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ENVIRONMENTAL STUDIES OF MACROZOOBENTHOS, AQUATIC MACROPHYTES, AND JUVENILE FISHES IN THE ST. CLAIR-DETROIT RIVER SYSTEM, 1983-1984

by

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This report presents information from a field study conducted in 1983 and 1984 to describe the distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fishes in the St. Clair - Detroit River System (SCDRS) during the open water season, and how they might be affected by additional winter navigation traffic. A further objective of this study was to predict or evaluate the potential environmental impact of an extended navigation season on these organisms in the SCDRS. The information obtained for the open water season on the SCDRS provides a baseline data set. The study included observations on the effects of the St. Clair River ice jam of April 1984. These data can be used along with other pertinent data to evaluate the major effect of any further extension of the navigation season.

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ABSTRACT

This report provides information needed by the U.S. Army Corps of Engineers for preparation of a Supplemental Environmental Impact Statement addressing the winter operation of the lock facilities at Sault Ste. Marie, Michigan, and the subsequent extension of the navigation season in the St. Clair-Detroit River system (SCDRS) to January-February. We describe the distribution and abundance of macrozoobenthos, aquatic macrophytes and juvenile fishes during the 1983 and 1984 open water season, and attempt to predict or evaluate the potential environmental impact of an extended navigation season on the biota of SCDRS. Fauna and flora were diverse and abundant; we identified more than 300 taxa of macrozoobenthos, 30 taxa of submergent and emergent macrophytes, and 36 species of fish. The diversity and abundance of macrozoobenthos were generally highest in the St. Clair River. Abundance and diversity of submersed macrophytes were similar in the two rivers, but Chara dominated in the St. Clair River and Vallisneria americana in the Detroit River. We collected more total fish in the Detroit River but more species in the St. Clair River. Yellow perch and rock bass dominated most catches in both rivers. An ice jam in the St. Clair River in spring 1984 appeared to affect two of the three groups studied--macroinvertebrates and submersed macrophytes. Of the 24 abundant taxa of macroinvertebrates, 9 were seemingly less abundant in spring in 1984 than in 1983 in the St. Clair River; however the densities of 6 of these taxa had recovered by fall 1984 to levels equal to or exceeding those in fall 1983 and the other 3 were within 30% of those in 1983. Cover of the bottom with submersed macrophytes was somewhat reduced in spring of 1984--particularly in the St. Clair River--but recovered to 1983 levels by fall 1984. Plant biomass levels varied between years and locations; no consistent differences could be attributed to the ice jam. Catches of fish were lower in 1984 than in 1983 but differences between locations and months were inconsistent. Observed differences in the plant community could be attributed to reduced temperatures, and ice-scour may have reduced the density of several taxa of macrozoobenthos. Evaluation of the potential environmental impacts of an extended navigation season on the biota of SCDRS was not attempted.

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EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers is considering the extension of operation of the Locks at Sault Ste. Marie, Michigan, from 8 January ± 1 week to 31 January ± 2 weeks. This study was undertaken to provide part of the information needed by the Corps for the preparation of a Supplemental Environmental Impact Statement addressing the winter operation of the lock facilities at Sault Ste. Marie, Michigan, and the subsequent extension of the navigation season in the St. Clair-Detroit River system (SCDRS) to mid-winter. The objectives of this study were (1) to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fish that might adversely be affected by an extension of winter navigation and (2) to predict or evaluate the potential environmental impact of an extended navigation season on SCDRS. An extensive ice jam on the St. Clair River in spring 1984 and the associated ice breaking activities provided an opportunity to evaluate between-river and between-year variation in the abundance and distribution of biota relative to differences in ice cover and related shipping activities. The study area encompassed the region between Port Huron (at southern Lake Huron) on the north and the lower end of Grosse Ile (mouth of the Detroit River) on the south, including the St. Clair River, Lake St. Clair, and the Detroit River. The St. Clair River is 39.1 mi long and receives water from Lake Huron; mean annual discharge into Lake St. Clair during the study period was 212,000 ft^3/s. Lake St. Clair has a surface area of about 430 mi^2, a mean depth of 11 ft, and a maximum natural depth of 21 ft. Flushing time of the lake is 5 to 7 days. The Detroit River is 31.9 mi long and receives water from Lake St. Clair; and the mean annual discharge rate into Lake Erie was 216,000 ft^3/s. The shipping channel running through the system has a minimum statutory depth of 27 ft, which is maintained by dredging.

Ice cover is limited or absent from both the St. Clair and Detroit rivers during normal winters, but is usually well developed on Lake St. Clair. However, ice may enter the St. Clair River from Lake Huron mainly under the influence of northerly winds. The current carries the floes downstream until they meet the resistance of the solid ice cover in or upstream from Lake St. Clair. This ice cover increases as more ice enters the system and may extend upstream nearly to Lake Huron. During most of the winter, a large natural ice arch becomes lodged in the narrowing confines at the outlet of Lake Huron and prevents ice from entering the river. This condition usually lasts through the winter but may be disrupted by strong southerly winds, particularly in March and April, which break up the ice arch and push the ice field away from the river mouth. A wind change back to the north pushes the ice field back into the river and if no ice arch forms, floe ice may enter the river in large quantities to form a huge ice jam, as it did in 1984. Ice jams of roughly similar magnitude occurred in the St. Clair River in 1901, 1920, and 1942.

Concentration of toxic materials are elevated in the sediments in several areas in the SCDRS. No contaminant data were collected in the present study, but past work has demonstrated that the presence of contaminants affects the

health and abundance of fish, macrophytes, and particularly macrozoobenthos. In the St. Clair River levels of polychlorobiphenyls (PCBs) exceeded the Ontario guidelines (50 ppb) and International Joint Commission (IJC) objectives (100 ppb); certain areas can be classified as being heavily polluted with mercury (> 1 ppm), as judged by the U.S. Environmental Protection Agency (EPA) standards; oil and grease levels were within acceptable tolerances. In Lake St. Clair, cadmium levels (> 1 ppm) exceeded Ontario's guidelines and mercury levels exceeded EPA's guidelines. In the Detroit River, PCB, oil and grease, cyanide, chromium, cadmium, and mercury levels exceeded EPA's guidelines for heavily polluted sediments.

A total of 756 macrozoobenthos samples were collected with a Ponar grab along 21 transects in the St. Clair River, Lake St. Clair, and Detroit River in May and October in 1983 and 1984. Stations along the transects were at three locations: on the sloping side of the shipping channel (channel stations), immediately adjacent to the channel on the crest of the channel slope (near-channel stations), and between the crest of the channel slope and the adjacent shoreline (off-channel stations). Aquatic macrophytes were collected during late June, late July-early August, and early September at Stag, Fawn, and Russell islands in the St. Clair River, and at Belle Isle, Point Hennepin, and Stony Island in the Detroit River. A sampling grid composed 500-ft-square blocks was used to distribute sampling effort. Grapnel hauls were made at the grid intersections and Ponar or hand-harvested samples were taken within individual blocks. Juvenile fish were sampled with hoop nets at the same locations at which macrophytes were collected, during late May, late June, late July-early August, early September, and early October in 1983 and 1984. At each location, two nets were set in submersed aquatic vegetation, and two others in nearby non-vegetated areas. A total of 40 net sets were made at each location during the two years of the study.

The diversity of macrozoobenthos within SCDRS was highest in the upper Detroit River, where we identified 101 taxa, and lowest in Lake St. Clair, where we recorded 65; we collected 98 taxa in the upper St. Clair River, 95 in the lower St. Clair River, and 80 in the lower Detroit River. Identifications usually were made only to genus, family or higher level; however, as judged by our species identification of adult aquatic insects, the list of taxa of macrozoobenthos in SCDRS might easily exceed 300 species.

The densities of most taxa of macrozoobenthos were significantly higher in 1983 than in 1984, in October than in other months, and at the off-channel stations than at other stations. Densities of most taxa were highest in the St. Clair River. Of particular interest were the taxa with significantly higher populations in 1983 than in 1984. If the low densities occurred mainly in spring 1984 in the St. Clair River and no recovery occurred by fall 1984, we might postulate that the ice jam in May 1984 caused long-term damage. Densities of nine taxa were lower in the spring in 1984 than in 1983: Amnicola, Chironomidae, Gammarus, Harpacticoida, Hyalella, Isopoda, Nematoda, Oecetis, and Turbellaria The lower density were restricted to the St. Clair River, particularly in the lower section. Among these taxa, the densities of

Nematoda, Isopoda, Gammarus, Chironomidae, and Oecetis had recovered in fall 1984 to levels equalling or exceeding those in fall 1983; the densities of Turbellaria, Harpacticoida, Hyalella, and Amnicola were still low in fall 1984. Mean biomass ranged from 0.03 to 4.84 g/m² over the 21 transects. Biomass was highest in the Russell Island and Belle Isle areas and lowest near lower Lake Huron. Average total densities ranged from 976 to 96,684/m² over the 21 transects in 1983-1984, and the average number of taxa at each transect ranged from 9 to 38.

Twenty taxa of submersed macrophytes were collected in the St. Clair and Detroit rivers in 1983 and 1984; the most common, in order of frequency of occurrence, were Chara spp., narrow-leaf forms of Potamogeton spp., Vallisneria americana, Potamogeton gramineus, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis. Other taxa occurred in less than 13% of the samples. Chara spp. was the most commonly collected taxon in the St. Clair River and V. americana was the most common in the Detroit River. The total number of taxa at each location ranged from 7 to 14 and was highest in September. Percent occurrence of individual taxa during each sampling period between 1983 and 1984 varied less than 10% at each location.

In the St. Clair River in June, most submersed macrophyte taxa were less abundant in 1984 than in 1983. However, a paired comparison of all taxa showed significant differences only at Russell Island. A similar decline in biomass of dominant taxa occurred in the Detroit River, but was significant only at Belle Isle. Biomass of most taxa in September was similar in 1983 and 1984. Changes in the areal extent of the submersed macrophyte beds also showed similar trends between years, months, and locations.

Emergent macrophyte taxa were present in only two of the sampling grids at the six locations. A small bed of Scirpus acutus was at the tip of Fawn Island. Stony Island had extensive beds of Typha latifolia and Sparganium eurycarpum, usually in monotypic stands, and the species of Eleocharis, Phalaris, Sagittaria, and Scirpus occurred together in mixed stands. Mean dry weight biomass of individual taxa varied from 10 to more than 2000 g/m².

We captured 1,771 fish of 36 species in 1983 and 1,038 fish of 26 species in 1984. Of the total of 39 species represented, only 7 were common (> 50 fish collected in each year); yellow perch, rock bass, hornyhead chub, spottail shiner, striped shiner, rainbow smelt, and white sucker collectively made up 86% of the total for both years combined. Only yellow perch and rock bass were common to both rivers in both years. An average of 2.4 species was collected per net set in 1983 and 1984. The number of species collected was higher in the Detroit River than in the St. Clair River. The mean catch of all species combined was nominally larger in 1983 than in 1984, increased from May to October, was larger in the St. Clair River than the Detroit River, and was larger in nets set in vegetation than in those set in non-vegetated areas. However, most of these differences were not significant at the 0.05 level. The mean catches of yellow perch and rock bass were nominally higher in 1983 than 1984, but were significantly higher only at Russell Island and Belle

Isle. Significantly more yellow perch were caught in nets set in vegetation than in those set in non-vegetated areas at Fawn Island. A statistically significant relation between catch and vegetation was not observed for other species or at other locations. Most of the fish caught were adults.

The number of taxa of macrozoobenthos collected in this study (160) exceeded that in any previous work on the SCDRS. Comparison with other large river systems indicated that the diversity and density of macrozoobenthos is much greater in SCDRS than in most other rivers of the world. Sediment particle size and contaminant distribution basically determined the benthic community in the SCDRS. The St. Clair River, with its wider range of sediment size and diverse macrophyte community, was dominated by pollution intolerant aquatic insects, amphipods, and snails. Diversity was similar in the area around Belle Isle in the Detroit River. Low diversity of macrozoobenthos in the lower Detroit River reflected a moderate effect of contaminants. The constant flow, low turbidity, and luxuriant macrophyte growth in SCDRS were major factors in stabilization and in the incorporation of fine deposits into the sediments of the off-channel areas. As a result, densities and biomass of macrozoobenthos were much higher than in the shifting sand habitat characteristic of most rivers.

Community diversity, biomass, and percent coverage of macrophytes has remained stable in SCDRS since at least 1978. The taxonomic composition and abundance of aquatic macrophytes probably reflects the stability of flow more than any other environmental variable. The lack of spates provides long-term stability to the system. Narrow-leaf forms of Potamogeton spp. were more common at shoal areas at the head and side of islands in SCDRS than along the shores of both mainlands. The maximum biomass estimates for the SCDRS were on the low side of the range reported for aquatic macrophyte stands in rivers at temperate latitudes (110-520 g/m^2). We found the highest biomass in September at every island, although biomass values for September were not significantly different from those for July-August at Belle Isle and Pt. Hennepin. Turbidity may be high enough in the Detroit River to prevent development of certain species of submersed macrophytes in the deeper littoral areas.

This was the first study of the juvenile fish community in the near-channel areas of SCDRS. Most species in the vicinity of these island shoals were either rare, transient species, or preferred other areas of the river. It is also possible that we were not adequately sampling this community. We found that the tendency for catches of fish to be higher in plant beds than in non-vegetated areas, may be species-specific, and depend on location; the tendency was also stronger in 1983 than 1984, and was correlated with season. Three of the four common species inhabiting the island shoals were more abundant in vegetated than in non-vegetated areas.

The ice jam in spring 1984 appeared to affect at least two of the three groups studied. Nine of the 24 most abundant taxa of macroinvertebrates declined in abundance in spring 1984, but only in the St. Clair River. Six of these taxa had recovered in fall 1984 to levels equalling or exceeding those

in fall 1983 and the densities of the other taxa were within 30% of those in 1983. Areal coverage by submersed macrophytes was somewhat less in spring in 1984 than in 1983, particularly in the St. Clair River, but recovered to 1983 levels by fall 1984. Plant biomass varied between years and locations, and no consistent differences could be attributed to the ice jam. Catches of fish were lower in 1984 than in 1983, but differences in numbers between location and month were inconsistent. Observed differences in the plant community could be attributed to lower temperatures, and ice-scour may have reduced the density of several taxa of macrozoobenthos.

This study was conducted to describe the distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fishes in SCDRS in 1983-84. We believe that we have addressed this objective for the open water season on SCDRS within the constraints imposed by our data set, and that our study provides a baseline data set that can be used to evaluate the major effects of any future extension of the navigation season. We do not believe that the results of our study can be used alone to answer the question of whether increased winter vessel traffic will have a measurable effect on the biota of SCDRS. Such an evaluation would require minimally the development of one or more realistic scenarios in which the potential effects of vessel passage in the extended season on ice, water, and sediment movement in the SCDRS was adequately characterized, so that the impact of these physical changes on biota could be examined over the range of expected conditions. Although some adverse effects may have been associated with the ice jam in April 1984, we cannot provide evidence to show that the ice jam was caused or exacerbated by navigation, or that the jam simulated conditions that might result from vessel operation in January or February. We believe that an evaluation of the potential impacts of winter navigation on SCDRS would be facilitated by the development of an energy flow model plus an age-structured fishery model. Research funded by the U.S. Army Corps of Engineers on SCDRS has provided a substantial base for development of models of these kinds. Additional data are needed on phytoplankton, periphyton, zooplankton standing crop and production, and terrestrial inputs to complete the energy budget. This information would permit quantification of the simultaneous effects of all components, according to their interrelationships in the ecosystem, and avoid the problem associated with a piecemeal evaluation of the individual components. Such models would be useful in partitioning impacts, so that rational remedial strategies and mitigation could be attempted.

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ENVIRONMENTAL STUDIES OF MACROZOOBENTHOS, AQUATIC MACROPHYTES, AND JUVENILE FISHES IN THE ST. CLAIR-DETROIT RIVER SYSTEM, 1983-1984

INTRODUCTION

The U.S. Army Corps of Engineers (Corps) is considering the extension of operation of the Locks at Sault Ste. Marie, Michigan, from 8 January ± 1 week to 31 January ± 2 weeks. To provide information needed in the preparation of a Supplemental Environmental Impact Statement addressing this extension in the winter operation of the lock facilities at Sault Ste. Marie, Michigan, and the subsequent increase in vessel traffic in the St. Clair-Detroit River system (SCDRS), the Corps funded a comprehensive environmental study of SCDRS in 1983-1985. The SCDRS includes the St. Clair River, Lake St. Clair, and the Detroit River. The present study of macrozoobenthos, aquatic macrophytes, and juvenile fish in SCDRS is an integral part of that comprehensive study. Other components of the Corps-funded research on this system include those undertaken by the U.S. Army Cold Regions Research and Engineering Laboratory on sediments and water chemistry, by the Michigan Department of Natural Resources on adult fish populations and anglers' catches, and by the U.S. Fish and Wildlife Service (Sandusky Biological Station) on fish spawning and nursery areas (Muth, K. M. et al. 1986).

The objectives of the present study were (1) to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fish within SCDRS, and (2) to predict the potential environmental impact of an extended navigation season on these organisms in SCDRS.

Currently (1986) there is some navigation on SCDRS during the proposed extension period. This is the contemporary baseline condition, and extension of lock operation would result in increased vessel traffic in the system over and above the 1986 situation. Ice cover is limited or lacking in both St. Clair and Detroit rivers during normal winters, but usually is well developed on Lake St. Clair. Potential impacts of extended lock operation would typically be evaluated on the basis of anticipated or modeled considerations involving the biology, distribution and abundance of organisms in relation to ship movement and ice breaking during winter ice conditions. However, an extensive ice jam (described later), that occurred in spring 1984 on the St. Clair River, provided an opportunity to evaluate differences in abundance and distribution of biota that might be attributable to relatively large between-year differences in ice cover, shipping activities, and ice scour.

Concern over possible adverse impacts of winter shipping on the Great Lakes has provided impetus for a number of environmental studies on connecting channels over the past several years (Gleason et al. 1979; Hiltunen 1979, 1980; Jones 1982; Liston et al. 1980, 1981; and Poe et al. 1980). These studies were supplemented by pollution related studies on SCDRS (USACE 1980; Harlow 1965; Michigan Water Resources Commission 1967; Ontario Ministry of the Environment 1979; Texas Instruments 1975; and Thornley and Hamdy 1984). Studies on fish in SCDRS (Goodyear et al. 1982; Hatcher and Nester 1983; and

Poe 1983) documented the distribution of important taxa and their habitats. An annotated bibliography of macrozoobenthos and aquatic macrophytes in SCDRS was prepared with Corps funding (McCauley 1985). Limno Tech, Inc. (1985) developed a bibliography and summary of the water quality problems in the system. Thornley and Hamdy (1984) and the Ontario Ministry of the Environment (1979) described the impact of man's discharge of contaminants, particularly of organics and heavy metals, on the biota and habitat. Many of these studies have pointed out the importance to the fishery of the extensive, submersed macrophyte beds and their stable, macrozoobenthos-rich substrates.

One of the major environmental concerns associated with the impact of winter navigation was the possibility of increased scouring of benthic habitat by flow modifications and ice, and the displacement downstream of plants, benthos, and substrate (Poe and Edsall 1982). In the present study we focused on upstream areas of five islands and one shoal area that the USACE identified as potentially vulnerable to impact by ice scour during an extended navigation season. All six areas were extensively covered with submersed macrophytes. Aerial photographs and plant and fish samples were taken from spring to fall in 1983 and 1984 in each area. The benthos samples were collected along the main navigation channel throughout the SCDRS, in spring and fall in 1983 and 1984.

Given the possible impact of ice scour on the benthic habitat in the St. Clair River in 1984, we concentrated on statistically analyzing variation in the abundance of major taxa of macrozoobenthos between years and between rivers, in relation to physical variables and changes in fish and plant populations. We then focused our attention on variation in community structure of macrozoobenthos, plants, and fish in relation to the effects of the ice jam.

DESCRIPTION OF THE STUDY AREA

The study area extended from Port Huron on the north to the lower end of Grosse Ile on the south, including the St. Clair and Detroit rivers (Fig. 1). The surface bedrock geology in the study area dates back to the Devonian period, is of marine origin, and consists mainly of shales in the St. Clair River and Lake St. Clair, and dolomites in the Detroit River. Glaciation has modified the topography by scouring and filling. The SCDRS lies in a morainal trough and is characterized by sediments consisting of glacial till and lake and stream deposits. The rivers are incised into a bed of glacial, lake-deposited clays with thicknesses of 80-200 ft (24-61 m) in the St. Clair River (Cole 1903) and 20-140 ft (6-43 m) in the Detroit River (Mozola 1969).

The SCDRS which is 89 mi (143.2 km) long, and drops 8 ft (2.4 m) between Lake Huron and Lake Erie, can be divided into five major segments: the upper St. Clair River, the lower St. Clair River, Lake St. Clair, and the upper and lower segments of the Detroit River (Fig. 1). Most of the following hydrographic information on the system comes from Derecki (1984 a, b, c). The upper St. Clair River is 27.9 mi (45 km) long and receives water from Lake

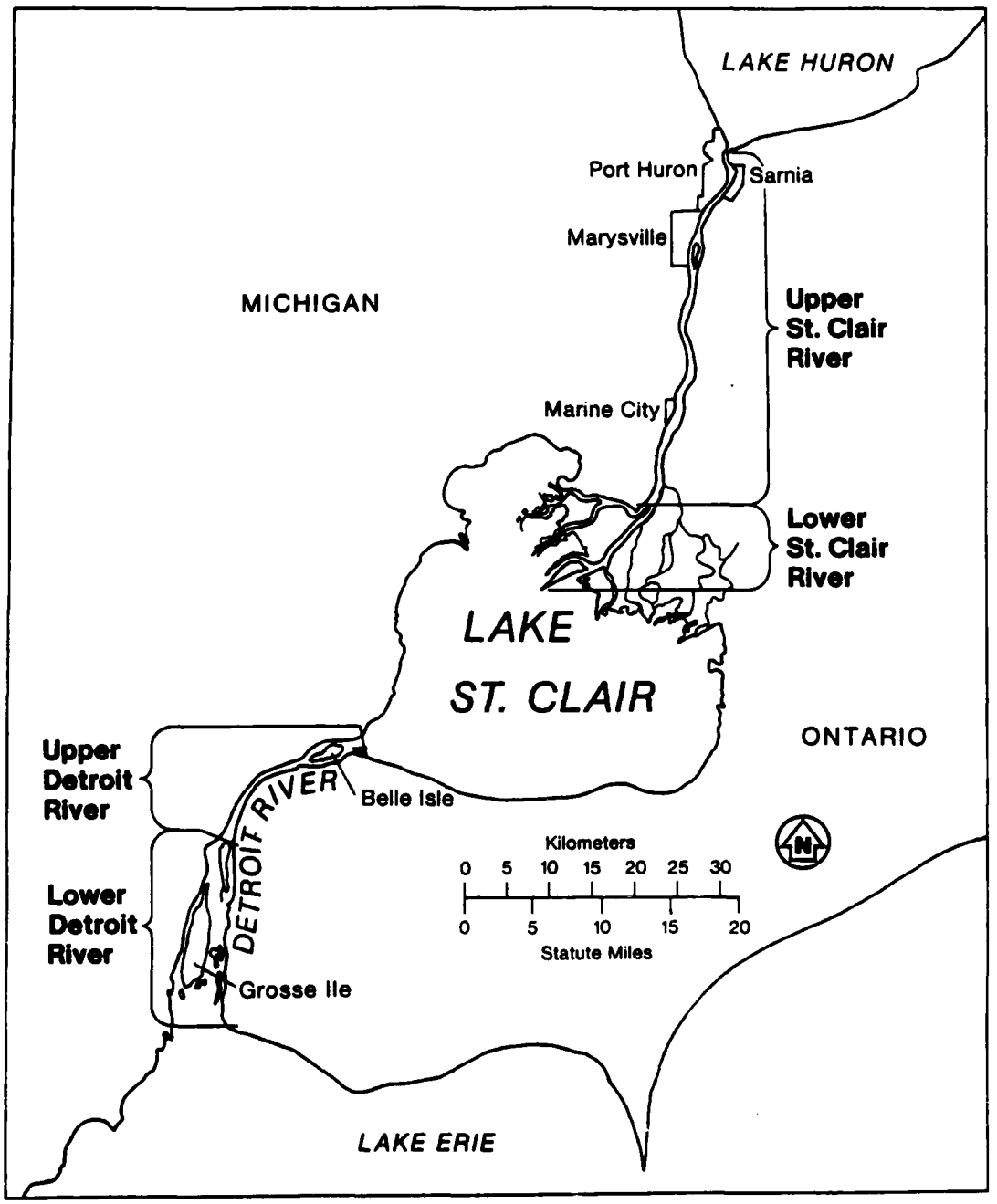

Figure 1. The St. Clair-Detroit River System.

Huron and three major tributaries (the Black, Pine, and Belle rivers). The lower St. Clair River, begins at the branching of the north and south channels near Algonac, Michigan, is 11.2 mi (18 km) long and divides to form a large delta area consisting of three main channels (north, middle, and south) and a number of secondary channels that empty into Lake St. Clair.

Width of the St. Clair River ranges from 820 to 3,940 ft (250-1200 m) and averages 2,625 ft (800 m) in the upper section. The widths of the three main channels in the delta area range from 700 to 3,000 ft (214-915 m). Mid-channel depths are 27 to 70 ft (8.2 - 21.5 m); a minimum statutory depth of 27 ft is maintained by dredging. Littoral depths are typically 6-13 ft (1.8-4.0 m). Mean annual discharge rate of the St. Clair River into Lake St. Clair was 214,000 ft^3/s (6,060 m^3/s) in 1983 and 209,000 ft^3/s (5,920 m^3/s) in 1984. These flows are about 17% higher than the historical average discharge of 180,000 ft^3/s (5,100 m^3/s). Velocities in the St. Clair approach 6 ft/s (1.8 m/s) in the navigational channel and range from 0.3 to 2.8 ft/s (0.09-0.86 m/s) near the channel. Total flushing time from Lake Huron to Lake St. Clair is normally about 21 hours; about one-third of this time is required to flush the delta area. Stag and Fawn Islands, 8.7 mi (14 km) and 21.7 mi (35 km) respectively, downstream from Lake Huron, are the only islands in the upper section of the St. Clair River. The delta area includes Russell, Harsens, Dickinson, and Seaway islands.

Lake St. Clair has a surface area of about 430 mi^2 (1,114 km^2), a mean depth of 11 ft (3.4 m), and a maximum natural depth of 21 ft (6.4 m). A navigation channel 18 mi (29 km) long, which has a statutory depth of 27 ft (8.2 m) bisects the lake from the mouth of the South Channel of the St. Clair River to the head of the Detroit River. These data are based on a Great Lakes low water datum of 573.3 ft (174.7 m) above mean sea level; in 1983-1984 the water levels were 3.25 ft (1.0 m) above this low-water datum. Major tributaries are the Clinton River on the United States side and the Sydenham, Thames, Belle, and Ruscom rivers on the Canadian side. Flushing time of the lake is 5 - 7 days.

The upper Detroit River, which is 13 mi (21 km) long, receives water from Lake St. Clair. The lower Detroit River, which is 18.9 mi (30.5 km) long, begins at the head of Fighting Island, where the river separates into three channels (Trenton, Livingstone, and Amherstburg). Major tributaries are the Rouge and the Ecorse rivers, both on the U. S. side. Width of the river ranges from 1,970 to 8,450 ft (600 - 2,600 m) in the upper section, and from 4,920 to 10,400 ft (1,500 - 3,000 m) in the lower section. Mid-channel depths are 20 - 49 ft (6.2 - 15.1 m) and littoral depths are 7-20 ft (2.2-6.2 m). Mean annual discharge rate of the Detroit River into Lake Erie was 217,000 ft^3/s (6,140 m^3/s) in 1983 and 215,000 ft^3/s (6,090 m^3/s) in 1984. These flows are about 17% higher than the historical average discharge of 185,000 ft^3/s (5,200 m^3/s). Average flow velocities were 2 - 6 ft/s (0.6 - 1.8 m/s) in the mid-channel region and 0.1 - 1.9 ft/s (0.03-0.58 m/s) in the nearshore and near channel areas. Total flushing time from Lake St. Clair to Lake Erie is about 19 hours in the main channel. The upper river has two large islands,

Peach Island and Belle Isle, and the lower river has Fighting Island, Grosse Ile, Bois Blanc, and several small islands.

The climate in the study area is semi-maritime due to its proximity to lakes Huron and Erie. The mean annual surface air temperature is 9 - 10°C (48-50°F); however, intense cells of cold arctic air can lower temperatures as much as 28°C (81°F) over a 24-hour period. Air temperatures from December to March averaged 4.6°C lower in 1983-1984 than in 1982-1983. Air temperatures were 1.0°C higher in April-June and 1.7°C lower in July-September in 1984 than in 1983 (Fig. 2).

High winds and storms are common and significantly affect the thermal budgets of Lake Huron and SCDRS. Prevailing winds are from the west. High winds generate seiches and surges that strongly affect the lower Detroit River, causing water levels to rise or fall 2-3 ft. Wind speed and direction also sometimes affect ice buildup and cause ice jams in the St. Clair River. Typically the river remains clear of ice and only a narrow band of shore ice forms along the banks, except in the delta area. However, ice may enter the St. Clair River from Lake Huron under the influence of northerly winds. The current carries this ice downstream until it meets resistance from solid ice cover in the delta or in Lake St. Clair. When large amounts of ice enter the system, the ice accumulation may extend upstream from Lake St. Clair nearly to Port Huron (Fig. 1). During most of the winter a large natural ice arch forms at the outlet of Lake Huron and prevents ice from entering the river. This condition usually lasts through the winter, but strong southerly winds, particularly in March and April, may disrupt the ice arch and push the ice field away from the river mouth. If the ice arch does not re-form, a north wind can then push the ice field back into the river in large quantities, as it did in 1901 (Cole 1903), 1920, 1942, and 1984 (USACE 1984).

In 1984 the ice jam in the St. Clair River lasted from April 5 to April 30 (USACE 1984). On April 1 no ice existed in the St. Clair River, but a large pack of ice covered the southern portion of Lake Huron. On April 5 a large amount of ice was reported floating downstream in the vicinity of Marine City. By April 7 pack ice extended from Marysville to the mouth of the St. Clair River. The large ice pack in Lake Huron and persistent winds from the north in April choked the St. Clair River with ice until April 30. Ice as thick as 8 ft was reported. Water temperature during April in the St. Clair River was about 6°F lower than normal and a reduction in flow of almost 95,000 ft^3/s (2690 m^3/s) resulted in a 2-ft drop in the Lake St. Clair water level for about 3 days. During April at least 140 vessels were led through the St. Clair River by four Coast Guard ice breakers. Movement through the river at this time was slow and difficult, and several vessels ran aground.

The upper Detroit River normally does not freeze over, except in the broad, shallow area between Belle Isle and the United States mainland. Minor ice jams occur when large quantities of floe ice from Lake St. Clair encounter the narrow channel and shallow ice-covered areas in the lower river, which block downstream passage of the floe ice. Easterly winds can also cause

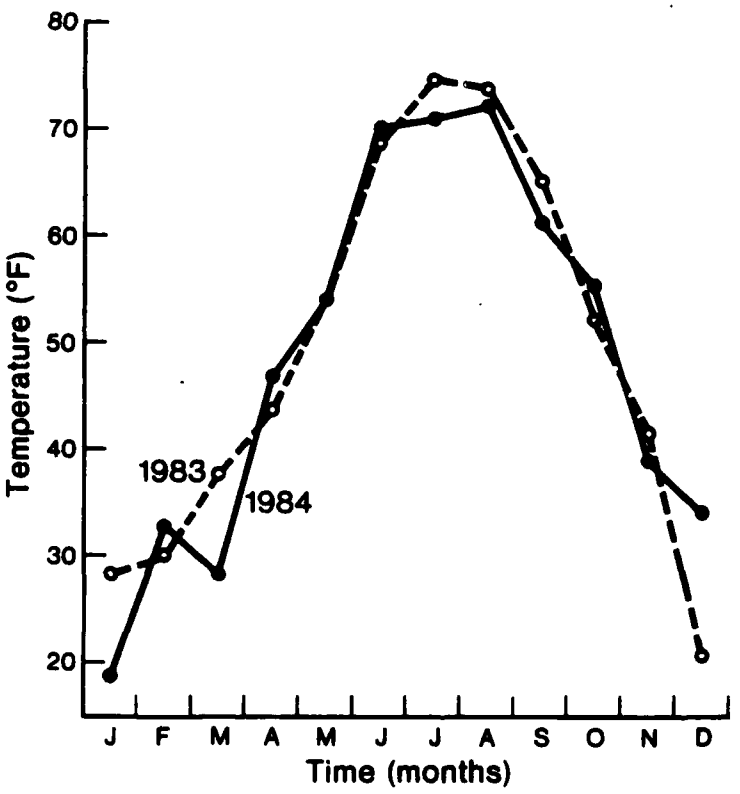

Figure 2. Mean monthly air temperatures in 1983 and 1984 at Windsor, Ontario, airport.

jams by moving Lake Erie ice into the lower river. Ice cover develops in the lower river in the broad, shallow expanses adjacent to the many islands; however, the main navigation channels are generally open. Occasionally the river fills completely with ice, when there is heavy ice movement from Lake St. Clair and the river mouth is blocked by ice from Lake Erie (Derecki 1984 c).

Concentrations of toxic materials in sediments are elevated in several areas within SCDRS. Although we collected no data on contaminants, past work has demonstrated that contaminants adversely effect the health and abundance of fish, macrophytes, and particularly macrozoobenthos (Limno-Tech, Inc. 1985). Concentrations of pollutants in the sediments of SCDRS are relatively high and some exceed EPA criteria; potential contaminants treated by Ontario's guidelines and IJC objectives are polychlorinated biphenyls (PCB), hexachlorobenzene (HCB), octachlorostyrene (OCS), phenol, polyaromatic hydrocarbons (PAH), cyanide, oil and grease, cadmium, chromium, and mercury. The contaminated areas tend to be near shore, and near point sources, but also include depositional zones far removed from known point sources. The distribution of contaminants in sediments is difficult to assess--as it is in most riverine environments. The major point source in the St. Clair River is the Sarnia industrial complex. The reported ranges of concentrations of contaminants in the upper St. Clair River follow: PCBs, 0-10,000 ppb; OCS, 0-193 ppb; oil and grease, 250-600 ppm; and mercury, 0.1-58 ppm. PCB levels exceed the Ontario guidelines (50 ppb) and IJC objectives (100 ppb), and mercury in certain areas (>1 ppm) exceeds the EPA guidline (no standards exist for OCS in sediments). Oil and grease levels are acceptable in most areas. Concentrations of contaminants are lower in the St. Clair delta, but sampling there has been limited. Deposition of sediments in Lake St. Clair in the mid-lake area near the navigational channel has resulted in the following ranges of concentrations: PCB 0-50 ppb, HCB 36-99 ppb, OCS 0-30 ppb, cadmium 1-2 ppm, and mercury 1-3 ppm. Cadmium concentrations (>1 ppm) exceed Ontario's guidelines and mercury levels indicate heavy pollution; no guidelines exist for HCB in sediments. The entire Detroit River--particularly the lower section associated with the industrial complex on the U.S. shore--is the most severely polluted area in SCDRS. Pollutants include PCB 0-3800 ppb, HCB 0-36 ppb, OCS 0-10 ppb, oil and grease 100-29,000 ppm, cyanide 0.25-2.94 ppm, phenols 0-1 ppm, chromium 4-330 ppm, mercury 0-8 ppm, and cadmium 0-17 ppm. PCB, oil and grease, cyanide, chromium, cadmium, and mercury levels exceed EPA's guidelines for heavily polluted sediments. No standards exist for phenol or PAH. A total of 15 PAH compounds have been found at detectable levels, and mean concentrations of individual compounds measured have been as high as 39 ppm. Some of these data were collected in the 1970's, and some pollutants have declined since then. Hamdy and Post (1985) concluded that mercury in superficial sediments of the Detroit River declined substantially between 1970 and 1980. Pugsley et al. (1985) could not determine whether PCB levels in sediments had decreased or remained reasonably static in SCDRS over the last 10 years, and Mudroch (1985) found metal concentrations in the Detroit River to be significantly higher in 1983 than in 1969-73. More data are needed to provide a comprehensive and current assessment of contaminants in sediments, and to establish standards.

MATERIALS AND METHODS

MACROZOOBENTHOS

A total of 756 macrozoobenthos samples were collected with a standard Ponar grab (484 cm^2) along 21 transects in the St. Clair River, Lake St. Clair, and the Detroit River (Fig. 3; Appendix A). The sampling locations were considered to be areas most likely to be affected by ice scour or vessel passage during winter navigation. Triplicate samples were taken at each of three stations on each transect in May and October in 1983 and 1984. Stations were located on the sloping side of the shipping channel (channel stations), immediately adjacent to the channel on the crest of the channel slope (near-channel stations), and between the crest of the channel slope and the adjacent shoreline (off-channel stations). Sampling was most difficult on the channel slope because the hard, current-swept bottom could not be sampled effectively with a Ponar grab; it was particularly difficult in the lower Detroit River, where the bottom type is mainly bedrock and boulders. Samples were concentrated in the field by washing them in a standard U.S. No. 30 sieve (0.65 mm mesh), preserved in a 10% formalin-phloxine B mixture, and taken to the laboratory for processing.

In the laboratory, each sample was divided into aliquots of a size convenient for processing and the organisms were then extracted manually from each. The residue from the aliquots collectively composing a sample was then pooled and mixed with a sugar solution to float any remaining organisms, which were then extracted manually from the sugar solution and added to those previously removed from the sample. Samples that required more than 20 man-hours to process (i.e., samples containing large numbers of Hydra and small oligochaetes) were reduced as follows. All organisms except Hydra and small oligochaetes were removed from the sample and the rest of the sample was then subdivided with a Folsom Splitter until a 1/8 aliquot was obtained. In this aliquot, the total numbers of Hydra and oligochaetes were counted and these counts were then used to estimate the total number of organism of each taxon that was present in the whole sample. Macrozoobenthos density data (No./m^2) at each station is shown in Appendix B and summarized in Appendices C and D.

Macrozoobenthic organisms were placed on a glass fiber filter, dried in an oven at 60°C for 24 hours, and weighed to the nearest 0.1 mg for biomass determinations. Ash-free dry weight was obtained by reheating the dried samples in a muffle furnace at 525°C for 1 hour. The biomass data are given in Appendix E.

Organisms picked from the samples were identified to the lowest feasible taxon before they were dried. Most were identified to genus; when mature specimens were available (e.g. clams, leeches, copepods and cladocerans), identification was to species; and other forms such as nematodes, turbellarians, oligochaetes, and mites were identified only to family level or a higher taxon. Specimens of leeches were sent to Don Klemm (U.S. Environmental

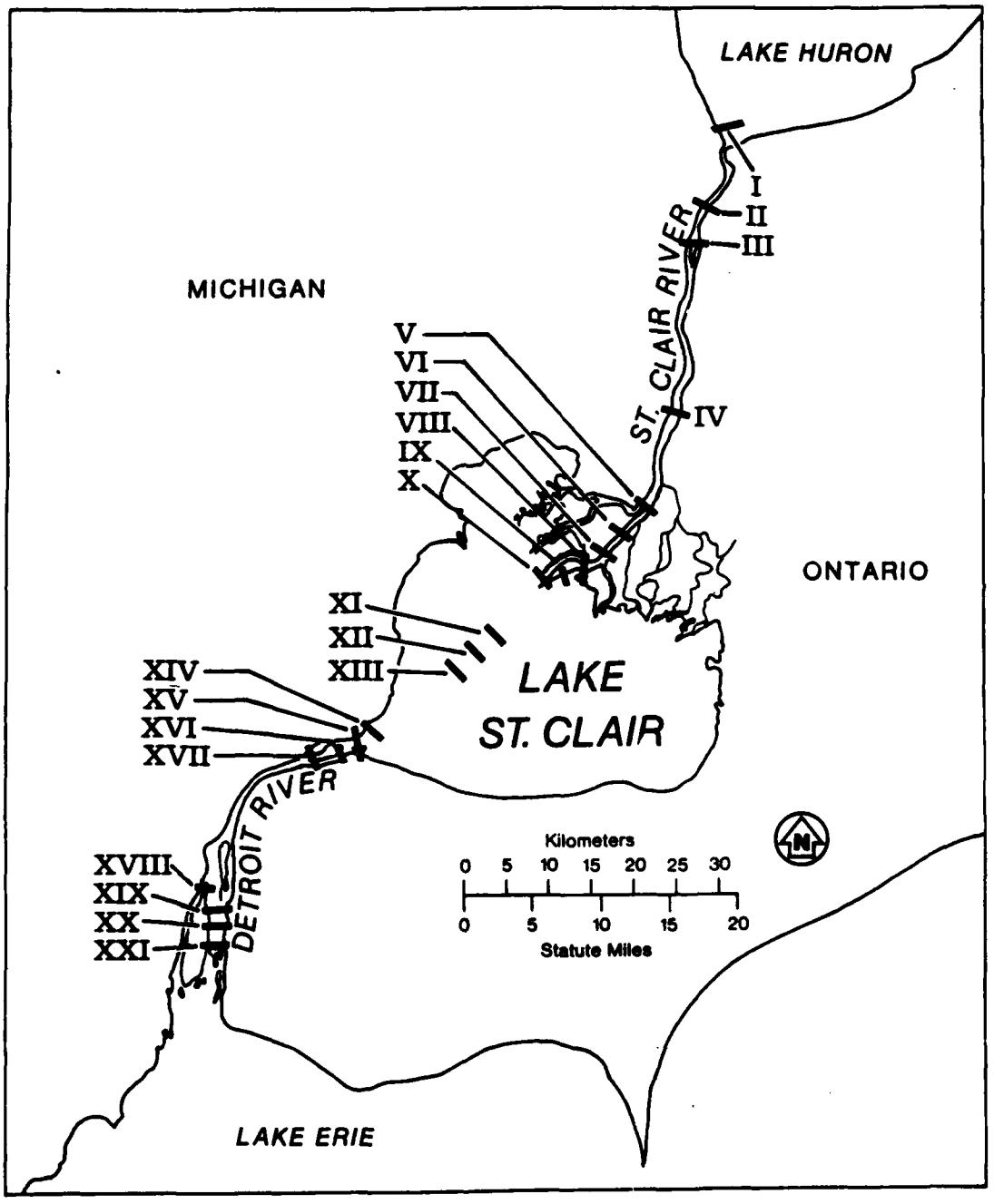

Figure 3. Macrozoobenthos sampling locations.

Protection Agency), and freshwater mussels to Tom Freitag (Corps, Detroit District), for identification and verification. To complement the collection of immature insects and to develop a species composition list of aquatic insects living in SCDRS, adult insects were collected periodically with sweepnets and light-traps from May to October during both years. Adults of major taxa were sent to the following specialists for identification and verification: Brian Armitage, Athens University, Athens, AL (Trichoptera); Ken Tennessen, Tennessee Valley Authority, Decatur, AL (Odonata); Manny Pescador, Florida Agricultural and Mechanical University, Tallahassee, FL (Ephemeroptera); and Ole Saether, University of Bergen, Bergen, Norway (Chironomidae).

At each macrozoobenthos station we recorded Loran coordinates (TI 9900 Loran C Navigator; accuracy given in manual as ±300 ft), water depth (sounding line or Ray Jefferson Model 202, depth computer), surface and bottom measurements of current velocities (Marsh McBirney Model 201 Portable Water Current Meter), bottom type (e.g. silt, sand) as estimated by visual and textural means, and water temperature (Yellow Springs Instruments Model 54 Oxygen Meter). The physical data set is given in Appendix F and summarized in Appendix G.[1/]

The macrozoobenthos data were subjected to analysis of variance (ANOVA) to test for significant ($P \leq 0.05$) differences in abundance between stations, transects, months, and years (Appendix H). We transformed density estimates using square root transformations $(No./m^2 + 0.5)^{\frac{1}{2}}$, so that ANOVA assumptions of normality and homogeneity of variance were better met. We used Tukeys Studentized Range Test to distinguish among levels of abundance at each station, transect, month, and year. To assess the relationship between macrozoobenthos density and environmental variables (depth, water velocity, bottom type, and temperature), we used the Pearson Product-Moment Correlation procedure. We performed all statistical analyses with SAS (SAS Institute Inc. 1982).

AQUATIC MACROPHYTES

Aquatic macrophytes were collected during late June, late July-early August, and early September at Stag, Fawn, and Russell islands in the St. Clair River, and at Belle Isle, Point Hennepin, and Stony Island in the Detroit River. Plants were sampled at the upstream end of each island and on the side of the island adjacent to the navigation channel (Fig. 4). A sampling grid with 500-ft-square blocks was used to distribute sampling effort at each site (Appendix I). The grid was set by using a 100-ft tape, staff buoys, and line-of-sight compass readings on shore structures. After the grid buoys were in place, we made grapnel hauls at the grid intersections and collected Ponar or hand-harvested samples within individual blocks.

1/ Mention of name brands does not imply Government endorsement of commercial products.

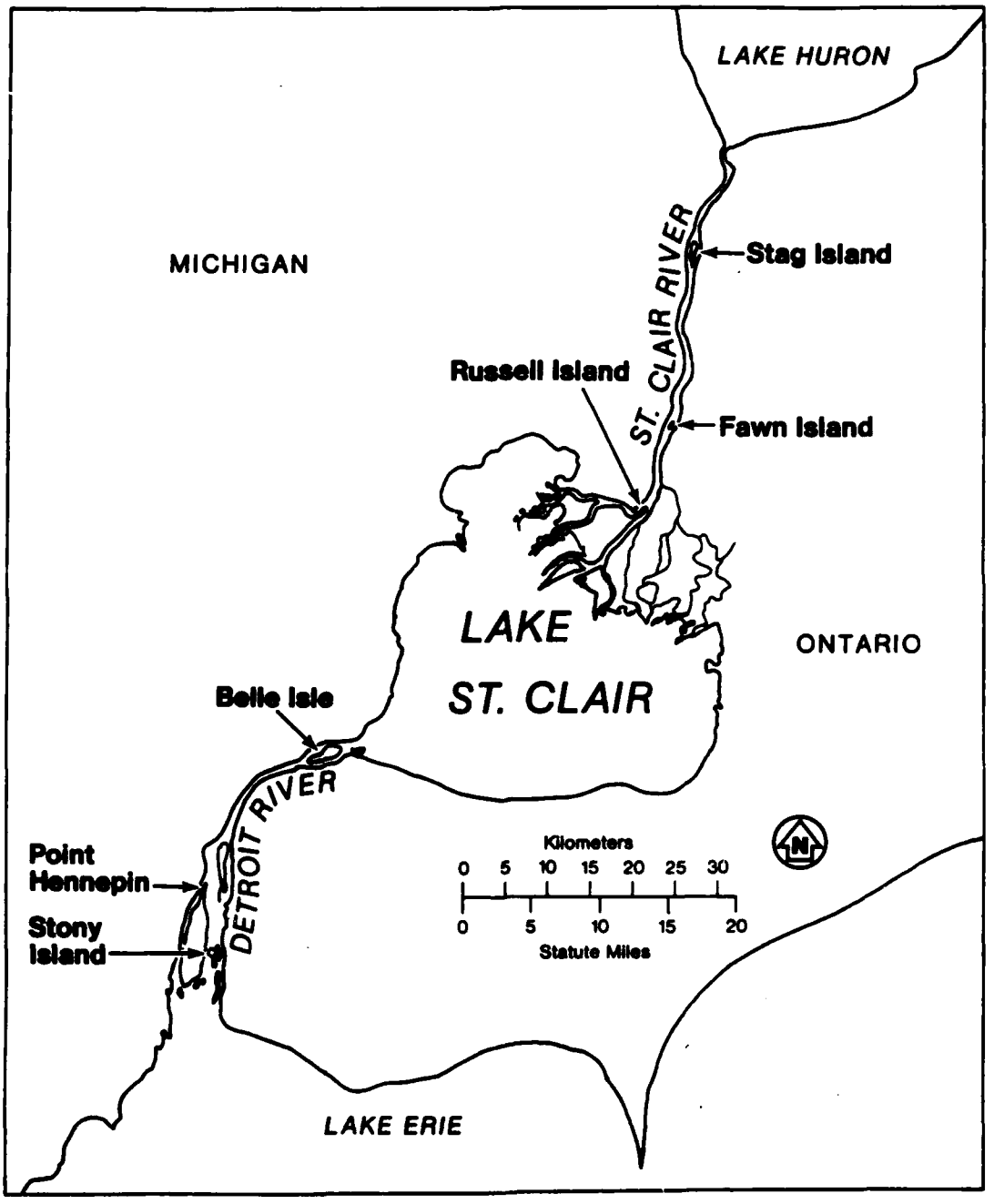

Figure 4. Sampling locations for aquatic macrophytes and juvenile fish.

The grapnel was lined with 1-cm-square mesh hardware cloth and was dragged along the bottom for a distance of 30 ft at each grid intersection. Submersed macrophytes collected with the grapnel were sorted to species, the percent abundance of each taxon collected was estimated, the total weight of the sample was taken, and the sample was discarded in the field. Water depth at grapnel stations was 2-35 ft. The data set is in Appendix J and is summarized in Appendix K.

Once the grapnel collections were completed, the dominant stand of submersed or emergent vegetation in each block was selected on the basis of the grapnel collections and visual observation. Each block was then sampled in triplicate, either with a standard Ponar dredge (for submersed plants), or by hand with a 0.6-m^2 steel hoop (for emergent plants). Sampling depths were 2 to 13 ft. At several locations, some blocks contained no vegetation and others contained several stands that were considered to be dominant. Blocks that had several dominant or subdominant stands were revisited and were sampled in triplicate until the following minimum number of samples had been obtained during each sampling period at each location:

St. Clair River		Detroit River	
Stag Island	60	Belle Isle	40
Fawn Island	44	Point Hennepin	56
Russell Island	36	Stony Island	44

Samples of vegetation from each Ponar grab or steel hoop collection were placed in plastic bags, stored in a portable cooler, and transported to the laboratory. In the laboratory, macrophytes were sorted and identified by consulting taxonomic keys (Hotchkiss 1967, 1970; and Voss 1972). Dry weight (105°C for 24 hours) and ash-free dry weight (525°C for 24 hours) of each taxon in each sample was determined to the nearest 0.1 mg and reported as grams of plant matter per square meter of substrate sampled. Data for submergent macrophytes are in Appendix L and those for emergent macrophytes are in Appendix M. The analysis was done on dry weight biomass, but results can be converted to ash-free dry weight (AFDW) by using the following equation: $\log_e$ AFDW (g) = -0.5436 + 0.9984 $\log_e$ dry weight (g), where n = 4100 and R^2 = 96%.

We encountered taxonomic difficulties with the narrow-leaf pondweeds and the Potamogeton gramineus-praelongus-illinoensis group. There were at least two narrow-leaf pondweeds in SCDRS (P. pectinatus and P. filiformis), that were difficult to identify to species when they were without flowers or seeds. Consequently we routinely identified them as narrow-leaf forms of Potamogeton and in the text refer to them as Potamogeton spp. Potamogeton natans, a broad-leaf form in its early stages of development, is superficially characterized by narrow leaves. Early in the season we identified it only as Potamogeton spp. Identification of P. gramineus, P. praelongus, P. illinoensis, and the occasional hybrid was difficult without seed structures, due to variations in leaf form (which depend on temporal and spatial growing conditions). Schloesser and Manny (1982), in an extensive survey of SCDRS in fall 1978, did not collect P.

praelongus, but recorded P. illinoensis at about 1% of the stations and P. gramineus at 6-15%. Probably P. gramineus made up 90% of this particular group of broad-leaf pondweeds in the SCDRS.

The distribution of aquatic macrophytes in the 500-ft square sampling blocks was mapped to scale by using 9- x 9-in., color, aerial photographs taken at each location during or immediately after each sampling period. The photographs were taken during mornings or afternoons when there was little cloud cover or wind, with a Wild Heerbrugg RC-8 camera (15.24-cm focal length, F 5.6 at 1/300 second) and Aerochrome MS aerographic (transparency) film (type 2448). The transparencies had a nominal scale of about 1:5000 and a minimum resolution of 1.5 m. Photograph coverage at each location was indexed on 1:15,000 scale NOAA charts by reference to landmarks visible on both the transparencies and the charts (Appendix N). Transparencies were examined with the aid of a translucent light table. The photointerpreter prepared a macrophyte map for each location and sampling period maps based on color, texture, and relative density of the submersed and emergent beds. Collateral ground truth information was also used in interpretation and preparation of the maps. One 9- x 9-in. color print (one-color balancing, no enhancement) was produced from each transparency (Appendix N) and used to construct the macrophyte maps shown in Appendix O.

At each macrophyte station we recorded Loran coordinates, water depth, surface and bottom measurements of water velocities, and incident light (Protomatic Incident Light Meter, foot candles). The physical data set for the grapnel collections is in Appendix J and is summarized in Appendix K. The physical data set for the Ponar grab collections is in Appendix L.

An ANOVA procedure was used to determine if the biomass of aquatic plants varied significantly ($P < 0.05$) among blocks, or sampling dates at each of the six islands (Appendix P). We used square root transformations to normalize the biomass estimates and Tukey's Studentized Range Test to distinguish between levels of abundance at each block, month, and year. Because replication within blocks was unequal, we used only the first three replicates (dominant stand) for analysis. This procedure resulted in a balanced design that is more accurate and computationally efficient than an unbalanced design. The Wilcoxon Signed Rank Test was used to test absolute differences between paired yearly biomass estimates of different taxa at each location and month. The Pearson Product-Moment Correlation procedure was used to assess the relation between taxa and environmental variables (depth, water velocity, and incident light).

JUVENILE FISH

Fish were sampled with hoop nets in the St. Clair River at Stag, Fawn, and Russell islands, and in the Detroit River at Belle Isle, Point Hennepin, and Stony Island (Fig. 4) during late May, late June, late July-early August, early September, and early October in 1983 and 1984. The nets were 2.5 feet in diameter and 10 feet long, and constructed of 1-inch (stretched measure)

nylon mesh. Each net was fitted with wings about 6 feet long and 3 feet high, constructed of 2-inch mesh nylon. Nets were set in the gridded area used for macrophyte sampling, in water 3-6 ft deep, for 24 hours; the net mouth faced downstream. At each location, two nets were set in submersed aquatic vegetation and two others in nearby non-vegetated areas. A total of 240 net sets were made. Fish caught in each set were sorted to species, weighed to the nearest gram, measured (total length to the nearest millimeter), and released. Age was determined by consulting age-at-length records for fishes of Ohio, including western Lake Erie (Trautman 1981). The fish data set is in Appendix Q.

We used ANOVA techniques based on a factorial model for comparing catches. Because the lack of vegetation in spring 1984 unbalanced the study design for that year, we computed by regression with dummy variables. The factorial model included the effects of location (river); month and year, which were fixed; and the effect of plant density, which was considered random. Because of the relatively large number and levels of effects, we made the analysis by location (Appendix R). Catch data were normalized by using a square root transformation. The analysis was done on total catch, total number of species, and the catch of the two most common species--yellow perch and rock bass. We used Tukey's Studentized Range Test to distinguish among the levels of catch for each main effect. To assess the relation between catch and environmental variables (depth, current velocity, incident light, temperature, bottom type), we used the Pearson Product-Moment Correlation procedure.

At each station we recorded Loran coordinates, water depth, surface and bottom measurements of current velocities, incident light, bottom type, and water temperature. The physical data set for the fish collections is in Appendix S.

RESULTS

MACROZOOBENTHOS

Taxonomic Composition

The diversity of macrozoobenthos in SCDRS was highest in the upper Detroit River, where we identified 101 distinct taxa, and lowest in Lake St. Clair, where we recorded 65. We counted 98 taxa in the upper St. Clair, 95 in the lower St. Clair, and 80 in the lower Detroit River. The taxonomic composition and abundance of macrozoobenthos, by location and year, are summarized in Appendix C where the 21 transects are grouped into five geographic regions (transect numbers in parentheses): upper St. Clair River (I-V), lower St. Clair River (VI-X), Lake St. Clair (XI-XIII), upper Detroit River (XIV-XVII) and lower Detroit River (XVIII-XXI). Many of the 162 taxa listed in Appendix C are higher level designations that include unidentifiable, immature, or damaged specimens; these taxa may include genera or species already listed. However, when counting taxa by location or year, we excluded those for which

lower order taxa belonging to the same group were already listed. The list assuredly underestimates the diversity of this system because lack of suitable keys restricted most of the identifications to genus, family, or a higher level. For example, the midges are listed only to family (Chironomidae), although the qualitative work we performed on both larvae and adults of this family indicated that the group included at least 58 genera and 127 species. However, comparisons can be made of relative diversity between areas and years in Appendix C because taxonomic effort was uniform throughout the study.

A few sponges were collected everywhere except in the lower Detroit River, where none were seen (Appendix C). Bryozoa were lacking in Lake St. Clair and were scarce at other locations. Two genera of coelenterates were represented in the samples by Cordylophora lacustris (a single specimen from the upper Detroit River), and Hydra (present throughout the system and one of the most common benthic taxa collected).

The flatworm taxa Rhabdocoela and Tricladida were common at all locations and in both years in SCDRS. Rhabdocoela were more common than Tricladida, particularly in Lake St. Clair. Tricladida occurred most frequently in the Detroit River. The two taxa were combined (as Turbellaria) and analyzed statistically in the next section. A single specimen of a third flatworm taxon, Trematoda, was collected in the Detroit River.

Nemertinea and Nematoda were collected at all locations in both years. Nemertinea usually occurred in over 50% of the samples in both rivers, but in only 1-2% of the samples taken from Lake St. Clair. Nematodes were ubiquitous, occurring in over 95% of the 756 samples collected.

The annelids Oligochaeta and Polychaeta were two of the most abundant taxa in the system. Oligochaetes were partly divided into smaller taxa, including Nais, Stylaria, Branchiura, and Spirosperma, because they could be easily identified. All remaining taxa were combined as Oligochaeta and occurred in every sample from the lower St. Clair River downstream. Nais was common in both rivers, but not in Lake St. Clair. Branchiura sowerbyi was collected only in the upper Detroit River. Spirosperma occurred in at least 50% or more of all samples at all locations, and in over 90% of the samples from the Detroit River. The only polychaete found, Manayunkia speciosa, was uncommon in the upper St. Clair River, but occurred in all of the samples from Lake St. Clair.

The other annelids in the system, leeches, were not abundant, and most specimens could be identified to species. A total of 12 species were identified (Table 1), of which 11 were recorded in the St. Clair River, 5 in Lake St. Clair, and 8 in the Detroit River. The upper and lower portions of the St. Clair River had similar total numbers of species (eight and nine, respectively), but had only five species in common. Of the species found in Lake St. Clair, only Placobdella montifera was unique to the lake. Glossiphonia complanata, Helobdella papillata, and Piscicola milneri were collected only in the St. Clair River. Most species occurred in less than 10% of the samples.

Table 1. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of Hirudinea in Ponar grab samples from SCDRS in 1983-84.[a/]

Taxon	Locality and number of samples				
	St. Clair River		Lake	Detroit River	
	Upper (n = 180)	Lower (n = 180)	St. Clair (n = 108)	Upper (n = 144)	Lower (n = 144)
Actinobdella inequiannulata	T (2)	0 (0)	0 (0)	T (2)	0 (0)
Batracobdella phalera	0 (0)	T (2)	0 (0)	0 (0)	T (4)
Erpobdellidae	3 (23)	1 (5)	0 (0)	7 (23)	T (2)
Erpobdella punctata	1 (4)	0 (0)	0 (0)	1 (2)	0 (0)
Glossiphoniidae	0 (0)	0 (0)	0 (0)	T (6)	0 (0)
Glossiphonia complanata	0 (0)	1 (7)	T (3)	0 (0)	0 (0)
Glossiphonia heteroclita	0 (0)	1 (5)	0 (0)	1 (10)	T (2)
Helobdella elongata	T (4)	1 (8)	7 (33)	2 (15)	0 (0)
Helobdella papillata	T (2)	T (2)	0 (0)	0 (0)	0 (0)
Helobdella stagnalis	T (4)	1 (5)	3 (31)	1 (10)	0 (0)
Helobdella triserialis	T (2)	T (2)	0 (0)	1 (4)	T (2)
Hirudinea	T (4)	0 (0)	0 (0)	0 (0)	0 (0)
Piscicolidae	1 (4)	T (3)	T (3)	0 (0)	0 (0)
Piscicola	1 (10)	1 (7)	0 (0)	T (2)	0 (0)
Piscicola milneri	T (2)	T (5)	0 (0)	0 (0)	0 (0)
Placobdella montifera	0 (0)	0 (0)	1 (8)	0 (0)	0 (0)
Placobdella papillifera	T (2)	0 (0)	0 (0)	0 (0)	0 (0)

[a/] T = trace (< 0.5/m²).

In Lake St. Clair in 1983, Helobdella elongata was the most frequently collected (44%) and densest (46/m²) of the leeches. Declines in abundance and percent occurrence about equaled increases between 1983 and 1984 for all taxa and locations (Appendix C). Because of the low density of individual species, the group was analyzed in detail as a class.

We identified 36 taxa of Cladocera and Copepoda (Appendix C). Inasmuch as most specimens were too small to be retained by our sieve, their densities reflect their presence rather than their true abundance. Furthermore, many of the taxa represented in our samples are planktonic and were probably entrapped in the Ponar as it descended through the water column. This group includes Diaphanosoma, Holopedium, Leptodora, all Daphnia species, Bosmina, Polyphemus, Limnocalanus, Epischura, Diaptomus, Cyclops, and Mesocyclops. True benthic cladocerans and cyclopoids include Eurycercus, Camptocercus, Alona, Sida, Ilyocryptus, Macrocyclops, Eucyclops, Paracyclops, and the Harpacticoida. Daphnia, Diaptomus, and Bosmina were the most common planktonic taxa and Harpacticoida, Ilyocryptus, Sida, and Macrocyclops the most common benthic taxa.

Other crustaceans common in the system included Ostracoda, Gammarus, Hyalella, Asellus, and Lirceus. Although rare, crayfish and Pontoporeia were taken most frequently in the St. Clair River. Densities of Asellus, and Lirceus are combined and analyzed as Isopoda in the next section.

The terrestrial insects collected with the Ponar included both those that are strictly terrestrial and those that have aquatic early-life stages. They occurred in over 20% of the samples at each location and year and were most common in the St. Clair River. Average densities never exceeded 12/m². Densities of most were higher in 1984 than in 1983.

Chironomids were the most common and abundant aquatic insects collected in SCDRS (Table 2). Some genera were collected only as adults and others only as larvae. Seven genera were collected at all five locations (Ablabesmyia, Chironomus, Coelotanypus, Cryptochironomus, Parakieferiella, Polypedilum, and Procladius); three in only the St. Clair River (Chernoskia, Cladotanytarsus, and Paratanytarsus); and four in only the Detroit River (Psectrocladius, Paratricocladius, Lauterborniella, and Acricotopus).

Other Diptera identified from the system included the families Ceratopogonidae, Empididae, Tipulidae, and Psychodidae and the genus Chaoborus (Appendix C). Ceratopogonids were collected at all locations and in both years; densities were highest (> 14/m²) in Lake St. Clair and the Detroit River, and were higher in 1984 than in 1983 at most locations. Empidids were common (20/m²) in the upper St. Clair River, not collected in Lake St. Clair, and scarce (< 7/m²) elsewhere. Densities were similar in the two years. Psychodids were occasionally collected in both rivers; tipulids and Chaoborus were rare.

Among mayflies, eight genera were collected as nymphs, and three--Cloen,

Table 2. Distribution of genera of Chironomidae and estimated number of species per genus in SCDRS in 1983-84[a/].

Genus	No. of species in genus	Locality				
		St. Clair River		Lake St. Clair	Detroit River	
		Upper	Lower		Upper	Lower
Ablabesmyia	6	-	-	-	-	A
Acricotopus	1	A	A	-	-	-
Axarus	1	A,L	A,L	L	A,L	A
Chironomus	8	A,L	A,L	L	A,L	A
Chernovskiia	1	A,L	-	-	-	-
Cladopelma	1	-	-	-	A	-
Cladotanytarsus	2	A,L	A,L	-	A,L	A
Clinotanypus	1	-	-	-	A	-
Coelotanypus	2	L	L	L	A,L	A,L
Conchapelopia	1	A,L	L	L	-	-
Corynoneura	3	L	-	-	A	A
Cricotopus	11	A,L	A,L	-	A,L	A,L
Cryptocladopelma	2	A	A	-	-	-
Cryptochironomus	6	A,L	A,L	L	A,L	A,L
Cryptotendipes	2	A	-	-	A	A
Demicryptochironomus	1	A	A	-	A	-
Dicrotendipes	3	A,L	A	-	A,L	A,L
Einfeldia	1	A	-	-	-	-
Epoicocladius	1	L	A,L	L	L	-
Eukiefferiella	1	-	A	-	A	-
Glyptotendipes	2	A	-	-	-	-
Harnischia	1	A	A	-	L	A
Heterotrissocladius	1	-	-	L	-	-
Hydrobaenus	1	L	A	L	-	-
Labrundinia	1	-	A	-	A	-
Larsia	1	-	A	-	-	-
Lauterborniella	1	-	-	-	A	-
Limnophyes	2	A	A	-	-	A
Lopescladius	1	L	-	-	-	L
Mesosmittia	1	A	-	-	A	-
Micropsectra	3	A	-	-	L	A
Microtendipes	1	-	A	-	-	-
Monodiamesa	1	L	L	-	L	-
Nanocladius	4	A,L	A,L	-	A,L	A,L
Nilothauma	1	-	-	-	L	-
Orthocladius	4	A,L	A,L	-	A	-
Parachironomus	6	A	A	-	A	A
Parakiefferiella	1	A,L	A	L	A,L	-
Paralauterborniella	1	A	A	-	A	A
Paratanytarsus	2	A	A	-	-	-
Paratendipes	1	-	-	-	L	-
Paratrichocladius	1	-	-	-	-	A
Pentaneura	1	A,L	A	-	-	A
Phaenopsectra	2	A	A	-	-	-
Polypedilum	7	A,L	A,L	L	A,L	A,L
Potthastia	1	L	L	L	L	-
Procladius	2	A,L	A,L	L	A,L	A,L
Pseudochironomus	3	A,L	L	L	A,L	-
Psectrocladius	1	-	-	-	-	A
Pseudosmittia	1	-	A	-	-	-
Rheotanytarsus	3	A,L	A,L	-	A,L	A,L
Robackia	1	L	-	-	-	-
Smittia	1	-	A	-	A	-
Stempellina	1	A,L	-	-	-	-
Stictochironomus	1	A	-	-	A	-
Tanypus	1	A	-	-	A	-
Tanytarsus	5	A,L	A,L	-	A,L	A
Thienemannimyia	1	A	-	-	-	-
Tribelos	1	A	-	-	A	-
Xenochironomus	1	-	-	L	-	-

a/ A = adults; L = larvae.

Ephemera and Stenacron--only as adults (Table 3). Each genus in which species identification was feasible was represented by one species. In the genera Caenis and Tricorythodes, species identification was not feasible. Nymphs of Hexagenia and Caenis occurred at all locations and years, and average abundance sometimes exceeded 300/m². The abundance of Ephemerella, Baetisca, and Stenonema averaged 0-46/m²; these three taxa were collected at all locations with one exception--Ephemerella was not collected in the lower Detroit River. Ephemerella and Stenonema were most abundant in the St. Clair River, and densities of Ephemerella were markedly lower in 1984 than in 1983, whereas the density of Stenonema was higher in 1983 (Appendix C). Baetisca nymphs were most common in the upper Detroit River and were more abundant in 1984 than in 1983. Average densities of Tricorythodes, Brachycercus, and Baetis were usually less than 1/m².

Coleoptera were represented by two families, a few of which were collected only in the St. Clair River. Dubiraphia (Elmidae) was the most abundant genus. Brychius (Haliplidae) was represented by only two specimens.

Lepidoptera larvae were usually identified only to order, but several individuals of the family Pyralidae were identified. Larvae were collected only at river transects, and average densities never exceeded 5/m² (Appendix C).

Trichoptera of 20 genera were collected as larvae and an additional 8 genera were collected only as adults; one additional taxon, Helicopsyche was recorded as present only by the collection of its unique case (Table 4). Cheumatopsyche and Hydropsyche were the most commonly collected caddisflies in the two rivers and Oecetis was the most abundant caddisfly in Lake St. Clair. Other genera with average densities greater than 13/m² were Brachycentrus and Protoptila, whose distribution was almost exclusively in the St. Clair River, and Polycentropus and Mystacides whose densities were highest in the St. Clair River. Phylocentropus was limited almost exclusively to the upper Detroit River. Of the rarer genera, Micrasema, Phryganea, and Pycnopsyche were collected only in the St. Clair River and Hydroptila, Macrostemum, and Potamyia only in the Detroit River.

Corixidae and Odonata, which are typically found in quiet backwater regions of large rivers, were rarely collected in SCDRS. Damselfly naiads were found only in the lower St. Clair and Detroit rivers (Appendix C). Adult damselflies of the genera Enallagma, Ischnura, and Lestes were collected in both rivers (Table 5); a cursory identification of naiads indicated that most belonged of the genus Enallagma. Dragon fly naiads of the genera Gomphus and Stylurus were collected, along with adults of the genera Anax and Tramea.

Plecoptera were rare, and limited to samples from the St. Clair River (Appendix C). Two distinct taxa were identified as nymphs--specimens in the family Perlodidae and in the genus Isogenoides. Adults of Perlesta were also collected adjacent to the St. Clair River.

Acarina were collected at all locations and in both years. A few tardigrades were collected in both rivers; densities were highest in the lower Detroit River.

Table 3. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different genera of Ephemeroptera in Ponar grab samples from SCDRS in 1983-84.[a/]

Genus	Locality and number of samples				
	St. Clair River		Lake St. Clair	Detroit River	
	Upper (n = 180)	Lower (n = 180)	(n = 108)	Upper (n = 144)	Lower (n = 144)
Baetis	T (6)	A	0 (0)	T (2)	A
Baetisca	5 (17)	6 (15)	T (3)	32 (54)	6 (31)
Brachycercus	0 (0)	0 (0)	0 (0)	T (4)	0 (0)
Caenis	96 (50)	349 (87)	1 (14)	29 (38)	14 (21)
Cloeon	0.0	0.0	0.0	A	0.0
Ephemera	0.0	0.0	0.0	A	0.0
Ephemerella	32 (31)	11 (23)	T (3)	1 (6)	0 (0)
Hexagenia	224 (54)	670 (83)	1210 (100)	69 (58)	6 (38)
Stenacron	A	A	0.0	A	A
Stenonema	22 (50)	7 (20)	T (3)	1 (4)	1 (6)
Tricorythodes	0 (0)	T (2)	0 (0)	T (2)	1 (8)

[a/] A = adult; T = trace (< 0.5/m²).

Table 4. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different genera of Trichoptera in Ponar grab samples from SCDRS in 1983-84.[a/]

Genus	No. of species in genus	Locality and number of samples: St. Clair River Upper (n = 180)	St. Clair River Lower (n = 180)	Lake St. Clair (n = 108)	Detroit River Upper (n = 144)	Detroit River Lower (n = 144)
Agraylea	1	0 (0)	0 (0)	0 (0)	0 (0)	A
Branchycentrus	1	7 (31)	23 (33)	0 (0)	T (2)	0 (0)
Ceraclea	4	5 (46)	13 (42)	0 (0)	3 (25)	1 (6)
Cheumatopsyche	2	113 (77)	22 (32)	3 (6)	700 (75)	35 (44)
Helicopsyche	1	0 (0)	S (0)	0 (0)	0 (0)	0 (0)
Hydropsyche	2	108 (85)	22 (33)	0 (0)	208 (56)	33 (48)
Hydroptila	1	T (4)	1 (8)	0 (0)	T (2)	7 (27)
Limnephilus	1	A	0 (0)	0 (0)	0 (0)	0 (0)
Macrostemum	1	0 (0)	0 (0)	0 (0)	0 (0)	T (2)
Micrasema	1	T (2)	1 (5)	0 (0)	0 (0)	0 (0)
Molanna	1	0 (0)	0 (0)	0 (0)	A	0 (0)
Mystacides	1	5 (29)	9 (28)	T (3)	T (2)	0 (0)
Nectopsyche	2	T (6)	2 (15)	0 (0)	T (6)	T (2)
Neotrichia	1	0 (0)	0 (0)	0 (0)	A	0 (0)
Neureclipsis	1	14 (27)	21 (30)	0 (0)	T (4)	31 (31)
Nyctiophylax	1	0 (0)	A	0 (0)	0 (0)	0 (0)
Ochrotrichia	1	0 (0)	0 (0)	0 (0)	A	0 (0)
Oecetis	2	13 (33)	39 (62)	41 (88)	14 (33)	3 (10)
Orthotrichia	1	0 (0)	T (3)	0 (0)	T (2)	1 (8)
Oxyethira	1	A	0 (0)	0 (0)	0 (0)	A
Phylocentropus	1	T (2)	0 (0)	0 (0)	8 (19)	0 (0)
Phryganea	1	T (2)	0 (0)	0 (0)	0 (0)	0 (0)
Polycentropus	2	T (6)	15 (32)	0 (0)	T (4)	6 (21)
Potamyia	1	0 (0)	0 (0)	0 (0)	0 (0)	T (2)
Protoptila	1	17 (19)	0 (0)	0 (0)	T (4)	A
Psychomyia	1	0 (0)	0 (0)	0 (0)	0 (0)	A
Pycnopsyche	1	0 (0)	T (3)	0 (0)	0 (0)	0 (0)
Setodes	1	T (8)	4 (23)	0 (0)	T (4)	0 (0)
Triaenodes	2	2 (10)	3 (28)	0 (0)	T (4)	T (6)

[a/] A = adult; T = trace (< 0.5/m²); S = shell only.

Table 5. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of Odonata in Ponar grab samples from the SCDRS in 1983-84.[a/]

Taxon	No. of species in taxon	Locality and number of samples				
		St. Clair River		Lake St. Clair	Detroit River	
		Upper (n = 180)	Lower (n = 180)	(n = 108)	Upper (n = 144)	Lower (n = 144)
Anax	1	A	0 (0)	0 (0)	0 (0)	A
Coenagrionidae		1 (5)	1 (3)	0 (0)	0 (0)	4 (7)
Enallagma	5	A	0 (0)	0 (0)	A	A
Gomphus	1	A	T (1)	0 (0)	0 (0)	T (1)
Ischnura	1	A	0 (0)	0 (0)	A	A
Lestes	1	0 (0)	0 (0)	0 (0)	0 (0)	A
Stylurus	1	T (1)	0 (0)	0 (0)	0 (0)	0 (0)
Tramea	1	0 (0)	0 (0)	0 (0)	0 (0)	A

[a/] A = adult; T = trace (< 0.5/m²).

Gastropods were abundant and diverse in SCDRS. We identified 13 taxa and recorded average densities as high as 578/m² (Table 6). Four of the genera--Amnicola, Elimia, Gyraulus, and Physa--were common throughout SCDRS. Of the other taxa, Valvata was common in the upper St. Clair River and Ferrisia in the lower Detroit River, whereas the average densities of all other species were less than 10/m².

The pelecypods were also diverse in SCDRS, but only fingernail clams were abundant in our collections (Table 7). A standard Ponar dredge is not large enough to effectively sample unionids, whose densities rarely exceed 1/m² and whose distribution is often clumped. Pisidium was the more common taxon (380/m²) within the Sphaeriidae and occurred more frequently at all locations than Sphaerium (26/m²), which was most common in Lake St. Clair and the upper Detroit River.

In addition to macrozoobenthos, four species of fish, some fish remains, and fish eggs were collected with the Ponar grab mainly from the upper St. Clair River (Appendix C). The fish densities represent 1 specimen per grab and estimated densities of eggs (rainbow smelt) averaged as high as 46/m². Egg densities were substantially lower in 1984 than in 1983, but percent occurrence remained stable.

Major Taxa and Their Distribution

An analysis of variance was done on 24 taxonomic groups (e.g. Hexagenia, Oligochaeta) that were chosen to include one to several representative taxa from the various classes of invertebrates found in SCDRS. The ANOVA table associated with each group is in Appendix H. The main effect means (year, month, transect, station) are given in Tables 8-19. Interaction means (e.g., transect x year) for two combinations (transect x station, and transect x year and month) are plotted in Appendix D for each group. These two combinations were chosen because they contained all four effects, the plots were not too complex, and they were of geographic and biological interest. Since many of the interaction terms were significant (Appendix H) the differences in main effect means in Tables 8-19 must be interpreted in light of plots in Appendix D. For example, there is a significant difference in Hexagenia between years (Table 15) but it does not hold consistently over all transects (Figs. 46-47 of Appendix D).

Densities of most taxa were significantly higher in 1983 than in 1984 or showed no difference between years; were significantly higher in October than in May and at the off-channel than at the near-channel or channel station; and were higher in the St. Clair River than elsewhere in SCDRS (Tables 8-19). These results are summarized in Table 20. Of particular interest are the taxa with significantly higher populations in 1983 than in 1984. If the low densities occurred mainly in spring 1984 in the St. Clair River and no recovery occurred by fall 1984, we might postulate that some long-term damage had been caused by the ice jam in May 1984. The densities of taxa listed under 1983 in Table 20, except Manayunkia, were lower in spring in 1984 than in 1983. However,

Table 6. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different taxa of Gastropods in Ponar grab samples from SCDRS in 1983-84.[a/]

Taxon	Locality and number of samples				
	St. Clair River		Lake	Detroit River	
	Upper (n = 180)	Lower (n = 180)	St. Clair (n = 108)	Upper (n = 144)	Lower (n = 144)
Amnicola	578 (75)	548 (90)	33 (69)	203 (90)	93 (77)
Bithynia	0 (0)	0 (0)	T (6)	1 (8)	T (2)
Campeloma	T (2)	0 (0)	T (3)	T (2)	T (4)
Elimia livescens	271 (69)	125 (77)	7 (47)	171 (79)	65 (71)
Ferrisia	37 (23)	0 (0)	0 (0)	3 (17)	182 (58)
Gyraulus	51 (42)	124 (70)	28 (50)	52 (35)	28 (31)
Helisoma	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
Lymnaea	7 (31)	T (2)	0 (0)	1 (2)	0 (0)
Physa	122 (67)	110 (80)	T (3)	25 (38)	40 (54)
Pleurocera acuta	3 (8)	T (2)	2 (14)	10 (42)	T (4)
Somatogyrus subglobosus	0 (0)	T (2)	T (3)	0 (0)	0 (0)
Valvata sincera	2 (15)	1 (6)	2 (3)	T (2)	1 (6)
Valvata tricarinata	179 (31)	12 (44)	9 (42)	17 (6)	T (6)

[a/] T = trace (< 0.5/m²)

Table 7. Density (mean No./m²) and (in parentheses) percent frequency of occurrence of different taxa of Pelecypoda in Ponar grab samples from SCDRS in 1983-84.[a/]

Taxon	Locality and number of samples				
	St. CLair River		Lake	Detroit River	
	Upper (n = 180)	Lower (n = 180)	St. Clair (n = 108)	Upper (n = 144)	Lower (n = 144)
Anodonta grandis	0 (0)	0 (0)	T (3)	0 (0)	0 (0)
Elliptio dilitatus	0 (0)	0 (0)	0 (0)	1 (8)	0 (0)
Lampsilis sp.	0 (0)	T (2)	T (3)	1 (6)	0 (0)
Lampsilis radiata siliquoidea	0 (0)	0 (0)	1 (8)	T (6)	T (2)
Lampsilis ventricosa	0 (0)	0 (0)	0 (0)	T (4)	0 (0)
Leptodea fragilis	0 (0)	0 (0)	T (3)	T (2)	0 (0)
Pisidium sp.	259 (77)	300 (90)	671 (100)	368 (98)	285 (75)
Pleurobema cordatum	0 (0)	0 (0)	0 (0)	T (4)	0 (0)
Proptera alata	0 (0)	0 (0)	T (3)	T (2)	0 (0)
Ptychobranchus fasciolaria	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
Sphaerium sp.	7 (21)	30 (47)	30 (89)	62 (75)	1 (6)
Truncilla sp.	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
Truncilla donaciformis	0 (0)	0 (0)	0 (0)	T (2)	0 (0)
Truncilla truncata	0 (0)	0 (0)	0 (0)	1 (4)	0 (0)
Unionidae (juveniles)	T (4)	1 (12)	1 (14)	6 (44)	0 (0)

[a/] T = trace (< 0.5/m²).

Table 8. Mean density (No./m²) of Hydra and Turbellaria by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Hydra	12,488 1984	3,528 1983	13,358 October	2,658 May	10,375 Near-channel	8,708 Channel	4,940 Off-channel

Transect

42,431	36,099	34,826	23,282	11,824	5,651	2,064	2,421	2,536	1,546	2,211	1,165	996	482	168	181	188	80	8	5	3
7	2	5	6	4	8	15	16	3	17	10	9	21	20	14	18	19	13	12	11	1

Turbellaria	372 1983	185 1984	339 October	217 May	442 Off-channel	219 Near-channel	173 Channel

Transect

941	951	408	405	376	336	495	355	335	236	266	173	117	91	124	52	61	30	22	64	1
8	18	6	21	16	2	20	10	9	7	19	5	4	17	15	11	14	13	12	3	1

Table 9. Mean density (No./m²) of Nemertinea and Nematoda by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Nemertinea	211 1983	262 1984	388 October	85 May	268 Channel	243 Near-channel	198 Off-channel

Transect

1080	772	587	461	383	315	206	451	160	124	96	125	75	71	21	16	16	3	1	.6	0
19	21	18	20	14	17	15	2	4	16	7	8	5	3	6	9	10	13	1	11	12

Nematoda	969 1983	826 1984	1133 May	663 October	1018 Near-channel	952 Off-channel	723 Channel

Transect

2333	2045	2152	1717	1445	960	1090	813	758	778	597	705	539	641	495	578	402	447	148	160	54
11	17	16	20	7	8	21	4	13	15	12	19	6	18	9	5	10	2	14	3	1

Table 10. Mean density (No./m²) of Hirudinea and Oligochaeta by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Hirudinea	8 1983	6 1984	8 October	6 May	14 Off-channel	4 Channel	4 Near-channel

Transect

39 16	33 11	14 6	17 17	10 4	10 5	8 12	8 2	8 9	5 8	2 18	2 13	2 7	1 10	.6 15	.6 14	.6 21	.6 20	0 1	0 19	0 3

Taxon	Year		Month		Station		
Oligochaeta	9114 1983	7936 1984	10324 May	6727 October	11306 Off-channel	8482 Near-channel	5788 Channel

Transect

76383 18	11551 8	11297 2	7311 11	8939 7	6169 16	7663 19	7916 5	5888 21	4965 6	5179 4	4654 17	5021 9	3148 10	4665 20	2414 12	2320 14	1845 13	896 15	471 3	334 1

Table 11. Mean density (No./m²) of Manayunkia and Harpacticoida by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Manayunkia	1524 1983	841 1984	1384 October	982 May	1418 Off-channel	1137 Near-channel	993 Channel

Transect

7113 17	3949 19	3800 8	2615 21	2129 14	1070 11	1501 9	937 12	421 13	300 15	269 20	238 10	348 18	118 16	8 2	7 4	6 7	4 5	3 3	2 6	2 1

Harpacticoida	229 1983	71 1984	197 May	103 October	241 Off-channel	143 Near-channel	65 Channel

Transect

751 17	385 16	312 8	326 2	267 9	240 11	115 13	98 12	166 6	125 4	152 10	78 14	30 19	25 5	18 7	22 20	21 21	10 18	2 15	2 1	.6 3

Table 12. Mean density (No./m²) of Ostracoda and Isopoda by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Ostracoda	278 1984	101 1983	300 May	79 October	204 Off-channel	273 Channel	91 Near-channel

Transect

1047	1707	279	153	134	166	62	83	79	56	71	55	25	30	14	12	5	2	1	1	0
16	14	6	11	12	5	13	15	17	2	4	8	9	10	18	7	1	19	3	21	20

Isopoda	36 1983	14 1984	27 May	23 October	63 Off-channel	6 Near-channel	5 Channel

Transect

192	114	117	32	28	12	12	7	3	2	1	.6	.6	0	0	0	0	0	0	0	0
6	8	9	17	16	20	10	7	2	4	3	12	18	13	15	1	14	11	19	5	21

Table 13. Mean density (No./m²) of Gammarus and Hyalella by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Gammarus	512	452	741	223	838	423	185
	1983	1984	October	May	Off-channel	Near-channel	Channel

Transect

1656	1417	1054	1182	1267	720	510	340	548	470	298	206	153	106	69	37	23	20	20	14	11
6	7	8	5	4	9	12	13	10	16	11	2	20	15	18	17	19	21	14	1	3

Hyalella	105	67	85	87	164	51	43
	1983	1984	October	May	Off-channel	Near-channel	Channel

Transect

445	515	243	145	78	83	79	68	44	30	34	16	9	8	6	2	.6	.6	0	0	0
16	9	8	6	2	7	4	20	10	5	18	17	14	3	21	11	1	13	12	19	15

Table 14. Mean density (No./m²) of Chironomidae and Oecetis by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Chironomidae	2174	1322	2137	1359	2409	1542	1292
	1983	1984	May	October	Off-channel	Near-channel	Channel

Transect

5261	4867	3439	3445	2593	2514	2876	2566	1745	775	751	1018	853	663	566	1306	583	397	258	175	52
6	8	16	9	2	5	7	10	4	11	12	3	17	13	1	15	14	20	18	21	19

Oecetis	26	17	23	20	44	14	7
	1983	1984	May	October	Off-channel	Near-channel	Channel

Transect

118	46	42	36	39	55	29	22	20	12	9	6	6	5	3	2	2	1	0	0	0
6	13	12	11	9	5	16	17	7	10	8	15	21	19	2	4	1	3	18	20	14

Table 15. Mean density (No./m²) of Caenis and Hexagenia by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Caenis	115	105	122	97	223	72	34
	1984	1983	October	May	Off-channel	Near-channel	Channel

Transect

608	540	266	194	169	135	93	75	121	41	28	14	13	2	1	1	.6	.6	.6	0	0
8	9	7	6	5	10	2	16	4	20	15	17	19	11	21	3	13	12	18	1	14

Hexagenia	488	290	544	235	420	370	378
	1984	1983	October	May	Channel	Off-channel	Near-channel

Transect

1290	1214	1126	1502	1059	640	222	425	200	142	231	52	21	17	8	8	6	6	5	3	.6
12	13	11	6	8	5	7	10	16	9	4	17	2	14	15	19	21	18	20	3	1

Table 16. Mean density (No./m²) of Cheumatopsyche and Hydropsyche by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon			Year				Month				Station									
Cheumatopsyche			221 1984			124 1983	298 October			46 May	246 Near-channel			192 Channel		79 Off-channel				
			Transect																	
1900	460	731	99	136	92	59	29	42	32	16	8	3	3	3	2	2	.6	.6	0	0
15	2	17	7	14	20	5	4	21	16	3	13	9	18	6	8	19	10	11	1	12
Hydropsyche			108 1984			45 1983	131 October			23 May	113 Off-channel			74 Channel		44 Near-channel				
			Transect																	
575	212	153	208	115	88	61	78	45	39	15	10	5	5	3	2	1	0	0	0	0
15	2	5	14	3	7	4	20	21	17	6	16	19	18	8	10	9	1	12	13	11

Table 17. Mean density (No./m²) of Acarina and Sphaeriidae by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Acarina	46 1984	38 1983	40 May	43 October	55 Off-channel	37 Near-channel	33 Channel

Transect

136	115	106	78	88	60	39	37	34	27	26	24	27	18	14	14	11	10	8	4	2
2	4	20	5	19	18	16	17	10	14	8	7	21	9	11	6	12	13	3	15	1

Taxon	Year		Month		Station		
Sphaeriidae	372 1983	365 1984	403 October	334 May	438 Off-channel	350 Near-channel	316 Channel

Transect

983	584	537	519	473	532	440	460	359	371	345	360	349	278	320	218	142	127	239	57	43
11	12	13	14	15	4	7	8	17	16	9	21	5	10	19	18	2	6	20	1	3

Table 18. Mean density (No./m²) of Physa and Gyraulus by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Physa	65	58	89	35	115	52	18
	1984	1983	October	May	Off-channel	Near-channel	Channel

Transect

280	183	141	115	112	96	90	75	61	52	36	14	16	15	8	2	1	.6	0	0	0
2	8	6	4	7	18	5	16	9	10	20	19	21	14	17	3	15	12	1	13	11

Taxon	Year		Month		Station		
Gyraulus	68	49	81	36	128	33	13
	1983	1984	October	May	Off-channel	Near-channel	Channel

Transect

236	162	158	104	140	76	62	69	42	35	38	32	24	10	11	9	7	5	5	1	0
6	16	4	7	8	10	9	18	12	13	5	20	15	17	14	2	11	19	21	3	1

Table 19. Mean density (No./m²) of Amnicola and Elimia by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of transformed (square root of value + 0.5) data. Differences between mean densities and rank reflect the effect of transformation.

Taxon	Year		Month		Station		
Amnicola	377	228	327	278	504	253	150
	1983	1984	October	May	Off-channel	Near-channel	Channel

Transect

790	685	937	627	608	577	432	285	336	386	148	103	109	80	81	42	44	40	13	13	10
2	6	4	7	8	5	10	17	16	9	20	21	15	19	14	12	13	18	11	1	3

Elimia	129	126	147	108	154	130	99
	1984	1983	October	May	Near-channel	Off-channel	Channel

Transect

376	400	327	249	263	245	181	133	176	57	74	57	44	18	15	22	9	8	6	6	2
7	2	15	14	4	5	20	6	3	19	17	8	10	21	9	16	13	11	12	18	1

Table 20. Summary of ANOVA results in tables 8-19 of mean density on 24 abundant taxa collected in the SCDRS in 1983 and 1984. Placement indicates significantly higher ($P \leq 0.05$) abundance at a particular time or location. Taxa placement in station and location categories were based on overall ranking regardless of significance; in the case of location, the cutoff was arbitrary.

YEAR		
1983[1/]	1984[1/]	Nonsignificant
Amnicola	Cheumatopsyche	Acarina
Chironomidae	Hexagenia	Caenis
Gammarus	Hydra	Elimia
Harpacticoida	Hydropsyche	Gyraulus
Hyalella	Ostracoda	Hirudinea
Isopoda		Nemertinea
Manayunkia		Oligochaeta
Nematoda		Physa
Oecetis		Sphaeriidae
Turbellaria		

MONTH		
May[1/]	October[1/]	Nonsignificant
Acarina	Amnicola	Oecetis
Chironomidae	Caenis	
Harpacticoida	Cheumatopsyche	
Isopoda	Elimia	
Nematoda	Gammarus	
Oligochaeta	Gyraulus	
Ostracoda	Hexagenia	
	Hirudinea	
	Hyalella	
	Hydra	
	Hydropsyche	
	Manayunkia	
	Nemertinea	
	Physa	
	Sphaeriidae	
	Turbellaria	

STATION		
Off-channel	Near-channel	Channel
Acarina	Cheumatopsyche	Cheumatopsyche
Amnicola	Elimia	Hexagenia
Caenis	Hexagenia	Nemertinea
Chironomidae	Hydra	
Gammarus	Nematoda	
Gyraulus		
Harpacticoida		
Hexagenia		
Hirudinea		
Hyalella		
Hydropsyche		
Isopoda		
Manayunkia		
Oecetis		
Oligochaeta		
Ostracoda		
Physa		
Sphaeriidae		
Turbellaria		

LOCATION		
St. Clair R. (Transects 1-10)	Lake St. Clair (Transects 11-13)	Detroit River (Transects 14-21)
Acarina	Hexagenia	Acarina
Amnicola	Hirudinea	Cheumatopsyche
Caenis	Nematoda	Elimia
Chironomidae	Oecetis	Harpacticoida
Elimia	Sphaeriidae	Hyalella
Gammarus		Hydropsyche
Gyraulus		Manayunkia
Hirudinea		Nematoda
Hyalella		Nemertinea
Hydra		Oligochaeta
Isopoda		Ostracoda
Oecetis		Turbellaria
Oligochaeta		
Physa		
Turbellaria		

[1/] Significantly greater density.

this lower density in spring occurred only in the St. Clair River, and was most obvious in the delta region (transects VII-X). Densities of Nematoda, Isopoda, Gammarus, Hyalella, Chironomidae, and Oecetis in the affected area had recovered by fall 1984 to levels equal to or exceeding those in fall 1983, though densities of Turbellaria, Harpacticoida, and Amnicola were still low in fall 1984 (Figs. 5, 23, 35, and 68 of Appendix D).

Variability in yearly trends of mean density in relation to month can be illustrated by Hydra population densities. Numbers in spring were consistently higher in 1983 than in 1984 (Fig. 1 of Appendix D), but the reverse was true in the fall (Fig. 2 in Appendix D). This difference also occurred in Oligochaeta, Chironomidae, Caenis, Acarina, and Sphaeriidae. Variation in yearly trends by transect and month are shown in Hexagenia densities in Figs. 46 and 47 of Appendix D. Other taxa were more consistent, although all vary somewhat over the 21 transects and two sampling periods.

Densities of most taxa were significantly higher in October than in May (Table 20). The differences in seasonal abundance were fairly consistent over years and transects, because many of the interaction means associated with month were nonsignificant (e.g., Hirudinea, Cheumatopsyche in Appendix H). The exceptions were Hydra, which typically was most common in October, though its density was rather high in the Detroit River in May 1984 (Fig. 1 of Appendix D). Densities of Ostracoda were high in the St. Clair River in October, whereas they are typically highest in May (Fig. 25 of Appendix D). Similarly, departures from seasonal abundance trends resulting from unusually high densities in a particular year or area (transect) occurred also in Hexagenia, Gyraulus, and Elimia.

Densities of most taxa were significantly higher at the off-channel station that at either the near-channel or channel stations (Table 20). Densities of Acarina, Hydropsyche, Cheumatopsyche, and Hexagenia were not significantly different between at least two stations (Tables 15, 16, 17); consequently these taxa were listed at stations where their densities were highest. In addition, the abundance of several taxa at a particular station (depth) was not consistent over all transects. The depth distributions of Hirudinea, Oligochaeta, Chironomidae, Sphaeriidae, and Amnicola differed in lake and riverine situations, and those of Manayunkia, Acarina, and Elimia differed between the lower Detroit River and the rest of the system. Contaminant problems may override depth distribution in this area. These and other minor differences in distribution among stations probably reflect a preference for a sediment type.

Most taxa were most abundant in the St. Clair River (Table 20). Listing a particular taxon in a particular location was somewhat subjective because of ranking between locations overlapped considerably. For example, densities of Hydra were consistently high in the St. Clair River , whereas those of Turbellaria were equally high in the St. Clair and Detroit rivers (Table 8). If distribution differences were not clear cut, a particular taxon was listed in more than one location. Taxa most abundant in the St. Clair River were

mostly insects and snails. The number of taxa whose highest densities were in Lake St. Clair were few, and were characteristic of lotic situations. The Detroit River was dominated by lower invertebrate taxa (worms) and net-spinning caddisflies.

Biomass

Mean biomass ranged from 0.03 to 4.84 g/m² over the 21 transects (Table 21). Biomass was higher in 1984 than in 1983 along about half the transects; there were no statistically significant differences between years (Table 22 and Appendix H). Biomass was 25% lower in May, but 60% higher in October, in 1984 than in 1983. This reversal resulted in no statistically significant differences between May and October (Table 22). Biomass in May was lower in 1984 than in 1983 at most St. Clair River transects, but the opposite was true in the Detroit River. However, most biomass values for October were higher in 1984 than in 1983, over all transects (Figs. 73-74 in Appendix D). Differences between stations were significant, and relationships did not vary by month or year and were fairly consistent over transects (Fig. 75 of Appendix D). Biomass was highest in the Russell Island area and Belle Isle (Table 21) and lowest at transect I in Lake Huron.

Clams, crayfish, and fish remains were rarely collected but contributed considerably to biomass estimates. Because of the great variability they introduced, they were not included in the ANOVA (Table 22 and Appendix H). Clams were most common in Lake St. Clair and the Detroit River--particularly at transect XVI, where biomass estimates were as high as 2.6 g/m².

Density and Diversity

Average total densities of macrozoobenthos ranged from 976 to 96,684/m² over the 21 transects in the two years (Table 21). Total densities were higher along about half the transects, and lower along the other half, in 1984 than in 1983. Densities were not necessarily positively correlated with biomass calculated at the same stations (Table 21). Densities were highest at transects XVIII (due mainly to oligochaetes) and VII (which had a diverse community--an average of 36 taxa per sampling period).

The average number of taxa at each transect ranged from 9 to 38 (Table 21). Diversity was consistently higher in 1983 than in 1984 in the St. Clair River but did not differ between years in the Detroit River. On the average, there were four fewer taxa in 1984 than in 1983 in the St. Clair River. The number of taxa was lowest (9-13) in the sandy substrates of transect I (Lake Huron) and high (> 30) at II-VIII and at XVII (Belle Isle). The number of taxa per sample averaged 22 in the lower Detroit River.

Physical Characteristics of the River

The physical environment varied among transects (see Appendix G for summary). Current velocities and substrates differed among segments of SCDRS: upper St.

Table 21. Mean total density, biomass (ash-free dry weight) and average number of taxa (diversity) of macrozoobenthos collected in SCDRS, May and October, 1983-1984.

Transect	Density (no./m²)		Biomass (g/m²)		Diversity (no. of taxa)	
	1983	1984	1983	1984	1983	1984
I	2,504	976	0.24	0.03	13	9
II	24,622	87,430	1.16	2.27	38	37
III	7,837	2,555	0.22	0.12	22	18
IV	15,190	34,659	0.79	1.78	32	32
V	14,361	87,481	1.33	2.47	32	29
VI	34,814	47,042	2.47	2.13	38	32
VII	31,533	90,107	2.82	3.31	36	32
VIII	43,294	23,176	1.56	0.91	34	31
IX	25,470	6,260	1.02	0.21	34	23
X	13,103	10,113	0.55	0.41	26	23
XI	13,956	15,391	1.68	1.08	24	21
XII	8,090	7,474	1.25	1.67	22	22
XIII	7,184	5,514	0.91	1.85	22	22
XIV	9,054	113	0.55	1.75	23	22
XV	11,040	8,020	0.92	1.43	21	23
XVI	20,325	17,802	4.20	4.84	34	32
XVII	22,545	16,313	1.18	0.82	28	30
XVIII	98,684	63,073	1.35	1.37	25	21
XIX	13,661	15,938	0.42	0.89	20	22
XX	11,154	8,983	0.34	0.34	22	25
XXI	11,277	14,608	0.92	0.31	21	22
Mean	20,938	26,811	1.23	1.43	27	25

Table 22. Ash-free dry weight mean biomass (g/m^2) of macrozoobenthos by year, month, station, and transect in SCDRS. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$). Ranking and significance are based on an ANOVA and Tukey's Studentized Range test of untransformed data. Large clams, crayfish, and fish remains are not included in the analysis.

	Year		Month		Stations		
Biomass	1.09	1.00	1.07	1.03	1.43	1.00	0.71
	1984	1983	May	October	Off-channel	Near-channel	Channel

Transects

3.07	2.30	1.90	1.41	1.35	1.24	1.19	1.16	1.10	1.10	1.00	0.84	0.81	0.70	0.66	0.61	0.48	0.45	0.34	0.17	0.14
7	6	5	2	11	8	18	15	13	16	4	14	12	17	19	9	10	21	20	3	1

Clair River, sometimes >2 ft/s, mostly gravel; lower St. Clair River, never >2 ft/s, predominantly sand and silt; Lake St. Clair, rarely >0.6 ft/s, cohesive clay and silt; upper Detroit River and portions of the lower river, usually <1 ft/s, unconsolidated clay and silt; and other transects in the lower Detroit River (XX-XXI), with >1 ft/s and mainly gravel and cobble. Sampling depth ranged from 4 to 25 ft in the rivers, but varied little in Lake St. Clair, averaging 22 ft.

Water temperature varied between locations, seasons, and years during the study. Contemporaneous differences of up to 7°F occurred routinely between Port Huron and the lower Detroit River. These differences were greatest in spring and smallest in fall, and averaged about 4°F for the year. Temperatures ranged from 39° to 46°F in early May and from 57° to 59°F in October. Daily temperatures for both years were available from the water plants operated by the City of Port Huron (in the river adjacent to the city) and Detroit (Detroit River at Belle Isle). The average monthly temperatures are plotted in Fig. 5. Both rivers reached maximum temperature in August; temperatures were consistently lower in 1984 than in 1983--particularly in the St. Clair River in March, April, and May, where low temperatures were presumably caused by the large ice jam previously described. Differences between surface and bottom temperatures were always less than 2°F.

Relationships between Macrozoobenthos and Physical Environment

The relation between depth, velocity, bottom type, and temperature and the abundance of 24 taxa was limited mainly to significant correlations with depth and velocity (Table 23). Increasing depth was correlated with increasing current velocity and coarser or firmer substrates. However, it was difficult to determine which of these physical factors most influenced the abundance of macrozoobenthos. The abundance of all of the taxa listed in Table 23 except Hydropsyche and Cheumatopsyche were negatively correlated ($P \leq 0.05$) with depth and velocity. Most of the taxa listed in Table 23 were significantly denser at the off-channel stations than at others (Table 20). Turbellaria, Hirudinea, Oligochaeta, Gammarus, Hyalella, Chironomidae, Caenis, Physa, Gyraulus, and Amnicola were consistently most abundant in shallow areas with little current. The depth distribution of certain other taxa may have been unique, but the relation was not linear.

Although water velocity was related to bottom type, a linear relation with sediment type was significant for only one taxon--densities of Hydropsyche were highest in coarse sediments. Other significant positive relations were shown by Hydropsyche and Cheumatopsyche (with water velocity) and Physa (with temperature). Few correlations with temperature would be expected because temperature differences both vertically and cross channel were small, and the sampling periods were widely separated.

AQUATIC MACROPHYTES

Distribution of Submersed Plants

We collected 20 taxa of submersed macrophytes with the Ponar grab in the

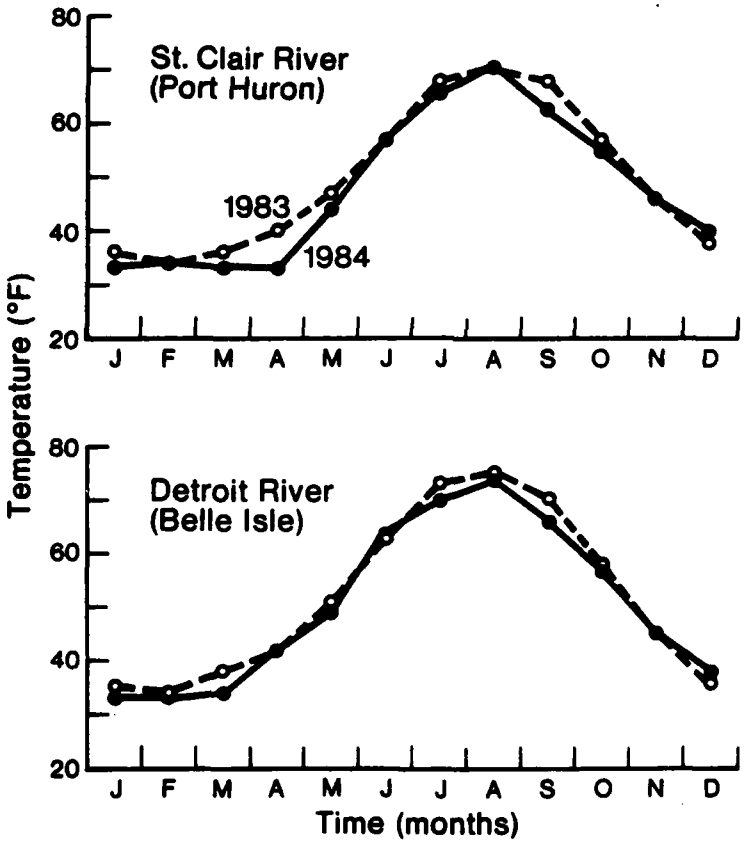

Figure 5. Mean monthly water temperatures (°F) measured in the St. Clair and Detroit rivers at the city of Port Huron water intake (1.5 miles below the Blue Water Bridge) and at the city of Detroit water intake (Belle Isle) in 1983 and 1984.

Table 23. Significant correlation coefficients ($P \leq 0.05$, $n = 756$) for macrozoobenthos density (by taxon) and: water depth, velocity, temperature, and bottom type.

Taxon	Depth	Velocity	Temperature	Bottom type
Turbellaria	-0.253	-0.308	-	-
Hirudinea	-0.255	-0.259	-	-
Oligochaeta	-0.222	-0.329	-	-
Gammarus	-	-0.243	-	-
Hyalella	-	-0.180	-	-
Chironomidae	-0.301	-0.349	-	-
Caenis	-0.261	-0.305	-	-
Hexagenia	-	-0.286	-	-
Cheumatopsyche	-	+0.248	-	-
Hydropsyche	-	+0.243	-	+0.164
Physa	-0.263	-0.265	+0.224	-
Gyraulus	-0.255	-0.230	-	-
Amnicola	-0.311	-0.269	-	-

St. Clair and Detroit rivers in 1983 and 1984 (Table 24). The St. Clair River yielded 18 submersed taxa plus 1 emergent species, Sagittaria sp., that was found in the submersed stage; and the Detroit River collections contained 19 taxa including 2 emergent species that were found in their submersed forms. The most common submersed plants in decreasing order of frequency of occurrence, were Chara spp., Potamogeton spp., Vallisneria americana, Potamogeton gramineus, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis. Other taxa occurred in less than 13% of the samples. The most common taxa collected were Chara in the St. Clair River and V. americana in the Detroit River. The frequency of occurrence of Potamogeton spp. was similar in both rivers; P. richardsonii, E. canadensis, and P. gramineus were more common in the St. Clair River and M. spicatum was more common in the Detroit River. Butomus umbellatus and Ranunculus longirostris were collected only in the Detroit River and Zannichellia palustris only in the St. Clair River. Variation in frequency of occurrence of individual taxa between years was 7% or less in both rivers.

The number of plant taxa generally increased from spring to late summer as Najas flexilis, Nitellopsis obtusa, and P. zosteriformis appeared in July-August (Tables 25-27). One taxon, P. crispus, declined in occurrence as the season progressed. Total number of taxa at each location varied from 7 to 14, the largest number occurring in September. The plant collections were only slightly more diverse at Stag Island and Belle Isle (mean of 11 taxa) than at Point Hennepin, where the diversity was lowest (mean of 8 taxa). Percent occurrence of individual taxa during each sampling period varied less than 10% between years, at each location. Only 11 of 228 comparisons (by year, month, and island) showed changes in occurrence of taxa that exceeded 20%. Changes were about equally divided between the St. Clair and Detroit rivers and occurred most frequently in July. Incidence of variation (> 10%) in percent occurrence between years, was highest in Potamogeton spp., P. richardsonii, E. canadensis, and Vallisneria americana.

The diversity of taxa and distribution of plants were unique at each location. At Stag Island, plants were lacking in blocks 1-4 and sparse in block 5 (Figs. 1-3 and 19-21 of Appendix O). Plants also appeared to be absent in parts of blocks 6-9 and 13, and in shallow areas in blocks 8, 10, and 11. Most plants were located in and near an area with depths up to 20 ft that was centered on grid intersect 17 and along the shipping channel. Chara spp., Potamogeton spp., and P. richardsonii occurred in relatively high concentrations--> 10 g/m^2 in June, > 20 in July, and > 40 in September--in all blocks below the upstream tip of the island. Chara spp. occurred most often in pure stands, particularly in shallow areas adjacent to Stag Island. Potamogeton richardsonii, Elodea canadensis and P. crispus were the dominant plants composing the dark band around deep water in grids 6-9 and 11-12 (e.g., see Fig. 2 of Appendix O). Myriophyllum spicatum and Najas flexilis dominated the deeper water in both these areas. Potamogeton gramineus was the dominant taxon in the deeper areas near the shipping channel. Potamogeton spp. was interspersed throughout the communities and was the dominant taxon in the lighter areas near the shipping channel. Diversity was greatest in areas where light and dark patches converged. Six to eight taxa were often found in

Table 24. Percent frequency of occurrence and mean dry weight biomass (g/m^2) of submersed macrophyte taxa collected with a Ponar grab in SCDRS in 1983 and 1984. Mean biomass is based only on samples in which the taxa occurred.

Taxa	St. Clair River				Detroit River			
	Occurrence		Mean biomass		Occurrence		Mean biomass	
	1983	1984	1983	1984	1983	1984	1983	1984
Butomus umbellatus [a]	0	0	0	0	0	2	0	27.3
Chara spp.	70	65	85.8	119.8	11	15	30.4	60.8
Elodea canadensis	28	22	44.6	25.5	7	7	78.4	137.0
Heteranthera dubia	T [b]	0	1.5	0	7	7	58.4	173.9
Myriophyllum exalbescens	T	T	6.0	2.6	0	T	0	3.3
Myriophyllum spicatum	8	7	34.1	41.7	24	17	93.9	104.6
Najas flexilis	3	6	3.3	2.6	3	7	2.3	15.5
Nitella hyalina	3	10	26.1	35.0	9	11	58.6	28.8
Nitellopsis obtusa	1	1	34.0	11.5	9	10	81.7	48.9
Potamogeton crispus	3	3	29.9	17.7	10	13	83.5	69.6
Potamogeton gramineus	46	41	42.8	64.2	4	5	26.1	39.5
Potamogeton spp. [c]	54	53	50.1	33.6	31	28	23.6	17.2
Potamogeton natans	1	0	72.2	0	0	0	0	0
Potamogeton nodosus	1	0	5.0	0	0	1	0	124.7
Potamogeton richardsonii	32	31	50.6	84.1	21	22	73.0	69.6
Potamogeton zosteriformis	2	3	7.3	20.6	2	8	3.0	3.9
Ranunculus longirostris	0	0	0	0	1	0	102.4	0
Sagittaria sp. [a]	T	T	16.2	1.0	0	2	0	4.7
Vallisneria americana	2	5	12.7	6.5	70	67	49.0	41.1
Zannichellia palustris	0	1	0	1.4	0	0	0	0

[a] Emergent species collected only in the submersed stage.

[b] T = < 1%

[c] Narrow-leaf forms.

Table 25. Mean dry weight biomass (g/m^2) and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCDRS in June 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

Taxon	Year	Stag Island	Fawn Island	Russell Island	Belle Isle	Pt. Hennepin	Stony Island
Chara spp.	1983	24 (67)	28 (82)	51 (85)	45 (38)	27 (20)	4 (3)
	1984	63 (70)	102 (71)	40 (80)	32 (31)	18 (10)	0
Elodea canadensis	1983	49 (33)	6 (4)	58 (22)	1 (5)	0	50 (19)
	1984	18 (50)	0	8 (22)	0	1 (2)	157 (33)
Heteranthera dubia	1983	0	0	0	0	0	15 (17)
	1984	0	0	0	0	0	6 (7)
Myriophyllum spicatum	1983	20 (16)	0	81 (2)	34 (10)	124 (6)	12 (19)
	1984	40 (17)	0	0	24 (18)	0	4 (10)
Nitella hyalina	1983	22 (5)	20 (6)	78 (2)	37 (49)	42 (19)	0
	1984	64 (17)	5 (2)	2 (8)	30 (46)	29 (33)	3 (3)
Potamogeton crispus	1983	40 (10)	1 (2)	0	8 (13)	84 (7)	143 (47)
	1984	18 (8)	4 (4)	0	4 (9)	0	150 (42)
Potamogeton gramineus	1983	14 (22)	19 (46)	14 (33)	22 (15)	0	30 (6)
	1984	10 (22)	7 (47)	5 (33)	2 (12)	0	0
Potamogeton[a/] spp.	1983	32 (50)	32 (27)	46 (62)	5 (56)	28 (87)	4 (47)
	1984	19 (57)	4 (40)	14 (53)	2 (50)	20 (65)	2 (30)
Potamogeton richardsonii	1983	14 (12)	32 (20)	32 (17)	11 (23)	2 (2)	44 (11)
	1984	8 (17)	10 (20)	17 (33)	8 (23)	21 (26)	0
Vallisneria americana	1983	0	0	0	4 (77)	4 (50)	9 (39)
	1984	0	1 (2)	0	2 (62)	4 (54)	8 (47)

[a/] Narrow-leaf forms.

Table 26. Mean dry weight biomass (g/m^2) and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCDRS in July-August 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

Taxon	Year	Stag Island	Fawn Island	Russell Island	Belle Isle	Point Hennepin	Stony Island
Chara spp.	1983	100 (62)	103 (71)	110 (78)	48 (10)	3 (5)	0
	1984	132 (57)	136 (81)	121 (36)	107 (38)	16 (5)	0
Elodea canadensis	1983	25 (42)	7 (16)	59 (33)	1 (3)	0	169 (24)
	1984	57 (45)	0	13 (12)	0	0	171 (21)
Heteranthera dubia	1983	0	0	2 (3)	0	0	51 (24)
	1984	0	0	0	0	0	124 (21)
Myriophyllum spicatum	1983	20 (20)	5 (2)	1 (3)	80 (36)	161 (12)	92 (48)
	1984	41 (20)	0	1 (3)	66 (19)	0	82 (33)
Najas flexilis	1983	0	0	0	2 (10)	1 (2)	0
	1984	0	1 (19)	1 (6)	3 (31)	1 (2)	0
Nitella hyalina	1983	35 (3)	0	0	4 (3)	0	0
	1984	111 (13)	23 (17)	6 (14)	0	5 (10)	0
Nitellopsis obtusa	1983	0	0	0	71 (51)	1 (2)	0
	1984	0	0	0	36 (38)	0	0
Potamogeton crispus	1983	33 (15)	6 (4)	0	12 (10)	0	3 (9)
	1984	28 (8)	0	0	9 (17)	0	40 (27)
Potamogeton gramineus	1983	36 (37)	31 (49)	24 (56)	0	0	32 (3)
	1984	13 (7)	34 (52)	101 (50)	60 (10)	72 (7)	75 (3)
Potamogeton[a/] spp.	1983	39 (48)	35 (64)	36 (58)	5 (5)	37 (42)	20 (18)
	1984	41 (43)	30 (45)	29 (67)	5 (14)	29 (49)	40 (24)
Potamogeton richardsonii	1983	31 (32)	53 (62)	36 (36)	72 (38)	86 (48)	49 (12)
	1984	56 (42)	53 (21)	212 (42)	98 (45)	127 (35)	142 (15)
Potamogeton zosteriformis	1983	9 (7)	5 (9)	0	4 (13)	0	1 (3)
	1984	0	41 (12)	0	4 (33)	0	0
Vallisneria americana	1983	1 (2)	1 (4)	0	25 (72)	50 (70)	37 (67)
	1984	7 (3)	1 (2)	3 (3)	20 (76)	42 (68)	63 (55)

a/ Narrow-leaf forms.

Table 27. Mean dry weight biomass (g/m^2) and (in parentheses) percent frequency of occurrence of submersed macrophytes found at six locations in SCDRS in September 1983 and 1984. Mean biomass is based only on samples in which the taxon occurred.

Taxon	Year	Stag Island	Fawn Island	Russell Island	Belle Isle	Pt. Hennepin	Stony Island
Chara spp.	1983	203 (47)	116 (69)	94 (69)	15 (12)	1 (9)	0
	1984	95 (48)	190 (76)	204 (64)	73 (38)	10 (14)	0
Elodea canadensis	1983	26 (37)	75 (36)	54 (25)	1 (2)	2 (2)	1 (9)
	1984	27 (38)	2 (7)	7 (19)	2 (2)	0	2 (6)
Heteranthera dubia	1983	0	0	0	0	5 (7)	129 (18)
	1984	0	0	0	0	0	231 (39)
Myriophyllum spicatum	1983	69 (23)	2 (2)	1 (6)	72 (34)	125 (7)	145 (45)
	1984	53 (23)	0	8 (3)	91 (26)	101 (11)	225 (36)
Najas flexilis	1983	4 (7)	4 (14)	1 (6)	3 (14)	1 (2)	0
	1984	0	5 (24)	1 (6)	33 (24)	15 (9)	0
Nitella hyalina	1983	25 (7)	23 (2)	6 (3)	167 (14)	0	0
	1984	3 (10)	3 (7)	0	95 (5)	1 (2)	0
Nitellopsis obtusa	1983	4 (7)	0	69 (6)	104 (31)	0	0
	1984	0	12 (5)	0	59 (48)	0	0
Potamogeton crispus	1983	0	0	0	5 (2)	0	6 (3)
	1984	11 (5)	0	0	2 (2)	0	23 (18)
Potamogeton gramineus	1983	47 (38)	88 (64)	65 (69)	28 (10)	0	0
	1984	76 (23)	47 (69)	171 (64)	38 (10)	1 (2)	0
Potamogeton[a/] spp.	1983	95 (65)	30 (48)	81 (64)	8 (5)	107 (16)	1 (3)
	1984	53 (48)	12 (45)	74 (81)	14 (12)	3 (2)	34 (6)
Potamogeton richardsonii	1983	96 (38)	51 (55)	78 (14)	98 (43)	114 (12)	0
	1984	42 (43)	69 (33)	234 (25)	30 (33)	50 (21)	0
Potamogeton zosteriformis	1983	15 (2)	1 (2)	0	0	0	0
	1984	14 (8)	1 (2)	1 (3)	7 (2)	0	0
Vallisneria americana	1983	37 (5)	0	8 (11)	56 (95)	78 (84)	135 (76)
	1984	6 (7)	12 (17)	2 (11)	30 (83)	84 (98)	90 (61)

[a/] Narrow-leaf forms.

these areas (Table 1 of Appendix K). The number of taxa per Ponar grab averaged about 2.6 at Stag Island (Table 28) and tended to increase over the season.

At Fawn Island, submersed macrophytes were present in all blocks (Figs. 4-6 and 22-24 of Appendix O). Chara spp. occurred in relatively pure stands over most of the lightly stippled area in the figures. Potamogeton richardsonii, P. gramineus and Potamogeton spp. made up the narrow dark U-shaped band (e.g., Fig. 6 of Appendix O) adjacent to the divided shipping channels and the small patches within the Chara spp. stand. Frequency of occurrence and biomass of Potamogeton spp. were higher on the eastern wing of the wedge and those of P. richardsonii on the west side; P. gramineus was about equally abundant in both wings. Potamogeton spp. and P. gramineus dominated at the tip of the wedge. The only other common taxon, E. canadensis, occurred in deep water adjacent to the main shipping channel, in blocks 3, 5, and 6. A maximum of seven taxa (average four to five) were collected in each block (Table 2 of Appendix K). The number of taxa per Ponar grab averaged 2.6 and increased progressively over the growing season in both years (Table 28).

At Russell Island, the biomass of Chara spp., Potamogeton spp., and P. gramineus was relatively high in all nine blocks of the sampling grid (Figs. 7-9 and 25-27 of Appendix O). Concentrations of Chara spp. were highest in the lightly stippled areas of blocks 2 and 6-9 and in pure stands in blocks 6 and 7. The dark areas in blocks 1, 2, and 6 and the strip in blocks 7-9 adjacent to shore represented P. gramineus. The dark strip in blocks 7-9 also contained high concentrations of Potamogeton spp. and P. gramineus, and the dark areas in blocks 4, and 5 were P. richardsonii. Elodea was common in deeper water adjacent to the shipping channel in blocks 3 and 4. Vallisneria americana was restricted to block 4 and P. nodosus and P. natans to blocks 1, 3, 4, and 7. Taxa were distributed evenly over most of the grid, averaging three to five (maximum, 9) per block (Table 3 of Appendix K). Diversity was greatest at grid intersection 10 and in blocks 3 and 4. The number of taxa per grab averaged 2.6 and increased through the season (Table 28).

At Belle Isle most of the plants were close to shore in blocks 8-10 in an extensive littoral area (Figs. 10-12 and 28-30 of Appendix O). Few plants were found in blocks 1-7 in relatively deep water (> 12 ft). Vallisneria americana was relatively abundant in all blocks; however, its low growth profile and the reduced water clarity in the Detroit River may have decreased its visibility on the aerial photos. The large dark band in block 1 and the smaller bands in blocks 1-6 were mainly P. richardsonii, mixed with P. zosteriformis and Potamogeton spp. The dark areas in blocks 7-10 were mostly small beds of Myriophyllum spicatum, P. richardsonii, and P. gramineus. Blocks 7-10 also included extensive beds of Chara spp., Najas flexilis, and Nitellopsis obtusa which may not have been visible because of their low growth profile. Najas flexilis and P. zosteriformis occurred in all but two blocks but never at high biomass levels. The macrophyte fauna was more diverse off Belle Isle than at any other location. Eleven taxa were found at grid intersection 18 (Table 4) of Appendix K). Diversity was greatest in blocks 7-10 and averaged

Table 28. Mean number of submersed macrophyte taxa per Ponar grab at six locations in SCDRS in 1983 and 1984.

Location	June		July-August		September		Grand mean
	1983	1984	1983	1984	1983	1984	
Stag Island	2.2	2.8	2.8	2.4	2.8	2.8	2.6
Fawn Island	1.9	1.9	2.9	2.7	3.2	2.9	2.6
Russell Island	2.2	2.4	2.7	2.6	3.0	2.8	2.6
Belle Isle	3.1	2.8	2.8	3.3	2.8	3.1	3.0
Pt. Hennepin	2.1	2.6	1.8	1.8	1.4	1.7	1.9
Stony Island	2.3	2.2	2.1	2.1	1.6	1.8	2.0

four to nine taxa over the sampling grid. The average number of species per grab was three and the seasonal range was 2.8-3.3 (Table 28).

On the shoals adjacent to Pt. Hennepin, Potamogeton spp. and V. americana were the dominant taxa. Narrow-leaf forms of Potamogeton spp. were found at relatively high biomass in every block except 7 and 14 in June, but had almost disappeared by September. Vallisneria americana was present in every block over all sampling dates and by September had replaced Potamogeton spp. as the most abundant taxon. Interpretation of plant distribution (Figs. 13-15 and 31-33 of Appendix O) is difficult, because many plants did not occur at densities great enough to be visible on aerial photos; the stippled areas generally represent the distribution of Potamogeton spp. in June and of V. americana in July-August and September. However, the dark bands adjacent to the channel in blocks 1, 2, 5, and 11-14 were mainly P. richardsonii. The dark bands in block 8 were composed mainly of M. spicatum, P. crispus and P. richardsonii. Chara spp. and Najas flexilis were in patches down the middle of the island, in a strip bounded by the corner of grid intersections 10, 11, 33, and 34, and are not visible in our photographs. Diversity was highest along the Fighting Island Channel, where dark and light bands adjoined. The number of species at the grid intersections ranged from two to seven (Table 5 of Appendix K). The average of 1.9 taxa per grab (the lowest for the six locations sampled) declined consistently over the season (Table 28).

The distribution of taxa at Stony Island can be grouped into three areas--the head of the island (blocks 1-5), an inlet area (blocks 6-8), and an intermediate area (blocks 9-11). The darker areas in blocks 2, 3, and 4 indicate the presence of P. richardsonii and M. spicatum (Figs. 16-18 and 34-36 of Appendix O). Potamogeton spp. and V. americana made up the lighter areas in blocks 1-5. Inside the bay the dark areas represented beds of Elodea canadensis, Heteranthra dubia, P. crispus, Ranunculus longirostris, and Myriophyllum spicatum, in pure or mixed stands. Potamogeton crispus was prevalent only in June and was replaced by H. dubia by September. The long strip of plants in blocks 9-11 is composed of H. dubia and M. spicatum. The lighter areas in blocks 9-11 show beds of V. americana. Taxa per grid ranged from zero to five with a maximum of 7 at grid intersection 5 (Table 6 of Appendix K). Taxa per grab averaged 2.0 and declined through the season (Table 28).

Distribution of Emergent Plants

Emergent macrophytes were present in only two of the sampling grids at the six locations. We collected 11 taxa at Fawn Island and Stony Island (Table 29). A small bed of Scirpus acutus was at the tip of Fawn Island in block 7 and extensive beds were in blocks 8, 10, and 11 off Stony Island. Typha latifolia and Sparganium eurycarpum usually occurred in pure stands, whereas the species of Eleocharis, Phalaris, Sagittaria, and Scirpus were usually found together in mixed stands. Because of the great size and diversity of the emergent beds at Stony Island and limited sampling effort, our coverage of the beds was not representative. The beds appeared to be stable and the percent occurrence between years for the most part reflected this stability (Table 29).

Table 29. Percent frequency of occurrence and mean dry weight biomass (g/m^2) of emergent macrophytes collected at Stony Island, in the Detroit River, in 1983 and 1984.

Taxon	Occurrence		Biomass	
	1983 (n=33)	1984 (n=39)	1983	1984
Eleocharis spp.[a/]	6	15	37.2	18.4
Phalaris arundinacea	3	5	29.6	42.7
Sagittaria latifolia	12	15	13.4	35.5
Sagittaria rigida	0	26	0	198.0
Scirpus acutus	3	5	2.8	9.6
Scirpus americanus	18	23	178.7	299.4
Scirpus fluviatilis	9	3	965.8	8.2
Scirpus validus	9	23	28.0	44.9
Sparganium eurycarpum	36	33	196.2	357.5
Typha angustifolia	36	26	903.5	865.3

[a/] Two closely related species, *E. smallii* and *E. erythropoda*.

Abundance of Submersed Plants

Yearly variation in abundance of taxa of submersed macrophytes by river is shown in Table 24. The biomass of Chara spp., P. gramineus, and M. spicatum increased from 1983 to 1984 in both rivers. Potamogeton crispus and Potamogeton spp. were less abundant in both rivers in 1984 than in 1983, whereas N. flexilis and P. richardsonii were more abundant in the St. Clair River but less abundant in the Detroit River in 1984 than in 1983.

Differences in biomass of dominant taxa between years and sampling periods at each sampling location are shown in Tables 25-27. In the St. Clair River in June, most taxa were less abundant in 1984 than in 1983. However, a paired comparison of all taxa showed only the differences at Russell Island to be significant. Biomass of dominant taxa declined similarly in the Detroit River, but was significant only at Belle Isle. In July, the trend of decline in taxa from 1983 to 1984 did not occur; rather the biomass of most taxa was higher in 1984 than in 1983. At Stony Island the increase in biomass in July from 1983 to 1984 was significant. In September, the change in biomass for most taxa was similar between years. Over all, two taxa--Chara spp. and N. flexilis--increased rather consistently from 1983 to 1984, whereas one taxon, Potamogeton spp., declined over the same time period. The biomass of E. canadensis at Russell Island and V. americana at Belle Isle was consistently lower in 1984 than in 1983.

An analysis of dry weight biomass of all taxa combined, by year, month, and blocks over sampling location, showed several significant differences (Table 30). However, these differences must be interpreted cautiously because most of the combinations (interactions) between year, month, and block were also significant (Appendix P). At Stag Island, biomass values were significantly higher in 1983 than in 1984 (Table 30), but this was not consistent over all months (Fig. 6) or blocks (Fig. 7). Biomass increased significantly from June to July-August to September in 1983 (Table 30), but this trend was not obvious in 1984 (Fig. 6). Biomass was higher in all blocks in September 1983, but was higher in blocks 10-13 in June and July-August 1984. A partial reason for the biomass being higher early in the year in 1984 was the occurrence of several unusually heavy samples of Chara spp. and N. flexilis in our collections in blocks 12 and 13. Collectively, biomass was highest in blocks 6-8, 12, and 13.

At Fawn Island, biomass differences between years were negligible (Table 30). In both 1983 and 1984, biomass increased steadily through the season (Fig. 6). Biomass in blocks 5, 6, and 11 was higher in 1984 than in 1983 (Fig. 8) in most months. The decline from 1983 to 1984 was greatest in blocks 1-3 at the head of the island and the increase was greatest in blocks 5-6, near the center of the grid. As at Stag Island, the high biomass of Chara spp. and N. flexilis at Fawn Island in June and July-August kept the 1984 biomass levels near those of 1983.

Macrophyte biomass at Russell Island was significantly higher in 1984

Table 30. Mean dry weight biomass (g/m^2) of submersed aquatic macrophytes by year, month, and blocks (block numbers in parentheses) at six locations in SCDRS. Values jointly underlined were not significantly different ($P \leq 0.05$).

Location	Year		Month			Block														
Stag Island	97	86	127	97	51	184	215	177	142	146	136	86	99	77	57	57	0	0	0	0
	1983	1984	Sep.	July	June	(12)	(6)	(7)	(8)	(13)	(11)	(9)	(10)	(15)	(14)	(5)	(1)	(2)	(3)	(4)
Fawn Island	130	131	213	154	23	215	194	125	133	136	105	115	106	102	123	78				
	1983	1984	Sep.	July	June	(4)	(11)	(7)	(9)	(6)	(1)	(10)	(2)	(3)	(5)	(8)				
Russell Island	204	123	265	158	68	238	208	183	213	147	142	161	106	76						
	1984	1983	Sep.	July	June	(9)	(7)	(8)	(3)	(4)	(6)	(2)	(5)	(1)						
Belle Isle	106	105	140	136	41	185	161	150	124	121	98	90	45	44	37					
	1983	1984	Sep.	July	June	(9)	(8)	(7)	(10)	(3)	(5)	(1)	(6)	(4)	(2)					
Point Hennepin	75	71	93	91	35	110	106	107	86	71	67	66	62	62	61	58	69	61	38	
	1984	1983	Sep.	July	June	(6)	(8)	(2)	(5)	(11)	(3)	(1)	(4)	(12)	(9)	(7)	(13)	(10)	(14)	
Stony Island	180	146	220	161	107	382	245	224	158	128	109	101	125	77	78					
	1984	1983	Sep.	July	June	(6)	(8)	(7)	(10)	(3)	(4)	(2)	(9)	(5)	(1)					

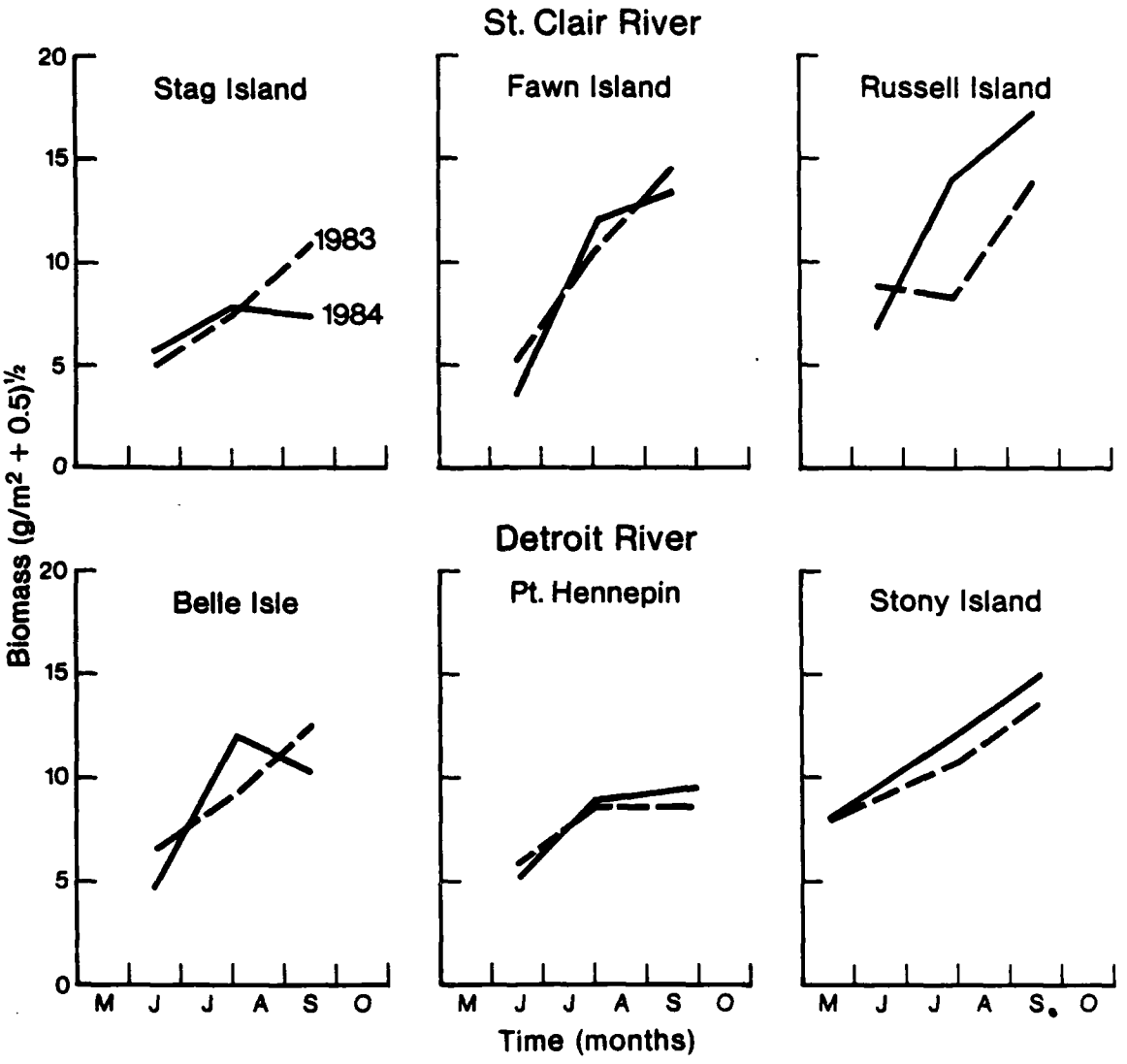

Figure 6. Mean seasonal biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes at six locations in the SCDRS.

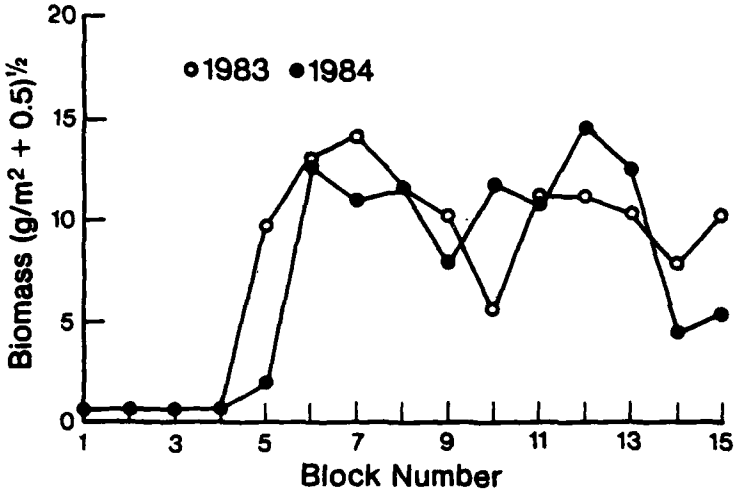

Figure 7. Mean biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes in blocks composing the sampling grid at Stag Island. (See Appendix I, Fig. 1 for block locations.)

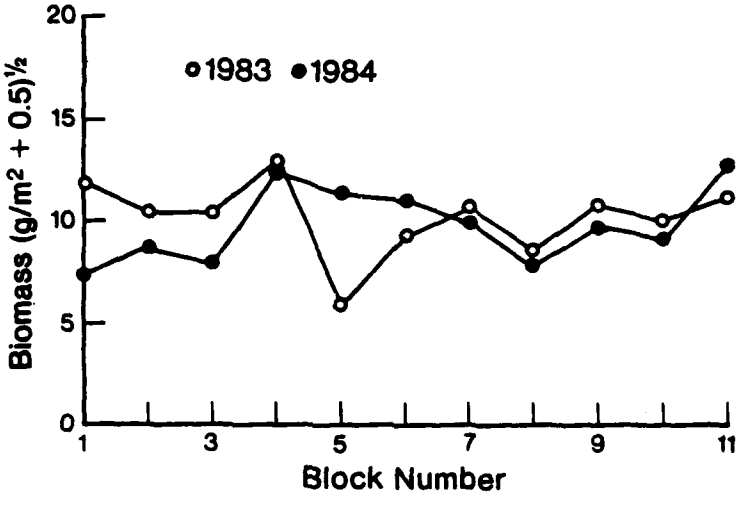

Figure 8. Mean biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes in blocks composing the sampling grid at Fawn Island. (See Fig. 2 of Appendix I for block locations.)

than in 1983 (Table 30). Although biomass was higher in 1983 than in 1984 during one month and several blocks (Figs. 6 and 9), the differences were not statistically significant. Biomass at this location tended to increase through the growing season. Biomass was highest in blocks 3 and 7-9, which were nearest the shore (Table 30). Large increases in the biomass of Chara spp., P. gramineus, and P. richardsonii accounted for the larger biomass in 1984.

At Belle Isle, yearly differences in dry weight biomass were negligible (Table 30), except for the high density in July-August 1984 (Fig. 6); the seasonal differences between July-August and September were not significant (Table 30). The high July-August biomass resulted mainly from high densities of Chara spp. and P. richardsonii in blocks 1, 7, and 8. Yearly differences between corresponding grids were small and trends were about the same (Fig. 10). Biomass was highest in blocks 7-10 in the downstream, shallow, protected area (Table 30).

At Point Hennepin, as at Belle Isle, differences in abundance between years and between September and July-August were not significant (Table 30). Monthly trends in biomass were similar between years (Fig. 6). Although differences between years were large in several blocks, no consistent trends were evident (Fig. 11). Biomass was highest in blocks 6 and 8, in the center of the sampling area on the side of the main shipping channel (Table 30).

For all three sampling periods, the standing crop biomass of submersed macrophytes at Stony Island was significantly higher in 1984 than in 1983 (Table 30, Fig. 6). Biomass also differed between years in all blocks except 3 and 4 (Fig. 12). Trends among blocks between years were consistent; biomass was highest in blocks 6, 7, and 8 in inlet areas. At Stony Island, unlike the other Detroit River locations, biomass increased significantly from June through September.

Abundance of Emergent Plants

We did not statistically compare yearly estimates of biomass of emergent macrophytes at Stony Island (Table 29) because sample size was too small (12 or fewer samples per taxon per year). The dry weight biomass of Scirpus fluviatilus and Typha latifolia was largest and that of Scirpus acutus smallest. Maximum dry weight biomasses for individual samples of Typha exceeded 2000 g/m^2. All taxa were present during each sampling period, and abundance of most taxa usually peaked in July-August. Differences in taxon biomass between years at Stony Island were mainly small. The few large differences were due to the large area and diversity of taxa in relation to sampling effort. The biomass estimates for the small emergent bed at Fawn Island can be evaluated by month and year. No samples of S. acutus were collected in June of either year because the plant bed had not yet broken the water surface. The biomass of this bed averaged 171 g/m^2 in July-August and 306 in September in both 1983 and 1984. However, the biomass in 1984 was 70% lower in July-August and 21% lower in September than in the same months in 1983.

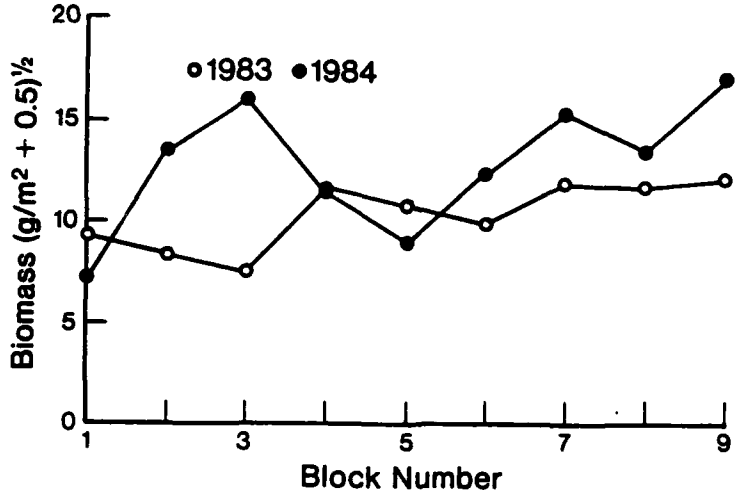

Figure 9. Mean biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes in blocks composing the sampling grid at Russell Island. (See Fig. 3 of Appendix I for block locations.)

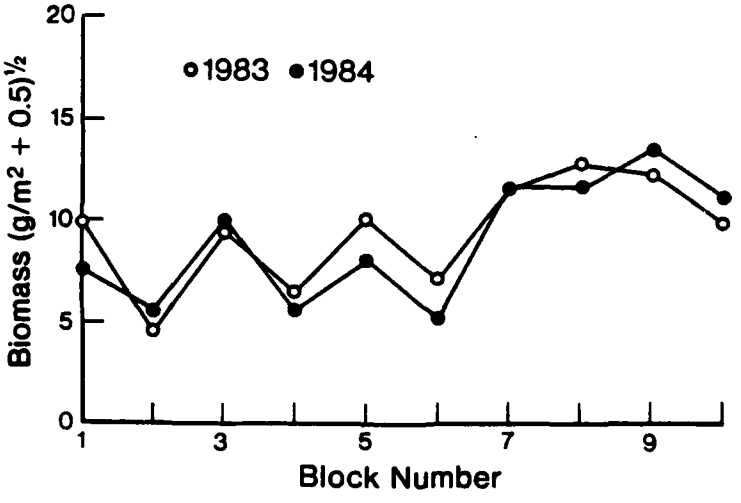

Figure 10. Mean biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes in blocks composing the sampling grid at Belle Isle. (See Fig. 4 of Appendix I for block locations.)

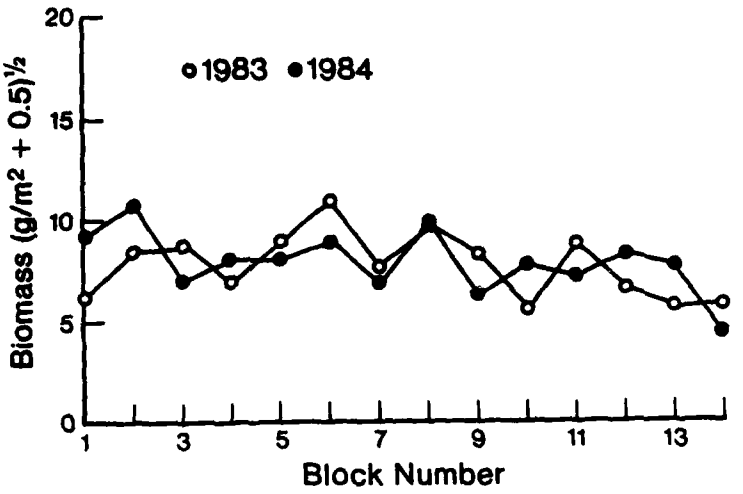

Figure 11. Mean biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes in blocks composing the sampling grid at Point Hennepin. (See Fig. 5 of Appendix I for block locations.)

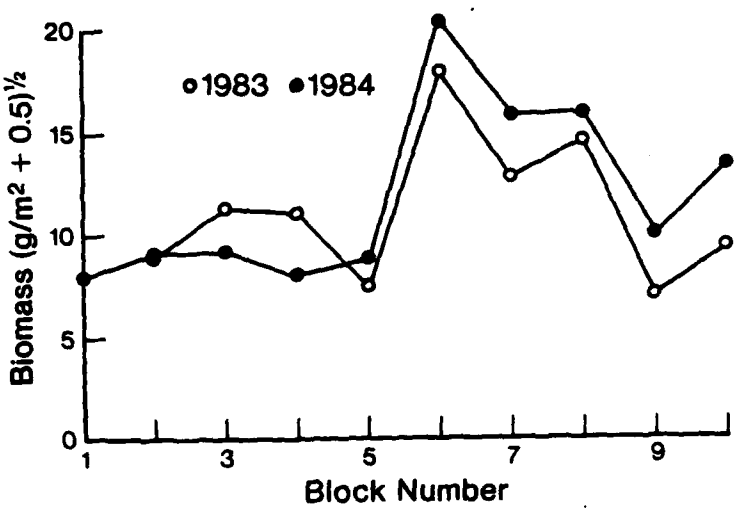

Figure 12. Mean biomass (square root of dry weight in g/m² + 0.5) of submersed macrophytes in blocks composing the grid at Stony Island. (See Fig. 6 of Appendix I for block locations.)

Areal Extent of Submersed Macrophyte Beds

The amount of area covered by plant beds at each location was estimated by overlaying the sampling grid (e.g., Fig. 1 of Appendix P) on each photograph with a grid that divided each 500-ft-square block into 100 equal sections. Each one-hundredth section was scored if half the section was covering plants, and scores were summed over each block and expressed as a percentage. Two independent estimates were obtained of the percent coverage of submersed macrophytes, by block. These estimates are given for each sampling location, month, and year in Tables 31 and 32.

At Stag Island, submersed plant beds in 1983 and 1984 covered an average of 23% of the sampling grid area in September (Table 31). Coverage increased about 7 percentage points from June to September and differences between years were small. The percent coverage by submersed macrophytes was largest in blocks 7-9 and 12.

Plant beds off Fawn Island were not clearly visible in June 1983 and were even less visible in 1984 (Appendix N). Biomass estimates for June 1984 indicated that the abundance of most taxa was reduced--except for Chara spp. (Table 25). By July-August and September, differences between years in percent coverage were negligible. Coverage peaked at 68% in September. This represents a difference of only 2-4 percentage points from July-August to September. Bed development was most extensive in blocks 4, 6, 7, 9, and 11.

Plant bed coverage in June at Russell Island differed greatly between 1983 and 1984 (Table 31). By July-August and September, however, the coverage between the two years differed only by 5-6 percentage points. Seasonal differences, once the beds developed, were about 2-3 percentage points. Bed coverage over the sampling area averaged 66%. Coverage of submersed macrophytes was most extensive in blocks 4, 5, and 7-9.

Plant bed coverage at Belle Isle in June and July-August was also substantially less in 1984 than in 1983, but differences in September were negligible (Table 32). Differences in coverage between sampling periods did not exceed 5 percentage points in 1983. The coverage was greatest (26%) in September and was generally highest in blocks 7-9.

Plant bed cover at Point Hennepin and Stony Island differed markedly from that at other locations. Coverage was greater and seasonal differences were larger in 1984. Bed coverage at Point Hennepin averaged 57% in September and was 8-9 percentage points lower in June (Table 32). Plant coverage was greatest in blocks 3, 6, and 9.

Seasonal differences at Stony Island were 41 to 51 percentage points (Table 32). Maximum bed development was in September and averaged 78%; coverage was greatest in blocks 8, 10, and 11. The difference in seasonal development occurred mainly in blocks 1-5 at the upstream end of the island. Water depth of 10-12 ft and low water clarity (mean transmittance was 14% in this area) prevented observation of macrophyte beds until September, when they reached the water surface.

Table 31. Percent coverage of submersed macrophyte beds in the sampling grid at Stag, Fawn, and Russell islands in June, July-August, and September, 1983 and 1984.

Block number	June		July-August		September	
	1983	1984	1983	1984	1983	1984
			Stag Island			
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	5	0	3	0	1	1
6	1	3	18	8	20	16
7	31	38	55	42	50	39
8	38	38	34	55	70	52
9	38	44	35	33	39	41
10	20	10	20	11	36	30
11	12	25	39	28	31	20
12	60	61	50	59	58	66
13	9	10	14	26	20	38
14	9	12	9	14	15	6
15	10	15	24	27	22	16
Mean	16	17	20	20	24	22
			Fawn Island			
1	6	0	6	6	9	7
2	39	0	73	72	72	69
3	16	0	44	55	45	41
4	5	0	100	100	100	100
5	6	0	10	9	16	14
6	6	0	98	92	98	99
7	6	9	100	100	100	100
8	0	0	58	69	75	86
9	0	0	100	100	100	100
10	0	0	11	25	25	34
11	1	0	98	100	100	100
Mean	7	1	63	66	67	68
			Russell Island			
1	42	0	50	28	52	30
2	41	16	43	14	42	28
3	4	0	7	9	14	11
4	66	12	85	72	92	78
5	53	25	100	100	100	100
6	16	0	22	36	26	33
7	12	32	88	86	93	88
8	100	10	100	100	100	100
9	100	41	100	100	100	100
Mean	48	25	66	61	69	63

Table 32. Percent coverage of submersed macrophyte beds in the sampling grid at Belle Isle, Point Hennepin, and Stony islands in June, July-August, and September, 1983 and 1984.

Block number	June		July		September	
	1983	1984	1983	1984	1983	1984
			Belle Isle			
1	14	9	16	14	23	11
2	2	1	4	6	1	10
3	15	6	7	9	1	8
4	2	4	2	3	2	3
5	22	4	22	3	20	20
6	6	4	5	6	3	4
7	50	12	63	20	75	34
8	48	12	63	47	69	72
9	38	17	38	36	53	59
10	23	6	17	19	27	30
Mean	22	8	24	16	27	25
			Point Hennepin			
1	58	70	61	81	64	90
2	50	30	48	55	42	92
3	95	100	86	94	79	89
4	9	25	12	21	17	16
5	39	61	51	70	73	82
6	100	100	95	95	92	88
7	11	31	16	26	19	25
8	74	39	67	59	64	78
9	88	41	93	68	100	100
10	1	25	5	24	6	19
11	50	75	59	62	69	53
12	42	77	51	83	59	95
13	0	22	17	15	28	0
14	1	45	19	38	23	39
Mean	44	53	49	56	52	62
			Stony Island			
1	0	0	0	0	42	17
2	0	9	22	26	100	95
3	0	0	90	73	81	84
4	0	6	31	47	36	81
5	0	11	1	28	84	100
6	45	39	45	78	81	86
7	38	42	39	73	92	99
8	100	100	100	100	100	100
9	33	20	23	58	23	63
10	55	63	41	94	94	96
11	81	72	70	64	72	100
Mean	32	33	42	58	73	84

Relationship between Macrophytes and Physical Environment

Water depth, light transmission, and current velocity measurements were taken with each group of three Ponar samples and at each grid line intersection (Tables 1-6 of Appendix K). Water depth at grapnel stations sometimes exceeded 30 ft. Many stations were located in or adjacent to the shipping channel, where a difference in horizontal distance of 25 to 50 ft was accompanied by a change in water depth of up to 18 ft. Light transmission varied from 0 to 98%. Transmission was high in shallow water in beds of Chara spp., and low in deep water or in thick beds of submersed macrophytes. Currents ranged from a maximum of 4.0 ft/s at the head of Stag Island to zero in shallow, protected areas at Belle Isle and Stony Island.

The average depths at which Ponar samples of submersed plants were collected varied little between the sampling locations, ranging only from 8 ft at Stag Island to 6 ft at Point Hennepin and Stony Island (Table 33). Light transmission and current velocity varied more widely. Average light transmission was 72% lower at Stony Island than at Stag Island, and values were typically about 2-3 times higher in the St. Clair River than in the Detroit River. Similarly, current velocities in the St. Clair River were about twice those in the Detroit River. In general, bottom current velocities were about 55% of those at the surface.

In the St. Clair River, light transmission and current velocity decreased markedly from June to September in beds of submersed plants but declined less sharply or not at all in adjacent areas without plants (Table 34). Average reduction in light transmission values was 25-60% in plant beds and 14-35% in adjacent plant-free areas. Reduction of light transmission values in plant-free areas was probably due to changes in sediment turbidity or plankton abundance. Current velocities decreased 10-50% at the surface and 30-70% at the bottom between June and September in plant beds, but did not decrease in areas devoid of plants. Reduction in average current velocity during the season ranged from 50 to 80% (Table 34). Reductions were similar in the Detroit River but were not as obvious because the seasonal ranges of light and current velocities were smaller.

We treated average water depth, light transmission, and current velocity data associated with each of the common macrophyte taxa shown (Table 35), separately by river, but averaged them over months to mask the variation in seasonal changes in light and velocity. The purpose of the table is to provide an average condition under which the taxa occur in the two rivers, and thus enable us to group taxa that occur under similar conditions. The table also includes the result of a correlation analysis between the biomass of each taxon and depth, light, and velocity.

Several taxa in both rivers were associated more frequently than others with various depth levels, light transmissions, and current velocities (Table 36). For example, both P. richardsonii and P. gramineus were more common in areas where current velocities exceeded 0.7 ft/s, but P. richardsonii occurred

Table 33. Mean depth (ft), light transmittance (%), and current velocity (ft/s) at stations where submersed macrophytes were sampled in the St. Clair and Detroit rivers.

Location	Depth	Light transmittance	Current velocity	
			Surface	Bottom
Stag Island	8	50	1.5	1.0
Fawn Island	6	47	1.2	0.7
Russell Island	7	36	1.3	0.6
Belle Isle	7	19	0.6	0.4
Point Hennepin	6	16	0.3	0.1
Stony Island	6	14	0.7	0.4

Table 34. Mean light transmittance (%) and current velocities (ft/s) measured in beds of submersed macrophytes and in areas without submersed macrophyte beds in the St. Clair River in 1983 and 1984[a/].

Taxon	Light transmittance			Current velocity		
	June	July-August	September	June	July-August	September
No plants	64	42	45	2.2[a/]	2.6	2.2
Chara spp.	57	55	43	1.2	0.7	0.6
Elodea canadensis	47	27	20	1.0	0.4	0.3
Myriophyllum spicatum	48	27	19	0.7	0.3	0.2
Nitella flexilis	41	33	28	1.4	1.1	0.4
Potamogeton gramineus	53	50	38	1.5	0.8	0.6
Potamogeton spp.	55	42	33	1.4	0.7	0.6
Potamogeton richardsonii	49	36	24	1.4	0.5	0.3

a/ Mean of measurements at surface and bottom.

Table 35. Mean depth (ft), light transmittance (%), and current velocity (ft/s) in beds of submersed macrophyte taxon in the St. Clair (S) and Detroit (D) rivers, June 14 - September 20, 1983-1984.

Taxon	Sample size		Depth		Light transmittance		Current velocity	
	S	D	S	D	S	D	S	D
Chara spp.	559	115	6(-)[a/]	7(-)	52(+)	24(+)	0.8	0.4
Elodea canadensis	218	48	9	5	31	10	0.6	0.2
Heteranthera dubia	F[b/]	47	F	5	F	14	F	0.4
Myriophyllum spicatum	86	150	8(-)	6	31	21	0.4	0.3
Najas flexilis	40	51	4	6	48	25	0.7	0.4
Nitella hyalina	56	89	9	6	34	18	1.0	0.2
Nitellopsis obtusa	F	71	F	6	F	27	F	0.2
Potamogeton crispus	34	80	8	6	44	10	0.4	0.3
Potamogeton gramineus	328	33	6(+)	6	47	26	1.0	0.4
Potamogeton spp.	424	266	7	6(-)	43	19	0.9	0.3(-)
Potamogeton richardsonii	253	179	8	7	36	12	0.7	0.4
Potamogeton zosteriformis	24	47	7	8	53	19	0.5	0.3
Vallisneria americana	32	551	6	7	38	16(-)	0.4	0.3

[a/] Significant correlation ($P \leq 0.05$) between taxon biomass and physical variables, sign indicates inverse (-) or positive (+) relationship.

[b/] Few or none present.

Table 36. Taxa associations with water depth, light transmission, and current velocity in the St. Clair and Detroit rivers, June-September 1983-1984.

St. Clair River

Mean depth > 7 ft. Mean light transmission < 42%		Mean depth < 7 ft. Mean light transmission > 42%	
Velocity (ft/s)			
> 0.7	< 0.7	> 0.7	< 0.7
P. richardsonii	*Elodea canadensis* *Myriophyllum spicatum*	*Chara* spp. *P. gramineus*	*Potamogeton* spp.

Detroit River

Mean Depth > 6 ft.
Velocity ≥ 0.3 ft/s

Mean light transmission > 21%	Mean light transmission < 16%
Chara spp. *Myriophyllum spicatum*	*Vallisneria americana* *P. richardsonii*

more frequently than P. gramineus in water deeper than 7 ft. Vallisneria and P. richardsonii appear to be adapted to the low light transmission in the Detroit River.

Significant correlations of the biomass of macrophyte taxa with physical measurements were few; they are most often with depth and least often with current (Table 35). Chara spp. in both rivers was associated negatively with depth and positively with light. Since these two physical variables are inversely related, Chara spp. biomass may be limited by low light. The negative correlation between Potamogeton spp. and depth may be related to the higher current usually associated with deeper water near the navigation channel in the Detroit River. The biomass of Potamogeton gramineus tended to be higher in deeper water in the St. Clair River. Biomass of Myriophyllum spicatum in the St. Clair River was higher at depths greater than 8 ft than at lesser depths.

JUVENILE AND ADULT FISH

Composition and Distribution of Catch

We captured 1,775 fish of 36 different species in 1983 and 1,038 fish of 26 species in 1984 (Table 37 and Appendix R). Of the 39 species represented, only 7 were captured commonly (> 50 fish/year): yellow perch, rock bass, hornyhead chub, spottail shiner, striped shiner, rainbow smelt and white sucker, collectively made up 86% of the total for both years combined. Only yellow perch and rock bass were common in both rivers in both years. Thirteen species collected in 1983 were not taken in 1984; of these, 11 were represented by a single individual and the other 2 by 3 and 10 specimens. Three species caught in 1984 but not in 1983 were represented by only one fish each.

A larger number of fish species were collected in the Detroit River than in the St. Clair River, particularly in 1983. Sixteen species were collected only in the Detroit River, of which channel catfish, stonecat, white bass, white perch, and brown bullhead were abundant enough to be considered common (Table 37). Trout-perch, striped shiner, and rainbow trout were collected only in the St. Clair River. Frequency of capture of most species by year, river, or presence of vegetation was erratic (Tables 37, 38, and 39).

In both 1983 and 1984, the numerically dominant species in the catch, yellow perch and rock bass, were collected during every month (Table 40). Two common species, rainbow smelt and spottail shiners, were collected most often in May and June. Catches of other species showed both seasonal and spatial variation. Channel catfish were present only in the Detroit River, where they were captured in all months except July. In the St. Clair River, striped shiners were abundant in June and October and hornyhead chubs from July to October. Some of the large seasonal catches probably reflected migrations or spawning runs. For example, the white suckers captured in May were gravid and the hornyhead chubs captured in July were in spawning coloration and had well-developed breeding tubercles.

Table 37. Total number, percent of total, and mean length (mm) of fish collected in the St. Clair and Detroit rivers during 1983 and 1984.

Common name	Scientific name	1983			1984		
		Number	Percent	Mean length (mm)	Number	Percent	Mean length (mm)
Yellow perch	Perca flavescens	989	56	120	365	35	149
Rock bass	Ambloplites rupestris	296	17	130	246	24	155
Hornyhead chub	Nocomis biguttatus	188	11	110	43	4	117
Spottail shiner	Notropis hudsonius	70	4	101	15		105
Striped shiner	Notropis chrysocephalus	55	3	100	1		95
Rainbow smelt	Osmerus mordax	46	3	116	146	14	115
Smallmouth bass	Micropterus dolomieui	20	1	101	5		247
Channel catfish	Ictalurus punctatus	18	1	419	34	3	441
White sucker	Catostomus commersoni	12	1	178	61	6	434
Stonecat	Noturus flavus	11	1	206	35	3	216
White perch	Morone americana	10	1	143	0		-
Common carp	Cyprinus carpio	9		475	3		519
Bluegill	Lepomis macrochirus	6		145	2		254
White bass	Morone chrysops	6		242	1		83
Black crappie	Pomoxis nigromaculatus	5		228	5		167
Pumpkinseed	Lepomis gibbosus	4		137	6		140
Brown bullhead	Ictalurus nebulosus	3		264	5		279
Yellow bullhead	Ictalurus natalis	3		231	0		-
Black redhorse	Moxostoma duquesnei	3		397	5		459
Northern pike	Esox lucius	2		660	1		775
Alewife	Alosa pseudoharengus	2		120	44	4	80
Golden redhorse	Moxostoma erythrurum	2		420	1		496
Trout-perch	Percopsis omiscomaycus	2		120	2		111
Logperch	Percina caprodes	1		105	0		-
Central stoneroller	Campostoma anomalum	1		126	0		-
Walleye	Stizostedion vitreum vitreum	1		254	8		405
Gizzard shad	Dorosoma cepedianum	1		106	0		-
White crappie	Pomoxis annularis	1		205	0		-
Common shiner	Notropis cornutus	1		106	0		-
Freshwater drum	Aplodinotus grunniens	1		373	1		375
Bigmouth buffalo	Ictiobus cyprinellus	1		370	0		-
Mottled sculpin	Cottus bairdi	1		71	0		-
Largemouth bass	Micropterus salmoides	1		98	0		-
Bowfin	Amia calva	1		532	0		-
Emerald shiner	Notropis atherinoides	1		94	0		-
Goldfish	Carassius auratus	1		161	0		-
W. perch x w. bass hybrid		0		-	1		106
Rainbow trout	Salmo gairdneri	0		-	1		320
American eel	Anguilla rostrata	0		-	1		602
Total		1,775			1038		

Table 38. Numbers and weights (g) of fish collected in the St. Clair and Detroit rivers in 1983 and 1984.

Species	1983				1984			
	St. Clair		Detroit		St. Clair		Detroit	
	No.	Wt(g)	No.	Wt(g)	No.	Wt(g)	No.	Wt(g)
Yellow perch	733	18391	256	6131	250	10186	115	5151
Hornyhead chub	176	2857	12	236	38	631	5	130
Rock bass	153	11108	143	9271	88	12784	158	13339
Striped shiner	55	818	0	0	1	10	0	0
Spottail shiner	38	465	32	357	2	22	13	135
Rainbow smelt	28	368	18	82	146	1260	0	0
Smallmouth bass	15	323	5	51	3	1944	2	38
White sucker	11	1815	1	100	6	6547	55	46030
Black crappie	5	840	1	350	1	352	1	178
Bluegill	2	180	4	99	0	0	1	12
Pumpkinseed	2	74	2	200	3	168	3	236
Alewife	2	31	0	0	31	234	13	36
Trout-perch	2	27	0	0	2	24	0	0
Common carp	1	2700	8	11824	0	0	3	5100
Northern pike	1	1500	1	2000	1	1700	0	0
Bowfin	1	1400	0	0	0	0	0	0
Walleye	1	120	0	0	4	1442	4	3650
Largemouth bass	1	14	0	0	0	0	0	0
Common shiner	1	13	0	0	0	0	0	0
Mottled sculpin	1	6	0	0	0	0	0	0
Channel catfish	0	0	18	16458	0	0	34	29188
Stonecat	0	0	11	1384	0	0	35	3988
White perch	0	0	10	470	0	0	0	0
White bass	0	0	5	1227	0	0	5	490
Black redhorse	0	0	3	1967	3	2722	2	1672
Brown bullhead	0	0	3	663	0	0	5	1462
Yellow bullhead	0	0	3	388	0	0	0	0
Golden redhorse	0	0	2	1582	1	1200	0	0
Bigmouth buffalo	0	0	1	800	0	0	0	0
Freshwater drum	0	0	1	680	1	650	0	0
White crappie	0	0	1	150	0	0	0	0
Goldfish	0	0	1	74	0	0	0	0
Stoneroller	0	0	1	13	0	0	0	0
Logperch	0	0	1	10	0	0	0	0
Gizzard shad	0	0	1	9	0	0	0	0
Emerald shiner	0	0	1	7	0	0	0	0
Rainbow trout	0	0	0	0	1	258	0	0
American eel	0	0	0	0	0	0	1	360
White perch X white bass hybrid	0	0	0	0	0	0	1	16
Total	1229	44768	546	54655	582	42139	456	111211

Table 39. Numbers and weights (g) of fish collected in vegetated or non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

Species	1983				1984			
	Vegetated		Non-vegetated		Vegetated		Non-vegetated	
	No.	Wt	No.	Wt	No.	Wt	No.	Wt
Yellow perch	714	16282	275	8240	191	7664	174	7673
Rock bass	130	8197	166	12182	107	9029	139	17094
Hornyhead chub	113	1869	75	1224	22	386	21	380
Striped shiner	45	723	10	95	1	10	0	0
Spottail shiner	44	539	26	283	8	80	7	77
Channel catfish	7	7100	11	9358	10	9140	24	20048
Common carp	5	6180	4	8344	3	5100	0	0
Smallmouth bass	5	40	15	334	1	28	4	1954
Rainbow smelt	4	18	42	432	99	836	47	424
Black redhorse	3	1967	0	0	5	4394	0	0
Pumpkinseed	3	140	1	134	2	92	4	312
White sucker	3	139	9	1776	3	3249	58	49328
White perch	3	43	7	427	0	0	0	0
Brown bullhead	2	449	1	214	5	1462	0	0
Stonecat	2	214	9	1170	21	2460	14	1528
Northern pike	1	2000	1	1500	1	1700	0	0
Bowfin	1	1400	0	0	0	0	0	0
Freshwater drum	1	680	0	0	0	0	1	650
Golden redhorse	1	708	1	874	1	1200	0	0
Black crappie	1	214	5	976	1	352	1	178
Yellow bullhead	1	190	2	198	0	0	0	0
White crappie	1	150	0	0	0	0	0	0
Goldfish	1	74	0	0	0	0	0	0
Alewife	1	16	1	15	3	70	41	200
Bluegill	1	14	5	265	1	12	0	0
Largemouth bass	1	14	0	0	0	0	0	0
Common shiner	1	13	0	0	0	0	0	0
Stoneroller	1	13	0	0	0	0	0	0
White bass	0	0	5	1227	4	148	1	342
Trout-perch	0	0	2	27	1	12	1	12
Bigmouth buffalo	0	0	1	800	0	0	0	0
Walleye	0	0	1	120	4	2342	4	2750
Logperch	0	0	1	10	0	0	0	0
Gizzard shad	0	0	1	9	0	0	0	0
Emerald shiner	0	0	1	7	0	0	0	0
Mottled sculpin	0	0	1	6	0	0	0	0
American eel	0	0	0	0	1	360	0	0
Rainbow trout	0	0	0	0	0	0	1	258
White perch X white bass hybrid	0	0	0	0	0	0	1	16
Total	1096	50309	679	49779	495	50126	543	103224

Table 40. Numbers of common species of fish collected in the St. Clair and Detroit rivers, May-October 1983 and 1984.

Month and species	St. Clair River		Detroit River	
	1983	1984	1983	1984
May				
Rainbow smelt	20	0	18	0
Spottail shiner	20	0	12	3
White sucker	1	0	0	55
Rock bass	1	3	24	40
Yellow perch	1	5	22	26
Stonecat	0	0	1	2
June				
Yellow perch	67	14	8	10
Striped shiner	18	0	0	0
Hornyhead chub	13	0	0	1
Rainbow smelt	8	146	0	0
Rock bass	6	4	32	43
Trout-perch	1	2	0	0
Spottail shiner	0	1	9	4
White perch	0	0	8	0
White bass	0	0	5	3
Stonecat	0	0	1	21
July				
Yellow perch	186	68	84	18
Hornyhead chub	59	6	7	1
Rock bass	40	45	33	28
Alewife	2	0	0	11
Pumpkinseed	1	0	0	2
Spottail shiner	1	0	8	5
Channel catfish	0	0	4	2
Black redhorse	0	0	1	1
Smallmouth bass	0	3	0	0
Common carp	0	0	0	3
September				
Yellow perch	223	106	40	14
Rock bass	51	20	23	19
Hornyhead chub	41	2	1	2
Smallmouth bass	13	0	0	0
Spottail shiner	13	1	3	0
White sucker	5	0	0	0
Northern pike	1	1	0	0
Black crappie	1	1	0	0
Pumpkinseed	1	2	2	0
Channel catfish	0	0	9	29
Common carp	0	0	3	0
Stonecat	0	0	3	2
Black redhorse	0	3	1	1
Alewife	0	30	0	0
October				
Brown bullhead	0	0	0	5
Yellow perch	256	57	102	47
Hornyhead chub	63	30	3	1
Rock bass	55	16	31	28
Striped shiner	35	0	0	0
Black crappie	4	0	1	1
White sucker	4	6	1	0
Spottail shiner	4	0	0	1
Smallmouth bass	2	0	5	2
Common carp	1	0	3	0
Stonecat	0	0	6	9
Channel catfish	0	0	5	3

An average of 2.4 species were collected per net set in 1983-1984. The average number of species caught was nominally higher in 1983 than 1984 at all locations (Table 41), but was significantly higher only at Stony Island. The number of fish species per net set was highest during July-October at most locations in both years (Fig. 13). Catches were significantly greater in October than in May and July at Russell Island, and in July than in May at Stag Island (Table 41). There were no significant differences in the number of species collected per net set in the vegetated or non-vegetated areas at each location, and catches were not consistently higher in either type of habitat over all locations (Table 41). The number of species collected differed slightly between nets set in vegetated and non-vegetated areas in July and September (Fig. 14).

Abundance

The mean catch for all species combined was larger in 1983 than in 1984, increased from May to October, was larger in the St. Clair River than in the Detroit River, and was larger in nets set in vegetated than in non-vegetated areas (Table 42). To determine if these differences were significant, we analyzed the variance of total catch and the abundance of yellow perch and rock bass, the two most abundant species, against year, month, river, locations, and presence or absence of vegetation (Appendix T). Computationally, this is a lengthy analysis, and to simplify it, we analyzed each location separately. We found few significant differences in catch between years, among months, or between vegetated and non-vegetated areas.

The mean catch of all species combined was not significantly different between 1983 and 1984 at any of the locations (Table 43). The catch in 1984 was 69% lower than in 1983 at Stag Island and 29% higher than in 1983 at Stony Island. Differences in catch between years at each island declined progressively from upstream to downstream locations (Fig. 15). Thus, there was a 53% decline in the St. Clair River from 1983 to 1984 and a 16% decline in the Detroit River. Catches in July, August, and September, were 54, 44, and 65% lower, respectively, in 1984 than in 1983 (Fig. 16). Fluctuations between years were substantially lower in the Detroit than in the St. Clair river. Monthly trends in catch at each location changed little between years. Nets set in vegetated areas at Fawn Island contained significantly more fish than did those set in non-vegetated areas. At all other islands, catches in nets set in vegetated and non-vegetated areas did not differ significantly (Table 43). For all islands, catches were 50% less in 1984 than in 1983 in vegetated areas and 27% less in non-vegetated areas (Table 44). More fish were caught in nets set in vegetation in both rivers in 1983 and in the St. Clair River in 1984, but not in the Detroit River in 1984. Seasonal differences between catches in vegetated and non-vegetated areas were small in May and October and largest in June, July, and September (Fig. 17).

The mean catch of yellow perch was consistently higher in 1983 than in 1984, but this difference was significant only at Russell Island and Belle Isle (Table 45). Catches were higher in July, September, and October at most

Table 41. Mean numbers of fish species collected by year, month and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	2.5 1983	2.0 1984	3.6 Oct.	3.0 Sep.	1.9 June	1.6 May	1.1 July	2.3 (N)	2.2 (V)
Fawn Island	2.1 1983	1.9 1984	2.5 Sep.	2.5 July	2.0 Oct.	2.0 June	1.0 May	2.4 (V)	1.7 (N)
Russell Island	2.8 1983	2.2 1984	2.9 July	2.8 Sep.	2.8 Oct.	2.8 June	1.3 May	2.7 (V)	2.2 (N)
Belle Isle	2.4 1983	2.1 1984	2.9 Oct.	2.5 July	2.3 Sept.	2.1 May	1.5 June	2.4 (N)	2.1 (V)
Point Hennepin	2.2 1983	1.8 1984	2.6 Oct.	2.3 July	1.9 May	1.6 June	1.5 Sep.	2.1 (V)	1.9 (N)
Stony Island	3.7 1983	2.7 1984	4.1 Sep.	3.5 Oct.	3.1 June	2.9 July	2.4 May	3.4 (V)	3.0 (N)

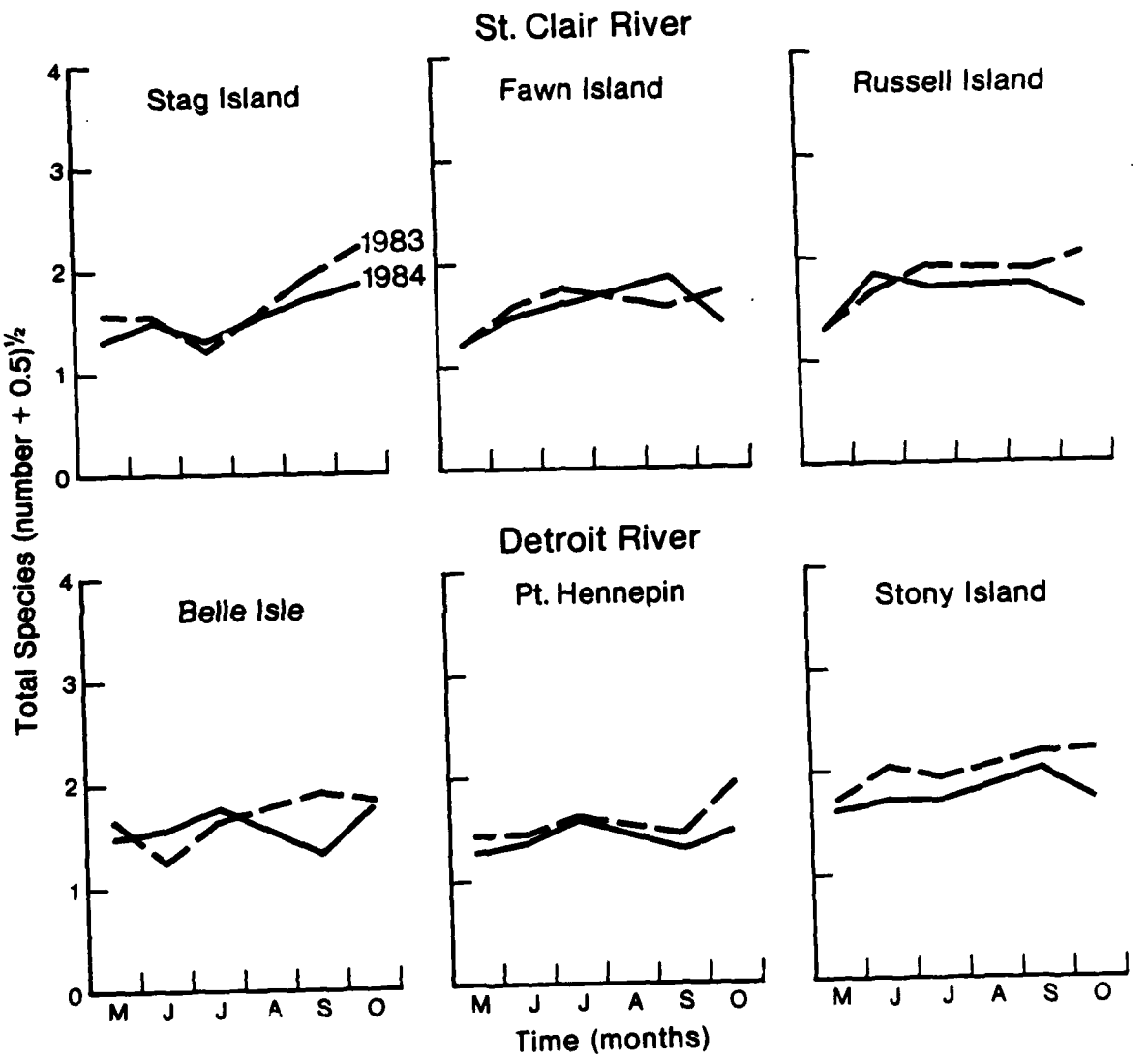

Figure 13. Seasonal diversity (square root of total number of species captured per net set + 0.5) of fish at six locations in the SCDRS.

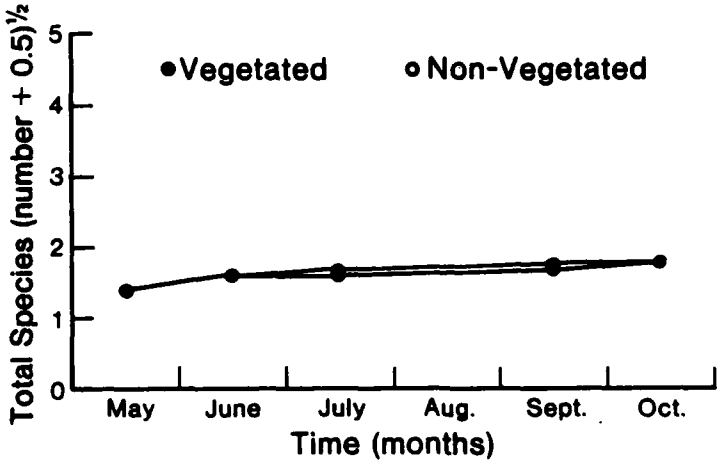

Figure 14. Seasonal diversity (square root of total number of species captured per net set + 0.5) of fishes in vegetated and non-vegetated areas.

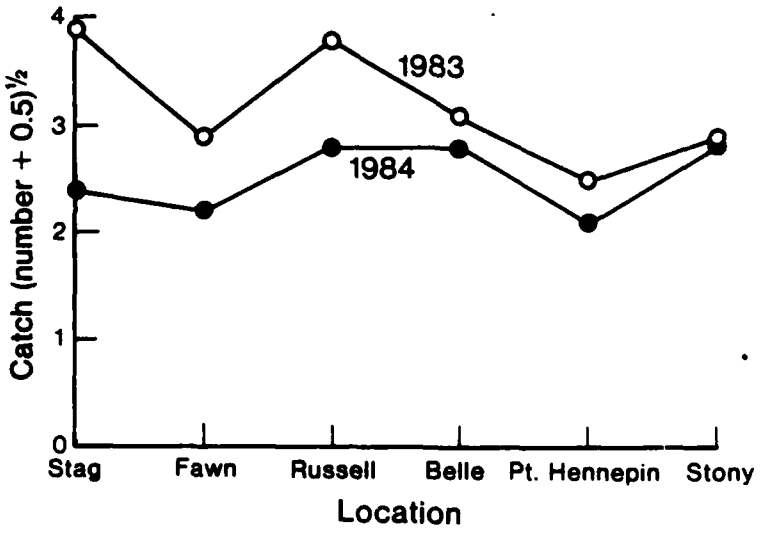

Figure 15. Mean catch (square root of mean catch + 0.5) of fish at six locations in the SCDRS.

Table 42. Mean total catch of fish by year, month, river, location, and vegetated and non-vegetated areas in the St. Clair and Detroit rivers.

Effect	N	Mean
Year		
1983	120	14.8
1984	120	8.6
Month		
May	48	5.5
June	48	9.1
July	48	13.1
September	48	14.2
October	48	16.6
River		
St. Clair	120	15.1
Detroit	120	8.4
Location		
Stag Island	40	18.5
Fawn Island	40	11.0
Russell Island	40	15.8
Belle Isle	40	9.3
Pt. Hennepin	40	6.6
Stony Island	40	9.2
Plants		
Non-vegetated	126	9.7
Vegetated	114	14.0

Table 43. Total catch of adult and juvenile fish by year, month, and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	28.2 1983	8.8 1984	47.5 Oct.	35.2 Sep.	3.6 May	3.5 June	2.5 July	21.0 (N)	16.0 (V)
Fawn Island	14.0 1983	8.1 1984	18.8 July	16.9 Sep.	10.2 June	9.2 Oct.	0.1 May	20.4 (V)	4.2 (N)
Russell Island	19.2 1983	12.2 1984	30.2 July	22.1 June	12.8 Sep.	10.2 Oct.	3.4 May	17.8 (V)	13.5 (N)
Belle Isle	11.0 1983	7.6 1984	15.0 Oct.	10.4 July	7.6 May	7.0 June	6.5 Sep.	9.6 (N)	8.9 (V)
Point Hennepin	8.2 1983	5.0 1984	10.5 Oct.	10.2 July	5.2 May	3.8 Sep.	3.2 June	7.4 (V)	5.9 (N)
Stony Island	10.3 1984	8.0 1983	13.2 May	10.2 Sep.	8.5 June	7.4 Oct.	6.4 July	10.2 (N)	7.9 (V)

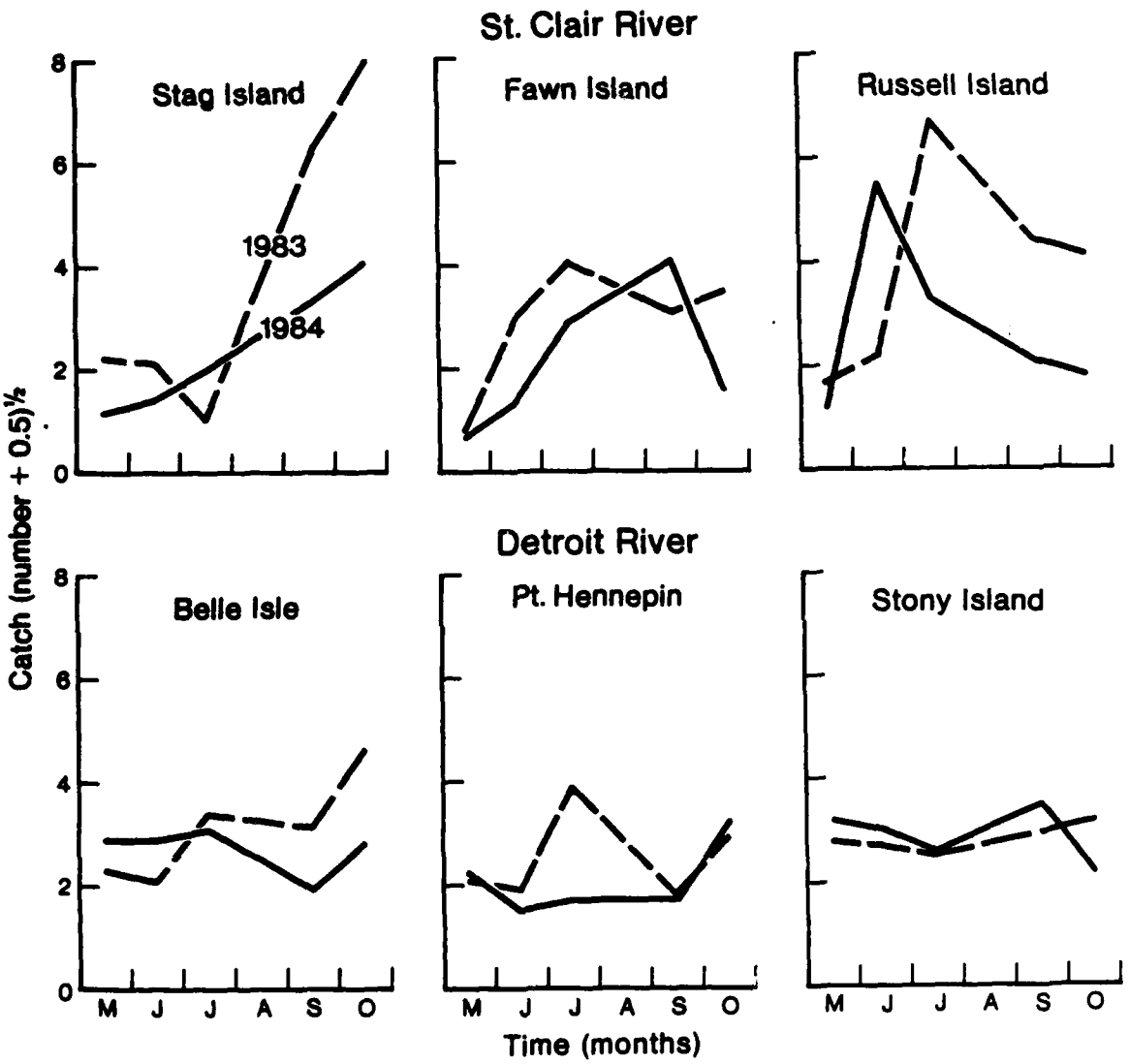

Figure 16. Mean seasonal catch (square root of mean catch + 0.5) of fish at six locations in the SCDRS.

Table 44. Number of fish caught by month in vegetated and non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

Month	St. Clair River				Detroit River			
	Vegetated		Non-vegetated		Vegetated		Non-vegetated	
	1983	1984	1983	1984	1983	1984	1983	1984
May	24	7	23	3	32	8	50	120
June	86	109	32	60	18	56	50	26
July	179	78	111	44	80	28	61	47
September	232	88	116	82	53	30	37	44
October	295	40	130	71	96	51	66	46
Total	816	322	412	260	279	173	264	283

Table 44. Number of fish caught by month in vegetated and non-vegetated areas in the St. Clair and Detroit rivers in 1983 and 1984.

Month	St. Clair River				Detroit River			
	Vegetated		Non-vegetated		Vegetated		Non-vegetated	
	1983	1984	1983	1984	1983	1984	1983	1984
May	24	7	23	3	32	8	50	120
June	86	109	32	60	18	56	50	26
July	179	78	111	44	80	28	61	47
September	232	88	116	82	53	30	37	44
October	295	40	130	71	96	51	66	46
Total	816	322	412	260	279	173	264	283

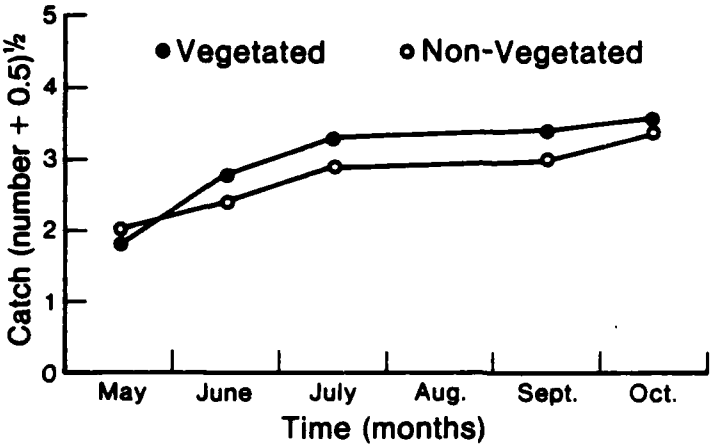

Figure 17. Mean monthly catch (square root of mean catch + 0.5) of fishes in vegetated and non-vegetated areas.

Table 45. Mean number of yellow perch collected by year, month, and in vegetated (V) and non-vegetated (N) in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	17.5	3.5	28.1	24.3	0.4	0.0	0.0	13.7	7.4
	1983	1984	Oct.	Sep.	July	May	June	(V)	(N)
Fawn Island	9.9	6.0	14.4	11.5	7.9	6.3	0.0	15.8	2.3
	1983	1984	July	Sep.	June	Oct.	May	(V)	(N)
Russell Island	9.1	2.9	17.0	5.4	4.8	2.3	0.8	7.2	4.7
	1983	1984	July	Sep.	Oct.	June	May	(V)	(N)
Belle Isle	6.2	1.8	9.8	4.9	2.9	1.9	0.8	4.4	3.7
	1983	1984	Oct.	July	Sep.	May	June	(V)	(N)
Point Hennepin	5.3	3.5	8.5	7.3	3.0	2.4	1.0	5.5	3.4
	1983	1984	Oct.	July	Sep.	May	June	(V)	(N)
Stony Island	1.3	0.3	1.8	0.9	0.6	0.5	0.4	1.3	0.5
	1983	1984	May	Sep.	July	June	Oct.	(V)	(N)

locations, but the differences were significant only at Stag Island, Russell Island and Belle Isle (Fig. 18). Significantly more yellow perch were caught in nets set in vegetation than in non-vegetated areas at Fawn Island (Table 45); differences were greatest in June, July, and September (Fig. 19).

Rock bass densities were higher in 1983 than 1984, but were significantly higher only at Russell Island and Belle Isle (Table 46). Monthly differences were significant only at Stag and Russell islands, and catches were dominant in either July, September, or October (Table 46). Monthly trends at each location did not differ by year (Fig. 20). Catches of rock bass over all locations did not differ significantly between vegetated and non-vegetated areas (Fig. 21). The total combined catch of the remaining species was higher in 1983 than in 1984 (Table 37); however, more rainbow smelt, channel catfish, white suckers, stonecats, alewives, and walleyes were caught in 1984 than in 1983. Catches of all species were greater in the St. Clair than in the Detroit River except for common carp in 1983 and rock bass, spottail shiners, and white suckers in 1984 (Table 38). Few consistent trends relating abundance of these species to the presence or absence of plants were evident (Table 39), although channel catfish, smallmouth bass, and white suckers were more abundant in both years in non-vegetated areas.

Most of the fish that we caught were adults rather than juveniles, as evidenced by their mean length (Table 37). The only juveniles we captured frequently were yellow perch and rock bass. Although fewer fish were caught in 1984 than in 1983, most were larger in 1984 than in 1983. Total fish biomass was also greater in 1984 than in 1983 (Table 38). Several large white suckers and channel catfish captured in the Detroit River caused the total biomass there to be larger than in the St. Clair River, even though more fish were captured in the St. Clair River.

Total biomass of all species, except rock bass and white sucker, was lower in 1984 than in 1983 (Table 38). The relation between total biomass of most species and their presence in vegetation was strong in 1983 but weak in 1984 (Table 39). Weights of yellow perch, hornyhead chubs, striped shiners, and spottail shiners were higher in vegetated than in non-vegetated areas in 1983, but were about equal in the two types of areas in 1984. A consistent trend over both years was that of the catch of rock bass, channel catfish, smallmouth bass and white suckers being greater in non-vegetated than in vegetated areas. Total weights of fish caught increased from May to October (Table 47). Large monthly differences in biomass between years and rivers resulted from the catch of a few large species such as white sucker, channel catfish and common carp.

Relationship between Fish and Physical Environment

A correlation analysis between fish catch data and environmental variables (water depth, temperature, current velocity, and light transmission) over various combinations of bottom type (silt-clay, sand, rubble), in vegetated and non-vegetated areas resulted in few significant correlations. Yellow perch numbers correlated positively with temperature in two instances, and

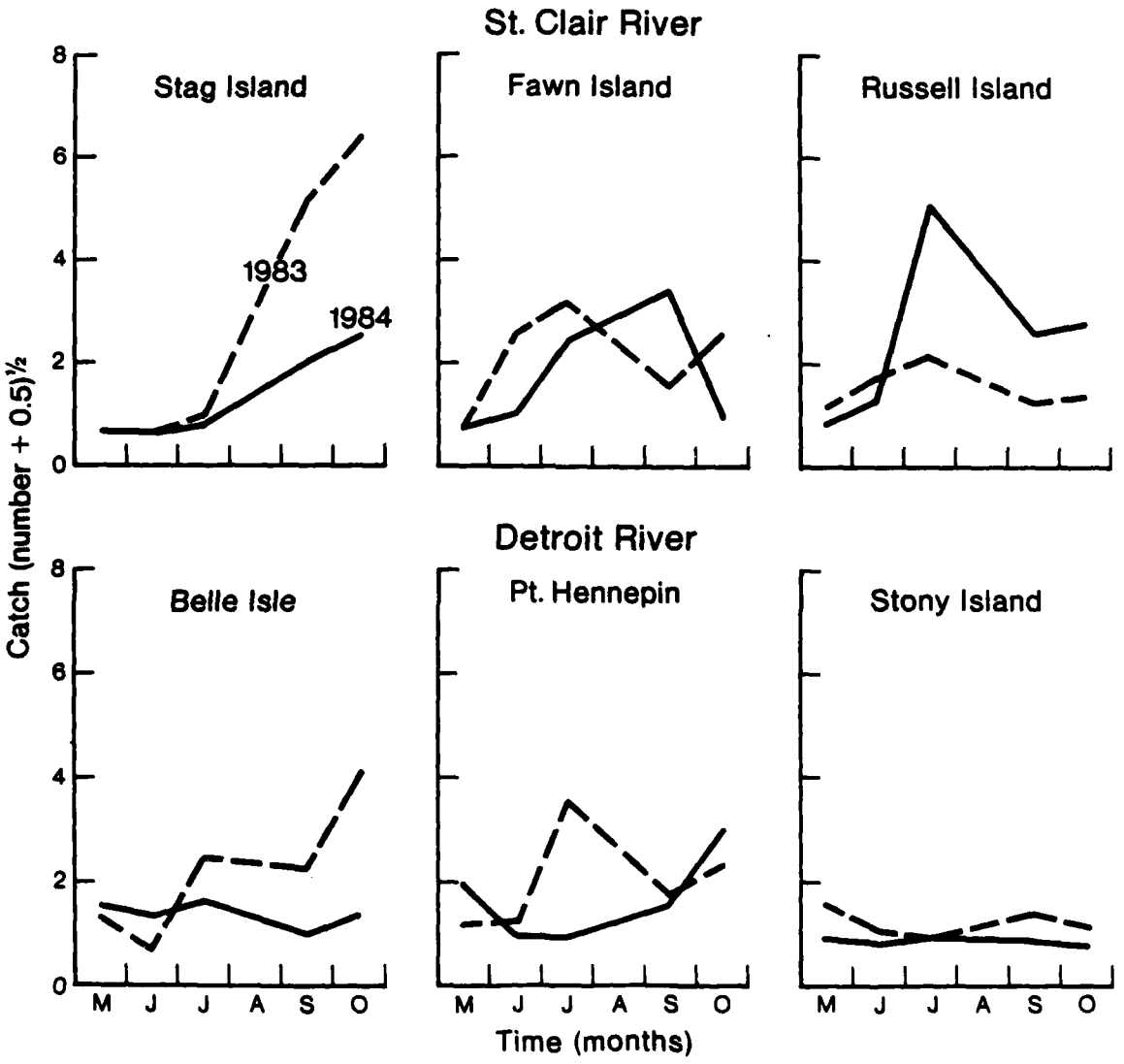

Figure 18. Mean seasonal catch (square root of mean catch + 0.5) of yellow perch at six locations in the SCDRS.

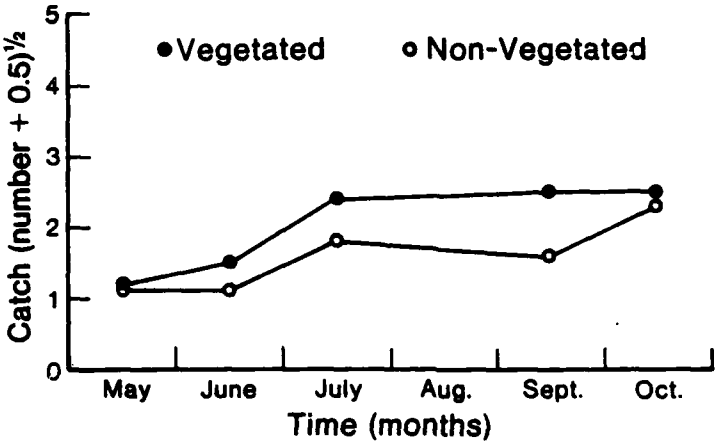

Figure 19. Mean monthly catch (square root of mean catch + 0.5) of yellow perch in vegetated and non-vegetated areas.

Table 46. Mean number of rock bass collected by year, month, and in vegetated (V) and non-vegetated (N) areas in the St. Clair and Detroit rivers. Adjacent values that are jointly underlined are not significantly different ($P \leq 0.05$).

Location	Years		Months					Area	
Stag Island	1.6 1983	1.5 1984	4.1 Oct.	2.0 July	1.0 Sep.	0.4 June	0.4 May	1.8 (N)	1.3 (V)
Fawn Island	2.1 1983	1.2 1984	3.6 Sep.	2.6 July	2.1 Oct.	0.0 May	0.0 June	2.6 (V)	1.0 (N)
Russell Island	3.8 1983	1.7 1984	6.0 July	4.3 Sep.	2.6 Oct.	0.9 June	0.1 May	4.1 (N)	1.6 (V)
Belle Isle	5.3 1984	3.3 1983	6.1 June	4.8 July	4.3 Oct.	3.0 Sep.	3.5 May	4.6 (N)	4.0 (V)
Point Hennepin	1.1 1983	0.6 1984	1.8 May	0.9 July	0.8 Oct.	0.8 June	0.4 Sep.	0.9 (V)	0.9 (N)
Stony Island	2.6 1983	1.9 1984	2.8 May	2.5 June	2.4 Oct.	2.0 July	1.9 Sep.	2.4 (N)	2.2 (V)

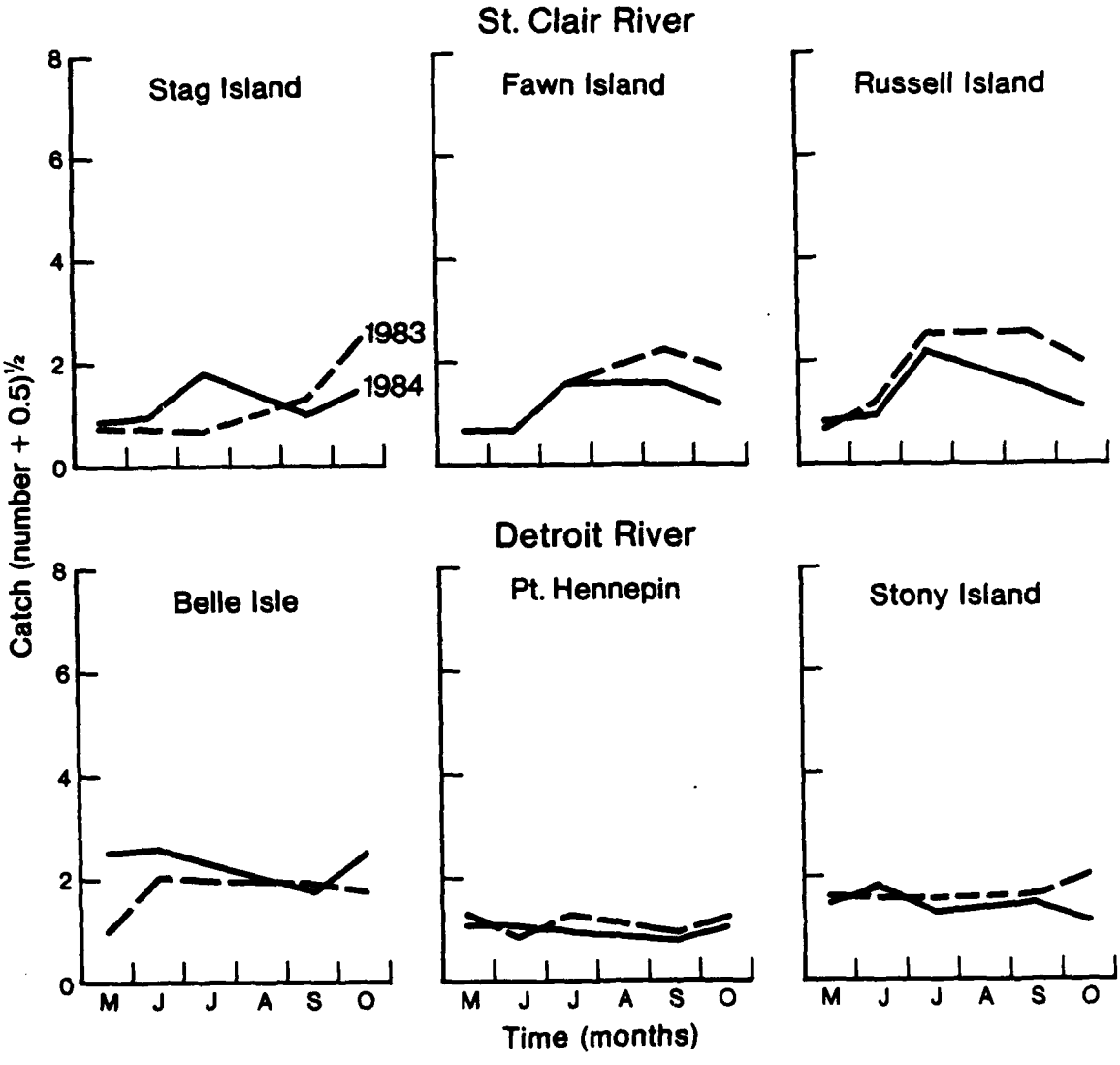

Figure 20. Mean seasonal catch (square root of mean catch + 0.5) of rock bass at six locations in the SCDRS.

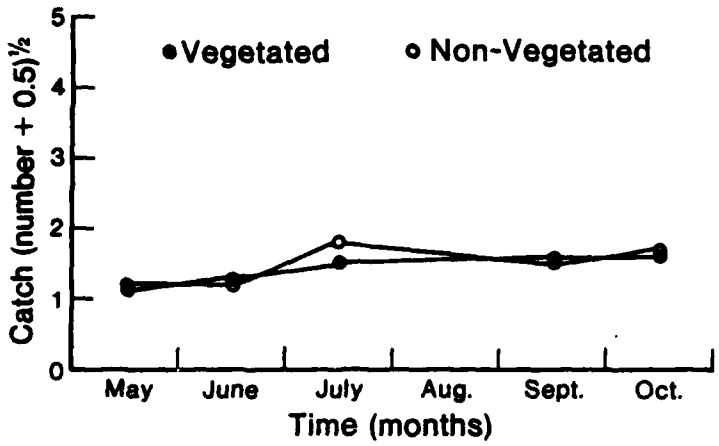

Figure 21. Mean monthly catch (square root of mean catch + 0.5) of rock bass in vegetated and non-vegetated areas.

Table 47. Total weights of common fishes collected in the St. Clair and Detroit rivers in May-October, 1983 and 1984.

Month and species	St. Clair River		Detroit River	
	1983	1984	1983	1984
May				
Rainbow smelt	296	0	82	0
Spottail shiner	200	0	145	32
White sucker	840	0	0	46030
Rock bass	6	848	1618	4477
Yellow perch	6	82	750	827
Stonecat	0	0	220	298
Walleye	0	0	0	1660
Golden redhorse	0	1200	0	0
June				
Yellow perch	736	719	226	521
Striped shiner	197	0	0	0
Hornyhead chub	233	0	0	40
Rainbow smelt	72	1260	0	0
Rock bass	478	872	1910	3744
Trout-perch	10	24	0	0
Spottail shiner	0	14	102	49
White perch	0	0	435	0
White bass	0	0	1227	470
Walleye	0	762	0	0
Stonecat	0	0	54	2428
Bowfin	1400	0	0	0
White sucker	840	0	0	0
Common carp	0	0	4700	0
Black redhorse	0	0	900	0
Bigmouth buffalo	0	0	800	0
Freshwater drum	0	0	680	0
July				
Yellow perch	5516	2685	2187	939
Hornyhead chub	944	149	144	12
Rock bass	3596	6647	2838	1271
Alewife	31	0	0	16
Pumpkinseed	60	0	0	224
Spottail shiner	9	0	77	46
Channel catfish	0	0	1770	1582
Black redhorse	0	0	530	652
Smallmouth bass	0	1944	0	0
Common carp	0	0	0	5100
Walleye	0	0	0	890
September				
Yellow perch	4594	3660	1041	543
Rock bass	3887	2510	1049	2246
Hornyhead chub	616	41	12	46
Smallmouth bass	309	0	0	0
Spottail shiner	206	8	33	0
White sucker	84	0	0	0
Northern pike	1500	1700	0	0
Black crappie	120	352	0	0
Pumpkinseed	14	100	200	0
Channel catfish	0	0	7704	25484
Common carp	0	0	3024	0
Stonecat	0	0	268	250
Black redhorse	0	2722	537	1020
Alewife	0	174	0	0
Walleye	0	680	0	0
Golden redhorse	0	0	1582	0
Freshwater drum	0	630	0	0
Brown bullhead	0	0	0	1462
Rainbow trout	0	258	0	0
October				
Brown bullhead	0	0	468	0
Yellow perch	7539	3040	1927	2321
Hornyhead chub	1064	446	62	32
Rock bass	3141	1907	1856	1601
Striped shiner	608	0	0	0
Black crappie	720	0	350	12
White sucker	51	6547	100	0
Spottail shiner	50	0	0	8
Smallmouth bass	14	0	51	38
Common carp	2700	0	4100	0
Stonecat	0	0	842	912
Channel catfish	0	0	6984	2122
Northern pike	0	0	2000	0
Walleye	0	0	0	1100
American eel	0	0	0	300

rock bass numbers correlated negatively with current velocities in four instances and positively with temperature in two instances. Total number of species and total weight had several positive associations with temperature. Associations with temperature were most common and those with current velocities the least common. The substrate with which the four species were most commonly associated was sandy, with or without vegetation.

For a summary analysis, we determined mean catch and weight of all species combined, total number of species collected, mean catch of yellow perch, rock bass, hornyhead chubs, and spottail shiners associated with six sediment-vegetation combinations. The highest and lowest catches and diversity (number of species) were then listed with the various sediment-vegetation combinations (Table 48). For example, the highest mean catch of hornyhead chubs per net set was highest in sandy areas in vegetation and lowest in non-vegetated rubble areas. We also found that low current velocities were associated with fine sediments and faster currents with coarse material. Vegetation tended to be in areas with slower currents. Yellow perch were collected most often in vegetation, regardless of sediment type; rock bass were taken over rubble without regard to vegetative cover; and hornyhead chubs and spottail shiners were most often caught over fine sediments in vegetated areas.

DISCUSSION

DISTRIBUTION AND ABUNDANCE OF MACROZOOBENTHOS

The number of taxa of macrozoobenthos listed in this study (160) exceeded that in any work on SCDRS, including that of Hiltunen (1980), Hiltunen and Manny (1982), Ontario Ministry of the Environment (1979), Thornley and Hamdy (1984), and Thornley (1985). The number of such taxa reported for any aquatic system depends primarily on the level of taxonomic treatment and the timing and extent of the sampling program. In the present study, we attempted to identify most specimens at least to genus (which potentially lengthened our list relative to those in the other published works), but we also limited our sampling to near-channel areas and to spring and fall (which potentially shortened the list). Our list (Appendix C) was also made somewhat longer than those in earlier works by the inclusion of Copepoda and Cladocera. However, our list might have exceeded 300 species, if we had identified all specimens to species, particularly within the Chironomidae, Ephemeroptera, Trichoptera, Odonata, and Oligochaeta, and added the other remaining taxa.

Our collections contained all of the major taxa listed in past studies in SCDRS but did not include several less abundant taxa such as Crangonyx, Dolichopodidae (Hiltunen 1980), and Pseudocleon (Ontario Ministry of the Environment 1979). In addition, we collected several common chironomid genera (Robackia, Chernoskia, and Lopescladius) that had not been reported from the system. These chironomids were common in the less productive sand-gravel sediments and their abundance may have been underestimated because their thin body form and small size allowed them to escape through the sieve (this is a common problem

Table 48. Fish catches and associated environmental conditions in the St. Clair and Detroit rivers in 1983-1984.

Physical characteristics and catch	Vegetation					
	Absent			Present		
Bottom type	Silt-clay	Sand	Rubble	Silt-clay	Sand	Rubble
Mean depth (ft)	4.3	4.0	5.0	4.4	4.0	4.7
Mean current (ft/s)	0.6	1.1	1.1	0.4	1.1	1.1
Catch						
Mean wt, all species		Lowest	Highest			
Mean catch, all species					Highest	Lowest
Diversity		Lowest				Highest
Catch of hornyhead chub			Lowest		Highest	
Catch of yellow perch			Lowest		Highest	
Catch of spottail shiner		Lowest			Highest	
Catch of rock bass					Lowest	Highest

with "rare" taxa, which often are merely not adequately sampled).

Comparison of zoobenthos diversity in large river systems is difficult because taxonomic detail is usually inadequate. The following studies are exceptions. Barton (1980) collected 114 taxa of benthic macroinvertebrates from the Athabasca River in northern Alberta, Canada. Hudson and Nichols (In Press) recorded 206 taxa from the Savannah River, South Carolina-Georgia. The list of 334 taxa from the wave-zone habitat (0 to 2-m depth zone) of the exposed shores of the Canadian portion of the Great Lakes (Barton and Hynes 1978) surpassed that for SCDRS. Although several taxonomic groups (e.g. oligochaetes, chironomids) were treated at different taxonomic levels in the two studies, the overall similarity was striking. The higher diversities of mayflies and stoneflies in the wave-zone and clams and leeches in SCDRS are noteworthy exceptions. Barton (1980) pointed out the greater diversity of sand-dwelling animals in rivers connecting ancient bodies of water with waveswept shores, such as those of Lake Baikal, Black Sea, and Caspian Sea, and stated that there are no ecological equivalents in glaciated North America. Barton used mollusks and malacostracans as examples of relict fauna not found in glaciated North America, but SCDRS may be an exception because both groups are well represented.

Variability in type of gear and sieve size, plus the great seasonal variability in numbers of small individuals or instars, makes the value of numerical comparisons of abundance between investigations dubious. This becomes immediately obvious when one realizes that our densities were at least 10 times higher than those reported by Thornley (1985) for SCDRS. Some of the differences may reflect an increase in macrozoobenthos numbers and diversity over time as a result of pollution abatement measures that occurred in the 1960's and 1970's. However, differences in the amount and distribution of sampling effort and in sampling and processing techniques all probably contributed to the difference--which points out clearly the need for standardization. Other gross differences in density between areas may reflect differences in productivity. Barton and Lock (1979) suggested an average density of benthic organisms of about 2,000/m^2 in the Athabasca River, as well as many other streams. Barton and Smith (1984) provided estimates of total invertebrates for a variety of rivers in the world that ranged from 17/m^2 in the Danube River (Bulgaria) to 40,000/m^2 in certain areas of the Athabasca River. Spring and fall densities we measured in SCDRS averaged 24,000/m^2. Assuming a sampling efficiency of only about 50% (Barton and Smith 1984) due to the large mesh size of the sieves we used, the densities in SCDRS may have exceeded those in most rivers of the world.

However, one can usually make confident quantitative comparisons of biomass, which are affected less from presence or absence of large numbers of small individuals, and by comparing selected species such as Hexagenia. Biomass estimates for large rivers (Barton and Smith 1984) ranged from 0.1 to 8.6 g/m^2 and our value of 1.33 g/m^2 for the SCDRS equals or exceeds values for six of the eight rivers listed. The mean biomass for SCDRS is higher than most

listed for rivers below impoundments (Walburg et al. 1983), and is nearly identical to that reported for the St. Lawrence River (1.4 g/m²) by Mills et al. (1981). Densities of Hexagenia in spring in SCDRS (235/m²) were higher than those reported by Hudson and Swanson (1972) for a Missouri River reservoir (140/m²), but somewhat lower than those reported by Hiltunen and Schloesser (1983) for the St. Marys River (361/m²). Densities of Hexagenia at transect VI in the St. Clair River in October 1984, which ranged from 3,600 to 6,730/m², are among the highest densities reported in the literature, and exceed the maximum density (50/m²) recorded by Thornley (1985) in the St. Clair River in 1968 and 1977.

Large within-year and between-year variations in abundance of macrozoobenthos can typically be traced to life cycle patterns. Most invertebrates complete several generations a year, causing population structure to shift in a matter of weeks from one dominated by large mature individuals to one of mainly small, immature specimens. Because density of most taxa in SCDRS is higher in fall, we might assume that age structure in fall is dominated by young individuals that are subject to overwinter mortality. In contrast, populations with maximum densities in spring may be cold-adapted forms that overwinter with little mortality or grow at low temperatures, and were recruited to our No. 30 mesh screen by May. Several genera of chironomids have this adaptation to low temperature. Of the 24 taxa we analyzed in detail, 19 had maximum densities during the same month in successive years, and differences in densities between years were usually less than 30%. Hydra, Oligochaeta, Manayunkia, Chironomidae, and Acarina were the only taxa with large, erratic seasonal and yearly changes in density. Hiltunen (1980) noted large fluxes between years in the oligochaete population in the St. Clair River. These large changes in density were probably due to the life history of oligochaetes, to differences in behavior of the multiple species in this large group or both.

Of the abundant taxa, 75% were most numerous at the shallower off-channel stations. The relative difference in densities between off-channel and channel stations is probably a true reflection of the life history requirements of each taxon, whereas the absolute difference between stations is probably a sampling artifact. Channel stations in particular are characterized by higher current velocity and coarser sediments. The Ponar dredge is inefficient in fast currents, and in the hard clay or rubble substrate, that is characteristic of the channel bank stations. Many taxa (e.g. Gastropoda, Diptera, Trichoptera, and Ephemeroptera) may be abundant in these inadequately sampled areas with fast currents and hard substrate.

Sediment particle size and contaminant distribution basically determine the composition and density of the benthic community in SCDRS. The St. Clair River, with its wider range of sediment size and diversity of macrophytes is dominated by aquatic insects, amphipods, and snails that are intolerant of pollution. Our samples were collected mainly along the U.S. shoreline, which is less contaminated than Canadian nearshore waters (Kauss and Hamdy 1985). The diversity of macrozoobenthos in the Detroit River near Belle Isle is similar to that in the St. Clair River. The headwater areas of both rivers support large populations of the filter-feeding caddisflies Cheumatopsyche and

Hydropsyche. Densities of these two genera are higher in the Detroit River than in the St. Clair River, probably because seston levels are higher in Lake St. Clair than in Lake Huron (Kauss and Hamdy 1985). Concentrations of contaminants were moderately high in the lower Detroit River (Transect XVIII) but were low at stations along Grosse Ile (Limnotech, Inc. 1985). The bottom fauna near transect XVIII was dominated by oligochaetes, and the fine sediments were contaminated with oil. The variety of invertebrates was greater but the densities were lower in the gravel-cobble substrate of transects XIX-XXI than at transects in the upper Detroit River. The densities of most of the more primitive invertebrates, such as Oligochaeta, Nematoda, Nemertinea, and Manayunkia, were highest in the Detroit River. The transects in Lake St. Clair were devoid of macrophytes but the substrate was covered with Cladophora in October. The lake community was simple, consisting of Hexagenia, Oecetis, Sphaeriidae, Ostracoda, and Nematoda, and was typical of any healthy, lentic community living on a bottom composed of fine sediments.

Sand, a dominant substrate in many large rivers, is unsuitable habitat for many benthic invertebrates (Barton and Lock 1979; Berner 1951). In the St. Clair, Detroit, and Athabasca rivers, dominant sediments range from sand in the Athabasca River to mud in the Detroit River (Table 49). The constant flow, low turbidity, and luxuriant plant growth in SCDRS must be major factors in stabilizing and incorporating finer sediments into what would probably be a typical river and sand habitat. Although current velocities are relatively high in SCDRS, most of the littoral substrates contain relatively high percentages of silt and clay that support large populations of insects and crustaceans. This situation may be analogous to that in the Volga and Angara rivers in Russia, which also support high biomasses of amphipods and oligochaetes (Barton and Smith 1984). The Athabasca River, in contrast, is turbid; the substrate is shifting sand that cortains little silt or clay; and the biomass of macroinvertebrates is relatively low (Barton 1980).

In summary, the high abundance and diversity of macrozoobenthos in SCDRS is due to the quality and diversity of the habitat: (1) high-quality water enters SCDRS from Lake Huron, (2) a wide variety of stable sediments are available, ranging from cohesive clay to cobble, (3) current velocities vary widely, ranging from 0 to 6 ft/s, and (4) submersed and emergent macrophytes are diverse and abundant.

DISTRIBUTION AND ABUNDANCE OF SUBMERSED MACROPHYTES

The submersed macrophyte community in the St. Clair and Detroit rivers changed little from 1983 to 1984. Frequency of occurrence of individual taxa between years varied by $\leq$ 7% in each river and was usually < 10% at each location. The few large discrepancies could be attributed to taxonomic or sampling problems. For example, at Point Hennepin, the occurrence of narrow-leaf Potamogeton spp. in June was 22% lower in 1984 than in 1983, but that of P. zosteriformis was 39% higher. Inasmuch as these two taxa superficially resemble each other early in the season, those collected in 1984 may have been Potamogeton spp. and those collected in 1983 may have been P. zosteriformis.

Table 49. Sediment composition (% of total) in three large rivers in North America.

Sediment	River		
	Athabasca (Alberta, Canada)	St. Clair	Detroit
Mud	8	17	56
Muddy sand	28	49	23
Sand	48	4	2
Gravel	16	30	18

The abundance of P. richardsonii in the June collections at Point Hennepin was 24% higher in 1984 than in 1983. The increase was due in part to the fact that a large bed of P. richardsonii in deep water was discovered and sampled routinely only after it broke the surface in July-August 1983.

The macrophyte community in SCDRS has remained stable since at least 1978. Schloesser and Manny (1982) collected one more taxon (19) in 1978 than we did and recorded the same dominant taxa by area (Chara spp. in the St. Clair River and Vallisneria americana in the Detroit River). In our study, maximum coverage averaged 53% over the six locations and varied less than 12% between years. Schloesser and Manny (1982) found submersed macrophytes at 68% of their stations, none of which were located in the shipping channel. Because a portion of our sampling grid extended into the shipping channel, where few plants lived, our estimates of percent cover on the shoals would have to be adjusted upward to be comparable with theirs. If that adjustment was made, our results would be similar to theirs.

The percent occurrence of taxa at our island locations also varied from that given by Schloesser and Manny (1982), who sampled most extensively in littoral waters adjacent to the Canadian and U.S. mainland (Table 50). The occurrences of V. americana, P. richardsonii, Myriophyllum spicatum, and Elodea canadensis were lower at our St. Clair River island locations than reported by Schloesser and Manny (1982) at their mainland stations. Potamogeton gramineus and particularly Potamogeton spp. were more abundant at our locations than at their adjacent mainland locations. In the Detroit River, Potamogeton spp., V. americana, P. richardsonii, and Characeae were more common at our sampling locations, whereas Heteranthera dubia was more common at their mainland locations. Some of these differences may reflect design and sampling differences, but it appears that at least Potamogeton spp. are more common in shoal areas at the head and side of islands in SCDRS than along the U.S. and Canadian mainland shorelines. The factor most affecting the distribution of aquatic macrophytes is bottom type, which is largely determined by current velocity (Westlake 1975). Current velocities at the heads of islands in SCDRS are higher than those along the mainland shore; this difference may affect soil textures and the ability of various species to anchor in a given sediment (Ozimek et al. 1976).

Extensive monospecific stands of submersed macrophytes were largely lacking at the six sampling locations in SCDRS. Large stands of Chara spp. at Fawn Island and Vallisneria americana at Point Hennepin were the exceptions. The average number of taxa per grab was 2.5 over all locations and was highest (3.3) at Belle Isle. Crowder et al. (1977) found a mean value of 5.5 taxa in Lake Opinicon, Ontario, but their sampling area (25-cm-square quadrant) was somewhat larger than ours; Liston and McNabb (1986) collected about 2 taxa per Ponar grab in the St. Marys River.

Schloesser and Manny (1982) found that the areal distribution of macrophytes was more limited in the Detroit River than in the St. Clair River, but wrote that the proportion of plant beds with high, medium, and low densities was

Table 50. Percent frequency of occurrence of dominant submersed macrophytes collected in littoral mainland areas (Schloesser and Manny 1982) and on island shoals (present study) in the St. Clair and Detroit rivers.

Taxon	St. Clair River		Detroit River	
	Mainland	Island shoals	Mainland	Island shoals
Vallisneria americana	28	4	49	70
Characeae	68	74	9	23
Potamogeton richardsonii	49	32	4	21
Myriophyllum spicatum	28	8	13	20
Elodea candensis	36	25	7	7
Heteranthera dubia	1	1	31	7
Potamogeton spp.	24	54	3	30
Najas flexilis	1	5	5	5
Potamogeton gramineus	11	24	3	5

similar in the two rivers. We found similar bed coverage between rivers and a 12% lower biomass in the Detroit River. Schloesser and Manny (1982) reported that maximum seasonal biomass over the entire system ranged from 118 to 427 g/m². Our September biomass estimates ranged from 93 to 265 g/m² over the six locations, and the highest seasonal biomass was 382 g/m², in block 6 at Stony Island.

Maximum biomass estimates for SCDRS made by Schloesser and Manny (1982) and by us were at the lower end of a range of 110-520 g/m² reported by Westlake (1963) for aquatic macrophyte stands in rivers at temperate latitudes. The mean biomass of 176 g/m² in SCDRS in September is similar to maximum values of 150 g/m² measured in the shallow littoral area of the St. Lawrence River (Cooley 1978) and 170 g/m² in the Red Cedar River, Michigan (Ball and Bahr 1975). In the Red Cedar River, several years of low discharge were followed by several years of record high flows that scoured and eliminated most of the macrophytes. Scouring due to extended high flows does not occur in SCDRS, and once macrophyte beds become established, it seems likely that only dredging or filling activities would physically remove them. The spring ice jam of 1984 did not scour beds, however the soft frazzle ice which typified this jam may not be an effective scouring agent.

Maximum summer biomass of submersed macrophytes in SCDRS is probably not related to nutrient availability. Nitrogen (200-400 µg/ℓ) and phosphorus (2-30 µg/ℓ) in the system were near the concentrations (100-200 µg/ℓ and 20-30 µg/ℓ, respectively) that Westlake (1975) believed to be sufficient to support optimum growth; the exception may be in the St. Clair River, where mean phosphorus levels were reported to be only 12 µg/ℓ (Ontario Ministry of the Environment 1979).

The seasonal growth patterns we found agreed largely with those reported by Schloesser et al. (1985). We found a higher biomass in September at every location, although biomass values for September were not significantly different from those for July-August at Belle Isle and Point Hennepin. Of the four locations we sampled in common, we were in agreement at Russell Island (October maximum), Belle Isle (August-September maximum), and Grosse Ile (August maximum). At Stag Island Schloesser et al. (1985) found Potamogeton spp. peaked in July and P. richardsonii in August; we found proportional increases in both taxa from June to September. Brown (1983) also recorded maximum biomass in Anchor Bay between August and November. The growing season for aquatic angiosperms is restricted to periods when water temperatures exceed 50°F (Haag 1979, Kunii 1981). The ice jam in the St. Clair River, in spring 1984 delayed the rise of water temperatures to 50°F by about 10 days but this delay did not affect the date on which maximum seasonal biomass was reached.

In the Detroit River, turbidity may reduce light penetration and prevent the development of certain species of submersed macrophytes in the deeper portions of the littoral area. It is a general view that aquatic macrophytes extend to depths receiving only 1-4% of surface light (Sculthorpe 1967), although a limit of 15% was observed by Bodkin et al. (1980). Chambers and Kalff (1985) found that angiosperms were limited to depths where an average of

at least 21% of the photosynthetically active radiation incident on the water surface was received over the growing season. The average light transmission to the bottom of the littoral area in the Detroit River (16%) is near the lower limit for plant growth; consequently any increase in turbidity in the Detroit River during the early growing season may eliminate some of the more light-sensitive species such as P. crispus and P. pectinatus (Sheldon and Boylen 1977).

The reduction of current velocity by vegetation in a lotic system is well documented (Gregg and Rose 1982; Nowell and Jumars 1984), and such a reduction clearly may allow small fish to live in areas where current velocity would otherwise exclude them. In addition, vegetation harbors benthic invertebrate food organisms and provides cover for juvenile fishes (Werner et al. 1983).

Macrophytes affect invertebrate community structure and abundance both directly and indirectly. Submersed macrophytes, by modifying the current, influence sediment deposition and thus influence the composition of invertebrate species on the bottom. Macrophytes create heterogeneity and can increase habitable surface area over a square meter of bottom by a factor of 2 (Brown et al. 1986). The most important function served by submersed macrophytes may be provided in fall, when the plants die and the plant material is released in a "pulse" in a form that can be rapidly used by aquatic detritivores (Hill and Webster 1983). In the New River, Virginia, this pulse accounted for 13.1% of the total annual organic input (including periphyton and allochthonous inputs) to the river and for 28% of the input generated within the middle reach of the stream (Hill and Webster 1983). The organic input provided by submersed plants is probably much greater in the SCDRS than in rivers such as the New River because little other organic matter that enters the SCDRS is derived from the watershed with the exception of storm sewers in the city of Detroit.

The taxonomic composition and abundance of aquatic macrophytes in SCDRS probably reflect the stability of flow more than any other environmental variable. The lack of spates provides long-term stability to the system. The pattern of distribution in the system reflects physiological and morphological adaptations of the macrophytes to light and current and results in communities that are fairly predictable. These developing beds then modify the current and light, thus allowing additional species to exploit this new microhabitat. Because competition and space are limited, this development is less predictable and prevents recognition of consistent associations between species. Differences in seasonal growth of different taxa further complicate the system, but they are predictable and further increase stability.

DISTRIBUTION AND ABUNDANCE OF FISH

Most species of fish in the vicinity of island shoals in the St. Clair and Detroit rivers where our collections were made are either rare, transient species, or prefer other areas of the river. Our small hoop nets collected mostly yellow perch and rock bass, along with 34 other species. Larger trap nets (77 m long lead, 1.8 m deep heart) set by the Michigan Department of

Natural Resources (Haas et al. 1986) at the outer fringes of the shoal areas also collected mainly adult yellow perch and rock bass, along with 46 other species. Cosentino (1983) found 14 species commonly in a marsh-bay complex in the St. Clair River near Russell Island; however, only 6 of these were collected in our study. Island shoals, because of their openness and vulnerability to environmental extremes, may typically have fish communities dominated by only a few species.

It is also possible that the community of fish inhabiting the island shoals was not adequately sampled by our gear. This inadequacy would account for both variation in species caught and the large variation in our spatial and temporal catch rates. Hoop nets were chosen as our gear because of the difficulty of sampling in areas of high current. Although hoop nets tend to yield a lower catch per unit of effort and a more variable catch than other gears (Pennington et al. 1980), and are not equally efficient for all species (Kallemeyn and Novotny 1977), they may be one of the few gears that can be fished quantitatively in flowing water. And though electroshocking is not recommended for sampling in deep, turbid, high-gradient streams (Larimore and Garrels 1985), two-boat electroshocking might prove to be effective in the riverine portions of SCDRS. More effort and the use of other sampling gear, would have increased the size and diversity of our catch, but probably would not have contradicted our finding that yellow perch and rock bass are the permanent, dominant residents of the littoral fish community of these island shoals. Larger species that may belong to this community, but that may not have been adequately captured by our gear are smallmouth bass in the St. Clair River and channel catfish and stonecat in the Detroit River. We cannot speculate on the composition of fish shorter than 100 mm in littoral communities because of the relatively large mesh size (1-inch stretched measure) of the netting from which the body of our hoop nets were constructed.

A major objective of this study was to determine if fish used plant beds. We believe that the higher catches observed in plant beds than in non-vegetated areas may reflect species-specific (yellow perch, hornyhead chub, spottail shiner) tendencies, which may also depend on location (e.g. at Fawn Island fish abundance and the presence of plants were significantly related). These tendencies were more strongly expressed in 1983 than 1984, and were correlated with season. The occurrence of significant trends could have been masked by various factors. Early in the season it was difficult to find well-defined, high-profile plant beds extending substantial distances into the water column; consequently we usually selected low profile Chara spp. beds as the vegetated areas in which we set our nets. Later in the season, high high-profile vegetation was so lush in some areas that it was difficult to find non-vegetated areas. Both situations could result in catches that might not support the well-documented preference of fish for structured environments of the sort provided by high profile vegetation (Brouha and von Geldern 1979; Prince and Maughan 1979; Helfman 1979; Paxton and Stevenson 1979). The poorly defined relationship between fish catch and vegetation in 1984 could be due to the rate of development of vegetation in spring 1984, which was generally lower and also varied more widely from location to location in 1984 than in 1983.

Overall, after considering the above variability, we believe that vegetation was related to abundance of three of the four common species inhabiting the island shoals. Submersed vegetation was also the only underwater structure in SCDRS, because the low gradient and navigation-related maintenance eliminate structure such as boulders and snags common to other riverine systems. Thus the submersed macrophyte beds are of considerable importance to fish production in SCDRS.

CHARACTERIZATION OF SCDRS HABITATS

Because of the number and variety of the data, a site-by-site treatment of major taxa might facilitate impact analysis on a habitat basis. Table 51 shows a geographic breakdown of the dominant taxa of macrozoobenthos, submersed macrophytes, and fish found in SCDRS. The benthic transect numbers I-XXI are used as locators. With the following exceptions, sampling locations for fish and macrophytes were also sampling locations (transects) for macrozoobenthos: Transect XVIII at Point Hennepin, at the tip of Grosse Ile, was the macrozoobenthos sampling location closest to the Mamajuda Island Shoals plant and fish sampling locations: and transect XXI was several thousand feet upstream from the fish and macrophyte location at Stony Island. Vegetation at each of the transects was usually at the shallower, off-channel station, except at Stag Island, where the benthic samples were taken at the head of the island in an area devoid of plants.

Physical differences in the rivers can serve as a basis for this characterization. The St. Clair River can be divided into four types of shallow-water habitat (< 12 ft deep), each with a slightly different faunal composition: the entrance into the St. Clair River, the mainland shore in the upper river, the shoreline along the delta islands, and the island shoals. Transect I typifies the headwaters of the St. Clair River. In this area current velocities are fairly high, the substrate is composed of sand, and macrophytes are lacking. The fauna was composed of chironomids having special adaptations (thin, streamlined bodies) for living in sand; planktonic copepods and cladocerans; and the ubiquitous oligochaetes (Table 51). Biomass and density are low.

Transect II represents the only mainland littoral area sampled in the upper St. Clair River. This narrow band between the shoreline and the 12-ft depth contour has a mean width of about 170 ft, runs along both mainland shorelines, and covers 1157 acres or 14% of the total area of the upper St. Clair River. Sediments along this narrow band range from sand-silt in protected areas and sand, gravel, or cohesive clays in plant beds along the shipping channel. The texture of superficial sediments at any given site depends on bed material and current velocity, which in turn is determined by river width and channel configuration. The fauna at transect II is characterized by the high standing stocks of net-spinning caddisflies (Table 51), which presumably eat the seston coming from Lake Huron. Farther downstream the seston begins to settle out and the net-spinners are replaced by collector-gatherers such as amphipods and mayflies. Macrozoobenthos biomass along this band is high, probably due to extensive beds of macrophytes dominated by Chara spp., Potamogeton spp., Vallisneria americana, and P. richardsonii. Schloesser and Manny (1982, 1984)

Table 51. Dominant macrozoobenthos, submersed macrophytes, and fishes in the SCORS in 1983-1984. Order of presentation of taxa in table indicates numerical or biomass rank. Transect number, substrate and current velocity values are associated with the macrozoobenthos data. Density (no./m²) and biomass values (g ash-free dry weight/m² for macrozoobenthos; g dry weight/m² for macrophytes) are for all taxa combined[a/].

Transect	Dominant substrate		Surface current velocity (ft/s)		Macrozoobenthos			Macrophytes		Fishes
	Off-channel	Channel	Off-channel	Channel	Taxa	Density	Biomass	Macrophytes*/	Biomass	
I	Sa	Sa	1.7	1.8	Chironomids, cladocerans, copepods, oligochaetes	1,700	0.14	none		
II	Sa Si	Gr	0.7	2.3	Hydra, oligochaetes, chironomids, snails, caddisflies	56,000	1.72	Potamogeton spp. P. richardsonii Vallisneria		
III (Stag Island)	Gr	Gr	1.8	2.1	Hydra, chironomids, oligochaetes, caddisflies, snails	5,200	0.17	Chara Potamogeton spp. P. richardsonii	92	Yellow perch Hornyhead chub Rock bass
IV (Fawn Island)	Sa Si	Sa	1.1	2.5	Hydra, oligochaetes, snails, chironomids, amphipods, clams	24,900	1.28	Chara P. gramineus P. richardsonii	130	Yellow perch Rock bass Hornyhead chub
V (Russell Island)	Sa Si	Gr	1.4	2.8	Hydra, oligochaetes, chironomids, snails, amphipods, mayflies	50,900	1.90	Chara P. gramineus Potamogeton spp.	164	Yellow perch Rock bass Hornyhead chub
VI	Sa Si	Sa Si	0.5	1.2	Hydra, chironomids, oligochaetes, amphipods, mayflies, snails	40,900	2.30	Chara* P. richardsonii		
VII	Sa Si	Cl	0.6	1.9	Hydra, oligochaetes, chironomids, snails, amphipods, mayflies	60,800	3.06	Chara* P. richardsonii		
VIII	Si Cl	Sa Si	0.2	0.7	Oligochaetes, Hydra, chironomids, Manayunkia, mayflies, amphipods	66,500	1.24	Chara* Potamogeton spp.		
IX	Sa Si	Sa Si	0.3	0.4	Oligochaetes, chironomids, Manayunkia, amphipods, Hydra, snails	15,900	0.62	Chara*		
X	Sa	Sa Si	0.4	0.4	Oligochaetes, chironomids, Hydra, snails, amphipods, mayflies	11,600	0.48	Chara*		
XI	Si Cl	Si Cl	0.5	0.2	Oligochaetes, nematodes, Manayunkia, mayflies, clams, chironomids	14,700	1.38	none		
XII	Si Cl	Si Cl	0.2	0.2	Oligochaetes, mayflies, chironomids, Manayunkia, nematodes, amphipods	7,800	1.46	none		
XIII	Si Cl	Si Cl	0.6	0.5	Oligochaetes, mayflies, chironomids, nematodes, clams, Manayunkia	6,300	1.38	none		
XIV	Sa Gr	Sa Si	0.8	1.2	Oligochaetes, Manayunkia, clams, chironomids, snails, caddisflies	4,600	1.15	Vallisneria*		
XV	Sa Cl	Sa Cl	0.7	1.6	Caddisflies, Hydra, oligochaetes, snails, clams, chironomids	9,500	1.18	Chara*		
XVI (Belle Isle)	Si	Sa Si	0.1	0.9	Oligochaetes, chironomids, nematodes, Hydra, amphipods, ostracods	19,100	4.52	P. richardsonii Vallisneria Ritellopsis	106	Rock bass Yellow perch
XVII	Si	Sa Si	0.3	1.4	Manayunkia, oligochaetes, nematodes, copepods, Hydra, chironomids	19,400	1.00	Vallisneria* Chara		
XVIII (Point Hennepin)	Si	Si	0.4	0.9	Oligochaetes, snails, nematodes, nemertines, rhabdocoels, triclads	80,900	1.36	Vallisneria P. richardsonii Potamogeton spp.	73	Yellow perch Rock bass Spottail shiner
XIX	Si Cl	Gr Sa	0.4	1.3	Oligochaetes, Manayunkia, nemertines, nematodes, snails, rhabdocoels	14,800	0.66	Vallisneria*		
XX	Co Gr	Sa Cl	0.7	1.9	Oligochaetes, nematodes, nemertines, snails, Hydra, chironomids	10,100	0.34	Heteranthera* Vallisneria Potamogeton spp.		
XXI (Stony Island)	Sa Si	Gr Cl	0.8	1.1	Oligochaetes, Manayunkia, nematodes, Hydra, nemertines, clams	12,900	0.62	Vallisneria Myriophyllum Heteranthera	163	Rock bass Channel catfish Stonecat

a/ Cl = clay, Si = silt, Sa = sand, Gr = gravel, Co = cobble; * Based on visual estimates of plants present in samples of macrozoobenthos.

estimated that the standing crop of submersed macrophytes along the mainland shorelines is 60-160 g/m^2.

Transects III, IV, and V are associated with island shoals. Between the shoreline and the 12-ft depth contour, these three island shoals, plus the St. Clair Middle Ground and a small shoal just above Fawn Island, cover 429 acres and represent 5% of the total surface area of the upper St. Clair River. Our sampling over most of this area indicated that the percent coverage by submersed macrophytes in this shallow water was about 60-70%. However, the shoals at the head of Stag Island are devoid of plants, current velocities are high, the substrate is gravel, and benthos standing crop is low. Plant coverage over the rest of Stag Island is also low (20%), and where plants are present standing crop is also low (< 100 g/m^2). Although current velocities are high at the head of Fawn and Russell islands, plants such as P. gramineus, P. richardsonii, and Potamogeton spp. ring the outer edge of the shoals, and these species along with Chara spp. cover almost 70% of the rest of the shoals. Macrozoobenthos and plant biomass are high at both Fawn and Russell islands (Table 51). Dominant taxa of macrozoobenthos, aquatic plants, and fish are similar between sites. Seston concentrations are capable of sustaining relatively high levels of caddisflies in gravel substrates at Stag Island, but not at Russell Island.

Transects VI - X are along the shoreline of the South Channel and St. Clair Cutoff Channel in the St. Clair River delta area. A band of shallow water extends an average of 374 ft from the shoreline to the 12-ft depth contour along both the U.S. and Canadian sides of the river. This area covers 905 acres and represents 50% of the total surface area of this portion of the river. Currents were low (< 1.0 ft/s) and sediments were dominated by mixtures of silt and sand. Some of the highest biomass values for macrozoobenthos were found at transects VI and VII (Table 51), but biomass and densities declined dramatically along transects nearer to Lake St. Clair. Dominant invertebrate groups were similar between transects, with only minor shifts in order of abundance. High densities of Manayunkia appeared at transect VIII, and oligochaetes replaced Hydra as the dominant taxon on this transect. Chara spp. was the dominant plant on all transects (> 80% of samples) but P. richardsonii was also common at transects VI and VII.

The benthic fauna at all areas sampled in the St. Clair River, except transect I in Lake Huron, was usually dominated by Hydra, oligochaetes, chironomids, gastropods, amphipods, and mayflies. Densities of Hydra were usually highest in October at most transects; however, densities were high in May at transects VI - VIII and X in 1983 but not in 1984. The depth distribution of Hydra is also variable, densities usually being highest in deeper, near-channel areas; in other areas (e.g., transect V) its density peaked in shallow water. The presence of solid substrates such as vegetation or coarse gravel may modify the distribution, regardless of depth. Sand, gravel, and cohesive clay are usually present where current velocities exceed 2 ft/s, and sand and silt where velocities are less than 1 ft/s. Oligochaetes were most common in shallow water in May, and chironomids were common in shallow water in May and

October. Gastropods were most common in October; Amnicola dominated in shallow water and Elimia in deeper water. Densities of amphipods were high in shallow water and Gammarus was the dominant genus. Mayflies do not become abundant until transect IV, perhaps reflecting pollution effects from Sarnia at the head of the river. Hexagenia and Caenis were the most common genera and were densest in the fall; Hexagenia was the more abundant in deepwater and Caenis in shallow water. Ephemerella was also common, but distributed evenly over all depths. The Trichoptera were dominated by Cheumatopsyche and Hydropsyche; densities were high only in the upper St. Clair River. Neither genus showed trends in abundance related to water depth. Yellow perch, rock bass, and hornyhead chubs were the dominant fishes except seasonally when rainbow smelt occasionally were the most abundant.

Transects XI - XIII were located in Lake St. Clair in the deepest part of the lake (> 12 ft). Sediments were uniformly fine in the silt-clay class. Aquatic macrophytes were lacking, although sparse stands of Cladophora were evident in October. Benthic invertebrates were not abundant, but biomass was about equal to the system-wide average because the number of large Hexagenia nymphs was high (Table 51). The dominant genus of clams was Pisidium, and the dominant amphipod was Gammarus. Although substrate and current velocities appeared to be uniform among the transects, there were considerable differences in relative abundance of taxa other than oligochaetes.

Transects XIV - XV were in the headwaters of the Detroit River. These two transects differed in substrate, aquatic macrophyte composition, and macrozoobenthos composition (Table 51). Manayunkia was abundant at transect XIV but not abundant at transect XV, and Hydra and caddisflies were more abundant at transect XV. Current velocities were similar, but bed material was different at the two locations. Subtle differences in substrate and the presence or absence of Chara spp. and Vallisneria americana apparently influence the composition of benthic invertebrates more strongly than do current velocities. Macrozoobenthos densities were low but biomass values were near average for the system. Plant biomass values were low, in the 20-90 g/m² range (Schloesser and Manny 1982).

About 18% of the 5,160 total surface acres of the upper Detroit River overlie water less than 12 ft deep. These littoral areas include 272 acres around Belle Isle; 159 acres in the Scott Middle Ground; 472 acres along both shores, where the average width of the littoral band is 150 ft; and about 40 acres at the head of Fighting Island. Composition and density of fauna at transects XVI and XVII are probably only representative of shoals in the vicinity of Belle Isle. Our estimate of the biomass of aquatic macrophytes at Belle Isle (106 g/m²) fell within the range measured by Schloesser and Manny (1982) in this area in 1978; however, they found almost no plants along the narrow band of shallow water along the U. S. mainland shore and only a few plants in areas (Ambassador Bridge and above Fighting Island) along the Canadian shoreline below Belle Isle. At transect XVI, the densities of macrozoobenthos were lower than the average of 25,500/m² for the system, but the biomass was the highest recorded in SCDRS in 1983-84. This high biomass was due in part to the large mussel population in the Belle Isle area. Transect XVII was the only transect

where Manayunkia was numerically dominant. Benthic copepods and ostracods also were among the six most abundant taxa at the two Belle Isle transects. The rock bass was the dominant fish species.

Transects XVIII - XXI in the lower Detroit River cover a variety of habitats ranging from protected areas with fine, oil-contaminanted sediments (XVIII) to areas with high current velocities and bedrock substrate (XX). Of the 28,800-acre area of the lower Detroit River, about 82% is less than 12 ft deep. Because of the complexity of the system this area was not divided into mainland, island, or shoal areas. Plant biomass ranged from sparse at Point Hennepin (73 g/m^2) to dense at Stony Island (163 g/m^2). Schloesser and Manny (1982) reported a similar range of values, including high biomass (150-220 g/m^2) on the west side of Grosse Isle, around Celeron Island and the east side of Fighting Island, and generally lower values (60-160 g/m^2) in most other areas of the river except along the U. S. mainland shoreline (where plants were lacking). Vallisneria americana and Heteranthera dubia were the dominant taxa in their collections and in ours. Biomass of macrozoobenthos was low, and dominated by oligochaetes--especially at transect XVIII. Snails, clams, and chironomids were the only other taxa to develop relatively high populations in the area. A variety of substrates were present but no pollution-sensitive insect group developed sizable populations. However, there were small populations of mayflies and caddisflies in areas with high current velocity and rock substrate. Rock bass dominated the fish community at Belle Isle and Point Hennepin, but the spottail shiner and two species of ictalurids were dominant in the lower Detroit River.

Oligochaetes, chironomids and Hydra dominated the upper Detroit River and oligochaetes, nematodes and nemertines dominated the lower Detroit River. Oligochaetes and nematodes were more common in shallow water in May, in contrast to nemertines and Manayunkia, which were more abundant in October in deeper water. Hydra was common only in May in 1983. Elimia, Amnicola, and Ferrisia were the most common gastropod taxa. Pisidium was the dominant pelecypod and Hydropsyche and Cheumatopsyche were the dominant caddisfly taxa. Both Gammarus and Hyalella were common amphipod taxa. Copepods were represented by benthic harpacticoids rather than planktonic taxa.

Spring 1984 Ice Jam

The ice jam that stalled vessels and required ice breaking activity for 3 weeks in late April and early May 1984 provided us with a chance to evaluate a potentially worst-case condition similar to one that might develop under extended season navigation. Macrozoobenthos populations appeared to be the most adversely affected of the three groups studied. Densities of 10 taxa and total biomass were lower in 1984 than in 1983 and most declines occurred in the St. Clair River. However, most of the affected taxa had recovered by fall 1984 to levels equally or exceeding those in fall 1983, and taxa that did not recover completely reached densities that were within 30% of the fall 1983 values. It is not known whether these declines were due to ice scour, lower temperature, or some other factor or combination of factors. Maximum densities of the affected taxa were at the inshore station, and most of the taxa could be categorized as living near

the mud-water interface. Thus the decline could logically be attributed to ice scour in the shallow areas. It would be difficult to ascertain whether lower temperatures were involved, because organisms of each of the taxa have different physiological responses and age structures. Whatever the cause, most taxa that exhibited a seeming decline recovered to 1983 densities within 6 months.

The distribution and occurrence of aquatic macrophyte taxa changed little between years. Maximum percent coverage of macrophyte beds varied little between years and rivers. Development of beds in June was delayed in 1984 in the St. Clair River and at Belle Isle, but by September the beds were little different in 1984 than in 1983, at least through the upper two-thirds of SCDRS. There were significant differences in biomass between years, but there were no consistent differences between locations or months. Impacts on submersed macrophytes, other than possibly delayed development due to lower temperature, could not be ascribed to the ice jam.

Fish catches were usually lower in 1984, but this trend occurred in both rivers and in most comparisons was not statistically significant. Lower catches in 1984 may have been due to the effect of lower temperatures on development of plant beds, general activity level, and seasonal migrations.

CONCLUSIONS AND RECOMMENDATIONS

This study was conducted to describe the present distribution and abundance of macrozoobenthos, aquatic macrophytes, and juvenile fishes in SCDRS. We believe that we have addressed this objective for the open water season on SCDRS within the constraints imposed by our data, and that our study provides a baseline data set that can be used to evaluate any future extension of the navigation season. We do not believe that the results of our study can be used alone to answer the question of whether increased winter vessel traffic will have a measurable effect on SCDRS. Such an evaluation would require minimally the development of one or more realistic scenarios in which the potential effects of vessel passage in the extended season on ice, water, and sediment movement in the SCDRS was adquately characterized, so that the impact of these physical changes on biota could be examined over the range of expected conditions. The ice jam of April 1984 may have had an undefined effect, but we cannot show that the ice jam was caused or exacerbated by navigation, or that the jam simulated conditions that might occur from vessel operation in January or February.

The benthic, aquatic plant, and fish communities described here appear to exist at the observed level of traffic without obvious ill effects from winter ship traffic. However, winter vessel traffic has occurred in SCDRS for many years and thus there is no truly unaffected baseline from which the effects of winter navigation that may have already occurred can be empirically judged. It has been postulated that increased shipping might amplify ice scour, turbulence, flooding, and dewatering, which in turn could affect the density, location, and behavior of biota in the system. It has also been postulated that the environmental

impacts of increasing winter shipping may be cumulative and take several years to become readily observable. We believe that an evaluation of the potential impacts of winter navigation on SCDRS would be facilitated by the development of an energy flow model plus an age-structured fishery model. The Corps-funded research on SCDRS has provided a substantial data base from which models of these kinds might be developed. Additional data are needed on phytoplankton, periphyton, and zooplankton standing crop and production, plus terrestrial inputs to complete the energy budget. This information would permit quantification of the simultaneous effects of all components according to their interrelationships in the ecosystem, and would avoid the problem associated with a piecemeal evaluation of individual components. Such models would be useful in partitioning impacts so that rational remedial strategies and mitigation could be attempted.

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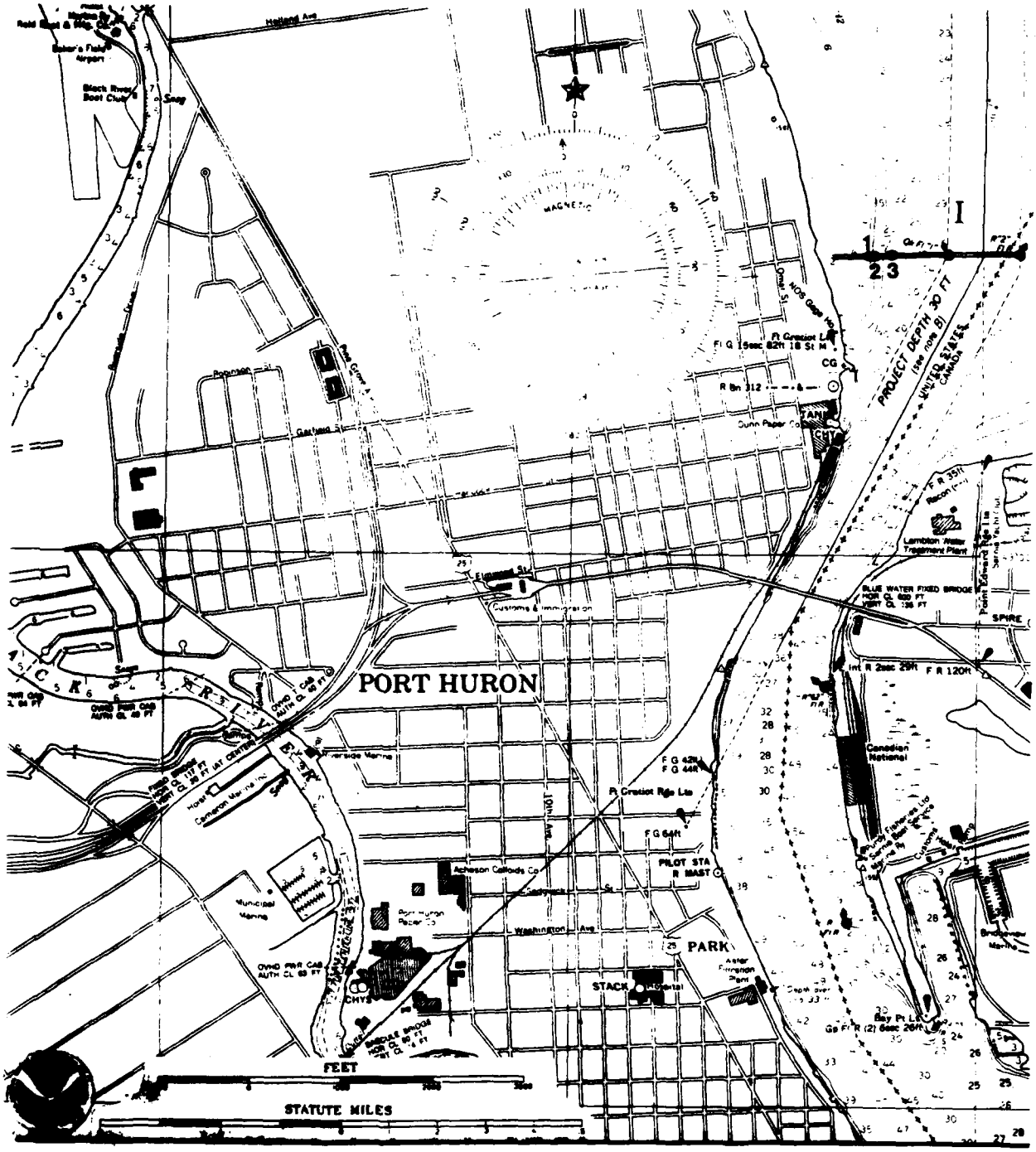
APPENDIX A

Sampling Locations for Macrozoobenthos



ST. CLAIR RIVER

TRANSECT I

Fig. 1.

Fig. 1.

Transect I is in line with buoys number 1 and 2 at the head of the St. Clair River. Stations 1, 2, and 3 are in water 8, 12, and 16 feet deep, respectively, on the U.S. side of the shipping channel about 600-750 feet offshore.

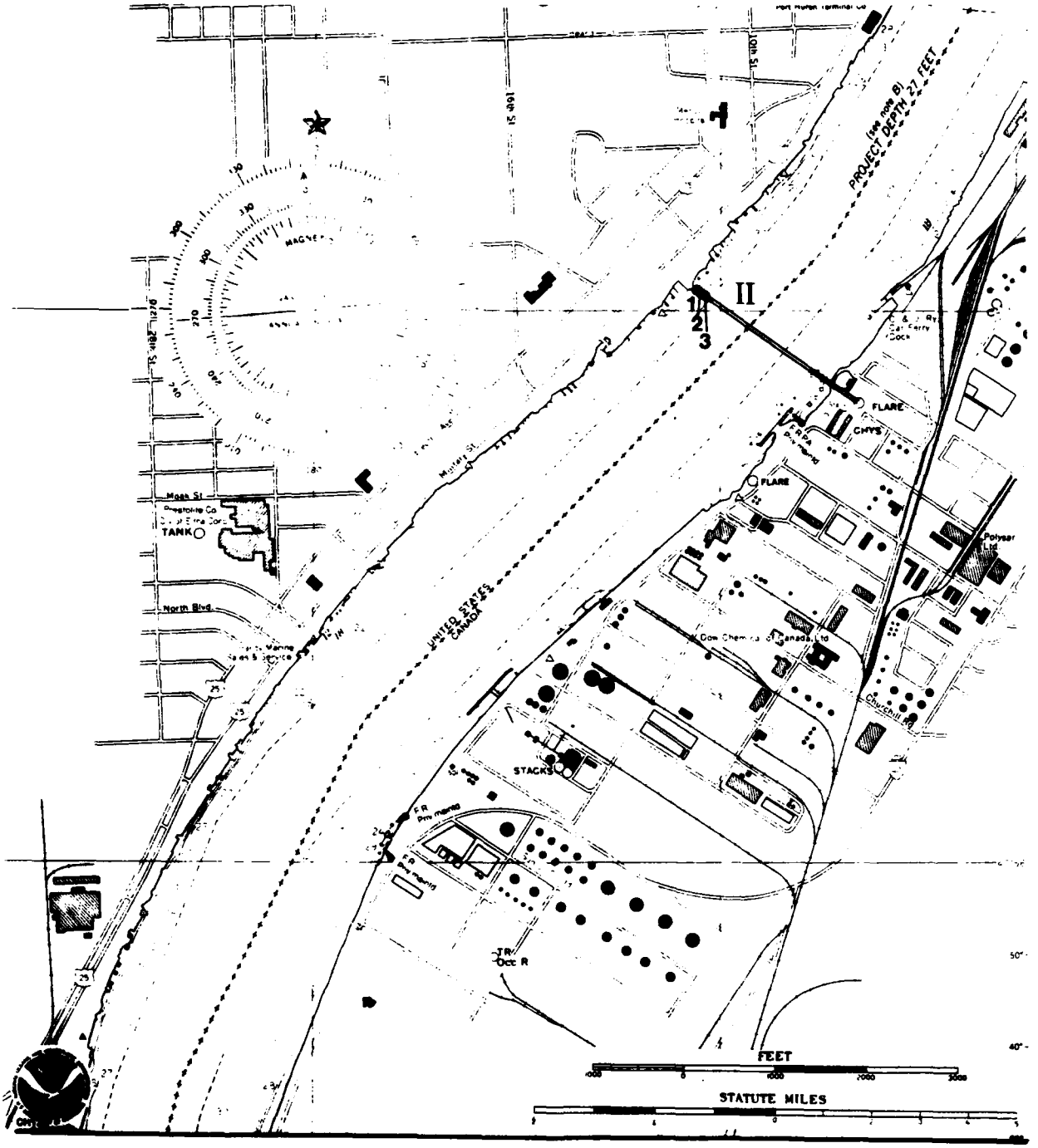
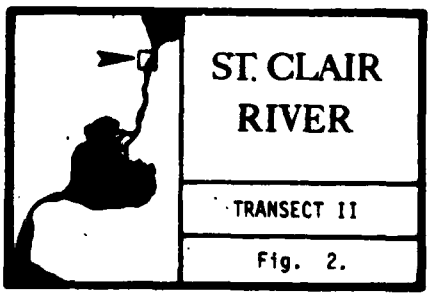
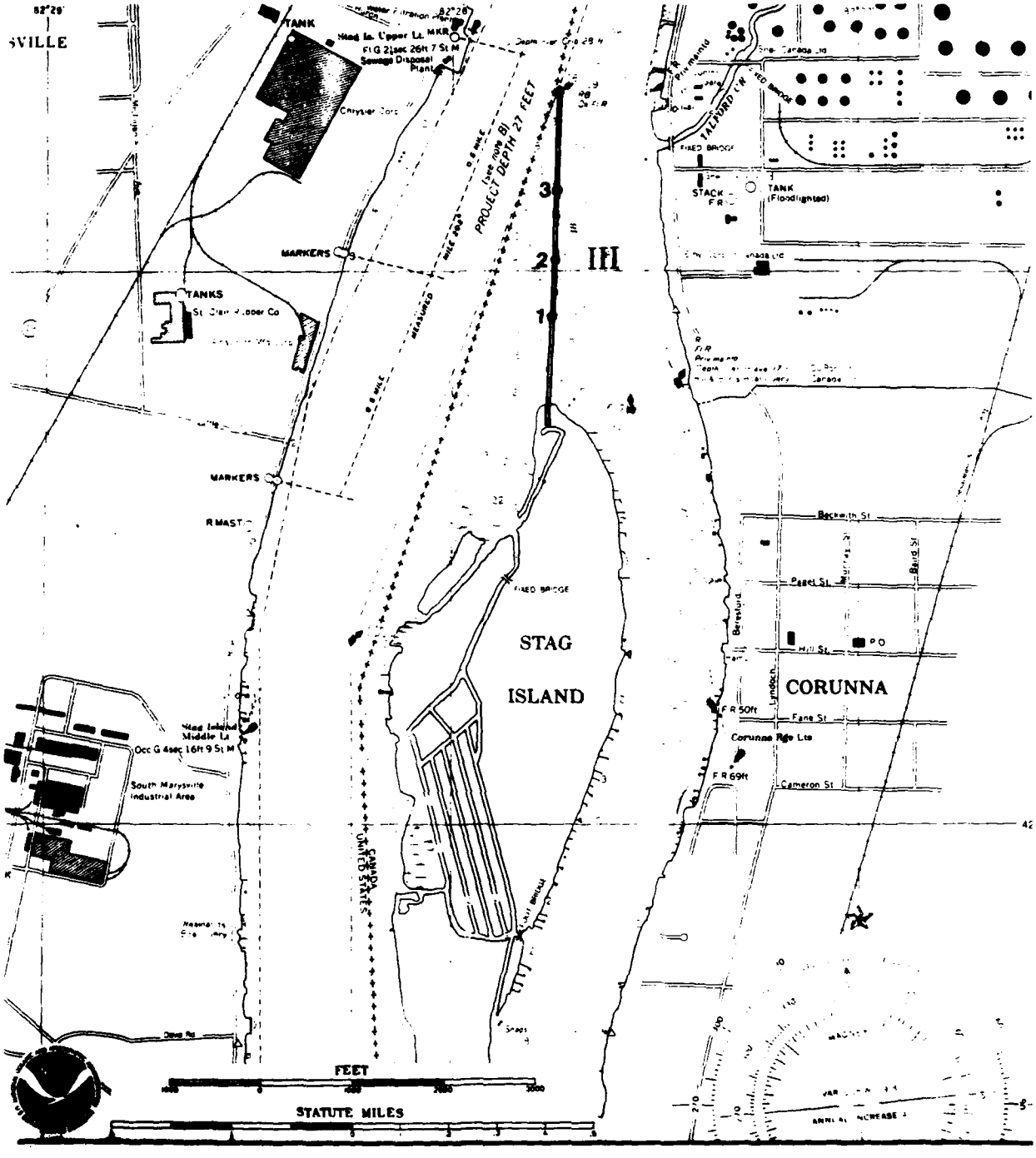


Fig. 2.

Transect II is in the St. Clair River about 4.5 miles downstream from transect I and is in line with a peninsular piece of land on U.S. side and a flare on the property of Dow Chemical of Canada, Ltd. Stations 1, 2, and 3 are in water 5, 10, and 16 feet deep, respectively, on the U.S. side of the shipping channel about 50-100 feet offshore.





ST. CLAIR RIVER

TRANSECT III

Fig. 3.

Fig. 3.

Transect III is at the head of Stag Island, about 4 miles downstream from transect II. The transect extends from the upstream tip of the island to buoy RB. Stations 1, 2, and 3 are in water 6, 13, and 18 feet deep, respectively, about 1000-2500 feet offshore.

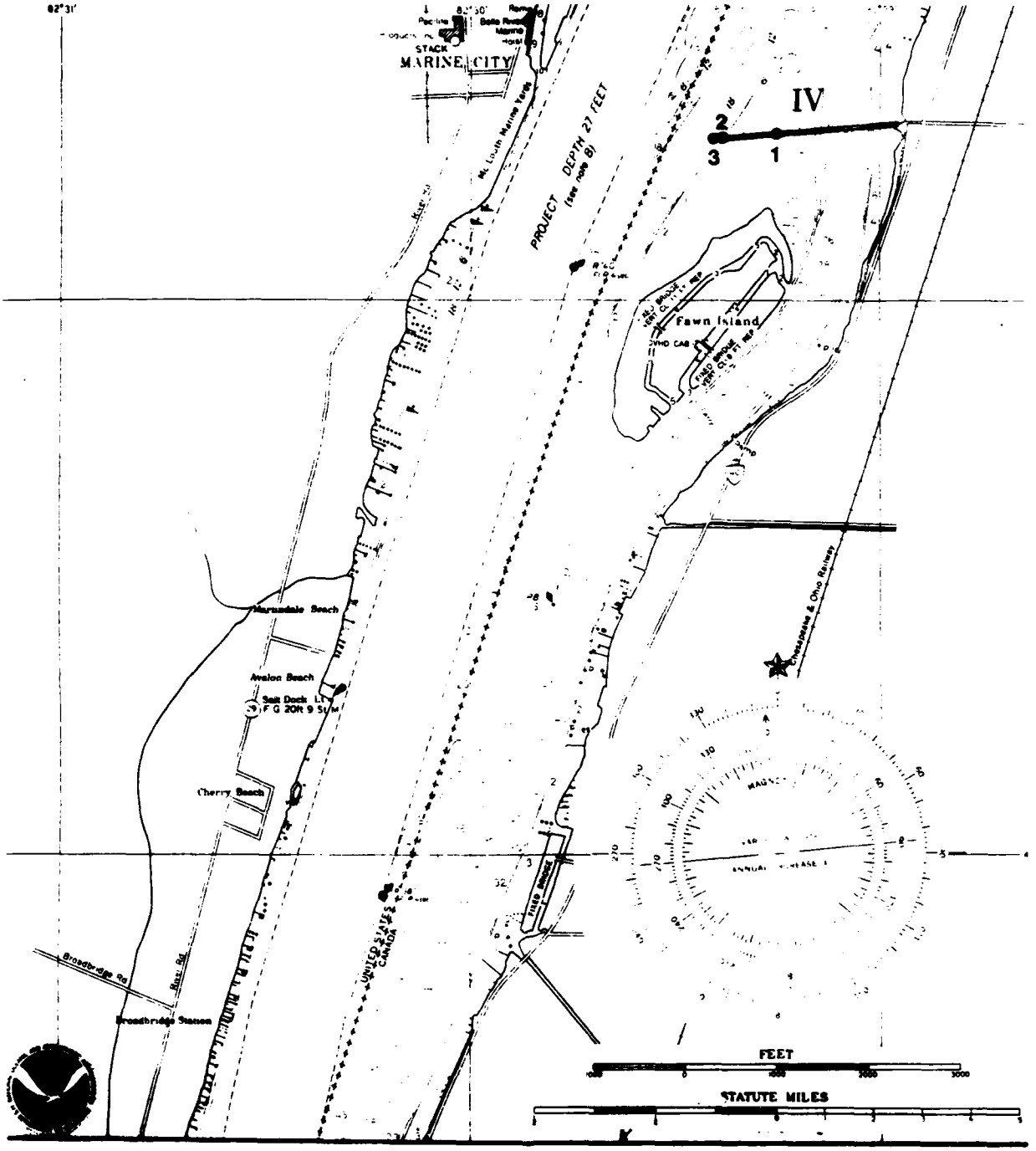


Fig. 4.

Transect IV is at the head of Fawn Island and is about 13 miles downstream from transect III. It extends due west from an unnamed east-west road on the Canadian shore. Stations 1, 2, and 3 are in water 4, 12, and 16 feet deep, respectively.

ST. CLAIR RIVER

TRANSECT IV

Fig. 4.

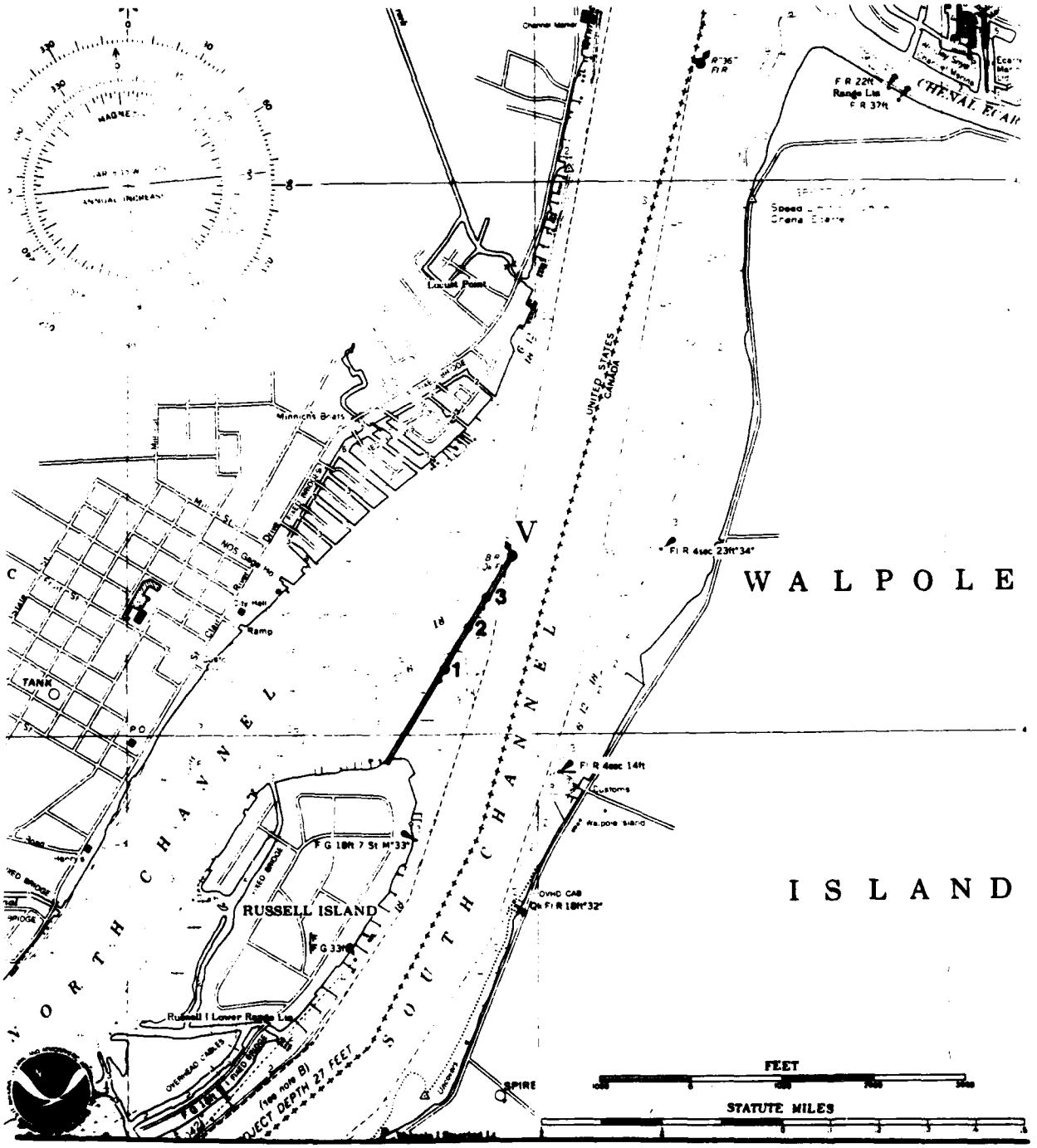


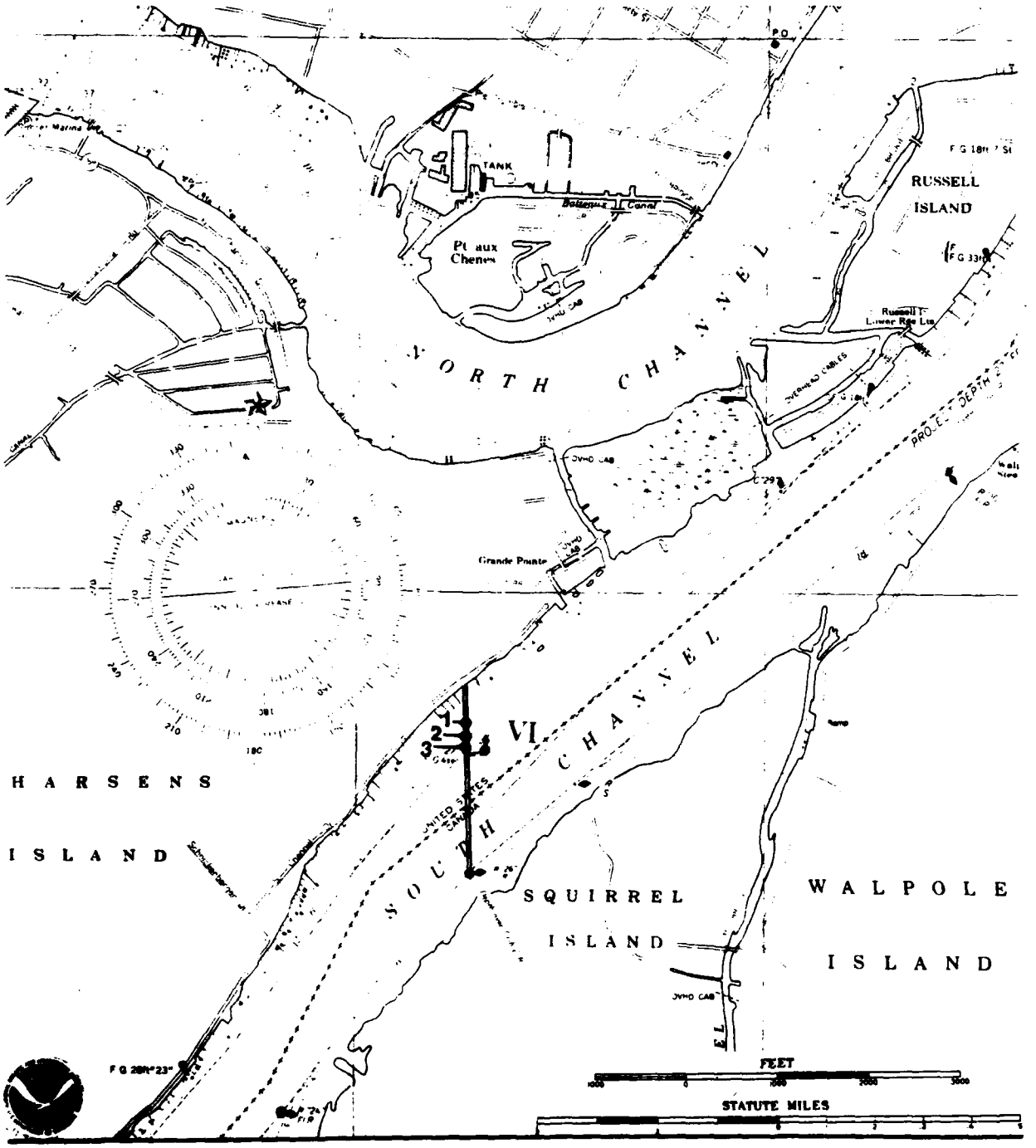
Fig. 5.

Transect V is at the head of Russell Island about 5.5 miles downstream from transect IV. It extends from the upstream tip of the island to buoy 8R. Stations 1, 2, and 3 are in water 5, 10, and 16 feet deep, respectively, about 650-2100 feet offshore of Russell Island.

ST. CLAIR RIVER

TRANSECT V

Fig. 5.



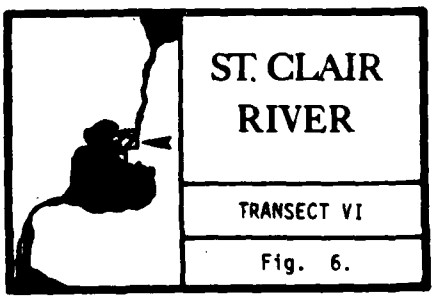


Fig. 6.

Transect VI is in the South Channel in line with buoys number 26 and 27 about 2.2 miles downstream from transect V. Stations 1, 2, and 3 are in water 4, 8, and 13 feet deep, respectively, about 400-750 feet offshore.

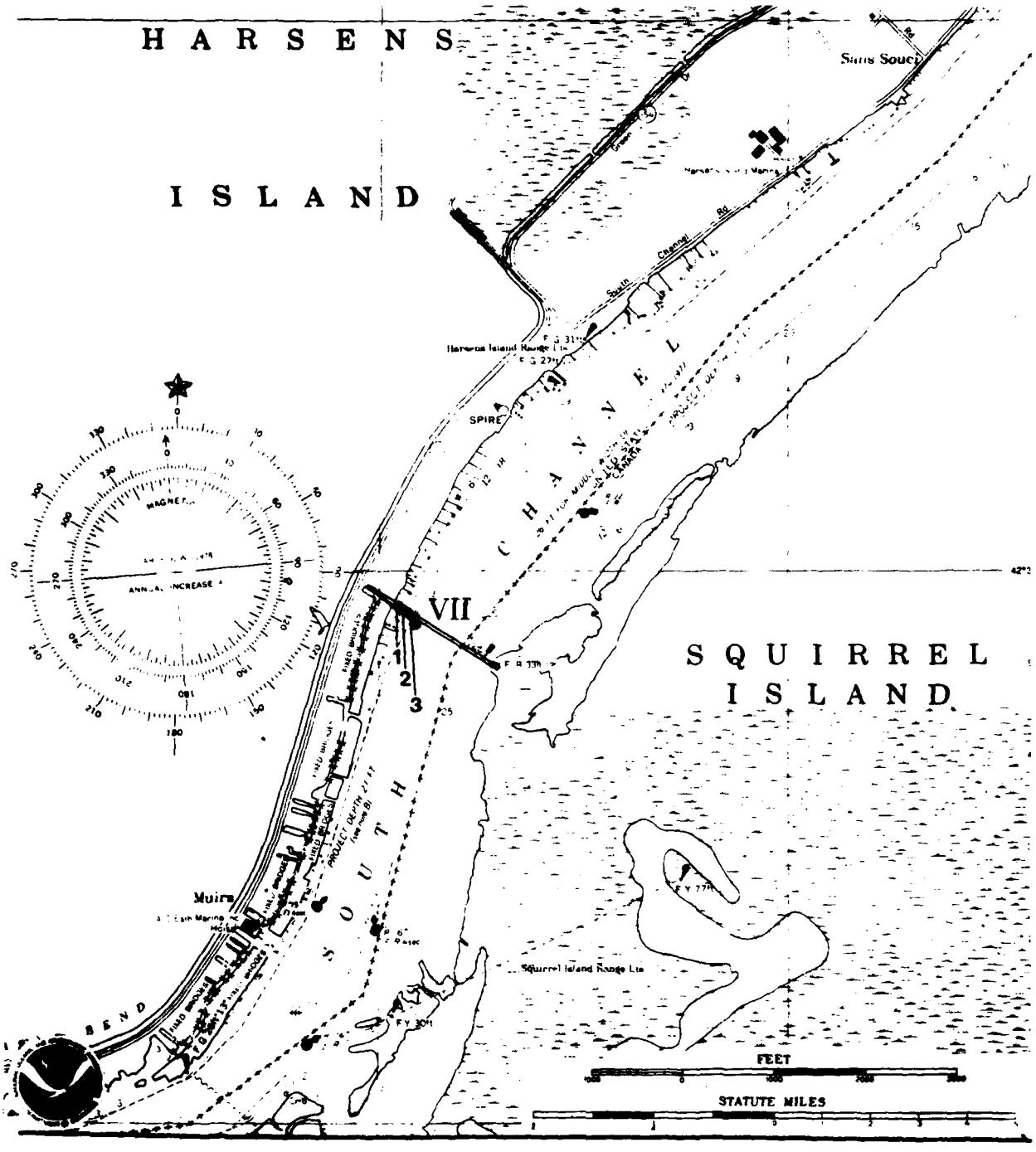
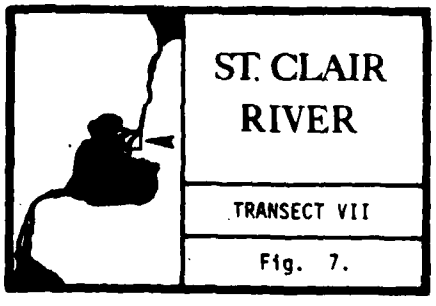


Fig. 7.

Transect VII is in the South Channel in line with buoys 17 and 20 about 2.9 miles downstream from transect VI. Stations 1, 2, and 3 are in water 6, 10, and 18 feet deep, respectively, about 100-250 feet offshore.



ST. CLAIR RIVER

TRANSECT VII

Fig. 7.

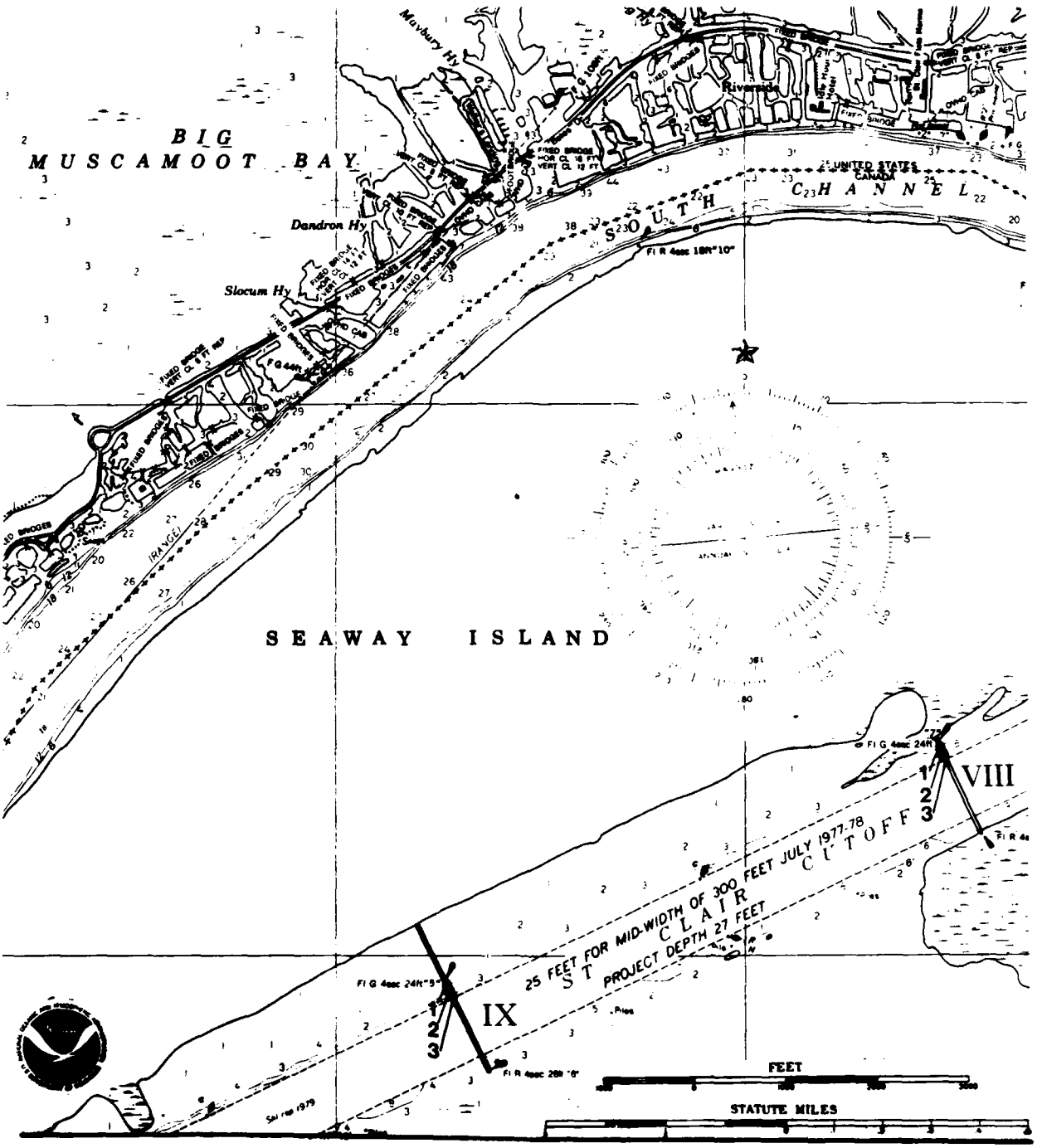


Fig. 8.

Transect VIII is in the St. Clair Cut-off Channel in line with Lights 7 and 8 about 3.2 miles downstream from transect VII. Stations 1, 2, and 3 are in water 4, 7, and 14 feet deep, respectively, about 100-250 feet offshore. Transect IX is in the St. Clair Cut-off Channel, in line with Lights 5 and 6. Stations 1, 2, and 3 are in water 5, 8, and 13 feet deep, respectively, about 700-800 feet offshore.

ST. CLAIR RIVER

TRANSECTS VIII & IX

Fig. 8.

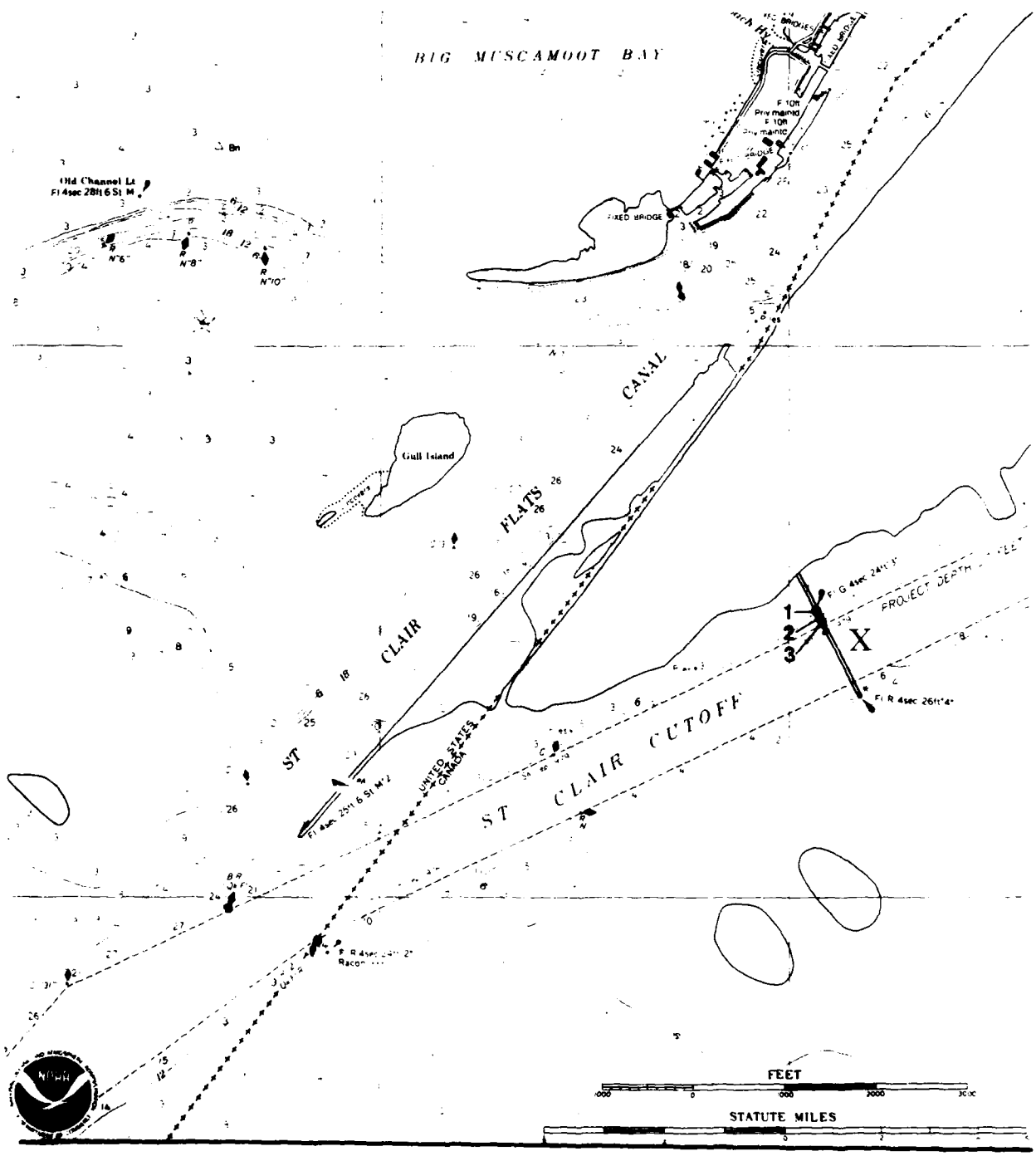
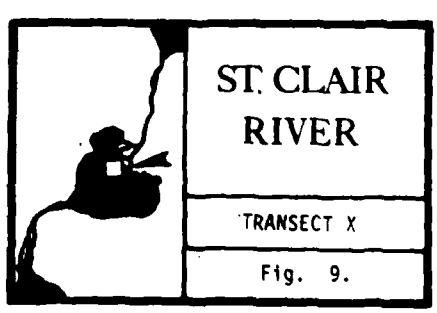


Fig. 9.

Transect X is in the St. Clair Cut-off Channel, in line with Lights 3 and 4. Stations 1, 2, and 3 are in water 5, 8, and 13 feet deep, respectively, about 700-800 feet offshore.



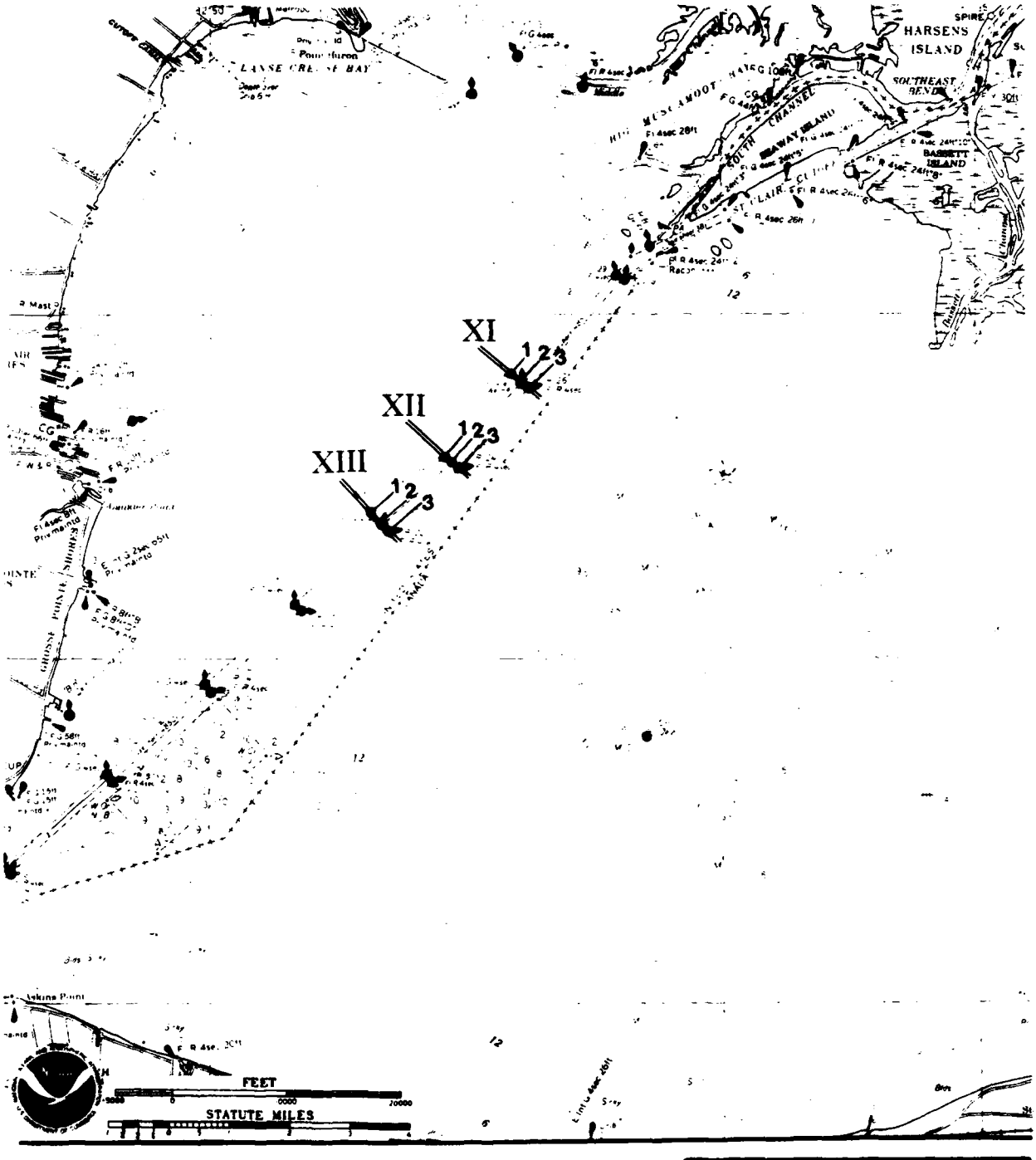


Fig. 10.

Transect XI is in Lake St. Clair in line with buoys 25 and 26 about 4.5 miles downstream from transect X. Stations 1, 2, and 3 are in water 19, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel. Transect XII is in Lake St. Clair, in line with buoy 24 and a stationary Light. Stations 1, 2, and 3 are in water 21, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel. Transect XIII is in Lake St. Clair, in line with buoys 21 and 22. Stations 1, 2, and 3 are in water 20, 22, and 26 feet deep, respectively, about 0-1000 feet from the navigation channel.

LAKE ST. CLAIR

TRANS XI, XII & XIII

Fig. 10.

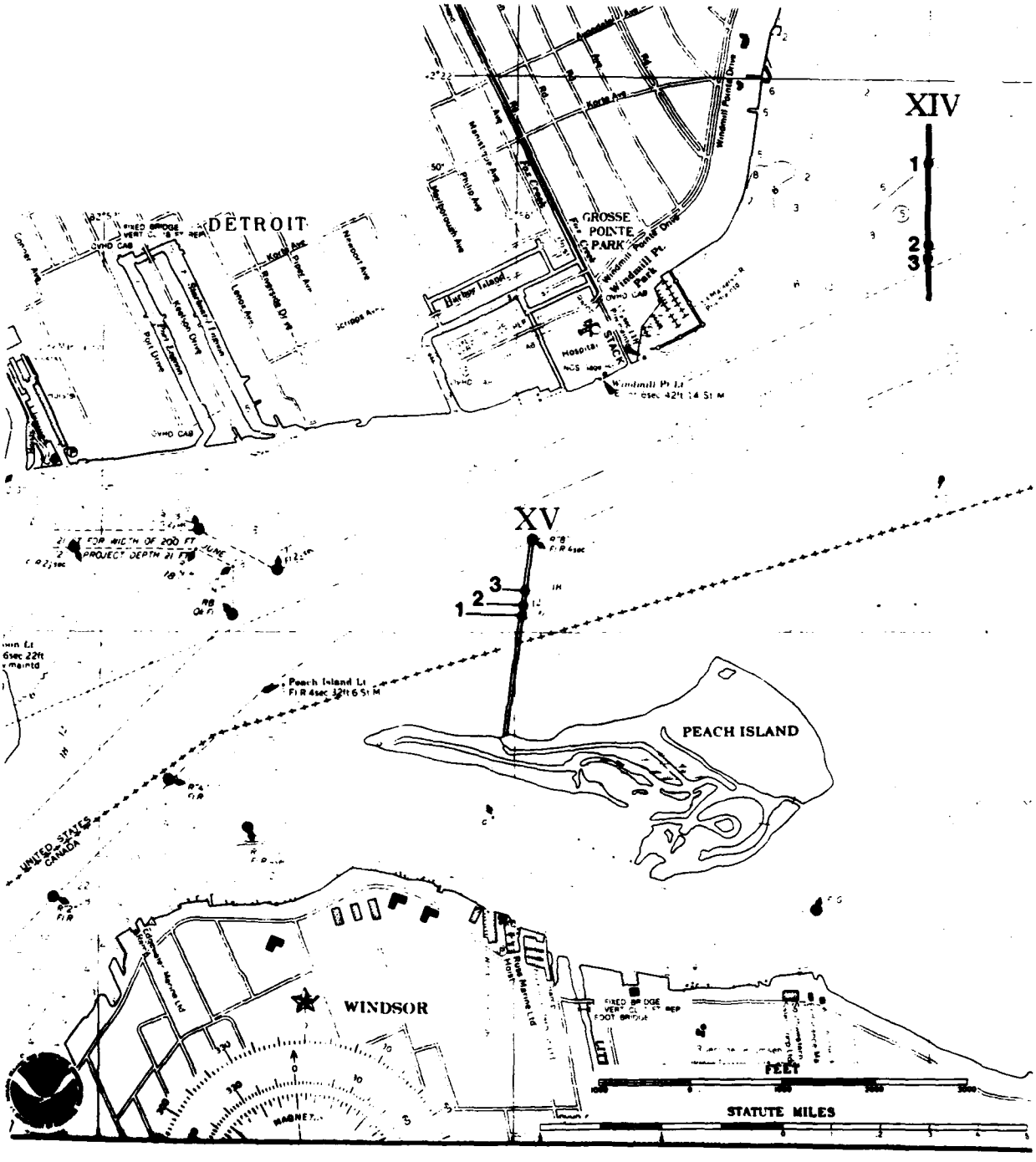


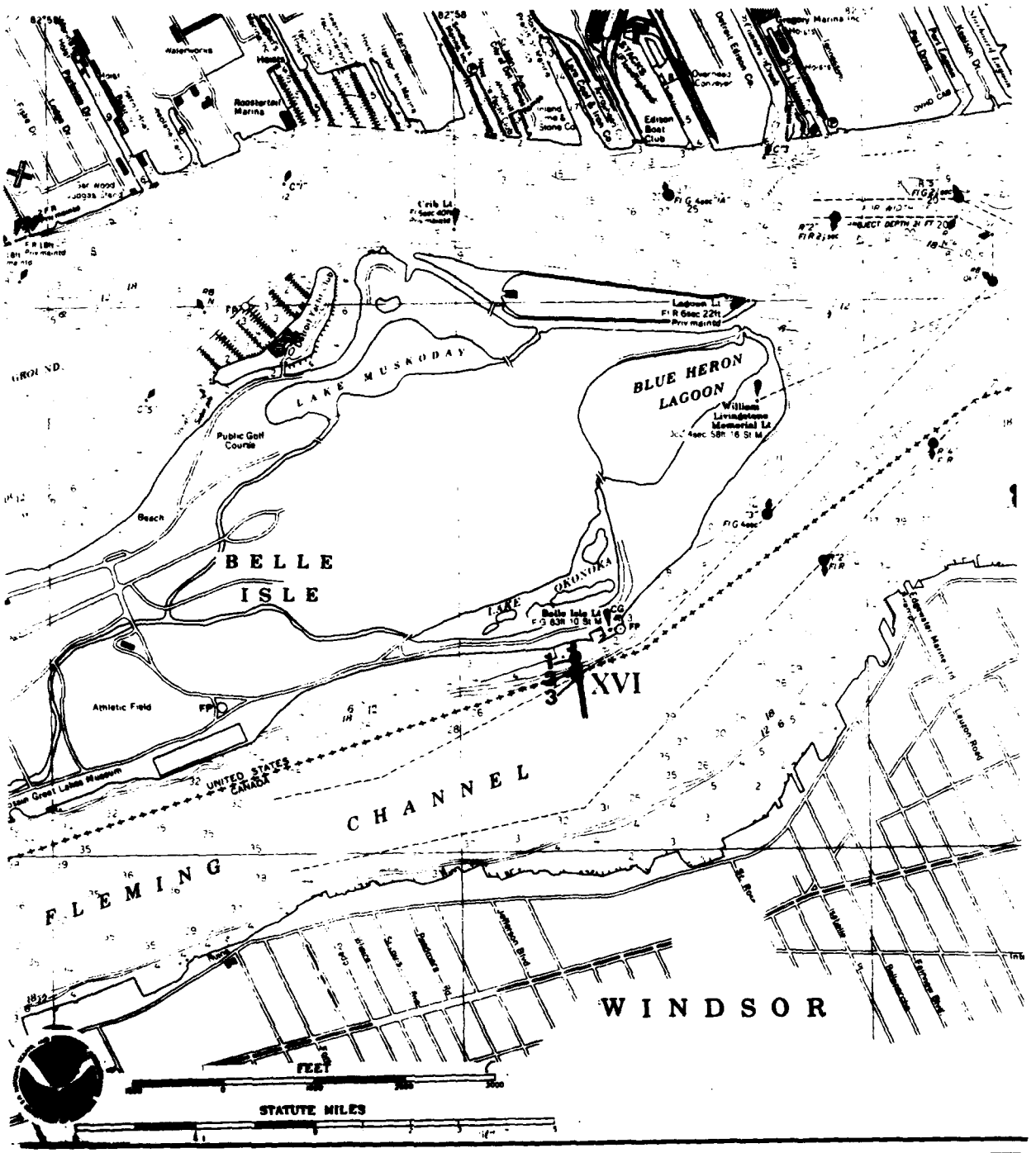
Fig. 11.

Transect XIV is in Lake St. Clair near the head of the Detroit River on a bearing of 4° from the Peach Island Range Tower. Stations 1, 2, and 3 are in water 7, 10, and 18 feet deep, respectively, on the north side of the channel, about 5000-6000 feet offshore. Transect XV is in the Detroit River on a bearing of 187° from buoy 8 on the north side of Peach Island. Stations 1, 2, and 3 are in water 7, 10, and 17 feet deep, respectively, about 1300-1600 feet offshore of Peach Island.

DETROIT RIVER

TRANSECTS XIV & XV

Fig. 11.



DETROIT RIVER

TRANSECT XVI

Fig. 12.

Fig. 12.

Transect XVI is on the south side of Belle Isle about 1.8 miles downstream from transect XV. The transect extends on a bearing of 172° from a point on the shoreline midway between the entrance to the Coast Guard Station vessel slip and the base of the Michigan Department of Natural Resources fishing pier. Stations 1, 2, and 3 are in water 6, 9, and 16 feet deep, respectively, and about 50-250 feet offshore.

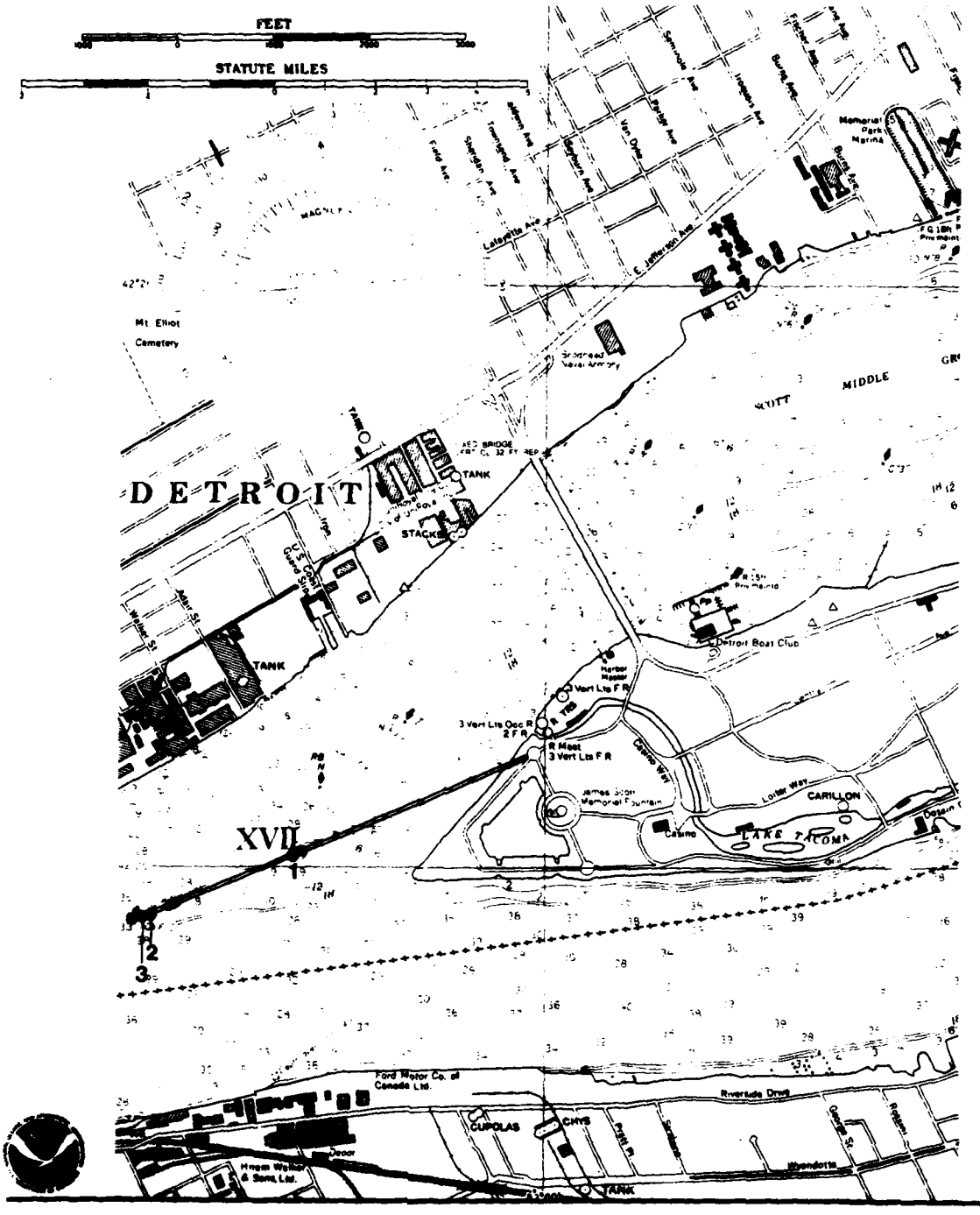


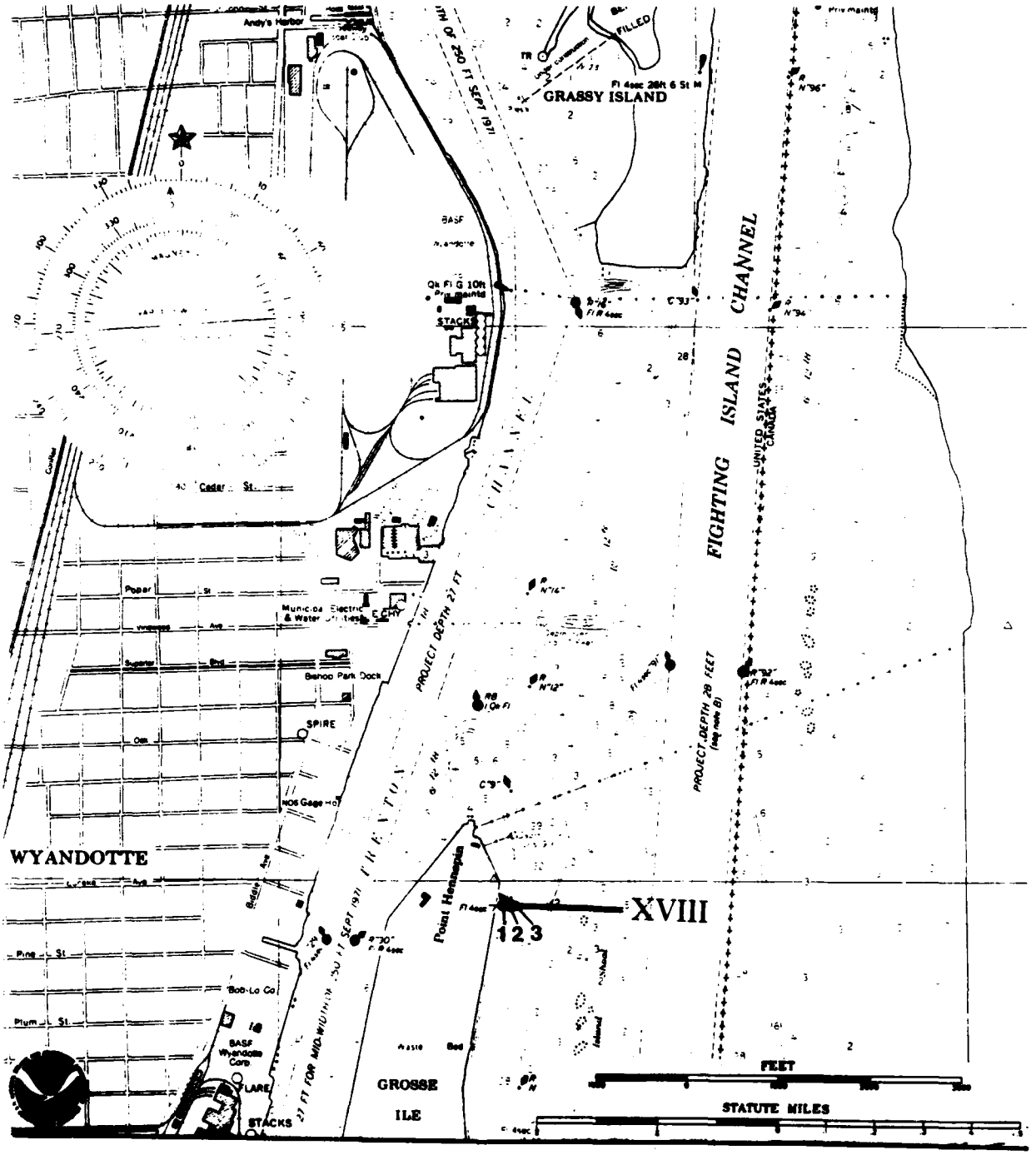
Fig. 13.

Transect XVII is below Belle Isle between buoy RB and a road intersection on Belle Isle about 2.5 miles downstream from transect XVI. Stations 1, 2, and 3 are in water 10, 12, and 18 feet deep, respectively, about 2600-3900 feet offshore.

DETROIT RIVER

TRANSECT XVII

Fig. 13.



DETROIT RIVER

TRANSECT XVIII

Fig. 14.

Fig. 14.

Transect XVIII is on the east side of the tip of Point Hennepin on a bearing of 275° from buoy 7 about 12.6 miles downstream from transect XVII. Stations 1, 2, and 3 are in water 6, 8, and 16 feet deep, respectively.

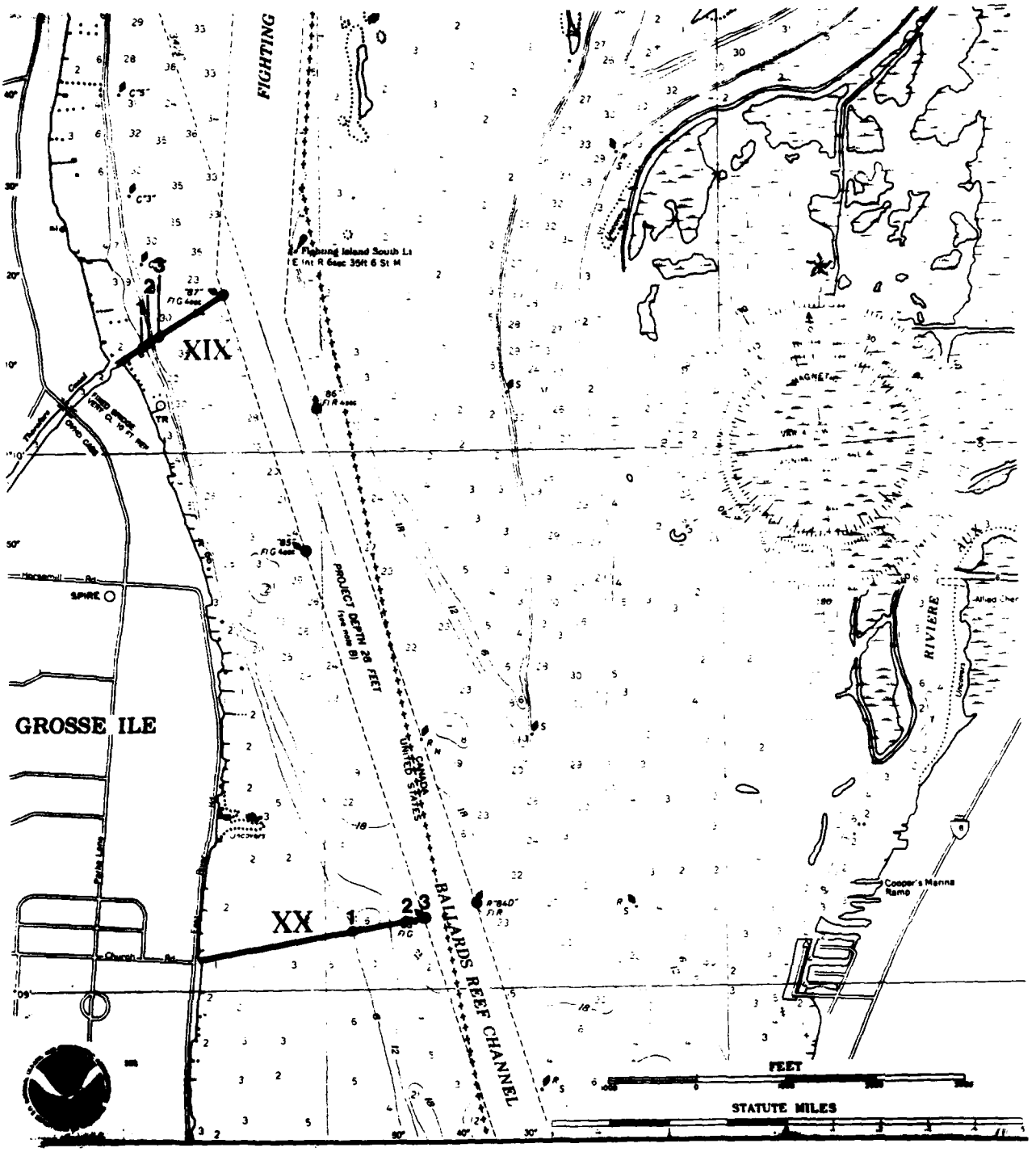


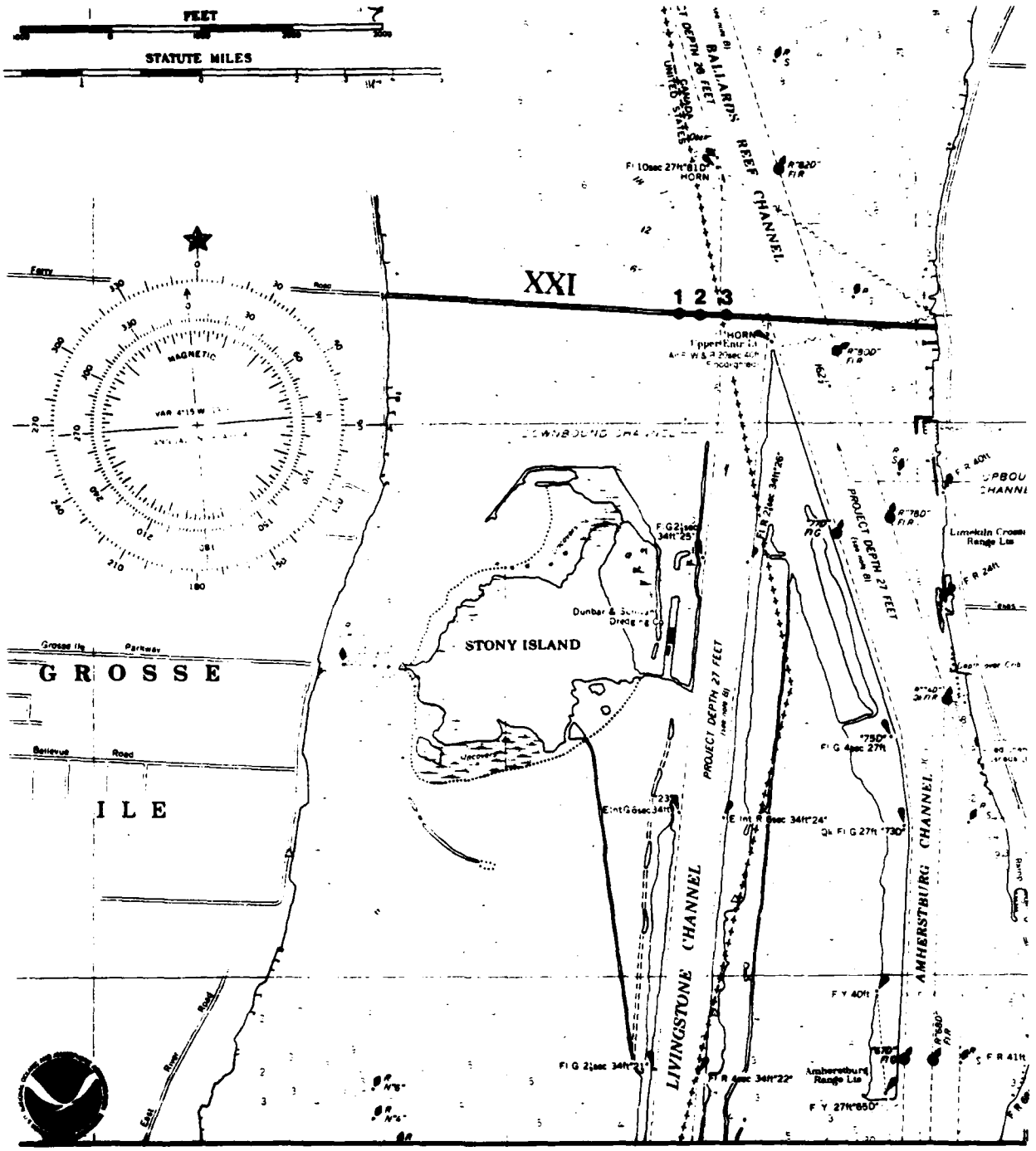
Fig. 15.

Transect XIX is adjacent to the Fighting Island Channel on a line between buoy 87 and the Thorofare Canal. Stations 1, 2, and 3 are in water 6, 12, and 20 feet deep, respectively, about 400-500 feet offshore. Transect XX is adjacent to the Ballards Reef Channel on a line between buoy 83 and Church Road on Grosse Isle. Stations 1, 2, and 3 are in water 5, 13, and 20 feet deep, respectively, about 1800-2600 feet offshore.

DETROIT RIVER

TRANSECTS XIX & XX

Fig. 15.



DETROIT RIVER

TRANSECT XXI

Fig. 16.

Fig. 16.

Transect XXI is adjacent to the Livingstone Channel on a bearing of 98° from Ferry Road on Grosse Isle. Stations 1, 2, and 3 are in water 9, 16, and 22 feet deep, respectively, about 3300-3700 feet offshore.

APPENDIX B

Macrozoobenthos Ponar Grab Data

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 1 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
NEMATODA	0	3	2	34
OLIGOCHAETA				
NAIS	0	0	1	
OTHER	58	72	43	
ALL OLIGOCHAETA				1198
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPOIDIDAE	1	0	0	
LIMNOCALANUS	3	0	1	
ALL COPEPODA				34
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	0	1	3	
PONTOPOREIA HOYI	35	8	10	
ALL AMPHIPODA				393
TERRESTRIAL INSECT	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 1 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	32	35	13	551
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	8	4	
SPHAERIUM	0	0	2	
ALL SPHAERIIDAE				207
ALL PELECYPODA				207

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 1 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMATODA	5	9	31	310
OLIGOCHAETA	54	73	68	1343
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	3	0	21
ALL POLYCHAETA				21
CLADOCERA				
DAPHNIA	0	1	0	
DAPHNIA PULEX	0	0	2	
ALL CLADOCERA				21
COPEPODA				
DIAPTOMUS	2	2	3	
HARPACTICOIDA	0	0	2	
LIMNOCALANUS	0	2	1	
ALL COPEPODA				83
OSTRACODA	0	3	0	21
AMPHIPODA				
GAMMARUS	1	1	0	
HYALELLA AZTECA	0	0	1	
PONTOPOREIA HOYI	0	4	0	
ALL AMPHIPODA				48

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 1 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	0	1	1	14
DIPTERA				
CHIRONOMIDAE	153	87	139	2610
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
LEPTOCERIDAE				
MYSTACIDES	0	0	1	
OECETIS	0	1	0	
ALL TRICHOPTERA				14
GASTROPODA				
AMNICOLA	0	1	1	
ELIMIA LIVESCENS	0	1	3	
ALL GASTROPODA				41
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	15	7	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				186
ALL PELECYPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 1 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	2	0	0	14
ALL FISH				14
CNIDARIA				
HYDRA	0	0	1	7
ALL CNIDARIA				7
RHABDOCOELA	0	0	1	7
NEMATODA	1	31	2	234
OLIGOCHAETA				
NAIS	0	0	2	
OTHER	16	130	56	
ALL OLIGOCHAETA				1405
CLADOCERA				
DAPHNIA	0	0	1	7
ALL CLADOCERA				7
COPEPODA				
DIAPTOMUS	4	5	2	
HARPACTICOIDA	0	1	0	
ALL COPEPODA				83
OSTRACODA	0	0	2	14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 1 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	3	15	
PONTOPOREIA HOYI	0	2	1	
ALL AMPHIPODA				145
DIPTERA				
CHIRONOMIDAE	30	110	60	1377
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	0	2	
ALL TRICHOPTERA				14
ACARINA	0	2	2	28
GASTROPODA				
AMNICOLA	2	15	4	
LYMNAEA	0	1	0	
ALL GASTROPODA				152
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	13	9	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				269
ALL PELECYPODA				269

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 2 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	0	1	7
ALL FISH				7
CNIDARIA				
HYDRA	26	10	271	2114
ALL CNIDARIA				2114
RHABDOCOELA	56	40	36	909
NEMATODA	82	101	261	3058
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	0	1	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	8	21	58	
SPIROSPERMA	48	63	124	
OTHER	2400	1808	1192	
ALL OLIGOCHAETA				39405
POLYCHAETA				
MANAYUNKIA SPECIOSA	5	0	0	34
ALL POLYCHAETA				34
CLADOCERA				
DAPHNIA	2	2	1	
DAPHNIA PULEX	0	0	1	
ILYOCRYPTUS	0	0	5	
ALL CLADOCERA				76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	0	1	
CYCLOPS BICUSPIDATUS	0	0	1	
CYCLOPS VERNALIS	0	0	1	
DIAPTOMUS	8	2	19	
HARPACTICOIDA	81	40	262	
LIMNOCALANUS	0	0	2	
MACROCYCLOPS	0	0	1	
PARACYCLOPS	0	0	7	
ALL COPEPODA				2927
OSTRACODA	0	0	6	41
AMPHIPODA				
GAMMARUS	11	4	6	
HYALELLA AZTECA	0	2	17	
PONTOPOREIA HOYI	0	1	2	
ALL AMPHIPODA				296
ISOPODA				
ASELLUS	0	0	1	7
ALL ISOPODA				7
TERRESTRIAL INSECT	0	0	1	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	0	0	2	
CHIRONOMIDAE	508	473	546	10516
EMPIDIDAE	1	0	4	
PSYCHODIDAE	0	0	1	
ALL DIPTERA				10571
EPHEMEROPTERA				
EPHEMEROPTERA	0	0	2	
CAENIDAE				
CAENIS	2	1	1	
EPHEMERIDAE				
HEXAGENIA	3	1	2	
EPHEMERELLIDAE				
EPHEMERELLA	0	1	7	
BAETISCIDAE				
BAETISCA	0	1	0	
HEPTAGENIIDAE				
STENONEMA	0	0	2	
ALL EPHEMEROPTERA				158
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	0	2	
ALL COLEOPTERA				14
LEPIDOPTERA	3	4	7	96

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	1	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	15	
HYDROPSYCHE	0	0	6	
LEPTOCERIDAE				
OECETIS	0	1	0	
SETODES	0	1	0	
OTHER	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	1	6	
OTHER	0	0	1	
ALL TRICHOPTERA				227
ACARINA	1	0	23	165
TARDIGRADA	0	0	3	21
GASTROPODA				
AMNICOLA	20	77	68	
FERISSIA	0	0	4	
PHYSA	4	3	48	
VALVATA SINCERA	1	0	0	
ALL GASTROPODA				1549

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	14	22	
SPHAERIUM	0	0	5	
ALL SPHAERIIDAE				303
ALL PELECYPODA				303

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 2 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	56	11	14	558
ALL CNIDARIA				558
RHABDOCOELA	6	6	3	103
NEMERTINEA	10	0	4	96
NEMATODA	42	28	33	709
OLIGOCHAETA				
NAIS	58	8	11	
SPIROSPERMA	60	38	53	
OTHER	117	231	144	
ALL OLIGOCHAETA				4958
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	5	34
ALL POLYCHAETA				34
CLADOCERA				
DAPHNIA	2	1	1	
ILYOCRYPTUS	1	0	0	
ALL CLADOCERA				34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	1	0	
DIAPTOMUS	3	2	4	
HARPACTICOIDA	25	3	13	
LIMNOCALANUS	0	0	1	
PARACYCLOPS	1	1	0	
ALL COPEPODA				372
DECAPODA				
ASTACIDAE	1	0	0	7
ALL DECAPODA				7
OSTRACODA	1	1	0	14
AMPHIPODA				
GAMMARUS	5	1	1	
HYALELLA AZTECA	3	6	2	
PONTOPOREIA HOYI	0	1	0	
ALL AMPHIPODA				131
ISOPODA				
ASELLUS	0	0	2	14
ALL ISOPODA				14
DIPTERA				
CHIRONOMIDAE	208	115	95	2879
EMPIDIDAE	1	24	15	
ALL DIPTERA				3154

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	3	10	4	
EPHEMERIDAE				
HEXAGENIA	2	1	0	
EPHEMERELLIDAE				
EPHEMERELLA	4	3	2	
BAETISCIDAE				
BAETISCA	0	1	0	
HEPTAGENIIDAE				
STENONEMA	1	0	0	
ALL EPHEMEROPTERA				213
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	1	0	
ALL COLEOPTERA				7
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	1	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	23	0	5	
HYDROPSYCHE	1	0	3	
LEPTOCERIDAE				
MYSTACIDES	0	2	0	
OECETIS	1	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	4	3	0	
RHYACOPHILIDAE				
PROTOPTILA	0	0	2	
ALL TRICHOPTERA				317
ACARINA	3	11	7	145

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	14	6	15	
ELIMIA LIVESCENS	27	38	11	
PHYSA	8	0	2	
ALL GASTROPODA				833
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	15	0	124
ALL PELECYPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 2 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
COTTUS BAIRDII	0	1	0	7
ALL FISH				7
CNIDARIA				
HYDRA	105	19	23	1012
ALL CNIDARIA				1012
RHABDOCOELA	8	0	1	62
NEMERTINEA	0	1	8	62
NEMATODA	8	6	2	110
OLIGOCHAETA				
NAIS	*28*	*3*	*8*	
SPIROSPERMA	0	3	5	
OTHER	149	16	39	
ALL OLIGOCHAETA				1729
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7
ALL POLYCHAETA				7
CLADOCERA				
DAPHNIA	2	0	1	21
ALL CLADOCERA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	5	0	0	
DIAPTOMUS	7	1	2	
HARPACTICOIDA	42	0	0	
LIMNOCALANUS	1	1	2	
ALL COPEPODA				420
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	1	0	1	
HYALELLA AZTECA	7	2	0	
PONTOPOREIA HOYI	2	0	0	
ALL AMPHIPODA				90
DIPTERA				
CHIRONOMIDAE	102	15	34	1040
EMPIDIDAE	0	6	1	
ALL DIPTERA				1088
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	2	
EPHEMERELLIDAE				
EPHEMERELLA	10	3	0	
HEPTAGENIIDAE				
STENONEMA	0	4	0	
ALL EPHEMEROPTERA				138

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	0	
ALL COLEOPTERA				7
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	0	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	62	37	12	
HYDROPSYCHE	0	7	10	
LEPTOCERIDAE				
CERACLEA	0	0	2	
OECETIS	1	0	0	
RHYACOPHILIDAE				
PROTOPTILA	1	2	5	
ALL TRICHOPTERA				971
HEMIPTERA				
CORIXIDAE	1	0	0	7
ACARINA	19	0	1	138
GASTROPODA				
AMNICOLA	2	3	3	
ELIMIA LIVESCENS	27	1	60	
LYMNAEA	0	0	1	
ALL GASTROPODA				668
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	17	117
ALL PELECYPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 3 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	3	7	3	90
ALL FISH				90
CNIDARIA				
HYDRA	7	9	4	138
ALL CNIDARIA				138
RHABDOCOELA	1	3	0	28
NEMERTINEA	0	0	7	48
NEMATODA	6	1	16	158
OLIGOCHAETA	83	17	279	2610
CLADOCERA				
DAPHNIA	0	2	0	14
ALL CLADOCERA				14
COPEPODA				
CYCLOPOIDIDAE	1	0	0	
CYCLOPS BICUSPIDATUS	0	0	1	
DIAPTOMUS	13	5	2	
HARPACTICOIDA	0	0	1	
LIMNOCALANUS	1	0	1	
ALL COPEPODA				172

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 3 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	0	0	1	
HYALELLA AZTECA	0	0	1	
ALL AMPHIPODA				14
DIPTERA				
CHIRONOMIDAE	103	109	214	2934
EMPIDIDAE	0	0	1	
ALL DIPTERA				2941
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	0	0	1	
MYSTACIDES	1	0	2	
ALL TRICHOPTERA				28
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	4	0	0	28
ALL GASTROPODA				28
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	1	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 3 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	7	4	0	76
ALL FISH				76
CNIDARIA				
HYDRA	3	9	5	117
ALL CNIDARIA				117
NEMERTINEA	0	1	0	7
NEMATODA	8	1	0	62
OLIGOCHAETA				
NAIS	0	0	1	
OTHER	97	7	18	
ALL OLIGOCHAETA				847
CLADOCERA				
DAPHNIA	1	0	1	14
ALL CLADOCERA				14
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	2	
DIAPTOMUS	3	8	7	
LIMNOCALANUS	1	1	0	
ALL COPEPODA				158
AMPHIPODA				
GAMMARUS	1	0	0	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

TRANSECT 3 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA	149	378	107	4366
CHIRONOMIDAE	3	2	7	
EMPIDIDAE				4449
ALL DIPTERA				
TRICHOPTERA				
HYDROPSYCHIDAE	0	0	1	
HYDROPSYCHE				
LEPTOCERIDAE	3	0	0	
CERACLEA	0	1	0	
OECETIS				
RHYACOPHILIDAE	0	1	0	
PROTOPTILA				
ALL TRICHOPTERA				41
ACARINA	0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/83

ST. CLAIR RIVER TRANSECT 3 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	2	12	2	110
ALL FISH				110
CNIDARIA				
HYDRA	1	1	2	28
ALL CNIDARIA				28
NEMATODA	2	2	3	48
OLIGOCHAETA	9	7	1	117
COPEPODA				
CYCLOPOIDIDAE	0	0	2	
DIAPTOMUS	3	9	4	
LIMNOCALANUS	0	2	0	
ALL COPEPODA				138
OSTRACODA	0	1	0	7
DIPTERA				
CHIRONOMIDAE	30	25	13	468
EMPIDIDAE	3	1	0	
ALL DIPTERA				496
ACARINA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 4 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	1	0	7
ALL FISH				7
CNIDARIA				
HYDRA	15	33	67	792
ALL CNIDARIA				792
RHABDOCOELA	1	0	3	28
NEMERTINEA	0	1	0	7
NEMATODA	205	93	106	2782
HIRUDINEA				
ERPOBDELLIDAE	1	0	0	7
OLIGOCHAETA				
NAIS	32	88	96	
SPIROSPERMA	48	106	56	
STYLARIA	0	0	1	
OTHER	160	118	96	
ALL OLIGOCHAETA				5530
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7
ALL POLYCHAETA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	0	2	1	21
ALL CLADOCERA				21
COPEPODA				
DIAPTOMUS	9	8	11	
HARPACTICOIDA	4	4	20	
LIMNOCALANUS	0	0	2	
ALL COPEPODA				399
OSTRACODA	1	1	0	14
AMPHIPODA				
GAMMARUS	0	0	11	
HYALELLA AZTECA	0	0	1	
ALL AMPHIPODA				83
DIPTERA				
CHIRONOMIDAE	51	81	102	1611
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	
EPHEMERELLIDAE				
EPHEMERELLA	0	1	4	
ALL EPHEMEROPTERA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	0	1	
LEPTOCERIDAE				
MYSTACIDES	0	1	0	
OTHER	1	0	0	
ALL TRICHOPTERA				34
ACARINA	2	1	8	76
GASTROPODA				
AMNICOLA	62	301	112	
ELIMIA LIVESCENS	*13*	*15*	*22*	
GYRAULUS	3	2	7	
LYMNAEA	0	1	15	
PHYSA	2	2	6	
VALVATA TRICARINATA	40	104	76	
ALL GASTROPODA				5392
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	25	124	53	
SPHAERIUM	0	0	2	
ALL SPHAERIIDAE				1405
ALL PELECYPODA				1405

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 4 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	155	0	0	1067
ALL FISH				1067
PORIFERA				
SPONGILLA	+	0	0	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	369	45	411	5681
ALL CNIDARIA				5681
RHABDOCOELA	28	5	0	227
NEMERTINEA	0	12	0	83
NEMATODA	55	42	39	937
HIRUDINEA				
HIRUDINEA	1	0	0	7
OLIGOCHAETA				
NAIS	95	91	68	
SPIROSPERMA	22	4	2	
OTHER	339	487	222	
ALL OLIGOCHAETA				9159

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	5	0	1	
DIAPTOMUS	13	3	9	
HARPACTICOIDA	32	18	51	
LIMNOCALANUS	3	0	1	
ALL COPEPODA				937
OSTRACODA	27	3	0	207
AMPHIPODA				
GAMMARUS	7	0	0	
HYALELLA AZTECA	4	0	0	
PONTOPOREIA HOYI	8	0	2	
ALL AMPHIPODA				145
ISOPODA				
ASELLUS	1	0	0	7
ALL ISOPODA				7
TERRESTRIAL INSECT	6	0	0	41
DIPTERA				
CERATOPOGONIDAE	3	0	0	
CHIRONOMIDAE	389	67	125	4001
EMPIDIDAE	2	4	0	
ALL DIPTERA				4063

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	2	0	0	
EPHEMERELLIDAE				
EPHEMERELLA	2	3	5	
HEPTAGENIIDAE				
STENONEMA	1	0	2	
ALL EPHEMEROPTERA				103
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	4	1	0	
HYDROPSYCHE	6	2	4	
OTHER	1	0	0	
LEPTOCERIDAE				
CERACLEA	1	1	0	
NECTOPSYCHE	1	0	0	
ALL TRICHOPTERA				145
ODONATA				
GOMPHIDAE				
GOMPHUS	1	0	0	7
ALL ODONATA				7
ACARINA	10	16	9	241
TARDIGRADA	2	0	1	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	2	2	0	
ELIMIA LIVESCENS	2	30	0	
GYRAULUS	5	1	0	
PHYSA	5	5	4	
ALL GASTROPODA				386
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	7	8	1	110
ALL PELECYPODA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 4 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	275	274	254	5530
ALL CNIDARIA				5530
RHABDOCOELA	3	5	3	76
NEMERTINEA	8	0	0	55
NEMATODA	14	15	3	220
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	1	0	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	102	141	33	
SPIROSPERMA	1	0	3	
STYLARIA	1	0	0	
OTHER	399	101	113	
ALL OLIGOCHAETA				6157
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	2	0	14
ALL POLYCHAETA				14
CLADOCERA				
DAPHNIA	0	1	0	7
ALL CLADOCERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	1	2	3	
DIAPTOMUS	5	1	7	
HARPACTICOIDA	32	3	6	
LIMNOCALANUS	0	1	0	
ALL COPEPODA				420
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	7	1	6	
HYALELLA AZTECA	0	2	6	
PONTOPOREIA HOYI	5	0	2	
ALL AMPHIPODA				200
TERRESTRIAL INSECT	0	1	1	14
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	158	110	95	2500
EMPIDIDAE	1	3	0	
ALL DIPTERA				2534

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERELLIDAE				
EPHEMERELLA	8	6	10	
BAETISCIDAE				
BAETISCA	0	0	1	
HEPTAGENIIDAE				
STENONEMA	1	0	1	
ALL EPHEMEROPTERA				186
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	10	5	2	
HYDROPSYCHE	2	0	1	
LEPTOCERIDAE				
MYSTACIDES	0	0	1	
OECETIS	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	2	0	0	
ALL TRICHOPTERA				165
PLECOPTERA	2	0	0	14
ACARINA	11	12	35	399

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	0	0	1	
ELIMIA LIVESCENS	2	0	11	
GYRAULUS	2	1	0	
LYMNAEA	0	0	1	
PHYSA	2	0	1	
ALL GASTROPODA				145
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	1	2	34
ALL PELECYPODA				34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 5 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	99	71	638	5564
ALL CNIDARIA				5564
RHABDOCOELA	9	52	36	668
TRICLADIDA	2	0	20	152
NEMERTINEA	2	0	0	14
NEMATODA	52	262	196	3512
HIRUDINEA				
ERPOBDELLIDAE	1	0	0	
GLOSSIPHONIIDAE				
HELOBDELLA TRISERIALIS	0	0	1	
PISCICOLIDAE				
PISCICOLA	0	1	0	
OTHER	1	0	0	
ALL HIRUDINEA				28
OLIGOCHAETA				
NAIS	53	11	39	
SPIROSPERMA	72	44	74	
OTHER	677	825	613	
ALL OLIGOCHAETA				16583

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
ILYOCRYPTUS	0	2	16	124
ALL CLADOCERA				124
COPEPODA				
DIAPTOMUS	13	14	3	
HARPACTICOIDA	4	7	0	
LIMNOCALANUS	1	3	16	
PARACYCLOPS	0	2	0	
UNIDENTIFIED NAUPLII	0	1	0	
ALL COPEPODA				441
DECAPODA				
ORCONECTES	1	0	0	7
ALL DECAPODA				7
OSTRACODA	0	5	1	41
AMPHIPODA				
GAMMARUS	51	4	35	
HYALELLA AZTECA	5	3	0	
PONTOPOREIA HOYI	1	1	1	
ALL AMPHIPODA				696
TERRESTRIAL INSECT	0	0	1	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	452	225	403	7438
EMPIDIDAE	0	0	1	
ALL DIPTERA				7444
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	5	25	
EPHEMERIDAE				
HEXAGENIA	12	12	16	
EPHEMERELLIDAE				
EPHEMERELLA	40	4	17	
HEPTAGENIIDAE				
STENONEMA	0	0	2	
ALL EPHEMEROPTERA				964
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	1	3	
ALL COLEOPTERA				34
LEPIDOPTERA	1	1	1	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	14	0	2	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	6	0	1	
LEPTOCERIDAE				
CERACLEA	1	0	2	
NECTOPSYCHE	1	0	0	
OECETIS	1	9	0	
TRIAENODES	2	0	0	
ALL TRICHOPTERA				275
HEMIPTERA				
CORIXIDAE	0	0	1	7
ODONATA				
GOMPHIDAE				
STYLURUS NOTATUS	0	1	0	7
ALL ODONATA				7
PLECOPTERA	1	0	1	14
ACARINA	4	0	17	145

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	33	140	110	
ELIMIA LIVESCENS	8	1	0	
GYRAULUS	3	0	24	
PHYSA	9	7	34	
VALVATA TRICARINATA	3	20	3	
ALL GASTROPODA				2720
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	17	47	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				461
ALL PELECYPODA				461

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 5 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	79	551
ALL CNIDARIA				551
RHABDOCOELA	1	0	0	7
NEMATODA	2	5	26	227
OLIGOCHAETA				
NAIS	0	23	59	
OTHER	35	15	116	
ALL OLIGOCHAETA				1708
CLADOCERA				
BOSMINA	0	0	1	
DAPHNIA	0	6	0	
ALL CLADOCERA				48
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	2	
DIAPTOMUS	1	5	6	
HARPACTICOIDA	0	0	11	
LIMNOCALANUS	2	2	0	
ALL COPEPODA				200
AMPHIPODA				
GAMMARUS	0	0	1	
HYALELLA AZTECA	0	1	2	
ALL AMPHIPODA				28

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	30	35	90	1067
EMPIDIDAE	0	0	1	
ALL DIPTERA				1074
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	2	0	
EPHEMERELLIDAE				
EPHEMERELLA	0	21	43	
HEPTAGENIIDAE				
STENONEMA	0	0	8	
ALL EPHEMEROPTERA				510
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	4	13	
HYDROPSYCHE	0	0	22	
ALL TRICHOPTERA				269
PLECOPTERA				
PERLODIDAE	0	0	1	7
ALL PLECOPTERA				7
ACARINA	0	1	9	69
GASTROPODA				
PHYSA	0	0	1	7
ALL GASTROPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	3	21
ALL PELECYPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 5 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
ETHEOSTOMA CAERULEUM	0	0	1	
FISH EGGS	0	0	2	
ALL FISH				21
CNIDARIA				
HYDRA	3	15	23	282
ALL CNIDARIA				282
RHABDOCOELA	1	0	0	7
NEMATODA	2	1	2	34
OLIGOCHAETA				
NAIS	0	0	4	
SPIROSPERMA	0	0	1	
OTHER	26	53	65	
ALL OLIGOCHAETA				1026
CLADOCERA				
BOSMINA	0	1	0	
DAPHNIA	1	0	3	
ALL CLADOCERA				34
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	2	
DIAPTOMUS	8	9	6	
LIMNOCALANUS	0	1	1	
ALL COPEPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 5 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
HYALELLA AZTECA	1	0	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	44	2	195	1660
EMPIDIDAE	4	0	0	
ALL DIPTERA				1687
EPHEMEROPTERA				
EPHEMERELLIDAE				
EPHEMERELLA	2	0	5	
ALL EPHEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	6	
LEPTOCERIDAE				
CERACLEA	0	0	1	
ALL TRICHOPTERA				48
PLECOPTERA	0	0	1	7
ACARINA	1	0	2	21
GASTROPODA				
AMNICOLA	0	1	0	7
ALL GASTROPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 6 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1109	838	428	16356
ALL CNIDARIA				16356
RHABDOCOELA	2	3	6	76
TRICLADIDA	23	30	7	413
NEMERTINEA	0	1	0	7
NEMATODA	86	40	11	943
OLIGOCHAETA				
NAIS	4	0	3	
SPIROSPERMA	12	25	40	
OTHER	374	166	192	
ALL OLIGOCHAETA				5620
CLADOCERA				
DAPHNIA	0	2	2	
DAPHNIA AMBIGUA	1	0	0	
ILYOCRYPTUS	9	3	1	
ALL CLADOCERA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	3	0	
CYCLOPS BICUSPIDATUS	14	0	0	
DIAPTOMUS	17	12	17	
HARPACTICOIDA	27	15	8	
LIMNOCALANUS	1	5	1	
ALL COPEPODA				826
OSTRACODA	0	0	2	14
AMPHIPODA				
GAMMARUS	108	129	61	
HYALELLA AZTECA	0	3	0	
PONTOPOREIA HOYI	1	0	0	
ALL AMPHIPODA				2080
ISOPODA				
ASELLUS	1	3	0	28
ALL ISOPODA				28
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	4	1	1	
CHIRONOMIDAE	437	718	879	14007
EMPIDIDAE	1	0	0	
ALL DIPTERA				14056

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	6	0	
EPHEMERIDAE				
HEXAGENIA	4	6	1	
ALL EPHEMEROPTERA				124
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	0	
ALL COLEOPTERA				7
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	1	2	0	
MYSTACIDES	0	1	1	
NECTOPSYCHE	1	0	0	
OECETIS	9	35	13	
SETODES	0	0	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	1	0	0	
ALL TRICHOPTERA				448
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	22	56	82	
ELIMIA LIVESCENS	6	32	11	
GYRAULUS	13	14	8	
PHYSA	4	6	7	
VALVATA TRICARINATA	18	6	1	
				1970

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	23	13	
SPHAERIUM	0	4	1	
ALL SPHAERIIDAE				324
ALL PELECYPODA				324

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 6 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
COTTUS BAIRDII	0	0	1	
FISH EGGS	9	0	0	
ALL FISH				69
CNIDARIA				
HYDRA	2276	3303	2754	57387
ALL CNIDARIA				57387
RHABDOCOELA	58	17	56	902
NEMERTINEA	1	0	1	14
NEMATODA	54	55	31	964
HIRUDINEA				
PISCICOLIDAE				
PISCICOLA MILNERI	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	32	52	95	
SPIROSPERMA	41	56	105	
OTHER	605	706	536	
ALL OLIGOCHAETA				15343
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	2	14
ALL POLYCHAETA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	0	1	0	
DAPHNIA	0	0	1	
DAPHNIA GALEATA MENDOTAE	0	1	0	
DAPHNIA PULEX	0	2	0	
ILYOCRYPTUS	9	14	9	
ALL CLADOCERA				255
COPEPODA				
CYCLOPS BICUSPIDATUS	0	18	24	
DIAPTOMUS	17	29	16	
HARPACTICOIDA	81	100	24	
LIMNOCALANUS	3	3	8	
PARACYCLOPS	0	2	0	
ALL COPEPODA				2238
OSTRACODA	8	2	10	138
AMPHIPODA				
GAMMARUS	55	24	45	
H.ALELLA AZTECA	4	1	8	
PONTOPOREIA HOYI	2	1	1	
ALL AMPHIPODA				971
ISOPODA				
ASELLUS	1	0	2	21
ALL ISOPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CERATOPOGONIDAE	0	0	2	
CHIRONOMIDAE	469	415	817	11714
EMPIDIDAE	1	0	0	
ALL DIPTERA				11735
EPHEMEROPTERA				
CAENIDAE				
CAENIS	9	1	9	
EPHEMERIDAE				
HEXAGENIA	66	20	26	
EPHEMERELLIDAE				
EPHEMERELLA	3	1	10	
HEPTAGENIIDAE				
STENONEMA	0	0	1	
ALL EPHEMEROPTERA				1005
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	3	
ALL COLEOPTERA				28

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	5	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	0	0	1	
LEPTOCERIDAE				
CERACLEA	3	5	2	
MYSTACIDES	0	0	1	
OECETIS	0	1	1	
TRIAENODES	0	1	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	2	3	
ALL TRICHOPTERA				200
ACARINA	2	0	1	21
GASTROPODA				
AMNICOLA	4	5	15	
ELIMIA LIVESCENS	1	1	12	
GYRAULUS	0	0	3	
PHYSA	7	5	21	
ALL GASTROPODA				510
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	3	10	117
ALL PELECYPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 6 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	21	0	14	241
ALL CNIDARIA				241
RHABDOCOELA	14	10	10	234
NEMATODA	34	83	68	1274
OLIGOCHAETA				
SPIROSPERMA FEROX	62	46	84	
OTHER	0	46	59	
ALL OLIGOCHAETA				2045
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	1	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	0	0	1	
DAPHNIA	0	1	0	
DAPHNIA AMBIGUA	0	1	0	
ALL CLADOCERA				21
COPEPODA				
CYCLOPOIDIDAE	0	6	0	
DIAPTOMUS	3	34	9	
HARPACTICOIDA	1	0	0	
LIMNOCALANUS	3	0	3	
ALL COPEPODA				406

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	11	0	3	
PONTOPOREIA HOYI	0	0	1	
ALL AMPHIPODA				103
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	2	0	0	
CHIRONOMIDAE	327	183	30	3719
EMPIDIDAE	9	0	4	
ALL DIPTERA				3822
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	16	0	2	
EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	
ALL EPHEMEROPTERA				131
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	1	1	
ALL COLEOPTERA				21
TRICHOPTERA				
LEPTOCERIDAE				
MYSTACIDES	0	0	1	
OECETIS	0	0	1	
TRIAENODES	0	0	1	
ALL TRICHOPTERA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	0	3	21
GASTROPODA				
AMNICOLA	48	2	5	
ELIMIA LIVESCENS	5	0	5	
GYRAULUS	22	0	0	
PHYSA	4	0	0	
SOMATOGYRUS SUBGLOBOSUS	1	0	0	
VALVATA TRICARINATA	1	1	0	
ALL GASTROPODA				647
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	24	9	18	
SPHAERIUM	8	3	3	
ALL SPHAERIIDAE				448
ALL PELECYPODA				448

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 7 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	2217	1614	3411	49873
ALL CNIDARIA				49873
RHABDOCOELA	76	13	63	1047
TRICLADIDA	0	16	0	110
NEMERTINEA	0	3	0	21
NEMATODA	24	104	38	1143
OLIGOCHAETA				
NAIS	2	8	0	
SPIROSPERMA	40	46	54	
OTHER	405	287	489	
ALL OLIGOCHAETA				9166
CLADOCERA				
BOSMINA	1	0	0	
DAPHNIA	2	0	0	
DAPHNIA PULEX	2	0	0	
DAPHNIA SCHODLERI	1	0	0	
ILYOCRYPTUS	3	0	1	
ALL CLADOCERA				69

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	9	0	3	
DIAPTOMUS	27	5	61	
HARPACTICOIDA	2	2	7	
LIMNOCALANUS	4	0	0	
PARACYCLOPS	1	0	0	
ALL COPEPODA				833
OSTRACODA	1	0	8	62
AMPHIPODA				
GAMMARUS	101	113	254	
HYALELLA AZTECA	1	2	14	
PONTOPOREIA HOYI	1	0	0	
ALL AMPHIPODA				3347
ISOPODA				
ASELLUS	0	1	10	76
ALL ISOPODA				76
DIPTERA				
CERATOPOGONIDAE	3	0	2	
CHIRONOMIDAE	638	380	1221	15419
ALL DIPTERA				15454

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	34	21	101	
EPHEMERIDAE				
HEXAGENIA	2	2	12	
EPHEMERELLIDAE				
EPHEMERELLA	2	2	2	
ALL EPHEMEROPTERA				1226
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	13	7	7	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	3	1	1	
HYDROPSYCHE	2	1	1	
LEPTOCERIDAE				
CERACLEA	2	1	2	
NECTOPSYCHE	0	0	1	
OECETIS	4	0	9	
SETODES	1	0	0	
TRIAENODES	1	0	0	
LIMNEPHILIDAE				
PYCNOPSYCHE	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	2	2	
ALL TRICHOPTERA				434
ACARINA	5	0	1	41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	58	47	228	
ELIMIA LIVESCENS	39	12	38	
GYRAULUS	20	21	23	
PHYSA	20	6	26	
VALVATA TRICARINATA	1	0	0	
ALL GASTROPODA				3712
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	62	29	97	
SPHAERIUM	1	1	1	
ALL SPHAERIIDAE				1315
ALL PELECYPODA				1315

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 7 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1515	1492	233	22313
ALL CNIDARIA				22313
RHABDOCOELA	13	23	5	282
NEMERTINEA	27	0	1	193
NEMATODA	225	49	78	2424
OLIGOCHAETA				
NAIS	19	21	5	
SPIROSPERMA	70	55	5	
OTHER	203	261	23	
ALL OLIGOCHAETA				4559
CLADOCERA				
DAPHNIA PULEX	0	2	0	
DAPHNIA SCHODLERI	0	1	0	
ALL CLADOCERA				21
COPEPODA				
CYCLOPS BICUSPIDATUS	0	6	0	
DIAPTOMUS	8	12	0	
HARPACTICOIDA	0	2	0	
LIMNOCALANUS	3	1	0	
ALL COPEPODA				220

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DECAPODA				
ASTACIDAE	1	0	0	7
ALL DECAPODA				7
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	57	49	31	
HYALELLA AZTECA	3	0	3	
ALL AMPHIPODA				985
TERRESTRIAL INSECT	0	1	3	28
DIPTERA				
CHIRONOMIDAE	343	267	39	4469
EMPIDIDAE	0	2	5	
ALL DIPTERA				4518
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	5	18	
EPHEMERIDAE				
HEXAGENIA	13	12	9	
EPHEMERELLIDAE				
EPHEMERELLA	11	4	26	
HEPTAGENIIDAE				
STENONEMA	1	0	1	
ALL EPHEMEROPTERA				737

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	4	7	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	4	17	9	
HYDROPSYCHE	5	8	1	
HYDROPTILIDAE				
HYDROPTILA	0	0	1	
LEPTOCERIDAE				
CERACLEA	9	3	2	
MYSTACIDES	0	1	0	
OECETIS	8	0	0	
TRIAENODES	2	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	3	7	11	
ALL TRICHOPTERA				702
PLECOPTERA				
PERLODIDAE	0	1	0	7
ALL PLECOPTERA				7
ACARINA	2	1	5	55
GASTROPODA				
AMNICOLA	18	15	6	
ELIMIA LIVESCENS	87	65	32	
GYRAULUS	0	1	0	
PHYSA	1	4	0	
ALL GASTROPODA				1577

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	31	6	
SPHAERIUM	7	10	8	
ALL SPHAERIIDAE				496
ALL PELECYPODA				496

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

ST. CLAIR RIVER TRANSECT 7 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	1	0	0	7
ALL FISH				7
CNIDARIA				
HYDRA	27	2	2	213
ALL CNIDARIA				213
RHABDOCOELA	0	0	14	96
NEMERTINEA	11	7	0	124
NEMATODA	624	267	230	7720
OLIGOCHAETA				
NAIS	0	3	1	
SPIROSPERMA	7	0	0	
OTHER	28	6	32	
ALL OLIGOCHAETA				530
CLADOCERA				
DAPHNIA	3	0	0	21
ALL CLADOCERA				21
COPEPODA				
DIAPTOMUS	0	14	5	
LIMNOCALANUS	0	1	4	
ALL COPEPODA				165

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	3	0	0	21
AMPHIPODA				
GAMMARUS	12	5	0	
HYALELLA AZTECA	1	0	7	
ALL AMPHIPODA				172
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	23	10	30	434
EMPIDIDAE	0	1	2	
ALL DIPTERA				455
EPHEMEROPTERA				
CAENIDAE				
CAENIS	2	1	0	
EPHEMERIDAE				
HEXAGENIA	3	4	12	
EPHEMERELLIDAE				
EPHEMERELLA	3	7	0	
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				227

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	0	1	0	
LEPTOCERIDAE				
CERACLEA	1	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	1	0	
ALL TRICHOPTERA				41
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	40	4	37	
ELIMIA LIVESCENS	23	3	3	
ALL GASTROPODA				758
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	6	1	9	110
ALL PELECYPODA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 8 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1008	155	136	8946
ALL CNIDARIA				8946
RHABDOCOELA	10	347	185	3733
TRICLADIDA	4	16	4	165
NEMERTINEA	0	2	0	14
NEMATODA	19	48	38	723
HIRUDINEA				
GLOSSIPHONIIDAE				
GLOSSIPHONIA COMPLANATA	1	1	0	
ALL HIRUDINEA				14
OLIGOCHAETA				
NAIS	2	17	0	
SPIROSPERMA	74	196	53	
OTHER	157	718	354	
ALL OLIGOCHAETA				10819
POLYCHAETA				
MANAYUNKIA SPECIOSA	48	6	36	620
ALL POLYCHAETA				620

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
ILYOCRYPTUS	0	0	5	34
ALL CLADOCERA				34
COPEPODA				
DIAPTOMUS	17	24	1	
HARPACTICOIDA	48	17	21	
LIMNOCALANUS	0	0	1	
PARACYCLOPS	0	1	0	
ALL COPEPODA				895
OSTRACODA	32	9	0	282
AMPHIPODA				
GAMMARUS	167	258	48	
HYALELLA AZTECA	37	10	0	
ALL AMPHIPODA				3581
ISOPODA				
ASELLUS	69	45	4	813
ALL ISOPODA				813
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	618	633	196	9965
ALL DIPTERA				9972

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	71	36	7	
ALL EPHEMEROPTERA				785
LEPIDOPTERA	0	1	1	14
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	1	1	0	
OECETIS	1	1	0	
TRIAENODES	1	0	0	
LIMNEPHILIDAE				
PYCNOPSYCHE	1	0	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	3	2	0	
ALL TRICHOPTERA				76
ODONATA				
COENAGRIONIDAE	1	0	0	7
ACARINA	2	2	0	28
GASTROPODA				
AMNICOLA	57	111	39	
ELIMIA LIVESCENS	3	7	0	
GYRAULUS	0	137	42	
PHYSA	9	86	23	
ALL GASTROPODA				3540

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	80	146	45	
SPHAERIUM	1	1	0	
ALL SPHAERIIDAE				1880
ALL PELECYPODA				1880

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 8 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	440	708	1353	17224
ALL CNIDARIA				17224
RHABDOCOELA	34	52	42	881
NEMERTINEA	0	2	0	14
NEMATODA	44	119	111	1887
OLIGOCHAETA				
NAIS	0	0	2	
SPIROSPERMA	16	146	61	
OTHER	704	1423	514	
ALL OLIGOCHAETA				19737
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	16	9	179
ALL POLYCHAETA				179
CLADOCERA				
ILYOCRYPTUS	12	0	18	207
ALL CLADOCERA				207

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	8	
DIAPTOMUS	8	16	16	
HARPACTICOIDA	81	97	74	
LIMNOCALANUS	1	0	0	
MESOCYCLOPS	1	0	0	
PARACYCLOPS	4	0	1	
ALL COPEPODA				2128
OSTRACODA	1	0	1	14
AMPHIPODA				
GAMMARUS	17	26	37	
HYALELLA AZTECA	1	7	19	
PONTOPOREIA HOYI	6	0	1	
ALL AMPHIPODA				785
ISOPODA				
ASELLUS	0	5	6	76
ALL ISOPODA				76
DIPTERA				
CERATOPOGONIDAE	0	0	3	
CHIRONOMIDAE	309	579	602	10261
ALL DIPTERA				10282

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	4	23	9	
EPHEMERIDAE				
HEXAGENIA	7	6	38	
ALL EPHEMEROPTERA				599
LEPIDOPTERA	0	3	3	41
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	0	1	0	
OECETIS	1	1	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	1	2	
ALL TRICHOPTERA				41
ODONATA				
COENAGRIONIDAE	0	0	1	7
ACARINA	1	2	2	34
GASTROPODA				
AMNICOLA	95	91	32	
ELIMIA LIVESCENS	0	1	1	
GYRAULUS	0	0	1	
PHYSA	1	3	1	
VALVATA SINCERA	0	2	3	
VALVATA TRICARINATA	2	0	0	
ALL GASTROPODA				1605

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	7	0	4	76
ALL PELECYPODA				76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 8 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	8	1	0	62
ALL FISH				62
CNIDARIA				
HYDRA	1948	1416	514	26706
ALL CNIDARIA				26706
RHABDOCOELA	84	81	104	1853
NEMATODA	76	24	9	751
OLIGOCHAETA				
NAIS	48	7	29	
SPIROSPERMA	384	85	652	
OTHER	1526	511	575	
ALL OLIGOCHAETA				26286
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	3	35	262
ALL POLYCHAETA				262
CLADOCERA				
DAPHNIA	1	0	2	
ILYOCRYPTUS	0	1	1	
ALL CLADOCERA				34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	8	3	0	
DIAPTOMUS	1	4	9	
HARPACTICOIDA	49	23	8	
LIMNOCALANUS	0	4	1	
PARACYCLOPS	0	1	0	
ALL COPEPODA				764
OSTRACODA	1	3	0	28
AMPHIPODA				
GAMMARUS	20	12	12	
HYALELLA AZTECA	8	1	7	
PONTOPOREIA HOYI	2	8	2	
ALL AMPHIPODA				496
ISOPODA				
ASELLUS	2	2	3	48
ALL ISOPODA				48
DIPTERA				
CERATOPOGONIDAE	7	8	3	
CHIRONOMIDAE	567	497	644	11762
EMPIDIDAE	0	1	0	
TIPULIDAE	1	0	0	
ALL DIPTERA				11900

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	15	4	6	
EPHEMERIDAE				
HEXAGENIA	37	20	4	
EPHEMERELLIDAE				
EPHEMERELLA	1	4	5	
ALL EPHEMEROPTERA				661
LEPIDOPTERA				
PYRALIDAE	0	0	1	
OTHER	3	0	0	
ALL LEPIDOPTERA				28
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	2	1	0	
LEPTOCERIDAE				
TRIAENODES	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	2	
ALL TRICHOPTERA				41
ACARINA	0	10	2	83
GASTROPODA				
AMNICOLA	44	48	105	
GYRAULUS	0	1	0	
PHYSA	5	7	29	
VALVATA SINCERA	1	0	0	
ALL GASTROPODA				1653

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	31	71	92	
SPHAERIUM	0	0	17	
ALL SPHAERIIDAE				1453
ALL PELECYPODA				1453

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 9 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	110	68	97	1894
ALL CNIDARIA				1894
TRICLADIDA	6	47	7	413
NEMERTINEA	0	0	1	7
NEMATODA	59	42	53	1061
HIRUDINEA				
ERPOBDELLIDAE	1	3	0	
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	1	1	3	
ALL HIRUDINEA				62
OLIGOCHAETA				
NAIS	8	11	6	
SPIROSPERMA	87	9	58	
OTHER	429	210	277	
ALL OLIGOCHAETA				7541
POLYCHAETA				
MANAYUNKIA SPECIOSA	257	205	359	5654
ALL POLYCHAETA				5654
CLADOCERA				
ILYOCRYPTUS	5	19	1	172
ALL CLADOCERA				172

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	1	
HARPACTICOIDA	8	17	16	
PARACYCLOPS	3	0	0	
ALL COPEPODA				310
OSTRACODA	5	1	8	96
AMPHIPODA				
GAMMARUS	40	53	33	
HYALELLA AZTECA	253	127	108	
ALL AMPHIPODA				4228
ISOPODA				
ASELLUS	27	69	14	
LIRCEUS	9	6	5	
ALL ISOPODA				895
DIPTERA				
CERATOPOGONIDAE	19	11	17	
CHIRONOMIDAE	320	468	282	7369
ALL DIPTERA				7692
EPHEMEROPTERA				
CAENIDAE				
CAENIS	255	281	171	
EPHEMERIDAE				
HEXAGENIA	13	20	10	
ALL EPHEMEROPTERA				5165

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
LEPIDOPTERA				
PYRALIDAE	0	0	1	
OTHER	1	0	0	
ALL LEPIDOPTERA				14
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	0	
LEPTOCERIDAE				
CERACLEA	1	0	1	
MYSTACIDES	3	11	9	
NECTOPSYCHE	8	0	0	
OECETIS	14	7	7	
SETODES	7	0	2	
POLYCENTROPODIDAE				
POLYCENTROPUS	4	2	2	
OTHER	3	0	0	
ALL TRICHOPTERA				565
ACARINA	2	0	1	21
TARDIGRADA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	26	63	60	
ELIMIA LIVESCENS	0	2	2	
GYRAULUS	10	38	7	
PHYSA	3	1	4	
ALL GASTROPODA				1488
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	35	28	31	
SPHAERIUM	0	2	9	
ALL SPHAERIIDAE				723
ALL PELECYPODA				723

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 9 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	15	0	287	2080
ALL CNIDARIA				2080
RHABDOCOELA	67	15	150	1598
TRICLADIDA	0	0	4	28
NEMERTINEA	1	1	0	14
NEMATODA	61	36	68	1136
OLIGOCHAETA				
NAIS	1	0	0	
SPIROSPERMA	182	112	150	
OTHER	974	624	689	
ALL OLIGOCHAETA				18814
POLYCHAETA				
MANAYUNKIA SPECIOSA	41	13	18	496
ALL POLYCHAETA				496
CLADOCERA				
DAPHNIA	0	0	1	
ILYOCRYPTUS	16	1	16	
ALL CLADOCERA				234

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	2	0	
CYCLOPS BICUSPIDATUS	1	0	0	
DIAPTOMUS	3	0	0	
HARPACTICOIDA	74	32	120	
LIMNOCALANUS	1	3	0	
PARACYCLOPS	2	0	0	
ALL COPEPODA				1639
OSTRACODA	4	1	1	41
AMPHIPODA				
GAMMARUS	42	12	82	
HYALELLA AZTECA	0	0	5	
PONTOPOREIA HOYI	3	0	2	
ALL AMPHIPODA				1005
ISOPODA				
ASELLUS	0	0	6	41
ALL ISOPODA				41
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	5	1	2	
CHIRONOMIDAE	681	312	406	9634
ALL DIPTERA				9690

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	17	5	9	
EPHEMERIDAE				
HEXAGENIA	6	2	7	
EPHEMERELLIDAE				
EPHEMERELLA	0	0	3	
ALL EPHEMEROPTERA				337
LEPIDOPTERA	0	0	1	7
TRICHOPTERA				
LEPTOCERIDAE				
MYSTACIDES	1	0	0	
OECETIS	2	6	0	
SETODES	2	0	0	
ALL TRICHOPTERA				76
ACARINA	0	1	1	14
GASTROPODA				
AMNICOLA	75	40	92	
ELIMIA LIVESCENS	3	2	6	
GYRAULUS	0	2	1	
PHYSA	1	1	6	
PLEUROCERA ACUTA	0	1	0	
VALVATA TRICARINATA	12	5	10	
ALL GASTROPODA				1770

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	47	14	11	
SPHAERIUM	0	0	8	
ALL SPHAERIIDAE				551
ALL PELECYPODA				551

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 9 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	13	0	2	103
ALL FISH				103
CNIDARIA				
HYDRA	519	11	37	3905
ALL CNIDARIA				3905
RHABDOCOELA	27	6	25	399
TRICLADIDA	1	0	0	7
NEMATODA	48	47	16	764
OLIGOCHAETA				
NAIS	13	0	2	
SPIROSPERMA	125	136	59	
OTHER	347	391	313	
ALL OLIGOCHAETA				9545
POLYCHAETA				
MANAYUNKIA SPECIOSA	4	2	0	41
ALL POLYCHAETA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	2	2	0	
DAPHNIA PULEX	0	0	3	
DAPHNIA SCHODLERI	0	0	2	
ILYOCRYPTUS	13	5	1	
ALL CLADOCERA				193
COPEPODA				
DIAPTOMUS	5	4	2	
HARPACTICOIDA	68	9	4	
LIMNOCALANUS	3	2	0	
ALL COPEPODA				668
OSTRACODA	5	1	0	41
AMPHIPODA				
GAMMARUS	17	0	14	
HYALELLA AZTECA	18	1	3	
PONTOPOREIA HOYI	5	5	2	
ALL AMPHIPODA				448
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CERATOPOGONIDAE	0	5	3	
CHIRONOMIDAE	738	626	261	11191
ALL DIPTERA				11246

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	4	4	0	
EPHEMERIDAE				
HEXAGENIA	11	28	25	
EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	
ALL EPHEMEROPTERA				503
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	0	2	
ALL COLEOPTERA				14
LEPIDOPTERA	0	0	1	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	2	
HYDROPSYCHE	1	0	0	
LEPTOCERIDAE				
CERACLEA	0	0	1	
MYSTACIDES	3	0	0	
NECTOPSYCHE	0	0	1	
OECETIS	2	0	0	
ALL TRICHOPTERA				76
ACARINA	0	4	1	34

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 4/83

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	69	12	28	
ELIMIA LIVESCENS	1	0	3	
GYRAULUS	3	0	4	
PHYSA	11	0	0	
VALVATA TRICARINATA	4	0	0	
ALL GASTROPODA				930
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	24	29	475
ALL PELECYPODA				475

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 10 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	12	0	7	131
ALL CNIDARIA				131
RHABDOCOELA	1	2	3	41
NEMATODA	2	7	12	145
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	0	1	0	
OTHER	12	26	80	
ALL OLIGOCHAETA				620
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7
ALL POLYCHAETA				7
CLADOCERA				
DAPHNIA GALEATA MENDOTAE	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
HARPACTICOIDA	0	13	2	
LIMNOCALANUS	3	0	1	
ALL COPEPODA				131
AMPHIPODA				
GAMMARUS	2	1	5	55
ALL AMPHIPODA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 10 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CERATOPOGONIDAE	0	3	2	
CHIRONOMIDAE	4	20	72	661
ALL DIPTERA				696
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	1	2	4	
ELIMIA LIVESCENS	0	0	1	
ALL GASTROPODA				55
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	9	17	186
ALL PELECYPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 10 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	49	8	145	1391
ALL CNIDARIA				1391
RHABDOCOELA	22	22	80	854
TRICLADIDA	0	0	6	41
NEMERTINEA	1	0	1	14
NEMATODA	39	58	49	1005
OLIGOCHAETA				
NAIS	0	0	4	
SPIROSPERMA	31	33	22	
OTHER	206	195	305	
ALL OLIGOCHAETA				5482
POLYCHAETA				
MANAYUNKIA SPECIOSA	61	19	91	1178
ALL POLYCHAETA				1178
CLADOCERA				
ILYOCRYPTUS	1	6	1	55
ALL CLADOCERA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	1	0	1	
HARPACTICOIDA	0	21	20	
LIMNOCALANUS	2	0	1	
ALL COPEPODA				317
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	46	10	76	
PONTOPOREIA HOYI	0	0	3	
ALL AMPHIPODA				930
ISOPODA				
ASELLUS	5	0	10	103
ALL ISOPODA				103
DIPTERA				
CERATOPOGONIDAE	2	2	0	
CHIRONOMIDAE	203	310	444	6591
ALL DIPTERA				6618
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	2	14	
EPHEMERIDAE				
HEXAGENIA	3	13	1	
EPHEMERELLIDAE				
EPHEMERELLA	0	0	2	
ALL EPHEMEROPTERA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
MYSTACIDES	1	1	0	
OECETIS	1	0	2	
ALL TRICHOPTERA				34
ACARINA	1	1	0	14
GASTROPODA				
AMNICOLA	137	12	72	
ELIMIA LIVESCENS	5	1	7	
GYRAULUS	12	1	4	
PHYSA	4	0	9	
VALVATA TRICARINATA	3	0	8	
ALL GASTROPODA				1894
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	43	24	24	627
UNIONIDAE	1	0	0	
ALL PELECYPODA				634

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

ST. CLAIR RIVER TRANSECT 10 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1707	7	81	12362
ALL CNIDARIA				12362
RHABDOCOELA	79	27	103	1439
TRICLADIDA	6	0	1	48
NEMERTINEA	9	0	0	62
NEMATODA	118	51	88	1770
OLIGOCHAETA				
NAIS	76	0	0	
SPIROSPERMA	216	40	23	
OTHER	489	343	244	
ALL OLIGOCHAETA				9855
CLADOCERA				
BOSMINA	0	1	0	
ILYOCRYPTUS	32	18	4	
ALL CLADOCERA				379

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	0	
DIAPTOMUS	0	4	0	
HARPACTICOIDA	112	42	13	
MACROCYCLOPS	0	1	0	
ALL COPEPODA				1191
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	59	6	30	
HYALELLA AZTECA	4	0	1	
PONTOPOREIA HOYI	0	1	0	
ALL AMPHIPODA				696
ISOPODA				
ASELLUS	1	0	4	34
ALL ISOPODA				34
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CERATOPOGONIDAE	5	1	10	
CHIRONOMIDAE	598	262	247	7624
PSYCHODIDAE	1	0	0	
ALL DIPTERA				7741

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	15	4	2	
EPHEMERIDAE				
HEXAGENIA	18	22	6	
EPHEMERELLIDAE				
EPHEMERELLA	4	0	0	
ALL EPHEMEROPTERA				489
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	3	2	
POLYCENTROPODIDAE				
NEURECLIPSIS	5	0	0	
ALL TRICHOPTERA				76
ODONATA				
COENAGRIONIDAE	1	0	0	7
ACARINA	5	0	2	48
TARDIGRADA	0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	84	25	36	
ELIMIA LIVESCENS	0	0	3	
GYRAULUS	24	1	2	
PHYSA	4	1	1	
ALL GASTROPODA				1246
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	11	15	
SPHAERIUM	22	0	1	
ALL SPHAERIIDAE				406
ALL PELECYPODA				406

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

LAKE ST. CLAIR TRANSECT 11 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	1	0	7
NEMATODA	73	68	13	1061
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	1	0	0	
HELOBDELLA STAGNALIS	0	3	0	
PLACOBDELLA MONTIFERA	0	0	1	
ALL HIRUDINEA				34
OLIGOCHAETA				
SPIROSPERMA	1	1	0	
OTHER	39	47	36	
ALL OLIGOCHAETA				854
POLYCHAETA				
MANAYUNKIA SPECIOSA	28	16	5	337
ALL POLYCHAETA				337
CLADOCERA				
ILYOCRYPTUS	2	0	1	21
ALL CLADOCERA				21
COPEPODA				
HARPACTICOIDA	6	2	0	55
ALL COPEPODA				55
OSTRACODA	1	3	0	28

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	1	8	62
ALL AMPHIPODA				62
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	58	80	26	1129
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	45	56	44	
EPHEMERELLIDAE				
EPHEMERELLA	0	0	1	
ALL EPHEMEROPTERA				1005
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
LEPTOCERIDAE				
OECETIS	1	5	0	
ALL TRICHOPTERA				48
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	1	0	0	7
ALL GASTROPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	20	16	4	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				282
UNIONIDAE				
LAMPSILIS RADIATA SILIQUOIDEA	0	0	1	
OTHER	0	1	0	
ALL PELECYPODA				296

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

LAKE ST. CLAIR TRANSECT 11 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	3	2	41
NEMATODA	94	98	233	2927
HIRUDINEA				
GLOSSIPHONIIDAE				
PLACOBDELLA MONTIFERA	0	1	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	0	1	0	
OTHER	59	45	118	
ALL OLIGOCHAETA				1543
POLYCHAETA				
MANAYUNKIA SPECIOSA	9	4	19	220
ALL POLYCHAETA				220
CLADOCERA				
DAPHNIA	0	0	1	
ILYOCRYPTUS	1	0	3	
ALL CLADOCERA				34
COPEPODA				
DIAPTOMUS	1	0	3	
HARPACTICOIDA	0	5	24	
LIMNOCALANUS	0	2	2	
MESOCYCLOPS	0	0	1	
ALL COPEPODA				262

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 11 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	4	6	69
AMPHIPODA				
GAMMARUS	1	4	5	69
ALL AMPHIPODA				69
DIPTERA				
CHIRONOMIDAE	34	45	68	1012
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	47	59	69	
ALL EPHEMEROPTERA				1205
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	5	0	
ALL TRICHOPTERA				34
ACARINA	1	3	1	34
GASTROPODA				
AMNICOLA	1	0	0	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	17	16	49	
SPHAERIUM	2	0	1	
ALL SPHAERIIDAE				585
ALL PELECYPODA				585

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

LAKE ST. CLAIR TRANSECT 11 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	0	4	0	+
ALL PORIFERA				0
RHABDOCOELA	2	0	0	14
NEMATODA	39	103	96	1639
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	3	2	
ALL HIRUDINEA				34
OLIGOCHAETA				
SPIROSPERMA	0	2	0	
OTHER	330	345	461	
ALL OLIGOCHAETA				7837
POLYCHAETA				
MANAYUNKIA SPECIOSA	44	11	15	482
ALL POLYCHAETA				482
CLADOCERA				
DAPHNIA	2	0	0	
ILYOCRYPTUS	37	6	32	
ALL CLADOCERA				530

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 11 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	0	1	
DIAPTOMUS	0	2	0	
HARPACTICOIDA	0	0	2	
LIMNOCALANUS	2	2	4	
MACROCYCLOPS	4	2	0	
ALL COPEPODA				131
OSTRACODA	1	0	2	21
AMPHIPODA				
GAMMARUS	1	0	3	28
ALL AMPHIPODA				28
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CHIRONOMIDAE	46	27	59	909
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	50	38	59	
ALL EPHEMEROPTERA				1019
ACARINA	2	0	1	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 11 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	33	22	43	
SPHAERIUM	2	7	15	
ALL SPHAERIIDAE				840
ALL PELECYPODA				840

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

LAKE ST. CLAIR TRANSECT 12 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	0	1	7
ALL CNIDARIA				7
RHABDOCOELA	1	1	1	21
NEMATODA	25	29	17	489
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA				
SPIROSPERMA	4	0	0	
OTHER	27	52	34	
ALL OLIGOCHAETA				806
POLYCHAETA				
MANAYUNKIA SPECIOSA	82	146	74	2060
ALL POLYCHAETA				2060
CLADOCERA				
BOSMINA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	0	
HARPACTICOIDA	4	7	9	
LIMNOCALANUS	1	1	1	
ALL COPEPODA				165

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 12 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	6	8	1	103
AMPHIPODA				
GAMMARUS	16	5	25	317
ALL AMPHIPODA				317
DIPTERA				
CHIRONOMIDAE	50	60	42	1047
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	25	20	16	
ALL EPHEMEROPTERA				420
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	8	2	8	
ELIMIA LIVESCENS	0	0	1	
GYRAULUS	0	0	2	
PLEUROCERA ACUTA	0	7	0	
VALVATA TRICARINATA	1	0	0	
ALL GASTROPODA				200
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	11	13	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				275
UNIONIDAE				
LEPTODEA FRAGILIS	1	0	0	
ALL PELECYPODA				282

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

LAKE ST. CLAIR TRANSECT 12 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	5	0	0	34
ALL CNIDARIA				34
NEMATODA	35	51	27	778
OLIGOCHAETA	22	27	23	496
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	2	19	145
ALL POLYCHAETA				145
COPEPODA				
DIAPTOMUS	0	1	0	
HARPACTICOIDA	0	6	3	
LIMNOCALANUS	1	0	0	
MACROCYCLOPS	0	0	1	
ALL COPEPODA				83
OSTRACODA	3	4	5	83
AMPHIPODA				
GAMMARUS	20	6	12	262
ALL AMPHIPODA				262
DIPTERA				
CHIRONOMIDAE	55	51	27	916

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 12 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	23	30	26	
ALL EPHEMEROPTERA				544
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	5	0	5	
ALL TRICHOPTERA				69
ACARINA	2	2	0	28
GASTROPODA				
AMNICOLA	2	3	1	
PHYSA	1	0	0	
PLEUROCERA ACUTA	1	0	1	
ALL GASTROPODA				62
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	13	19	16	
SPHAERIUM	1	2	1	
ALL SPHAERIIDAE				358
ALL PELECYPODA				358

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

LAKE ST. CLAIR TRANSECT 12 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	2	1	2	34
NEMATODA	100	17	76	1329
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	1	0	0	
HELOBDELLA STAGNALIS	2	0	0	
ALL HIRUDINEA				21
OLIGOCHAETA	372	93	460	6370
POLYCHAETA				
MANAYUNKIA SPECIOSA	9	13	8	207
ALL POLYCHAETA				207
CLADOCERA				
DAPHNIA	1	2	0	
ILYOCRYPTUS	47	1	21	
ALL CLADOCERA				496

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 12 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	0	1	
CYCLOPS BICUSPIDATUS	2	0	0	
CYCLOPS VERNALIS	1	0	0	
DIAPTOMUS	3	1	3	
HARPACTICOIDA	4	0	0	
LIMNOCALANUS	1	6	0	
MACROCYCLOPS	0	0	1	
MESOCYCLOPS	0	1	0	
ALL COPEPODA				165
OSTRACODA	3	0	10	90
AMPHIPODA				
GAMMARUS	5	8	4	117
ALL AMPHIPODA				117
TERRESTRIAL INSECT	1	1	0	14
DIPTERA				
CHIRONOMIDAE	64	32	38	923
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	26	36	23	
ALL EPHEMEROPTERA				585

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 5/83

TRANSECT 12 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	2	1	21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	51	30	86	1150
ALL PELECYPODA				1150

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

LAKE ST. CLAIR TRANSECT 13 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA	0	1	0	7
HYDRA				
ALL CNIDARIA				7
RHABDOCOELA	2	3	9	96
NEMATODA	10	27	26	434
OLIGOCHAETA	1	1	2	
SPIROSPERMA				
OTHER	9	9	18	
ALL OLIGOCHAETA				275
POLYCHAETA	31	104	30	1136
MANAYUNKIA SPECIOSA				
ALL POLYCHAETA				1136
CLADOCERA	0	1	0	
CHYDORUS				
DAPHNIA	0	1	0	
ALL CLADOCERA				14
COPEPODA	0	7	1	
HARPACTICOIDA				
LIMNOCALANUS	0	0	1	
ALL COPEPODA				62
OSTRACODA	0	2	1	21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 13 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	14	17	8	269
ALL AMPHIPODA				269
DIPTERA				
CHIRONOMIDAE	14	35	20	475
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	15	29	25	
ALL EPHEMEROPTERA				475
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	2	3	
ALL TRICHOPTERA				41
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	0	2	0	
ELIMIA LIVESCENS	1	2	0	
GYRAULUS	0	4	0	
ALL GASTROPODA				62
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	28	3	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				289
UNIONIDAE				
LAMPSILIS RADIATA SILIQUOIDEA	1	0	0	
ALL PELECYPODA				296

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

LAKE ST. CLAIR TRANSECT 13 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	0	0	+	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	0	136	0	937
ALL CNIDARIA				937
RHABDOCOELA	0	1	0	7
NEMERTINEA	0	3	0	21
NEMATODA	43	411	36	3374
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	1	1	0	
ALL HIRUDINEA				14
OLIGOCHAETA				
SPIROSPERMA	0	3	0	
OTHER	59	97	31	
ALL OLIGOCHAETA				1308
POLYCHAETA				
MANAYUNKIA SPECIOSA	11	60	4	516
ALL POLYCHAETA				516

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	1	3	0	
DIAPTOMUS	0	2	0	
HARPACTICOIDA	26	4	1	
LIMNOCALANUS	0	2	1	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				282
OSTRACODA	4	4	0	55
AMPHIPODA				
GAMMARUS	3	62	20	585
ALL AMPHIPODA				585
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	48	18	20	592
ALL DIPTERA				599
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	24	18	16	
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				406

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	13	0	
LEPTOCERIDAE				
MYSTACIDES	0	1	0	
OECETIS	7	0	0	
ALL TRICHOPTERA				145
ACARINA	1	1	0	14
GASTROPODA				
AMNICOLA	5	0	0	
BITHYNIA	0	0	1	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				48
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	28	14	12	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				379
UNIONIDAE	1	0	0	
ALL PELECYPODA				386

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

LAKE ST. CLAIR TRANSECT 13 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	3	0	21
NEMERTINEA	0	0	1	7
NEMATODA	36	47	68	1040
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA	255	6	217	3292
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	38	0	262
ALL POLYCHAETA				262
CLADOCERA				
ILYOCRYPTUS	5	2	3	69
ALL CLADOCERA				69

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 13 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	3	0	
CYCLOPS BICUSPIDATUS	0	0	1	
DIAPTOMUS	1	2	0	
HARPACTICOIDA	3	3	4	
LIMNOCALANUS	1	0	0	
MACROCYCLOPS	0	0	1	
MESOCYCLOPS	1	0	0	
ALL COPEPODA				138
OSTRACODA	1	2	3	41
AMPHIPODA				
GAMMARUS	1	1	7	62
ALL AMPHIPODA				62
DIPTERA				
CHIRONOMIDAE	74	19	95	1295
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	32	28	51	
ALL EPHEMEROPTERA				764
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	4	2	
ALL TRICHOPTERA				48
ACARINA	2	1	2	34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/83

TRANSECT 13 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
PLEUROCERA ACUTA	0	0	1	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	26	0	10	
SPHAERIUM	0	6	1	
ALL SPHAERIIDAE				296
ALL PELECYPODA				296

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 14 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	2	14	8	165
ALL CNIDARIA				165
RHABDOCOELA	1	1	0	14
NEMERTINEA	6	4	1	76
NEMATODA	0	0	24	165
OLIGOCHAETA				
BRANCHIURA	0	0	1	
NAIS	0	0	2	
SPIROSPERMA	0	0	7	
OTHER	20	151	334	
ALL OLIGOCHAETA				3547
POLYCHAETA				
MANAYUNKIA SPECIOSA	55	36	99	1308
ALL POLYCHAETA				1308
CLADOCERA				
DAPHNIA	4	4	3	76
ALL CLADOCERA				76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 14 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	4	
DIAPTOMUS	10	5	0	
HARPACTICOIDA	0	10	85	
LIMNOCALANUS	1	0	7	
ALL COPEPODA				854
OSTRACODA	1	4	2	48
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	2	8	49	406
ALL DIPTERA				413
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	0	1	
BAETISCIDAE				
BAETISCA	0	0	2	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	0	1	0	
ALL TRICHOPTERA				7
ACARINA	0	1	3	28

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 14 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	4	1	22	
ELIMIA LIVESCENS	10	10	0	
ALL GASTROPODA				324
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	14	12	
SPHAERIUM	1	4	7	
ALL SPHAERIIDAE				289
ALL PELECYPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 14 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	4	25	17	317
ALL CNIDARIA				317
RHABDOCOELA	0	1	0	7
NEMERTINEA	4	6	1	76
NEMATODA	10	7	5	152
OLIGOCHAETA				
BRANCHIURA	0	1	0	
NAIS	1	2	0	
SPIROSPERMA	3	19	5	
OTHER	133	319	189	
ALL OLIGOCHAETA				4628
POLYCHAETA				
MANAYUNKIA *SPECIOSA*	148	506	296	6542
ALL POLYCHAETA				6542
CLADOCERA				
DAPHNIA	2	2	2	41
ALL CLADOCERA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	1	
DIAPTOMUS	2	4	0	
HARPACTICOIDA	0	29	8	
ALL COPEPODA				310
OSTRACODA	0	25	8	227
DIPTERA				
CHIRONOMIDAE	44	75	26	999
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	2	0	0	
ALL EPHEMEROPTERA				14
ACARINA	0	0	2	14
GASTROPODA				
AMNICOLA	1	2	2	
BITHYNIA	0	1	0	
ELIMIA LIVESCENS	0	6	3	
PLEUROCERA ACUTA	0	0	1	
ALL GASTROPODA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	36	16	
SPHAERIUM	2	22	12	
ALL SPHAERIIDAE				716
UNIONIDAE				
LAMPSILIS RADIATA SILIQUOIDEA	0	0	1	
ALL PELECYPODA				723

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 14 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	16	0	4	138
ALL CNIDARIA				138
RHABDOCOELA	1	1	0	14
NEMERTINEA	38	7	15	413
NEMATODA	20	20	27	461
HIRUDINEA				
GLOSSIPHONIIDAE	0	0	1	7
OLIGOCHAETA				
BRANCHIURA SOWERBYI	1	0	0	
SPIROSPERMA	185	68	180	
OTHER	285	59	144	
ALL OLIGOCHAETA				6349
POLYCHAETA				
MANAYUNKIA SPECIOSA	1293	197	417	13133
ALL POLYCHAETA				13133
CLADOCERA				
ALONA	0	1	0	
DAPHNIA	0	4	1	
ILYOCRYPTUS	0	4	0	
ALL CLADOCERA				69

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 14 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	1	
DIAPTOMUS	3	4	5	
HARPACTICOIDA	1	0	1	
LIMNOCALANUS	2	6	3	
PARACYCLOPS	0	0	2	
ALL COPEPODA				193
OSTRACODA	83	8	187	1914
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	93	34	107	1611
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	1	4	
BAETISCIDAE				
BAETISCA	1	0	0	
ALL EPHEMEROPTERA				48
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	2	0	0	
ALL TRICHOPTERA				14
ACARINA	4	3	4	76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 14 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	0	1	0	
ELIMIA LIVESCENS	0	0	1	
ALL GASTROPODA				14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	54	11	20	
SPHAERIUM	30	2	3	
ALL SPHAERIIDAE				826
ALL PELECYPODA				826

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 15 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	33	8	39	551
ALL CNIDARIA				551
RHABDOCOELA	0	0	2	14
NEMATODA	8	16	5	200
OLIGOCHAETA				
SPIROSPERMA	0	0	1	
OTHER	11	66	23	
ALL OLIGOCHAETA				696
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	3	21
ALL POLYCHAETA				21
CLADOCERA				
DAPHNIA	5	6	0	76
ALL CLADOCERA				76
COPEPODA				
CYCLOPS BICUSPIDATUS	5	10	0	
DIAPTOMUS	7	11	0	
LIMNOCALANUS	3	0	0	
ALL COPEPODA				248
OSTRACODA	2	0	0	14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	0	3	6	62
GASTROPODA				
AMNICOLA	4	9	0	
ELIMIA LIVESCENS	2	3	9	
ALL GASTROPODA				186
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	17	21	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				310
ALL PELECYPODA				310

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 15 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	159	266	383	5564
ALL CNIDARIA				5564
TRICLADIDA	0	1	2	21
NEMERTINEA	5	9	8	152
NEMATODA	167	192	209	3912
OLIGOCHAETA				
SPIROSPERMA	15	17	12	
OTHER	140	115	84	
ALL OLIGOCHAETA				2638
POLYCHAETA				
MANAYUNKIA SPECIOSA	42	34	33	751
ALL POLYCHAETA				751
CLADOCERA				
BOSMINA	0	0	1	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	2	0	0	
DIAPTOMUS	2	4	3	
HARPACTICOIDA	1	1	0	
LIMNOCALANUS	1	2	1	
ALL COPEPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 15 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	9	7	4	138
DIPTERA				
CHIRONOMIDAE	2	3	2	48
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	1	0	
EPHEMERIDAE				
HEXAGENIA	1	2	0	
BAETISCIDAE				
BAETISCA	1	2	1	
ALL EPHEMEROPTERA				62
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	8	7	10	
ALL TRICHOPTERA				172
GASTROPODA				
ELIMIA LIVESCENS	0	1	1	14
ALL GASTROPODA				14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	10	15	
SPHAERIUM	2	1	0	
ALL SPHAERIIDAE				220
ALL PELECYPODA				220

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 15 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1087	561	39	11618
ALL CNIDARIA				11618
RHABDOCOELA	0	1	0	7
NEMERTINEA	8	4	9	145
NEMATODA	56	19	21	661
HIRUDINEA				
GLOSSIPHONIIDAE	1	0	0	7
OLIGOCHAETA				
SPIROSPERMA	0	9	38	
OTHER	30	89	177	
ALL OLIGOCHAETA				2362
POLYCHAETA				
MANAYUNKIA SPECIOSA	16	46	168	1584
ALL POLYCHAETA				1584
CLADOCERA				
DAPHNIA	1	1	0	14
ALL CLADOCERA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 15 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	2	3	2	
DIAPTOMUS	3	7	2	
LIMNOCALANUS	1	1	2	
ALL COPEPODA				158
OSTRACODA	9	14	22	310
DIPTERA				
CHIRONOMIDAE	2	1	9	83
EPHEMEROPTERA				
EPHEMEROPTERA	0	0	1	
BAETISCIDAE				
BAETISCA	3	6	1	
ALL EPHEMEROPTERA				76
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	21	4	0	
HYDROPSYCHE	2	1	0	
ALL TRICHOPTERA				193
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	3	0	0	21
ALL GASTROPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 15 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	9	24	
SPHAERIUM	3	0	3	
ALL SPHAERIIDAE				337
ALL PELECYPODA				337

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 16 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	269	211	192	4628
ALL CNIDARIA				4628
RHABDOCOELA	6	8	32	317
NEMATODA	86	72	138	2038
HIRUDINEA				
ERPOBDELLIDAE	3	2	9	
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	*0*	*0*	*1*	
HELOBDELLA ELONGATA	1	2	0	
HELOBDELLA STAGNALIS	1	1	0	
ALL HIRUDINEA				138
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	0	0	1	
OTHER	439	220	416	
ALL OLIGOCHAETA				7417
CLADOCERA				
ALONA	1	0	0	
DAPHNIA	3	0	1	
ILYOCRYPTUS	0	1	0	
ALL CLADOCERA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	2	0	0	
CYCLOPS VERNALIS	2	0	0	
DIAPTOMUS	4	0	0	
HARPACTICOIDA	41	41	16	
MACROCYCLOPS	3	1	8	
ALL COPEPODA				813
OSTRACODA	102	65	92	1784
AMPHIPODA				
GAMMARUS	1	0	0	
HYALELLA AZTECA	12	12	14	
ALL AMPHIPODA				269
ISOPODA				
ASELLUS	1	3	0	28
ALL ISOPODA				28
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	14	18	17	
CHIRONOMIDAE	180	176	160	3554
ALL DIPTERA				3891

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	5	7	1	
EPHEMERIDAE				
HEXAGENIA	5	3	6	
ALL EPHEMEROPTERA				186
LEPIDOPTERA	0	1	1	14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	3	2	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	1	0	0	
ALL TRICHOPTERA				55
ACARINA	2	0	0	14
GASTROPODA				
AMNICOLA	13	3	9	
CAMPELOMA	0	0	1	
GYRAULUS	2	1	2	
PHYSA	0	0	1	
PLEUROCERA ACUTA	0	1	1	
ALL GASTROPODA				234

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 16 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	545	729	1039	15929
ALL CNIDARIA				15929
RHABDOCOELA	4	11	30	310
NEMERTINEA	3	1	8	83
NEMATODA	287	356	311	6570
OLIGOCHAETA				
NAIS	8	1	3	
SPIROSPERMA	13	19	19	
STYLARIA	0	0	1	
OTHER	309	374	308	
ALL OLIGOCHAETA				7265
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	6	41
ALL POLYCHAETA				41
CLADOCERA				
BOSMINA	0	2	2	
DIAPHANASOMA	0	1	0	
ILYOCRYPTUS	0	0	2	
ALL CLADOCERA				48

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	7	
DIAPTOMUS	0	7	2	
HARPACTICOIDA	24	25	29	
LIMNOCALANUS	0	4	3	
MACROCYCLOPS	2	3	0	
MESOCYCLOPS	0	0	1	
PARACYCLOPS	0	1	1	
ALL COPEPODA				806
OSTRACODA	59	67	98	1543
AMPHIPODA				
GAMMARUS	8	0	6	
HYALELLA AZTECA	1	2	6	
ALL AMPHIPODA				158
TERRESTRIAL INSECT	0	1	2	21
DIPTERA				
CERATOPOGONIDAE	0	14	16	
CHIRONOMIDAE	154	285	202	4414
ALL DIPTERA				4621

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	12	13	
EPHEMERIDAE				
HEXAGENIA	27	15	15	
ALL EPHEMEROPTERA				634
LEPIDOPTERA	1	1	2	28
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	3	8	
HYDROPSYCHE	0	0	5	
LEPTOCERIDAE				
OECETIS	0	1	2	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	1	
PHYLOCENTROPUS	1	0	1	
ALL TRICHOPTERA				165
ACARINA	5	4	1	69
TARDIGRADA	0	0	1	7
GASTROPODA				
AMNICOLA	10	3	4	
ELIMIA LIVESCENS	0	0	1	
ALL GASTROPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	27	55	31	778
ALL PELECYPODA				778

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 16 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	730	123	59	6281
ALL CNIDARIA				6281
RHABDOCOELA	3	3	2	55
NEMERTINEA	2	6	0	55
NEMATODA	33	76	23	909
OLIGOCHAETA				
SPIROSPERMA	17	17	12	
OTHER	189	179	436	
ALL OLIGOCHAETA				5854
POLYCHAETA				
MANAYUNKIA SPECIOSA	4	29	0	227
ALL POLYCHAETA				227
CLADOCERA				
BOSMINA	1	0	0	
DAPHNIA	1	0	2	
ALL CLADOCERA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	2	
DIAPTOMUS	1	2	2	
HARPACTICOIDA	0	3	4	
LIMNOCALANUS	1	0	2	
ALL COPEPODA				124
OSTRACODA	4	8	1	90
AMPHIPODA				
GAMMARUS	14	2	2	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				131
DIPTERA				
CERATOPOGONIDAE	1	6	3	
CHIRONOMIDAE	11	45	42	675
ALL DIPTERA				744
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	3	0	
EPHEMERIDAE				
HEXAGENIA	1	16	0	
BAETISCIDAE				
BAETISCA	0	2	0	
ALL EPHEMEROPTERA				152

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	7	0	0	
HYDROPSYCHE	3	1	0	
ALL TRICHOPTERA				76
ACARINA	0	5	0	34
GASTROPODA				
AMNICOLA	1	1	2	
PLEUROCERA ACUTA	2	1	1	
ALL GASTROPODA				55
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	42	22	
SPHAERIUM	1	8	1	
ALL SPHAERIIDAE				620
UNIONIDAE				
ELLIPTIO DILATATUS	1	0	0	
LEPTODEA FRAGILIS	1	0	0	
PLEUROBEMA CORDATUM	1	0	0	
PROPTERA ALATA	0	1	0	
TRUNCILLA TRUNCATA	1	0	0	
OTHER	1	1	0	
ALL PELECYPODA				668

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 17 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	280	452	178	6267
ALL CNIDARIA				6267
RHABDOCOELA	14	26	23	434
NEMERTINEA	0	4	1	34
NEMATODA	202	182	87	3244
HIRUDINEA				
ERPOBDELLIDAE	1	1	3	
GLOSSIPHONIIDAE	0	0	1	
ALL HIRUDINEA				41
OLIGOCHAETA				
NAIS	0	1	0	
SPIROSPERMA	1	3	18	
OTHER	629	708	432	
ALL OLIGOCHAETA				12341
POLYCHAETA				
MANAYUNKIA SPECIOSA	4	19	16	269
ALL POLYCHAETA				269
CLADOCERA				
ALONA	1	0	0	7
ALL CLADOCERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	6	0	0	
CYCLOPS BICUSPIDATUS	0	28	16	
DIAPTOMUS	2	1	0	
HARPACTICOIDA	140	123	100	
LIMNOCALANUS	0	2	0	
MACROCYCLOPS	1	0	0	
MESOCYCLOPS	1	0	0	
ALL COPEPODA				2892
AMPHIPODA				
GAMMARUS	1	6	0	
HYALELLA AZTECA	1	2	0	
ALL AMPHIPODA				69
ISOPODA				
ASELLUS	1	3	0	
LIRCEUS	1	1	2	
ALL ISOPODA				55
DIPTERA				
CERATOPOGONIDAE	4	4	3	
CHIRONOMIDAE	145	161	133	3023
ALL DIPTERA				3099
EPHEMEROPTERA				
CAENIDAE				
CAENIS	3	3	9	
EPHEMERIDAE				
HEXAGENIA	3	3	0	
ALL EPHEMEROPTERA				145

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	1	1	
HYDROPSYCHE	2	1	0	
LEPTOCERIDAE				
OECETIS	0	7	0	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	2	0	1	
ALL TRICHOPTERA				110
ACARINA	2	7	2	76
GASTROPODA				
AMNICOLA	16	11	3	
ELIMIA LIVESCENS	1	0	0	
PHYSA	0	1	0	
PLEUROCERA ACUTA	1	0	1	
ALL GASTROPODA				234
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	28	7	4	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				275
UNIONIDAE				
ELLIPTIO DILATATUS	0	1	0	
PLEUROBEMA CORDATUM	0	1	0	
ALL PELECYPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 17 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	189	342	177	4876
ALL CNIDARIA				4876
RHABDOCOELA	0	1	1	14
NEMERTINEA	2	0	2	28
NEMATODA	117	143	123	2638
OLIGOCHAETA				
SPIROSPERMA	13	9	4	
OTHER	113	239	129	
ALL OLIGOCHAETA				3492
POLYCHAETA				
MANAYUNKIA SPECIOSA	666	468	345	10185
ALL POLYCHAETA				10185
CLADOCERA				
DAPHNIA	0	1	3	28
ALL CLADOCERA				28
COPEPODA				
DIAPTOMUS	0	2	4	
HARPACTICOIDA	6	75	10	
LIMNOCALANUS	1	1	0	
MESOCYCLOPS	1	0	0	
ALL COPEPODA				689

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	2	1	2	34
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	42	21	47	758
ALL DIPTERA				764
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	0	
EPHEMERIDAE				
HEXAGENIA	1	3	2	
ALL EPHEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	1	0	
LEPTOCERIDAE				
NECTOPSYCHE	0	1	0	
OECETIS	5	3	4	
ALL TRICHOPTERA				110
ACARINA	0	1	1	14
GASTROPODA				
AMNICOLA	3	0	0	
ELIMIA LIVESCENS	0	2	1	
PLEUROCERA ACUTA	0	0	2	
ALL GASTROPODA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	4	17	
SPHAERIUM	1	0	3	
ALL SPHAERIIDAE	0	0	1	275
UNIONIDAE				282
ALL PELECYPODA				

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

DETROIT RIVER TRANSECT 17 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	24	116	63	1398
ALL CNIDARIA				1398
RHABDOCOELA	1	0	0	7
NEMERTINEA	2	2	4	55
NEMATODA	76	111	46	1618
OLIGOCHAETA				
SPIROSPERMA	33	18	24	
OTHER	45	30	92	
ALL OLIGOCHAETA				1667
POLYCHAETA				
MANAYUNKIA SPECIOSA	2005	155	682	19572
ALL POLYCHAETA				19572
COPEPODA				
DIAPTOMUS	2	0	0	
LIMNOCALANUS	2	2	1	
ALL COPEPODA				48.
OSTRACODA	0	0	2	14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/10/83

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	13	11	6	207
ALL DIPTERA				213
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	1	0	
BAETISCIDAE				
BAETISCA	0	0	1	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	0	0	
ALL TRICHOPTERA				7
ACARINA	2	0	0	14
GASTROPODA				
AMNICOLA	0	1	0	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	1	13	
SPHAERIUM	1	5	0	
ALL SPHAERIIDAE				172
ALL PELECYPODA				172

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 18 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	87	8	32	875
ALL CNIDARIA				875
RHABDOCOELA	11	17	41	475
NEMERTINEA	4	0	0	28
NEMATODA	80	17	8	723
HIRUDINEA				
ERPOBDELLIDAE	1	0	0	7
OLIGOCHAETA				
NAIS	16	0	32	
SPIROSPERMA	372	14	230	
OTHER	104	121	168	71225O
ALL OLIGOCHAETA				241123
POLYCHAETA				
MANAYUNKIA SPECIOSA	404	0	0	2782
ALL POLYCHAETA				2782
CLADOCERA				
DAPHNIA	1	0	1	
ILYOCRYPTUS	4	8	8	
ALL CLADOCERA				152

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	6	0	8	
DIAPTOMUS	14	0	0	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				200
OSTRACODA	1	8	1	69
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CERATOPOGONIDAE	8	.1	2	
CHIRONOMIDAE	13	6	6	172
ALL DIPTERA				248
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	3	0	
ALL EPHEMEROPTERA				28
LEPIDOPTERA	0	0	2	14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
ALL TRICHOPTERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	0	1	
GYRAULUS	0	0	1	
ALL GASTROPODA				21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	22	20	18	413
ALL PELECYPODA				413

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 18 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	103	19	0	840
ALL CNIDARIA				840
RHABDOCOELA	16	24	3	296
NEMERTINEA	3	194	2	1370
NEMATODA	275	5	31	2142
OLIGOCHAETA				
SPIROSPERMA	52	62	5	
OTHER	521625768		695	
ALL OLIGOCHAETA				218982
CLADOCERA				
DAPHNIA	0	1	0	
ILYOCRYPTUS	0	0	1	
ALL CLADOCERA				14
COPEPODA				
DIAPTOMUS	8	1	7	
LIMNOCALANUS	1	0	1	
ALL COPEPODA				124
OSTRACODA	0	0	1	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 18 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	20	13	0	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				234
DIPTERA				
CERATOPOGONIDAE	1	0	1	
CHIRONOMIDAE	38	35	2	516
PSYCHODIDAE	0	2	0	
TIPULIDAE	1	0	0	
ALL DIPTERA				551
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	1	2	0	
HEPTAGENIIDAE				
STENONEMA	0	1	0	
ALL EPHEMEROPTERA				34
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPTILIDAE				
HYDROPTILA	4	0	0	
ALL TRICHOPTERA				34

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 18 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ODONATA				
COENAGRIONIDAE	0	1	0	7
ACARINA	6	3	0	62
TARDIGRADA	0	16	1	117
GASTROPODA				
AMNICOLA	1	1	1	
BITHYNIA	0	1	0	
FERISSIA	1	23	1	
PHYSA	3	2	0	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				241
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	29	22	1	358
ALL PELECYPODA				358

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 18 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	2	0	14
ALL CNIDARIA				14
RHABDOCOELA	5	9	28	289
NEMATODA	3	2	11	110
OLIGOCHAETA				
SPIROSPERMA	10	39	37	
OTHER	2239	3077	80	
ALL OLIGOCHAETA				37753
POLYCHAETA				
MANAYUNKIA SPECIOSA	3	0	0	21
ALL POLYCHAETA				21
COPEPODA				
CYCLOPOIDIDAE	1	1	0	
DIAPTOMUS	10	1	10	
HARPACTICOIDA	0	0	1	
LIMNOCALANUS	5	0	2	
ALL COPEPODA				213
OSTRACODA	0	0	2	14
TERRESTRIAL INSECT	0	0	1	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 18 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	4	2	1	48
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	2	0	
ALL EPHEMEROPTERA				14
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	1	0	0	
GYRAULUS	0	0	1	
ALL GASTROPODA				14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	6	13	172
ALL PELECYPODA				172

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 19 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	7	1	0	55
ALL CNIDARIA				55
RHABDOCOELA	58	3	15	523
NEMERTINEA	10	0	5	103
NEMATODA	59	38	32	888
OLIGOCHAETA				
SPIROSPERMA	30	7	26	
OTHER	414	191	397	
ALL OLIGOCHAETA				7334
POLYCHAETA				
MANAYUNKIA SPECIOSA	555	68	216	5778
ALL POLYCHAETA				5778
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	0	
DIAPTOMUS	3	5	1	
LIMNOCALANUS	0	1	1	
ALL COPEPODA				90
AMPHIPODA				
GAMMARUS	2	2	3	48
ALL AMPHIPODA				48

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CERATOPOGONIDAE	56	33	33	
CHIRONOMIDAE	15	14	13	289
EMPIDIDAE	1	2	0	
ALL DIPTERA				1150
EPHEMEROPTERA				
CAENIDAE				
CAENIS	11	9	1	
BAETISCIDAE				
BAETISCA	1	0	0	
ALL EPHEMEROPTERA				152
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	1	
HYDROPTILIDAE				
HYDROPTILA	0	2	0	
LEPTOCERIDAE				
NECTOPSYCHE	0	1	1	
OECETIS	8	0	0	
ALL TRICHOPTERA				96
ACARINA	0	4	0	28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	6	9	7	
ELIMIA LIVESCENS	1	0	2	
FERISSIA	2	1	1	
PHYSA	1	0	1	
ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	53	51	46	1033
ALL PELECYPODA				1033

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 19 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1	5	47	365
ALL CNIDARIA				365
RHABDOCOELA	3	0	9	83
NEMERTINEA	30	19	47	661
NEMATODA	5	15	13	227
OLIGOCHAETA				
SPIROSPERMA	12	6	11	
OTHER	276	204	283	
ALL OLIGOCHAETA				5454
POLYCHAETA				
MANAYUNKIA SPECIOSA	782	1008	775	17664
ALL POLYCHAETA				17664
CLADOCERA				
DAPHNIA	0	1	1	14
ALL CLADOCERA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 19 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	3	8	5	
DIAPTOMUS	3	12	7	
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	0	1	3	
LIMNOCALANUS	3	2	4	
PARACYCLOPS	0	1	0	
ALL COPEPODA				365
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	1	0	0	7
EMPIDIDAE	1	0	0	
ALL DIPTERA				21
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	2	1	
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				28
GASTROPODA				
AMNICOLA	3	5	0	
ELIMIA LIVESCENS	1	0	2	
ALL GASTROPODA				76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 19 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	29	5	337
ALL PELECYPODA				337

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 19 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	167	79	18	1818
ALL CNIDARIA				1818
RHABDOCOELA	0	30	0	207
NEMERTINEA	49	80	30	1095
NEMATODA	7	2	6	103
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	9	81	27	
OTHER	26	709	41	
ALL OLIGOCHAETA				6157
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	5	1	48
ALL POLYCHAETA				48
CLADOCERA				
DAPHNIA	1	1	0	14
ALL CLADOCERA				14
COPEPODA				
CYCLOPS BICUSPIDATUS	3	5	0	
DIAPTOMUS	5	5	3	
LIMNOCALANUS	0	3	2	
ALL COPEPODA				179

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 19 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	3	1	0	28
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	0	0	
ALL EPHEMEROPTERA				7
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	2	0	
ALL TRICHOPTERA				28
GASTROPODA				
AMNICOLA	1	3	0	
ELIMIA LIVESCENS	4	7	0	
FERISSIA	0	2	0	
ALL GASTROPODA				117
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	2	0	14
ALL PELECYPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 20 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	8	8	93	751
ALL CNIDARIA				751
RHABDOCOELA	8	11	94	778
NEMERTINEA	0	2	0	14
NEMATODA	26	8	102	937
OLIGOCHAETA				
NAIS	0	2	0	
SPIROSPERMA	13	22	59	
OTHER	192	346	2972	
ALL OLIGOCHAETA				24833
POLYCHAETA				
MANAYUNKIA SPECIOSA	13	7	32	358
ALL POLYCHAETA				358
COPEPODA				
DIAPTOMUS	2	0	8	
HARPACTICOIDA	2	0	8	
ALL COPEPODA				138
AMPHIPODA				
GAMMARUS	4	3	8	
HYALELLA AZTECA	3	3	0	
ALL AMPHIPODA				145

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ISOPODA				
ASELLUS	1	2	0	21
ALL ISOPODA				21
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CERATOPOGONIDAE	6	0	2	
CHIRONOMIDAE	13	49	41	709
EMPIDIDAE	1	0	0	
ALL DIPTERA				771
EPHEMEROPTERA				
CAENIDAE				
CAENIS	8	6	1	
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				110
LEPIDOPTERA	0	2	2	28
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	2	1	
ALL TRICHOPTERA				34
ODONATA				
COENAGRIONIDAE	0	0	1	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	1	8	6	103
GASTROPODA				
AMNICOLA	5	6	14	
ELIMIA LIVESCENS	1	3	1	
FERISSIA	1	0	0	
GYRAULUS	1	4	0	
PHYSA	1	3	3	
ALL GASTROPODA				296
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	24	9	17	344
ALL PELECYPODA				344

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 20 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	2	2	12	110
ALL CNIDARIA				110
NEMERTINEA	2	3	1	41
NEMATODA	314	262	79	4511
OLIGOCHAETA				
NAIS	0	5	0	
SPIROSPERMA	79	1	5	
OTHER	136	51	17	
ALL OLIGOCHAETA				2025
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	2	21
ALL POLYCHAETA				21
CLADOCERA				
DAPHNIA	2	0	2	28
ALL CLADOCERA				28
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	0	
DIAPTOMUS	4	0	2	
LIMNOCALANUS	4	6	1	
ALL COPEPODA				131
DIPTERA				
CHIRONOMIDAE	6	4	1	76

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 20 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	0	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	2	
ALL TRICHOPTERA				14
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	1	0	4	34
ALL GASTROPODA				34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 20 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	110	66	480	4518
ALL CNIDARIA				4518
RHABDOCOELA	0	1	1	14
NEMERTINEA	8	7	29	303
NEMATODA	7	12	25	303
OLIGOCHAETA				
SPIROSPERMA	0	2	2	
OTHER	28	5	116	
ALL OLIGOCHAETA				1054
POLYCHAETA				
MANAYUNKIA SPECIOSA	78	28	32	950
ALL POLYCHAETA				950
CLADOCERA				
BOSMINA	0	1	0	
DAPHNIA	1	2	2	
ALL CLADOCERA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 20 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	2	0	
CYCLOPS BICUSPIDATUS	4	0	5	
DIAPTOMUS	8	1	6	
LIMNOCALANUS	3	3	7	
ALL COPEPODA				269
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CHIRONOMIDAE	3	0	3	41
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	
BAETISCIDAE				
BAETISCA	0	2	5	
ALL EPHEMEROPTERA				55
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	0	4	
HYDROPSYCHE	0	5	7	
LEPTOCERIDAE				
CERACLEA	0	1	0	
ALL TRICHOPTERA				131
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	1	0	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 21 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	17	11	25	365
ALL CNIDARIA				365
RHABDOCOELA	72	51	62	1274
NEMERTINEA	2	2	3	48
NEMATODA	73	62	32	1150
OLIGOCHAETA				
SPIROSPERMA	30	72	71	
OTHER	430	1017	356	
ALL OLIGOCHAETA				13608
POLYCHAETA				
MANAYUNKIA SPECIOSA	9	98	51	1088
ALL POLYCHAETA				1088
CLADOCERA				
DAPHNIA	0	0	1	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPOIDIDAE	0	0	1	
DIAPTOMUS	1	0	3	
LIMNOCALANUS	2	0	6	
ALL COPEPODA				90

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	0	1	7
AMPHIPODA				
GAMMARIDAE	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CERATOPOGONIDAE	2	0	0	
CHIRONOMIDAE	0	3	2	34
ALL DIPTERA				48
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	2	0	0	
ALL TRICHOPTERA				14
ACARINA	1	0	2	21
GASTROPODA				
AMNICOLA	4	18	8	
FERISSIA	1	0	0	
PHYSA	0	0	1	
VALVATA SINCERA	2	0	0	
ALL GASTROPODA				234
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	17	34	386
ALL PELECYPODA				386

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 21 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	109	430	18	3836
ALL CNIDARIA				3836
TRICLADIDA	2	1	0	21
NEMERTINEA	1	6	0	48
NEMATODA	43	32	7	565
OLIGOCHAETA				
SPIROSPERMA	1	0	0	
OTHER	34	12	34	
ALL OLIGOCHAETA				558
POLYCHAETA				
MANAYUNKIA SPECIOSA	53	39	2	647
ALL POLYCHAETA				647
CLADOCERA				
DAPHNIA	1	0	5	41
ALL CLADOCERA				41

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	3	0	0	
CYCLOPS BICUSPIDATUS	0	7	0	
DIAPTOMUS	4	3	1	
HARPACTICOIDA	1	0	0	
LIMNOCALANUS	6	1	5	
ALL COPEPODA				213
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	1	1	1	21
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	2	1	1	
BAETISCIDAE				
BAETISCA	0	1	1	
ALL EPHEMEROPTERA				41
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	4	6	
LEPTOCERIDAE				
CERACLEA	0	0	2	
OECETIS	1	0	0	
ALL TRICHOPTERA				90
GASTROPODA				
ELIMIA LIVESCENS	1	1	0	14
ALL GASTROPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

DETROIT RIVER TRANSECT 21 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	386	622	78	7479
ALL CNIDARIA				7479
TRICLADIDA	1	0	0	7
NEMERTINEA	12	9	0	145
NEMATODA	4	20	5	200
OLIGOCHAETA				
SPIROSPERMA	0	0	1	
OTHER	22	39	17	
ALL OLIGOCHAETA				544
POLYCHAETA				
MANAYUNKIA SPECIOSA	32	108	0	964
ALL POLYCHAETA				964
CLADOCERA				
BOSMINA	1	0	0	
DAPHNIA	1	0	2	
ALL CLADOCERA				28
COPEPODA				
CYCLOPS BICUSPIDATUS	2	3	0	
DIAPTOMUS	1	7	0	
LIMNOCALANUS	0	2	1	
ALL COPEPODA				110

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 21 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	3	4	0	48
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	0	1	0	
BAETISCIDAE				
BAETISCA	2	0	1	
HEPTAGENIIDAE				
STENONEMA	0	2	0	
ALL EPHEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	5	14	1	
HYDROPSYCHE	0	1	0	
ALL TRICHOPTERA				145
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	2	0	0	
ELIMIA LIVESCENS	0	1	0	
FERISSIA	1	0	0	
ALL GASTROPODA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/11/83

TRANSECT 21 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	7	7	1	
SPHAERIUM	3	0	0	
ALL SPHAERIIDAE				124
ALL PELECYPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 1 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	1	0	0	
DAPHNIA	51	26	35	
ALL CLADOCERA				778
COPEPODA				
CYCLOPOIDIDAE	2	0	0	
DIAPTOMUS	7	3	5	
EPISHURA LACUSTRIS	11	0	0	
ALL COPEPODA				193
TERRESTRIAL INSECT	8	0	1	62
DIPTERA				
CHIRONOMIDAE	18	13	12	296

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 1 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	64	44	1	
DAPHNIA GALEATA MENDOTAE	0	0	30	
DAPHNIA PULEX	0	0	4	
ALL CLADOCERA				985
COPEPODA				
DIAPTOMUS	5	15	0	
EPISHURA LACUSTRIS	16	12	9	
LIMNOCALANUS	0	0	1	
ALL COPEPODA				399
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CHIRONOMIDAE	20	17	19	386

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 1 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	20	26	37	
DIAPHANASOMA	1	0	0	
HOLOPEDIUM	0	1	0	
ALL CLADOCERA				585
COPEPODA				
DIAPTOMUS	2	4	1	
EPISHURA LACUSTRIS	0	3	0	
LIMNOCALANUS	0	1	0	
ALL COPEPODA				76
DIPTERA				
CHIRONOMIDAE	30	6	13	337

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 2 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	27	90	85	1391
ALL CNIDARIA				1391
RHABDOCOELA	7	9	11	186
NEMERTINEA	3	1	2	41
NEMATODA	3	16	4	158
HIRUDINEA				
ERPOBDELLIDAE	0	1	0	
GLOSSIPHONIIDAE				
HELOBDELLA PAPILLATA	0	0	1	
PISCICOLIDAE				
PISCICOLA	0	1	0	
ALL HIRUDINEA				21
OLIGOCHAETA				
NAIS	0	41	0	
SPIROSPERMA	0	38	5	
STYLARIA	2	2	19	
OTHER	465	441	322	
ALL OLIGOCHAETA				9194

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	17	33	26	
SIDA CRYSTALLINA	0	2	2	
ALL CLADOCERA				551
COPEPODA				
DIAPTOMUS	5	17	16	
EPISHURA LACUSTRIS	4	1	17	
HARPACTICOIDA	0	16	0	
ALL COPEPODA				523
OSTRACODA	0	2	0	14
AMPHIPODA				
GAMMARUS	17	21	19	
HYALELLA AZTECA	1	1	2	
ALL AMPHIPODA				420
DIPTERA				
CHIRONOMIDAE	27	128	95	1722
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	2	8	
EPHEMERIDAE				
HEXAGENIA	0	0	2	
HEPTAGENIIDAE				
STENONEMA	0	2	1	
ALL EPHEMEROPTERA				103

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	1	0	
ALL COLEOPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	7	0	
HYDROPSYCHE	0	3	2	
LEPTOCERIDAE				
MYSTACIDES	1	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	13	1	
ALL TRICHOPTERA				193
ACARINA	0	10	0	69
GASTROPODA				
AMNICOLA	26	132	81	
FERISSIA	1	0	2	
GYRAULUS	0	8	1	
PHYSA	3	14	32	
ALL GASTROPODA				2066
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	2	0	21
ALL PELECYPODA				21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 2 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	236	1560	537	16067
ALL CNIDARIA				16067
RHABDOCOELA	13	26	2	282
NEMERTINEA	11	0	5	110
NEMATODA	0	1	5	41
OLIGOCHAETA				
SPIROSPERMA	31	26	30	
OTHER	8	101	32	
ALL OLIGOCHAETA				1570
CLADOCERA				
DAPHNIA	1	4	4	62
ALL CLADOCERA				62
COPEPODA				
DIAPTOMUS	0	3	0	21
ALL COPEPODA				21
AMPHIPODA				
GAMMARUS	6	10	0	
HYALELLA AZTECA	3	1	0	
ALL AMPHIPODA				138

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	5	5	5	103
EMPIDIDAE	0	0	1	
ALL DIPTERA				110
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	0	0	1	
HEPTAGENIIDAE				
STENONEMA	2	1	0	
ALL EPHEMEROPTERA				28
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	1	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	14	37	8	
HYDROPSYCHE	7	32	3	
OTHER	1	29	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	6	2	1	
ALL TRICHOPTERA				985
ACARINA	1	3	2	41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	26	49	20	
ELIMIA LIVESCENS	0	11	17	
FERISSIA	4	3	0	
GYRAULUS	1	0	0	
LYMNAEA	2	0	1	
PHYSA	8	7	10	
VALVATA SINCERA	0	0	1	
ALL GASTROPODA				1102
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	17	9	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				200
ALL PELECYPODA				200

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 2 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	888	1499	1488	26686
ALL CNIDARIA				26686
RHABDOCOELA	9	5	12	179
NEMERTINEA	1	21	1	158
NEMATODA	2	6	1	62
OLIGOCHAETA				
SPIROSPERMA	1	0	0	
OTHER	4	0	9	
ALL OLIGOCHAETA				96
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	1	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	0	2	0	
CHYDORUS	0	1	0	
DAPHNIA	5	4	10	
HOLOPEDIUM	0	1	0	
ALL CLADOCERA				158

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	0	3	
CYCLOPS BICUSPIDATUS	0	5	0	
DIAPTOMUS	4	7	9	
EPISHURA LACUSTRIS	3	1	0	
HARPACTICOIDA	0	1	0	
MESOCYCLOPS	0	1	0	
ALL COPEPODA				234
AMPHIPODA				
GAMMARUS	0	0	1	
HYALELLA AZTECA	1	1	0	
ALL AMPHIPODA				21
DIPTERA				
CHIRONOMIDAE	3	4	2	62
EPHEMEROPTERA				
HEPTAGENIIDAE				
STENONEMA	8	1	8	
ALL EPHEMEROPTERA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	2	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	24	23	52	
HYDROPSYCHE	8	6	7	
LEPTOCERIDAE				
CERACLEA	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	1	
RHYACOPHILIDAE				
PROTOPTILA	12	4	7	
ALL TRICHOPTERA				1012
ACARINA	10	39	5	372
GASTROPODA				
AMNICOLA	1	1	0	
ELIMIA LIVESCENS	16	59	11	
LYMNAEA	1	0	0	
PHYSA	0	3	2	
ALL GASTROPODA				647
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	0	1	0	7
ALL PELECYPODA				7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 3 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	21	17	75	778
ALL CNIDARIA				778
TRICLADIDA	0	2	0	14
NEMERTINEA	8	1	9	124
OLIGOCHAETA				
SPIROSPERMA	0	0	2	
OTHER	17	2	11	
ALL OLIGOCHAETA				220
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	2	1	0	
DAPHNIA	7	3	4	
ALL CLADOCERA				117
COPEPODA				
DIAPTOMUS	6	0	1	
EPISHURA LACUSTRIS	0	4	1	
ALL COPEPODA				83
AMPHIPODA				
HYALELLA AZTECA	1	0	0	7
ALL AMPHIPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 3 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CHIRONOMIDAE	7	4	25	248
EMPIDIDAE	2	2	0	
ALL DIPTERA				275
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	4	0	
HYDROPSYCHE	18	28	5	
LEPTOCERIDAE				
CERACLEA	2	2	0	
ALL TRICHOPTERA				413
GASTROPODA				
AMNICOLA	2	0	3	
ELIMIA LIVESCENS	0	2	0	
ALL GASTROPODA				48

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 3 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	552	956	352	12809
ALL CNIDARIA				12809
RHABDOCOELA	2	4	2	55
NEMERTINEA	15	23	21	406
NEMATODA	1	0	1	14
OLIGOCHAETA	21	18	2	282
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	0	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	0	1	4	
DAPHNIA	21	12	12	
HOLOPEDIUM	0	0	1	
ALL CLADOCERA				351

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 3 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	1	1	0	
CYCLOPS BICUSPIDATUS	1	0	0	
DIAPTOMUS	2	0	3	
EPISHURA LACUSTRIS	0	0	1	
ALL COPEPODA				62
AMPHIPODA				
HYALELLA AZTECA	2	0	0	14
ALL AMPHIPODA				14
DIPTERA				
CHIRONOMIDAE	5	5	0	69
EMPIDIDAE	1	0	0	
ALL DIPTERA				76
EPHEMEROPTERA				
BAETIDAE				
BAETIS	1	0	0	
HEPTAGENIIDAE				
STENONEMA	1	0	0	
ALL EPHEMEROPTERA				14
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	9	1	5	
LEPTOCERIDAE				
CERACLEA	0	1	0	
MYSTACIDES	1	0	0	
ALL TRICHOPTERA				117
PLECOPTERA				
ISOGENOIDES	0	0	1	7
ALL PLECOPTERA				7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 3 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	0	3	0	
ELIMIA LIVESCENS	12	16	23	
LYMNAEA	5	0	0	
PHYSA	0	0	1	
ALL GASTROPODA				413
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	1	0	
SPHAERIUM	1	2	0	
ALL SPHAERIIDAE				48
ALL PELECYPODA				48

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

ST. CLAIR RIVER TRANSECT 3 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
COTTUS BAIRDII	0	1	0	7
ALL FISH				7
CNIDARIA				
HYDRA	0	1555	7	10757
ALL CNIDARIA				10757
RHABDOCOELA	0	94	0	647
NEMERTINEA	0	29	2	213
NEMATODA	106	1	119	1556
OLIGOCHAETA				
STYLARIA	0	2	0	
OTHER	22	68	43	
ALL OLIGOCHAETA				930
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	1	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	0	2	0	
DAPHNIA	0	67	5	
LEPTODORA KINDTII	0	1	0	
ALL CLADOCERA				516

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 3 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	0	0	1	
CYCLOPS BICUSPIDATUS	0	4	0	
DIAPTOMUS	0	1	1	
EPISHURA LACUSTRIS	1	12	2	
ALL COPEPODA				152
AMPHIPODA				
GAMMARUS	1	1	10	
HYALELLA AZTECA	0	0	7	
ALL AMPHIPODA				131
ISOPODA				
LIRCEUS	0	0	2	14
ALL ISOPODA				14
DIPTERA				
CHIRONOMIDAE	0	11	2	90
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	0	3	
BAETIDAE				
BAETIS	1	0	0	
HEPTAGENIIDAE				
STENONEMA	1	1	5	
ALL EPHEMEROPTERA				83

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/83

TRANSECT 3 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	14	5	
HYDROPSYCHE	1	24	14	
HYDROPTILIDAE	0	0	1	
LEPTOCERIDAE				
CERACLEA	0	1	0	
OECETIS	0	1	0	
RHYACOPHILIDAE				
PROTOPTILA	1	0	0	
ALL TRICHOPTERA				427
ACARINA	0	2	0	14
GASTROPODA				
ELIMIA LIVESCENS	19	147	21	
GYRAULUS	0	1	0	
LYMNAEA	0	6	0	
ALL GASTROPODA				1336
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	16	3	
SPHAERIUM	15	10	5	
ALL SPHAERIIDAE				337
ALL PELECYPODA				337

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 4 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	197	391	0	4049
ALL CNIDARIA				4049
RHABDOCOELA	54	1	3	399
TRICLADIDA	0	45	0	310
NEMERTINEA	17	3	14	234
NEMATODA	24	9	90	847
HIRUDINEA				
HIRUDINEA	0	0	1	
ERPOBDELLIDAE	1	2	0	
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	0	2	
ALL HIRUDINEA				41
OLIGOCHAETA				
NAIS	2	5	0	
SPIROSPERMA	34	18	1	
STYLARIA	40	30	9	
OTHER	67	29	144	
ALL OLIGOCHAETA				2610

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	1	0	0	
DAPHNIA	8	2	0	
SIDA CRYSTALLINA	0	0	1	
ALL CLADOCERA				83
COPEPODA				
DIAPTOMUS	2	0	0	
MACROCYCLOPS	0	0	1	
ALL COPEPODA				21
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	546	485	6	
HYALELLA AZTECA	13	7	9	
PONTOPOREIA HOYI	0	4	0	
ALL AMPHIPODA				7369
ISOPODA				
ASELLUS	0	0	1	7
ALL ISOPODA				7
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CHIRONOMIDAE	107	132	49	1983

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	2	
EPHEMERIDAE				
HEXAGENIA	0	2	6	
ALL EPHEMEROPTERA				76
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	1	
HYDROPSYCHE	2	6	0	
LEPTOCERIDAE				
OECETIS	0	1	0	
ALL TRICHOPTERA				76
GASTROPODA				
AMNICOLA	333	269	6	
ELIMIA LIVESCENS	40	43	0	
GYRAULUS	128	69	1	
PHYSA	32	35	3	
PLEUROCERA ACUTA	0	0	6	
VALVATA TRICARINATA	220	103	0	
OTHER	1	0	0	
ALL GASTROPODA				8877
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	119	38	1	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				1095
ALL PELECYPODA				1095

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 4 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	5	5	93	709
ALL CNIDARIA				709
RHABDOCOELA	0	1	1	14
NEMERTINEA	3	1	2	41
NEMATODA	13	2	2	117
OLIGOCHAETA				
NAIS	0	0	1	
STYLARIA	0	1	0	
OTHER	4	88	31	
ALL OLIGOCHAETA				861
POLYCHAETA				
MANAYUNKIA SPECIOSA	7	0	1	55
ALL POLYCHAETA				55
CLADOCERA				
BOSMINA	1	0	1	
DAPHNIA	5	4	9	
HOLOPEDIUM	0	0	1	
ALL CLADOCERA				145
COPEPODA				
EPISHURA LACUSTRIS	0	3	0	21
ALL COPEPODA				21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	7	5	4	110
ALL AMPHIPODA				110
DIPTERA				
CHIRONOMIDAE	1	1	16	124
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	3	
HYDROPSYCHE	0	0	20	
ALL TRICHOPTERA				158
ACARINA	0	0	2	14
GASTROPODA				
AMNICOLA	3	6	10	
ELIMIA LIVESCENS	7	3	4	
FERISSIA	0	1	0	
GYRAULUS	2	0	0	
PHYSA	1	0	3	
VALVATA SINCERA	0	0	2	
ALL GASTROPODA				289
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	2	6	76
ALL PELECYPODA				76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 4 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	21	67	61	1026
ALL CNIDARIA				1026
NEMERTINEA	1	0	8	62
NEMATODA	5	4	30	269
OLIGOCHAETA				
SPIROSPERMA	0	0	1	
OTHER	25	13	21	
ALL OLIGOCHAETA				413
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	0	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	0	1	0	
DAPHNIA	3	4	3	
ALL CLADOCERA				76
COPEPODA				
DIAPTOMUS	0	1	0	
EPISHURA LACUSTRIS	1	0	0	
ALL COPEPODA				14
AMPHIPODA				
GAMMARUS	5	5	9	
HYALELLA AZTECA	0	0	1	
ALL AMPHIPODA				138

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	0	3	5	55
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	0	0	11	
ALL TRICHOPTERA				83
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	0	0	4	
ELIMIA LIVESCENS	4	4	6	
GYRAULUS	0	0	1	
PHYSA	0	0	2	
ALL GASTROPODA				145
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	1	21
ALL PELECYPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 5 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	55	190	158	2775
ALL CNIDARIA				2775
RHABDOCOELA	18	57	23	675
TRICLADIDA	7	0	0	48
NEMERTINEA	7	18	9	234
NEMATODA	1	41	7	337
HIRUDINEA				
ERPOBDELLIDAE				
ERPOBDELLA PUNCTATA	1	0	1	
ALL HIRUDINEA				14
OLIGOCHAETA				
NAIS	8	0	0	
SPIROSPERMA	81	39	21	
STYLARIA	19	164	13	
OTHER	133	153	206	
ALL OLIGOCHAETA				5764

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	16	27	42	
HOLOPEDIUM	1	0	0	
ILYOCRYPTUS	0	8	0	
ALL CLADOCERA				647
COPEPODA				
EPISHURA LACUSTRIS	0	1	0	
MACROCYCLOPS	1	1	0	
ALL COPEPODA				21
OSTRACODA	41	96	61	1364
AMPHIPODA				
GAMMARUS	69	39	95	
HYALELLA AZTECA	15	2	3	
ALL AMPHIPODA				1536
DIPTERA				
CERATOPOGONIDAE	0	2	0	
CHIRONOMIDAE	146	190	141	3285
EMPIDIDAE	1	0	0	
ALL DIPTERA				3306

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	17	11	7	
EPHEMERIDAE				
HEXAGENIA	58	59	25	
BAETIDAE				
BAETIS	1	0	0	
HEPTAGENIIDAE				
STENONEMA	1	4	7	
ALL EPHEMEROPTERA				1308
LEPIDOPTERA	1	1	0	14
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	1	0	
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	0	
LEPTOCERIDAE				
CERACLEA	0	1	0	
MYSTACIDES	3	0	3	
OECETIS	30	11	37	
SETODES	0	1	0	
TRIAENODES	5	1	2	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	1	0	
ALL TRICHOPTERA				682
ODONATA				
GOMPHIDAE				
GOMPHUS	0	1	0	7
ALL ODONATA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	1	2	1	28
GASTROPODA				
AMNICOLA	81	225	85	
ELIMIA LIVESCENS	4	18	45	
FERISSIA	1	0	0	
GYRAULUS	3	23	9	
LYMNAEA	0	2	0	
PHYSA	12	2	8	
VALVATA TRICARINATA	13	7	0	
ALL GASTROPODA				3705
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	10	3	117
ALL PELECYPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 5 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	322	852	50	8429
ALL CNIDARIA				8429
RHABDOCOELA	10	17	0	186
TRICLADIDA	0	0	1	7
NEMERTINEA	3	1	1	34
NEMATODA	5	0	11	110
HIRUDINEA				
PISCICOLIDAE				
PISCICOLA	0	1	1	
ALL HIRUDINEA				14
OLIGOCHAETA				
SPIROSPERMA	13	5	15	
OTHER	25	2	134	
ALL OLIGOCHAETA				1336
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	4	0	34
ALL POLYCHAETA				34
CLADOCERA				
DAPHNIA	19	10	19	331
ALL CLADOCERA				331

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
EPISHURA LACUSTRIS	0	5	0	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				41
AMPHIPODA				
GAMMARUS	6	7	76	
HYALELLA AZTECA	0	0	2	
ALL AMPHIPODA				627
DIPTERA				
CHIRONOMIDAE	17	7	20	303
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	0	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	0	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	3	6	
HYDROPSYCHE	6	2	8	
LEPTOCERIDAE				
OECETIS	1	0	0	
ALL TRICHOPTERA				186
ODONATA				
GOMPHIDAE				
GOMPHUS	2	0	0	14

ACARINA

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	36	21	51	
ELIMIA LIVESCENS	30	7	15	
FERISSIA	1	0	0	
GYRAULUS	0	0	1	
PHYSA	5	0	1	
PLEUROCERA ACUTA	0	2	2	
VALVATA TRICARINATA	8	4	4	
ALL GASTROPODA				1295
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	9	0	19	193
ALL PELECYPODA				193

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 5 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	64	4	61	888
ALL CNIDARIA				888
RHABDOCOELA	3	0	0	21
NEMERTINEA	0	2	6	55
NEMATODA	1	2	2	34
OLIGOCHAETA				
NAIS	0	0	4	
SPIROSPERMA	1	0	0	
OTHER	19	4	12	
ALL OLIGOCHAETA				275
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	2	0	14
ALL POLYCHAETA				14
CLADOCERA				
BOSMINA	0	0	1	
DAPHNIA	7	8	15	
SIDA CRYSTALLINA	0	0	1	
ALL CLADOCERA				220

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 5 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	0	2	3	
EPISHURA LACUSTRIS	6	4	0	
ALL COPEPODA				103
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	20	15	16	351
EMPIDIDAE	0	0	1	
ALL DIPTERA				358
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	11	
HYDROPSYCHE	3	0	21	
ALL TRICHOPTERA				255

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 6 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	26	0	0	179
ALL CNIDARIA				179
RHABDOCOELA	40	2	16	399
TRICLADIDA	0	28	59	599
NEMERTINEA	0	1	0	7
NEMATODA	2	18	18	262
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	1	0	1	
HELOBDELLA STAGNALIS	2	1	1	
ALL HIRUDINEA				41
OLIGOCHAETA				
SPIROSPERMA	0	0	2	
STYLARIA	47	50	70	
OTHER	41	29	63	
ALL OLIGOCHAETA				2080
CLADOCERA				
DAPHNIA	0	1	0	
EURYCERCUS LAMELLATUS	0	1	0	
ALL CLADOCERA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	1	0	0	
MACROCYCLOPS	3	0	0	
ALL COPEPODA				28
OSTRACODA	93	52	112	1770
AMPHIPODA				
GAMMARUS	247	221	196	
HYALELLA AZTECA	39	35	59	
ALL AMPHIPODA				5489
ISOPODA				
ASELLUS	172	29	44	1687
ALL ISOPODA				1687
DIPTERA				
CHIRONOMIDAE	241	175	208	4297
EMPIDIDAE	1	0	0	
ALL DIPTERA				4304
EPHEMEROPTERA				
CAENIDAE				
CAENIS	12	7	0	
EPHEMERIDAE				
HEXAGENIA	5	3	14	
ALL EPHEMEROPTERA				282

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	2	0	
LEPTOCERIDAE				
CERACLEA	1	0	0	
NECTOPSYCHE	0	1	0	
DECETIS	21	8	4	
SETODES	0	1	0	
TRIAENODES	1	0	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	9	8	2	
ALL TRICHOPTERA				413
GASTROPODA				
AMNICOLA	66	41	107	
ELIMIA LIVESCENS	13	11	4	
GYRAULUS	42	35	61	
PHYSA	10	7	6	
VALVATA TRICARINATA	1	0	1	
ALL GASTROPODA				2789
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	3	6	1	69
ALL PELECYPODA				69

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 6 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	64	138	77	1921
ALL CNIDARIA				1921
RHABDOCOELA	9	39	22	482
TRICLADIDA	17	0	39	386
NEMERTINEA	1	0	2	21
NEMATODA	23	0	1	165
HIRUDINEA				
GLOSSIPHONIIDAE				
GLOSSIPHONIA COMPLANATA	0	0	1	
PISCICOLIDAE				
PISCICOLA	0	1	0	
ALL HIRUDINEA				14
OLIGOCHAETA				
SPIROSPERMA	11	1	4	
STYLARIA	20	401	222	
OTHER	249	67	146	
ALL OLIGOCHAETA				7720

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	0	0	1	
DAPHNIA	39	19	4	
SIDA CRYSTALLINA	0	0	1	
ALL CLADOCERA				441
COPEPODA				
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	16	0	0	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				124
AMPHIPODA				
GAMMARUS	177	132	152	
HYALELLA AZTECA	7	21	14	
PONTOPOREIA HOYI	0	0	1	
ALL AMPHIPODA				3471
ISOPODA				
ASELLUS	2	0	2	28
ALL ISOPODA				28
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	336	84	208	4325
ALL DIPTERA				4332
EPHEMEROPTERA				

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EPHEMERIDAE				
HEXAGENIA	22	4	14	
ALL EPHEMEROPTERA				399

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	1	0	
ALL COLEOPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	1	
HYDROPTILIDAE				
ORTHOTRICHIA	0	1	0	
LEPTOCERIDAE				
MYSTACIDES	0	0	1	
TRIAENODES	0	1	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	8	8	9	
ALL TRICHOPTERA				200
ACARINA	2	0	0	14
GASTROPODA				
AMNICOLA	43	124	73	
ELIMIA LIVESCENS	5	2	1	
GYRAULUS	7	35	6	
PHYSA	3	38	21	
VALVATA TRICARINATA	3	3	2	
ALL GASTROPODA				2521
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	7	0	14	145
ALL PELECYPODA				145

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 6 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	73	4	3	551
ALL CNIDARIA				551
RHABDOCOELA	41	8	5	372
TRICLADIDA	0	3	9	83
NEMERTINEA	21	1	2	165
NEMATODA	27	26	67	826
HIRUDINEA				
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	1	0	1	
PISCICOLIDAE				
PISCICOLA MILNERI	1	0	0	
ALL HIRUDINEA				21
OLIGOCHAETA				
SPIROSPERMA	9	28	42	
STYLARIA	27	0	0	
OTHER	403	439	456	
ALL OLIGOCHAETA				9669

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	18	0	3	
SIDA CRYSTALLINA	8	0	0	
ALL CLADOCERA				200
COPEPODA				
HARPACTICOIDA	0	9	0	
LIMNOCALANUS	0	1	0	
MACROCYCLOPS	1	0	1	
ALL COPEPODA				83
AMPHIPODA				
GAMMARUS	75	4	66	999
ALL AMPHIPODA				999
ISOPODA				
ASELLUS	0	0	4	28
ALL ISOPODA				28
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	311	323	250	6088
EMPIDIDAE	0	1	0	
ALL DIPTERA				6102
EPHEMEROPTERA				
CAENIDAE				
CAENIS	2	1	0	
EPHEMERIDAE				
HEXAGENIA	50	84	45	
ALL EPHEMEROPTERA				1253

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
ALL TRICHOPTERA				14
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	74	13	16	
ELIMIA LIVESCENS	0	0	2	
PHYSA	2	0	2	
ALL GASTROPODA				751
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	14	5	145
ALL PELECYPODA				145

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 7 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	291	235	388	6294
ALL CNIDARIA				6294
RHABDOCOELA	1	4	1	41
TRICLADIDA	4	25	0	200
NEMERTINEA	0	2	40	289
NEMATODA	3	14	45	427
OLIGOCHAETA				
NAIS	9	4	0	
SPIROSPERMA	43	74	56	
STYLARIA	71	84	36	
OTHER	151	108	34	
ALL OLIGOCHAETA				4614
CLADOCERA				
BOSMINA	0	0	1	
DAPHNIA	14	4	2	
ALL CLADOCERA				145

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPOIDIDAE	1	0	0	
DIAPTOMUS	16	0	10	
HARPACTICOIDA	0	1	8	
ALL COPEPODA				248
OSTRACODA	1	2	0	21
AMPHIPODA				
GAMMARUS	155	119	8	
HYALELLA AZTECA	41	8	3	
ALL AMPHIPODA				2300
ISOPODA				
LIRCEUS	0	1	0	7
ALL ISOPODA				7
DIPTERA				
CERATOPOGONIDAE	1	2	0	
CHIRONOMIDAE	189	89	8	1970
EMPIDIDAE	0	1	0	
ALL DIPTERA				1997
EPHEMEROPTERA				
CAENIDAE				
CAENIS	41	28	10	
EPHEMERIDAE				
HEXAGENIA	11	14	4	
BAETISCIDAE	0	0	1	

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	4	62	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	0	7	0	
LEPTOCERIDAE				
CERACLEA	0	1	0	
NECTOPSYCHE	0	1	0	
OECETIS	3	0	0	
TRIAENODES	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	9	0	
ALL TRICHOPTERA				620
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	26	68	93	
ELIMIA LIVESCENS	2	0	0	
GYRAULUS	21	18	0	
PHYSA	2	16	0	
ALL GASTROPODA				1694
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	25	34	0	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				413
ALL PELECYPODA				413

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 7 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1627	345	878	19627
ALL CNIDARIA				19627
RHABDOCOELA	0	10	22	220
TRICLADIDA	26	0	0	179
NEMERTINEA	2	3	1	41
NEMATODA	11	15	32	399
OLIGOCHAETA				
SPIROSPERMA	84	43	2	
STYLARIA	8	2	0	
OTHER	81	60	5	
ALL OLIGOCHAETA				1963
POLYCHAETA				
MANAYUNKIA SPECIOSA	8	0	0	55
ALL POLYCHAETA				55
CLADOCERA				
DAPHNIA	1	0	17	
SIDA CRYSTALLINA	0	0	1	
ALL CLADOCERA				131

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
MACROCYCLOPS	0	2	1	21
ALL COPEPODA				21
AMPHIPODA				
GAMMARUS	167	35	0	
HYALELLA AZTECA	7	1	0	
ALL AMPHIPODA				1446
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	36	27	14	530
EPHEMEROPTERA				
CAENIDAE				
CAENIS	46	1	0	
EPHEMERIDAE				
HEXAGENIA	1	0	16	
HEPTAGENIIDAE				
STENONEMA	0	4	8	
ALL EPHEMEROPTERA				523
COLEOPTERA				
ELMIDAE	0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	7	0	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	12	8	2	
HYDROPSYCHE	5	0	0	
LEPTOCERIDAE				
CERACLEA	3	0	0	
MYSTACIDES	16	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	2	21	34	
ALL TRICHOPTERA				758
GASTROPODA				
AMNICOLA	42	2	0	
ELIMIA LIVESCENS	48	58	3	
GYRAULUS	16	0	0	
PHYSA	9	0	0	
ALL GASTROPODA				1226
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	17	11	0	
SPHAERIUM	5	20	0	
ALL SPHAERIIDAE				365
ALL PELECYPODA				365

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 7 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	108	13	73	1336
ALL CNIDARIA				1336
RHABDOCOELA	0	5	8	90
TRICLADIDA	2	0	0	14
NEMERTINEA	6	6	0	83
NEMATODA	30	15	11	386
OLIGOCHAETA				
SPIROSPERMA	2	0	2	
OTHER	3	25	6	
ALL OLIGOCHAETA				262
CLADOCERA				
DAPHNIA	3	2	2	48
ALL CLADOCERA				48
COPEPODA				
DIAPTOMUS	0	2	1	
EPISHURA LACUSTRIS	0	1	0	
ALL COPEPODA				28

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	86	8	4	
HYALELLA AZTECA	5	0	0	
ALL AMPHIPODA				709
DIPTERA				
CHIRONOMIDAE	9	2	1	83
EPHEMEROPTERA				
CAENIDAE				
CAENIS	2	0	0	
EPHEMERIDAE				
HEXAGENIA	0	1	0	
HEPTAGENIIDAE				
STENONEMA	1	0	1	
ALL EPHEMEROPTERA				34
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	7	0	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	26	8	1	
HYDROPSYCHE	11	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	2	1	2	
ALL TRICHOPTERA				399
ACARINA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	2	11	0	
ELIMIA LIVESCENS	8	15	8	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				310
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	5	
SPHAERIUM	5	5	1	
ALL SPHAERIIDAE				110
ALL PELECYPODA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 8 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA	2	0	18	138
HYDRA				
ALL CNIDARIA				138
RHABDOCOELA	15	8	5	193
NEMERTINEA	71	6	43	826
NEMATODA	122	97	57	1901
OLIGOCHAETA	0	0	1	
NAIS	244	146	52	
SPIROSPERMA	5	0	1	
STYLARIA	249	275	138	
OTHER				7651
ALL OLIGOCHAETA				
POLYCHAETA	978	952	663	17857
MANAYUNKIA SPECIOSA				
ALL POLYCHAETA				17857
CLADOCERA	0	32	0	220
ALONA				
ALL CLADOCERA				220

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA	16	0	0	
DIAPTOMUS	0	1	0	
EPISHURA LACUSTRIS	0	0	16	
HARPACTICOIDA	0	1	2	
MACROCYCLOPS				248
ALL COPEPODA	16	0	0	110
OSTRACODA	66	33	35	
AMPHIPODA	18	33	24	
GAMMARUS				1439
HYALELLA AZTECA				
ALL AMPHIPODA	3	1	0	
ISOPODA	0	1	0	
ASELLUS				34
LIRCEUS				
ALL ISOPODA	1	2	0	
DIPTERA	61	10	69	964
CERATOPOGONIDAE				985
CHIRONOMIDAE				
ALL DIPTERA				

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	39	50	106	
EPHEMERIDAE				
HEXAGENIA	1	4	7	
HEPTAGENIIDAE				
STENONEMA	0	1	1	
ALL EPHEMEROPTERA				1439
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	0	0	
LEPTOCERIDAE				
OECETIS	0	1	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	7	7	17	
ALL TRICHOPTERA				234
GASTROPODA				
AMNICOLA	0	1	0	
ELIMIA LIVESCENS	2	10	1	
GYRAULUS	0	1	0	
PHYSA	1	32	1	
ALL GASTROPODA				337
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	1	0	
SPHAERIUM	1	1	0	
ALL SPHAERIIDAE				21
ALL PELECYPODA				21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 8 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	16	0	110
ALL CNIDARIA				110
RHABDOCOELA	20	89	3	771
TRICLADIDA	1	0	0	7
NEMERTINEA	0	1	0	7
NEMATODA	21	9	34	441
OLIGOCHAETA				
NAIS	0	1	0	
SPIROSPERMA	59	71	65	
STYLARIA	10	102	1	
OTHER	962	413	1385	
ALL OLIGOCHAETA				21135
POLYCHAETA				
MANAYUNKIA SPECIOSA	16	118	49	1260
ALL POLYCHAETA				1260
CLADOCERA				
DAPHNIA	9	0	0	62
ALL CLADOCERA				62

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	0	16	0	110
ALL COPEPODA				110
AMPHIPODA				
GAMMARUS	3	141	12	
HYALELLA AZTECA	7	113	0	
ALL AMPHIPODA				1901
ISOPODA				
ASELLUS	0	1	0	
LIRCEUS	0	3	0	
ALL ISOPODA				28
DIPTERA				
CHIRONOMIDAE	216	138	185	3712
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	2	3	
EPHEMERIDAE				
HEXAGENIA	2	6	0	
ALL EPHEMEROPTERA				90
COLEOPTERA				
ELMIDAE	0	0	1	7
TRICHOPTERA				
POLYCENTROPODIDAE				
POLYCENTROPUS	0	1	1	
ALL TRICHOPTERA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	3	67	17	
ELIMIA LIVESCENS	0	4	1	
GYRAULUS	0	25	0	
PHYSA	0	14	0	
VALVATA TRICARINATA	1	0	0	
ALL GASTROPODA				909
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	14	5	145
ALL PELECYPODA				145

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

ST. CLAIR RIVER TRANSECT 8 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	91	2	13	730
ALL CNIDARIA				730
RHABDOCOELA	117	24	23	1129
TRICLADIDA	56	0	0	386
NEMERTINEA	24	16	1	282
NEMATODA	11	51	23	585
HIRUDINEA				
GLOSSIPHONIIDAE				
GLOSSIPHONIA COMPLANATA	1	0	0	
HELOBDELLA PAPILLATA	1	0	0	
PISCICOLIDAE	0	0	1	
ALL HIRUDINEA				21
OLIGOCHAETA				
SPIROSPERMA	90	32	54	
STYLARIA	2	1	0	
OTHER	262	332	224	
ALL OLIGOCHAETA				6866

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	16	9	17	289
ALL POLYCHAETA				289
CLADOCERA				
DAPHNIA	9	8	0	117
ALL CLADOCERA				117
COPEPODA				
DIAPTOMUS	16	0	0	
HARPACTICOIDA	0	32	8	
ALL COPEPODA				386
AMPHIPODA				
GAMMARUS	128	0	1	
HYALELLA AZTECA	0	0	2	
ALL AMPHIPODA				902
ISOPODA				
ASELLUS	19	0	0	
LIRCEUS	2	0	0	
ALL ISOPODA				145
DIPTERA				
CHIRONOMIDAE	167	209	129	3478
EPHEMEROPTERA				
CAENIDAE				
CAENIS	9	0	0	
EPHEMERIDAE				
HEXAGENIA	84	199	196	
ALL EPHEMEROPTERA				3361

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/12/83

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	0	
ALL COLEOPTERA				7
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	44	18	23	
PHYSA	3	0	2	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				627
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	5	13	227
UNIONIDAE	1	0	0	
ALL PELECYPODA				234

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

ST. CLAIR RIVER TRANSECT 9 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	1	0	7
NEMATODA	1	0	0	7
OLIGOCHAETA	5	4	7	110
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	6	48
ALL POLYCHAETA				48
CLADOCERA				
BOSMINA	0	1	1	14
ALL CLADOCERA				14
COPEPODA				
DIAPTOMUS	0	1	0	
HARPACTICOIDA	0	0	1	
ALL COPEPODA				14
AMPHIPODA				
GAMMARUS	1	2	1	28
ALL AMPHIPODA				28
DIPTERA				
CERATOPOGONIDAE	1	0	1	
CHIRONOMIDAE	4	3	2	62
ALL DIPTERA				76

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

ST. CLAIR RIVER TRANSECT 9 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	1	0	7
ALL FISH				7
CNIDARIA				
HYDRA	8	7	1	110
ALL CNIDARIA				110
RHABDOCOELA	10	23	8	282
TRICLADIDA	0	0	26	179
NEMERTINEA	1	1	1	21
NEMATODA	11	21	2	234
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	46	154	82	
STYLARIA	69	105	75	
OTHER	178	236	89	
ALL OLIGOCHAETA				7128
POLYCHAETA				
MANAYUNKIA SPECIOSA	142	254	222	4256
ALL POLYCHAETA				4256

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	3	1	2	
SIDA CRYSTALLINA	0	0	1	
ALL CLADOCERA				48
COPEPODA				
DIAPTOMUS	1	1	0	
HARPACTICOIDA	6	4	0	
ALL COPEPODA				83
OSTRACODA	0	2	1	21
AMPHIPODA				
GAMMARUS	55	199	288	
HYALELLA AZTECA	3	3	5	
ALL AMPHIPODA				3808
ISOPODA				
ASELLUS	0	0	3	
LIRCEUS	0	1	0	
ALL ISOPODA				28
DIPTERA				
CERATOPOGONIDAE	13	3	1	
CHIRONOMIDAE	117	186	75	2603
ALL DIPTERA				2720

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	31	5	5	
EPHEMERIDAE				
HEXAGENIA	4	3	0	
ALL EPHEMEROPTERA				331
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	0	1	0	
MYSTACIDES	0	4	2	
NECTOPSYCHE	1	0	0	
OECETIS	6	3	7	
SETODES	1	0	0	
ALL TRICHOPTERA				172
ACARINA	1	1	1	21
GASTROPODA				
AMNICOLA	1	33	56	
ELIMIA LIVESCENS	1	0	0	
GYRAULUS	8	12	13	
PHYSA	1	27	14	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				1150
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	48	53	74	
SPHAERIUM	5	0	0	
ALL SPHAERIIDAE				1240
ALL PELECYPODA				1240

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

ST. CLAIR RIVER TRANSECT 9 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	80	15	8	709
ALL CNIDARIA				709
RHABDOCOELA	27	7	24	399
TRICLADIDA	0	0	63	434
NEMERTINEA	8	3	0	76
NEMATODA	47	15	25	599
HIRUDINEA				
ERPOBDELLIDAE	0	0	1	
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	0	0	3	
HELOBDELLA TRISERIALIS	0	0	1	
ALL HIRUDINEA				34
OLIGOCHAETA				
SPIROSPERMA	86	31	0	
STYLARIA	115	35	123	
OTHER	286	215	393	
ALL OLIGOCHAETA				8842

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	44	47	0	627
ALL POLYCHAETA				627
CLADOCERA				
DAPHNIA	9	5	0	
ILYOCRYPTUS	0	0	1	
ALL CLADOCERA				103
COPEPODA				
CYCLOPOIDIDAE	0	1	0	
DIAPTOMUS	0	1	0	
HARPACTICOIDA	40	44	8	
ALL COPEPODA				647
OSTRACODA	10	1	2	90
AMPHIPODA				
GAMMARUS	32	28	76	
HYALELLA AZTECA	2	1	285	
ALL AMPHIPODA				2920
ISOPODA				
LIRCEUS	2	0	0	14
ALL ISOPODA				14
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	400	161	350	6274
ALL DIPTERA				6281

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	12	1	2	
EPHEMERIDAE				
HEXAGENIA	76	6	0	
ALL EPHEMEROPTERA				668
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	1	0	0	
LEPTOCERIDAE				
MYSTACIDES	1	0	0	
OECETIS	0	1	0	
TRIAENODES	1	0	0	
ALL TRICHOPTERA				28
ODONATA				
COENAGRIONIDAE	1	0	0	7
ACARINA	1	3	1	34
GASTROPODA				
AMNICOLA	54	27	21	
ELIMIA LIVESCENS	1	1	0	
GYRAULUS	0	1	2	
PHYSA	5	0	23	
VALVATA TRICARINATA	3	1	0	
ALL GASTROPODA				957
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	11	21	0	220
ALL PELECYPODA				220

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

ST. CLAIR RIVER TRANSECT 10 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	1	1	14
NEMERTINEA	0	0	1	7
NEMATODA	0	0	3	21
OLIGOCHAETA	59	52	60	1178
CLADOCERA				
DAPHNIA	0	2	0	14
ALL CLADOCERA				14
COPEPODA				
HARPACTICOIDA	0	0	1	7
ALL COPEPODA				7
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CERATOPOGONIDAE	8	2	6	
CHIRONOMIDAE	9	13	27	337
ALL DIPTERA				448

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 10 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	0	
EPHEMERIDAE				
HEXAGENIA	2	0	1	
ALL EPHEMEROPTERA				28
GASTROPODA				
ELIMIA LIVESCENS	1	2	0	21
ALL GASTROPODA				21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	0	0	21
ALL PELECYPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

ST. CLAIR RIVER TRANSECT 10 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	2	0	14
ALL CNIDARIA				14
RHABDOCOELA	0	3	0	21
TRICLADIDA	0	1	0	7
NEMATODA	0	5	0	34
OLIGOCHAETA				
NAIS	0	1	0	
STYLARIA	0	6	0	
OTHER	70	200	28	
ALL OLIGOCHAETA				2100
POLYCHAETA				
MANAYUNKIA SPECIES A	0	5	4	62
ALL POLYCHAETA				62
CLADOCERA				
DAPHNIA	2	1	0	21
ALL CLADOCERA				21
AMPHIPODA				
GAMMARUS	0	7	1	55
ALL AMPHIPODA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	4	13	6	
CHIRONOMIDAE	4	167	2	1191
ALL DIPTERA				1350
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	12	0	
EPHEMERIDAE				
HEXAGENIA	0	2	0	
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				103
ACARINA	0	3	1	28
GASTROPODA				
ELIMIA LIVESCENS	2	0	0	14
ALL GASTROPODA				14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	0	1	21
ALL PELECYPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

ST. CLAIR RIVER TRANSECT 10 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	8	11	0	131
ALL CNIDARIA				131
RHABDOCOELA	8	28	2	262
TRICLADIDA	0	18	0	124
NEMERTINEA	0	15	1	110
NEMATODA	9	11	28	331
OLIGOCHAETA				
NAIS	8	0	0	
SPIROSPERMA	1	32	25	
STYLARIA	0	47	6	
OTHER	69	307	144	
ALL OLIGOCHAETA				4401
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	18	0	124
ALL POLYCHAETA				124
CLADOCERA				
DAPHNIA	1	10	1	
SIDA CRYSTALLINA	0	1	0	
ALL CLADOCERA				90

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
EPISHURA LACUSTRIS	0	0	1	
HARPACTICOIDA	0	0	32	
LIMNOCALANUS	0	0	1	
ALL COPEPODA				234
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	0	25	0	
HYALELLA AZTECA	0	1	0	
PONTOPOREIA HOYI	0	3	0	
ALL AMPHIPODA				200
DIPTERA				
CHIRONOMIDAE	168	420	119	4869
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	8	0	
EPHEMERIDAE				
HEXAGENIA	11	65	20	
ALL EPHEMEROPTERA				716

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/13/83

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	0	0	
HYDROPTILIDAE				
HYDROPTILA	0	2	0	
LEPTOCERIDAE				
OECETIS	0	0	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	1	0	
ALL TRICHOPTERA				34
ACARINA	0	4	0	28
GASTROPODA				
AMNICOLA	4	36	4	
ELIMIA LIVESCENS	1	3	0	
GYRAULUS	0	9	0	
PHYSA	0	6	0	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				441
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	9	2	83
UNIONIDAE	0	1	0	
ALL PELECYPODA				90

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 11 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	1	14
ALL CNIDARIA				14
RHABDOCOELA	4	3	1	55
NEMERTINEA	0	0	1	7
NEMATODA	26	28	50	716
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	1	0	0	
SPIROSPERMA	7	58	8	
OTHER	53	78	52	
ALL OLIGOCHAETA				1770
POLYCHAETA				
MANAYUNKIA SPECIOSA	60	0	170	1584
ALL POLYCHAETA				1584
CLADOCERA				
SIDA CRYSTALLINA	0	0	1	7
ALL CLADOCERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	72	63	117	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				1749
OSTRACODA	14	17	21	358
AMPHIPODA				
GAMMARUS	97	64	114	1894
ALL AMPHIPODA				1894
DIPTERA				
CHIRONOMIDAE	28	31	30	613
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	100	116	99	
ALL EPHEMEROPTERA				2169
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	7	12	7	
ALL TRICHOPTERA				179
ACARINA	1	1	1	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	9	2	1	
BITHYNIA	1	0	0	
ELIMIA LIVESCENS	0	0	1	
GYRAULUS	6	2	2	
PLEUROCERA ACUTA	2	0	0	
VALVATA TRICARINATA	4	5	1	
ALL GASTROPODA				248
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	11	10	5	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				186
ALL PELECYPODA				186

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 11 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	2	3	0	34
NEMATODA	135	139	149	2913
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	2	0	
HELOBDELLA STAGNALIS	0	0	1	
ALL HIRUDINEA				21
OLIGOCHAETA				
NAIS	0	1	0	
SPIROSPERMA	0	1	0	
OTHER	344	456	322	
ALL OLIGOCHAETA				7741
POLYCHAETA				
MANAYUNKIA SPECIOSA	33	83	60	1212
ALL POLYCHAETA				1212
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
DIAPTOMUS	0	0	1	
HARPACTICOIDA	5	6	30	
MACROCYCLOPS	3	5	3	
ALL COPEPODA				365

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 11 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	1	2	8	76
AMPHIPODA				
GAMMARUS	17	10	11	262
ALL AMPHIPODA				262
DIPTERA				
CHIRONOMIDAE	18	47	27	634
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	43	42	29	
ALL EPHEMEROPTERA				785
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	2	1	0	
ALL TRICHOPTERA				21
ACARINA	3	1	1	34
GASTROPODA				
AMNICOLA	1	0	1	
ELIMIA LIVESCENS	1	1	0	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				34
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	93	62	30	
SPHAERIUM	1	5	3	
ALL SPHAERIIDAE				1336
ALL PELECYPODA				1336

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 11 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1	0	0	7
ALL CNIDARIA				7
RHABDOCOELA	1	4	0	34
TRICLADIDA	0	0	1	7
NEMATODA	208	193	173	3953
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	3	1	3	
ALL HIRUDINEA				48
OLIGOCHAETA				
SPIROSPERMA	21	0	15	
OTHER	1123	1123	731	
ALL OLIGOCHAETA				20750
POLYCHAETA				
MANAYUNKIA SPECIOSA	23	57	42	840
ALL POLYCHAETA				840
CLADOCERA				
DAPHNIA	2	1	0	
ILYOCRYPTUS	0	0	2	
ALL CLADOCERA				34

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 11 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	1	1	1	
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	27	10	10	
MACROCYCLOPS	12	6	4	
ALL COPEPODA				503
OSTRACODA	2	0	0	14
AMPHIPODA				
GAMMARUS	19	41	10	482
ALL AMPHIPODA				482
DIPTERA				
CHIRONOMIDAE	37	25	39	696
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	46	29	47	
ALL EPHEMEROPTERA				840
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	0	1	
ALL TRICHOPTERA				7
ACARINA	0	1	0	7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	67	128	78	
SPHAERIUM	0	0	5	
ALL SPHAERIIDAE				1914
ALL PELECYPODA				1914

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 12 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICLADIDA	0	1	0	7
NEMATODA	18	15	16	337
OLIGOCHAETA				
SPIROSPERMA	2	3	3	
STYLARIA	1	0	1	
OTHER	22	24	19	
ALL OLIGOCHAETA				516
POLYCHAETA				
MANAYUNKIA SPECIOSA	22	15	27	441
ALL POLYCHAETA				441
CLADOCERA				
DAPHNIA	0	1	0	
ILYOCRYPTUS	1	0	0	
ALL CLADOCERA				14
COPEPODA				
CYCLOPOIDIDAE	1	1	0	
DIAPTOMUS	0	1	1	
HARPACTICOIDA	25	19	15	
ALL COPEPODA				434
OSTRACODA	10	4	10	165

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 12 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	32	14	24	482
ALL AMPHIPODA				482
DIPTERA				
CHIRONOMIDAE	35	24	29	606
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	126	129	148	
ALL EPHEMEROPTERA				2775
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	7	3	4	
ALL TRICHOPTERA				96
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	4	4	2	
ELIMIA LIVESCENS	0	0	1	
GYRAULUS	5	3	3	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				158
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	14	22	14	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				351
ALL PELECYPODA				351

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 12 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	5	1	0	41
TRICLADIDA	1	0	1	14
NEMATODA	54	24	15	640
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	1	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
SPIROSPERMA	1	1	0	
OTHER	171	159	99	
ALL OLIGOCHAETA				2968
POLYCHAETA				
MANAYUNKIA SPECIOSA	13	4	5	152
ALL POLYCHAETA				152
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 12 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	3	0	1	
DIAPTOMUS	3	0	0	
EPISHURA LACUSTRIS	2	1	0	
HARPACTICOIDA	16	5	4	
LIMNOCALANUS	0	1	0	
MACROCYCLOPS	4	2	0	
MESOCYCLOPS	3	0	0	
ALL COPEPODA				310
OSTRACODA	16	4	0	138
AMPHIPODA				
GAMMARUS	524	20	6	3788
ALL AMPHIPODA				3788
DIPTERA				
CHIRONOMIDAE	50	32	24	730
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	122	117	92	
ALL EPHEMEROPTERA				2279
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	3	3	2	
ALL TRICHOPTERA				55
ACARINA	1	0	0	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 12 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	0	1	0	
GYRAULUS	5	0	0	
ALL GASTROPODA				41
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	33	34	26	
SPHAERIUM	2	0	2	
ALL SPHAERIIDAE				668
ALL PELECYPODA				668

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 12 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICLADIDA	0	0	1	7
NEMATODA	15	9	15	269
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	2	0	1	
ALL HIRUDINEA				21
OLIGOCHAETA				
SPIROSPERMA	0	0	2	
OTHER	130	187	301	
ALL OLIGOCHAETA				4270
POLYCHAETA				
MANAYUNKIA SPECIOSA	24	53	107	1267
ALL POLYCHAETA				1267
CLADOCERA				
BOSMINA	0	0	1	
DAPHNIA	0	3	1	
ALL CLADOCERA				34
COPEPODA				
DIAPTOMUS	0	0	4	
HARPACTICOIDA	0	3	9	
MACROCYCLOPS	0	1	1	
ALL COPEPODA				124
OSTRACODA	1	1	1	21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 12 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	15	9	11	241
ALL AMPHIPODA				241
DIPTERA				
CHIRONOMIDAE	18	24	38	551
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	87	70	79	
ALL EPHEMEROPTERA				1625
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	2	1	0	
ALL TRICHOPTERA				21
ACARINA	1	0	2	21
GASTROPODA				
AMNICOLA	1	2	3	
GYRAULUS	0	1	0	
ALL GASTROPODA				48
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	14	5	44	
SPHAERIUM	1	1	0	
ALL SPHAERIIDAE				448
ALL PELECYPODA				448

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 13 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	2	0	14	110
NEMATODA	17	26	28	489
OLIGOCHAETA				
NAIS	0	1	10	
SPIROSPERMA	2	1	0	
OTHER	6	4	0	
ALL OLIGOCHAETA				165
POLYCHAETA				
MANAYUNKIA SPECIOSA	18	27	17	427
ALL POLYCHAETA				427
COPEPODA				
HARPACTICOIDA	1	5	49	379
ALL COPEPODA				379
OSTRACODA	1	3	5	62
AMPHIPODA				
GAMMARUS	88	73	72	1605
ALL AMPHIPODA				1605
DIPTERA				
CHIRONOMIDAE	14	40	27	558

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 13 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	56	158	120	
ALL EPHEMEROPTERA				2300
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	3	10	
ALL TRICHOPTERA				96
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	11	4	9	
ELIMIA LIVESCENS	1	2	3	
GYRAULUS	9	7	14	
VALVATA TRICARINATA	4	4	6	
ALL GASTROPODA				510
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	7	9	6	
SPHAERIUM	2	8	3	
ALL SPHAERIIDAE				241
UNIONIDAE	1	0	0	
ALL PELECYPODA				248

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 13 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	0	1	14
NEMATODA	25	42	10	530
OLIGOCHAETA	160	152	60	2562
POLYCHAETA				
MANAYUNKIA SPECIOSA	4	14	8	179
ALL POLYCHAETA				179
CLADOCERA				
BOSMINA	0	1	0	7
ALL CLADOCERA				7
COPEPODA				
DIAPTOMUS	0	1	0	
HARPACTICOIDA	14	34	1	
MACROCYCLOPS	0	2	1	
ALL COPEPODA				365
OSTRACODA	3	16	0	131
AMPHIPODA				
GAMMARUS	20	49	19	606
ALL AMPHIPODA				606

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	40	42	34	799
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	92	100	90	
ALL EPHEMEROPTERA				1942
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	2	2	
ALL TRICHOPTERA				34
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	3	3	2	
GYRAULUS	0	1	1	
ALL GASTROPODA				69
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	25	44	16	
SPHAERIUM	3	5	2	
ALL SPHAERIIDAE				654
ALL PELECYPODA				654

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

LAKE ST. CLAIR TRANSECT 13 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	0 ?	+	0	+
ALL PORIFERA				0
NEMATODA	12	23	19	372
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	1	0	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
SPIROSPERMA	2	1	0	
OTHER	147	164	103	
ALL OLIGOCHAETA				2872
POLYCHAETA				
MANAYUNKIA SPECIOSA	14	29	17	413
ALL POLYCHAETA				413
CLADOCERA				
BOSMINA	1	0	0	
DAPHNIA	1	0	0	
ALL CLADOCERA				14
COPEPODA				
EPISHURA LACUSTRIS	2	0	0	
HARPACTICOIDA	2	4	0	
MACROCYCLOPS	0	0	2	
ALL COPEPODA				69
OSTRACODA	2	2	3	48

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 13 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	9	13	20	289
ALL AMPHIPODA				289
DIPTERA				
CHIRONOMIDAE	28	52	32	771
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	83	111	107	
ALL EPHEMEROPTERA				2073
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	3	1	3	
ALL TRICHOPTERA				48
ACARINA	1	1	1	21
GASTROPODA				
AMNICOLA	0	1	3	
GYRAULUS	1	1	2	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				62
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	28	73	19	
SPHAERIUM	0	2	2	
ALL SPHAERIIDAE				854
ALL PELECYPODA				854

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

DETROIT RIVER TRANSECT 14 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	19	8	0	186
ALL CNIDARIA				186
RHABDOCOELA	27	15	7	337
NEMERTINEA	25	2	7	234
NEMATODA	2	1	0	21
OLIGOCHAETA				
SPIROSPERMA	0	1	0	
OTHER	13	5	20	
ALL OLIGOCHAETA				269
POLYCHAETA				
MANAYUNKIA SPECIOSA	2	0	0	14
ALL POLYCHAETA				14
CLADOCERA				
BOSMINA	0	1	0	7
ALL CLADOCERA				7
AMPHIPODA				
GAMMARUS	4	0	0	
HYALELLA AZTECA	8	4	0	
ALL AMPHIPODA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 14 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	83	25	1	751
ALL DIPTERA				758
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	2	0	0	
ALL EPHEMEROPTERA				14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	25	11	0	
HYDROPSYCHE	40	28	4	
ALL TRICHOPTERA				744
ACARINA	6	2	1	62
GASTROPODA				
AMNICOLA	1	0	0	
ELIMIA LIVESCENS	32	16	30	
FERISSIA	5	4	0	
GYRAULUS	4	5	0	
PHYSA	4	12	0	
ALL GASTROPODA				778
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	44	25	13	
SPHAERIUM	4	9	2	
ALL SPHAERIIDAE				668
UNIONIDAE	1	0	1	
ALL PELECYPODA				682

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

DETROIT RIVER TRANSECT 14 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1	0	0	7
ALL CNIDARIA				7
TRICLADIDA	4	3	6	90
NEMERTINEA	11	4	5	138
NEMATODA	0	4	3	48
OLIGOCHAETA	20	19	14	365
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	2	0	21
ALL POLYCHAETA				21
COPEPODA				
DIAPTOMUS	0	0	1	7
ALL COPEPODA				7
DIPTERA				
CHIRONOMIDAE	1	2	0	21
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	4	0	0	
ALL EPHEMEROPTERA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	1	1	1	21
GASTROPODA				
AMNICOLA	2	0	2	
ELIMIA LIVESCENS	12	3	3	
GYRAULUS	0	1	0	
PHYSA	1	0	0	
ALL GASTROPODA				165
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	17	2	7	
SPHAERIUM	1	0	3	
ALL SPHAERIIDAE				207
ALL PELECYPODA				207

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

DETROIT RIVER TRANSECT 14 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
RHABDOCOELA	0	1	0	7
TRICLADIDA	0	1	0	7
NEMERTINEA	4	9	7	138
NEMATODA	1	1	2	28
OLIGOCHAETA				
BRANCHIURA	1	0	6	
NAIS	1	0	0	
SPIROSPERMA	9	9	2	
OTHER	46	62	60	
ALL OLIGOCHAETA				1350
POLYCHAETA				
MANAYUNKIA SPECIOSA	2	4	2	55
ALL POLYCHAETA				55
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/83

TRANSECT 14 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	2	0	0	14
DIPTERA				
CHIRONOMIDAE	8	7	3	124
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	2	0	
ALL TRICHOPTERA				14
ACARINA	0	0	2	14
GASTROPODA				
AMNICOLA	1	0	1	
ELIMIA LIVESCENS	8	10	11	
ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	8	10	
SPHAERIUM	3	1	1	
ALL SPHAERIIDAE				227
UNIONIDAE				
ELLIPTIO DILATATUS	0	1	0	
ALL PELECYPODA				234

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 15 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	8	26	81	792
ALL CNIDARIA				792
RHABDOCOELA	12	0	0	83
TRICLADIDA	24	48	47	820
NEMERTINEA	12	73	21	730
NEMATODA	15	8	4	186
OLIGOCHAETA				
SPIROSPERMA	49	19	28	
STYLARIA	1	0	0	
OTHER	14	1	19	
ALL OLIGOCHAETA				902
POLYCHAETA				
MANAYUNKIA SPECIOSA	23	17	11	351
ALL POLYCHAETA				351
OSTRACODA	0	0	1	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	14	22	35	
PONTOPOREIA HOYI	0	0	1	
ALL AMPHIPODA				496
DIPTERA				
CHIRONOMIDAE	287	256	575	7699
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	0	4	
EPHEMERIDAE				
HEXAGENIA	2	0	1	
EPHEMERELLIDAE				
EPHEMERELLA	0	4	0	
BAETISCIDAE				
BAETISCA	4	1	2	
ALL EPHEMEROPTERA				172
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	0	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	110	106	95	
HYDROPSYCHE	88	85	69	
LEPTOCERIDAE				
CERACLEA	0	1	1	
OECETIS	1	3	2	
SETODES	0	2	0	
ALL TRICHOPTERA				3884
ACARINA	1	0	2	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	25	23	16	
BITHYNIA	1	0	0	
ELIMIA LIVESCENS	60	54	41	
GYRAULUS	4	4	1	
PHYSA	0	1	0	
ALL GASTROPODA				1584
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	69	54	36	
SPHAERIUM	4	16	1	
ALL SPHAERIIDAE				1240
UNIONIDAE				
LAMPSILIS VENTRICOSA	0	1	0	
OTHER	1	0	0	
ALL PELECYPODA				1253

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 15 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	14	16	207
ALL CNIDARIA				207
RHABDOCOELA	4	0	2	41
NEMERTINEA	4	9	5	124
NEMATODA	47	50	46	985
OLIGOCHAETA				
SPIROSPERMA	0	1	0	
OTHER	5	6	5	
ALL OLIGOCHAETA				117
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	15	4	131
ALL POLYCHAETA				131
COPEPODA				
HARPACTICOIDA	0	0	1	7
ALL COPEPODA				7
OSTRACODA	0	0	4	28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 15 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	12	15	8	
AMETROPIDAE				
TRICHORYTHODES	1	0	0	
ALL EPHEMEROPTERA				248
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	173	290	381	
HYDROPSYCHE	3	18	9	
ALL TRICHOPTERA				6019
GASTROPODA				
AMNICOLA	2	1	0	
ELIMIA LIVESCENS	28	32	38	
ALL GASTROPODA				696
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	47	20	30	
SPHAERIUM	5	4	1	
ALL SPHAERIIDAE				737
UNIONIDAE	4	0	1	
ALL PELECYPODA				771

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 15 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	8	1	1	69
ALL CNIDARIA				69
NEMERTINEA	36	19	19	510
NEMATODA	49	36	52	943
OLIGOCHAETA				
SPIROSPERMA	5	4	6	
OTHER	19	13	41	
ALL OLIGOCHAETA				606
POLYCHAETA				
MANAYUNKIA SPECIOSA	6	18	60	578
ALL POLYCHAETA				578
DIPTERA				
CHIRONOMIDAE	1	4	4	62
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	2	3	5	
ALL EPHEMEROPTERA				69
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	110	0	12	
HYDROPSYCHE	5	0	0	
ALL TRICHOPTERA				875

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 15 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
ELIMIA LIVESCENS	4	0	0	28
ALL GASTROPODA				28
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	14	18	20	358
UNIONIDAE	1	0	1	
ALL PELECYPODA				372

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 16 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	3	33	0	248
ALL CNIDARIA				248
RHABDOCOELA	96	6	67	1164
TRICLADIDA	0	1	47	331
NEMERTINEA	1	0	0	7
NEMATODA	94	9	35	950
HIRUDINEA				
ERPOBDELLIDAE	1	0	0	
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	2	0	2	
HELOBDELLA ELONGATA	2	0	0	
HELOBDELLA STAGNALIS	2	0	0	
HELOBDELLA TRISERIALIS	6	0	0	
PISCICOLIDAE				
PISCICOLA	0	1	0	
ALL HIRUDINEA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OLIGOCHAETA				
NAIS	0	0	6	
SPIROSPERMA	2	23	1	
STYLARIA	133	13	168	
OTHER	296	161	174	
ALL OLIGOCHAETA				6728
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7
ALL POLYCHAETA				7
CLADOCERA				
DAPHNIA	0	3	0	
SIDA CRYSTALLINA	2	0	0	
ALL CLADOCERA				34
OSTRACODA	3	0	0	21
AMPHIPODA				
GAMMARUS	41	8	101	
HYALELLA AZTECA	99	1	91	
ALL AMPHIPODA				2348
ISOPODA				
ASELLUS	3	0	11	96
ALL ISOPODA				96
DIPTERA				
CERATOPOGONIDAE	7	1	4	
CHIRONOMIDAE	365	254	436	7265
ALL DIPTERA				7348

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	3	12	
EPHEMERIDAE				
HEXAGENIA	0	91	0	
ALL EPHEMEROPTERA				778
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	2	0	
LEPTOCERIDAE				
OECETIS	0	2	16	
ALL TRICHOPTERA				138
ACARINA	0	6	2	55
GASTROPODA				
AMNICOLA	12	34	19	
FERISSIA	0	0	1	
GYRAULUS	2	0	4	
PHYSA	22	3	5	
PLEUROCERA ACUTA	0	0	1	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				716
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	29	0	200
UNIONIDAE	0	1	0	
ALL PELECYPODA				207

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 16 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	8	1	162	1178
ALL CNIDARIA				1178
RHABDOCOELA	26	4	88	813
NEMERTINEA	15	0	42	393
TREMATODA	1	0	0	7
NEMATODA	125	47	19	1315
HIRUDINEA				
ERPOBDELLIDAE				
ERPOBDELLA PUNCTATA	0	0	4	
OTHER	0	0	1	
GLOSSIPHONIIDAE				
HELOBDELLA TRISERIALIS	2	0	0	
ALL HIRUDINEA				48
OLIGOCHAETA				
SPIROSPERMA	3	0	60	
STYLARIA	2	12	5	
OTHER	167	199	36	
ALL OLIGOCHAETA				3333

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	4	0	34
ALL POLYCHAETA				34
CLADOCERA				
ALONA	0	0	16	
BOSMINA	0	0	1	
DAPHNIA	0	1	11	
SIDA CRYSTALLINA	0	1	0	
ALL CLADOCERA				207
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	2	
DIAPTOMUS	0	0	2	
HARPACTICOIDA	32	37	1	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				516
OSTRACODA	17	8	1	179
AMPHIPODA				
GAMMARUS	6	8	461	
HYALELLA AZTECA	13	6	11	
ALL AMPHIPODA				3478

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	1	5	0	
CHIRONOMIDAE	70	68	43	1246
EMPIDIDAE	1	0	0	
ALL DIPTERA				1295
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	8	0	
EPHEMERIDAE				
HEXAGENIA	11	1	3	
EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	
ALL EPHEMEROPTERA				213
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	3	
LEPTOCERIDAE				
MYSTACIDES	0	0	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	2	0	0	
ALL TRICHOPTERA				41
ACARINA	6	0	0	41

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	16	4	222	
ELIMIA LIVESCENS	2	1	32	
GYRAULUS	25	5	64	
LYMNAEA	0	0	7	
PHYSA	8	0	26	
PLEUROCERA ACUTA	2	1	1	
VALVATA TRICARINATA	0	0	116	
ALL GASTROPODA				3664
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	0	71	558
ALL PELECYPODA				558

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 16 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	4	0	0	28
ALL CNIDARIA				28
RHABDOCOELA	0	0	1	7
NEMERTINEA	25	18	45	606
NEMATODA	7	16	26	337
OLIGOCHAETA				
SPIROSPERMA	1	0	3	
STYLARIA	0	1	0	
OTHER	203	93	329	
ALL OLIGOCHAETA				4339
POLYCHAETA				
MANAYUNKIA SPECIOSA	32	24	17	503
ALL POLYCHAETA				503
COPEPODA				
DIAPTOMUS	4	0	0	28
ALL COPEPODA				28
AMPHIPODA				
GAMMARUS	0	0	2	14
ALL AMPHIPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	11	24	40	516
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	8	
BAETIDAE				
BAETIS	1	0	2	
ALL EPHEMEROPTERA				76
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	11	
ALL TRICHOPTERA				83
ACARINA	0	0	9	62
GASTROPODA				
AMNICOLA	6	2	4	
ELIMIA LIVESCENS	1	0	1	
PLEUROCERA ACUTA	2	1	0	
ALL GASTROPODA				117
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	9	0	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				83
ALL PELECYPODA				83

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 17 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	4	1	3	55
TRICLADIDA	4	2	4	69
NEMERTINEA	0	59	89	1019
NEMATODA	82	174	278	3677
HIRUDINEA				
ERPOBDELLIDAE	3	1	3	
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	1	0	
HELOBDELLA STAGNALIS	1	0	0	
ALL HIRUDINEA				62
OLIGOCHAETA				
SPIROSPERMA	8	11	21	
STYLARIA	16	0	1	
OTHER	256	136	202	
ALL OLIGOCHAETA				4483
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	8	55
ALL POLYCHAETA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	192	161	87	3030
ALL COPEPODA				3030
AMPHIPODA				
GAMMARUS	1	3	6	
HYALELLA AZTECA	5	1	0	
ALL AMPHIPODA				110
ISOPODA				
ASELLUS	0	1	0	
LIRCEUS	4	8	5	
ALL ISOPODA				124
DIPTERA				
CERATOPOGONIDAE	1	0	8	
CHIRONOMIDAE	98	45	40	1260
ALL DIPTERA				1322
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	4	0	4	
ALL EPHEMEROPTERA				55
TRICHOPTERA				
POLYCENTROPODIDAE				
PHYLOCENTROPUS	3	0	1	
ALL TRICHOPTERA				28
ACARINA	4	1	0	34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	7	9	23	
ELIMIA LIVESCENS	1	1	0	
FERISSIA	0	2	0	
GYRAULUS	0	0	3	
PHYSA	0	0	1	
PLEUROCERA ACUTA	0	2	1	
VALVATA TRICARINATA	1	0	0	
OTHER	1	0	0	
ALL GASTROPODA				358
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	18	9	23	344
UNIONIDAE	1	0	1	
ALL PELECYPODA				358

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 17 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	9	2	2	90
ALL CNIDARIA				90
TRICLADIDA	2	0	0	14
NEMERTINEA	39	48	49	937
NEMATODA	66	17	31	785
OLIGOCHAETA				
SPIROSPERMA	35	36	16	
STYLARIA	0	1	0	
OTHER	51	76	31	
ALL OLIGOCHAETA				1694
POLYCHAETA				
MANAYUNKIA SPECIOSA	830	1030	671	17430
ALL POLYCHAETA				17430
CLADOCERA				
DAPHNIA	8	0	1	62
ALL CLADOCERA				62
COPEPODA				
DIAPTOMUS	0	16	0	
HARPACTICOIDA	0	0	9	
ALL COPEPODA				172

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	25	0	2	186
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	20	12	4	248
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	7	5	13	
ALL EPHEMEROPTERA				172
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	8	90	26	
HYDROPSYCHE	0	3	0	
LEPTOCERIDAE				
CERACLEA	0	0	1	
ALL TRICHOPTERA				881
ACARINA	0	4	0	28
GASTROPODA				
AMNICOLA	25	8	28	
ELIMIA LIVESCENS	21	25	2	
HELISOMA	1	0	0	
PLEUROCERA ACUTA	1	3	1	
ALL GASTROPODA				792

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	11	3	5	131
UNIONIDAE	2	0	1	
ALL PELECYPODA				152

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

DETROIT RIVER TRANSECT 17 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1	3	4	55
ALL CNIDARIA				55
RHABDOCOELA	1	0	0	7
TRICLADIDA	0	0	1	7
NEMERTINEA	52	34	14	689
NEMATODA	28	66	4	675
OLIGOCHAETA				
SPIROSPERMA	36	16	25	
OTHER	69	57	49	
ALL OLIGOCHAETA				1735
POLYCHAETA				
MANAYUNKIA SPECIOSA	491	1033	574	14448
ALL POLYCHAETA				14448
COPEPODA				
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	0	1	0	
ALL COPEPODA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	1	3	28
ALL AMPHIPODA				28
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	10	4	10	165
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	0	3	7	
ALL EPHEMEROPTERA				69
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	12	8	87	
HYDROPSYCHE	0	0	8	
LEPTOCERIDAE				
CERACLEA	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	3	
ALL TRICHOPTERA				820
ACARINA	0	0	2	14
GASTROPODA				
AMNICOLA	6	8	18	
GYRAULUS	0	1	0	
ALL GASTROPODA				227

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/18/83

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	8	2	
SPHAERIUM	2	2	5	
ALL SPHAERIIDAE				131
UNIONIDAE				
TRUNCILLA DONACIFORMIS	0	1	0	
ALL PELECYPODA				138

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 18 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	42	39	23	716
TRICLADIDA	0	165	0	1136
NEMERTINEA	4	76	11	627
NEMATODA	71	17	11	682
OLIGOCHAETA				
NAIS	0	16	16	
SPIROSPERMA	337	69	44	
STYLARIA	62	190	10	
OTHER	1585	668	897	
ALL OLIGOCHAETA				26817
CLADOCERA				
ILYOCRYPTUS	0	1	8	62
ALL CLADOCERA				62
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	8	
DIAPTOMUS	0	16	0	
MACROCYCLOPS	1	0	1	
ALL COPEPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	3	0	0	
HYALELLA AZTECA	9	9	0	
PONTOPOREIA HOYI	0	1	0	
ALL AMPHIPODA				152
DIPTERA				
CHIRONOMIDAE	34	40	9	572
EPHEMEROPTERA				
HEPTAGENIIDAE				
STENONEMA	0	1	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	1	0	
HYDROPTILIDAE				
HYDROPTILA	3	3	2	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
POLYCENTROPUS	1	3	0	
ALL TRICHOPTERA				103
ODONATA				
COENAGRIONIDAE	0	2	1	21
ACARINA	7	10	0	117

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	5	1	
FERISSIA	20	118	3	
GYRAULUS	1	5	0	
PHYSA	1	0	0	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				1074
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	30	15	23	468
ALL PELECYPODA				468

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 18 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
ETHEOSTOMA NIGRUM	0	1	0	7
ALL FISH				7
RHABDOCOELA	326	31	31	2672
TRICLADIDA	0	0	65	448
NEMERTINEA	72	26	30	881
NEMATODA	17	18	76	764
HIRUDINEA				
GLOSSIPHONIIDAE				
BATRACOBDELLA PHALERA	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	17	9	64	
SPIROSPERMA	404	76	165	
STYLARIA	125	139	6	
OTHER	1320	873	1690	
ALL OLIGOCHAETA				33662
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	32	220
ALL POLYCHAETA				220

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 18 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
CAMPTOCERCUS	16	0	0	
EURYCERCUS LAMELLATUS	0	1	0	
ILYOCRYPTUS	16	0	0	
ALL CLADOCERA				227
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	0	
DIAPTOMUS	16	0	0	
ALL COPEPODA				165
AMPHIPODA				
GAMMARUS	15	1	0	
HYALELLA AZTECA	21	9	1	
ALL AMPHIPODA				324
DIPTERA				
CHIRONOMIDAE	3	7	7	117
CULICIDAE				
CHAOBORUS	0	1	0	
PSYCHODIDAE	0	0	1	
ALL DIPTERA				131
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	0	0	2	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	0	1	
ALL TRICHOPTERA				21
ODONATA				
COENAGRIONIDAE	0	2	0	14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 18 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	19	1	20	275
GASTROPODA				
AMNICOLA	1	3	15	
ELIMIA LIVESCENS	0	1	0	
FERISSIA	6	17	14	
GYRAULUS	3	1	0	
PHYSA	11	9	19	
ALL GASTROPODA				689
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	12	8	15	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				248
ALL PELECYPODA				248

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 18 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	9	0	8	117
NEMERTINEA	9	0	38	324
OLIGOCHAETA				
SPIROSPERMA	36	18	12	
OTHER	408	223	215	
ALL OLIGOCHAETA				6281
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	8	55
ALL POLYCHAETA				55
OSTRACODA	0	9	0	62
AMPHIPODA				
HYALELLA AZTECA	1	0	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	0	0	1	7
PSYCHODIDAE	1	0	0	
ALL DIPTERA				14
ACARINA	0	0	3	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/19/83

TRANSECT 18 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	9	1	
CAMPELOMA	1	0	0	
FERISSIA	0	0	1	
VALVATA SINCERA	2	0	0	
ALL GASTROPODA				103
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	5	37	358
ALL PELECYPODA				358

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 19 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
RHABDOCOELA	9	56	4	475
TRICLADIDA	0	0	17	117
NEMERTINEA	36	56	71	1123
NEMATODA	8	18	31	393
OLIGOCHAETA				
NAIS	0	0	10	
SPIROSPERMA	55	50	32	
STYLARIA	0	0	1	
OTHER	62	93	51	
ALL OLIGOCHAETA				2438
POLYCHAETA				
MANAYUNKIA SPECIOSA	112	56	80	1708
ALL POLYCHAETA				1708
COPEPODA				
EPISHURA LACUSTRIS	0	0	8	
HARPACTICOIDA	0	8	0	
ALL COPEPODA				110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	3	0	21
ALL AMPHIPODA				21
DIPTERA				
CERATOPOGONIDAE	3	0	0	
CHIRONOMIDAE	0	1	1	14
ALL DIPTERA				34
ACARINA	6	15	0	145
GASTROPODA				
AMNICOLA	1	3	5	
ELIMIA LIVESCENS	0	0	1	
FERISSIA	0	0	3	
PHYSA	0	0	1	
ALL GASTROPODA				96
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	65	45	19	888
ALL PELECYPODA				888

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 19 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	2	4	0	41
NEMERTINEA	72	49	65	1281
NEMATODA	8	8	4	138
OLIGOCHAETA				
SPIROSPERMA	0	7	19	
STYLARIA	0	4	0	
OTHER	289	198	149	
ALL OLIGOCHAETA				4587
POLYCHAETA				
MANAYUNKIA SPECIOSA	968	548	501	13890
ALL POLYCHAETA				13890
COPEPODA				
DIAPTOMUS	0	4	0	28
ALL COPEPODA				28
AMPHIPODA				
GAMMARUS	0	4	0	28
ALL AMPHIPODA				28
DIPTERA				
CHIRONOMIDAE	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 19 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	0	1	
ALL TRICHOPTERA				7
ACARINA	1	1	1	21
GASTROPODA				
AMNICOLA	0	3	3	
ELIMIA LIVESCENS	19	9	8	
ALL GASTROPODA				289
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	22	8	213
ALL PELECYPODA				213

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 19 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	1	1	21
TRICLADIDA	0	1	0	7
NEMERTINEA	56	43	21	826
NEMATODA	2	2	1	34
OLIGOCHAETA				
NAIS	1	0	1	
SPIROSPERMA	1	3	11	
OTHER	2	6	5	
ALL OLIGOCHAETA				207
POLYCHAETA				
MANAYUNKIA SPECIOSA	2	3	3	55
ALL POLYCHAETA				55
AMPHIPODA				
GAMMARUS	1	0	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT	0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 19 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	0	1	
ELIMIA LIVESCENS	1	3	0	
PHYSA	0	4	0	
ALL GASTROPODA				69
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	2	0	14
ALL PELECYPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 20 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	13	1	0	96
ALL CNIDARIA				96
RHABDOCOELA	12	56	58	868
TRICLADIDA	126	52	76	1749
NEMERTINEA	38	107	42	1288
NEMATODA	10	40	34	578
OLIGOCHAETA				
NAIS	0	8	8	
SPIROSPERMA	33	59	119	
STYLARIA	145	42	108	
OTHER	42	115	141	
ALL OLIGOCHAETA				5647
POLYCHAETA				
MANAYUNKIA SPECIOSA	13	11	57	558
ALL POLYCHAETA				558
CLADOCERA				
ILYOCRYPTUS	0	1	0	
SIDA CRYSTALLINA	1	1	0	
ALL CLADOCERA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	0	8	0	
MACROCYCLOPS	15	0	2	
ALL COPEPODA				172
AMPHIPODA				
GAMMARUS	41	0	17	
HYALELLA AZTECA	18	9	19	
ALL AMPHIPODA				716
DIPTERA				
CHIRONOMIDAE	62	85	27	1198
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	2	1	
AMETROPIDAE				
TRICHORYTHODES	1	0	0	
ALL EPHEMEROPTERA				34
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	2	0	
HYDROPSYCHE	0	1	0	
HYDROPTILIDAE				
HYDROPTILA	3	6	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	2	0	
POLYCENTROPUS	7	1	3	
ALL TRICHOPTERA				179
ODONATA				
COENAGRIONIDAE	4	0	3	48

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	9	3	4	110
GASTROPODA				
AMNICOLA	13	58	3	
ELIMIA LIVESCENS	2	2	0	
FERISSIA	7	1	2	
GYRAULUS	1	1	0	
PHYSA	4	1	4	
ALL GASTROPODA				682
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	43	50	41	923
ALL PELECYPODA				923

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 20 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	0	4	28
ALL CNIDARIA				28
RHABDOCOELA	1	0	1	14
TRICLADIDA	6	14	25	310
NEMERTINEA	74	34	54	1116
NEMATODA	92	14	31	943
OLIGOCHAETA				
SPIROSPERMA	31	2	16	
OTHER	39	10	10	
ALL OLIGOCHAETA				744
POLYCHAETA				
MANAYUNKIA SPECIOSA	9	0	2	76
ALL POLYCHAETA				76
COPEPODA				
DIAPTOMUS	1	0	0	7
ALL COPEPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 20 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	5	0	0	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				41
DIPTERA				
CHIRONOMIDAE	1	0	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	2	0	0	
ALL TRICHOPTERA				14
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	18	7	10	
ELIMIA LIVESCENS	112	28	39	
ALL GASTROPODA				1474
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	0	0	14
ALL PELECYPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/19/83

DETROIT RIVER TRANSECT 20 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1	13	0	96
ALL CNIDARIA				96
RHABDOCOELA	0	4	1	34
TRICLADIDA	0	0	8	55
NEMERTINEA	5	0	22	186
NEMATODA	81	5	181	1839
OLIGOCHAETA				
SPIROSPERMA	1	0	0	
STYLARIA	0	0	8	
OTHER				
ALL OLIGOCHAETA	2	0	1	83
POLYCHAETA				
MANAYUNKIA SPECIOSA	9	0	0	62
ALL POLYCHAETA				62
COPEPODA				
LIMNOCALANUS	0	2	0	14
ALL COPEPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 20 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	1	0	2	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	11	4	27	
HYDROPSYCHE	2	0	5	
ALL TRICHOPTERA				337
GASTROPODA				
ELIMIA LIVESCENS	4	2	15	
PHYSA	0	0	1	
ALL GASTROPODA				152

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 21 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	12	72	47	902
TRICLADIDA	1	0	0	7
NEMERTINEA	43	115	31	1302
NEMATODA	155	106	112	2569
OLIGOCHAETA				
NAIS	0	40	0	
SPIROSPERMA	110	121	59	
STYLARIA	12	51	35	
OTHER	210	142	104	
ALL OLIGOCHAETA				6088
POLYCHAETA				
MANAYUNKIA SPECIOSA	308	866	256	9848
ALL POLYCHAETA				9848
CLADOCERA				
SIDA CRYSTALLINA	0	2	0	14
ALL CLADOCERA				14
COPEPODA				
MACROCYCLOPS	0	26	1	186
ALL COPEPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	1	2	1	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				34
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CHIRONOMIDAE	11	25	34	482
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	
BAETISCIDAE				
BAETISCA	0	0	1	
ALL EPHEMEROPTERA				14
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	13	0	2	
HYDROPSYCHE	10	1	28	
LEPTOCERIDAE				
OECETIS	0	8	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	18	4	23	
POLYCENTROPUS	0	0	1	
ALL TRICHOPTERA				744

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	3	9	83
GASTROPODA				
AMNICOLA	11	23	11	
CAMPELOMA	0	2	0	
ELIMIA LIVESCENS	0	1	1	
FERISSIA	0	0	4	
GYRAULUS	0	0	1	
PHYSA	0	3	11	
ALL GASTROPODA				468
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	47	42	18	737
UNIONIDAE				
LAMPSILIS RADIATA SILIQUOIDEA	0	0	1	
ALL PELECYPODA				744

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 21 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	11	5	16	220
TRICLADIDA	3	0	0	21
NEMERTINEA	68	99	29	1350
NEMATODA	16	0	0	110
OLIGOCHAETA				
SPIROSPERMA	14	0	6	
OTHER	118	91	49	
ALL OLIGOCHAETA				1914
POLYCHAETA				
MANAYUNKIA SPECIOSA	32	48	56	937
ALL POLYCHAETA				937
COPEPODA				
EURYTEMORA	16	0	0	
HARPACTICOIDA	16	0	0	
ALL COPEPODA				220
AMPHIPODA				
GAMMARUS	0	1	0	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	0	1	0	7
CULICIDAE				
CHAOBORUS	0	1	0	
ALL DIPTERA				14
TRICHOPTERA				
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
ALL TRICHOPTERA				7
ACARINA	1	0	1	14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	26	8	8	289
ALL PELECYPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/19/83

DETROIT RIVER TRANSECT 21 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	2	3	3	55
NEMERTINEA	35	74	72	1246
NEMATODA	0	17	0	117
OLIGOCHAETA				
SPIROSPERMA	7	7	4	
OTHER	42	24	49	
ALL OLIGOCHAETA				916
POLYCHAETA				
MANAYUNKIA SPECIOSA	65	96	113	1887
ALL POLYCHAETA				1887
COPEPODA				
DIAPTOMUS	0	16	0	110
ALL COPEPODA				110
DIPTERA				
CHIRONOMIDAE	0	0	3	21
GASTROPODA				
AMNICOLA	1	0	2	
FERISSIA	1	0	0	
ALL GASTROPODA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/19/83

TRANSECT 21 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	13	32	337
ALL PELECYPODA				337

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 1 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMERTINEA	0	1	0	7
NEMATODA	0	1	0	7
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	0	
DIAPTOMUS	12	3	5	
LIMNOCALANUS	1	1	6	
ALL COPEPODA				207
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	2	1	1	28
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	0	0	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 7/84

ST. CLAIR RIVER TRANSECT 1 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	0	
DIAPTOMUS	4	7	2	
LIMNOCALANUS	3	0	2	
ALL COPEPODA				131
DIPTERA				
CHIRONOMIDAE	2	3	5	69
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	1	0	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 1 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	0	1	7
ALL CNIDARIA				7
NEMERTINEA	0	0	1	7
NEMATODA	0	0	8	55
OLIGOCHAETA	0	0	2	14
COPEPODA				
DIAPTOMUS	4	2	2	
LIMNOCALANUS	0	2	1	
ALL COPEPODA				76
OSTRACODA	0	0	1	7
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	11	6	29	317

8-345

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 2 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
ICHTHYOMYZON FOSSOR	0	0	1	7
ALL FISH				7
PORIFERA				
SPONGILLA	0	0	+	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	8	0	0	55
ALL CNIDARIA				55
RHABDOCOELA	17	3	15	241
NEMATODA	1	9	20	207
OLIGOCHAETA				
SPIROSPERMA	50	46	38	
OTHER	830	719	368	
ALL OLIGOCHAETA				14125
COPEPODA				
DIAPTOMUS	8	0	19	
HARPACTICOIDA	1	0	0	
ALL COPEPODA				193
OSTRACODA	2	1	2	34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	2	5	3	
HYALELLA AZTECA	0	1	0	
ALL AMPHIPODA				76
ISOPODA				
ASELLUS	0	0	1	7
ALL ISOPODA				7
TERRESTRIAL INSECT	1	1	5	48
DIPTERA				
CERATOPOGONIDAE	5	0	0	
CHIRONOMIDAE	100	252	49	2762
EMPIDIDAE	1	0	0	
PSYCHODIDAE	1	11	9	
ALL DIPTERA				2947
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	3	4	0	
ALL EPHEMEROPTERA				48
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	2	0	
ALL COLEOPTERA				14
LEPIDOPTERA	2	0	0	14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	2	1	
HYDROPSYCHE	1	1	0	
LEPTOCERIDAE				
MYSTACIDES	0	1	0	
OECETIS	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	1	0	
ALL TRICHOPTERA				62
ACARINA	3	1	0	28
GASTROPODA				
AMNICOLA	96	65	37	
GYRAULUS	0	0	3	
PHYSA	2	1	4	
ALL GASTROPODA				1432
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	2	3	55
ALL PELECYPODA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 2 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	12	15	8	241
ALL CNIDARIA				241
RHABDOCOELA	1	4	1	41
TRICLADIDA	1	11	0	83
NEMERTINEA	5	5	0	69
NEMATODA	10	15	32	393
OLIGOCHAETA				
NAIS	0	4	3	
SPIROSPERMA	16	23	9	
OTHER	29	76	37	
ALL OLIGOCHAETA				1357
CLADOCERA				
DAPHNIA	0	0	1	
ILYOCRYPTUS	0	0	1	
ALL CLADOCERA				14

B-34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	4	2	0	
DIAPTOMUS	29	0	6	
HARPACTICOIDA	6	7	34	
LIMNOCALANUS	5	1	0	
ALL COPEPODA				647
DECAPODA				
ORCONECTES	1	0	0	7
ALL DECAPODA				7
AMPHIPODA				
GAMMARUS	8	10	5	
HYALELLA AZTECA	8	9	6	
ALL AMPHIPODA				317
TERRESTRIAL INSECT	0	1	1	14
DIPTERA				
CHIRONOMIDAE	184	222	167	3946
EMPIDIDAE	3	3	5	
PSYCHODIDAE	0	0	1	
ALL DIPTERA				4029

B-350

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	17	9	
EPHEMERIDAE				
HEXAGENIA	1	1	4	
EPHEMERELLIDAE				
EPHEMERELLA	0	3	0	
BAETISCIDAE				
BAETISCA	1	0	1	
ALL EPHEMEROPTERA				324
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	3	8	5	
ALL COLEOPTERA				110
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	5	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	13	50	4	
HYDROPSYCHE	11	19	2	
HYDROPTILIDAE	1	0	0	
LEPTOCERIDAE				
OECETIS	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	3	2	2	
ALL TRICHOPTERA				799
PLECOPTERA	1	0	0	7
ACARINA	9	11	17	255

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	60	44	74	
ELIMIA LIVESCENS	43	56	20	
FERISSIA	2	2	1	
LYMNAEA	0	0	1	
PHYSA	3	11	2	
ALL GASTROPODA				2197
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	9	7	2	124
ALL PELECYPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 2 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	8	37	5	344
ALL CNIDARIA				344
RHABDOCOELA	1	2	0	21
TRICLADIDA	1	1	0	14
NEMERTINEA	2	5	1	55
NEMATODA	13	12	9	234
OLIGOCHAETA				
SPIROSPERMA	4	15	11	
OTHER	96	76	53	
ALL OLIGOCHAETA				1756
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	1	7
ALL POLYCHAETA				7
COPEPODA				
DIAPTOMUS	16	7	2	
HARPACTICOIDA	6	3	4	
LIMNOCALANUS	2	0	5	
ALL COPEPODA				310

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	1	2	1	28
AMPHIPODA				
GAMMARUS	13	7	0	
HYALELLA AZTECA	17	15	11	
ALL AMPHIPODA				434
TERRESTRIAL INSECT	3	0	0	21
DIPTERA				
CHIRONOMIDAE	204	176	181	3863
EMPIDIDAE	4	11	6	
ALL DIPTERA				4008
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	18	10	
EPHEMERIDAE				
HEXAGENIA	0	5	1	
EPHEMERELLIDAE				
EPHEMERELLA	1	2	0	
HEPTAGENIIDAE				
STENONEMA	0	1	0	
ALL EPHEMEROPTERA				331
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	4	1	3	
ALL COLEOPTERA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	9	20	2	
HYDROPSYCHE	6	15	1	
RHYACOPHILIDAE				
PROTOPTILA	2	1	3	
ALL TRICHOPTERA				413
PLECOPTERA	0	1	0	7
ACARINA	6	27	7	275
GASTROPODA				
AMNICOLA	9	30	7	
ELIMIA LIVESCENS	40	86	32	
LYMNAEA	0	1	0	
PHYSA	0	1	1	
VALVATA TRICARINATA	1	1	0	
ALL GASTROPODA				1439
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	5	8	
SPHAERIUM	0	2	0	
ALL SPHAERIIDAE				110
ALL PELECYPODA				110

8-355

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 3 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	0	1	7
ALL FISH				7
CNIDARIA				
HYDRA	1	0	1	14
ALL CNIDARIA				14
COPEPODA				
CYCLOPS BICUSPIDATUS	4	0	4	
DIAPTOMUS	28	4	20	
ALL COPEPODA				413
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	15	10	14	269
EMPIDIDAE	0	1	0	
ALL DIPTERA				275
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	1	0	0	
ALL TRICHOPTERA				7
ACARINA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 3 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	1	0	0	7
ALL FISH				7
CNIDARIA				
HYDRA	1	1	1	21
ALL CNIDARIA				21
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	1	
DIAPTOMUS	5	0	13	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				152
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	32	13	21	455
EMPIDIDAE	5	1	0	
ALL DIPTERA				496
ACARINA	1	0	1	14
GASTROPODA				
ELIMIA LIVESCENS	0	2	1	21
ALL GASTROPODA				21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	6	0	48
ALL PELECYPODA				48

0357

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

ST. CLAIR RIVER TRANSECT 3 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	1	1	1	21
ALL FISH				21
CNIDARIA				
HYDRA	0	0	2	14
ALL CNIDARIA				14
TRICLADIDA	0	1	3	28
NEMATODA	2	0	1	21
OLIGOCHAETA	0	1	29	207
COPEPODA				
DIAPTOMUS	30	4	4	
LIMNOCALANUS	1	0	1	
ALL COPEPODA				275
AMPHIPODA				
GAMMARUS	2	0	0	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				21
DIPTERA				
CHIRONOMIDAE	54	33	40	875
EMPIDIDAE	0	1	1	
ALL DIPTERA				868

8 358

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 7/84

TRANSECT 3 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERELLIDAE				
EPHEMERELLA	0	0	6	
BAETISCIDAE				
BAETISCA	2	0	0	
ALL EPHEMEROPTERA				55
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	1	1	71	
LEPTOCERIDAE				
MYSTACIDES	1	0	0	
RHYACOPHILIDAE				
PROTOPTILA	0	1	0	
ALL TRICHOPTERA				523
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	31	12	16	
GYRAULUS	1	0	0	
ALL GASTROPODA				413

2359

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 4 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	0	1	7
ALL FISH				7
CNIDARIA				
HYDRA	0	2	0	14
ALL CNIDARIA				14
TRICLADIDA	0	1	0	7
NEMATODA	33	58	69	1102
HIRUDINEA				
ERPOBDELLIDAE	0	3	0	21
OLIGOCHAETA				
SPIROSPERMA	34	49	30	
OTHER	23	50	27	
ALL OLIGOCHAETA				1467
COPEPODA				
DIAPTOMUS	2	4	3	
LIMNOCALANUS	2	1	3	
ALL COPEPODA				103
OSTRACODA	0	0	1	7

8 960

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
HYALELLA AZTECA	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	11	21	7	269
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	0	2	0	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
ALL TRICHOPTERA				7
ACARINA	0	3	0	21
GASTROPODA				
AMNICOLA	39	50	27	
ELIMIA LIVESCENS	1	18	9	
PHYSA	0	0	2	
VALVATA SINCERA	1	0	0	
VALVATA TRICARINATA	48	55	25	
ALL GASTROPODA				1894
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	24	49	40	778
ALL PELECYPODA				778

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 4 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	6	0	8	96
ALL CNIDARIA				96
RHABDOCOELA	12	8	8	193
TRICLADIDA	0	0	1	7
NEMATODA	24	49	125	1364
HIRUDINEA				
ERPOBDELLIDAE	0	0	1	
GLOSSIPHONIIDAE				
PLACOBDELLA PAPILLIFERA	1	0	0	
ALL HIRUDINEA				14
OLIGOCHAETA				
NAIS	5	1	2	
SPIROSPERMA	10	6	13	
OTHER	237	288	233	
ALL OLIGOCHAETA				5475
COPEPODA				
DIAPTOMUS	3	0	0	
HARPACTICOIDA	3	0	16	
LIMNOCALANUS	0	0	1	
ALL COPEPODA				158

B 367

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	4	2	4	
HYALELLA AZTECA	14	2	11	
PONTOPOREIA HOYI	19	0	0	
ALL AMPHIPODA				386
TERRESTRIAL INSECT	3	0	0	21
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	118	22	152	2011
EMPIDIDAE	0	0	1	
ALL DIPTERA				2025
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	1	
EPHEMERIDAE				
HEXAGENIA	1	0	20	
EPHEMERELLIDAE				
EPHEMERELLA	3	0	1	
HEPTAGENIIDAE				
STENONEMA	1	0	0	
ALL EPHEMEROPTERA				193

B 363

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
LEPIDOPTERA	0	3	0	21
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	2	
HYDROPSYCHE	5	1	3	
LEPTOCERIDAE				
MYSTACIDES	1	0	0	
OECETIS	0	0	1	
TRIAENODES	1	0	2	
ALL TRICHOPTERA				117
ACARINA	9	1	16	179
GASTROPODA				
AMNICOLA	34	12	26	
ELIMIA LIVESCENS	0	1	0	
PHYSA	3	0	7	
VALVATA SINCERA	1	0	3	
VALVATA TRICARINATA	32	10	23	
ALL GASTROPODA				1047
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	32	6	20	399
ALL PELECYPODA				399

IB 364

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 4 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
UNIDENTIFIED FISH REMAINS	0	0	1	7
ALL FISH				7
CNIDARIA				
HYDRA	1	3	7	76
ALL CNIDARIA				76
RHABDOCOELA	0	0	1	7
TRICLADIDA	0	0	1	7
NEMATODA	41	7	24	496
OLIGOCHAETA				
NAIS	1	0	3	
SPIROSPERMA	1	6	11	
OTHER	83	70	198	
ALL OLIGOCHAETA				2569
COPEPODA				
CYCLOPS BICUSPIDATUS	2	0	1	
DIAPTOMUS	6	3	0	
HARPACTICOIDA	0	0	1	
LIMNOCALANUS	0	1	0	
ALL COPEPODA				96

B365

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	2	0	16	
HYALELLA AZTECA	1	0	36	
PONTOPOREIA HOYI	0	1	0	
ALL AMPHIPODA				386
ISOPODA				
ASELLUS	1	0	0	7
ALL ISOPODA				7
TERRESTRIAL INSECT	0	0	5	34
DIPTERA				
CERATOPOGONIDAE	0	1	1	
CHIRONOMIDAE	66	23	181	1859
ALL DIPTERA				1873
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	0	1	
EPHEMERELLIDAE				
EPHEMERELLA	0	0	2	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	1	3	
HYDROPSYCHE	0	1	17	
LEPTOCERIDAE				
MYSTACIDES	0	0	1	
OECETIS	0	0	1	
ALL TRICHOPTERA				172

B 346

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PLECOPTERA	0	0	1	7
ACARINA	1	0	2	21
GASTROPODA				
AMNICOLA	7	1	21	
CAMPELOMA	1	0	0	
ELIMIA LIVESCENS	6	2	12	
GYRAULUS	1	1	1	
PHYSA	0	0	7	
VALVATA TRICARINATA	0	0	4	
ALL GASTROPODA				441
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	2	5	117
ALL PELECYPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 5 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	0	1	7
ALL FISH				7
CNIDARIA				
HYDRA	2	0	2	28
ALL CNIDARIA				28
NEMATODA	51	116	17	1267
OLIGOCHAETA				
NAIS	1	0	0	
SPIROSPERMA	21	22	14	
OTHER	26	12	23	
ALL OLIGOCHAETA				820
COPEPODA				
CYCLOPS BICUSPIDATUS	2	8	0	
DIAPTOMUS	5	8	3	
HARPACTICOIDA	1	0	1	
ALL COPEPODA				193
AMPHIPODA				
GAMMARUS	35	6	34	516
ALL AMPHIPODA				516
TERRESTRIAL INSECT	0	2	1	21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	152	101	77	2273
EMPIDIDAE	2	1	0	
ALL DIPTERA				2293
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	0	
EPHEMERIDAE				
HEXAGENIA	2	4	1	
ALL EPHEMEROPTERA				55
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	7	0	2	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	2	0	1	
LEPTOCERIDAE				
OECETIS	1	3	0	
SETODES	0	1	0	
TRIAENODES	4	0	0	
ALL TRICHOPTERA				152
ODONATA				
GOMPHIDAE				
GOMPHUS	0	0	1	7
ALL ODONATA				7
ACARINA	4	1	0	34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	12	10	10	
ELIMIA LIVESCENS	57	48	31	
PHYSA	2	0	1	
VALVATA TRICARINATA	42	25	40	
ALL GASTROPODA				1914
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	51	36	22	751
ALL PELECYPODA				751

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 5 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	2	0	1	21
ALL CNIDARIA				21
NEMATODA	62	1	8	489
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	6	5	6	
OTHER	43	15	16	
ALL OLIGOCHAETA				634
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	0	5	2	
DIAPTOMUS	14	20	5	
HARPACTICOIDA	2	0	0	
LIMNOCALANUS	0	1	0	
ALL COPEPODA				337
AMPHIPODA				
GAMMARUS	4	0	0	28
ALL AMPHIPODA				28
DIPTERA				
CHIRONOMIDAE	52	44	70	1143

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	0	0	
ALL TRICHOPTERA				7
ACARINA	0	2	0	14
GASTROPODA				
AMNICOLA	8	24	30	
ELIMIA LIVESCENS	7	46	36	
PLEUROCERA ACUTA	1	2	3	
VALVATA TRICARINATA	8	16	18	
ALL GASTROPODA				1370
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	29	15	8	358
ALL PELECYPODA				358

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 5 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	2	1	21
ALL FISH				21
CNIDARIA				
HYDRA	1	0	1	14
ALL CNIDARIA				14
OLIGOCHAETA	0	1	3	28
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	1	
DIAPTOMUS	6	3	4	
LIMNOCALANUS	5	0	1	
ALL COPEPODA				145
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	5	8	13	179
ALL DIPTERA				186
EPHEMEROPTERA				
HEPTAGENIIDAE				
STENONEMA	1	1	0	
ALL EPHEMEROPTERA				14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	1	0	0	
ALL TRICHOPTERA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 5 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	0	1	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 6 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	+	+	+	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	0	6	0	41
ALL CNIDARIA				41
RHABDOCOELA	0	2	0	14
TRICLADIDA	0	3	2	34
NEMATODA	9	19	12	275
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	1	1	
HELOBDELLA STAGNALIS	1	0	1	
ALL HIRUDINEA				28
OLIGOCHAETA				
SPIROSPERMA	4	5	0	
OTHER	36	29	41	
ALL OLIGOCHAETA				792

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	1	
DIAPTOMUS	7	5	5	
HARPACTICOIDA	0	1	3	
LIMNOCALANUS	3	1	0	
MACROCYCLOPS	0	1	1	
ALL COPEPODA				200
AMPHIPODA				
GAMMARUS	80	193	84	
HYALELLA AZTECA	13	25	9	
ALL AMPHIPODA				2782
ISOPODA				
ASELLUS	12	50	11	503
ALL ISOPODA				503
DIPTERA				
CERATOPOGONIDAE	5	6	1	
CHIRONOMIDAE	286	570	318	8085
EMPIDIDAE	0	1	0	
ALL DIPTERA				8174
EPHEMEROPTERA				
CAENIDAE				
CAENIS	13	19	7	
EPHEMERIDAE				
HEXAGENIA	10	14	12	
EPHEMERELLIDAE				
EPHEMERELLA	0	1	0	
ALL EPHEMEROPTERA				523

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	1	0	
HYDROPTILIDAE				
ORTHOTRICHIA	0	0	1	
LEPTOCERIDAE				
CERACLEA	0	2	2	
OECETIS	30	28	31	
SETODES	0	0	3	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	4	3	
ALL TRICHOPTERA				730
ACARINA	2	1	1	28
GASTROPODA				
AMNICOLA	80	78	64	
ELIMIA LIVESCENS	18	34	10	
GYRAULUS	30	12	15	
LYMNAEA	0	1	0	
PHYSA	12	12	3	
ALL GASTROPODA				2541
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	2	4	1	48
UNIONIDAE	0	0	1	
ALL PELECYPODA				55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 6 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	0	1	7
ALL CNIDARIA				7
NEMATODA	25	20	35	551
OLIGOCHAETA				
SPIROSPERMA	0	1	4	
OTHER	11	44	13	
ALL OLIGOCHAETA				503
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	1	
DIAPTOMUS	5	4	2	
HARPACTICOIDA	0	1	0	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				103
AMPHIPODA				
GAMMARUS	2	0	3	34
ALL AMPHIPODA				34
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	38	40	33	764
ALL DIPTERA				771

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	0	0	1	
ALL EPHEMEROPTERA				14
GASTROPODA				
AMNICOLA	10	2	0	
GYRAULUS	3	0	0	
VALVATA TRICARINATA	1	1	0	
ALL GASTROPODA				117
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	0	0	14
ALL PELECYPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 6 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMATODA	7	10	8	172
OLIGOCHAETA	19	9	1	200
CLADOCERA				
DAPHNIA	0	1	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	2	
DIAPTOMUS	5	4	10	
HARPACTICOIDA	1	1	0	
LIMNOCALANUS	1	1	0	
ALL COPEPODA				179
AMPHIPODA				
GAMMARUS	0	3	0	21
ALL AMPHIPODA				21
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	23	25	1	337
EMPIDIDAE	0	1	0	
ALL DIPTERA				344

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	0	0	1	
ALL EPHEMEROPTERA				14
GASTROPODA				
AMNICOLA	4	2	0	
PHYSA	1	0	0	
ALL GASTROPODA				48

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 7 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	4	1	3	55
TRICLADIDA	2	3	0	34
NEMERTINEA	0	1	0	7
NEMATODA	22	20	12	372
BRYOZOA	+	0	0	+
OLIGOCHAETA				
SPIROSPERMA	48	32	8	
OTHER	220	151	185	
ALL OLIGOCHAETA				4435
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	2	0	14
ALL POLYCHAETA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	0	
DIAPTOMUS	13	18	1	
HARPACTICOIDA	2	0	8	
LIMNOCALANUS	0	2	0	
UNIDENTIFIED NAUPLII	0	0	1	
ALL COPEPODA				317
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	58	29	9	
HYALELLA AZTECA	1	1	2	
ALL AMPHIPODA				689
TERRESTRIAL INSECT	7	6	8	145
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	280	180	171	4345
EMPIDIDAE	1	0	0	
ALL DIPTERA				4359

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	13	1	1	
EPHEMERIDAE				
HEXAGENIA	8	6	4	
ALL EPHEMEROPTERA				227
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	2	0	
TRIAENODES	1	0	1	
ALL TRICHOPTERA				34
ACARINA	1	1	1	21
GASTROPODA				
AMNICOLA	32	32	31	
ELIMIA LIVESCENS	7	10	0	
PHYSA	3	2	0	
ALL GASTROPODA				806
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	13	8	2	
SPHAERIUM	1	1	2	
ALL SPHAERIIDAE				186
ALL PELECYPODA				186

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 7 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	0	0	+	+
ALL PORIFERA				0
NEMATODA	23	32	34	613
OLIGOCHAETA				
NAIS	1	0	0	
SPIROSPERMA	8	9	20	
OTHER	1	39	7	
ALL OLIGOCHAETA				585
COPEPODA				
DIAPTOMUS	6	1	47	
LIMNOCALANUS	3	1	2	
ALL COPEPODA				413
AMPHIPODA				
GAMMARUS	0	2	3	34
ALL AMPHIPODA				34
TERRESTRIAL INSECT	4	0	0	28
DIPTERA				
CHIRONOMIDAE	3	24	15	289

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	5	4	
BAETISCIDAE				
BAETISCA	0	12	0	
ALL EPHEMEROPTERA				145
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	3	0	
LEPTOCERIDAE				
CERACLEA	0	2	0	
OECETIS	0	1	1	
ALL TRICHOPTERA				48
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	1	5	10	
ELIMIA LIVESCENS	2	21	13	
GYRAULUS	0	0	1	
PHYSA	0	3	0	
ALL GASTROPODA				386
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	4	39	
SPHAERIUM	1	5	2	
ALL SPHAERIIDAE				372
ALL PELECYPODA				372

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 7 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMATODA	85	67	61	1467
OLIGOCHAETA				
SPIROSPERMA	19	11	33	
OTHER	27	21	18	
ALL OLIGOCHAETA				888
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	0	
DIAPTOMUS	6	32	34	
LIMNOCALANUS	2	32	0	
ALL COPEPODA				737
AMPHIPODA				
GAMMARUS	5	5	1	76
ALL AMPHIPODA				76
TERRESTRIAL INSECT	3	0	2	34
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	12	24	22	399
EMPIDIDAE	0	0	1	
ALL DIPTERA				413

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	1	0	
EPHEMERIDAE				
HEXAGENIA	0	1	3	
EPHEMERELLIDAE				
EPHEMERELLA	0	0	1	
ALL EPHEMEROPTERA				48
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	4	3	16	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	2	
LEPTOCERIDAE				
CERACLEA	0	1	0	
OECETIS	1	1	0	
TRIAENODES	1	1	0	
ALL TRICHOPTERA				207
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	5	5	12	
ELIMIA LIVESCENS	16	38	55	
PHYSA	0	1	0	
ALL GASTROPODA				909

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	16	12	
SPHAERIUM	9	12	13	
ALL SPHAERIIDAE				468
UNIONIDAE				
LAMPSILIS	0	1	0	
ALL PELECYPODA				475

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 8 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	5	1	41
TRICLADIDA	0	1	0	7
NEMATODA	32	70	9	764
OLIGOCHAETA				
NAIS	1	0	0	
SPIROSPERMA	23	34	11	
OTHER	45	103	32	
ALL OLIGOCHAETA				1715
POLYCHAETA				
MANAYUNKIA SPECIOSA	8	157	33	1364
ALL POLYCHAETA				1364
COPEPODA				
DIAPTOMUS	1	2	7	
HARPACTICOIDA	0	17	1	
LIMNOCALANUS	0	0	8	
PARACYCLOPS	0	8	3	
ALL COPEPODA				324
AMPHIPODA				
GAMMARUS	8	5	4	
HYALELLA AZTECA	2	5	4	
ALL AMPHIPODA				193

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ISOPODA				
ASELLUS	2	1	0	21
ALL ISOPODA				21
TERRESTRIAL INSECT	1	0	1	14
DIPTERA				
CERATOPOGONIDAE	0	2	0	
CHIRONOMIDAE	35	55	27	806
ALL DIPTERA				820
EPHEMEROPTERA				
CAENIDAE				
CAENIS	39	18	25	
EPHEMERIDAE				
HEXAGENIA	6	1	2	
ALL EPHEMEROPTERA				627
TRICHOPTERA				
POLYCENTROPODIDAE				
POLYCENTROPUS	0	2	0	
ALL TRICHOPTERA				14
ACARINA	0	2	0	14
GASTROPODA				
AMNICOLA	3	0	0	
ELIMIA LIVESCENS	1	3	2	
GYRAULUS	0	0	1	
PHYSA	1	0	0	
ALL GASTROPODA				76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	0	
SPHAERIUM	2	2	0	
ALL SPHAERIIDAE				41
ALL PELECYPODA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 8 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	9	3	4	110
NEMATODA	27	29	41	668
OLIGOCHAETA				
SPIROSPERMA	9	11	14	
OTHER	39	71	100	
ALL OLIGOCHAETA				1680
POLYCHAETA				
MANAYUNKIA SPECIOSA	14	2	8	165
ALL POLYCHAETA				165
COPEPODA				
CYCLOPS BICUSPIDATUS	2	1	0	
DIAPTOMUS	14	3	8	
HARPACTICOIDA	1	0	0	
LIMNOCALANUS	2	0	0	
ALL COPEPODA				213
OSTRACODA	0	0	9	62
AMPHIPODA				
GAMMARUS	4	2	5	
HYALELLA AZTECA	2	0	2	
ALL AMPHIPODA				103

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	52	12	54	813
EPHEMEROPTERA				
CAENIDAE				
CAENIS	2	0	2	
EPHEMERIDAE				
HEXAGENIA	1	0	1	
ALL EPHEMEROPTERA				41
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	2	0	0	
ALL TRICHOPTERA				14
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	14	2	12	
ELIMIA LIVESCENS	0	0	1	
GYRAULUS	4	1	1	
PHYSA	2	0	2	
VALVATA TRICARINATA	0	0	1	
ALL GASTROPODA				275
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	9	3	12	165
ALL PELECYPODA				165

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

ST. CLAIR RIVER TRANSECT 8 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	16	0	110
ALL CNIDARIA				110
RHABDOCOELA	21	26	53	689
NEMATODA	74	19	51	992
OLIGOCHAETA				
SPIROSPERMA	42	113	166	
OTHER	846	848	620	
ALL OLIGOCHAETA				18146
CLADOCERA				
DAPHNIA	0	1	0	
ILYOCRYPTUS	0	2	0	
ALL CLADOCERA				21
COPEPODA				
DIAPTOMUS	0	0	1	
HARPACTICOIDA	0	17	0	
ALL COPEPODA				124
AMPHIPODA				
GAMMARUS	15	19	3	
HYALELLA AZTECA	1	1	0	
PONTOPOREIA HOYI	0	1	0	
ALL AMPHIPODA				275

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ISOPODA				
ASELLUS	4	14	0	
LIRCEUS	0	2	0	
ALL ISOPODA				138
DIPTERA				
CERATOPOGONIDAE	0	3	1	
CHIRONOMIDAE	205	228	106	3712
ALL DIPTERA				3739
EPHEMEROPTERA				
CAENIDAE				
CAENIS	15	16	1	
EPHEMERIDAE				
HEXAGENIA	19	3	11	
ALL EPHEMEROPTERA				448
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	1	0	
LEPTOCERIDAE				
OECETIS	0	1	0	
TRIAENODES	1	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
POLYCENTROPUS	2	1	0	
ALL TRICHOPTERA				69
ODONATA				
GOMPHIDAE				
GOMPHUS	0	1	0	7
ALL ODONATA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 8/84

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	4	0	28
GASTROPODA				
AMNICOLA	10	37	37	
PHYSA	2	1	0	
VALVATA SINCERA	0	1	0	
ALL GASTROPODA				606
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	5	3	62
ALL PELECYPODA				62

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

ST. CLAIR RIVER TRANSECT 9 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	17	17	234
ALL CNIDARIA				234
RHABDOCOELA	9	9	5	158
TRICLADIDA	1	0	1	14
NEMERTINEA	8	1	0	62
NEMATODA	26	58	80	1129
OLIGOCHAETA				
SPIROSPERMA	20	65	9	
OTHER	242	211	92	
ALL OLIGOCHAETA				4401
POLYCHAETA				
MANAYUNKIA SPECIOSA	159	318	363	5785
ALL POLYCHAETA				5785
COPEPODA				
LIMNOCALANUS	0	2	0	14
ALL COPEPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	58	94	38	
HYALELLA AZTECA	24	31	20	
ALL AMPHIPODA				1825
ISOPODA				
ASELLUS	5	4	1	
LIRCEUS	9	23	16	
ALL ISOPODA				399
TERRESTRIAL INSECT	1	0	2	21
DIPTERA				
CERATOPOGONIDAE	29	21	74	
CHIRONOMIDAE	101	121	139	2486
ALL DIPTERA				3340
EPHEMEROPTERA				
CAENIDAE				
CAENIS	34	26	67	
EPHEMERIDAE				
HEXAGENIA	1	0	2	
EPHEMERELLIDAE				
EPHEMERELLA	0	0	1	
ALL EPHEMEROPTERA				902

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
MYSTACIDES	0	8	1	
OECETIS	4	5	3	
SETODES	1	4	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	1	0	0	
ALL TRICHOPTERA				186
ACARINA	3	1	1	34
GASTROPODA				
AMNICOLA	0	2	0	
GYRAULUS	1	3	0	
PHYSA	1	3	1	
ALL GASTROPODA				76
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	13	9	1	
SPHAERIUM	1	1	3	
ALL SPHAERIIDAE				193
ALL PELECYPODA				193

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

ST. CLAIR RIVER TRANSECT 9 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	0	1	7
ALL CNIDARIA				7
NEMATODA	12	20	37	475
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	3	4	6	
OTHER	27	23	50	
ALL OLIGOCHAETA				785
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	2	5	48
ALL POLYCHAETA				48
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	0	2	0	
DIAPTOMUS	15	23	2	
LIMNOCALANUS	2	12	1	
ALL COPEPODA				393
AMPHIPODA				
GAMMARUS	1	6	8	
HYALELLA AZTECA	0	1	1	
ALL AMPHIPODA				117

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	6	7	14	186
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	2	1	
ALL EPHEMEROPTERA				21
ACARINA	0	2	1	21
GASTROPODA				
AMNICOLA	2	0	2	28
ALL GASTROPODA				28
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	20	6	4	207
ALL PELECYPODA				207

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

ST. CLAIR RIVER TRANSECT 9 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	2	0	0	14
NEMATODA	6	29	8	296
OLIGOCHAETA				
SPIROSPERMA	1	3	10	
OTHER	11	11	2	
ALL OLIGOCHAETA				262
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7
ALL POLYCHAETA				7
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	7	
DIAPTOMUS	28	5	7	
EURYTEMORA	0	1	0	
HARPACTICOIDA	0	1	0	
LIMNOCALANUS	8	4	4	
ALL COPEPODA				455
OSTRACODA	1	0	0	7

B 4/03

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	3	0	2	34
ALL AMPHIPODA				34
DIPTERA				
CHIRONOMIDAE	6	4	5	103
GASTROPODA				
AMNICOLA	2	0	0	
ELIMIA LIVESCENS	1	0	0	
ALL GASTROPODA				21
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	8	3	9	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				145
ALL PELECYPODA				145

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

ST. CLAIR RIVER TRANSECT 10 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMATODA	1	0	1	14
OLIGOCHAETA	3	2	1	41
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	0	
DIAPTOMUS	3	3	1	
LIMNOCALANUS	11	7	10	
ALL COPEPODA				248
AMPHIPODA				
GAMMARUS	1	0	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT	1	0	1	14
DIPTERA				
CERATOPOGONIDAE	1	0	2	
CHIRONOMIDAE	2	2	2	41
ALL DIPTERA				62
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	2	0	34
ALL PELECYPODA				34

B 405

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

ST. CLAIR RIVER TRANSECT 10 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	1	0	7
NEMATODA	10	24	11	310
HIRUDINEA				
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	1	0	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
SPIROSPERMA	37	37	28	
OTHER	81	55	122	
ALL OLIGOCHAETA				2479
POLYCHAETA				
MANAYUNKIA SPECIOSA	2	21	2	172
ALL POLYCHAETA				172
CLADOCERA				
DAPHNIA	3	0	1	28
ALL CLADOCERA				28
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	3	
DIAPTOMUS	6	3	6	
LIMNOCALANUS	23	11	2	
ALL COPEPODA				379
OSTRACODA	1	0	0	7

B 405

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	38	20	60	813
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
LEPTOCERIDAE				
CERACLEA	1	0	0	
ALL TRICHOPTERA				7
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	15	8	2	
ELIMIA LIVESCENS	0	1	2	
GYRAULUS	2	0	0	
PHYSA	0	0	1	
ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	8	19	289
ALL PELECYPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

ST. CLAIR RIVER TRANSECT 10 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	1	0	14
NEMATODA	12	20	33	448
OLIGOCHAETA				
SPIROSPERMA	3	7	0	
OTHER	38	78	25	
ALL OLIGOCHAETA				1040
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	3	21
ALL POLYCHAETA				21
CLADOCERA				
BOSMINA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	1	
DIAPTOMUS	3	1	14	
LIMNOCALANUS	12	6	4	
ALL COPEPODA				289
DIPTERA				
CHIRONOMIDAE	12	2	5	131
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
ALL EPHEMEROPTERA				7

B 408

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	1	0	
ALL TRICHOPTERA				7
GASTROPODA				
AMNICOLA	18	3	1	
GYRAULUS	0	1	0	
ALL GASTROPODA				158
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	17	4	2	158
ALL PELECYPODA				158

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

LAKE ST. CLAIR TRANSECT 11 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	3	0	2	34
NEMATODA	96	47	40	1260
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	2	0	0	
ALL HIRUDINEA				14
OLIGOCHAETA				
SPIROSPERMA	0	0	2	
OTHER	234	129	37	
ALL OLIGOCHAETA				2768
POLYCHAETA				
MANAYUNKIA SPECIOSA	58	40	18	799
ALL POLYCHAETA				799
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	3	
DIAPTOMUS	0	0	2	
HARPACTICOIDA	0	0	1	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				48
OSTRACODA	15	30	21	455
AMPHIPODA				
GAMMARUS	9	27	8	303
ALL AMPHIPODA				303

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	81	52	76	1439
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	129	92	126	
ALL EPHEMEROPTERA				2390
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	1	1	
ALL TRICHOPTERA				21
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	1	1	0	
ELIMIA LIVESCENS	1	0	0	
SOMATOGYRUS SUBGLOBOSUS	1	0	0	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				34
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	46	13	4	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				441
UNIONIDAE				
LAMPSILIS RADIATA SILIQUOIDEA	0	0	1	
ALL PELECYPODA				448

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

LAKE ST. CLAIR TRANSECT 11 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	2	5	8	103
NEMATODA	109	168	210	3354
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA	615	551	679	12706
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	24	0	165
ALL POLYCHAETA				165
CLADOCERA				
ILYOCRYPTUS	0	2	0	14
ALL CLADOCERA				14
OSTRACODA	3	8	19	207
AMPHIPODA				
GAMMARUS	5	4	3	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				90
DIPTERA				
CHIRONOMIDAE	36	50	24	758

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 11 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	77	56	71	
ALL EPHEMEROPTERA				1412
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	0	1	
ALL TRICHOPTERA				7
ACARINA	0	1	0	7
GASTROPODA				
GYRAULUS	0	1	0	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	61	36	88	1274
ALL PELECYPODA				1274

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

LAKE ST. CLAIR TRANSECT 11 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	6	0	2	55
NEMATODA	116	162	131	2817
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	2	1	0	
PISCICOLIDAE	0	1	0	
ALL HIRUDINEA				28
OLIGOCHAETA				
SPIROSPERMA	0	0	1	
OTHER	779	445	507	
ALL OLIGOCHAETA				11928
POLYCHAETA				
MANAYUNKIA SPECIOSA	16	32	33	558
ALL POLYCHAETA				558
CLADOCERA				
ILYOCRYPTUS	3	3	3	62
ALL CLADOCERA				62
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	0	
DIAPTOMUS	0	8	0	
LIMNOCALANUS	0	2	0	
ALL COPEPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 11 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	1	3	1	34
AMPHIPODA				
GAMMARUS	3	0	3	
HYALELLA AZTECA	0	2	0	
ALL AMPHIPODA				55
DIPTERA				
CHIRONOMIDAE	28	33	41	702
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	58	81	60	
ALL EPHEMEROPTERA				1377
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	0	0	
ALL TRICHOPTERA				7
ACARINA	1	1	0	14
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	59	101	21	
SPHAERIUM	3	8	2	
ALL SPHAERIIDAE				1336
ALL PELECYPODA				1336

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

LAKE ST. CLAIR TRANSECT 12 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	3	0	28
TRICLADIDA	0	1	0	7
NEMATODA	26	16	41	572
OLIGOCHAETA				
SPIROSPERMA	4	19	9	
OTHER	20	27	56	
ALL OLIGOCHAETA				930
POLYCHAETA				
MANAYUNKIA SPECIOSA	70	47	52	1164
ALL POLYCHAETA				1164
CLADOCERA				
DAPHNIA	0	2	0	14
ALL CLADOCERA				14
COPEPODA				
CYCLOPS VERNALIS	0	0	1	
DIAPTOMUS	0	1	1	
HARPACTICOIDA	1	3	1	
LIMNOCALANUS	1	4	5	
ALL COPEPODA				124
OSTRACODA	9	22	22	365

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

TRANSECT 12 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	41	9	6	386
ALL AMPHIPODA				386
DIPTERA				
CHIRONOMIDAE	44	50	31	861
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	77	142	115	
ALL EPHEMEROPTERA				2300
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	2	4	1	
ALL TRICHOPTERA				48
GASTROPODA				
AMNICOLA	7	8	3	
ELIMIA LIVESCENS	0	1	0	
GYRAULUS	12	11	18	
VALVATA TRICARINATA	0	4	3	
ALL GASTROPODA				461
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	17	12	18	
SPHAERIUM	0	0	2	
ALL SPHAERIIDAE				337
ALL PELECYPODA				337

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

LAKE ST. CLAIR TRANSECT 12 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	0	3	21
NEMATODA	15	15	69	682
OLIGOCHAETA				
SPIROSPERMA	0	1	2	
OTHER	62	108	233	
ALL OLIGOCHAETA				2796
POLYCHAETA				
MANAYUNKIA SPECIOSA	5	11	10	179
ALL POLYCHAETA				179
COPEPODA				
CYCLOPS VERNALIS	0	1	1	
DIAPTOMUS	0	1	7	
HARPACTICOIDA	0	0	3	
LIMNOCALANUS	9	2	10	
ALL COPEPODA				234
OSTRACODA	0	1	2	21
AMPHIPODA				
GAMMARUS	7	2	10	131
ALL AMPHIPODA				131
DIPTERA				
CHIRONOMIDAE	23	60	68	1040

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 12 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	82	99	94	
ALL EPHEMEROPTERA				1901
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	5	1	5	
ALL TRICHOPTERA				76
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	1	3	5	
ELIMIA LIVESCENS	0	1	2	
GYRAULUS	1	0	2	
ALL GASTROPODA				103
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	14	30	38	
SPHAERIUM	0	0	1	
ALL SPHAERIIDAE				572
ALL PELECYPODA				572

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

LAKE ST. CLAIR TRANSECT 12 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICLADIDA	0	1	0	7
NEMATODA	12	63	21	661
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	1	1	
HELOBDELLA STAGNALIS	0	1	0	
ALL HIRUDINEA				21
OLIGOCHAETA				
SPIROSPERMA	1	3	3	
OTHER	149	383	103	
ALL OLIGOCHAETA				4421
POLYCHAETA				
MANAYUNKIA SPECIOSA	5	25	9	269
ALL POLYCHAETA				269
COPEPODA				
CYCLOPS VERNALIS	0	1	0	
DIAPTOMUS	9	5	2	
HARPACTICOIDA	0	12	3	
LIMNOCALANUS	8	3	1	
ALL COPEPODA				303
OSTRACODA	0	4	0	28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 12 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	1	12	2	103
ALL AMPHIPODA				103
ISOPODA				
ASELLUS	0	1	0	7
ALL ISOPODA				7
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	31	62	46	957
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	91	71	79	
ALL EPHEMEROPTERA				1660
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	5	1	
ALL TRICHOPTERA				48
ACARINA	2	0	0	14
GASTROPODA				
AMNICOLA	0	2	0	
GYRAULUS	0	7	3	
VALVATA TRICARINATA	0	1	1	
ALL GASTROPODA				96

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/15/84

TRANSECT 12 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	18	64	16	675
ALL PELECYPODA				675

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

LAKE ST. CLAIR TRANSECT 13 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	0	1	7
NEMATODA	12	30	12	372
OLIGOCHAETA	18	33	22	503
POLYCHAETA				
MANAYUNKIA SPECIOSA	9	0	1	69
ALL POLYCHAETA				69
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	0	
DIAPTOMUS	2	3	6	
HARPACTICOIDA	4	7	0	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				172
OSTRACODA	6	6	7	131
AMPHIPODA				
GAMMARUS	2	7	4	90
ALL AMPHIPODA				90
DIPTERA				
CHIRONOMIDAE	17	43	29	613

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

TRANSECT 13 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	91	91	87	
ALL EPHEMEROPTERA				1853
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	4	5	1	
ALL TRICHOPTERA				69
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	3	3	6	
ELIMIA LIVESCENS	0	1	0	
GYRAULUS	3	0	0	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				117
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	33	17	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				393
ALL PELECYPODA				393

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

LAKE ST. CLAIR TRANSECT 13 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1	0	0	7
ALL CNIDARIA				7
RHABDOCOELA	1	0	3	28
NEMATODA	62	16	27	723
OLIGOCHAETA				
SPIROSPERMA	3	0	1	
OTHER	350	165	102	
ALL OLIGOCHAETA				4277
POLYCHAETA				
MANAYUNKIA SPECIOSA	5	2	5	83
ALL POLYCHAETA				83
COPEPODA				
CYCLOPS BICUSPIDATUS	3	0	2	
DIAPTOMUS	1	0	3	
HARPACTICOIDA	4	0	5	
ALL COPEPODA				124
OSTRACODA	4	1	4	62
AMPHIPODA				
GAMMARUS	34	3	13	
HYALELLA AZTECA	1	0	0	
ALL AMPHIPODA				351

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	62	35	49	1005
ALL DIPTERA				1012
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	69	74	107	
ALL EPHEMEROPTERA				1729
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	1	5	
ALL TRICHOPTERA				41
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	7	0	0	
ELIMIA LIVESCENS	1	0	0	
GYRAULUS	4	8	0	
VALVATA TRICARINATA	1	0	0	
ALL GASTROPODA				145
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	38	27	21	
SPHAERIUM	1	5	3	
ALL SPHAERIIDAE				654
ALL PELECYPODA				654

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

LAKE ST. CLAIR TRANSECT 13 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	0	1	7
NEMATODA	1	22	21	303
OLIGOCHAETA	21	83	67	1178
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	5	2	48
ALL POLYCHAETA				48
COPEPODA				
DIAPTOMUS	0	2	2	
EPISHURA LACUSTRIS	0	1	0	
HARPACTICOIDA	0	9	1	
LIMNOCALANUS	0	3	0	
ALL COPEPODA				124
OSTRACODA	0	0	6	41
AMPHIPODA				
GAMMARUS	3	5	11	131
ALL AMPHIPODA				131
DIPTERA				
CHIRONOMIDAE	12	20	24	386

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 4/84

TRANSECT 13 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	86	73	85	
ALL EPHEMEROPTERA				1680
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	3	1	3	
ALL TRICHOPTERA				48
GASTROPODA				
AMNICOLA	1	0	4	
ELIMIA LIVESCENS	0	1	1	
GYRAULUS	0	0	4	
ALL GASTROPODA				76
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	6	18	
SPHAERIUM	1	0	1	
ALL SPHAERIIDAE				207
ALL PELECYPODA				207

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

DETROIT RIVER TRANSECT 14 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	+	+	+	+
ALL PORIFERA				0
NEMATODA	0	1	0	7
OLIGOCHAETA				
NAIS	7	2	5	
SPIROSPERMA	0	6	0	
OTHER	24	35	28	
ALL OLIGOCHAETA				737
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	2	1	28
ALL POLYCHAETA				28
COPEPODA				
CYCLOPS BICUSPIDATUS	7	4	1	
DIAPTOMUS	27	24	20	
HARPACTICOIDA	0	0	1	
LIMNOCALANUS	2	5	2	
ALL COPEPODA				640
OSTRACODA	0	3	1	28
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	3	2	5	69
ALL DIPTERA				76

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 14 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	1	0	0	
ALL EPHEMEROPTERA				7
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	3	4	18	
ELIMIA LIVESCENS	16	21	27	
ALL GASTROPODA				613
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	12	21	
SPHAERIUM	3	4	6	
ALL SPHAERIIDAE				420
UNIONIDAE	1	0	0	
ALL PELECYPODA				427

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

DETROIT RIVER TRANSECT 14 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	0	+	+	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	0	0	11	76
ALL CNIDARIA				76
TRICLADIDA	0	0	6	41
NEMERTINEA	0	2	3	34
NEMATODA	3	5	6	96
OLIGOCHAETA				
NAIS	0	0	6	
SPIROSPERMA	0	1	1	
OTHER				
ALL OLIGOCHAETA	28	18	24	537
POLYCHAETA				
MANAYUNKIA SPECIOSA	21	11	19	351
ALL POLYCHAETA				351

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS VERNALIS	2	1	0	
DIAPTOMUS	30	15	16	
HARPACTICOIDA	1	0	0	
LIMNOCALANUS	2	2	4	
UNIDENTIFIED NAUPLII	0	1	0	
ALL COPEPODA				510
OSTRACODA	0	2	1	21
DIPTERA				
CERATOPOGONIDAE	1	2	1	
CHIRONOMIDAE	7	5	7	131
ALL DIPTERA				158
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	4	0	15	
HYDROPSYCHE	0	0	1	
ALL TRICHOPTERA				138
GASTROPODA				
AMNICOLA	7	2	3	
ELIMIA LIVESCENS	12	11	7	
ALL GASTROPODA				289

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	17	18	16	
SPHAERIUM	13	12	11	
ALL SPHAERIIDAE				599
UNIONIDAE	1	0	0	
ALL PELECYPODA				606

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

DETROIT RIVER TRANSECT 14 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	1	0	0	7
ALL FISH				7
CNIDARIA				
HYDRA	33	0	8	282
ALL CNIDARIA				282
RHABDOCOELA	2	1	8	76
TRICLADIDA	2	0	1	21
NEMERTINEA	59	177	42	1914
NEMATODA	30	37	27	647
OLIGOCHAETA				
BRANCHIURA	2	2	0	
SPIROSPERMA	213	154	134	
OTHER	215	247	236	
ALL OLIGOCHAETA				8285
POLYCHAETA				
MANAYUNKIA SPECIOSA	53	262	258	3946
ALL POLYCHAETA				3946

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 14 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
ILYOCRYPTUS	2	0	0	14
ALL CLADOCERA				14
COPEPODA				
DIAPTOMUS	9	0	9	
LIMNOCALANUS	0	8	1	
MESOCYCLOPS	0	0	1	
ALL COPEPODA				193
OSTRACODA	1994	267	387	18236
AMPHIPODA				
GAMMARUS	14	0	1	
HYALELLA AZTECA	2	0	1	
ALL AMPHIPODA				124
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	0	2	0	
CHIRONOMIDAE	94	19	62	1205
ALL DIPTERA				1219
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	6	6	8	
ALL EPHEMEROPTERA				138

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 14 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	15	0	0	
LEPTOCERIDAE				
CERACLEA	0	1	0	
ALL TRICHOPTERA				110
ACARINA	9	1	0	69
GASTROPODA				
AMNICOLA	1	6	8	
BITHYNIA	1	0	0	
ELIMIA LIVESCENS	6	9	2	
PHYSA	2	0	0	
ALL GASTROPODA				241
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	34	52	26	
SPHAERIUM	34	36	23	
ALL SPHAERIIDAE				1412
UNIONIDAE				
LAMPSILIS	0	1	1	
TRUNCILLA	1	0	0	
OTHER	0	6	0	
ALL PELECYPODA				1474

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

DETROIT RIVER TRANSECT 15 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	7	3	3	90
ALL CNIDARIA				90
TRICLADIDA	0	1	0	7
NEMERTINEA	3	1	2	41
NEMATODA	3	33	11	324
OLIGOCHAETA				
SPIROSPERMA	11	1	4	
OTHER	24	18	12	
ALL OLIGOCHAETA				482
COPEPODA				
CYCLOPS BICUSPIDATUS	1	1	4	
DIAPTOMUS	10	1	10	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				193
OSTRACODA	4	1	4	62
AMPHIPODA				
GAMMARUS	1	1	1	21
ALL AMPHIPODA				21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	1	2	2	34
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	1	3	
ALL TRICHOPTERA				34
GASTROPODA				
AMNICOLA	1	5	1	
ELIMIA LIVESCENS	2	9	3	
ALL GASTROPODA				145
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	8	5	158
UNIONIDAE				
LAMPSILIS RADIATA SILIQUOIDEA	1	0	0	
ALL PELECYPODA				165

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MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 3/84

DETROIT RIVER TRANSECT 15 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	0	1	7
ALL FISH				7
CNIDARIA				
HYDRA	292	101	15	2810
ALL CNIDARIA				2810
RHABDOCOELA	0	3	0	21
TRICLADIDA	20	12	0	220
NEMERTINEA	8	5	3	110
NEMATODA	49	14	50	778
OLIGOCHAETA				
SPIROSPERMA	1	6	3	
OTHER	24	22	38	
ALL OLIGOCHAETA				647
COPEPODA				
CYCLOPS BICUSPIDATUS	8	0	1	
DIAPTOMUS	1	1	9	
EUCYCLOPS	0	0	4	
LIMNOCALANUS	0	2	0	
ALL COPEPODA				179

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 15 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	16	39	1	386
AMPHIPODA				
GAMMARUS	2	2	0	28
ALL AMPHIPODA				28
DIPTERA				
CHIRONOMIDAE	10	4	7	145
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	
BAETISCIDAE				
BAETISCA	10	11	0	
HEPTAGENIIDAE				
STENONEMA	2	0	0	
ALL EPHEMEROPTERA				165
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	175	68	5	
HYDROPSYCHE	69	9	0	
LEPTOCERIDAE				
CERACLEA	2	0	0	
ALL TRICHOPTERA				2259
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	4	8	4	
ELIMIA LIVESCENS	107	31	9	
ALL GASTROPODA				1123

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 15 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	25	20	
SPHAERIUM	0	2	0	
ALL SPHAERIIDAE				393
ALL PELECYPODA				393

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

DETROIT RIVER TRANSECT 15 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	0	1	0	7
ALL FISH				7
CNIDARIA				
HYDRA	1	0	1	14
ALL CNIDARIA				14
NEMERTINEA	1	2	0	21
NEMATODA	14	0	16	207
OLIGOCHAETA				
SPIROSPERMA	1	8	0	
OTHER	1	22	0	
ALL OLIGOCHAETA				220
POLYCHAETA				
MANAYUNKIA SPECIOSA	2	2	0	28
ALL POLYCHAETA				28
CLADOCERA				
DAPHNIA	0	0	1	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	1	2	0	
DIAPTOMUS	1	2	16	
LIMNOCALANUS	0	3	3	
ALL COPEPODA				193

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 15 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	6	1	48
DIPTERA				
CHIRONOMIDAE	0	4	3	48
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	3	2	1	
BAETISCIDAE				
BAETISCA	1	0	0	
ALL EPHEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	0	1	
LEPTOCERIDAE				
OECETIS	0	0	1	
ALL TRICHOPTERA				14
GASTROPODA				
ELIMIA LIVESCENS	0	1	0	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	8	12	
SPHAERIUM	0	0	4	
ALL SPHAERIIDAE				172
ALL PELECYPODA				172

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

DETROIT RIVER TRANSECT 16 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	32	8	17	393
ALL CNIDARIA				393
RHABDOCOELA	8	5	2	103
NEMATODA	260	101	218	3987
HIRUDINEA				
ERPOBDELLIDAE	1	0	3	
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	0	2	0	
HELOBDELLA ELONGATA	0	0	5	
HELOBDELLA STAGNALIS	0	0	1	
ALL HIRUDINEA				83
OLIGOCHAETA				
NAIS	24	0	8	
SPIROSPERMA	2	2	0	
OTHER	1206	415	1242	
ALL OLIGOCHAETA				19964
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	16	110
ALL POLYCHAETA				110

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	1	0	0	
DIAPTOMUS	16	10	0	
HARPACTICOIDA	51	42	195	
PARACYCLOPS	0	0	16	
ALL COPEPODA				2279
OSTRACODA	447	60	421	6391
AMPHIPODA				
GAMMARUS	12	12	8	
HYALELLA AZTECA	263	105	78	
ALL AMPHIPODA				3292
ISOPODA				
ASELLUS	1	1	2	28
ALL ISOPODA				28
DIPTERA				
CERATOPOGONIDAE	15	7	10	
CHIRONOMIDAE	841	500	711	14131
ALL DIPTERA				14352
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	4	
ALL EPHEMEROPTERA				34
LEPIDOPTERA	3	1	1	34

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	3	0	
HYDROPSYCHE	1	0	0	
LEPTOCERIDAE				
OECETIS	0	1	1	
TRIAENODES	1	0	0	
ALL TRICHOPTERA				62
ACARINA	1	1	0	14
GASTROPODA				
AMNICOLA	11	2	9	
GYRAULUS	1	2	0	
PHYSA	4	1	1	
ALL GASTROPODA				213
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	0	14
ALL PELECYPODA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

DETROIT RIVER TRANSECT 16 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	1	1	0	14
ALL FISH				14
CNIDARIA				
HYDRA	0	5	12	117
ALL CNIDARIA				117
RHABDOCOELA	7	9	7	158
TRICLADIDA	0	0	2	14
NEMERTINEA	8	0	14	152
NEMATODA	171	179	264	4228
HIRUDINEA				
ERPOBDELLIDAE	1	0	1	
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	1	0	
ALL HIRUDINEA				21
OLIGOCHAETA				
SPIROSPERMA	10	2	11	
OTHER	129	146	88	
ALL OLIGOCHAETA				2658

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	1	0	14
ALL POLYCHAETA				14
COPEPODA				
CYCLOPS BICUSPIDATUS	8	17	9	
DIAPTOMUS	8	16	0	
HARPACTICOIDA	24	82	0	
MESOCYCLOPS	8	16	8	
ALL COPEPODA				1350
OSTRACODA	39	84	131	1749
AMPHIPODA				
GAMMARUS	5	3	4	
HYALELLA AZTECA	9	1	4	
ALL AMPHIPODA				179
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CERATOPOGONIDAE	20	28	27	
CHIRONOMIDAE	65	44	63	1185
ALL DIPTERA				1701

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	19	2	4	
EPHEMERIDAE				
HEXAGENIA	20	11	28	
ALL EPHEMEROPTERA				578
LEPIDOPTERA	0	0	2	14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	1	
HYDROPSYCHE	1	0	0	
HYDROPTILIDAE				
ORTHOTRICHIA	1	0	0	
LEPTOCERIDAE				
NECTOPSYCHE	1	0	0	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	3	3	3	
ALL TRICHOPTERA				96
ACARINA	1	2	0	21
GASTROPODA				
AMNICOLA	18	18	14	
GYRAULUS	1	0	0	
PHYSA	0	1	0	
PLEUROCERA ACUTA	5	5	2	
ALL GASTROPODA				441

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	26	13	47	
SPHAERIUM	2	6	3	
ALL SPHAERIIDAE				668
UNIONIDAE	0	1	1	
ALL PELECYPODA				682

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

DETROIT RIVER TRANSECT 16 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
FISH EGGS	1	2	1	28
ALL FISH				28
CNIDARIA				
HYDRA	23	0	4	186
ALL CNIDARIA				186
RHABDOCOELA	7	0	1	55
TRICLADIDA	1	0	1	14
NEMATODA	31	20	43	647
OLIGOCHAETA				
SPIROSPERMA	2	3	0	
OTHER	178	231	104	
ALL OLIGOCHAETA				3567
POLYCHAETA				
MANAYUNKIA SPECIOSA	10	16	0	179
ALL POLYCHAETA				179
CLADOCERA				
DAPHNIA	0	8	1	62
ALL CLADOCERA				62

18-457

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	8	8	3	
LIMNOCALANUS	0	0	1	
MACROCYCLOPS	0	1	0	
ALL COPEPODA				145
OSTRACODA	34	26	57	806
AMPHIPODA				
GAMMARUS	39	10	8	
HYALELLA AZTECA	6	1	2	
ALL AMPHIPODA				455
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CERATOPOGONIDAE	1	2	0	
CHIRONOMIDAE	46	51	15	771
EMPIDIDAE	1	0	0	
ALL DIPTERA				799
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	9	2	1	
EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	
BAETISCIDAE				
BAETISCA	1	1	0	
ALL EPHEMEROPTERA				103

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 3/84

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	5	0	0	
HYDROPSYCHE	1	0	0	
HYDROPTILIDAE				
HYDROPTILA	0	0	1	
ALL TRICHOPTERA				48
ACARINA	4	2	8	96
GASTROPODA				
AMNICOLA	6	0	2	
GYRAULUS	1	0	2	
PLEUROCERA ACUTA	1	0	0	
ALL GASTROPODA				83
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	17	5	220
UNIONIDAE				
ELLIPTIO DILATATUS	1	0	0	
LAMPSILIS VENTRICOSA	1	0	0	
PTYCHOBRAUCHUS FASCIOLARIA	0	1	0	
ALL PELECYPODA				241

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 17 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	22	23	178	1536
ALL CNIDARIA				1536
RHABDOCOELA	5	7	2	96
TRICLADIDA	0	1	0	7
NEMERTINEA	4	0	1	34
NEMATODA	96	194	212	3457
HIRUDINEA				
ERPOBDELLIDAE	3	2	2	
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	1	0	0	
ALL HIRUDINEA				55
OLIGOCHAETA				
NAIS	0	0	2	
SPIROSPERMA	22	6	7	
OTHER	686	836	693	
ALL OLIGOCHAETA				15509
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	0	7
ALL POLYCHAETA				7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	0	
DIAPTOMUS	1	8	9	
HARPACTICOIDA	48	40	19	
LIMNOCALANUS	1	2	0	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				943
OSTRACODA	1	3	0	28
AMPHIPODA				
GAMMARUS	4	4	3	
HYALELLA AZTECA	0	2	3	
ALL AMPHIPODA				110
ISOPODA				
ASELLUS	2	0	0	
LIRCEUS	1	0	0	
ALL ISOPODA				21
DIPTERA				
CERATOPOGONIDAE	6	12	4	
CHIRONOMIDAE	60	49	38	1012
ALL DIPTERA				1164
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	3	0	
ALL EPHEMEROPTERA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	1	0	
HYDROPSYCHE	0	1	0	
ALL TRICHOPTERA				14
GASTROPODA				
AMNICOLA	22	8	33	
ELIMIA LIVESCENS	0	0	3	
GYRAULUS	2	0	4	
PHYSA	1	0	0	
PLEUROCERA ACUTA	1	0	0	
ALL GASTROPODA				510
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	16	1	39	
SPHAERIUM	1	0	8	
ALL SPHAERIIDAE				448
ALL PELECYPODA				448

95h-4

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 17 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	22	238	81	2348
ALL CNIDARIA				2348
RHABDOCOELA	1	0	8	62
TRICLADIDA	0	1	0	7
NEMERTINEA	2	3	8	90
NEMATODA	90	218	125	2982
OLIGOCHAETA				
SPIROSPERMA	3	14	49	
OTHER	143	404	306	
ALL OLIGOCHAETA				6329
POLYCHAETA				
MANAYUNKIA SPECIOSA	64	163	41	1846
ALL POLYCHAETA				1846
COPEPODA				
DIAPTOMUS	1	24	0	
HARPACTICOIDA	0	41	0	
LIMNOCALANUS	2	0	0	
ALL COPEPODA				468

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	20	10	26	386
AMPHIPODA				
GAMMARUS	6	2	2	
HYALELLA AZTECA	10	1	0	
ALL AMPHIPODA				145
DIPTERA				
CERATOPOGONIDAE	3	5	1	
CHIRONOMIDAE	62	64	74	1377
EMPIDIDAE	0	1	0	
ALL DIPTERA				1446
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	3	2	
EPHEMERIDAE				
HEXAGENIA	13	9	4	
BAETISCIDAE				
BAETISCA	1	0	0	
ALL EPHEMEROPTERA				227
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	2	1	
HYDROPSYCHE	1	0	0	
LEPTOCERIDAE				
OECETIS	4	4	8	
TRIAENODES	0	1	0	
ALL TRICHOPTERA				145

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	5	10	11	179
GASTROPODA				
AMNICOLA	8	8	4	
ELIMIA LIVESCENS	0	2	3	
PLEUROCERA ACUTA	4	2	1	
ALL GASTROPODA				220
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	19	9	
SPHAERIUM	1	15	2	
ALL SPHAERIIDAE				337
ALL PELECYPODA				337

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 17 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	65	35	141	1660
ALL CNIDARIA				1660
RHABDOCOELA	1	0	0	7
NEMERTINEA	2	2	7	76
NEMATODA	32	40	28	689
OLIGOCHAETA				
SPIROSPERMA	37	17	22	
OTHER	31	11	34	
ALL OLIGOCHAETA				1047
POLYCHAETA				
MANAYUNKIA SPECIOSA	83	323	80	3347
ALL POLYCHAETA				3347
COPEPODA				
CYCLOPS *BICUSPIDATUS*	0	1	0	
DIAPTOMUS	0	3	0	
LIMNOCALANUS	1	1	0	
ALL COPEPODA				41
OSTRACODA	24	13	5	289

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	5	0	1	
HYALELLA AZTECA	1	0	1	
ALL AMPHIPODA				55
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	3	2	4	62
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	0	0	1	
BAETISCIDAE				
BAETISCA	3	0	1	
ALL EPHEMEROPTERA				41
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	1	6	
ALL TRICHOPTERA				62
ACARINA	0	1	2	21
GASTROPODA				
AMNICOLA	5	6	2	
ELIMIA LIVESCENS	1	0	0	
PLEUROCERA ACUTA	1	0	0	
ALL GASTROPODA				103

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	9	3	6	
SPHAERIUM	2	1	5	
ALL SPHAERIIDAE				179
ALL PELECYPODA				179

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

DETROIT RIVER TRANSECT 18 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
ETHEOSTOMA NIGRUM	1	0	0	7
ALL FISH				7
RHABDOCOELA	9	1	6	110
TRICLADIDA	14	5	4	158
NEMERTINEA	10	0	16	179
NEMATODA	59	1	89	1026
OLIGOCHAETA				
NAIS	24	0	0	
SPIROSPERMA	31	35	17	
OTHER	2423	3045	2945	
ALL OLIGOCHAETA				58674
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	1	
DIAPTOMUS	43	0	0	
LIMNOCALANUS	3	32	1	
ALL COPEPODA				551
OSTRACODA	1	0	0	7

8-403

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	4	1	19	
HYALELLA AZTECA	1	3	0	
ALL AMPHIPODA				193
DIPTERA				
CHIRONOMIDAE	40	4	13	393
EMPIDIDAE	0	0	1	
ALL DIPTERA				399
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	3	0	0	
HYDROPTILIDAE				
HYDROPTILA	1	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
ALL TRICHOPTERA				41
ODONATA				
COENAGRIONIDAE	2	0	1	21
ACARINA	12	0	3	103
TARDIGRADA	8	0	0	55

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	7	0	6	
ELIMIA LIVESCENS	3	1	2	
FERISSIA	9	4	3	
GYRAULUS	3	0	0	
PHYSA	14	8	15	
ALL GASTROPODA				516
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	0	2	28
ALL PELECYPODA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

DETROIT RIVER TRANSECT 18 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
RHABDOCOELA	0	0	1	7
TRICLADIDA	1	0	1	14
NEMATODA	18	1	64	572
OLIGOCHAETA				
SPIROSPERMA	3	5	32	
OTHER	415	891	1571	
ALL OLIGOCHAETA				20088
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	96	661
ALL POLYCHAETA				661
COPEPODA				
CYCLOPS BICUSPIDATUS	0	17	3	
DIAPTOMUS	0	16	1	
ALL COPEPODA				255
DIPTERA				
CHIRONOMIDAE	3	1	3	48

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 18 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	2	3	34
TARDIGRADA	16	0	0	110
GASTROPODA				
AMNICOLA	3	0	1	
ELIMIA LIVESCENS	0	1	0	
FERISSIA	0	16	0	
PHYSA	1	0	1	
ALL GASTROPODA				158
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	1	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

DETROIT RIVER TRANSECT 18 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	64	0	0	441
ALL CNIDARIA				441
RHABDOCOELA	1	2	1	28
NEMATODA	0	0	1	7
OLIGOCHAETA				
NAIS	132	0	192	
SPIROSPERMA	71	5	41	
OTHER	4263	1217	5728	
ALL OLIGOCHAETA				80223
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	64	0	441
ALL POLYCHAETA				441
COPEPODA				
LIMNOCALANUS	0	2	1	21
ALL COPEPODA				21
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	1	0	0	
HYALELLA AZTECA	2	0	0	
ALL AMPHIPODA				21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 18 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	29	2	1	220
PSYCHODIDAE	11	0	0	
ALL DIPTERA				296
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	1	0	
ALL EPHEMEROPTERA				7
LEPIDOPTERA	5	0	0	34
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	3	0	0	
HYDROPSYCHE	3	0	0	
HYDROPTILIDAE				
ORTHOTRICHIA	1	0	0	
LEPTOCERIDAE				
TRIAENODES	1	0	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	2	0	0	
ALL TRICHOPTERA				69
ODONATA				
COENAGRIONIDAE	3	0	0	21
ACARINA	10	0	4	96

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 18 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	0	0	
ELIMIA LIVESCENS	0	0	2	
FERISSIA	5	0	0	
PHYSA	1	0	0	
VALVATA SINCERA	0	0	1	
ALL GASTROPODA				69
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	5	21	179
ALL PELECYPODA				179

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

DETROIT RIVER TRANSECT 19 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	31	40	21	634
TRICLADIDA	2	6	1	62
NEMERTINEA	19	13	5	255
NEMATODA	144	96	28	1846
OLIGOCHAETA				
SPIROSPERMA	194	319	40	
OTHER	1545	2497	3102	
ALL OLIGOCHAETA				53007
POLYCHAETA				
MANAYUNKIA SPECIOSA	17	32	66	792
ALL POLYCHAETA				792
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	2	
DIAPTOMUS	0	16	0	
HARPACTICOIDA	16	0	0	
LIMNOCALANUS	0	0	1	
ALL COPEPODA				241
OSTRACODA	2	0	0	14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	3	10	4	117
ALL AMPHIPODA				117
DIPTERA				
CERATOPOGONIDAE	14	19	2	
CHIRONOMIDAE	4	3	0	48
EMPIDIDAE	1	0	0	
PSYCHODIDAE	1	0	0	
ALL DIPTERA				303
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	2	0	
EPHEMERIDAE				
HEXAGENIA	1	1	2	
ALL EPHEMEROPTERA				41
LEPIDOPTERA	1	1	0	14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPTILIDAE				
ORTHOTRICHIA	0	2	0	
ALL TRICHOPTERA				21
ACARINA	14	63	2	544

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	7	12	11	
ELIMIA LIVESCENS	0	0	4	
FERISSIA	8	4	24	
GYRAULUS	0	1	0	
PHYSA	2	2	1	
ALL GASTROPODA				523
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	14	18	255
ALL PELECYPODA				255

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

DETROIT RIVER TRANSECT 19 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMERTINEA	11	43	8	427
NEMATODA	89	24	24	943
OLIGOCHAETA				
SPIROSPERMA	45	60	13	
OTHER	119	167	60	
ALL OLIGOCHAETA				3195
COPEPODA				
CYCLOPS VERNALIS	0	0	1	
LIMNOCALANUS	0	8	0	
ALL COPEPODA				62
DIPTERA				
CHIRONOMIDAE	0	8	0	55
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	2	2	0	
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				34
GASTROPODA				
AMNICOLA	2	1	2	
ELIMIA LIVESCENS	1	2	0	
ALL GASTROPODA				55

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

DETROIT RIVER TRANSECT 19 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
RHABDOCOELA	1	0	1	14
NEMERTINEA	18	5	1	165
NEMATODA	3	4	8	103
OLIGOCHAETA				
SPIROSPERMA	7	12	18	
OTHER	181	20	237	
ALL OLIGOCHAETA				3271
POLYCHAETA				
MANAYUNKIA SPECIOSA	19	2	88	751
ALL POLYCHAETA				751
COPEPODA				
CYCLOPS BICUSPIDATUS	3	0	8	
DIAPTOMUS	2	0	0	
HARPACTICOIDA	1	0	0	
LIMNOCALANUS	1	1	0	
ALL COPEPODA				110
OSTRACODA	0	0	1	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 1/84

TRANSECT 19 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	2	1	5	55
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	1	0	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	1	0	
HYDROPSYCHE	0	1	0	
ALL TRICHOPTERA				14
ACARINA	1	2	0	21
GASTROPODA				
AMNICOLA	1	0	0	
ELIMIA LIVESCENS	0	1	1	
FERISSIA	1	0	0	
ALL GASTROPODA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 20 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	10	3	90
ALL CNIDARIA				90
RHABDOCOELA	0	4	0	28
TRICLADIDA	0	0	3	21
NEMERTINEA	0	0	1	7
NEMATODA	8	26	20	372
OLIGOCHAETA				
NAIS	8	1	2	
SPIROSPERMA	2	0	0	
STYLARIA	1	1	0	
OTHER	227	16	5	
ALL OLIGOCHAETA				1811
COPEPODA				
CYCLOPS BICUSPIDATUS	9	0	0	
DIAPTOMUS	7	4	3	
LIMNOCALANUS	0	1	0	
ALL COPEPODA				165

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	3	5	
HYALELLA AZTECA	0	6	9	
ALL AMPHIPODA				158
DIPTERA				
CHIRONOMIDAE	0	13	32	310
EMPIDIDAE	0	1	0	
ALL DIPTERA				317
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	0	0	
HYDROPTILIDAE				
HYDROPTILA	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	2	
ALL TRICHOPTERA				28
ODONATA				
COENAGRIONIDAE	0	0	2	14
ACARINA	0	3	2	34
GASTROPODA				
AMNICOLA	1	0	0	
ELIMIA LIVESCENS	1	0	0	
FERISSIA	0	0	3	
PHYSA	0	1	0	
ALL GASTROPODA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 20 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	0	0	7
TRICLADIDA	1	0	0	7
NEMERTINEA	1	0	2	21
NEMATODA	73	469	97	4401
OLIGOCHAETA				
SPIROSPERMA	4	3	2	
OTHER	94	51	29	
ALL OLIGOCHAETA				1260
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	1	14
ALL POLYCHAETA				14
CLADOCERA				
DAPHNIA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	3	0	2	
DIAPTOMUS	15	0	8	
LIMNOCALANUS	1	0	0	
ALL COPEPODA				200

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MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 20 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	1	0	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	1	8	1	69
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
ALL TRICHOPTERA				7
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	2	2	3	48
ALL GASTROPODA				48

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 20 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	10	2	83
ALL CNIDARIA				83
NEMERTINEA	18	52	1	489
NEMATODA	91	69	160	2204
OLIGOCHAETA				
SPIROSPERMA	15	8	8	
STYLARIA	1	0	0	
OTHER	129	31	40	
ALL OLIGOCHAETA				1598
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	24	172
ALL POLYCHAETA				172
COPEPODA				
CYCLOPS BICUSPIDATUS	9	1	0	
DIAPTOMUS	10	5	1	
HARPACTICOIDA	0	0	16	
LIMNOCALANUS	20	0	1	
ALL COPEPODA				434
AMPHIPODA				
GAMMARUS	0	0	1	7
ALL AMPHIPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 20 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	0	2	2	28
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	3	2	
BAETISCIDAE				
BAETISCA	0	0	3	
ALL EPHEMEROPTERA				55
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	1	2	
HYDROPSYCHE	0	0	2	
ALL TRICHOPTERA				34
ACARINA	0	0	1	7
GASTROPODA				
ELIMIA LIVESCENS	3	0	2	34
ALL GASTROPODA				34

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 21 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	8	0	1	69
ALL CNIDARIA				69
RHABDOCOELA	22	39	24	585
TRICLADIDA	4	6	0	69
NEMERTINEA	1	19	2	152
NEMATODA	67	192	145	2782
OLIGOCHAETA				
NAIS	0	16	0	
SPIROSPERMA	4	24	10	
OTHER	669	1180	916	
ALL OLIGOCHAETA				19413
POLYCHAETA				
MANAYUNKIA SPECIOSA	16	16	0	220
ALL POLYCHAETA				220
COPEPODA				
CYCLOPS BICUSPIDATUS	1	2	0	
DIAPTOMUS	0	16	0	
LIMNOCALANUS	0	2	0	
ALL COPEPODA				145

MACROZOOBENTHOS PONAR GRAB COUNT DATA

5/ 2/84

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	1	0	0	7
DIPTERA	5	0	1	
CERATOPOGONIDAE	11	6	2	131
CHIRONOMIDAE				172
ALL DIPTERA				
TRICHOPTERA				
HYDROPSYCHIDAE	0	3	0	
CHEUMATOPSYCHE	1	4	0	
HYDROPSYCHE	0	1	0	
HYDROPTILIDAE				
HYDROPTILA	1	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS				76
ALL TRICHOPTERA				
ACARINA	5	1	1	48
GASTROPODA	13	12	8	
AMNICOLA	0	1	0	
ELIMIA LIVESCENS	3	2	0	
FERISSIA	0	1	0	
GYRAULUS	0	1	0	
PHYSA				282
ALL GASTROPODA				

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	31	40	16	599
ALL PELECYPODA				599

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 21 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	10	0	69
ALL CNIDARIA				69
RHABDOCOELA	2	18	0	138
TRICLADIDA	0	5	0	34
NEMERTINEA	47	2	1	344
NEMATODA	56	29	16	696
OLIGOCHAETA				
NAIS	0	4	0	
SPIROSPERMA	15	8	2	
STYLARIA	0	1	0	
OTHER	433	66	894	
ALL OLIGOCHAETA				9800
POLYCHAETA				
MANAYUNKIA SPECIOSA	251	0	0	1729
ALL POLYCHAETA				1729

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	9	2	0	
CYCLOPS VERNALIS	6	1	0	
DIAPTOMUS	9	3	24	
HARPACTICOIDA	0	3	0	
LIMNOCALANUS	5	0	1	
ALL COPEPODA				434
AMPHIPODA				
GAMMARUS	0	5	0	
HYALELLA AZTECA	0	9	0	
ALL AMPHIPODA				96
DIPTERA				
CHIRONOMIDAE	0	38	1	269
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	2	0	0	
ALL EPHEMEROPTERA				14
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	0	1	0	
ALL TRICHOPTERA				7
ODONATA				
COENAGRIONIDAE	0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	1	4	0	34
GASTROPODA				
AMNICOLA	1	2	2	
ELIMIA LIVESCENS	1	2	2	
FERISSIA	0	8	0	
PLEUROCERA ACUTA	0	0	1	
ALL GASTROPODA				131
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	4	0	41
ALL PELECYPODA				41

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

DETROIT RIVER TRANSECT 21 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	10	3	7	138
ALL CNIDARIA				138
TRICLADIDA	5	0	2	48
NEMERTINEA	1	3	8	83
NEMATODA	52	30	91	1191
OLIGOCHAETA				
SPIROSPERMA	1	1	3	
OTHER	22	14	7	
ALL OLIGOCHAETA				331
POLYCHAETA				
MANAYUNKIA SPECIOSA	36	2	2	275
ALL POLYCHAETA				275
CLADOCERA				
DAPHNIA	0	0	1	7
ALL CLADOCERA				7
COPEPODA				
CYCLOPS BICUSPIDATUS	2	0	0	
DIAPTOMUS	11	10	10	
LIMNOCALANUS	3	1	4	
ALL COPEPODA				282

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 5/ 2/84

TRANSECT 21 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	0	1	1	14
ALL AMPHIPODA				14
DIPTERA				
CHIRONOMIDAE	8	1	6	103
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	0	2	0	
BAETISCIDAE				
BAETISCA	3	3	3	
ALL EPHEMEROPTERA				76
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	19	3	3	
HYDROPSYCHE	16	0	8	
HYDROPTILIDAE				
HYDROPTILA	0	0	2	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	2	
ALL TRICHOPTERA				372
GASTROPODA				
AMNICOLA	0	0	1	
ELIMIA LIVESCENS	5	1	9	
PHYSA	0	0	1	
ALL GASTROPODA				117

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 1 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMATODA	0	1	0	7
OLIGOCHAETA	2	2	2	41
CLADOCERA				
BOSMINA	8	4	5	
DAPHNIA	51	24	29	
HOLOPEDIUM	25	12	11	
LEPTODORA KINDTII	0	0	1	
ALL CLADOCERA				1171
COPEPODA				
CYCLOPS BICUSPIDATUS	2	2	0	
DIAPTOMUS	4	7	16	
ALL COPEPODA				213
OSTRACODA	0	0	1	7
TERRESTRIAL INSECT	1	0	2	21
DIPTERA				
CHIRONOMIDAE	8	7	22	255.

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 1 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	2	0	14
ALL CNIDARIA				14
OLIGOCHAETA				
STYLARIA	0	1	0	7
ALL OLIGOCHAETA				7
CLADOCERA				
BOSMINA	3	0	4	
DAPHNIA	53	44	33	
HOLOPEDIUM	13	10	17	
ALL CLADOCERA				1219
COPEPODA				
CYCLOPS BICUSPIDATUS	2	1	4	
DIAPTOMUS	9	4	10	
EPISHURA LACUSTRIS	0	1	1	
MESOCYCLOPS	1	0	0	
ALL COPEPODA				227
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT	0	2	0	14
DIPTERA				
CHIRONOMIDAE	8	9	18	241

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 1 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	1	2	0	
DAPHNIA	27	37	45	
HOLOPEDIUM	9	7	8	
ALL CLADOCERA				937
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	1	
DIAPTOMUS	3	14	4	
ALL COPEPODA				152
TERRESTRIAL INSECT	0	1	3	28
DIPTERA				
CHIRONOMIDAE	21	13	14	331
PELECYPODA				
SPHAERIIDAE				
SPHAERIUM	1	0	0	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 2 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1458	978	498	20205
ALL CNIDARIA				20205
RHABDOCOELA	36	0	15	351
TRICLADIDA	3	2	2	48
NEMERTINEA	0	1	4	34
NEMATODA	17	0	35	358
HIRUDINEA				
ERPOBDELLIDAE	1	0	2	
PISCICOLIDAE				
PISCICOLA	0	0	2	
ALL HIRUDINEA				34
OLIGOCHAETA				
NAIS	594	65	508	
SPIROSPERMA	263	35	228	
STYLARIA	36	1	0	
OTHER	1669	1329	929	
ALL OLIGOCHAETA				38958

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
DAPHNIA	32	35	1	
HOLOPEDIUM	0	4	3	
SIDA CRYSTALLINA	0	1	0	
ALL CLADOCERA				523
COPEPODA				
DIAPTOMUS	0	16	8	
EPISHURA LACUSTRIS	0	8	0	
HARPACTICOIDA	16	8	0	
ALL COPEPODA				386
OSTRACODA	3	29	10	289
AMPHIPODA				
GAMMARUS	22	28	22	
HYALELLA AZTECA	1	10	3	
ALL AMPHIPODA				592
TERRESTRIAL INSECT	5	3	0	55
DIPTERA				
CERATOPOGONIDAE	0	0	2	
CHIRONOMIDAE	131	166	142	3023
EMPIDIDAE	0	0	2	
ALL DIPTERA				3051

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	3	24	4	
EPHEMERIDAE				
HEXAGENIA	0	0	1	
ALL EPHEMEROPTERA				220
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	12	6	11	
ALL COLEOPTERA				200
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	9	9	5	
HYDROPSYCHE	2	10	1	
PHRYGANEIDAE				
PHRYGANEA	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	20	9	17	
ALL TRICHOPTERA				572
PLECOPTERA	1	1	0	14
ACARINA	1	10	5	110
GASTROPODA				
AMNICOLA	154	72	105	
FERISSIA	2	0	0	
GYRAULUS	0	0	1	
PHYSA	65	87	67	
ALL GASTROPODA				3808

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	21	5	13	269
ALL PELECYPODA				269

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 2 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
ICHTHYOMYZON FOSSOR	0	2	0	14
ALL FISH				14
CNIDARIA				
HYDRA	8585	4947	3923	120207
ALL CNIDARIA				120207
RHABDOCOELA	2	1	1	28
TRICLADIDA	18	9	1	193
NEMERTINEA	48	42	2	634
NEMATODA	1	2	1	28
HIRUDINEA				
ERPOBDELLIDAE	2	1	0	
PISCICOLIDAE				
PISCICOLA	0	1	0	
ALL HIRUDINEA				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OLIGOCHAETA				
NAIS	49	0	0	
SPIROSPERMA	50	50	11	
STYLARIA	16	0	1	
OTHER	1283	839	492	
ALL OLIGOCHAETA				19221
CLADOCERA				
BOSMINA	0	0	8	
DAPHNIA	97	50	57	
HOLOPEDIUM	0	0	41	
ALL CLADOCERA				1742
COPEPODA				
CYCLOPS BICUSPIDATUS	16	0	0	
DIAPTOMUS	16	1	0	
EPISHURA LACUSTRIS	0	32	8	
ALL COPEPODA				503
OSTRACODA	17	19	0	248
AMPHIPODA				
GAMMARUS	69	22	23	
HYALELLA AZTECA	1	0	2	
ALL AMPHIPODA				806
ISOPODA				
ASELLUS	1	0	0	7
ALL ISOPODA				7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	3	0	0	21
DIPTERA				
CHIRONOMIDAE	51	62	47	1102
EMPIDIDAE	0	0	1	
PSYCHODIDAE	1	1	1	
ALL DIPTERA				1129
EPHEMEROPTERA				
CAENIDAE				
CAENIS	16	1	2	
EPHEMERIDAE				
HEXAGENIA	0	0	2	
HEPTAGENIIDAE				
STENONEMA	1	0	1	
ALL EPHEMEROPTERA				158
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	1	0	
ALL COLEOPTERA				14
TRICHOPTERA				
TRICHOPTERA	0	0	1	
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	2	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	21	2	22	
HYDROPSYCHE	13	1	25	
POLYCENTROPODIDAE				
NEURECLIPSIS	6	1	9	
ALL TRICHOPTERA				709

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	0	4	28
GASTROPODA				
AMNICOLA	20	28	19	
ELIMIA LIVESCENS	1	10	15	
FERISSIA	137	49	46	
GYRAULUS	1	0	0	
PHYSA	36	11	41	
ALL GASTROPODA				2851
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	21	17	282
ALL PELECYPODA				282

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 2 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	18706	10966	5804	244311
ALL CNIDARIA				244311
RHABDOCOELA	161	1	8	1171
TRICLADIDA	1	7	10	124
NEMERTINEA	495	81	27	4153
NEMATODA	0	0	1	7
OLIGOCHAETA				
SPIROSPERMA	6	16	1	
OTHER	389	36	16	
ALL OLIGOCHAETA				3195
CLADOCERA				
BOSMINA	96	114	17	
DAPHNIA	160	146	49	
HOLOPEDIUM	0	0	16	
ALL CLADOCERA				4118

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	1	9	
DIAPTOMUS	192	51	16	
EPISHURA LACUSTRIS	64	0	0	
ALL COPEPODA				2293
AMPHIPODA				
GAMMARUS	3	9	4	
HYALELLA AZTECA	0	2	0	
ALL AMPHIPODA				124
DIPTERA				
CHIRONOMIDAE	13	1	1	103
EMPIDIDAE	3	0	10	
ALL DIPTERA				193
EPHEMEROPTERA				
CAENIDAE				
CAENIS	2	1	1	
EPHEMERIDAE				
HEXAGENIA	2	0	1	
HEPTAGENIIDAE				
STENONEMA	3	14	4	
ALL EPHEMEROPTERA				193
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	2	0	
ALL COLEOPTERA				21
LEPIDOPTERA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 2 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	7	1	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	108	172	32	
HYDROPSYCHE	90	60	17	
POLYCENTROPODIDAE				
NEURECLIPSIS	2	2	0	
RHYACOPHILIDAE				
PROTOPTILA	44	23	40	
ALL TRICHOPTERA				4125
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	2	5	6	
ELIMIA LIVESCENS	42	51	23	
FERISSIA	1	1	0	
LYMNAEA	2	6	0	
PHYSA	1	1	9	
ALL GASTROPODA				1033
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	7	1	
SPHAERIUM	1	1	0	
ALL SPHAERIIDAE				90
ALL PELECYPODA				90

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 3 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	427	11	23	3175
ALL CNIDARIA				3175
NEMERTINEA	0	0	1	7
NEMATODA	0	0	2	14
OLIGOCHAETA				
NAIS	1	0	0	
OTHER	3	18	4	
ALL OLIGOCHAETA				179
CLADOCERA				
BOSMINA	6	14	1	
DAPHNIA	7	13	10	
HOLOPEDIUM	4	13	3	
ALL CLADOCERA				489
COPEPODA				
CYCLOPS BICUSPIDATUS	4	5	0	
DIAPTOMUS	14	13	5	
EPISHURA LACUSTRIS	1	1	1	
ALL COPEPODA				303
AMPHIPODA				
GAMMARUS	1	0	0	7
ALL AMPHIPODA				7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 3 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	6	38	28	496
EMPIDIDAE	1	0	2	
ALL DIPTERA				516
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	14	1	2	
LEPTOCERIDAE				
CERACLEA	0	1	0	
ALL TRICHOPTERA				131
PLECOPTERA				
ISOGENOIDES	0	0	1	7
ALL PLECOPTERA				7
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	1	0	0	
PHYSA	0	1	0	
ALL GASTROPODA				14

90.5-11

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 3 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	231	61	14	2107
ALL CNIDARIA				2107
NEMERTINEA	3	1	0	28
NEMATODA	2	1	0	21
OLIGOCHAETA				
STYLARIA	2	0	0	
OTHER	4	9	1	
ALL OLIGOCHAETA				110
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	0	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	7	7	7	
DAPHNIA	12	7	1	
HOLOPEDIUM	1	3	2	
ALL CLADOCERA				324.
COPEPODA				
CYCLOPS BICUSPIDATUS	7	0	2	
DIAPTOMUS	16	13	6	
EPISHURA LACUSTRIS	0	1	0	
ALL COPEPODA				310

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 3 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	18	44	35	668
EMPIDIDAE	0	1	1	
ALL DIPTERA				682
EPHEMEROPTERA				
HEPTAGENIIDAE				
STENONEMA	1	0	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	3	0	0	
LEPTOCERIDAE				
CERACLEA	0	0	3	
ALL TRICHOPTERA				48
PLECOPTERA				
ISOGENOIDES	0	2	0	14
ALL PLECOPTERA				14
ACARINA	1	0	0	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

ST. CLAIR RIVER TRANSECT 3 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	11	34	24	475
ALL CNIDARIA				475
NEMERTINEA	0	0	2	14
NEMATODA	2	0	1	21
OLIGOCHAETA				
SPIROSPERMA	0	0	1	
STYLARIA	0	1	0	
OTHER	2	5	13	
ALL OLIGOCHAETA				152
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	1	0	7
ALL POLYCHAETA				7
CLADOCERA				
BOSMINA	4	6	8	
DAPHNIA	6	11	11	
HOLOPEDIUM	6	4	6	
ALL CLADOCERA				427

B-505

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 3 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	4	0	
DIAPTOMUS	7	9	16	
EPISHURA LACUSTRIS	0	2	1	
MESOCYCLOPS	0	0	1	
ALL COPEPODA				275
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	53	23	109	1274
EMPIDIDAE	0	2	0	
ALL DIPTERA				1288
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	0	1	0	
ALL EPHEMEROPTERA				14
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	0	
LEPTOCERIDAE				
CERACLEA	1	0	1	
ALL TRICHOPTERA				21
GASTROPODA				
AMNICOLA	0	8	0	
PHYSA	0	1	0	
ALL GASTROPODA				62

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/16/84

TRANSECT 3 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	10	0	69
ALL PELECYPODA				69

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 4 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	229	329	848	9683
ALL CNIDARIA				9683
RHABDOCOELA	1	3	1	34
TRICLADIDA	2	1	6	62
NEMERTINEA	26	21	93	964
NEMATODA	25	114	2	971
HIRUDINEA				
ERPOBDELLIDAE	0	0	1	7
OLIGOCHAETA				
NAIS	555	170	562	
SPIROSPERMA	202	198	142	
STYLARIA	82	72	360	
OTHER	284	175	452	
ALL OLIGOCHAETA				22409

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	0	33	3	
CAMPTOCERCUS	1	0	0	
HOLOPEDIUM	16	0	0	
ALL CLADOCERA				365
COPEPODA				
DIAPTOMUS	0	16	0	
HARPACTICOIDA	0	0	18	
ALL COPEPODA				234
OSTRACODA	29	39	19	599
AMPHIPODA				
GAMMARUS	301	252	480	
HYALELLA AZTECA	6	10	14	
ALL AMPHIPODA				7321
DIPTERA				
CHIRONOMIDAE	255	207	169	4345
EMPIDIDAE	2	0	0	
ALL DIPTERA				4359
EPHEMEROPTERA				
CAENIDAE				
CAENIS	61	97	43	
EPHEMERIDAE				
HEXAGENIA	80	184	104	
HEPTAGENIIDAE				
STENONEMA	1	0	2	
ALL EPHEMEROPTERA				3939

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 4 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	2	
LEPTOCERIDAE				
CERACLEA	0	0	1	
MYSTACIDES	0	16	0	
ALL TRICHOPTERA				138
ACARINA	10	33	1	303
GASTROPODA				
AMNICOLA	65	41	56	
ELIMIA LIVESCENS	61	39	46	
GYRAULUS	1	16	31	
LYMNAEA	0	2	0	
PHYSA	37	19	3	
VALVATA SINCERA	0	1	0	
VALVATA TRICARINATA	40	29	33	
ALL GASTROPODA				3581
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	92	60	56	1432
ALL PELECYPODA				1432

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 4 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
FISH				
ICHTHYOMYZON FOSSOR	0	0	1	7
ALL FISH				7
CNIDARIA				
HYDRA	3294	3075	2418	60513
ALL CNIDARIA				60513
RHABDOCOELA	0	0	1	7
TRICLADIDA	2	0	0	14
NEMERTINEA	16	9	8	227
NEMATODA	20	5	10	241
HIRUDINEA				
ERPOBDELLIDAE	1	0	0	
GLOSSIPHONIIDAE				
ACTINOBDELLA INEQUIANNULATA	0	1	0	
ALL HIRUDINEA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OLIGOCHAETA				
NAIS	48	0	0	
SPIROSPERMA	32	10	2	
STYLARIA	16	0	0	
OTHER	275	55	135	
ALL OLIGOCHAETA				3946
CLADOCERA				
BOSMINA	1	16	25	
DAPHNIA	16	1	24	
HOLOPEDIUM	0	1	0	
ALL CLADOCERA				578
COPEPODA				
DIAPTOMUS	16	0	0	
HARPACTICOIDA	1	0	0	
ALL COPEPODA				117
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	19	5	5	200
ALL AMPHIPODA				200
TERRESTRIAL INSECT	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	236	19	35	1997
EMPIDIDAE	1	0	8	
ALL DIPTERA				2059
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	0	
EPHEMERIDAE				
HEXAGENIA	1	1	0	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	0	0	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	1	0	0	
ALL TRICHOPTERA				14
ODONATA				
GOMPHIDAE				
GOMPHUS	1	0	1	14
ALL ODONATA				14
ACARINA	4	1	0	34

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 4 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	36	50	43	
ELIMIA LIVESCENS	2	12	0	
GYRAULUS	1	0	1	
LYMNAEA	0	0	1	
PHYSA	6	6	6	
VALVATA TRICARINATA	1	3	1	
ALL GASTROPODA				1164
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	80	15	24	820
UNIONIDAE	0	0	1	
ALL PELECYPODA				826

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 4 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	550	1939	5312	53723
ALL CNIDARIA				53723
RHABDOCOELA	0	0	1	7
TRICLADIDA	0	1	0	7
NEMERTINEA	0	19	17	248
NEMATODA	5	45	10	413
OLIGOCHAETA				
STYLARIA	0	8	1	
OTHER	50	2	165	
ALL OLIGOCHAETA				1556
CLADOCERA				
BOSMINA	2	8	24	
DAPHNIA	1	16	8	
HOLOPEDIUM	5	0	0	
ALL CLADOCERA				441
COPEPODA				
CYCLOPS BICUSPIDATUS	0	0	16	
MESOCYCLOPS	0	0	8	
ALL COPEPODA				165

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	1	4	9	96
ALL AMPHIPODA				96
DIPTERA				
CHIRONOMIDAE	7	3	17	186
EMPIDIDAE	0	1	0	
ALL DIPTERA				193
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
BAETISCIDAE				
BAETISCA	0	1	1	
HEPTAGENIIDAE				
STENONEMA	0	2	0	
ALL EPHEMEROPTERA				34
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	1	5	
HYDROPSYCHE	8	2	14	
LEPTOCERIDAE				
CERACLEA	0	0	1	
RHYACOPHILIDAE				
PROTOPTILA	0	1	0	
ALL TRICHOPTERA				234
ACARINA	0	12	1	90

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10/17/84

MACROZOOBENTHOS PONAR GRAB COUNT DATA

TRANSECT 4 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA	1	1	11	
AMNICOLA	3	18	22	
ELIMIA LIVESCENS	0	1	0	
FERISSIA	0	2	0	
LYMNAEA	2	0	0	
PHYSA				420
ALL GASTROPODA				
PELECYPODA	1	2	11	96
SPHAERIIDAE				
PISIDIUM				96
ALL PELECYPODA				

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 5 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	9633	9041	3578	153242
ALL CNIDARIA				153242
RHABDOCOELA	3	2	2	48
TRICLADIDA	6	23	5	234
NEMERTINEA	17	7	6	207
NEMATODA	0	16	17	227
BRYOZOA	+	0	0	+
HIRUDINEA				
ERPOBDELLIDAE				
ERPOBDELLA PUNCTATA	0	2	0	
OTHER	1	0	0	
PISCICOLIDAE	4	0	0	
ALL HIRUDINEA				48

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OLIGOCHAETA				
NAIS	326	215	321	
SPIROSPERMA	16	18	28	
STYLARIA	354	389	502	
OTHER	2237	519	392	
ALL OLIGOCHAETA				36616
CLADOCERA				
BOSMINA	32	3	1	
DAPHNIA	0	0	1	
HOLOPEDIUM	16	0	1	
ILYOCRYPTUS	0	0	1	
ALL CLADOCERA				379
COPEPODA				
DIAPTOMUS	16	0	0	110
ALL COPEPODA				110
OSTRACODA	0	1	0	7
AMPHIPODA				
GAMMARUS	344	492	282	
HYALELLA AZTECA	3	1	5	
ALL AMPHIPODA				7761
DIPTERA				
CHIRONOMIDAE	175	316	203	4779

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	37	41	30	
EPHEMERIDAE				
HEXAGENIA	55	114	108	
EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	
BAETISCIDAE				
BAETISCA	7	2	14	
HEPTAGENIIDAE				
STENONEMA	6	4	3	
ALL EPHEMEROPTERA				2906
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	1	0	0	
ALL COLEOPTERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	0	2	
MICRASEMA	1	0	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	21	11	0	
HYDROPSYCHE	31	15	3	
LEPTOCERIDAE				
CERACLEA	0	3	1	
MYSTACIDES	0	2	0	
OECETIS	0	1	1	
SETODES	0	1	0	
TRIAENODES	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
POLYCENTROPUS	1	0	0	
ALL TRICHOPTERA				675
ODONATA				
GOMPHIDAE				
GOMPHUS	0	1	1	14
ALL ODONATA				14
ACARINA	21	8	1	207

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	15	17	16	
ELIMIA LIVESCENS	5	16	10	
PHYSA	10	58	6	
VALVATA TRICARINATA	13	44	21	
ALL GASTROPODA				1591
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	49	68	84	1384
UNIONIDAE	0	1	0	
ALL PELECYPODA				1391

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 5 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	124101	0672	9495	224347
ALL CNIDARIA				224347
RHABDOCOELA	0	0	1	7
TRICLADIDA	2	0	0	14
NEMERTINEA	0	17	1	124
NEMATODA	51	35	3	613
HIRUDINEA				
PISCICOLIDAE				
PISCICOLA MILNERI	0	1	1	
ALL HIRUDINEA				14
OLIGOCHAETA				
NAIS	99	64	16	
SPIROSPERMA	7	3	49	
STYLARIA	1011	744	683	
OTHER	234	981	294	
ALL OLIGOCHAETA				28821

13.527

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	41	54	19	
DAPHNIA	1	0	5	
EURYCERCUS LAMELLATUS	16	0	0	
HOLOPEDIUM	3	17	5	
ALL CLADOCERA				1109
COPEPODA				
CYCLOPS BICUSPIDATUS	32	1	0	
DIAPTOMUS	16	0	16	
HARPACTICOIDA	1	16	0	
ALL COPEPODA				565
OSTRACODA	17	34	33	578
AMPHIPODA				
GAMMARUS	103	350	20	
HYALELLA AZTECA	8	2	0	
ALL AMPHIPODA				3326
TERRESTRIAL INSECT	1	1	1	21
DIPTERA				
CHIRONOMIDAE	316	558	86	6611

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	39	72	1	
EPHEMERIDAE				
HEXAGENIA	249	306	89	
HEPTAGENIIDAE				
STENONEMA	6	28	10	
ALL EPHEMEROPTERA				5509
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	4	7	3	
HYDROPSYCHE	23	32	9	
LEPTOCERIDAE				
CERACLEA	1	2	2	
MYSTACIDES	0	2	0	
NECTOPSYCHE	0	0	2	
POLYCENTROPODIDAE				
NEURECLIPSIS	7	0	1	
POLYCENTROPUS	1	0	0	
ALL TRICHOPTERA				661
ODONATA				
GOMPHIDAE				
GOMPHUS	0	1	0	7
ALL ODONATA				7
ACARINA	0	35	5	275

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	29	8	43	
ELIMIA LIVESCENS	11	1	30	
GYRAULUS	1	1	1	
LYMNAEA	0	0	1	
PLEUROCERA ACUTA	0	1	1	
VALVATA SINCERA	0	1	0	
VALVATA TRICARINATA	56	32	21	
ALL GASTROPODA				1639
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	50	55	24	888
ALL PELECYPODA				888

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 5 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	2260	374	527	21769
ALL CNIDARIA				21769
TRICLADIDA	0	0	1	7
NEMERTINEA	20	8	6	234
NEMATODA	7	1	4	83
OLIGOCHAETA				
NAIS	34	0	0	
STYLARIA	17	0	1	
OTHER	39	24	85	
ALL OLIGOCHAETA				1377
CLADOCERA				
BOSMINA	40	13	8	
DAPHNIA	1	1	5	
EURYCERCUS LAMELLATUS	0	1	0	
HOLOPEDIUM	33	3	14	
ALL CLADOCERA				820

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	9	3	0	
DIAPTOMUS	8	18	7	
EPISHURA LACUSTRIS	0	3	1	
MESOCYCLOPS	1	0	0	
ALL COPEPODA				344
AMPHIPODA				
GAMMARUS	4	1	0	34
ALL AMPHIPODA				34
DIPTERA				
CHIRONOMIDAE	31	25	100	1074
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	1	0	1	
HEPTAGENIIDAE				
STENONEMA	1	0	0	
ALL EPHEMEROPTERA				28
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	11	4	0	
HYDROPSYCHE	61	10	1	
LEPTOCERIDAE				
CERACLEA	1	1	0	
ALL TRICHOPTERA				613
PLECOPTERA				
ISOGENOIDES	2	0	0	14
ALL PLECOPTERA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 5 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	0	14
ALL PELECYPODA				14

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 6 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	0	+	0	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	1177	156	111	9944
ALL CNIDARIA				9944
RHABDOCOELA	0	2	2	28
TRICLADIDA	41	13	23	530
NEMATODA	25	11	9	310
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	2	0	2	
ALL HIRUDINEA				28
OLIGOCHAETA				
NAIS	24	0	0	
SPIROSPERMA	12	15	24	
STYLARIA	123	128	140	
OTHER	37	55	107	
ALL OLIGOCHAETA				4580
CLADOCERA				
DAPHNIA	9	24	0	
HOLOPEDIUM	38	54	0	
ALL CLADOCERA				861

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	0	8	0	
EPISHURA LACUSTRIS	0	2	1	
ALL COPEPODA				76
OSTRACODA	43	81	24	1019
AMPHIPODA				
GAMMARUS	227	108	195	3650
ALL AMPHIPODA				3650
ISOPODA				
ASELLUS	1	0	0	7
ALL ISOPODA				7
TERRESTRIAL INSECT	0	2	0	14
DIPTERA				
CHIRONOMIDAE	158	107	146	2830
EMPIDIDAE	1	1	0	
ALL DIPTERA				2844
EPHEMEROPTERA				
CAENIDAE				
CAENIS	39	79	62	
EPHEMERIDAE				
HEXAGENIA	148	149	225	
EPHEMERELLIDAE				
EPHEMERELLA	1	0	0	
ALL EPHEMEROPTERA				4841

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 6 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	1	0	0	
LEPTOCERIDAE				
CERACLEA	10	2	5	
OECETIS	9	5	7	
SETODES	0	0	4	
POLYCENTROPODIDAE				
POLYCENTROPUS	1	0	0	
ALL TRICHOPTERA				303
ACARINA	0	2	1	21
GASTROPODA				
AMNICOLA	36	22	11	
ELIMIA LIVESCENS	16	22	13	
GYRAULUS	44	19	25	
PHYSA	30	0	8	
ALL GASTROPODA				1694
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	1	1	
SPHAERIUM	1	2	3	
ALL SPHAERIIDAE				76
ALL PELECYPODA				76

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 6 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	707	5091	4625	71780
ALL CNIDARIA				71780
RHABDOCOELA	6	3	7	110
TRICLADIDA	11	1	19	213
NEMERTINEA	2	0	0	14
NEMATODA	32	2	18	358
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	1	0	
PISCICOLIDAE				
PISCICOLA	1	0	1	
ALL HIRUDINEA				21
OLIGOCHAETA				
NAIS	0	6	16	
SPIROSPERMA	1	0	1	
STYLARIA	231	97	227	
OTHER	42	88	77	
ALL OLIGOCHAETA				5413

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	8	34	48	
DAPHNIA	35	34	17	
HOLOPEDIUM	35	1	67	
ALL CLADOCERA				1921
COPEPODA				
DIAPTOMUS	9	0	16	
EPISHURA LACUSTRIS	0	2	3	
MESOCYCLOPS	0	0	1	
ALL COPEPODA				213
OSTRACODA	12	15	12	269
AMPHIPODA				
GAMMARUS	113	31	43	
HYALELLA AZTECA	2	1	7	
ALL AMPHIPODA				1357
ISOPODA				
ASELLUS	1	0	0	7
ALL ISOPODA				7
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CERATOPOGONIDAE	3	0	1	
CHIRONOMIDAE	342	161	135	4394
ALL DIPTERA				4421

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	20	9	6	
EPHEMERIDAE				
HEXAGENIA	244	336	118	
HEPTAGENIIDAE				
STENONEMA	2	0	2	
ALL EPHEMEROPTERA				5075
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	1	2	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	0	8	5	
LEPTOCERIDAE				
CERACLEA	1	2	0	
NECTOPSYCHE	0	0	1	
OECETIS	1	0	0	
TRIAENODES	0	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	6	6	
POLYCENTROPUS	0	0	2	
ALL TRICHOPTERA				269
ACARINA	1	0	3	28

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 6 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	9	21	30	
ELIMIA LIVESCENS	0	1	0	
GYRAULUS	9	3	4	
PHYSA	12	5	18	
VALVATA TRICARINATA	0	0	2	
ALL GASTROPODA				785
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	3	1	69
UNIONIDAE	1	0	0	
ALL PELECYPODA				76

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 6 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	12913	1992	2662	120978
ALL CNIDARIA				120978
RHABDOCOELA	3	0	0	21
NEMERTINEA	0	0	4	28
NEMATODA	0	4	49	365
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	0	1	
PISCICOLIDAE				
PISCICOLA	0	1	0	
ALL HIRUDINEA				14
OLIGOCHAETA				
NAIS	56	3	37	
SPIROSPERMA	0	17	1	
STYLARIA	155	97	73	
OTHER	98	72	207	
ALL OLIGOCHAETA				5620
CLADOCERA				
BOSMINA	51	0	16	
DAPHNIA	49	18	1	
HOLOPEDIUM	48	0	0	
ALL CLADOCERA				1260

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	0	0	1	
LIMNOCALANUS	0	0	1	
MESOCYCLOPS	1	0	0	
ALL COPEPODA				21
OSTRACODA	7	1	12	138
AMPHIPODA				
GAMMARUS	67	14	16	
HYALELLA AZTECA	2	0	2	
ALL AMPHIPODA				696
TERRESTRIAL INSECT	1	1	0	14
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	96	124	153	2569
EMPIDIDAE	0	0	2	
ALL DIPTERA				2589
EPHEMEROPTERA				
CAENIDAE				
CAENIS	10	2	4	
EPHEMERIDAE				
HEXAGENIA	253	316	408	
HEPTAGENIIDAE				
STENONEMA	0	0	1	
ALL EPHEMEROPTERA				6845

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 6 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	1	0	
MICRASEMA	2	0	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	1	1	
HYDROPSYCHE	5	3	3	
LEPTOCERIDAE				
CERACLEA	16	0	0	
MYSTACIDES	1	0	0	
OECETIS	0	2	0	
SETODES	0	2	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	1	3	
ALL TRICHOPTERA				289
ACARINA	0	1	2	21
GASTROPODA				
AMNICOLA	8	9	12	
ELIMIA LIVESCENS	3	1	2	
GYRAULUS	2	0	0	
PHYSA	1	0	0	
ALL GASTROPODA				262
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	7	1	69
ALL PELECYPODA				69

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 7 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	4615	5274	4220	97164
ALL CNIDARIA				97164
RHABDOCOELA	2	2	0	28
TRICLADIDA	34	16	6	386
NEMERTINEA	1	1	0	14
NEMATODA	2	0	1	21
HIRUDINEA				
GLOSSIPHONIIDAE				
BATRACOBDELLA PHALERA	1	0	0	
PISCICOLIDAE				
PISCICOLA MILNERI	1	0	1	
OTHER	0	0	1	
ALL HIRUDINEA				28
OLIGOCHAETA				
NAIS	149	112	65	
SPIROSPERMA	93	56	2	
STYLARIA	353	307	375	
OTHER	1310	1286	844	
ALL OLIGOCHAETA				34103

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	21	1	6	
DAPHNIA	0	16	1	
HOLOPEDIUM	18	16	17	
ALL CLADOCERA				661
COPEPODA				
DIAPTOMUS	2	0	16	
EPISHURA LACUSTRIS	1	0	0	
PARACYCLOPS	0	0	16	
ALL COPEPODA				241
OSTRACODA	0	2	0	14
AMPHIPODA				
GAMMARUS	428	162	109	
HYALELLA AZTECA	15	5	7	
ALL AMPHIPODA				5000
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	274	125	115	3540

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	30	1	3	
EPHEMERIDAE				
HEXAGENIA	44	23	8	
BAETISCIDAE				
BAETISCA	0	0	1	
HEPTAGENIIDAE				
STENONEMA	0	0	1	
ALL EPHEMEROPTERA				764
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	8	1	3	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	3	9	
HYDROPSYCHE	6	5	8	
LEPTOCERIDAE				
CERACLEA	1	5	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	3	0	3	
ALL TRICHOPTERA				386
ACARINA	1	1	5	48
GASTROPODA				
AMNICOLA	110	41	9	
ELIMIA LIVESCENS	12	17	6	
GYRAULUS	25	11	1	
PHYSA	18	33	19	
VALVATA TRICARINATA	0	3	0	
ALL GASTROPODA				2100

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 7 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	40	18	17	
SPHAERIUM	2	1	0	
ALL SPHAERIIDAE				537
ALL PELECYPODA				537

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 7 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	12376	6668	6377	175066
ALL CNIDARIA				175066
RHABDOCOELA	1	1	0	14
TRICLADIDA	1	1	0	14
NEMERTINEA	17	1	33	351
NEMATODA	1	18	35	372
OLIGOCHAETA				
NAIS	102	32	49	
SPIROSPERMA	21	31	26	
STYLARIA	138	64	146	
OTHER	1952	909	1008	
ALL OLIGOCHAETA				30838
CLADOCERA				
BOSMINA	16	18	0	
DAPHNIA	17	0	1	
HOLOPEDIUM	0	17	0	
ALL CLADOCERA				475

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	0	1	16	117
ALL COPEPODA				117
OSTRACODA	1	0	0	7
AMPHIPODA				
GAMMARUS	117	88	76	
HYALELLA AZTECA	7	1	5	
ALL AMPHIPODA				2026
DIPTERA				
CHIRONOMIDAE	197	158	39	2713
EMPIDIDAE	1	1	0	
ALL DIPTERA				2727
EPHEMEROPTERA				
CAENIDAE				
CAENIS	11	5	6	
EPHEMERIDAE				
HEXAGENIA	67	37	17	
BAETISCIDAE				
BAETISCA	4	0	0	
HEPTAGENIIDAE				
STENONEMA	1	0	1	
ALL EPHEMEROPTERA				1026

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 7 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	2	0	2	
MICRASEMA	0	1	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	3	5	2	
HYDROPSYCHE	9	5	10	
LEPTOCERIDAE				
CERACLEA	3	2	0	
MYSTACIDES	2	0	0	
OECETIS	0	1	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	8	2	2	
ALL TRICHOPTERA				413
ACARINA	2	0	0	14
GASTROPODA				
AMNICOLA	46	24	11	
ELIMIA LIVESCENS	8	4	0	
GYRAULUS	19	1	3	
PHYSA	5	18	4	
ALL GASTROPODA				985
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	65	22	35	
SPHAERIUM	1	4	1	
ALL SPHAERIIDAE				881
ALL PELECYPODA				881

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 7 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	6352	8586	4997	137286
ALL CNIDARIA				137286
RHABDOCOELA	0	1	1	14
TRICLADIDA	0	0	1	7
NEMERTINEA	1	1	2	28
NEMATODA	51	73	166	1997
OLIGOCHAETA				
NAIS	0	0	17	
SPIROSPERMA	0	21	0	
STYLARIA	81	64	50	
OTHER	571	730	691	
ALL OLIGOCHAETA				15323
CLADOCERA				
BOSMINA	17	34	32	
DAPHNIA	1	48	2	
HOLOPEDIUM	0	34	16	
ALL CLADOCERA				1267

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	16	0	1	117
ALL COPEPODA				117
AMPHIPODA				
GAMMARUS	47	91	35	
HYALELLA AZTECA	2	1	1	
ALL AMPHIPODA				1219
DIPTERA				
CHIRONOMIDAE	10	24	13	324
EMPIDIDAE	2	0	3	
ALL DIPTERA				358
EPHEMEROPTERA				
CAENIDAE				
CAENIS	43	2	28	
EPHEMERIDAE				
HEXAGENIA	13	20	11	
BAETISCIDAE				
BAETISCA	8	1	10	
HEPTAGENIIDAE				
STENONEMA	2	8	17	
AMETROPIDAE				
TRICHORYTHODES	1	0	0	
ALL EPHEMEROPTERA				1129

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 7 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	7	5	9	
MICRASEMA	2	0	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	23	9	21	
HYDROPSYCHE	21	17	31	
LEPTOCERIDAE				
CERACLEA	1	4	4	
MYSTACIDES	0	3	2	
OECETIS	0	0	2	
SETODES	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	12	10	10	
ALL TRICHOPTERA				1343
ACARINA	2	4	4	69
GASTROPODA				
AMNICOLA	1	3	17	
ELIMIA LIVESCENS	0	1	1	
PHYSA	1	3	1	
ALL GASTROPODA				193
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	2	0	0	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				21
ALL PELECYPODA				21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 8 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	+	0	0	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	53	24	61	950
ALL CNIDARIA				950
TRICLADIDA	5	5	0	69
NEMERTINEA	0	3	0	21
NEMATODA	86	116	68	1859
HIRUDINEA				
ERPOBDELLIDAE	1	0	2	
GLOSSIPHONIIDAE				
GLOSSIPHONIA COMPLANATA	1	0	0	
ALL HIRUDINEA				28
OLIGOCHAETA				
NAIS	24	32	33	
SPIROSPERMA	265	182	219	
STYLARIA	23	0	0	
OTHER	109	75	77	
ALL OLIGOCHAETA				7155

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	893	1193	961	20984
ALL POLYCHAETA				20984
CLADOCERA				
BOSMINA	0	0	2	
DAPHNIA	1	1	3	
HOLOPEDIUM	5	2	0	
ALL CLADOCERA				96
COPEPODA				
EPISHURA LACUSTRIS	0	0	1	
MACROCYCLOPS	0	16	0	
ALL COPEPODA				117
AMPHIPODA				
GAMMARUS	196	113	148	
HYALELLA AZTECA	4	0	3	
ALL AMPHIPODA				3195
ISOPODA				
ASELLUS	3	0	3	41
ALL ISOPODA				41
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	196	102	188	3347
ALL DIPTERA				3354

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	157	54	121	
EPHEMERIDAE				
HEXAGENIA	76	17	70	
HEPTAGENIIDAE				
STENONEMA	0	3	1	
ALL EPHEMEROPTERA				3436
COLEOPTERA				
ELMIDAE				
DUBIRAPHIA	0	0	1	
ALL COLEOPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	0	1	0	
LEPTOCERIDAE				
OECETIS	0	1	2	
SETODES	2	0	0	
TRIAENODES	0	0	1	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	3	1	
ALL TRICHOPTERA				76
ACARINA	1	2	0	21
GASTROPODA				
AMNICOLA	4	2	2	
ELIMIA LIVESCENS	10	19	9	
GYRAULUS	1	0	0	
PHYSA	6	5	1	
ALL GASTROPODA				406

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	25	14	43	
SPHAERIUM	1	4	2	
ALL SPHAERIIDAE				613
ALL PELECYPODA				613

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 8 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	698	375	191	8705
ALL CNIDARIA				8705
RHABDOCOELA	33	43	12	606
TRICLADIDA	22	4	10	248
NEMERTINEA	0	35	0	241
NEMATODA	19	41	17	530
OLIGOCHAETA				
NAIS	2	0	17	
SPIROSPERMA	30	5	60	
STYLARIA	332	266	296	
OTHER	222	91	99	
ALL OLIGOCHAETA				9779
POLYCHAETA				
MANAYUNKIA SPECIOSA	47	173	119	2335
ALL POLYCHAETA				2335

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	1	0	1	
DAPHNIA	1	0	0	
HOLOPEDIUM	9	8	9	
ALL CLADOCERA				200
COPEPODA				
DIAPTOMUS	0	8	0	
HARPACTICOIDA	0	8	0	
ALL COPEPODA				110
OSTRACODA	0	12	1	90
AMPHIPODA				
GAMMARUS	89	126	42	
HYALELLA AZTECA	55	20	35	
ALL AMPHIPODA				2527
ISOPODA				
ASELLUS	2	1	0	21
ALL ISOPODA				21
DIPTERA				
CERATOPOGONIDAE	2	1	3	
CHIRONOMIDAE	150	146	119	2858
ALL DIPTERA				2899

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	38	122	34	
EPHEMERIDAE				
HEXAGENIA	108	235	180	
ALL EPHEMEROPTERA				4938
LEPIDOPTERA	1	0	0	7
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	0	0	1	
LEPTOCERIDAE				
CERACLEA	1	0	0	
OECETIS	0	0	2	
SETODES	0	1	0	
TRIAENODES	0	1	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	2	1	4	
ALL TRICHOPTERA				90
ODONATA				
COENAGRIONIDAE	1	1	0	14
ACARINA	2	2	3	48

8-565

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	29	39	22	
ELIMIA LIVESCENS	7	14	3	
GYRAULUS	9	9	4	
PHYSA	38	17	17	
VALVATA TRICARINATA	0	4	0	
ALL GASTROPODA				1460
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	21	20	386
ALL PELECYPODA				386

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 8 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	29	106	474	4194
ALL CNIDARIA				4194
RHABDOCOELA	3	8	47	399
NEMERTINEA	8	0	5	90
NEMATODA	13	17	30	413
OLIGOCHAETA				
SPIROSPERMA	25	20	49	
STYLARIA	2	0	10	
OTHER	347	337	319	
ALL OLIGOCHAETA				7637
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	9	32	282
ALL POLYCHAETA				282
CLADOCERA				
BOSMINA	0	1	20	
DAPHNIA	0	4	2	
HOLOPEDIUM	8	20	37	
ALL CLADOCERA				634

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
EPISHURA LACUSTRIS	0	0	6	
HARPACTICOIDA	2	0	8	
ALL COPEPODA				110
OSTRACODA	2	6	2	69
AMPHIPODA				
GAMMARUS	2	1	39	
HYALELLA AZTECA	0	0	2	
ALL AMPHIPODA				303
DIPTERA				
CERATOPOGONIDAE	2	0	0	
CHIRONOMIDAE	341	299	336	6721
ALL DIPTERA				6735
EPHEMEROPTERA				
CAENIDAE				
CAENIS	3	7	22	
EPHEMERIDAE				
HEXAGENIA	90	266	148	
ALL EPHEMEROPTERA				3691

15-503

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 8 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
BRACHYCENTRIDAE				
BRACHYCENTRUS	0	0	1	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
HYDROPSYCHE	0	0	2	
LEPTOCERIDAE				
OECETIS	0	1	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	1	0	
ALL TRICHOPTERA				41
ODONATA				
GOMPHIDAE				
GOMPHUS	0	0	1	7
ALL ODONATA				7
ACARINA	2	0	4	41
GASTROPODA				
AMNICOLA	12	3	36	
GYRAULUS	0	0	7	
PHYSA	0	1	9	
ALL GASTROPODA				468
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	8	46	11	448
UNIONIDAE	0	2	0	
ALL PELECYPODA				461

8-56

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 9 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	1	0	1	14
ALL CNIDARIA				14
RHABDOCOELA	2	0	0	14
NEMATODA	3	5	1	62
OLIGOCHAETA				
NAIS	0	0	2	
SPIROSPERMA	1	1	2	
STYLARIA	2	0	5	
OTHER	20	9	41	
ALL OLIGOCHAETA				572
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	0	4	28
ALL POLYCHAETA				28
CLADOCERA				
BOSMINA	6	14	5	
DAPHNIA	19	24	16	
HOLOPEDIUM	10	11	11	
ALL CLADOCERA				799

595-9

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	1	5	1	
DIAPTOMUS	10	15	7	
EPISHURA LACUSTRIS	4	3	1	
HARPACTICOIDA	1	0	0	
ALL COPEPODA				331
AMPHIPODA				
GAMMARUS	6	0	4	
HYALELLA AZTECA	0	0	4	
ALL AMPHIPODA				96
ISOPODA				
LIRCEUS	0	0	3	21
ALL ISOPODA				21
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CERATOPOGONIDAE	4	2	11	
CHIRONOMIDAE	3	3	53	406
ALL DIPTERA				523
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	2	
EPHEMERIDAE				
HEXAGENIA	6	1	0	
HEPTAGENIIDAE				
STENONEMA	0	0	1	
ALL EPHEMEROPTERA				69

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 9 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	5	0	0	
GYRAULUS	0	0	1	
PHYSA	1	0	0	
ALL GASTROPODA				48
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	3	0	3	41
ALL PELECYPODA				41

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 9 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	0	1	7
ALL CNIDARIA				7
NEMATODA	1	0	2	21
OLIGOCHAETA				
SPIROSPERMA	1	0	0	
OTHER	9	8	14	
ALL OLIGOCHAETA				220
CLADOCERA				
BOSMINA	14	2	4	
DAPHNIA	6	3	7	
EURYCERCUS LAMELLATUS	1	0	0	
HOLOPEDIUM	14	13	5	
ALL CLADOCERA				475
COPEPODA				
CYCLOPS BICUSPIDATUS	0	2	1	
DIAPTOMUS	9	0	10	
EPISHURA LACUSTRIS	1	0	0	
HARPACTICOIDA	1	0	1	
ALL COPEPODA				172
DIPTERA				
CERATOPOGONIDAE	2	2	2	
CHIRONOMIDAE	8	5	2	103
ALL DIPTERA				145

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 9 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	0	1	
ALL TRICHOPTERA				7
GASTROPODA				
PHYSA	0	1	0	7
ALL GASTROPODA				7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 9 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	194	0	535	5020
ALL CNIDARIA				5020
RHABDOCOELA	4	1	6	76
NEMERTINEA	0	1	0	7
NEMATODA	4	9	9	152
OLIGOCHAETA				
SPIROSPERMA	4	1	11	
STYLARIA	31	0	40	
OTHER	36	16	156	
ALL OLIGOCHAETA				2032
POLYCHAETA				
MANAYUNKIA SPECIOSA	57	2	89	1019
ALL POLYCHAETA				1019
CLADOCERA				
BOSMINA	0	18	0	
DAPHNIA	4	5	16	
HOLOPEDIUM	14	19	40	
ALL CLADOCERA				799

0.5.8

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	2	0	0	
DIAPTOMUS	4	1	0	
EPISHURA LACUSTRIS	0	1	16	
HARPACTICOIDA	0	2	8	
ALL COPEPODA				234
AMPHIPODA				
GAMMARUS	48	0	11	
HYALELLA AZTECA	3	0	0	
ALL AMPHIPODA				427
DIPTERA				
CERATOPOGONIDAE	6	2	1	
CHIRONOMIDAE	52	12	69	916
EMPIDIDAE	0	0	2	
ALL DIPTERA				992
EPHEMEROPTERA				
CAENIDAE				
CAENIS	7	0	0	
EPHEMERIDAE				
HEXAGENIA	25	0	2	
BAETISCIDAE				
BAETISCA	0	0	1	
ALL EPHEMEROPTERA				241
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	1	
LEPTOCERIDAE				
OECETIS	1	0	0	
ALL TRICHOPTERA				21

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 9 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	5	0	0	34
GASTROPODA				
AMNICOLA	0	0	3	
ELIMIA LIVESCENS	2	0	1	
GYRAULUS	0	0	2	
PHYSA	2	0	0	
ALL GASTROPODA				69
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	22	2	26	344
ALL PELECYPODA				344

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 10 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMATODA	0	0	2	14
OLIGOCHAETA	3	0	1	28
CLADOCERA				
BOSMINA	2	0	2	
DAPHNIA	11	17	12	
HOLOPEDIUM	8	18	10	
ALL CLADOCERA				551
COPEPODA				
DIAPTOMUS	4	2	1	
EPISHURA LACUSTRIS	1	2	0	
ALL COPEPODA				69
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT	1	0	1	14
DIPTERA				
CERATOPOGONIDAE	0	0	5	
CHIRONOMIDAE	3	8	3	96
ALL DIPTERA				131

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 10 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	3	2	41
ALL PELECYPODA				41

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 10 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	18	13	24	379
ALL CNIDARIA				379
RHABDOCOELA	13	41	33	599
TRICLADIDA	1	1	0	14
NEMATODA	17	8	13	262
HIRUDINEA				
PISCICOLIDAE				
PISCICOLA	1	0	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
SPIROSPERMA	21	11	12	
STYLARIA	44	35	98	
OTHER	300	77	110	
ALL OLIGOCHAETA				4876
POLYCHAETA				
MANAYUNKIA SPECIOSA	16	1	24	282
ALL POLYCHAETA				282
CLADOCERA				
BOSMINA	9	4	4	
DAPHNIA	8	6	12	
HOLOPEDIUM	8	8	14	
ALL CLADOCERA				503

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
DIAPTOMUS	0	1	0	
EPISHURA LACUSTRIS	0	2	0	
HARPACTICOIDA	8	0	0	
ALL COPEPODA				76
OSTRACODA	8	1	3	83
AMPHIPODA				
GAMMARUS	28	28	24	
HYALELLA AZTECA	8	8	24	
ALL AMPHIPODA				826
ISOPODA				
ASELLUS	0	0	1	7
ALL ISOPODA				7
TERRESTRIAL INSECT	2	4	0	41
DIPTERA				
CERATOPOGONIDAE	10	13	9	
CHIRONOMIDAE	162	259	207	4325
EMPIDIDAE	1	0	0	
ALL DIPTERA				4552

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	20	37	22	
EPHEMERIDAE				
HEXAGENIA	17	29	21	
BAETISCIDAE				
BAETISCA	5	2	4	
ALL EPHEMEROPTERA				1081
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	1	0	2	
LEPTOCERIDAE				
MYSTACIDES	1	1	0	
NECTOPSYCHE	2	0	0	
OECETIS	3	0	4	
SETODES	0	2	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	1	
POLYCENTROPUS	1	0	1	
ALL TRICHOPTERA				131
ACARINA	9	13	10	220
GASTROPODA				
AMNICOLA	11	12	20	
ELIMIA LIVESCENS	19	10	12	
GYRAULUS	6	8	15	
PHYSA	6	3	7	
VALVATA TRICARINATA	0	1	1	
ALL GASTROPODA				902

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 10 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	44	10	43	668
UNIONIDAE	1	0	0	
ALL PELECYPODA				675

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

ST. CLAIR RIVER TRANSECT 10 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	561	465	734	12121
ALL CNIDARIA				12121
RHABDOCOELA	30	28	38	661
TRICLADIDA	4	5	8	117
NEMATODA	19	18	32	475
OLIGOCHAETA				
NAIS	0	8	1	
SPIROSPERMA	18	3	34	
STYLARIA	37	118	113	
OTHER	199	94	201	
ALL OLIGOCHAETA				5688
POLYCHAETA				
MANAYUNKIA SPECIOSA	83	9	55	1012
ALL POLYCHAETA				1012

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	9	1	1	
DAPHNIA	2	0	11	
EURYCERCUS LAMELLATUS	1	0	1	
HOLOPEDIUM	1	32	4	
ILYOCRYPTUS	1	1	3	
ALL CLADOCERA				468
COPEPODA				
DIAPTOMUS	0	0	1	
EPISHURA LACUSTRIS	0	0	1	
HARPACTICOIDA	0	0	1	
ALL COPEPODA				21
OSTRACODA	12	0	24	248
AMPHIPODA				
GAMMARUS	195	71	337	
HYALELLA AZTECA	10	13	8	
ALL AMPHIPODA				4366
DIPTERA				
CERATOPOGONIDAE	13	1	2	
CHIRONOMIDAE	199	238	160	4111
ALL DIPTERA				4222

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	30	9	51	
EPHEMERIDAE				
HEXAGENIA	240	58	212	
ALL EPHEMEROPTERA				4132
LEPIDOPTERA	0	1	0	7
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	2	0	0	
LEPTOCERIDAE				
CERACLEA	0	1	1	
OECETIS	1	0	1	
TRIAENODES	0	1	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	1	0	1	
ALL TRICHOPTERA				69
ACARINA	5	0	4	62
GASTROPODA				
AMNICOLA	57	89	100	
ELIMIA LIVESCENS	2	3	2	
GYRAULUS	3	27	18	
PHYSA	6	18	24	
ALL GASTROPODA				2403

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/17/84

TRANSECT 10 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	67	13	37	806
ALL PELECYPODA				806

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 11 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	2	0	4	41
ALL CNIDARIA				41
RHABDOCOELA	2	1	3	41
TRICLADIDA	0	2	1	21
NEMATODA	24	18	27	475
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA STAGNALIS	0	0	2	
ALL HIRUDINEA				14
OLIGOCHAETA				
SPIROSPERMA	28	13	12	
STYLARIA	0	0	1	
OTHER	54	35	58	
ALL OLIGOCHAETA				1384
POLYCHAETA				
MANAYUNKIA SPECIOSA	372	171	306	5847
ALL POLYCHAETA				5847
CLADOCERA				
DAPHNIA	8	12	19	
EURYCERCUS LAMELLATUS	2	4	2	
HOLOPEDIUM	3	1	7	
ALL CLADOCERA				399

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	2	7	17	179
ALL COPEPODA				179
OSTRACODA	19	34	12	448
AMPHIPODA				
GAMMARUS	17	21	0	262
ALL AMPHIPODA				262
DIPTERA				
CHIRONOMIDAE	15	24	19	399
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	19	26	15	
ALL EPHEMEROPTERA				413
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	2	1	6	
ALL TRICHOPTERA				62
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	1	1	1	
ELIMIA LIVESCENS	2	3	1	
GYRAULUS	0	0	1	
VALVATA TRICARINATA	2	0	1	
ALL GASTROPODA				90

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 11 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	14	42	13	475
ALL PELECYPODA				475

S2S-9

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 11 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	0	1	14
TRICLADIDA	1	2	0	21
NEMATODA	76	107	134	2183
OLIGOCHAETA	49	60	70	1233
POLYCHAETA				
MANAYUNKIA SPECIOSA	17	19	18	372
ALL POLYCHAETA				372
CLADOCERA				
DAPHNIA	6	10	17	
HOLOPEDIUM	1	1	2	
ALL CLADOCERA				255
COPEPODA				
HARPACTICOIDA	1	3	6	
LIMNOCALANUS	0	1	0	
MACROCYCLOPS	2	3	7	
ALL COPEPODA				158
OSTRACODA	1	6	3	69

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 11 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	2	5	3	69
ALL AMPHIPODA				69
DIPTERA				
CHIRONOMIDAE	26	25	19	482
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	20	25	29	
ALL EPHEMEROPTERA				510
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	3	2	
ALL TRICHOPTERA				41
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	0	1	0	
ELIMIA LIVESCENS	0	2	1	
PLEUROCERA ACUTA	1	0	0	
ALL GASTROPODA				34
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	34	55	40	
SPHAERIUM	3	1	5	
ALL SPHAERIIDAE				950
UNIONIDAE				
ANODONTA GRANDIS	0	0	1	
ALL PELECYPODA				957

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 11 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	10	8	131
TRICLADIDA	0	0	1	7
NEMATODA	168	210	305	4704
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	3	0	5	
ALL HIRUDINEA				55
OLIGOCHAETA				
SPIROSPERMA	0	1	0	
OTHER	788	777	935	
ALL OLIGOCHAETA				17224
POLYCHAETA				
MANAYUNKIA SPECIOSA	37	16	9	427
ALL POLYCHAETA				427
CLADOCERA				
DAPHNIA	13	1	16	
HOLOPEDIUM	3	0	8	
ALL CLADOCERA				282
COPEPODA				
HARPACTICOIDA	0	1	1	
MACROCYCLOPS	5	0	8	
ALL COPEPODA				103

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 11 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	1	8	62
AMPHIPODA				
GAMMARUS	2	1	1	28
ALL AMPHIPODA				28
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	25	26	26	530
ALL DIPTERA				537
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	27	16	17	
ALL EPHEMEROPTERA				413
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	0	0	
ALL TRICHOPTERA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	75	127	108	
SPHAERIUM	1	2	2	
ALL SPHAERIIDAE				2169
ALL PELECYPODA				2169

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 12 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	8	0	55
ALL CNIDARIA				55
RHABDOCOELA	0	3	1	28
TRICLADIDA	1	0	0	7
NEMATODA	23	19	32	510
HIRUDINEA				
GLOSSIPHONIIDAE				
GLOSSIPHONIA COMPLANATA	0	0	1	
HELOBDELLA STAGNALIS	1	0	0	
ALL HIRUDINEA				14
OLIGOCHAETA				
SPIROSPERMA	1	3	2	
OTHER	58	49	33	
ALL OLIGOCHAETA				1005
POLYCHAETA				
MANAYUNKIA SPECIOSA	219	251	209	4676
ALL POLYCHAETA				4676
CLADOCERA				
DAPHNIA	8	16	13	
EURYCERCUS LAMELLATUS	2	1	2	
HOLOPEDIUM	25	28	27	
ALL CLADOCERA				840

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 12 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	4	7	2	
MACROCYCLOPS	3	2	3	
ALL COPEPODA				145
OSTRACODA	13	34	34	558
AMPHIPODA				
GAMMARUS	9	13	9	213
ALL AMPHIPODA				213
DIPTERA				
CHIRONOMIDAE	14	30	27	489
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	19	31	24	
ALL EPHEMEROPTERA				510
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	3	4	1	
ALL TRICHOPTERA				55
ACARINA	1	0	1	14
GASTROPODA				
AMNICOLA	1	1	1	
ELIMIA LIVESCENS	2	0	2	
VALVATA TRICARINATA	1	0	1	
ALL GASTROPODA				62

MACROZOOBENTHOS PONAR GRAB COUNT DATA

10/10/84

TRANSECT 12 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	22	17	12	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				358
UNIONIDAE				
ALL PELECYPODA	0	1	0	365

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 12 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	1	0	2	21
TRICLADIDA	0	1	0	7
NEMATODA	12	46	25	572
OLIGOCHAETA				
SPIROSPERMA	1	0	2	
OTHER	91	155	68	
ALL OLIGOCHAETA				2183
POLYCHAETA				
MANAYUNKIA SPECIOSA	10	6	15	213
ALL POLYCHAETA				213
CLADOCERA				
DAPHNIA	3	7	12	
HOLOPEDIUM	4	14	12	
ALL CLADOCERA				358
COPEPODA				
HARPACTICOIDA	0	2	0	
MACROCYCLOPS	3	1	3	
ALL COPEPODA				62
OSTRACODA	1	2	0	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 12 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	1	3	0	28
ALL AMPHIPODA				28
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	18	32	21	489
ALL DIPTERA				496
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	19	30	18	
ALL EPHEMEROPTERA				461
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	45	51	26	
SPHAERIUM	4	0	1	
ALL SPHAERIIDAE				875
UNIONIDAE				
PROPTERA ALATA	0	1	0	
ALL PELECYPODA				881

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 12 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	2	0	14
TRICLADIDA	0	1	0	7
NEMATODA	14	20	13	324
HIRUDINEA				
GLOSSIPHONIIDAE				
PLACOBDELLA MONTIFERA	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA				
SPIROSPERMA	1	0	0	
OTHER	145	108	67	
ALL OLIGOCHAETA				2211
POLYCHAETA				
MANAYUNKIA SPECIOSA	12	22	32	455
ALL POLYCHAETA				455
CLADOCERA				
DAPHNIA	12	17	8	
HOLOPEDIUM	7	3	8	
ALL CLADOCERA				379
COPEPODA				
HARPACTICOIDA	0	1	2	
MACROCYCLOPS	3	2	4	
ALL COPEPODA				83

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 12 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	2	0	14
AMPHIPODA				
GAMMARUS	1	4	3	55
ALL AMPHIPODA				55
DIPTERA				
CERATOPOGONIDAE	0	1	0	
CHIRONOMIDAE	22	25	11	399
ALL DIPTERA				406
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	21	21	20	
ALL EPHEMEROPTERA				427
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	0	4	
ALL TRICHOPTERA				34
ACARINA	0	0	1	7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	56	40	36	
SPHAERIUM	1	1	2	
ALL SPHAERIIDAE				937
ALL PELECYPODA				937

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 13 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
RHABDOCOELA	1	1	1	21
NEMERTINEA	1	1	0	14
NEMATODA	14	38	22	510
OLIGOCHAETA				
SPIROSPERMA	0	4	1	
OTHER	24	10	9	
ALL OLIGOCHAETA				331
POLYCHAETA				
MANAYUNKIA SPECIOSA	63	106	55	1543
ALL POLYCHAETA				1543
CLADOCERA				
ALONA	1	0	0	
DAPHNIA	1	4	0	
EURYCERCUS LAMELLATUS	0	2	1	
HOLOPEDIUM	2	13	2	
POLYPHEMUS PEDICULUS	0	1	0	
ALL CLADOCERA				186

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 13 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	0	1	5	
MACROCYCLOPS	0	1	0	
ALL COPEPODA				48
OSTRACODA	4	11	3	124
AMPHIPODA				
GAMMARUS	6	1	0	48
ALL AMPHIPODA				48
DIPTERA				
CHIRONOMIDAE	28	22	25	516
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	30	27	28	
HEPTAGENIIDAE				
STENONEMA	1	0	0	
ALL EPHEMEROPTERA				592
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	1	2	2	
ALL TRICHOPTERA				34
ACARINA	0	1	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 13 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	4	5	
ELIMIA LIVESCENS	1	1	0	
GYRAULUS	2	0	0	
VALVATA SINCERA	0	9	1	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				172
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	19	16	
SPHAERIUM	4	0	0	
ALL SPHAERIIDAE				303
UNIONIDAE				
LAMPSILIS	1	0	0	
OTHER	0	1	0	
ALL PELECYPODA				317

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 13 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	1	0	7
TRICLADIDA	0	0	1	7
NEMATODA	18	24	26	468
OLIGOCHAETA	99	90	93	1942
POLYCHAETA				
MANAYUNKIA SPECIOSA	6	17	8	213
ALL POLYCHAETA				213
CLADOCERA				
DAPHNIA	1	6	1	
HOLOPEDIUM	9	4	10	
ALL CLADOCERA				213
COPEPODA				
HARPACTICOIDA	0	1	2	
MACROCYCLOPS	5	1	3	
ALL COPEPODA				83
OSTRACODA	0	1	0	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 13 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	2	0	0	14
ALL AMPHIPODA				14
TERRESTRIAL INSECT	0	1	1	14
DIPTERA				
CHIRONOMIDAE	22	27	28	530
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	22	21	19	
ALL EPHEMEROPTERA				427
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	2	1	1	
ALL TRICHOPTERA				28
GASTROPODA				
ELIMIA LIVESCENS	0	1	0	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	45	46	41	
SPHAERIUM	2	3	0	
ALL SPHAERIIDAE				943
ALL PELECYPODA				943

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

LAKE ST. CLAIR TRANSECT 13 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	3	3	0	41
NEMATODA	49	8	12	475
OLIGOCHAETA	410	47	42	3436
POLYCHAETA				
MANAYUNKIA SPECIOSA	23	0	0	158
ALL POLYCHAETA				158
CLADOCERA				
BOSMINA	2	0	2	
DAPHNIA	1	0	1	
HOLOPEDIUM	6	2	1	
ALL CLADOCERA				103
COPEPODA				
EPISHURA LACUSTRIS	0	0	1	
HARPACTICOIDA	2	0	0	
MACROCYCLOPS	11	0	1	
MESOCYCLOPS	1	0	0	
ALL. COPEPODA				110
OSTRACODA	3	0	0	21

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 13 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	4	1	0	34
ALL AMPHIPODA				34
DIPTERA				
CHIRONOMIDAE	45	6	10	420
EPHEMEROPTERA				
EPHEMERIDAE				
HEXAGENIA	23	14	14	
ALL EPHEMEROPTERA				351
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	0	0	2	
ALL TRICHOPTERA				14
GASTROPODA				
CAMPELOMA	1	0	0	7
ALL GASTROPODA				7
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	82	6	8	
SPHAERIUM	1	0	1	
ALL SPHAERIIDAE				675
ALL PELECYPODA				675

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 14 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	+	+	+	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	57	36	29	840
ALL CNIDARIA				840
TRICLADIDA	5	4	9	124
NEMERTINEA	76	72	51	1370
NEMATODA	5	1	0	41
BRYOZOA	0	+	+	+
OLIGOCHAETA				
SPIROSPERMA	0	1	0	
OTHER	19	5	6	
ALL OLIGOCHAETA				213
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	2	0	14
ALL POLYCHAETA				14
OSTRACODA	0	0	1	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 14 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	1	2	3	41
ALL AMPHIPODA				41
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	78	29	126	1605
ALL DIPTERA				1611
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	0	1	2	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	26	22	72	
HYDROPSYCHE	83	54	152	
LEPTOCERIDAE				
CERACLEA	1	2	0	
ALL TRICHOPTERA				2837
ACARINA	2	1	0	21
GASTROPODA				
AMNICOLA	12	23	3	
ELIMIA LIVESCENS	37	84	21	
FERISSIA	2	1	1	
GYRAULUS	6	2	1	
PHYSA	2	0	5	
ALL GASTROPODA				1377

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 14 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	40	25	15	
SPHAERIUM	6	6	0	
ALL SPHAERIIDAE				634
UNIONIDAE				
TRUNCILLA TRUNCATA	1	1	1	
OTHER	0	2	0	
ALL PELECYPODA				668

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 14 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMERTINEA	15	3	7	172
NEMATODA	0	1	0	7
OLIGOCHAETA				
SPIROSPERMA	2	1	0	
OTHER	30	23	16	
ALL OLIGOCHAETA				496
POLYCHAETA				
MANAYUNKIA SPECIOSA	4	2	9	103
ALL POLYCHAETA				103
CLADOCERA				
BOSMINA	1	0	0	7
ALL CLADOCERA				7
COPEPODA				
DIAPTOMUS	1	0	0	7
ALL COPEPODA				7
AMPHIPODA				
GAMMARUS	3	2	3	55
ALL AMPHIPODA				55
DIPTERA				
CHIRONOMIDAE	0	1	1	14
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	1	1	2	
ALL *EPHEMEROPTERA*				28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 14 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	3	4	37	
ALL TRICHOPTERA				303
ACARINA	2	0	0	14
GASTROPODA				
AMNICOLA	6	1	4	
ELIMIA LIVESCENS	1	1	5	
FERISSIA	0	1	0	
ALL GASTROPODA				131
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	8	4	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				124
ALL PELECYPODA				124

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 14 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMERTINEA	0	2	2	28
NEMATODA	6	2	6	96
OLIGOCHAETA				
BRANCHIURA SOWERBYI	0	1	1	
SPIROSPERMA	1	4	3	
OTHER	48	41	55	
ALL OLIGOCHAETA				1061
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	2	3	34
ALL POLYCHAETA				34
AMPHIPODA				
GAMMARUS	1	0	0	7
ALL AMPHIPODA				7
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	2	3	4	62
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
ALL TRICHOPTERA				7

609-D

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 14 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
ELIMIA LIVESCENS	9	5	5	131
ALL GASTROPODA				131
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	6	2	4	
SPHAERIUM	2	0	1	
ALL SPHAERIIDAE				103
ALL PELECYPODA				103

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

DETROIT RIVER TRANSECT 15 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PORIFERA				
SPONGILLA	+	+	+	+
ALL PORIFERA				0
CNIDARIA				
HYDRA	35	30	22	599
ALL CNIDARIA				599
RHABDOCOELA	1	0	0	7
TRICLADIDA	16	10	4	207
NEMERTINEA	9	5	2	110
NEMATODA	20	8	15	296
BRYOZOA	+	+	0	+
OLIGOCHAETA				
SPIROSPERMA	54	17	17	
STYLARIA	2	1	0	
OTHER	32	30	33	
ALL OLIGOCHAETA				1281

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	6	1	0	48
ALL POLYCHAETA				48
COPEPODA				
DIAPTOMUS	0	2	2	28
ALL COPEPODA				28
AMPHIPODA				
GAMMARUS	25	35	46	730
ALL AMPHIPODA				730
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	223	421	440	7465
EPHEMEROPTERA				
CAENIDAE				
CAENIS	19	9	8	
EPHEMERIDAE				
HEXAGENIA	1	0	0	
BAETISCIDAE				
BAETISCA	1	1	1	
ALL EPHEMEROPTERA				275

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 15 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	105	129	80	
HYDROPSYCHE	122	205	190	
LEPTOCERIDAE				
CERACLEA	1	0	2	
OECETIS	2	0	1	
SETODES	0	1	0	
RHYACOPHILIDAE				
PROTOPTILA	2	1	0	
ALL TRICHOPTERA				5792
ACARINA	0	1	0	7
GASTROPODA				
AMNICOLA	38	30	13	
BITHYNIA	2	0	0	
ELIMIA LIVESCENS	17	15	21	
GYRAULUS	13	12	8	
PHYSA	1	0	0	
ALL GASTROPODA				1171
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	44	51	24	
SPHAERIUM	11	2	1	
ALL SPHAERIIDAE				916
ALL PELECYPODA				916

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

DETROIT RIVER TRANSECT 15 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	33	92	8	916
ALL CNIDARIA				916
TRICLADIDA	0	0	1	7
NEMERTINEA	4	5	6	103
NEMATODA	66	21	3	620
OLIGOCHAETA				
SPIROSPERMA	2	4	1	
OTHER	13	9	19	
ALL OLIGOCHAETA				331
POLYCHAETA				
MANAYUNKIA SPECIOSA	1	0	1	14
ALL POLYCHAETA				14
COPEPODA				
DIAPTOMUS	1	0	1	14
ALL COPEPODA				14
TERRESTRIAL INSECT	0	0	1	7
DIPTERA				
CHIRONOMIDAE	1	0	0	7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 15 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	3	0	0	
ALL EPHEMEROPTERA				21
TRICHOPTERA				
TRICHOPTERA	1	0	0	
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	183	79	92	
HYDROPSYCHE	11	2	4	
ALL TRICHOPTERA				2562
GASTROPODA				
AMNICOLA	0	0	4	
ELIMIA LIVESCENS	31	10	40	
ALL GASTROPODA				585
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	15	6	36	
SPHAERIUM	3	0	2	
ALL SPHAERIIDAE				427
UNIONIDAE				
LAMPSILIS RADIATA SILIQUOIDEA	0	0	1	
OTHER	0	0	2	
ALL PELECYPODA				448

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

DETROIT RIVER TRANSECT 15 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	167	26	30	1536
ALL CNIDARIA				1536
TRICLADIDA	5	1	0	41
NEMERTINEA	9	11	42	427
NEMATODA	6	5	21	220
OLIGOCHAETA				
SPIROSPERMA	6	5	15	
OTHER	7	5	31	
ALL OLIGOCHAETA				475
POLYCHAETA				
MANAYUNKIA SPECIOSA	12	1	0	90
ALL POLYCHAETA				90
CLADOCERA				
BOSMINA	2	0	0	
DAPHNIA	0	1	0	
ALL CLADOCERA				21
OSTRACODA	1	0	0	7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/10/84

TRANSECT 15 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	2	1	0	21
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	8	2	6	
ALL EPHEMEROPTERA				110
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	700	210	153	
HYDROPSYCHE	87	16	6	
LEPTOCERIDAE				
CERACLEA	2	0	1	
OECETIS	1	0	0	
RHYACOPHILIDAE				
PROTOPTILA	1	0	0	
ALL TRICHOPTERA				8106
ACARINA	1	0	0	7
GASTROPODA				
AMNICOLA	0	0	2	
ELIMIA LIVESCENS	9	0	7	
ALL GASTROPODA				124
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	9	35	
SPHAERIUM	2	0	3	
ALL SPHAERIIDAE				406
UNIONIDAE	0	0	2	
ALL PELECYPODA				420

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 16 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	9	0	0	62
ALL CNIDARIA				62
RHABDOCOELA	23	27	35	585
TRICLADIDA	2	0	1	21
NEMATODA	148	57	57	1804
HIRUDINEA				
ERPOBDELLIDAE	1	1	1	
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	3	1	0	
ALL HIRUDINEA				48
OLIGOCHAETA				
NAIS	0	0	4	
SPIROSPERMA	0	0	1	
STYLARIA	95	92	93	
OTHER	178	260	264	
ALL OLIGOCHAETA				6797
CLADOCERA				
SIDA CRYSTALLINA	12	1	8	145
ALL CLADOCERA				145

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	0	1	7
AMPHIPODA				
GAMMARUS	4	11	7	
HYALELLA AZTECA	14	4	12	
ALL AMPHIPODA				358
ISOPODA				
ASELLUS	2	7	0	62
ALL ISOPODA				62
DIPTERA				
CERATOPOGONIDAE	4	1	0	
CHIRONOMIDAE	220	324	200	5124
CULICIDAE				
CHAOBORUS	0	1	0	
ALL DIPTERA				5165
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	1	
EPHEMERIDAE				
HEXAGENIA	4	1	0	
ALL EPHEMEROPTERA				48
LEPIDOPTERA				
PYRALIDAE	1	0	0	7
ALL LEPIDOPTERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 16 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
NECTOPSYCHE	1	0	0	
OECETIS	9	0	1	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	4	3	1	
ALL TRICHOPTERA				131
GASTROPODA				
AMNICOLA	32	17	16	
GYRAULUS	85	48	35	
PHYSA	34	5	13	
PLEUROCERA ACUTA	0	0	1	
ALL GASTROPODA				1970
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	10	0	0	69
ALL PELECYPODA				69

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 16 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	0	1	7
ALL CNIDARIA				7
RHABDOCOELA	7	10	21	262
TRICLADIDA	17	2	10	200
NEMERTINEA	5	1	18	165
NEMATODA	134	69	190	2706
HIRUDINEA				
ERPOBDELLIDAE	1	0	0	
GLOSSIPHONIIDAE				
ACTINOBDELLA INEQUIANNULATA	1	0	0	
GLOSSIPHONIA HETEROCLITA	0	0	1	
ALL HIRUDINEA				21
OLIGOCHAETA				
SPIROSPERMA	1	8	9	
STYLARIA	11	0	1	
OTHER	168	81	289	
ALL OLIGOCHAETA				3912

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
SIDA CRYSTALLINA	33	4	8	310
ALL CLADOCERA				310
COPEPODA				
HARPACTICOIDA	24	0	0	165
ALL COPEPODA				165
AMPHIPODA				
GAMMARUS	21	0	14	
HYALELLA AZTECA	6	2	0	
ALL AMPHIPODA				296
ISOPODA				
ASELLUS	6	0	11	117
ALL ISOPODA				117
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CERATOPOGONIDAE	0	0	2	
CHIRONOMIDAE	101	77	74	1735
ALL DIPTERA				1749
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	1	0	
EPHEMERIDAE				
HEXAGENIA	19	27	8	
ALL EPHEMEROPTERA				386

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 16 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
LEPTOCERIDAE				
OECETIS	3	0	2	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	8	9	4	
POLYCENTROPUS	2	0	0	
ALL TRICHOPTERA				193
ACARINA	3	1	1	34
GASTROPODA				
AMNICOLA	19	2	40	
ELIMIA LIVESCENS	1	0	0	
GYRAULUS	1	0	1	
PHYSA	2	0	5	
PLEUROCERA ACUTA	1	1	6	
ALL GASTROPODA				544
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	23	50	37	
SPHAERIUM	0	1	0	
ALL SPHAERIIDAE				764
UNIONIDAE	1	0	0	
ALL PELECYPODA				771

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 16 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	12	2	1	103
NEMERTINEA	0	0	4	28
NEMATODA	37	5	5	324
OLIGOCHAETA				
SPIROSPERMA	11	20	1	
STYLARIA	0	0	1	
OTHER	87	109	90	
ALL OLIGOCHAETA				2197
POLYCHAETA				
MANAYUNKIA SPECIOSA	26	12	6	303
ALL POLYCHAETA				303
CLADOCERA				
BOSMINA	0	0	1	
EURYCERCUS LAMELLATUS	4	0	0	
SIDA CRYSTALLINA	1	0	0	
ALL CLADOCERA				41
COPEPODA				
EPISHURA LACUSTRIS	1	0	0	7
ALL COPEPODA				7
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	1	1	0	
CHIRONOMIDAE	51	26	18	654
ALL DIPTERA				668
EPHEMEROPTERA				
CAENIDAE				
BRACHYCERCUS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	18	1	6	
ALL EPHEMEROPTERA				179
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	0	2	0	
HYDROPSYCHE	0	1	1	
LEPTOCERIDAE				
OECETIS	7	5	1	
ALL TRICHOPTERA				117
ACARINA	3	0	0	21
GASTROPODA				
AMNICOLA	5	3	7	
PLEURDCERA ACUTA	3	0	1	
ALL GASTROPODA				131

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 16 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	23	18	25	
SPHAERIUM	0	2	1	
ALL SPHAERIIDAE				475
UNIONIDAE				
LAMPSILIS	0	1	0	
OTHER	1	1	0	
ALL PELECYPODA				496

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 17 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
RHABDOCOELA	5	6	10	145
TRICLADIDA	2	1	2	34
NEMERTINEA	4	10	0	96
NEMATODA	165	143	209	3560
HIRUDINEA				
ERPOBDELLIDAE	0	1	0	
GLOSSIPHONIIDAE				
HELOBDELLA ELONGATA	0	1	0	
HELOBDELLA STAGNALIS	0	2	2	
ALL HIRUDINEA				41
OLIGOCHAETA				
SPIROSPERMA	19	13	2	
STYLARIA	8	11	8	
OTHER	209	257	228	
ALL OLIGOCHAETA				5199

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
POLYCHAETA				
MANAYUNKIA SPECIOSA	10	12	26	331
ALL POLYCHAETA				331
CLADOCERA				
BOSMINA	3	0	0	
SIDA CRYSTALLINA	4	1	19	
ALL CLADOCERA				186
COPEPODA				
HARPACTICOIDA	36	215	0	
MACROCYCLOPS	1	0	0	
ALL COPEPODA				1735
OSTRACODA	0	0	1	7
AMPHIPODA				
GAMMARUS	4	5	7	
HYALELLA AZTECA	0	0	1	
ALL AMPHIPODA				117
ISOPODA				
ASELLUS	15	7	5	186
ALL ISOPODA				186
DIPTERA				
CHIRONOMIDAE	74	116	67	1770

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
EPHEMERIDAE				
HEXAGENIA	7	10	19	
ALL EPHEMEROPTERA				255
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	1	0	
HYDROPSYCHE	1	0	1	
LEPTOCERIDAE				
OECETIS	1	0	0	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	4	0	3	
ALL TRICHOPTERA				83
ACARINA	2	4	0	41
GASTROPODA				
AMNICOLA	12	27	23	
ELIMIA LIVESCENS	0	3	2	
FERISSIA	0	3	0	
GYRAULUS	3	1	3	
PHYSA	4	5	1	
PLEUROCERA ACUTA	0	3	0	
ALL GASTROPODA				620

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 17 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	75	51	27	1054
UNIONIDAE	0	1	0	
ALL PELECYPODA				1061

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 17 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	11	5	19	241
ALL CNIDARIA				241
TRICLADIDA	0	2	5	48
NEMERTINEA	15	3	29	324
NEMATODA	41	12	20	503
OLIGOCHAETA				
SPIROSPERMA	4	8	21	
STYLARIA	0	1	0	
OTHER	10	19	7	
ALL OLIGOCHAETA				482
POLYCHAETA				
MANAYUNKIA SPECIOSA	397	477	234	7630
ALL POLYCHAETA				7630
CLADOCERA				
BOSMINA	2	1	2	
DAPHNIA	1	0	0	
ALL CLADOCERA				41
COPEPODA				
HARPACTICOIDA	1	0	0	7
ALL COPEPODA				7

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
OSTRACODA	0	1	0	7
TERRESTRIAL INSECT	1	0	0	7
DIPTERA				
CHIRONOMIDAE	10	1	6	117
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	12	9	17	
ALL EPHEMEROPTERA				262
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	374	158	444	
HYDROPSYCHE	26	10	9	
LEPTOCERIDAE				
CERACLEA	0	0	1	
ALL TRICHOPTERA				7038
ACARINA	2	0	1	21
GASTROPODA				
AMNICOLA	29	21	19	
ELIMIA LIVESCENS	32	2	20	
PHYSA	0	1	0	
PLEUROCERA ACUTA	1	0	2	
VALVATA SINCERA	0	1	0	
ALL GASTROPODA				881

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 17 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE	25	9	25	
PISIDIUM	7	2	4	
SPHAERIUM				486
ALL SPHAERIIDAE				
UNIONIDAE	0	0	1	
LAMPSILIS	2	0	1	
OTHER				523
ALL PELECYPODA				

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

DETROIT RIVER TRANSECT 17 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
CORDYLOPHORA LACUSTRIS	0	1	0	
HYDRA	0	11	0	
ALL CNIDARIA				83
RHABDOCOELA	0	0	1	7
TRICLADIDA	0	10	0	69
NEMERTINEA	39	7	11	393
NEMATODA	41	41	21	709
OLIGOCHAETA				
NAIS	0	1	0	
SPIROSPERMA	16	23	37	
OTHER	84	27	83	
ALL OLIGOCHAETA				1866
POLYCHAETA				
MANAYUNKIA SPECIOSA	1027	239	220	10234
ALL POLYCHAETA				10234
CLADOCERA				
BOSMINA	0	1	0	
DAPHNIA	0	1	0	
ALL CLADOCERA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
HARPACTICOIDA	0	0	4	28
ALL COPEPODA				28
TERRESTRIAL INSECT	0	0	4	28
DIPTERA				
CHIRONOMIDAE	3	6	25	234
EPHEMEROPTERA				
CAENIDAE				
BRACHYCERCUS	0	0	1	
EPHEMERIDAE				
HEXAGENIA	0	1	0	
BAETISCIDAE				
BAETISCA	11	3	2	
HEPTAGENIIDAE				
STENONEMA	0	2	0	
ALL EPHEMEROPTERA				138
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	30	14	1	
HYDROPSYCHE	4	1	0	
LEPTOCERIDAE				
CERACLEA	0	1	0	
OECETIS	0	1	1	
POLYCENTROPODIDAE				
PHYLOCENTROPUS	0	0	1	
ALL TRICHOPTERA				372

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/ 9/84

TRANSECT 17 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	17	21	66	
ELIMIA LIVESCENS	0	1	5	
ALL GASTROPODA				758
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	4	6	52	
SPHAERIUM	2	1	2	
ALL SPHAERIIDAE				461
UNIONIDAE	0	0	2	
ALL PELECYPODA				475

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 18 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	24	60	40	854
TRICLADIDA	85	86	198	2541
NEMERTINEA	66	79	106	1729
NEMATODA	20	120	35	1205
HIRUDINEA				
GLOSSIPHONIIDAE				
GLOSSIPHONIA HETEROCLITA	0	1	1	
ALL HIRUDINEA				14
OLIGOCHAETA				
NAIS	99	90	115	
SPIROSPERMA	268	437	317	
STYLARIA	182	24	601	
OTHER	1566	3229	1371	
ALL OLIGOCHAETA				57152
CLADOCERA				
CAMPTOCERCUS	0	0	17	
SIDA CRYSTALLINA	0	8	0	
ALL CLADOCERA				172

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
COPEPODA				
CYCLOPS BICUSPIDATUS	0	8	0	
HARPACTICOIDA	16	0	0	
ALL COPEPODA				165
DECAPODA				
ASTACIDAE	0	2	0	14
ALL DECAPODA				14
AMPHIPODA				
GAMMARUS	3	0	38	
HYALELLA AZTECA	0	2	1	
ALL AMPHIPODA				303
ISOPODA				
ASELLUS	0	1	0	7
ALL ISOPODA				7
DIPTERA				
CHIRONOMIDAE	29	42	12	572
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	1	1	6	
POLYCENTROPODIDAE				
POLYCENTROPUS	4	1	6	
ALL TRICHOPTERA				131
ODONATA				
COENAGRIONIDAE	1	0	4	34

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 18 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	3	5	
FERISSIA	97	202	494	
GYRAULUS	48	9	31	
PHYSA	5	12	64	
VALVATA TRICARINATA	0	1	0	
ALL GASTROPODA				6694
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	5	28	20	365
ALL PELECYPODA				365

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 18 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	23	55	8	592
TRICLADIDA	12	0	0	83
NEMERTINEA	1	16	16	227
NEMATODA	32	2	16	344
OLIGOCHAETA				
NAIS	64	128	96	
SPIROSPERMA	6	54	85	
OTHER	1718	6206	2963	
ALL OLIGOCHAETA				77957
CLADOCERA				
ILYOCRYPTUS	1	0	0	7
ALL CLADOCERA				7
AMPHIPODA				
GAMMARUS	1	0	1	14
ALL AMPHIPODA				14
DIPTERA				
CERATOPOGONIDAE	1	0	0	
CHIRONOMIDAE	24	1	34	406
ALL DIPTERA				413

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 18 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ODONATA				
GOMPHIDAE				
GOMPHUS	1	0	0	7
ALL ODONATA				7
GASTROPODA				
FERISSIA	1	1	0	
GYRAULUS	1	16	0	
PHYSA	1	0	0	
ALL GASTROPODA				138
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	1	0	14
ALL PELECYPODA				14

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 18 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	30	56	38	854
TRICLADIDA	0	3	0	21
NEMERTINEA	48	18	178	1680
NEMATODA	0	0	16	110
OLIGOCHAETA				
NAIS	0	0	16	
SPIROSPERMA	112	36	48	
OTHER	2129	2517	3547	
ALL OLIGOCHAETA				57882
CLADOCERA				
SIDA CRYSTALLINA	0	0	16	110
ALL CLADOCERA				110
OSTRACODA	0	1	0	7
DIPTERA				
CHIRONOMIDAE	0	0	4	28

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 19 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	34	37	35	730
TRICLADIDA	25	2	12	269
NEMERTINEA	110	43	102	1756
NEMATODA	82	129	123	2300
OLIGOCHAETA				
NAIS	5	4	4	
SPIROSPERMA	95	47	77	
STYLARIA	13	38	30	
OTHER	168	58	123	
ALL OLIGOCHAETA				4559
POLYCHAETA				
MANAYUNKIA SPECIOSA	202	334	402	6460
ALL POLYCHAETA				6460

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MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	0	4	2	
CAMPTOCERCUS	0	0	1	
EURYCERCUS LAMELLATUS	0	1	0	
HOLOPEDIUM	0	2	0	
SIDA CRYSTALLINA	1	1	1	
ALL CLADOCERA				90
COPEPODA				
CYCLOPS BICUSPIDATUS	0	2	0	
HARPACTICOIDA	5	6	11	
ALL COPEPODA				165
AMPHIPODA				
GAMMARUS	1	1	4	41
ALL *AMPHIPODA*				41
TERRESTRIAL INSECT	0	2	0	14
DIPTERA				
CERATOPOGONIDAE	0	5	0	
CHIRONOMIDAE	10	0	6	110
EMPIDIDAE	0	1	0	
ALL DIPTERA				152

13-644

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 19 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPTILIDAE				
HYDROPTILA	5	3	1	
ORTHOTRICHIA	0	1	0	
POLYCENTROPODIDAE				
POLYCENTROPUS	0	0	1	
ALL TRICHOPTERA				76
ACARINA	19	1	17	255
GASTROPODA				
AMNICOLA	29	3	13	
ELIMIA LIVESCENS	7	2	4	
FERISSIA	1	0	0	
GYRAULUS	0	4	4	
PHYSA	2	0	8	
ALL GASTROPODA				530
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	47	64	47	1088
ALL PELECYPODA				1088

13-645

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 19 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	0	1	7
NEMERTINEA	106	233	145	3347
NEMATODA	22	78	105	1412
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	27	16	29	
STYLARIA	0	0	1	
OTHER	55	18	38	
ALL OLIGOCHAETA				1274
POLYCHAETA				
MANAYUNKIA SPECIOSA	4	1	6	76
ALL POLYCHAETA				76
CLADOCERA				
BOSMINA	0	3	0	21
ALL CLADOCERA				21
COPEPODA				
DIAPTOMUS	0	0	1	
HARPACTICOIDA	1	0	0	
ALL COPEPODA				14
DIPTERA				
CHIRONOMIDAE	0	0	1	7

919-81

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 19 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
ACARINA	0	0	1	7
GASTROPODA				
AMNICOLA	1	1	2	
ELIMIA LIVESCENS	3	4	3	
FERISSIA	0	1	0	
ALL GASTROPODA				103

L47 S

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 19 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMERTINEA	38	109	132	1921
NEMATODA	4	4	3	76
BRYOZOA	0	+	0	+
OLIGOCHAETA				
NAIS	0	0	1	
SPIROSPERMA	25	17	10	
STYLARIA	1	0	0	
OTHER	10	3	2	
ALL OLIGOCHAETA				475
POLYCHAETA				
MANAYUNKIA SPECIOSA	14	3	7	165
ALL POLYCHAETA				165
CLADOCERA				
BOSMINA	0	1	1	
EURYCERCUS LAMELLATUS	0	1	0	
ALL CLADOCERA				21
COPEPODA				
HARPACTICOIDA	0	1	0	7
ALL COPEPODA				7
TERRESTRIAL INSECT	0	1	0	7

B-619

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 19 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CHIRONOMIDAE	1	0	0	7
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	2	0	0	
ALL EPHEMEROPTERA				14
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	1	0	0	
HYDROPSYCHE	3	0	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	1	
ALL TRICHOPTERA				41
ACARINA	0	2	4	41
GASTROPODA				
AMNICOLA	1	2	0	
ELIMIA LIVESCENS	2	1	6	
PHYSA	0	2	0	
ALL GASTROPODA				96

B-646

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 20 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	37	126	53	1488
TRICLADIDA	16	43	19	537
NEMERTINEA	5	9	3	117
NEMATODA	32	167	38	1632
HIRUDINEA				
GLOSSIPHONIIDAE				
HELOBDELLA TRISERIALIS	0	0	1	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	108	192	109	
SPIROSPERMA	94	83	110	
STYLARIA	414	177	497	
OTHER	60	383	196	
ALL OLIGOCHAETA				16686
POLYCHAETA				
MANAYUNKIA SPECIOSA	18	88	38	992
ALL POLYCHAETA				992

B-C 50

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	0	6	0	
CAMPTOCERCUS	4	0	1	
EURYCERCUS LAMELLATUS	0	2	2	
HOLOPEDIUM	0	1	0	
SIDA CRYSTALLINA	2	0	5	
ALL CLADOCERA				158
COPEPODA				
CYCLOPS VERNALIS	0	1	2	
DIAPTOMUS	0	4	0	
EUCYCLOPS	2	1	0	
EURYTEMORA	1	0	1	
HARPACTICOIDA	0	4	0	
MACROCYCLOPS	0	4	0	
ALL COPEPODA				138
AMPHIPODA				
GAMMARUS	36	95	37	
HYALELLA AZTECA	28	15	7	
ALL AMPHIPODA				1501
ISOPODA				
ASELLUS	3	11	4	124
ALL ISOPODA				124

159-8

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
DIPTERA				
CERATOPOGONIDAE	0	0	1	
CHIRONOMIDAE	75	150	108	2293
EMPIDIDAE	0	1	0	
ALL DIPTERA				2307
EPHEMEROPTERA				
CAENIDAE				
CAENIS	4	24	23	
EPHEMERIDAE				
HEXAGENIA	0	0	1	
AMETROPIDAE				
TRICHORYTHODES	0	1	1	
ALL EPHEMEROPTERA				372
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	7	1	
HYDROPSYCHE	1	1	0	
HYDROPTILIDAE				
HYDROPTILA	1	1	0	
ORTHOTRICHIA	0	2	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	77	63	12	
POLYCENTROPUS	0	0	1	
ALL TRICHOPTERA				1171
ACARINA	32	51	54	943

259-1

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 20 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	34	49	38	
ELIMIA LIVESCENS	0	2	1	
FERISSIA	43	45	46	
GYRAULUS	9	17	22	
PHYSA	6	17	18	
ALL GASTROPODA				2390
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	38	52	136	
SPHAERIUM	1	0	0	
ALL SPHAERIIDAE				1563
ALL PELECYPODA				1563

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 20 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
NEMERTINEA	39	31	28	675
NEMATODA	59	84	91	1611
OLIGOCHAETA				
NAIS	0	1	1	
OTHER	6	9	8	
ALL OLIGOCHAETA				172
CLADOCERA				
BOSMINA	0	0	1	7
ALL CLADOCERA				7
AMPHIPODA				
GAMMARUS	4	0	0	28
ALL AMPHIPODA				28
DIPTERA				
CHIRONOMIDAE	2	0	1	21
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	0	1	
BAETISCIDAE				
BAETISCA	1	0	0	
AMETROPIDAE				
TRICHORYTHODES	0	1	0	
ALL EPHEMEROPTERA				21

159-A

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 20 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	2	3	0	
HYDROPSYCHE	4	6	2	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	0	1	
ALL TRICHOPTERA				124
ACARINA	0	0	2	14
GASTROPODA				
ELIMIA LIVESCENS	20	16	17	
PHYSA	1	1	0	
ALL GASTROPODA				379
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	1	0	0	7
ALL PELECYPODA				7

19-655

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 20 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CNIDARIA				
HYDRA	0	1	0	7
ALL CNIDARIA				7
RHABDOCOELA	0	1	0	7
TRICLADIDA	1	2	1	28
NEMERTINEA	89	71	25	1274
NEMATODA	106	37	42	1274
OLIGOCHAETA				
SPIROSPERMA	3	2	0	
OTHER	2	2	1	
ALL OLIGOCHAETA				69
POLYCHAETA				
MANAYUNKIA SPECIOSA	3	0	1	28
ALL POLYCHAETA				28
CLADOCERA				
BOSMINA	1	0	0	
ILYOCRYPTUS	0	0	1	
ALL CLADOCERA				14

159-81

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 20 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
AMPHIPODA				
GAMMARUS	4	2	1	48
ALL AMPHIPODA				48
TERRESTRIAL INSECT	0	1	0	7
DIPTERA				
CHIRONOMIDAE	2	0	0	14
EPHEMEROPTERA				
CAENIDAE				
CAENIS	1	0	0	
BAETISCIDAE				
BAETISCA	2	1	2	
AMETROPIDAE				
TRICHORYTHODES	0	1	0	
ALL EPHEMEROPTERA				48
TRICHOPTERA				
HYDROPSYCHIDAE				
CHEUMATOPSYCHE	76	3	12	
HYDROPSYCHE	68	21	5	
MACROSTEMUM	1	0	0	
POTAMYIA	1	0	0	
LEPTOCERIDAE				
CERACLEA	0	2	1	
POLYCENTROPODIDAE				
NEURECLIPSIS	2	0	0	
ALL TRICHOPTERA				1322
ACARINA	0	3	1	28

L59-84

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 20 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	1	0	0	
ELIMIA LIVESCENS	12	17	3	
FERISSIA	1	0	0	
PHYSA	2	0	0	
ALL GASTROPODA				248
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	0	1	7
ALL PELECYPODA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 21 STATION 1

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	44	28	86	1088
TRICLADIDA	7	9	14	207
NEMERTINEA	31	46	62	957
NEMATODA	173	107	189	3230
HIRUDINEA				
GLOSSIPHONIIDAE				
BATRACOBDELLA PHALERA	1	0	0	
ALL HIRUDINEA				7
OLIGOCHAETA				
NAIS	24	15	34	
SPIROSPERMA	72	252	90	
STYLARIA	43	40	46	
OTHER	136	217	143	
ALL OLIGOCHAETA				7658
POLYCHAETA				
MANAYUNKIA SPECIOSA	261	1386	311	13484
ALL POLYCHAETA				13484

18-6-57

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
CLADOCERA				
BOSMINA	0	0	4	
CAMPTOCERCUS	4	0	0	
SIDA CRYSTALLINA	20	10	12	
ALL CLADOCERA				344
COPEPODA				
MACROCYCLOPS	37	19	60	799
ALL COPEPODA				799
AMPHIPODA				
GAMMARUS	6	1	10	117
ALL AMPHIPODA				117
DIPTERA				
CHIRONOMIDAE	17	67	49	916
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	1	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	0	1	0	
POLYCENTROPUS	4	0	4	
ALL TRICHOPTERA				69
ACARINA	10	3	3	110

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 21 STATION 1 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
GASTROPODA				
AMNICOLA	22	17	21	
FERISSIA	2	14	1	
GYRAULUS	5	1	0	
PHYSA	4	5	1	
PLEUROCERA ACUTA	1	1	0	
ALL GASTROPODA				654
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	31	106	30	1150
ALL PELECYPODA				1150

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 21 STATION 2

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	12	2	7	145
NEMERTINEA	9	360	23	2700
NEMATODA	2	6	8	110
OLIGOCHAETA				
SPIROSPERMA	19	9	61	
OTHER	495	147	342	
ALL OLIGOCHAETA				7389
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	20	0	138
ALL POLYCHAETA				138
COPEPODA				
HARPACTICOIDA	0	10	0	69
ALL COPEPODA				69
AMPHIPODA				
GAMMARUS	1	0	1	14
ALL AMPHIPODA				14
DIPTERA				
CHIRONOMIDAE	6	0	1	48
EPHEMEROPTERA				
BAETISCIDAE				
BAETISCA	0	1	0	
ALL EPHEMEROPTERA				7

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 21 STATION 2 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	39	33	496
ALL PELECYPODA				496

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

DETROIT RIVER TRANSECT 21 STATION 3

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
RHABDOCOELA	0	0	5	34
NEMERTINEA	3	114	12	888
NEMATODA	5	43	4	358
OLIGOCHAETA				
SPIROSPERMA	0	53	8	
OTHER	0	63	230	
ALL OLIGOCHAETA				2438
POLYCHAETA				
MANAYUNKIA SPECIOSA	0	11	12	158
ALL POLYCHAETA				158
COPEPODA				
DIAPTOMUS	0	1	0	
HARPACTICOIDA	0	6	0	
ALL COPEPODA				48
AMPHIPODA				
GAMMARUS	0	1	0	7
ALL AMPHIPODA				7
DIPTERA				
CHIRONOMIDAE	0	0	2	14

B-669

MACROZOOBENTHOS PONAR GRAB COUNT DATA 10/11/84

TRANSECT 21 STATION 3 (CONT'D)

TAXON	GRAB COUNTS 1	2	3	ESTIMATED NO./SQ. METER
EPHEMEROPTERA				
CAENIDAE				
CAENIS	0	1	0	
ALL EPHEMEROPTERA				7
TRICHOPTERA				
HYDROPSYCHIDAE				
HYDROPSYCHE	9	0	0	
POLYCENTROPODIDAE				
NEURECLIPSIS	1	0	0	
ALL TRICHOPTERA				69
GASTROPODA				
AMNICOLA	1	0	0	
ELIMIA LIVESCENS	1	5	0	
ALL GASTROPODA				48
PELECYPODA				
SPHAERIIDAE				
PISIDIUM	0	3	21	165
ALL PELECYPODA				165

S90-21

APPENDIX C

Density and Percent Frequency of Occurrence of Macrozoobenthos: A Summary by Taxon, Year, and Location

Density (No./m^2) and percent frequency of occurrence (PCT) of macrozoobenthos taxa from five locations in the SCDRS in May and October 1983 and 1984. The upper St. Clair River location includes transects I - V; the lower St. Clair River, VI - X; Lake St. Clair, XI - XIII; upper Detroit River, XIV - XVII; and lower Detroit River, XVIII - XXI. The number of samples collected per year at each location is given as n, and a dot (.) indicates zero occurrence.

Appendix C
Table 1. Density and percent frequency of occurrence of macrozoobenthos taxa from five locations in the SCDRS in May and October, 1983 and 1984.

Taxon or item	Year	Location: Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Ichthyomyzon fossor	1984	0.92	10.0	.	.	.	.	.	.	.	.
Etheostoma nigrum	1983	.	.	.	.	.	.	.	.	0.29	4.2
	1984	.	.	.	.	.	.	.	.	0.29	4.2
Etheostoma caeruleum	1983	0.23	3.3	.	.	.	.	.	.	.	.
Cottus bairdii	1983	0.46	6.7	0.23	3.3	.	.	.	.	.	.
Fish remains	1984	0.23	3.3	.	.	.	.	.	.	.	.
Fish eggs	1983	46.14	26.7	8.03	16.7	.	.	.	.	.	.
	1984	2.30	20.0	.	.	.	.	2.58	20.8	.	.
Spongilla	1983	0.23	3.3	.	.	2.30	16.7	.	.	.	.
	1984	0.23	3.3	1.38	13.3	.	.	3.16	16.7	.	.
Cordylophora lacustris	1984	.	.	.	.	.	.	0.29	4.2	.	.
Hydra	1983	3624.91	86.7	8429.05	93.3	55.86	33.3	2524.82	95.8	885.51	66.7
	1984	30490.49	86.7	21466.89	63.3	6.12	22.2	574.75	83.3	37.88	37.5
Rhabdocoela	1983	158.85	70.0	603.96	96.7	29.46	77.8	154.38	83.3	419.80	87.5
	1984	71.85	43.3	122.35	70.0	33.29	94.4	70.30	58.3	306.17	79.2
Tricladida	1983	17.68	16.7	127.40	66.7	1.91	22.2	56.53	33.3	161.55	45.8
	1984	28.24	50.0	56.24	43.3	4.97	50.0	45.05	70.8	170.73	62.5
Nemertinea	1983	69.56	66.7	80.57	80.0	1.91	16.7	276.61	91.7	641.89	95.8
	1984	233.69	53.3	28.69	36.7	0.77	5.6	237.02	83.3	808.04	91.7
Trematoda	1983	.	.	.	.	.	.	0.29	4.2	.	.
Nematoda	1983	532.80	86.7	1010.96	100.0	1293.93	100.0	1354.95	100.0	834.43	95.8
	1984	287.86	80.0	525.22	100.0	1164.61	100.0	1205.74	100.0	1241.90	100.0
Bryozoa	1984	0.23	3.3	0.23	3.3	.	.	1.15	8.3	0.29	4.2
Hirudinea	1983	0.46	6.7	.	.	.	.	.	.	.	.
Erpobdellidae	1983	1.38	13.3	1.15	6.7	.	.	8.03	20.8	0.29	4.2
	1984	2.98	23.3	0.69	3.3	.	.	5.16	25.0	.	.
Erpobdella punctata	1983	0.46	3.3	.	.	.	.	1.15	4.2	.	.
	1984	0.46	3.3	.	.	.	.	.	.	.	.
Glossiphoniidae	1983	.	.	.	.	.	.	0.86	12.5	.	.
Glossiphonia complanata	1983	.	.	0.92	10.0	.	.	.	.	.	.
	1984	.	.	0.23	3.3	0.38	5.6	.	.	.	.
Glossiphonia heteroclita	1983	.	.	1.15	6.7	.	.	1.43	8.3	.	.
	1984	.	.	0.23	3.3	.	.	1.15	12.5	0.57	4.2
Helobdella stagnalis	1983	0.46	6.7	2.07	6.7	4.59	44.4	1.43	12.5	.	.
	1984	.	.	0.46	3.3	1.53	16.7	1.43	8.3	.	.
Helobdella elongata	1983	0.46	3.3	0.46	3.3	7.65	38.9	1.72	12.5	.	.
	1984	.	.	1.84	13.3	6.12	27.8	3.16	16.7	.	.
Helobdella triserialis	1983	0.23	3.3	0.23	3.3	.	.	2.30	8.3	.	.
	1984	.	.	.	.	.	.	.	.	0.29	4.2

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Helobdella papillata	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
Actinobdella inequiannulata	1984	0.23	3.3	.	.	.	.	0.29	4.2	.	.
Placobdella montifera	1983	.	.	.	.	0.77	11.1	.	.	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
Placobdella papillifera	1984	0.23	3.3	.	.	.	.	.	.	.	.
Batracobdella phalera	1983	.	.	.	.	.	.	.	.	0.29	4.2
	1984	.	.	0.23	3.3	.	.	.	.	0.29	4.2
Piscicolidae	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
	1984	0.92	3.3	0.23	3.3	0.38	5.6	.	.	.	.
Piscicola	1983	0.92	10.0	0.23	3.3	.	.	0.29	4.2	.	.
	1984	0.69	6.7	0.92	10.0	.	.	.	.	.	.
Piscicola milneri	1983	.	.	0.46	6.7	.	.	.	.	.	.
	1984	0.46	3.3	0.46	3.3	.	.	.	.	.	.
Oligochaeta	1983	3291.83	90.0	5975.79	100.0	3627.36	100.0	3048.21	100.0	25742.36	100.0
	1984	3927.47	80.0	4064.05	100.0	3979.73	100.0	3090.68	100.0	18195.15	100.0
Nais	1983	276.16	56.7	114.09	66.7	5.36	22.2	7.46	29.2	70.59	41.7
	1984	837.42	43.3	181.35	43.3	.	.	16.93	25.0	426.40	58.3
Stylaria	1983	69.56	23.3	399.66	40.0	0.77	5.6	101.58	29.2	269.15	29.2
	1984	986.63	36.7	987.32	43.3	0.38	5.6	92.97	25.0	605.74	37.5
Branchiura	1983	.	.	.	.	.	.	2.58	12.5	.	.
	1984	.	.	.	.	.	.	1.15	4.2	.	.
Branchiura sowerbyi	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	.	.	0.57	4.2	.	.
Spirosperma	1983	273.40	56.7	1189.10	86.7	55.09	77.8	347.20	95.8	951.51	100.0
	1984	416.41	53.3	494.46	90.0	45.15	66.7	309.90	100.0	1038.74	95.8
Spirosperma ferox	1983	.	.	44.07	3.3	.	.	.	.	.	.
Manayunkia speciosa	1983	8.49	46.7	1101.18	63.3	661.12	100.0	3635.87	95.8	2484.08	91.7
	1984	0.69	10.0	1117.25	50.0	957.63	100.0	1193.98	83.3	1106.46	70.8
Eurycercus lamellatus	1983	.	.	0.23	3.3	.	.	.	.	0.29	4.2
	1984	3.90	6.7	0.69	6.7	6.12	16.7	1.15	4.2	1.72	12.5
Camptocercus	1983	.	.	.	.	.	.	.	.	4.59	4.2
	1984	0.23	3.3	.	.	.	.	.	.	7.75	16.7
Chydorus	1983	0.23	3.3	.	.	0.38	5.6	.	.	.	.
Alona	1983	.	.	7.35	3.3	.	.	5.45	16.7	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
Sida crystallina	1983	1.38	10.0	2.75	16.7	0.38	5.6	0.86	8.3	1.15	8.3
	1984	0.23	3.3	.	.	.	.	26.11	16.7	21.81	20.8
Diaphanosoma	1983	0.23	3.3	.	.	.	.	0.29	4.2	.	.
Holopedium	1983	1.15	16.7	.	.	.	.	.	.	.	.
	1984	76.21	50.0	160.46	50.0	77.67	50.0	.	.	0.86	8.3

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Leptodora kindtii	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	0.23	3.3	.	.	.	.	.	.	.	.
Daphnia	1983	1/7.45	90.0	48.44	70.0	6.89	55.6	20.09	45.8	7.46	37.5
	1984	259.40	53.3	108.58	70.0	82.26	55.6	3.73	20.8	0.57	8.3
Daphnia pulex	1983	1.61	10.0	2.07	13.3	.	.	.	.	.	.
Daphnia galeata mendotae	1983	6.89	3.3	0.46	6.7	.	.	.	.	.	.
Daphnia ambigua	1983	.	.	0.46	6.7	.	.	.	.	.	.
Daphnia pulicaria	1983	.	.	0.92	10.0	.	.	.	.	.	.
Bosmina	1983	4.59	36.7	1.84	23.3	1.53	22.2	2.30	20.8	0.57	8.3
	1984	148.06	46.7	97.10	50.0	1.53	5.6	3.73	25.0	6.60	29.2
Ilyocryptus	1983	7.35	13.3	51.88	40.0	62.75	38.9	2.01	12.5	13.49	20.8
	1984	0.46	6.7	1.61	6.7	4.21	11.1	0.57	4.2	0.57	8.3
Polyphemus pediculus	1984	.	.	.	.	0.38	5.6	.	.	.	.
Limnocalanus	1983	12.86	56.7	14.92	50.0	11.10	50.0	14.06	41.7	21.52	50.0
	1984	10.79	40.0	41.09	50.0	19.51	44.4	12.34	41.7	25.54	45.8
Epischura lacustris	1983	27.09	43.3	0.92	13.3	2.68	22.2	0.29	4.2	2.58	8.3
	1984	28.69	26.7	11.02	36.7	0.77	11.1	0.29	4.2	.	.
Eurytemora	1983	.	.	.	.	.	.	.	.	4.59	4.2
	1984	.	.	0.23	3.3	.	.	.	.	0.57	4.2
Diaptomus	1983	86.31	86.7	107.20	66.7	12.63	66.7	35.58	66.7	57.10	70.8
	1984	208.44	96.7	119.37	90.0	21.04	44.4	92.68	62.5	63.13	54.2
Cyclopoididae	1983	3.21	30.0	2.98	16.7	4.21	27.8	1.72	4.2	2.30	16.7
Cyclops bicuspidatus	1983	8.26	36.7	22.50	30.0	3.06	22.2	28.41	45.8	22.96	41.7
	1984	37.42	66.7	9.41	46.7	6.89	22.2	21.23	33.3	24.10	50.0
Cyclops vernalis	1983	0.23	3.3	.	.	0.38	5.6	0.57	4.2	.	.
	1984	.	.	.	.	1.53	16.7	0.86	4.2	3.16	12.5
Mesocyclops	1983	0.23	3.3	0.23	3.3	2.30	22.2	0.86	12.5	.	.
	1984	2.53	13.3	0.46	6.7	0.38	5.6	9.47	8.3	.	.
Macrocyclops	1983	0.92	10.0	2.98	20.0	21.81	66.7	5.45	16.7	13.20	12.5
	1984	.	.	4.13	6.7	27.16	44.4	0.86	12.5	34.43	8.3
Eucyclops	1984	.	.	.	.	.	.	1.15	4.2	0.86	4.2
Paracyclops	1983	2.53	10.0	3.44	23.3	.	.	1.15	8.3	0.29	4.2
	1984	.	.	6.20	6.7	.	.	4.59	4.2	.	.
Harpacticoida	1983	155.87	43.3	344.56	86.7	255.19	100.0	371.31	58.3	13.77	29.2
	1984	35.35	36.7	21.58	50.0	46.29	88.9	236.44	41.7	27.55	45.8
Unidentified naupli	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	.	.	0.23	3.3	.	.	0.29	4.2	.	.
Astacidae	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
	1984	.	.	.	.	.	.	.	.	0.57	4.2
Orconectes	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	0.23	3.3	.	.	.	.	.	.	.	.

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Ostracoda	1983	59.00	50.0	92.51	63.3	84.55	100.0	272.31	66.7	6.60	20.8
	1984	60.60	40.0	67.26	43.3	148.06	100.0	1185.94	70.8	2.01	25.0
Gammaridae	1983	.	.	.	.	.	.	.	.	0.29	4.2
Gammarus	1983	374.18	76.7	1186.80	100.0	634.34	100.0	217.79	58.3	44.19	66.7
	1984	697.85	70.0	971.02	93.3	131.23	100.0	99.00	70.8	88.38	75.0
Pontoporeia hoyi	1983	20.66	33.3	11.71	40.0	.	.	0.29	4.2	0.29	4.2
	1984	4.59	6.7	0.23	3.3	.	.	.	.	.	.
Hyalella azteca	1983	31.91	73.3	320.00	76.7	.	.	83.21	33.3	30.42	37.5
	1984	46.14	43.3	91.82	63.3	1.53	16.7	151.79	41.7	23.82	25.0
Asellus	1983	1.15	13.3	130.85	56.7	.	.	6.60	16.7	0.86	4.2
	1984	0.69	10.0	26.63	30.0	0.38	5.6	16.93	20.8	5.45	8.3
Lirceus	1983	0.46	3.3	6.89	23.3	.	.	6.03	8.3	.	.
	1984	.	.	12.17	10.0	.	.	0.29	4.2	.	.
Terrestrial insect	1983	6.20	36.7	3.67	36.7	1.53	16.7	2.30	20.8	2.58	29.2
	1984	11.71	56.7	12.17	46.7	1.91	22.2	3.73	41.7	1.43	16.7
Chironomidae	1983	1814.41	100.0	5520.12	100.0	791.97	100.0	1466.57	95.8	184.22	91.7
	1984	1560.06	100.0	2085.51	100.0	667.62	100.0	1624.11	100.0	256.82	100.0
Ceratopogonidae	1983	1.84	13.3	44.07	73.3	0.38	5.6	37.59	45.8	42.75	29.2
	1984	2.53	16.7	56.70	63.3	1.53	22.2	45.34	50.0	13.77	20.8
Empididae	1983	21.35	53.3	6.66	30.0	.	.	0.29	4.2	1.43	12.5
	1984	18.59	56.7	4.13	33.3	.	.	0.57	8.3	1.43	20.8
Tipulidae	1983	.	.	0.23	3.3	.	.	.	.	0.29	4.2
Chaoborus	1983	.	.	.	.	.	.	.	.	0.57	8.3
	1984	.	.	.	.	.	.	0.29	4.2	.	.
Psychodidae	1983	0.23	3.3	0.23	3.3	.	.	.	.	1.15	12.5
	1984	5.74	10.0	.	.	.	.	.	.	3.44	8.3
Trichorythodes	1983	.	.	.	.	.	.	0.29	4.2	0.29	4.2
	1984	.	.	0.23	3.3	.	.	.	.	1.15	12.5
Ephemeroptera	1983	0.46	3.3	.	.	.	.	0.29	4.2	.	.
Caenis	1983	25.48	26.7	375.09	90.0	0.38	5.6	35.87	41.7	12.05	20.8
	1984	128.09	53.3	322.30	83.3	1.53	22.2	22.38	33.3	16.07	20.8
Brachycercus	1984	.	.	.	.	.	.	0.57	8.3	.	.
Hexagenia	1983	48.21	36.7	340.66	90.0	1288.57	100.0	66.28	58.3	6.03	41.7
	1984	309.90	53.3	999.48	76.7	1131.71	100.0	72.02	58.3	5.74	33.3
Ephemerella	1983	46.14	30.0	21.12	33.3	0.38	5.6	1.43	8.3	.	.
	1984	4.36	20.0	0.92	13.3	.	.	0.29	4.2	.	.
Baetis	1983	0.69	10.0	.	.	.	.	0.86	4.2	.	.
Baetisca	1983	0.92	13.3	0.69	10.0	0.38	5.6	32.42	54.2	5.45	33.3
	1984	6.66	13.3	11.02	20.0	.	.	32.42	54.2	6.31	29.2
Stenonema	1983	14.92	43.3	4.36	16.7	.	.	.	.	1.15	12.5
	1984	20.89	36.7	9.18	23.3	0.38	5.6	1.15	8.3	.	.
Brychius	1983	.	.	0.46	6.7	.	.	.	.	.	.

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Dubiraphia	1983	2.30	16.7	2.75	20.0	.	.	.	.	.	.
	1984	14.00	23.3	0.23	3.3	.	.	.	.	.	.
Lepidoptera	1983	4.36	10.0	3.44	23.3	.	.	2.01	12.5	2.58	20.8
	1984	1.38	10.0	0.92	13.3	.	.	2.01	8.3	2.58	16.7
Pyralidae	1983	.	.	0.46	6.7	.	.	.	.	.	.
	1984	.	.	.	.	.	.	0.29	4.2	.	.
Brachycentrus	1983	7.12	30.0	30.07	33.3	.	.	0.29	4.2	.	.
	1984	7.58	20.0	16.76	33.3	.	.	.	.	.	.
Micrasema	1984	0.23	3.3	1.38	10.0	.	.	.	.	.	.
Protoptila	1983	8.03	16.7	.	.	.	.	.	.	.	.
	1984	26.40	13.3	.	.	.	.	1.15	8.3	.	.
Polycentropodidae	1983	0.23	3.3	0.69	3.3	.	.	.	.	.	.
Phylocentropus	1983	.	.	.	.	.	.	2.87	16.7	.	.
	1984	0.23	3.3	.	.	.	.	13.20	20.8	.	.
Polycentropus	1983	0.23	3.3	21.81	30.0	.	.	0.57	4.2	5.45	20.8
	1984	0.46	6.7	7.12	33.3	.	.	0.57	4.2	6.60	20.8
Neureclipsis	1983	9.41	20.0	25.94	33.3	.	.	1.15	8.3	15.21	20.8
	1984	19.05	23.3	15.84	26.7	.	.	.	.	47.63	41.7
Trichoptera	1984	0.23	3.3	.	.	.	.	0.29	4.2	.	.
Leptoceridae	1983	0.46	6.7	.	.	.	.	.	.	.	.
Oecetis	1983	22.73	40.0	43.16	60.0	46.68	83.3	13.49	25.0	5.74	20.8
	1984	2.30	20.0	35.81	63.3	35.58	94.4	15.49	41.7	.	.
Triaenodes	1983	2.30	6.7	2.98	33.3	.	.	.	.	.	.
	1984	1.84	10.0	2.30	23.3	.	.	0.57	8.3	0.29	4.2
Mystacides	1983	3.67	26.7	13.31	40.0	0.38	5.6	0.29	4.2	.	.
	1984	5.51	23.3	4.36	16.7	.	.	.	.	.	.
Setodes	1983	0.46	6.7	3.44	20.0	.	.	0.57	4.2	.	.
	1984	0.46	6.7	4.59	26.7	.	.	0.29	4.2	.	.
Ceraclea	1983	4.59	36.7	10.33	43.3	.	.	2.01	20.8	0.86	8.3
	1984	4.59	30.0	15.38	40.0	.	.	4.02	29.2	0.86	4.2
Nectopsyche	1983	0.46	6.7	3.21	23.3	.	.	0.29	4.2	0.57	4.2
	1984	0.46	3.3	0.69	6.7	.	.	0.57	8.3	.	.
Hydroptilidae	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	0.23	3.3	.	.	.	.	.	.	.	.
Hydroptila	1983	.	.	0.92	10.0	.	.	.	.	7.46	20.8
	1984	.	.	0.92	6.7	.	.	0.29	4.2	7.17	33.3
Orthotrichia	1983	.	.	0.23	3.3	.	.	.	.	.	.
	1984	.	.	0.23	3.3	.	.	0.29	4.2	2.01	16.7
Phryganea	1984	0.23	3.3	.	.	.	.	.	.	.	.
Pycnopsyche	1983	.	.	0.46	6.7	.	.	.	.	.	.
Hydropsychidae	1983	7.12	6.7	.	.	.	.	.	.	.	.

(CONTINUED)

Taxon or item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Cheumatopsyche	1983	94.81	60.0	22.50	26.7	5.36	11.1	471.45	66.7	28.12	37.5
	1984	130.39	63.3	20.66	36.7	.	.	927.69	83.3	41.61	50.0
Hydropsyche	1983	75.98	70.0	11.48	40.0	.	.	108.46	45.8	20.09	41.7
	1984	140.26	66.7	32.37	26.7	.	.	307.32	66.7	46.20	54.2
Macrostemum	1984	.	.	.	.	.	.	.	.	0.29	4.2
Potamyia	1984	.	.	.	.	.	.	.	.	0.29	4.2
Corixidae	1983	0.46	6.7	.	.	.	.	.	.	.	.
Coenagrionidae	1983	.	.	0.92	13.3	.	.	.	.	4.02	20.8
	1984	.	.	0.46	3.3	.	.	.	.	4.02	20.8
Gomphus	1983	0.92	10.0	.	.	.	.	.	.	.	.
	1984	1.38	13.3	0.46	6.7	.	.	.	.	0.29	4.2
Stylurus notatus	1983	0.23	3.3	.	.	.	.	.	.	.	.
Plecoptera	1983	1.15	10.0	.	.	.	.	.	.	.	.
	1984	1.15	13.3	.	.	.	.	.	.	.	.
Perlodidae	1983	0.23	3.3	0.23	3.3	.	.	.	.	.	.
Isogenoides	1983	0.23	3.3	.	.	.	.	.	.	.	.
	1984	1.15	10.0	.	.	.	.	.	.	.	.
Acarina	1983	70.93	73.3	19.51	80.0	17.60	100.0	28.98	83.3	43.33	66.7
	1984	64.51	73.3	26.63	73.3	5.74	66.7	24.10	66.7	96.99	70.8
Tardigrada	1983	1.38	6.7	0.46	6.7	.	.	0.29	4.2	4.88	4.2
	1984	.	.	.	.	.	.	.	.	6.89	8.3
Gastropoda	1983	0.23	3.3	.	.	.	.	0.29	4.2	.	.
Ferrisia	1983	3.90	20.0	.	.	.	.	3.44	12.5	66.28	54.2
	1984	55.55	16.7	.	.	.	.	2.30	12.5	298.14	62.5
Lymnaea	1983	8.26	30.0	.	.	.	.	2.01	4.2	.	.
	1984	3.67	23.3	0.23	3.3	.	.	.	.	.	.
Physa	1983	75.06	53.3	129.93	80.0	0.38	5.6	24.39	33.3	24.10	45.8
	1984	119.37	53.3	89.30	80.0	.	.	25.25	41.7	56.53	62.5
Helisoma	1983	.	.	.	.	.	.	0.29	4.2	.	.
Gyraulus	1983	67.95	40.0	166.89	73.3	26.40	50.0	36.73	33.3	5.74	29.2
	1984	14.23	26.7	80.57	66.7	29.46	50.0	66.57	37.5	49.35	33.3
Amnicola	1983	566.77	66.7	771.77	90.0	38.26	77.8	186.80	87.5	88.38	79.2
	1984	363.85	60.0	323.44	90.0	27.55	61.1	218.94	91.7	96.99	75.0
Bithynia	1983	.	.	.	.	0.77	11.1	0.57	8.3	0.29	4.2
	1984	.	.	.	.	.	.	0.86	8.3	.	.
Somatogyrus subglobosus	1983	.	.	0.23	3.3	.	.	.	.	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
Pleurocera acuta	1983	2.30	6.7	0.23	3.3	4.59	22.2	7.75	41.7	.	.
	1984	1.84	6.7	.	.	0.38	5.6	11.76	41.7	0.86	8.3
Elimia tivescens	1983	197.42	60.0	145.31	90.0	5.36	33.3	150.07	79.2	79.77	62.5
	1984	236.67	53.3	104.45	63.3	9.56	61.1	191.10	79.2	51.08	79.2

(CONTINUED)

Taxon or Item	Year	Location									
		Upper St. Clair River n=90		Lower St. Clair River n=90		Lake St. Clair n=54		Upper Detroit River n=72		Lower Detroit River n=72	
		Density	PCT	Density	PCT	Density	PCT	Density	PCT	Density	PCT
Valvata sincera	1983	0.92	10.0	1.38	6.7	.	.	.	.	1.15	8.3
	1984	1.61	13.3	0.23	3.3	3.83	5.6	0.29	4.2	0.29	4.2
Valvata tricarinata	1983	138.88	16.7	20.89	50.0	11.10	38.9	33.86	12.5	0.57	8.3
	1984	147.37	33.3	3.21	20.0	6.89	44.4	.	.	0.29	4.2
Campeloma	1983	.	.	.	.	.	.	0.29	4.2	0.86	8.3
	1984	0.23	3.3	.	.	0.38	5.6	.	.	.	.
Unionidae	1983	.	.	0.69	10.0	1.15	16.7	5.45	37.5	.	.
	1984	0.46	6.7	1.15	13.3	0.77	11.1	7.17	50.0	.	.
Anodonta grandis	1984	.	.	0.38	5.6	.	.	.	.	.	.
Lampsilis	1984	.	.	0.23	3.3	0.38	5.6	1.15	12.5	.	.
Lampsilis radiata siliquoidea	1983	.	.	.	.	0.77	11.1	0.29	4.2	0.29	4.2
	1984	.	.	.	.	0.38	5.6	0.57	8.3	.	.
Lampsilis ventricosa	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	.	.	0.29	4.2	.	.
Leptodea fragilis	1983	.	.	.	.	0.38	5.6	0.29	4.2	.	.
Truncilla	1984	.	.	.	.	.	.	0.29	4.2	.	.
Truncilla donaciformis	1983	.	.	.	.	.	.	0.29	4.2	.	.
Truncilla truncata	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	.	.	0.86	4.2	.	.
Proptera alata	1983	.	.	.	.	.	.	0.29	4.2	.	.
	1984	.	.	.	.	0.38	5.6	.	.	.	.
Elliptio	1983	.	.	.	.	.	.	0.86	12.5	.	.
Elliptio dilitatus	1984	.	.	.	.	.	.	0.29	4.2	.	.
Pleurobema cordatum	1983	.	.	.	.	.	.	0.57	8.3	.	.
Ptychobranchus fasciolaris	1984	.	.	.	.	.	.	0.29	4.2	.	.
Pisidium	1983	167.58	70.0	372.80	90.0	613.30	100.0	352.94	95.8	318.80	87.5
	1984	269.04	70.0	226.34	90.0	729.60	100.0	382.78	100.0	248.21	62.5
Sphaerium	1983	11.02	36.7	40.86	53.3	34.82	94.4	51.36	70.8	1.15	8.3
	1984	1.15	10.0	19.74	40.0	24.49	83.3	73.46	79.2	0.29	4.2

APPENDIX D

Density and Total Biomass of Macrozoobenthos - A Summary by Year, Month, Transect, and Station

The density (square root of no./m^2 + 0.5) of 24 macrozoobenthos taxa and total biomass (ash free dry weight in g/m^2) are plotted in three different arrangements: transects by year for May, transect by year for October, and transect by station with months combined. These plots are part of the ANOVA results and should be used when interpreting main effect results in Tables 8 to 19 in the main body of the report.

Index

	Figure		Figure
Hydra	1-3	Oecetis	40-42
Turbellaria	4-6	Caenis	43-45
Nemertinea	7-9	Hexagenia	46-48
Nematoda	10-12	Cheumatopsyche	49-51
Hirudinea	13-15	Hydropsyche	52-54
Oligochaeta	16-18	Acarina	55-57
Manayunkia	19-21	Sphaeriidae	58-60
Harpacticoida	22-24	Physa	61-63
Ostracoda	25-27	Gyraulus	64-66
Isopoda	28-30	Amnicola	67-69
Gammarus	31-33	Elimia	70-72
Hyalella	34-36	Macrozoobenthos Biomass	73-75
Chironomidae	37-39		

FIG. 1

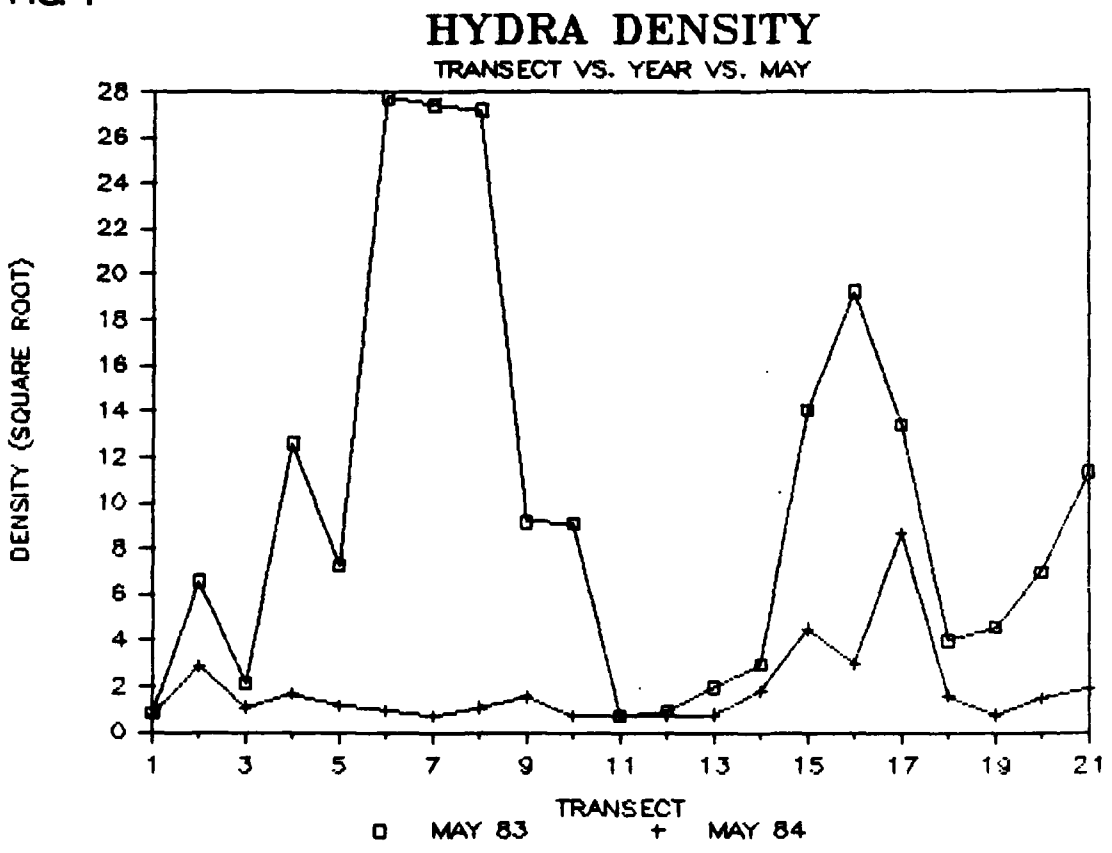

HYDRA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 2

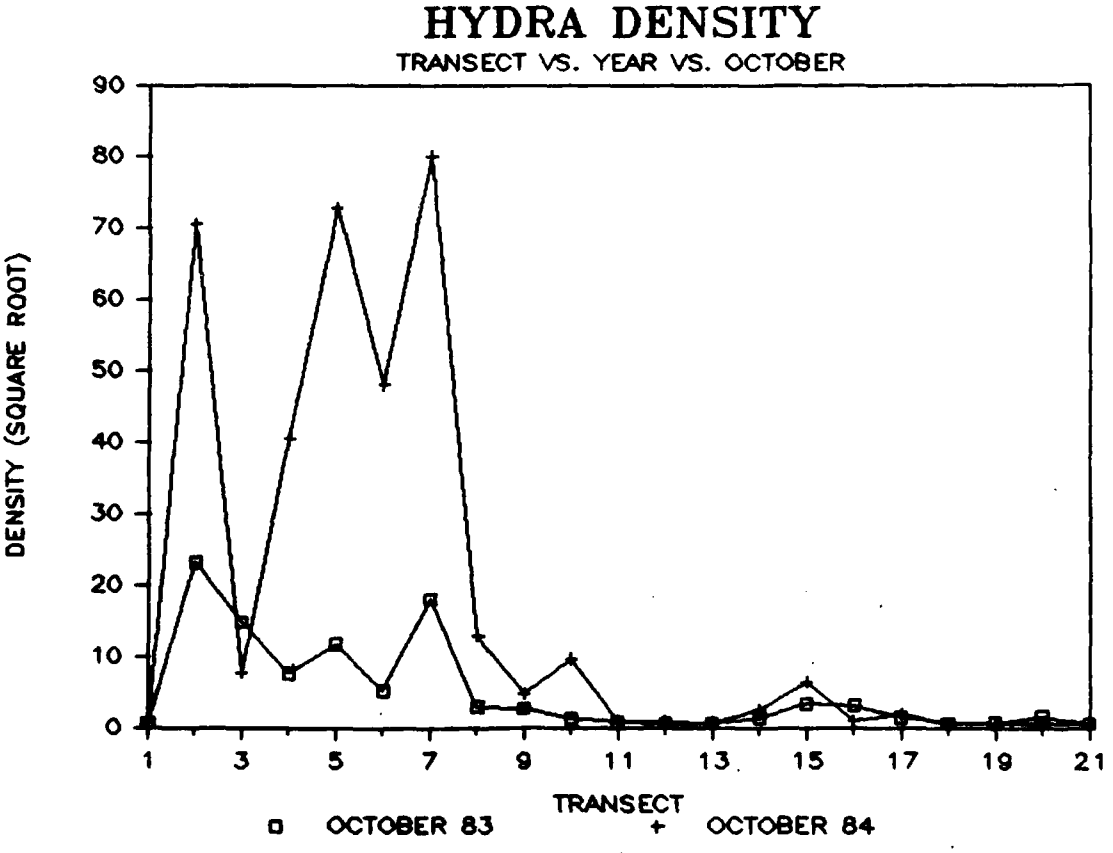

HYDRA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
10
20
30
40
50
60
70
80
90
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 3

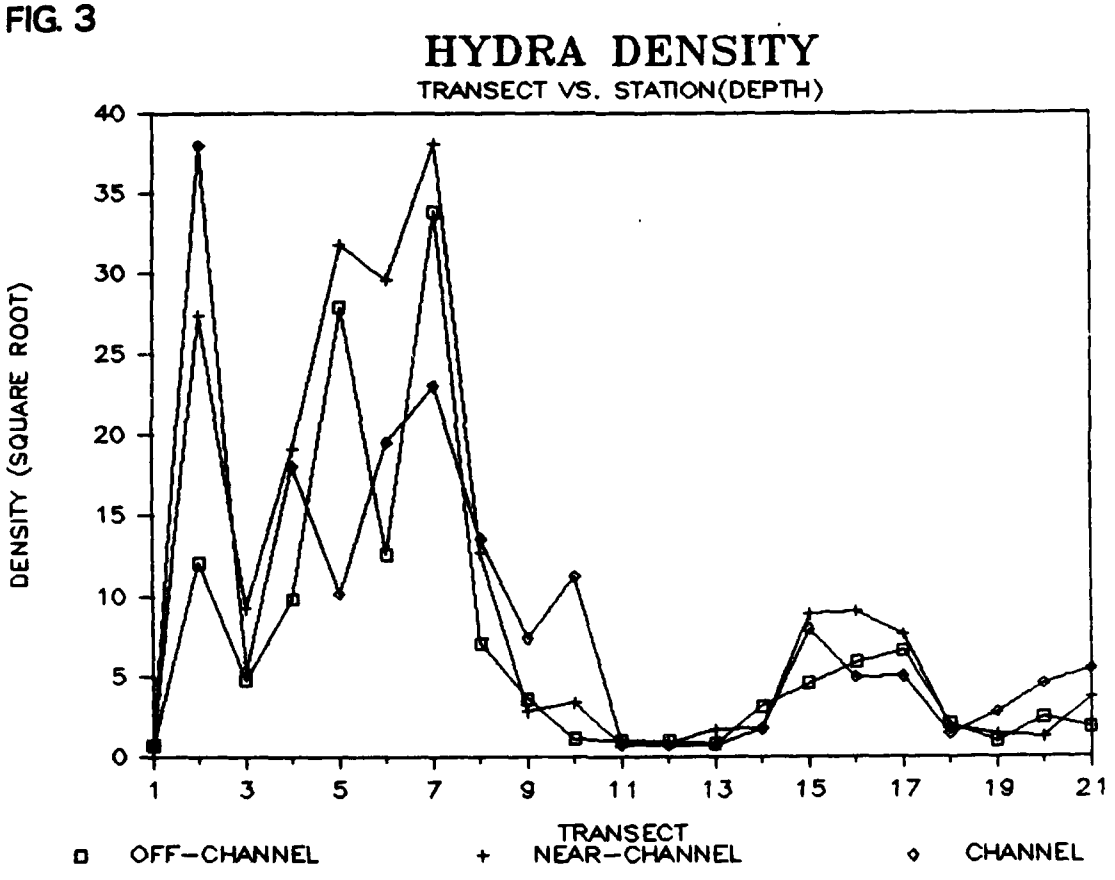

HYDRA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
40
35
30
25
20
15
10
5
0
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 4

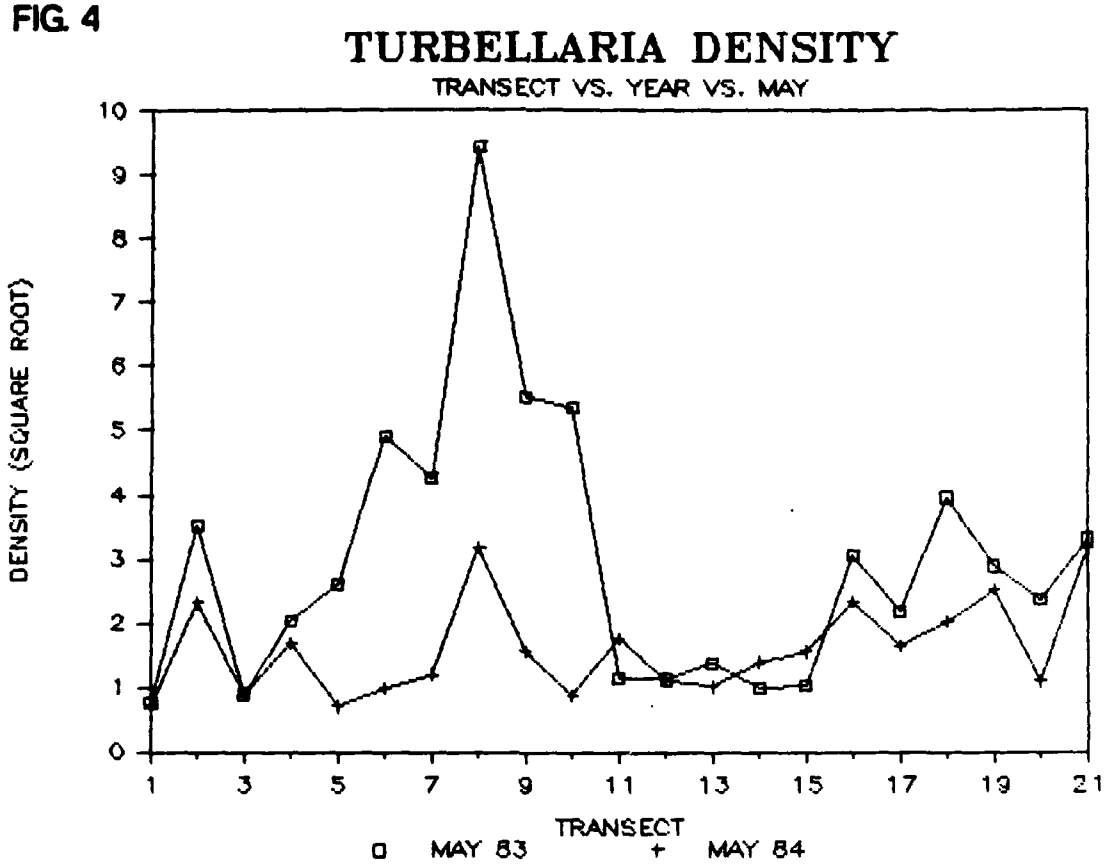

TURBELLARIA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 5

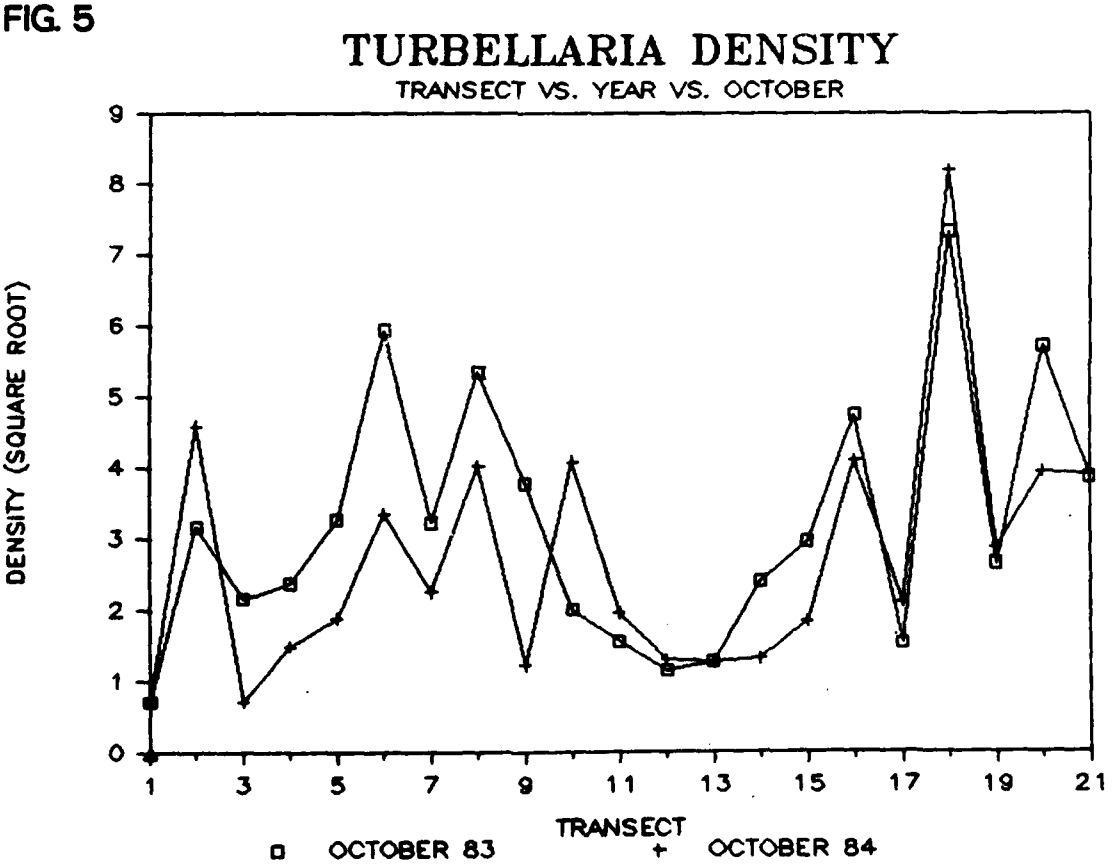

TURBELLARIA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 6

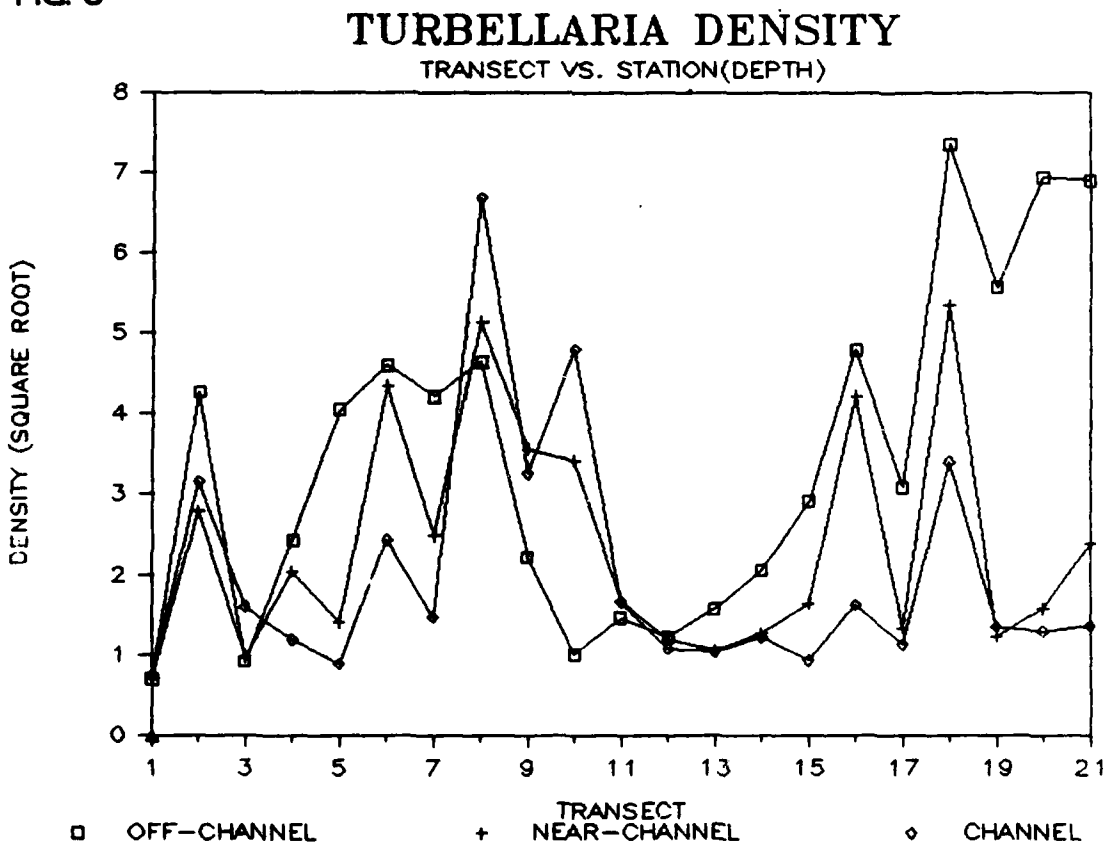

TURBELLARIA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 7

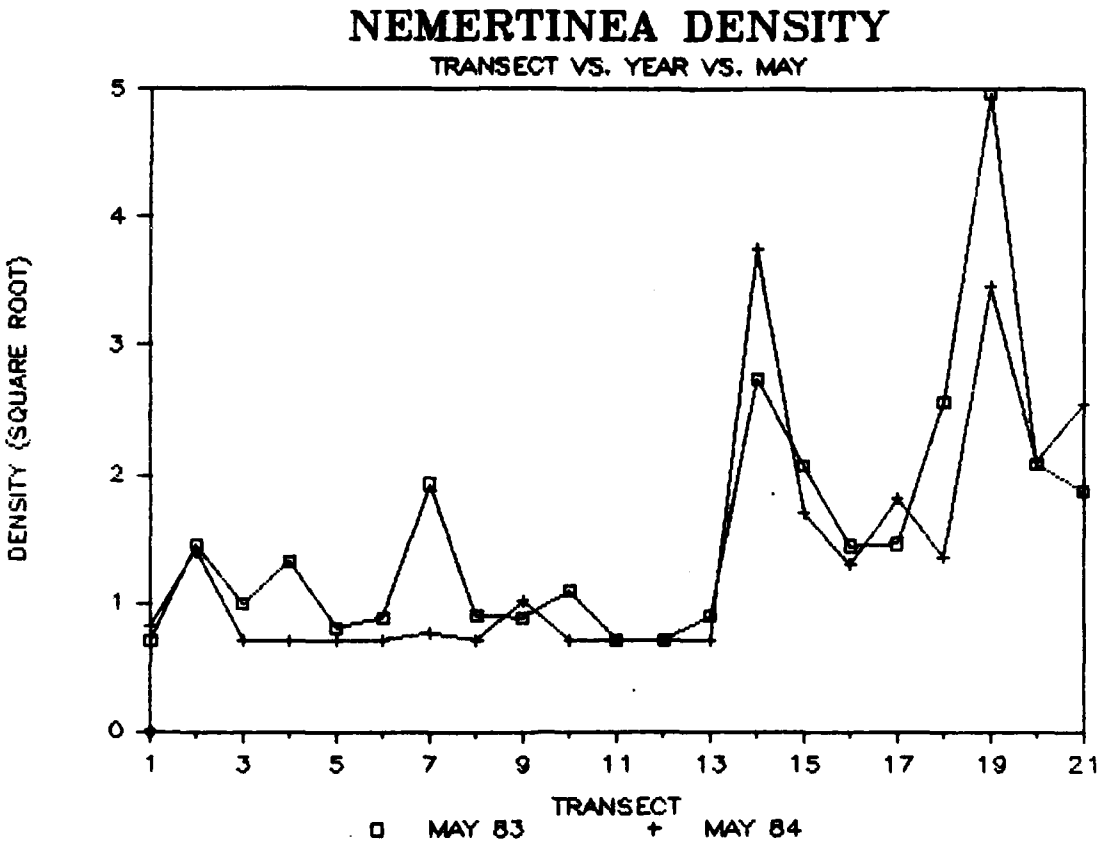

NEMERTINEA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 8

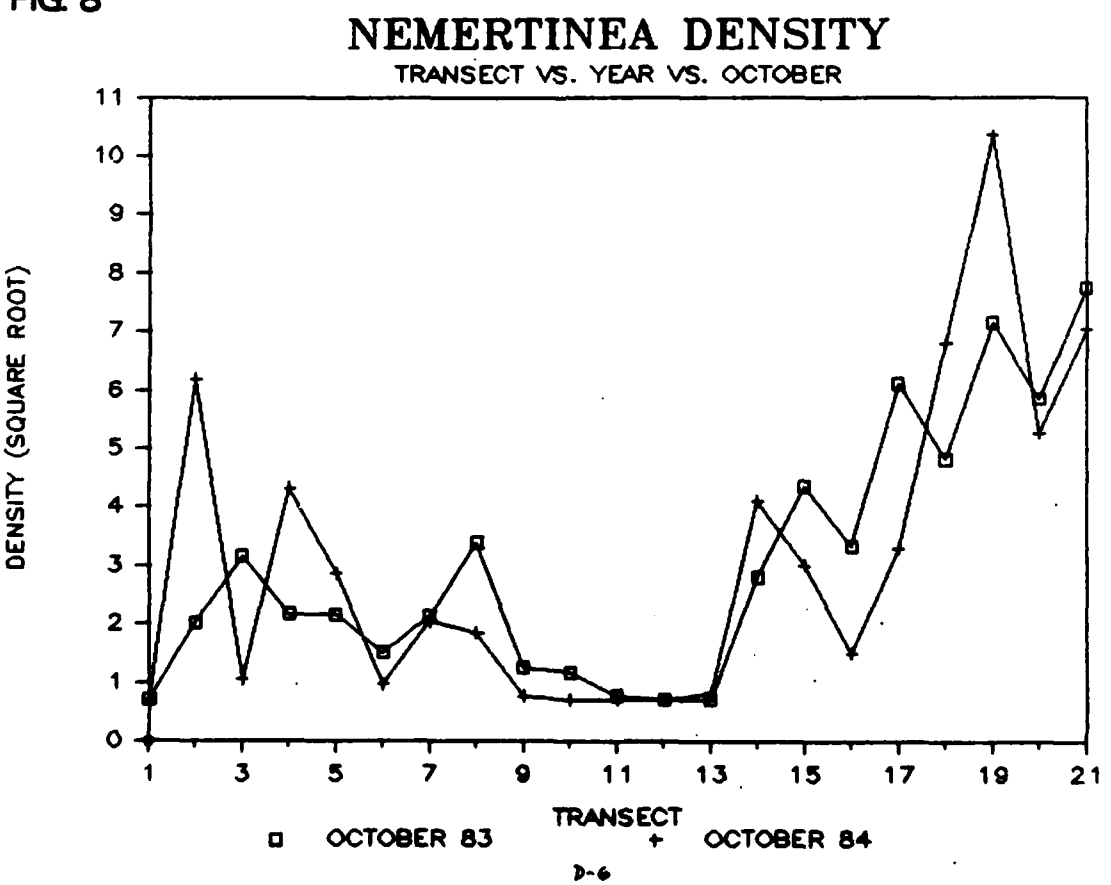

NEMERTINEA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 9

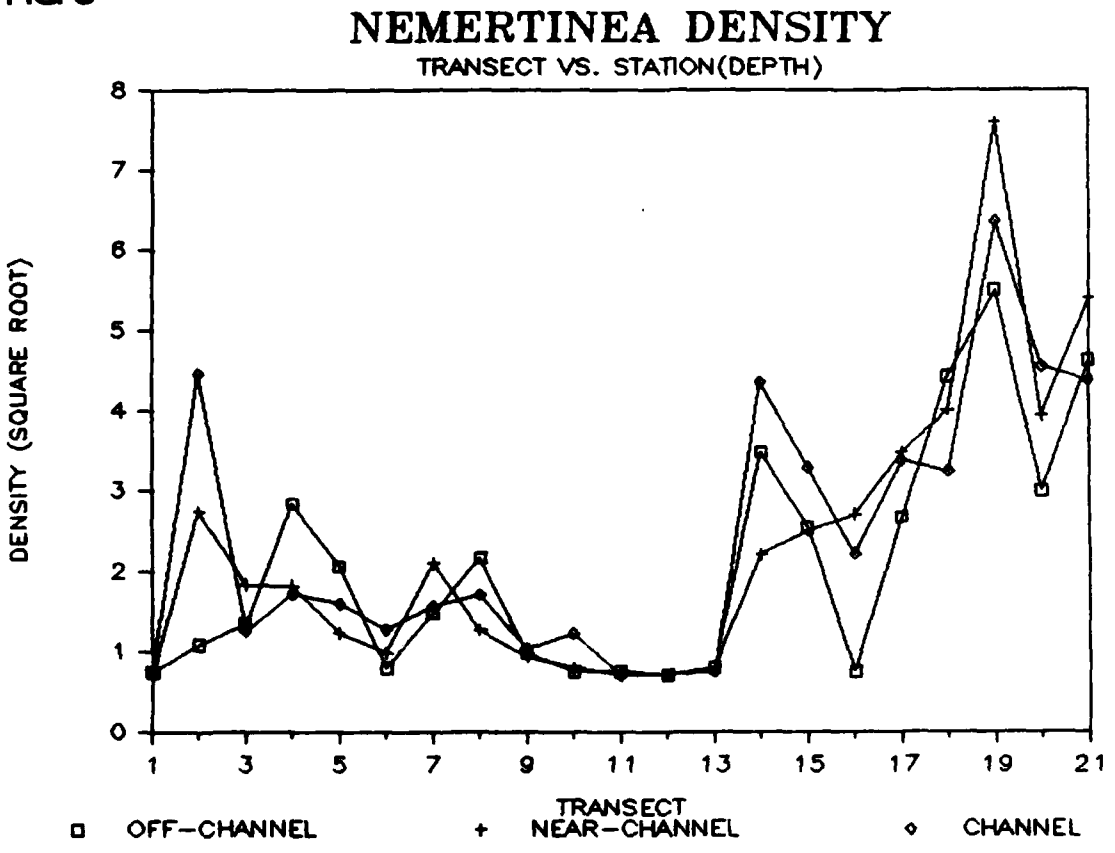

NEMERTINEA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 10

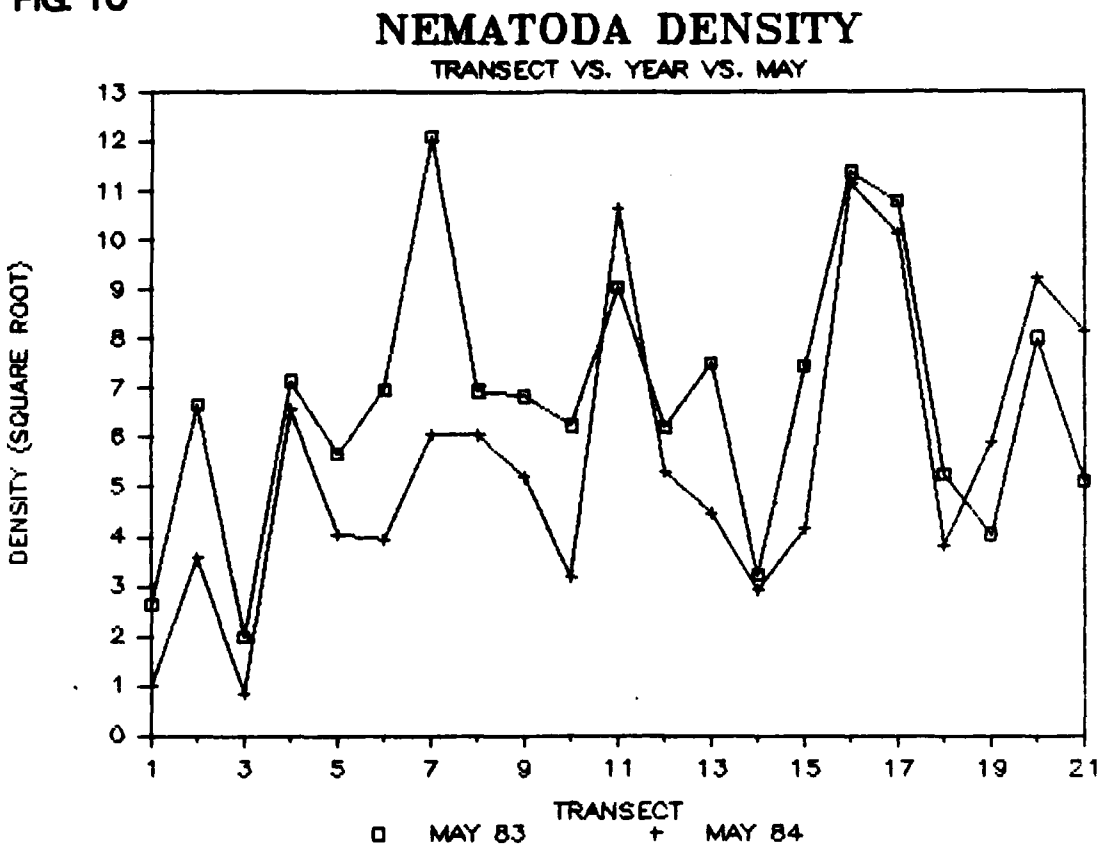

NEMATODA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 11

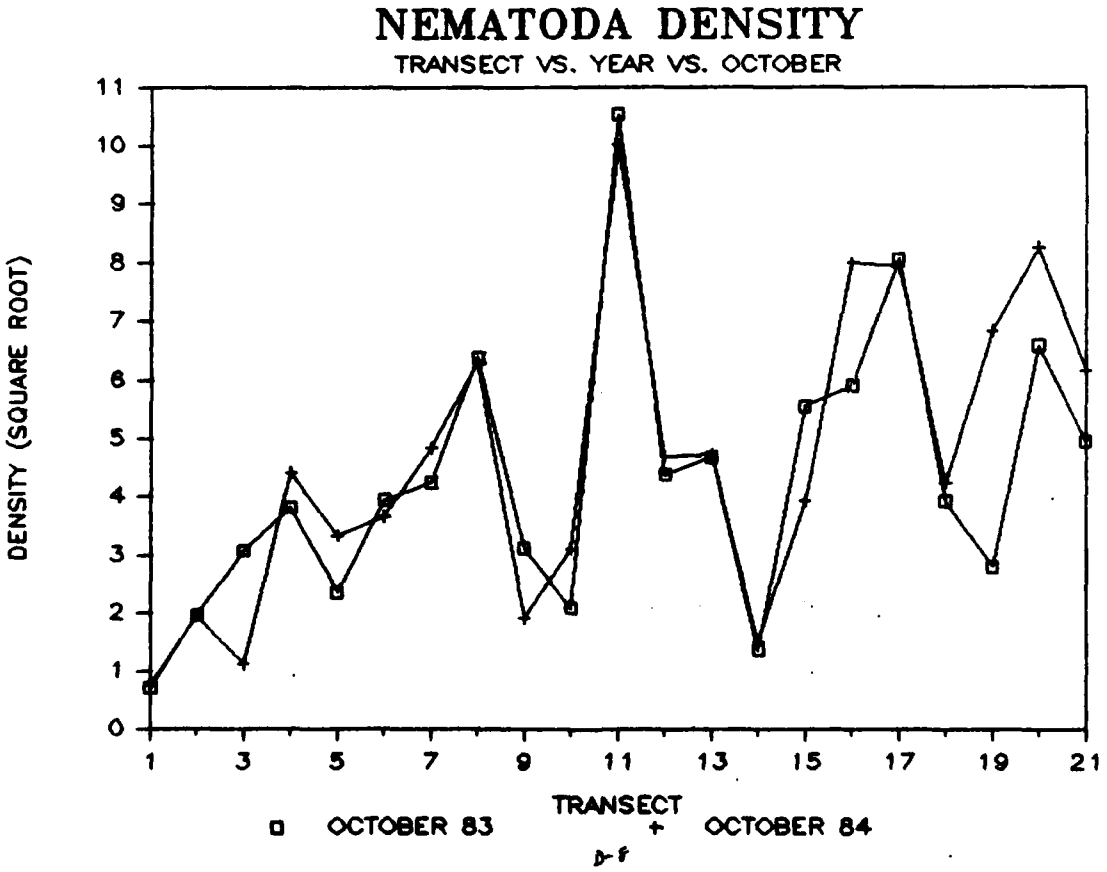

NEMATODA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 12

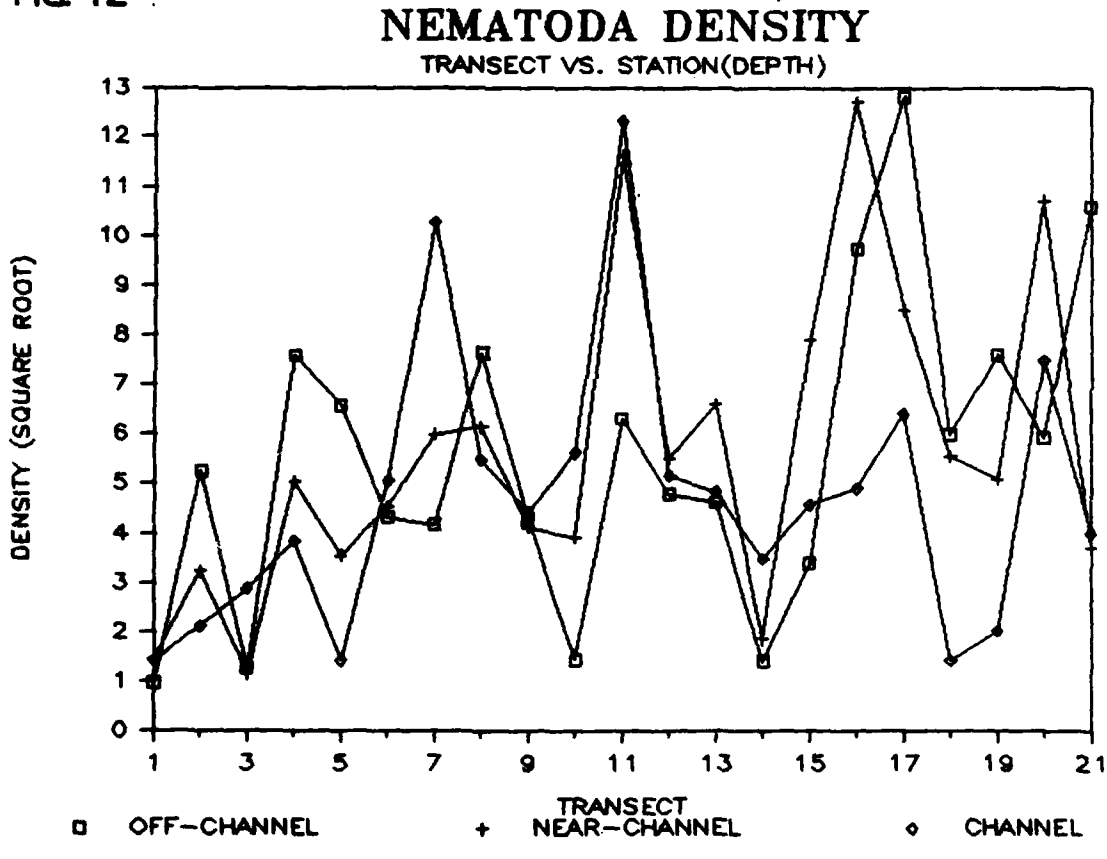

NEMATODA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
□ OFF-CHANNEL
+ NEAR-CHANNEL
◇ CHANNEL

FIG. 13

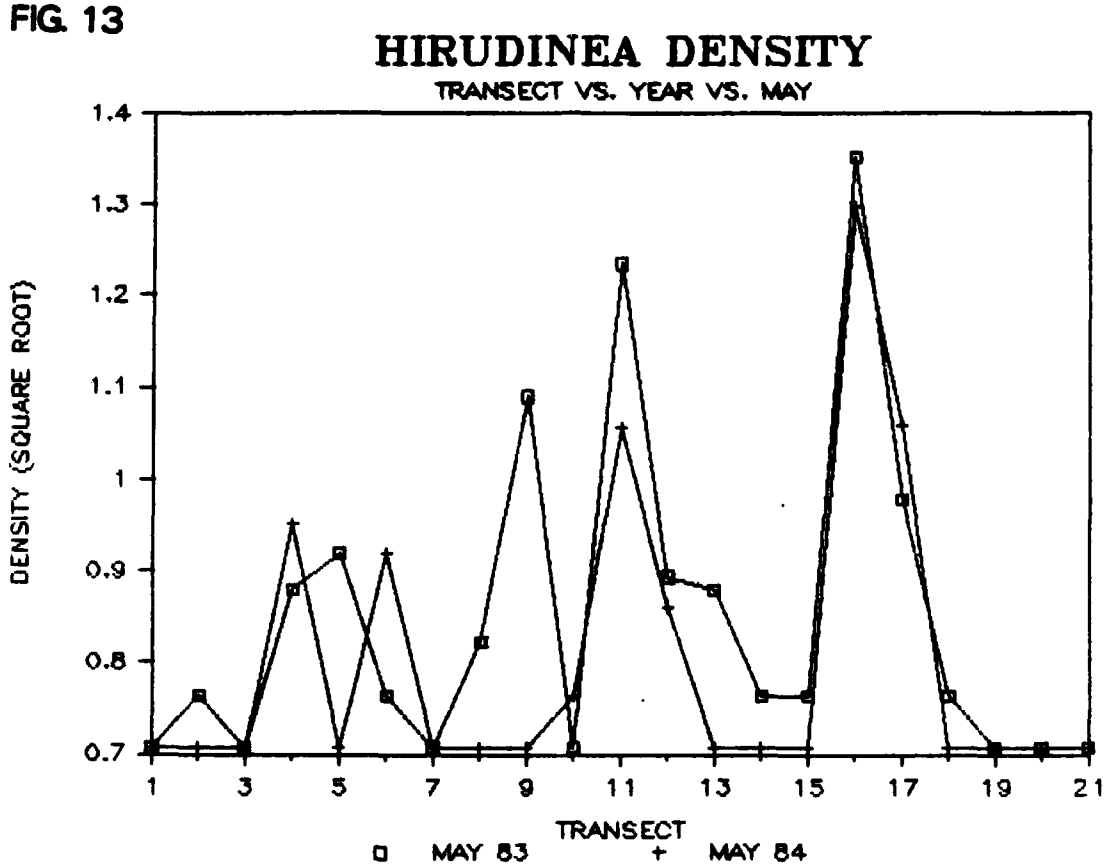

HIRUDINEA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 14

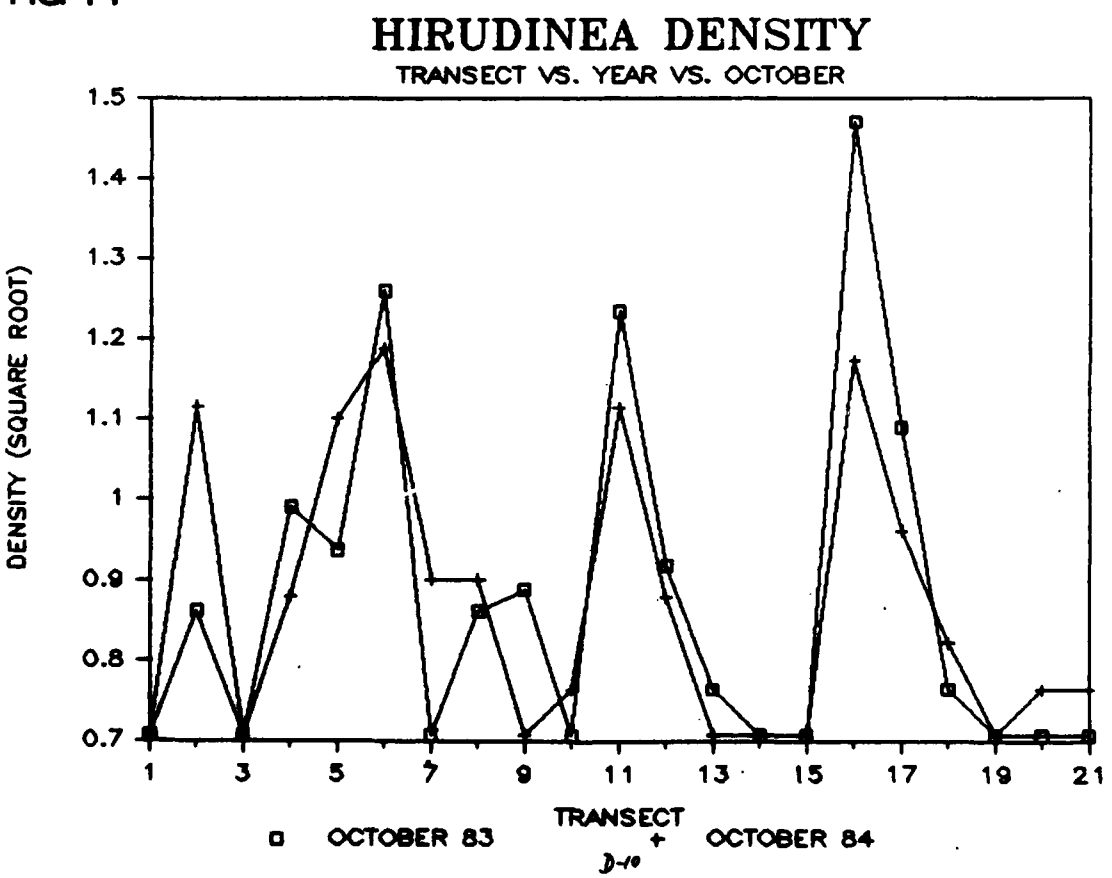

HIRUDINEA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 15

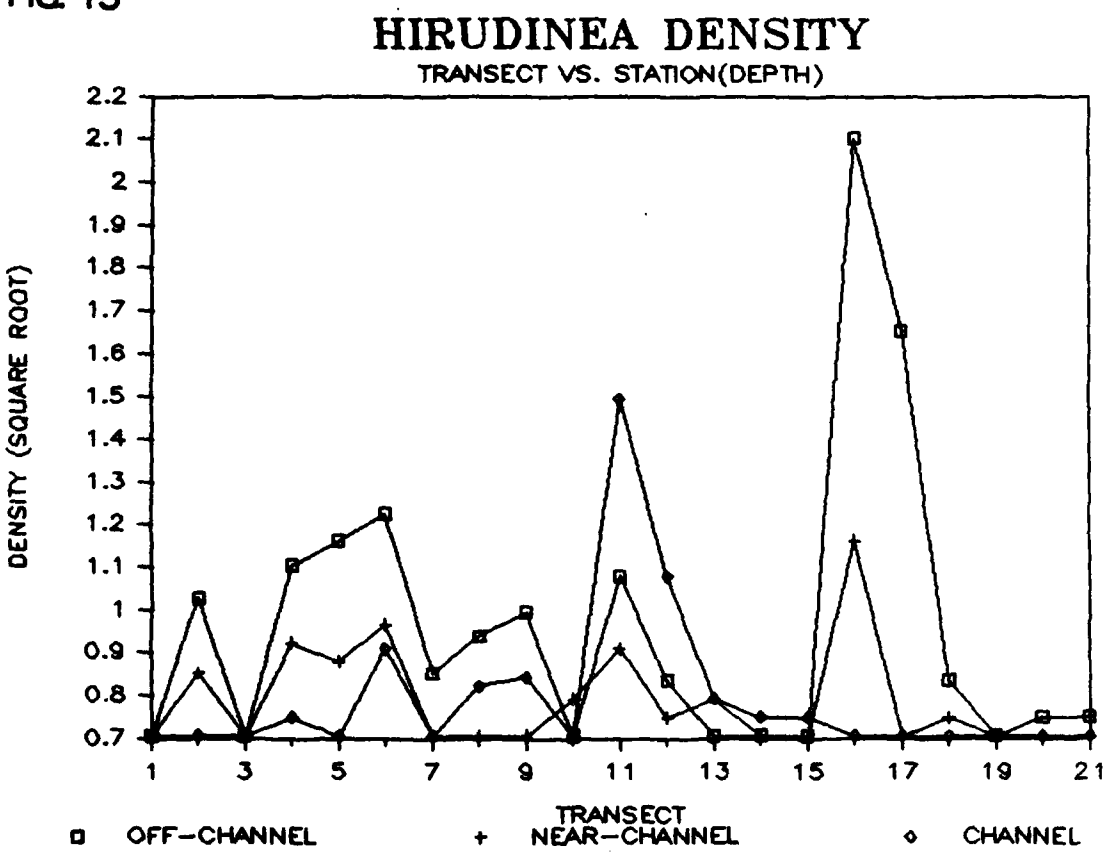

HIRUDINEA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 16

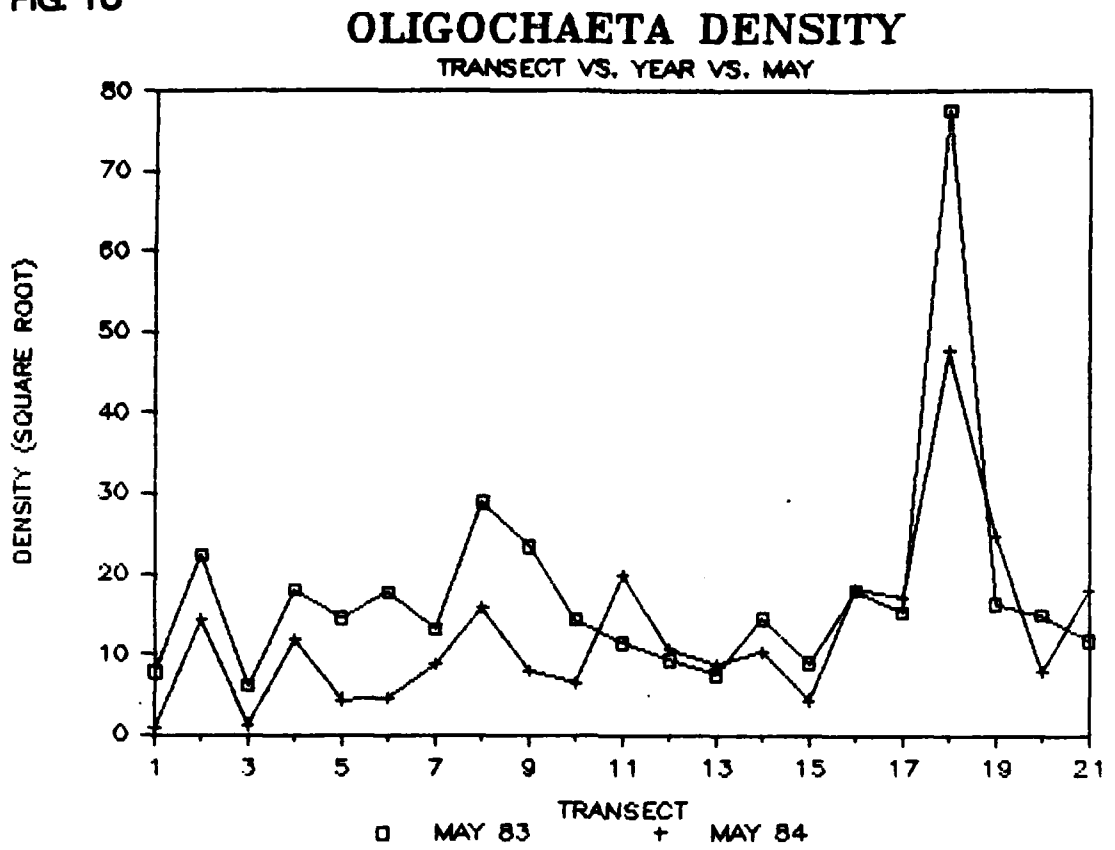
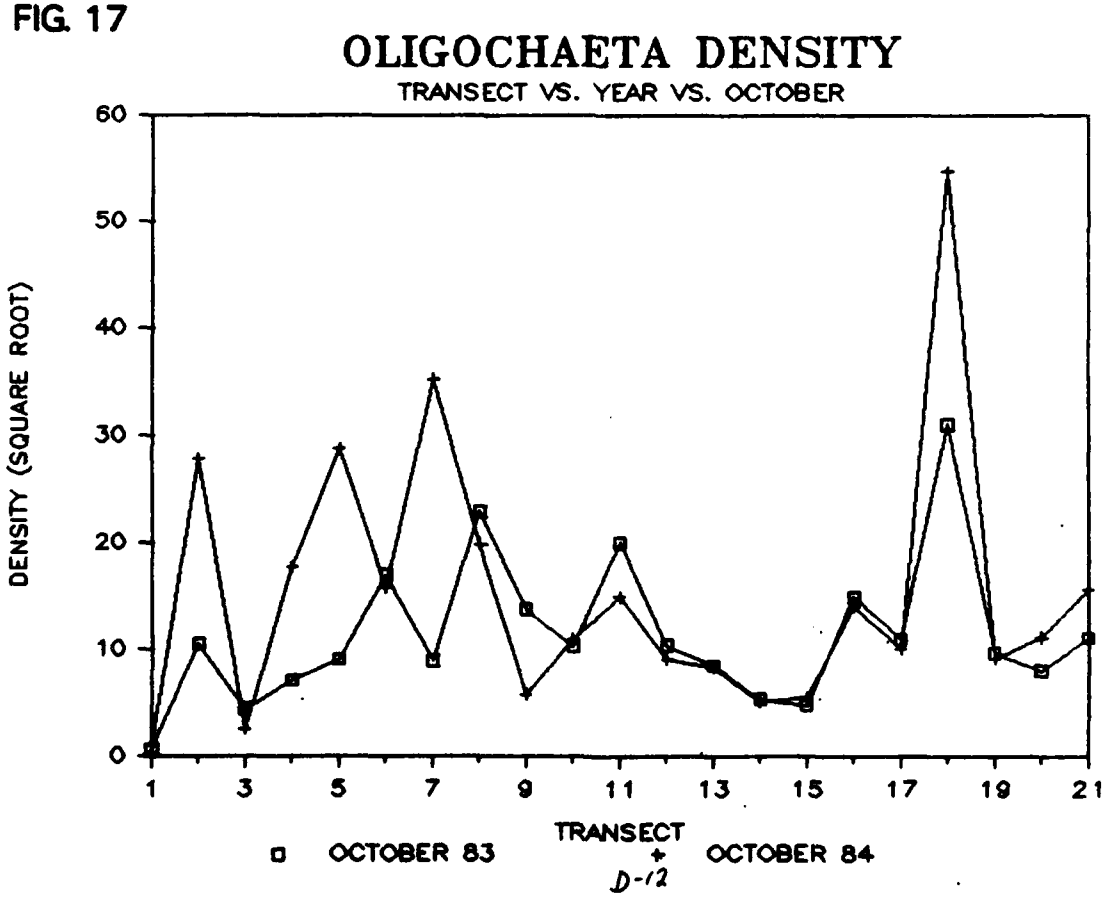


FIG. 17



D-12

FIG. 18

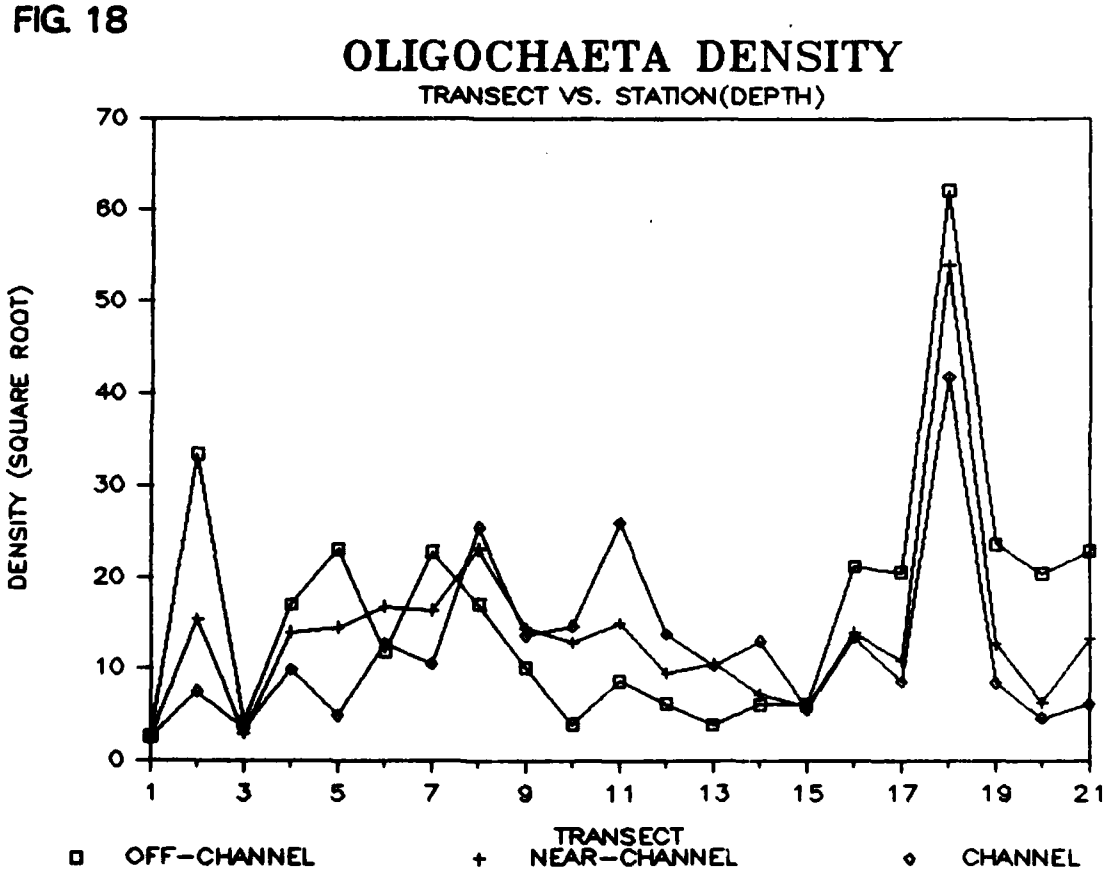

OLIGOCHAETA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
70
60
50
40
30
20
10
0
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 19

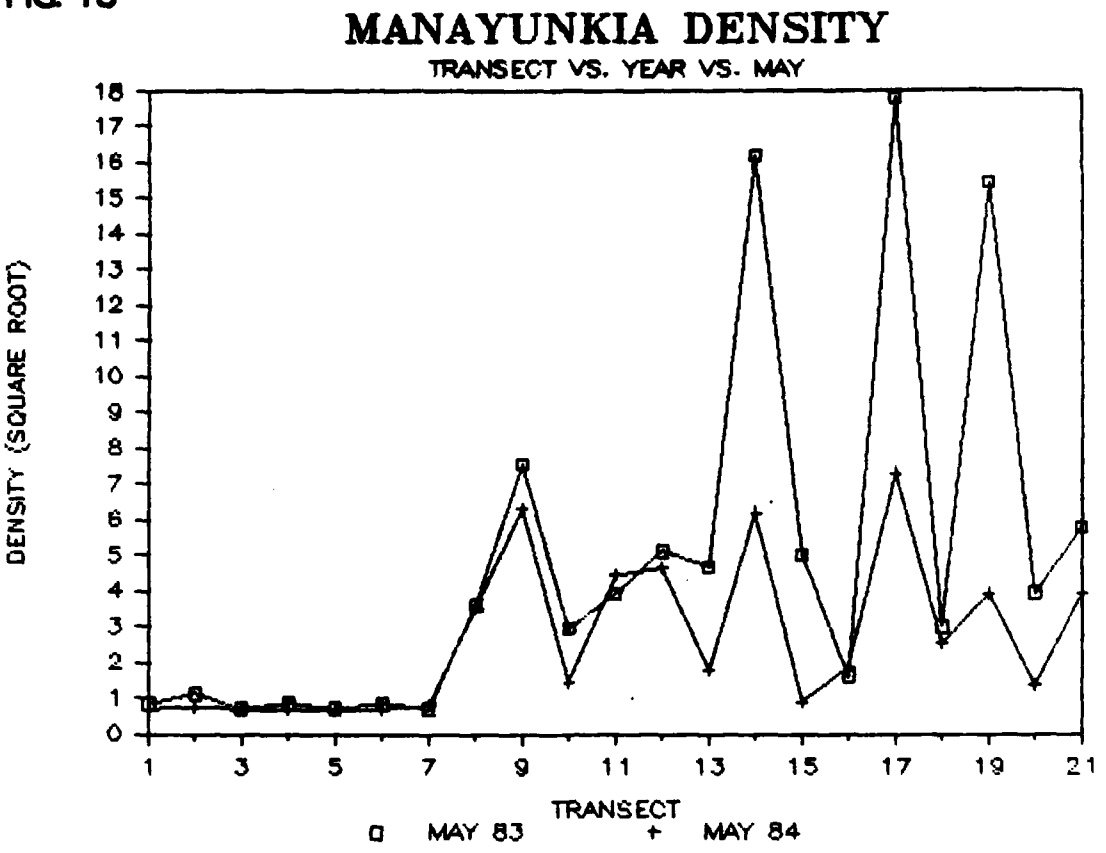

MANAYUNKIA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
1 3 5 7 9 11 13 15 17 19 21
TRANSECT
□ MAY 83
+ MAY 84

FIG. 20

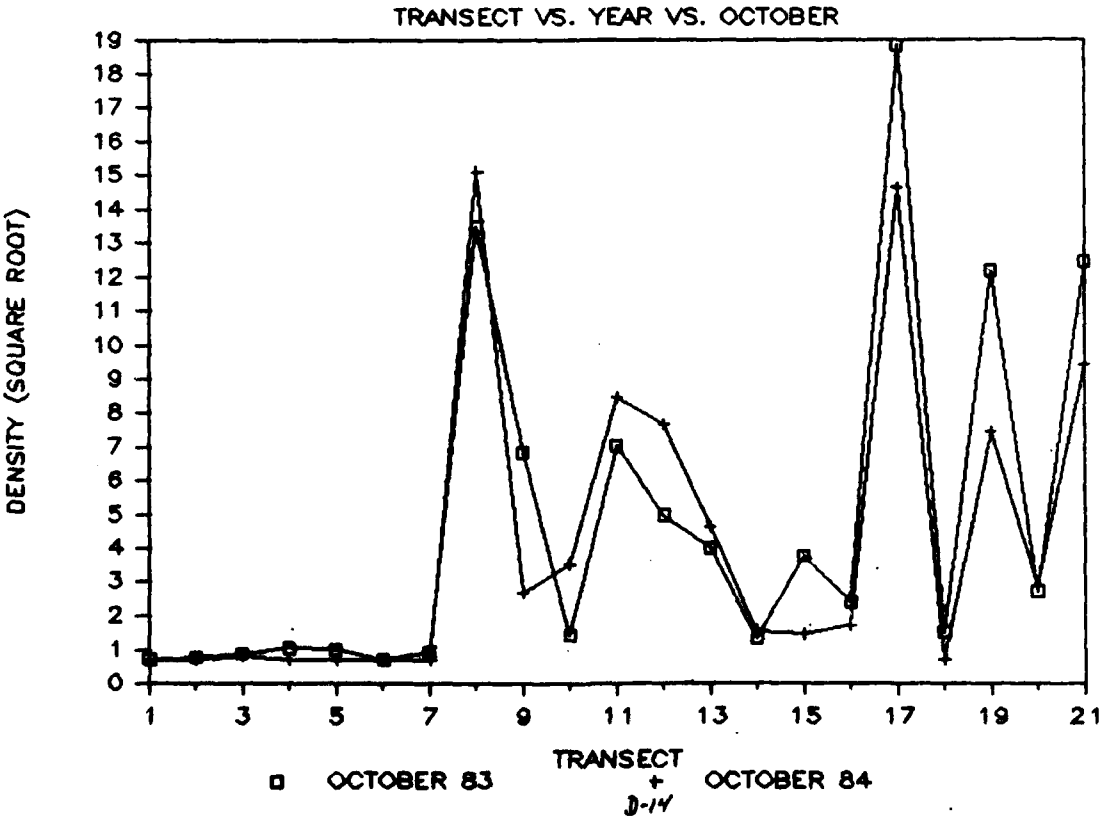

MANAYUNKIA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
1 3 5 7 9 11 13 15 17 19 21
TRANSECT
□ OCTOBER 83
+ OCTOBER 84

FIG. 21

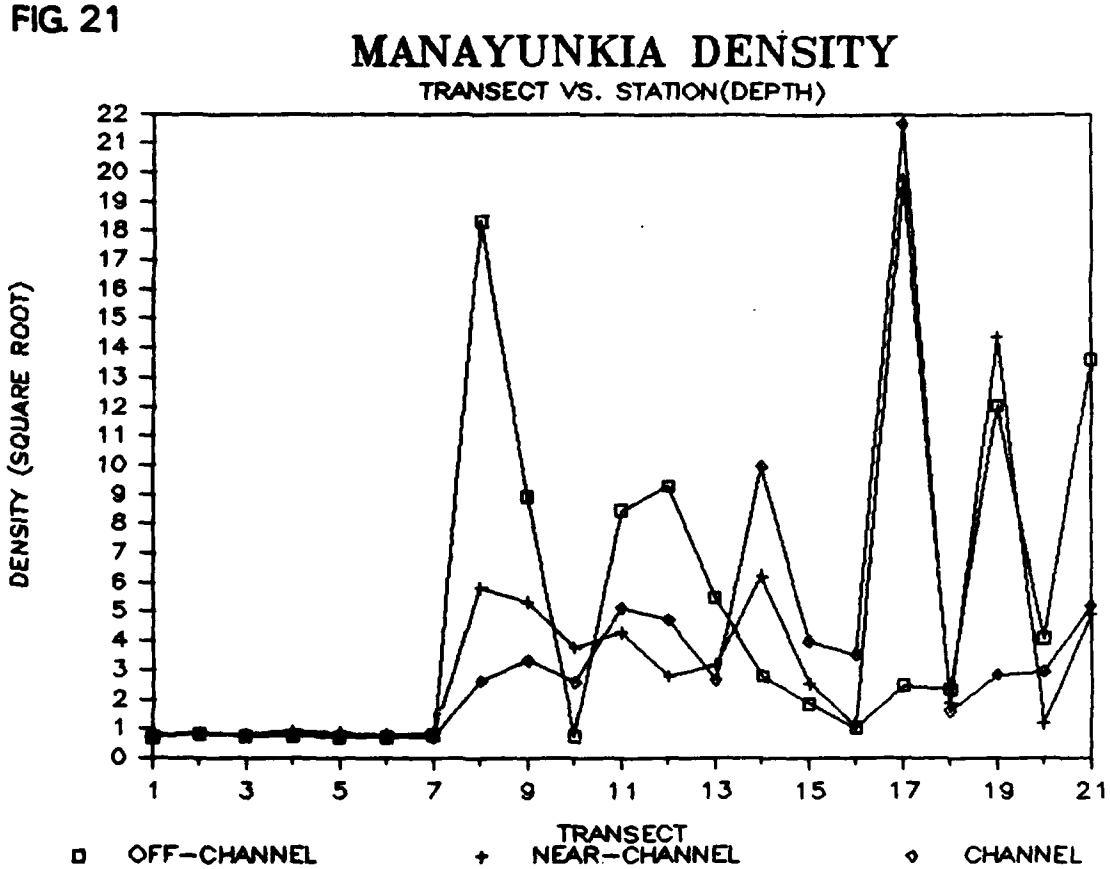

MANAYUNKIA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 22

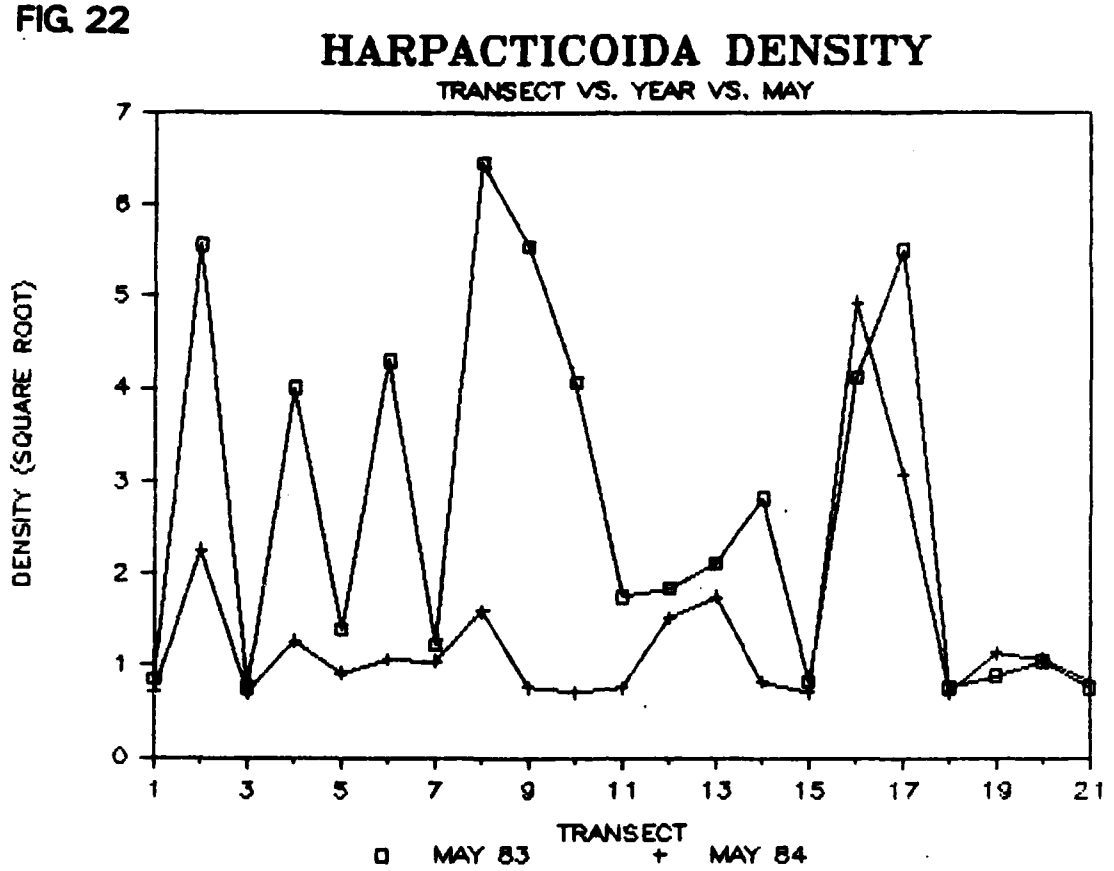
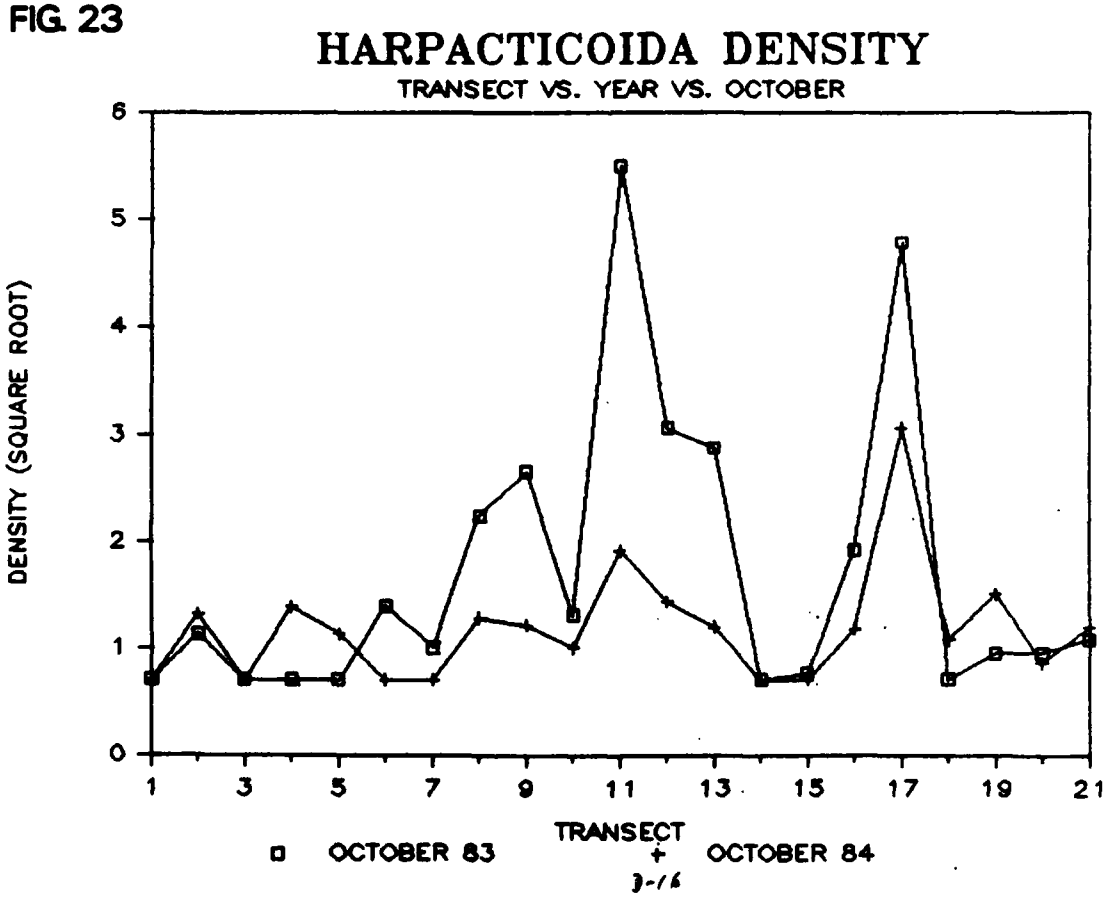


FIG. 23



3-16

FIG. 24

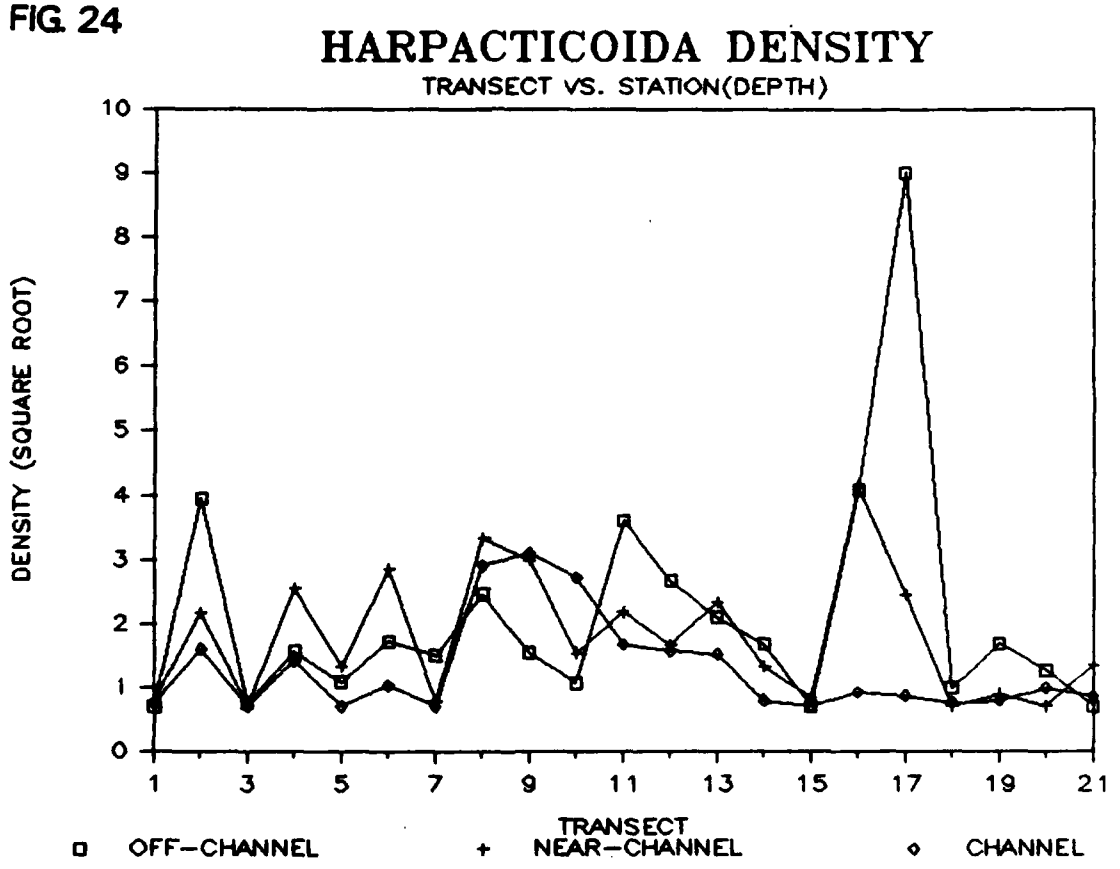

HARPACTICOIDA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 25

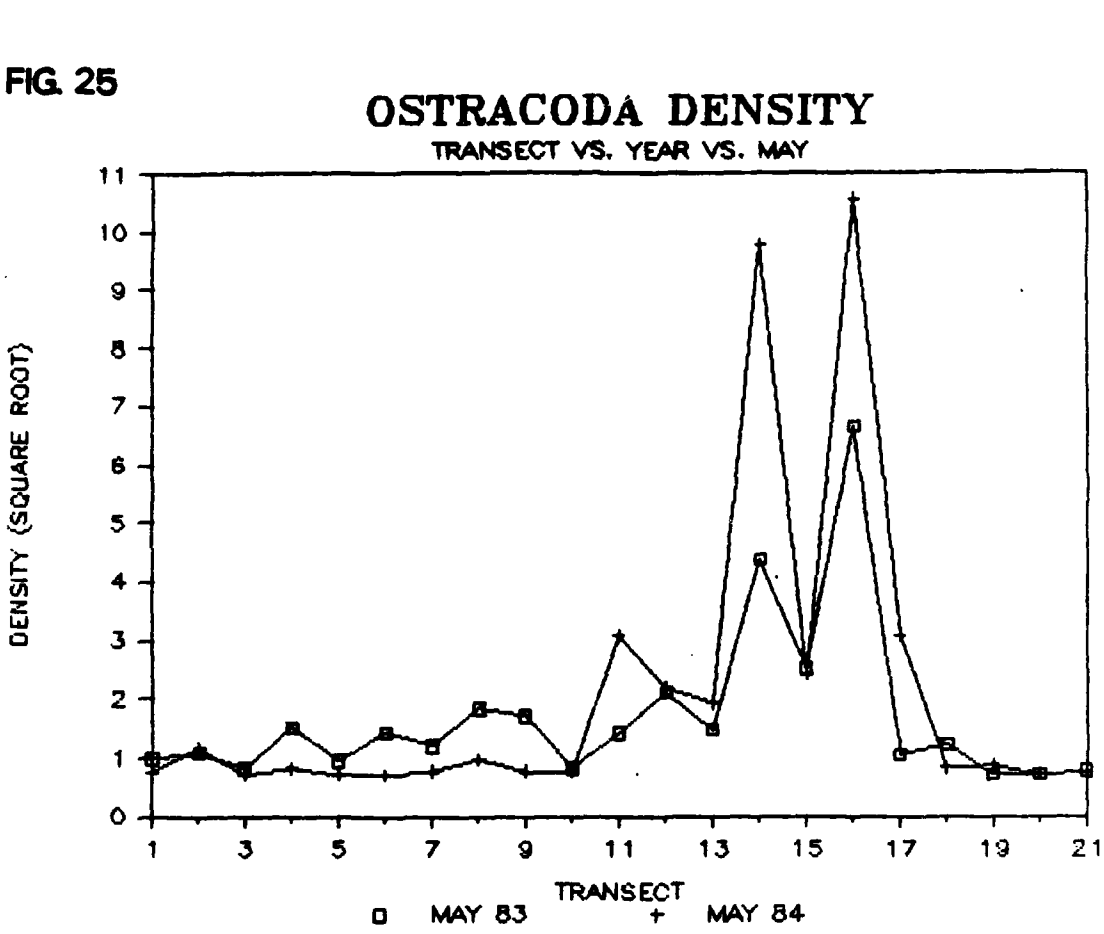

OSTRACODA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 26

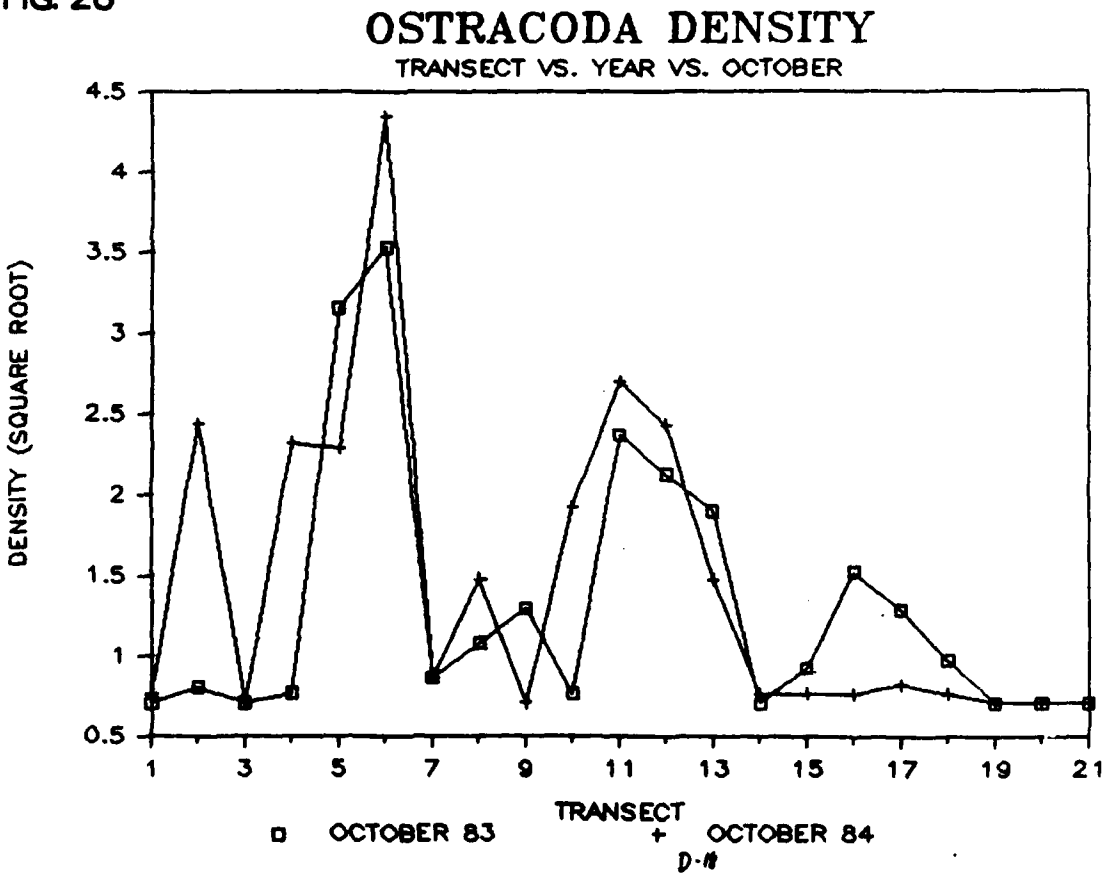

OSTRACODA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0.5
1
1.5
2
2.5
3
3.5
4
4.5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 27

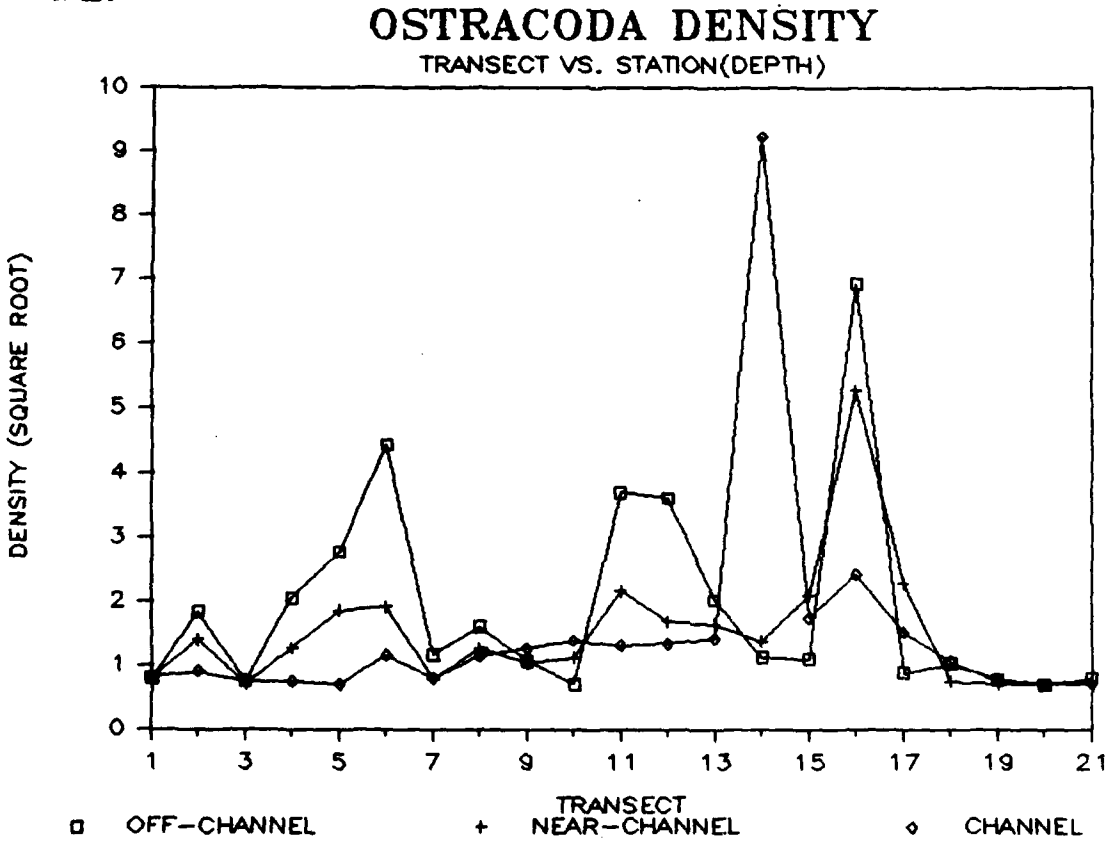

OSTRACODA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 28

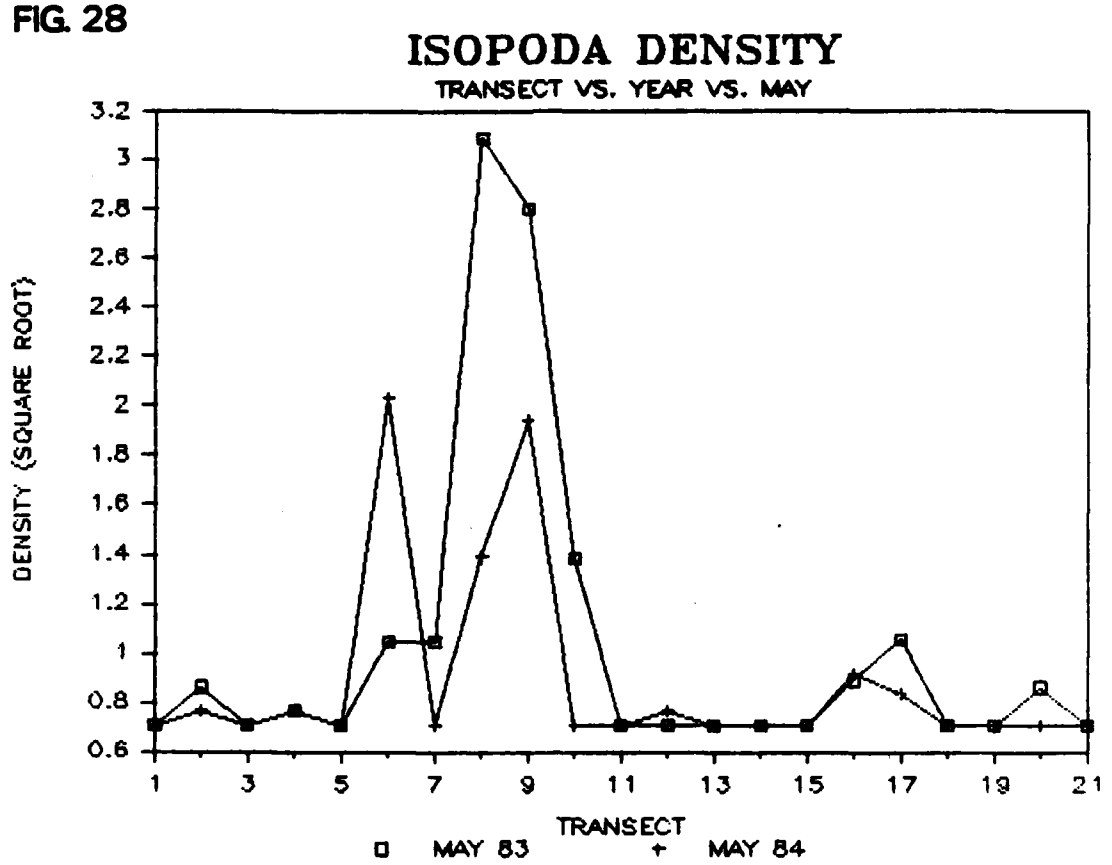

ISOPODA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 29

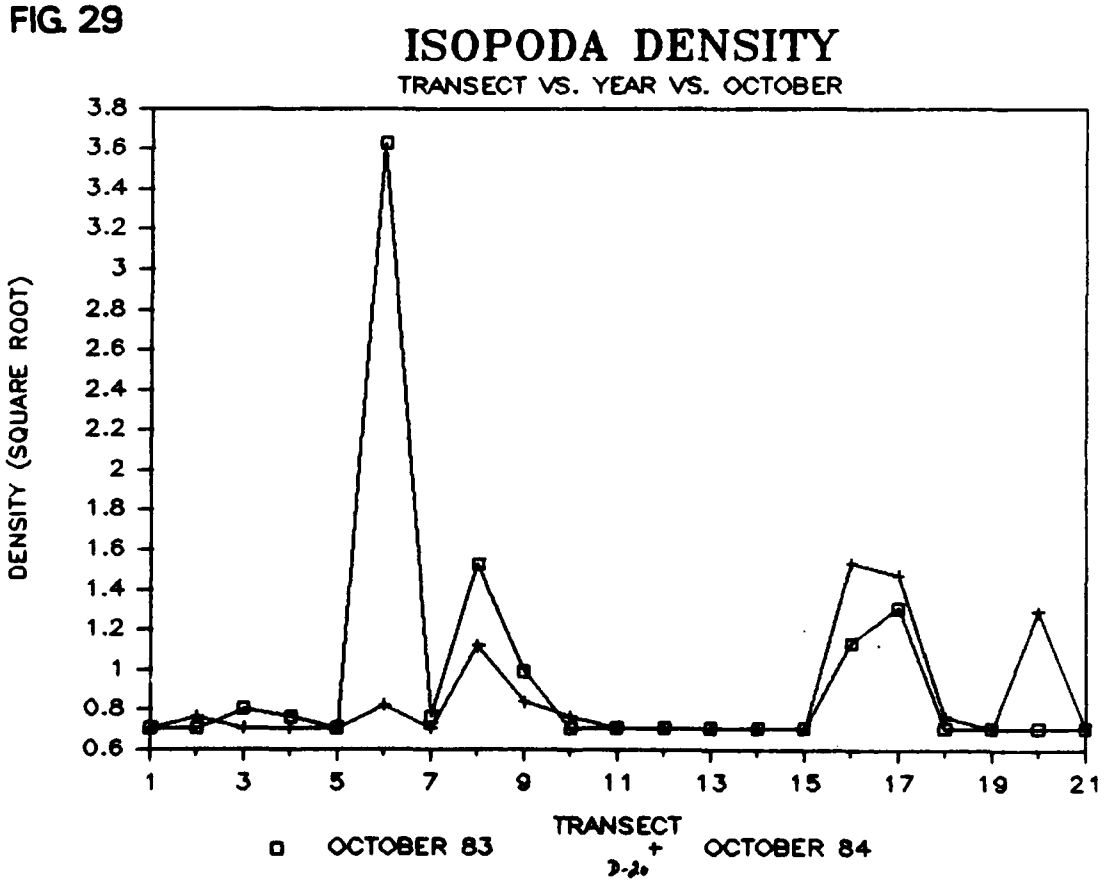

ISOPODA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 30

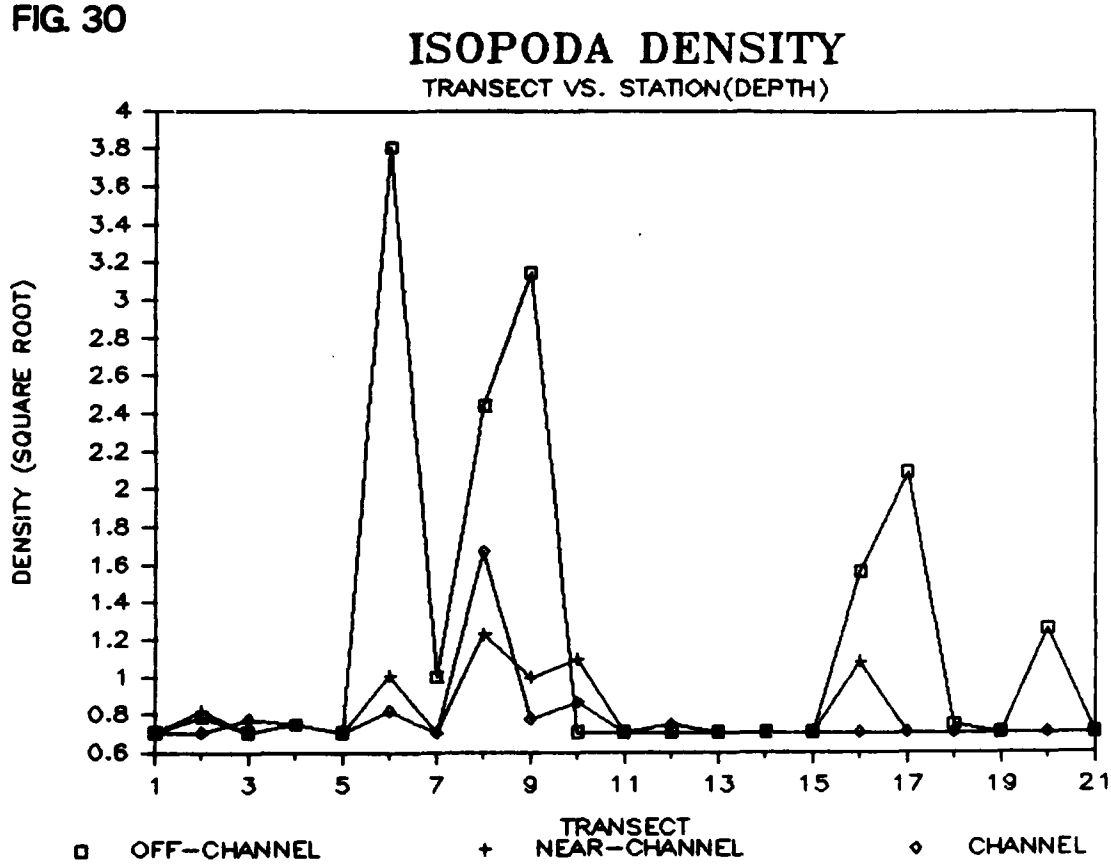

ISOPODA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 31

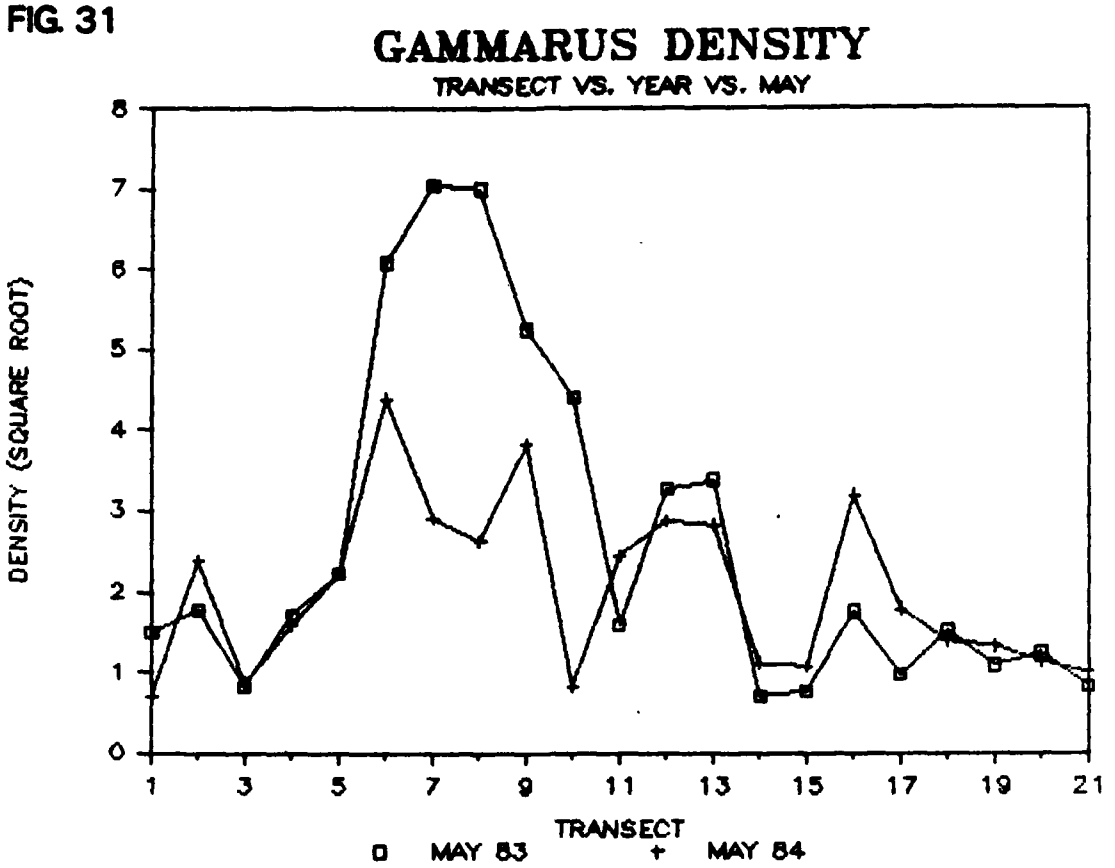

GAMMARUS DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 32

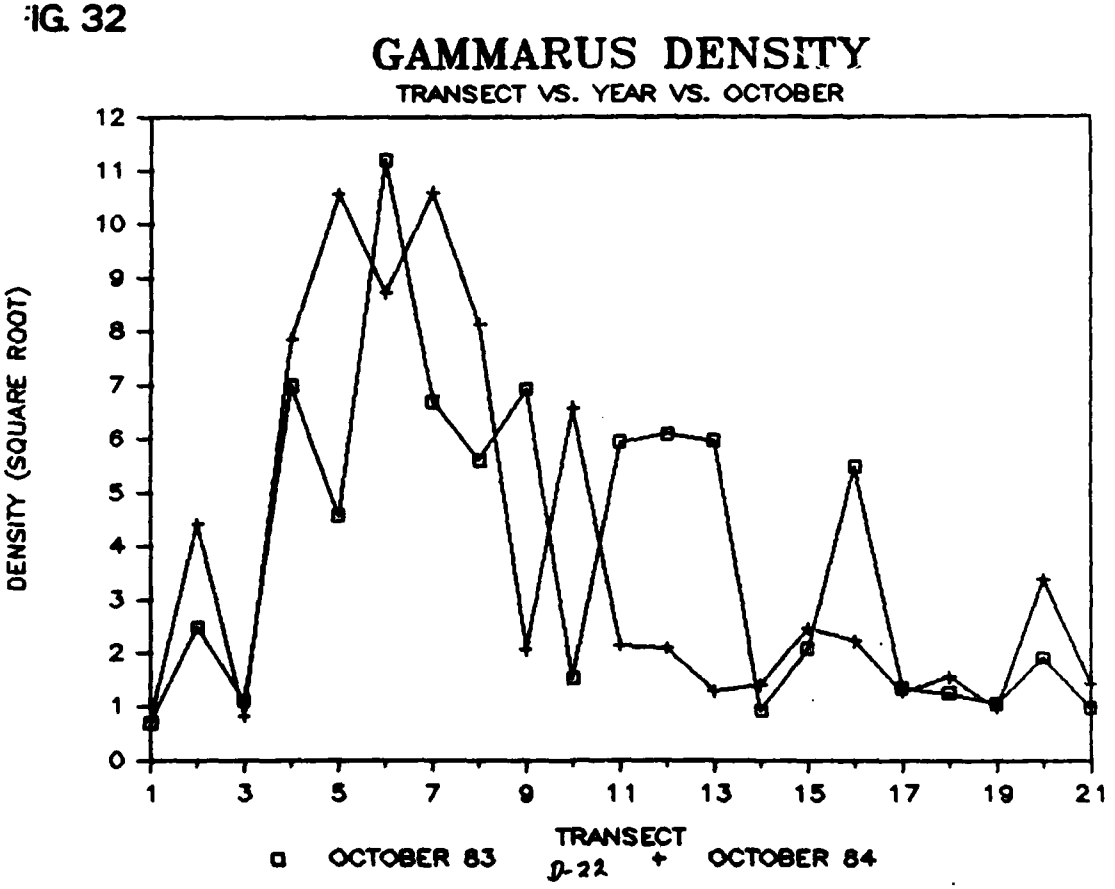

GAMMARUS DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
12
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 33

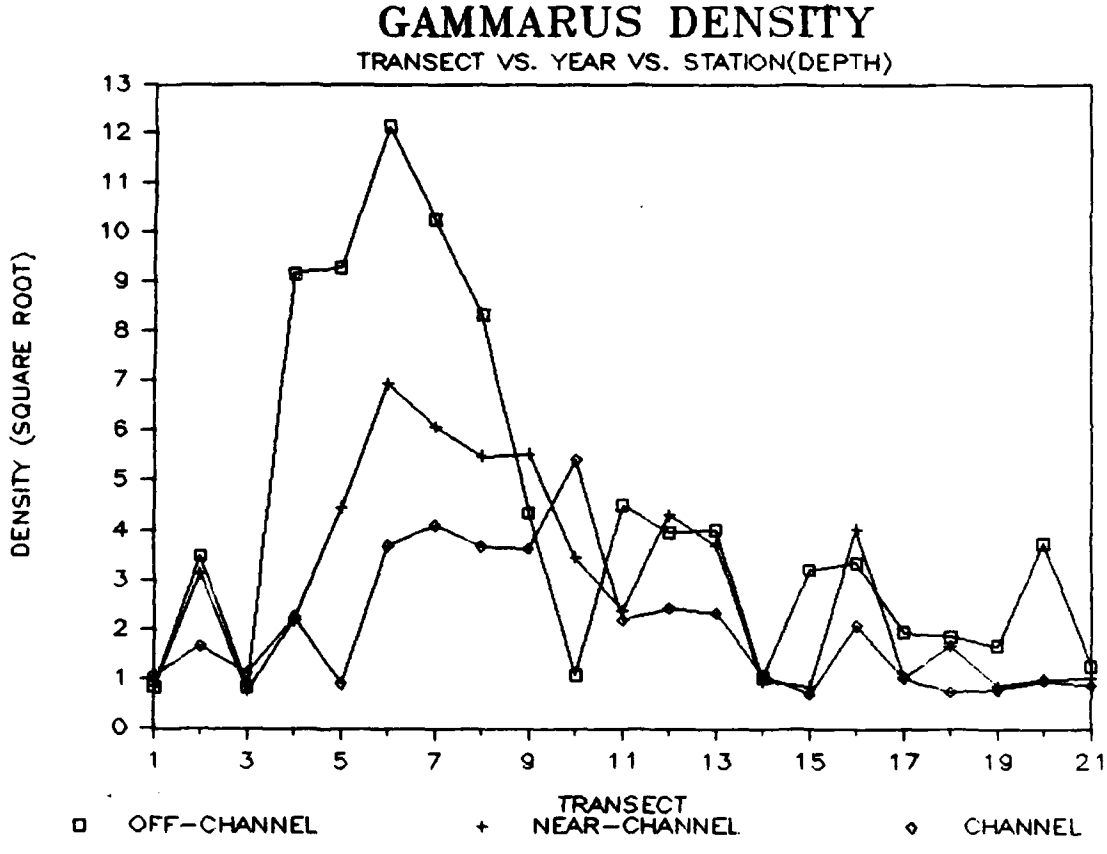

GAMMARUS DENSITY
TRANSECT VS. YEAR VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 34

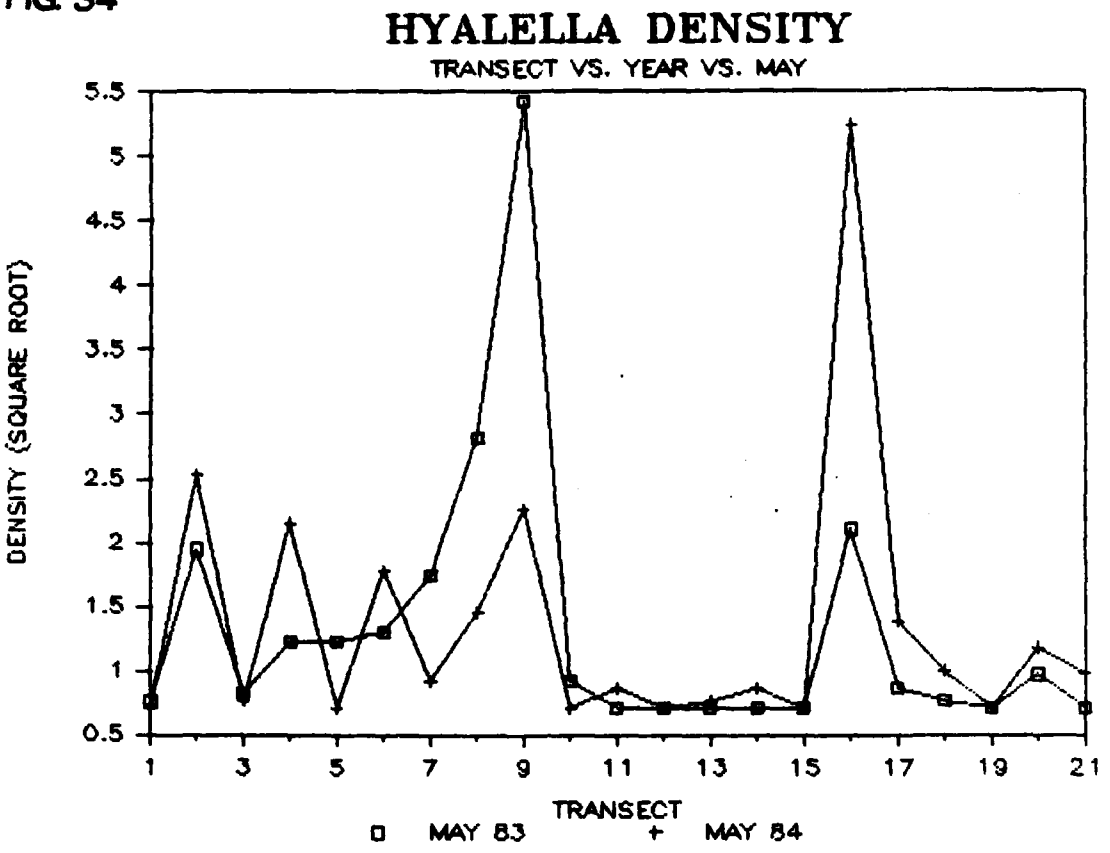

HYALELLA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 35

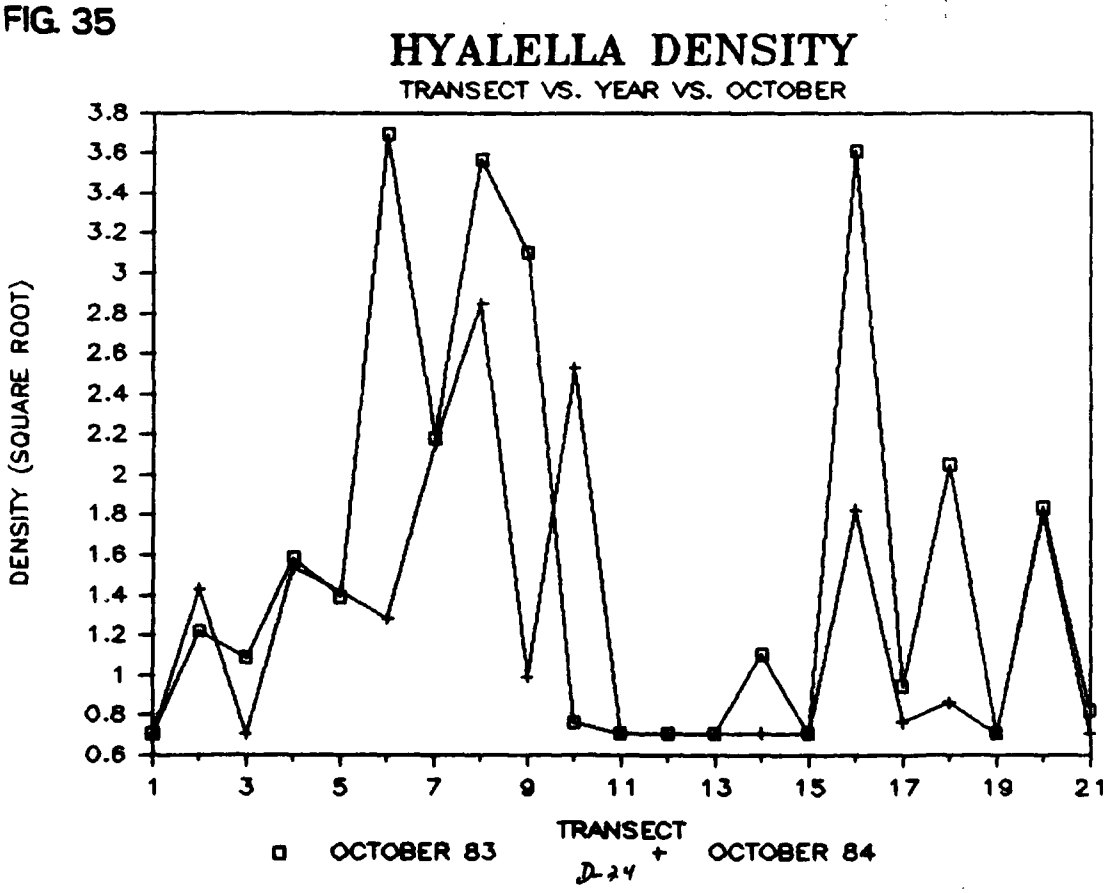

HYALELLA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 36

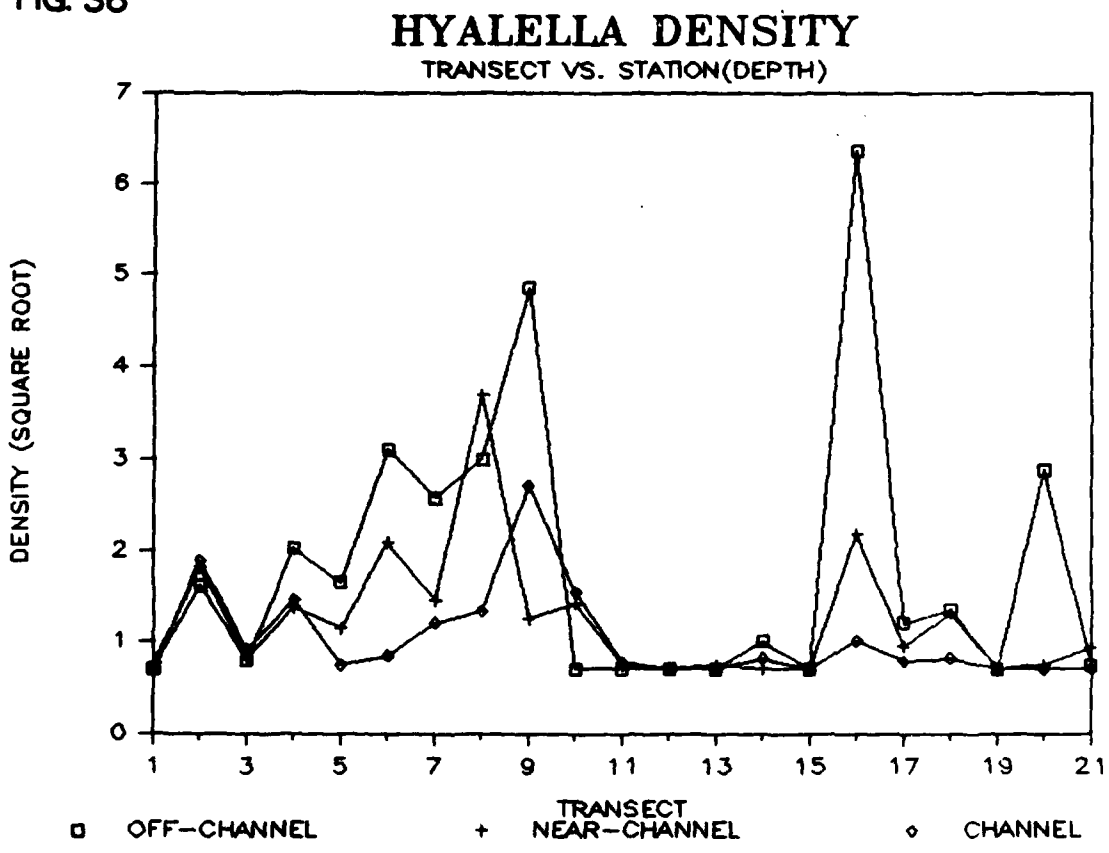

HYALELLA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 37

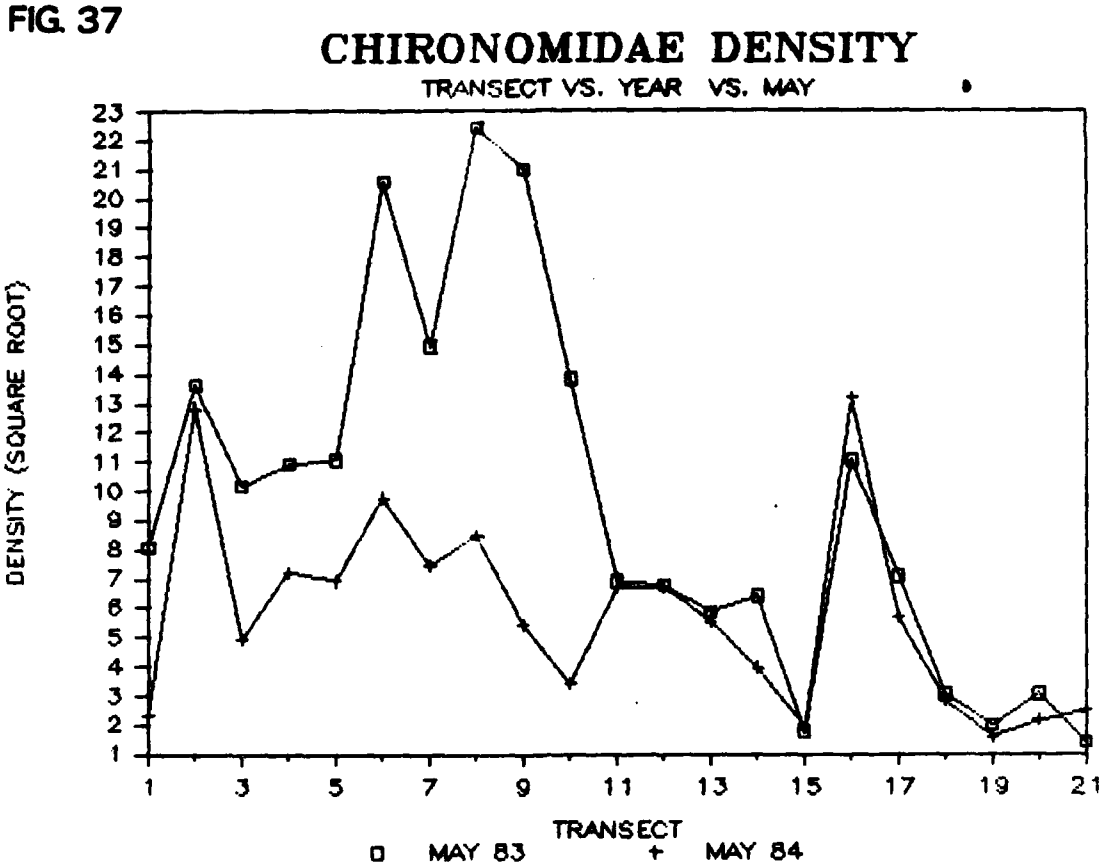

CHIRONOMIDAE DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
TRANSECT
MAY 83
MAY 84

FIG. 38

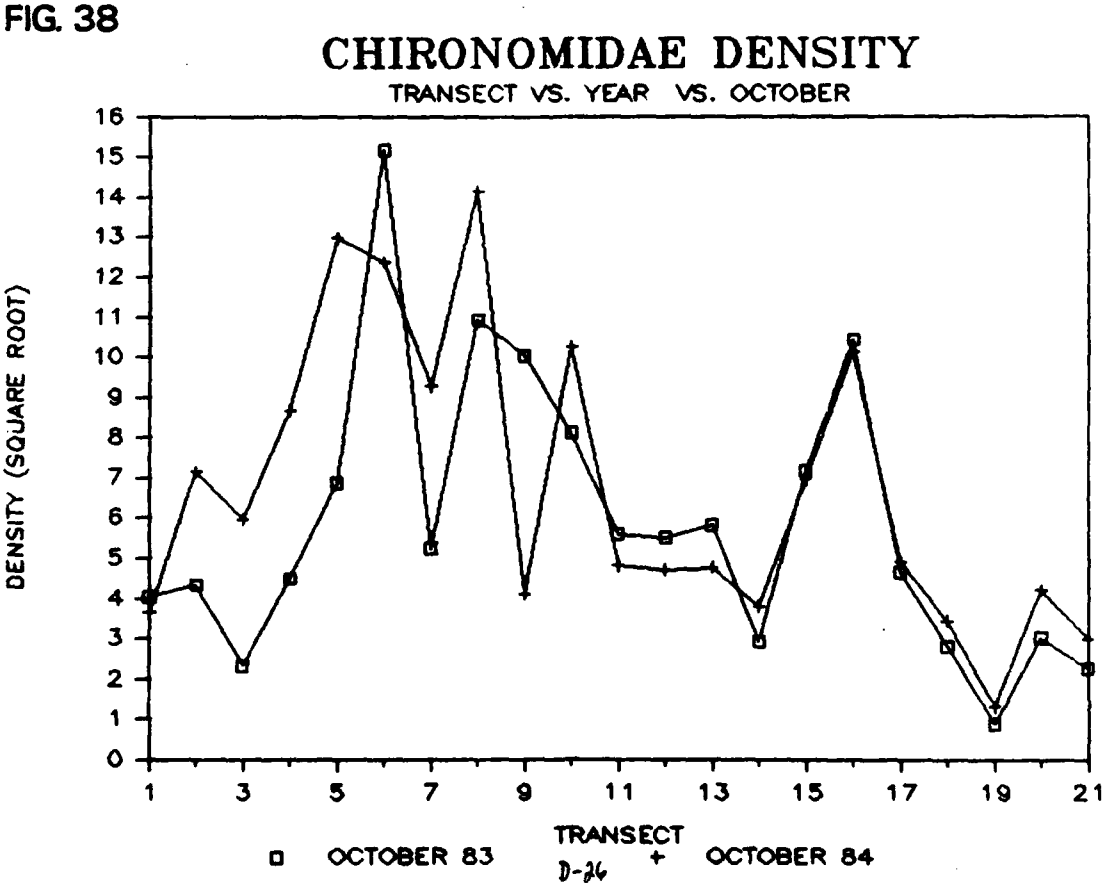

CHIRONOMIDAE DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 39

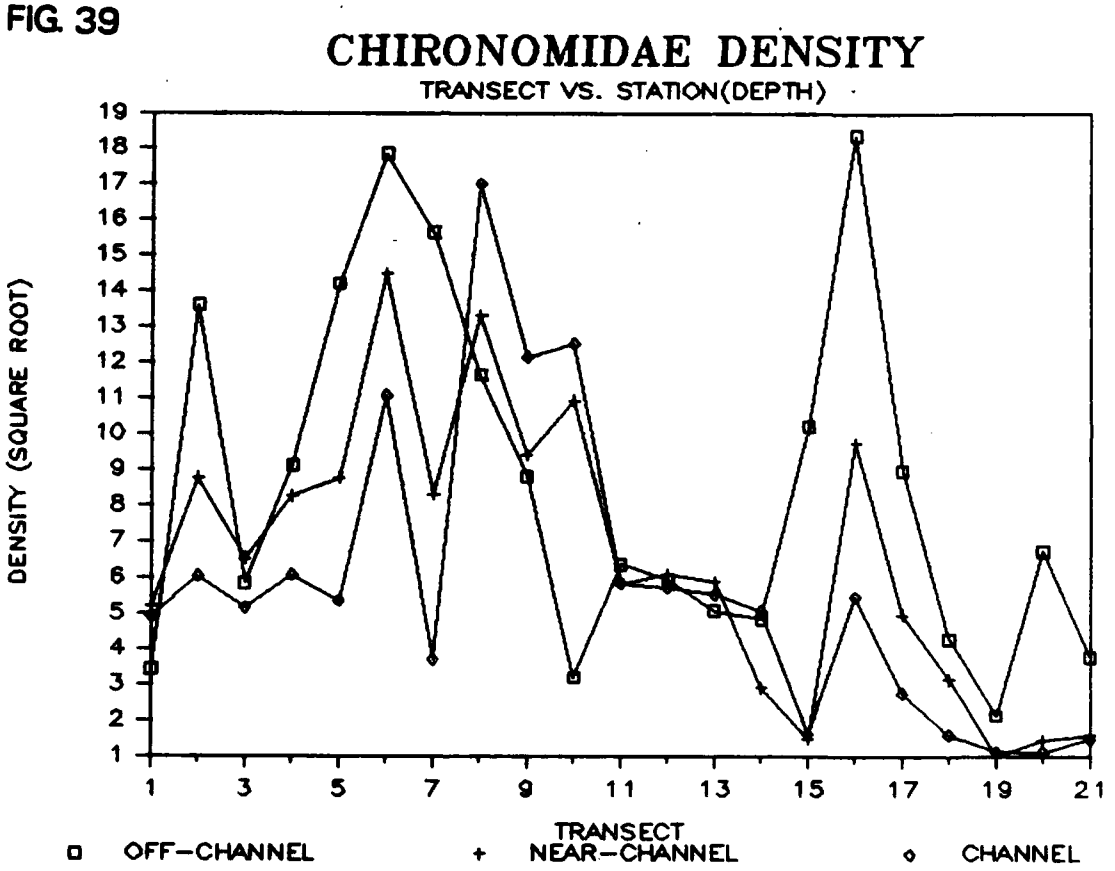

CHIRONOMIDAE DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 40

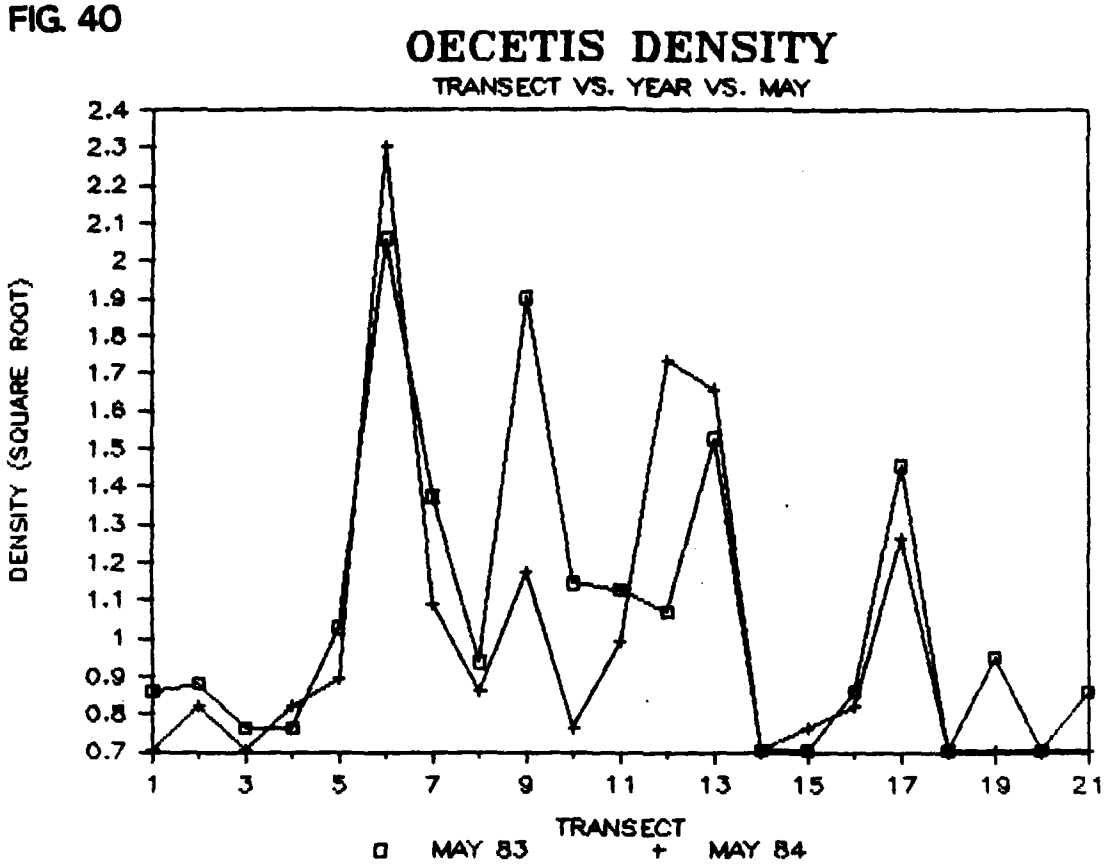

OECETIS DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1 3 5 7 9 11 13 15 17 19 21
TRANSECT
MAY 83
MAY 84

FIG. 41

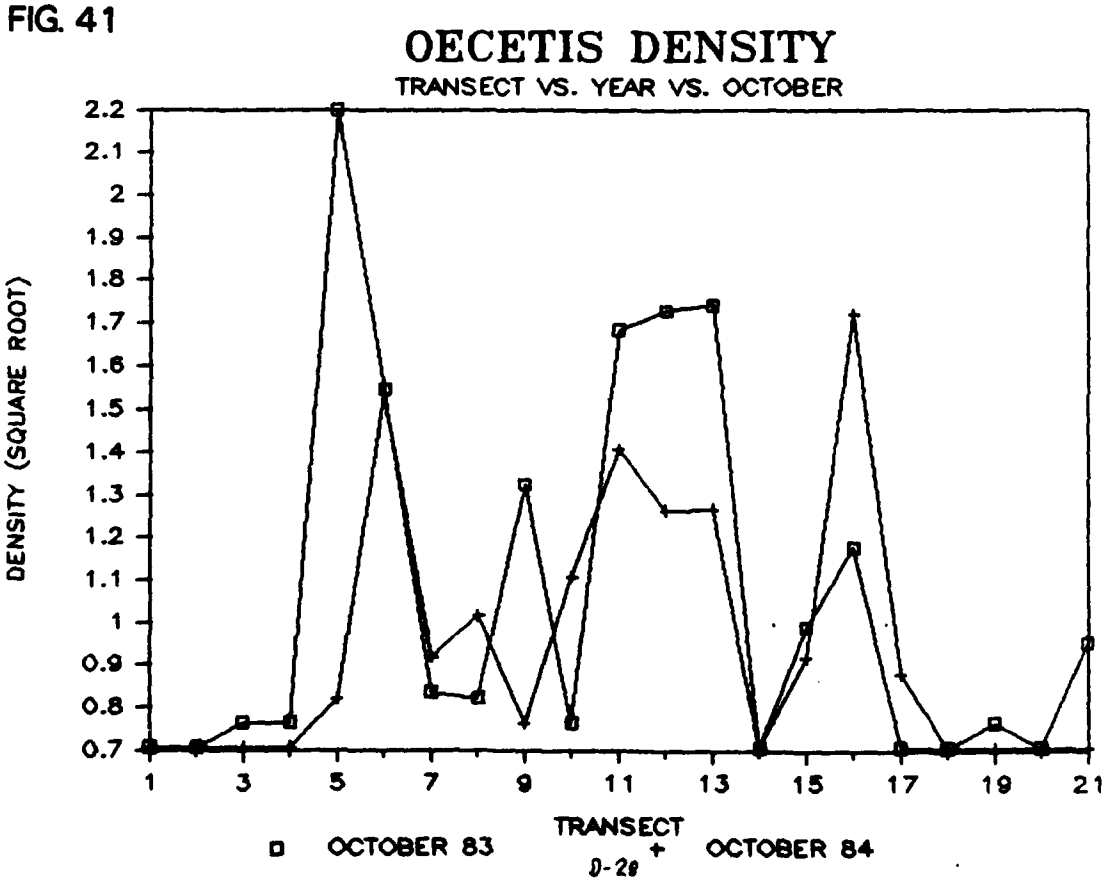

OECETIS DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1 3 5 7 9 11 13 15 17 19 21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 42

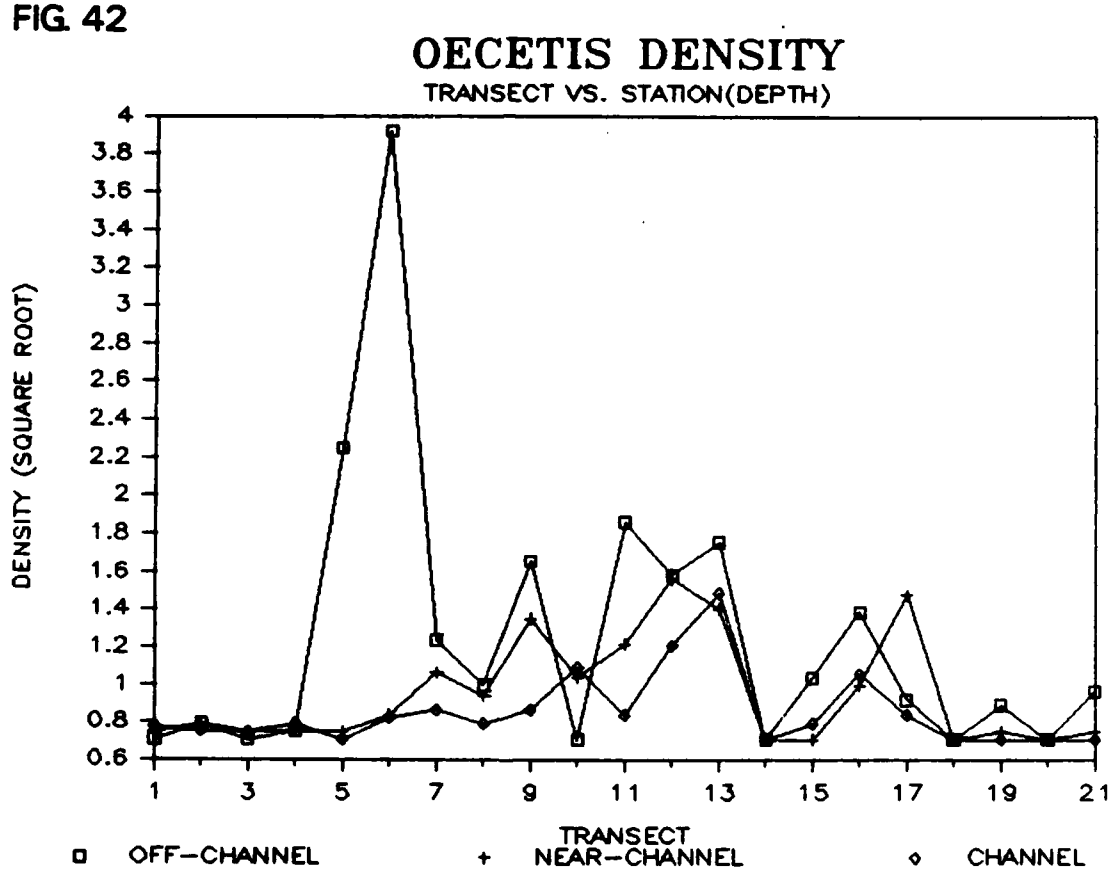

OECETIS DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
4
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 43

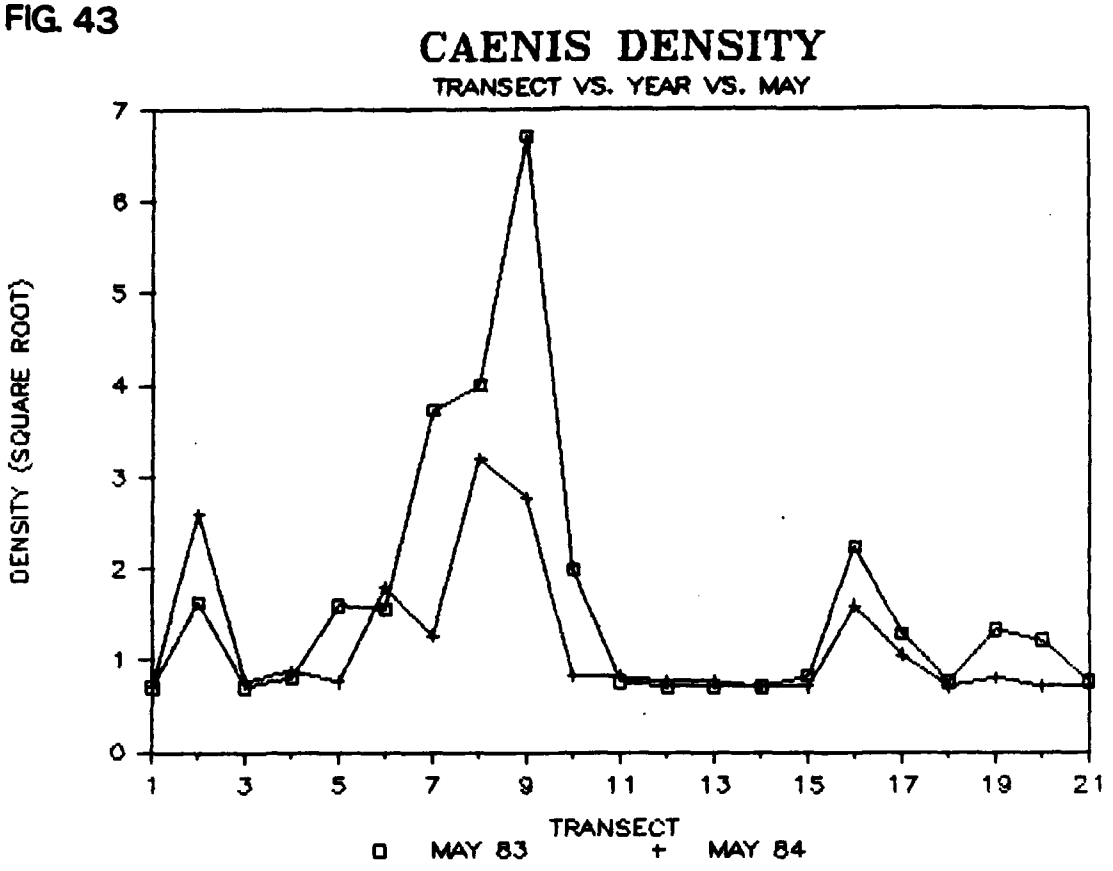

CAENIS DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 44

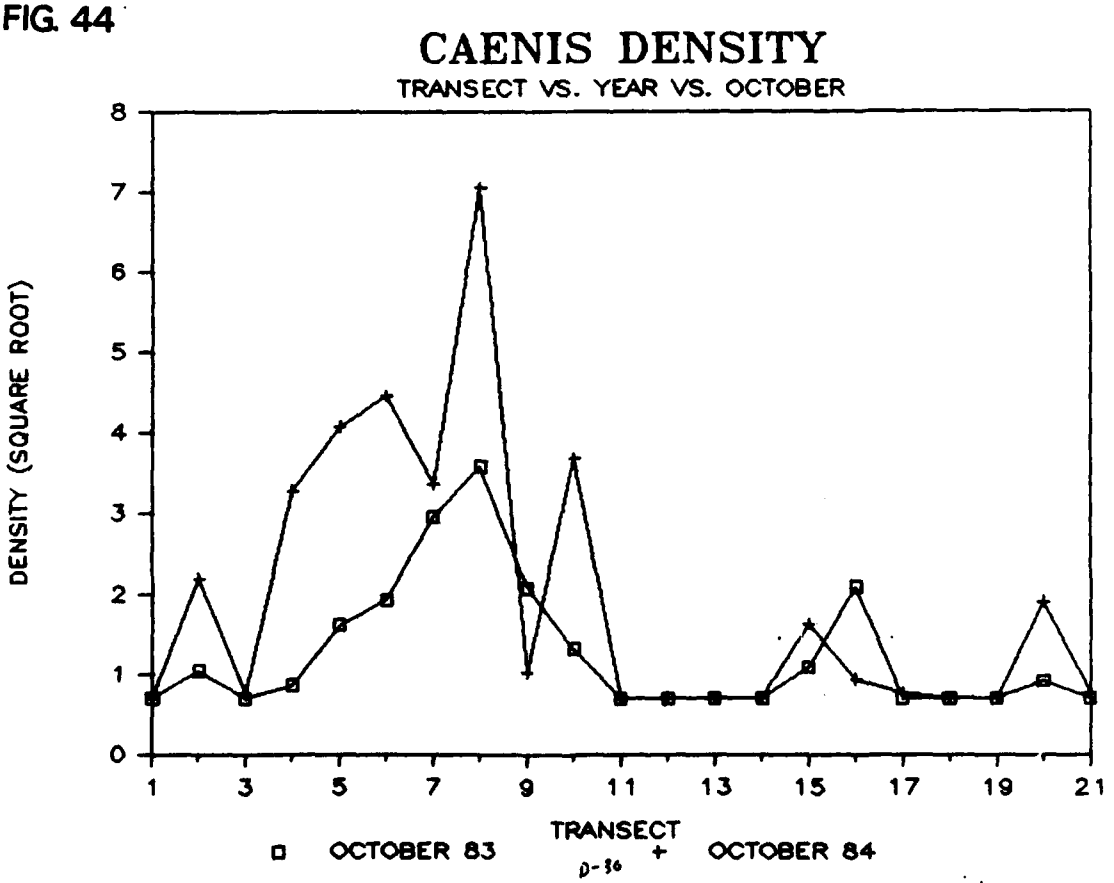

CAENIS DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 45

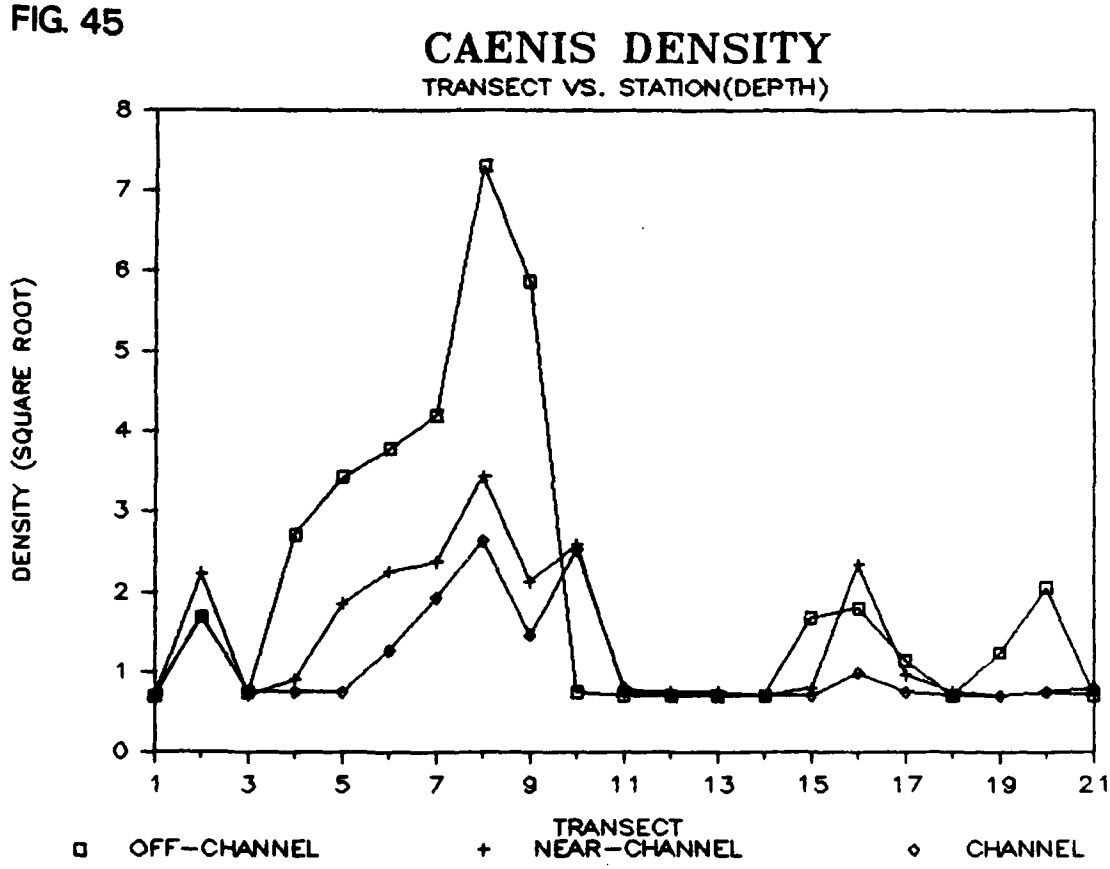

CAENIS DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 46

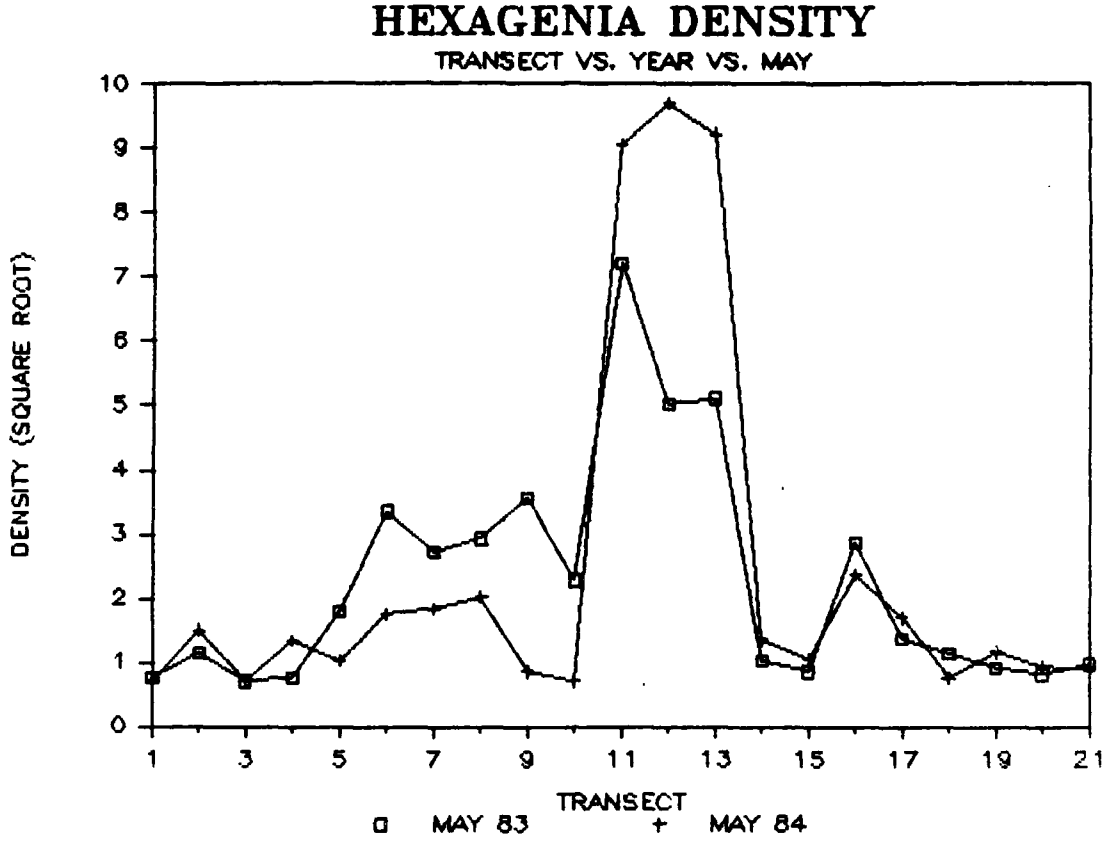

HEXAGENIA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 47

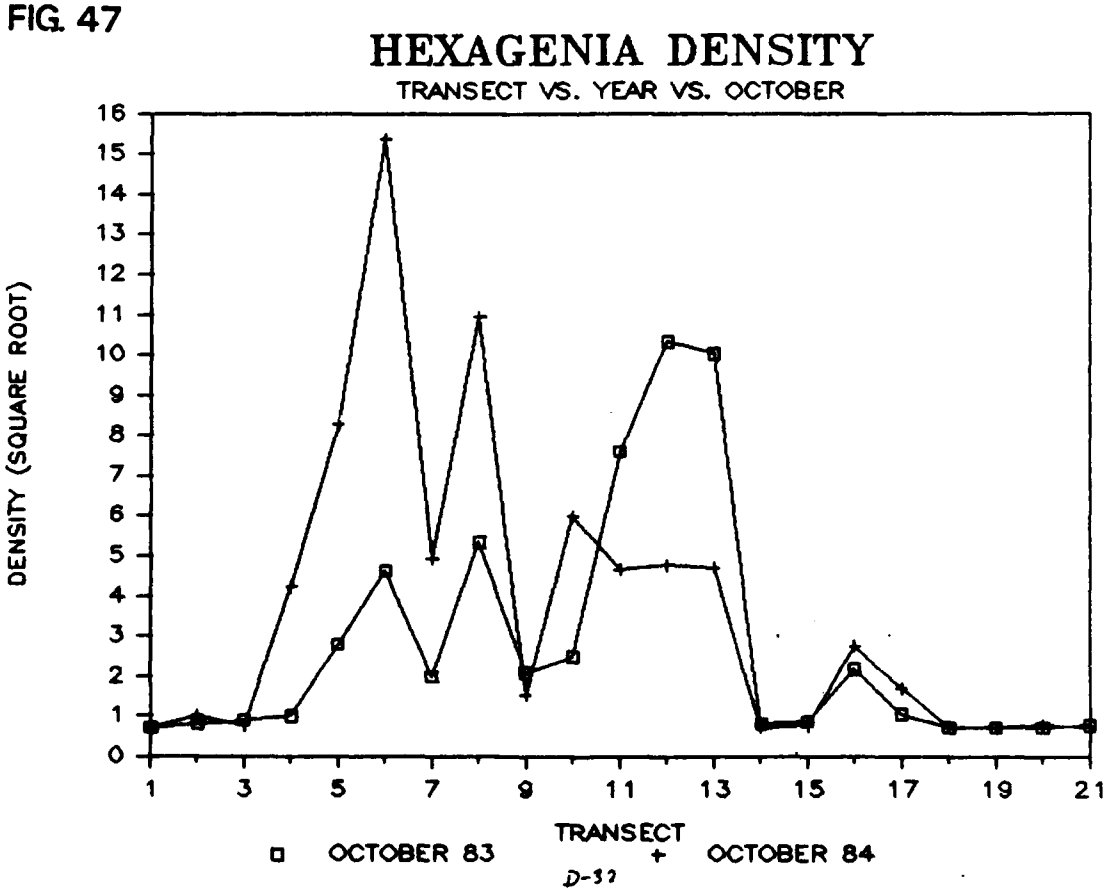

HEXAGENIA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 48

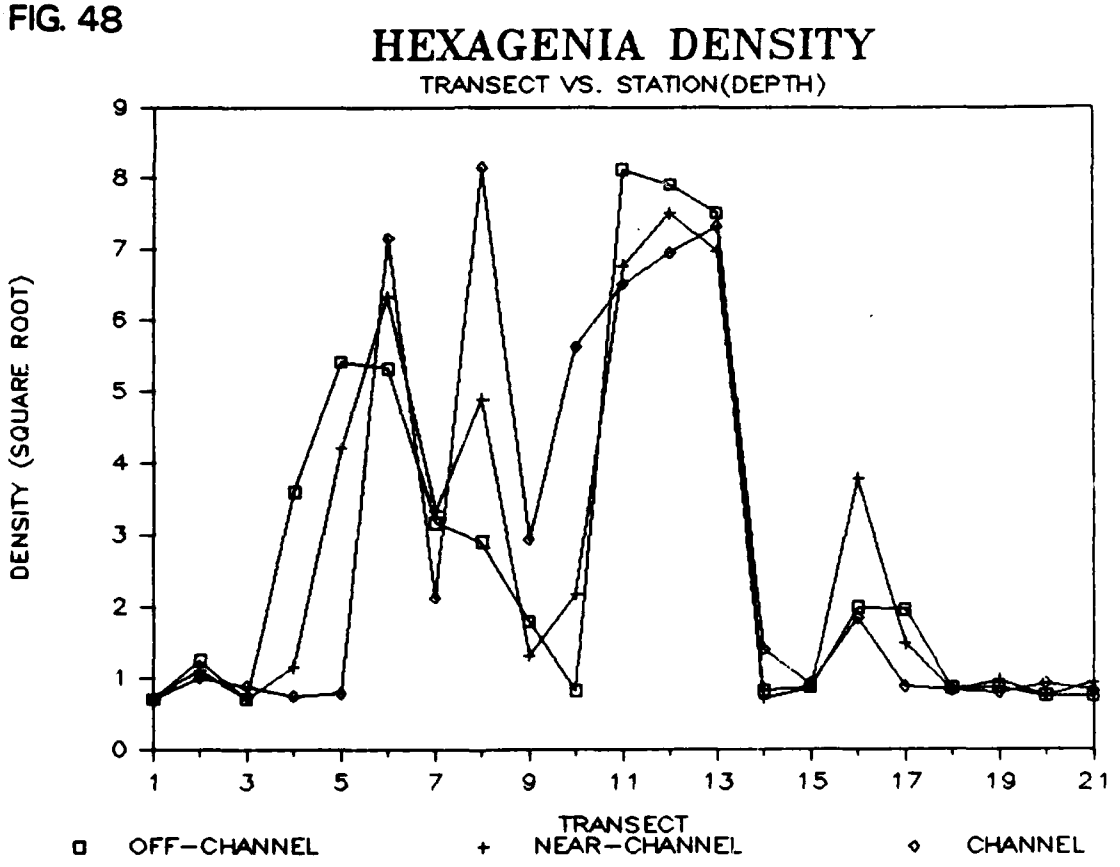

HEXAGENIA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 49

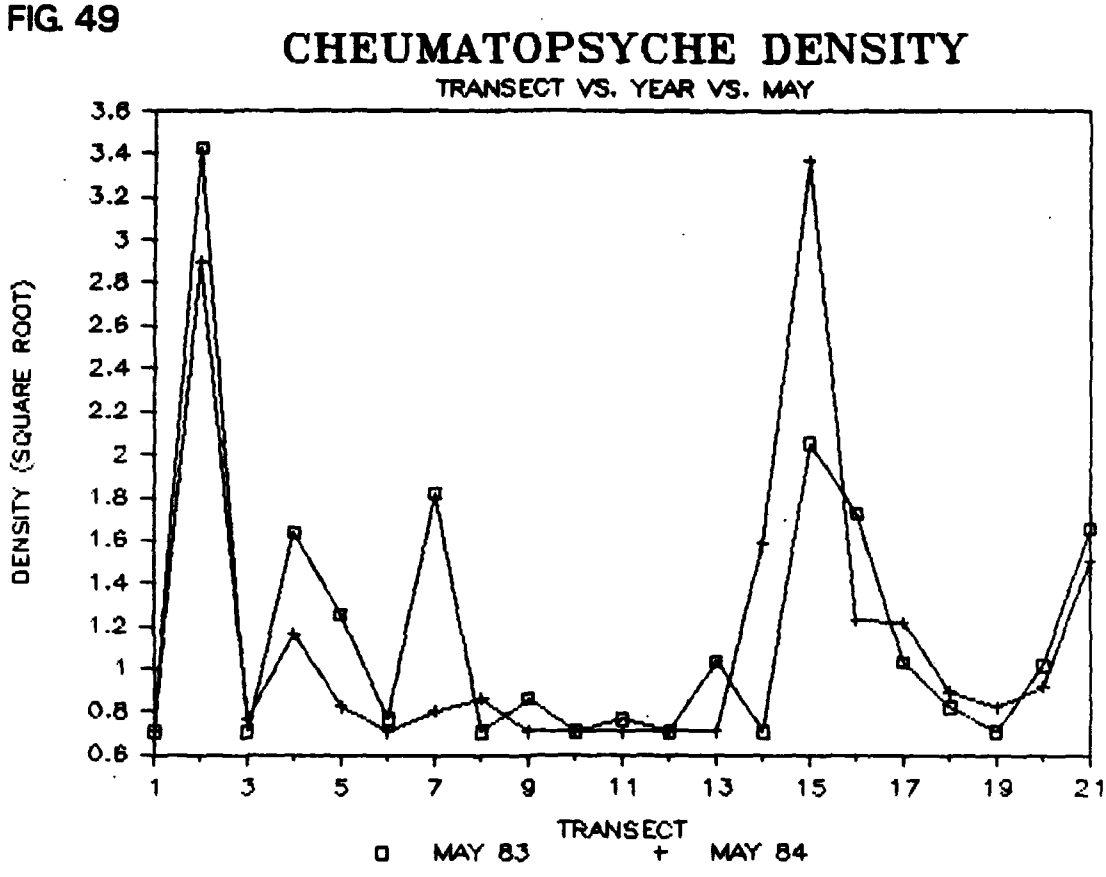

CHEUMATOPSYCHE DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 50

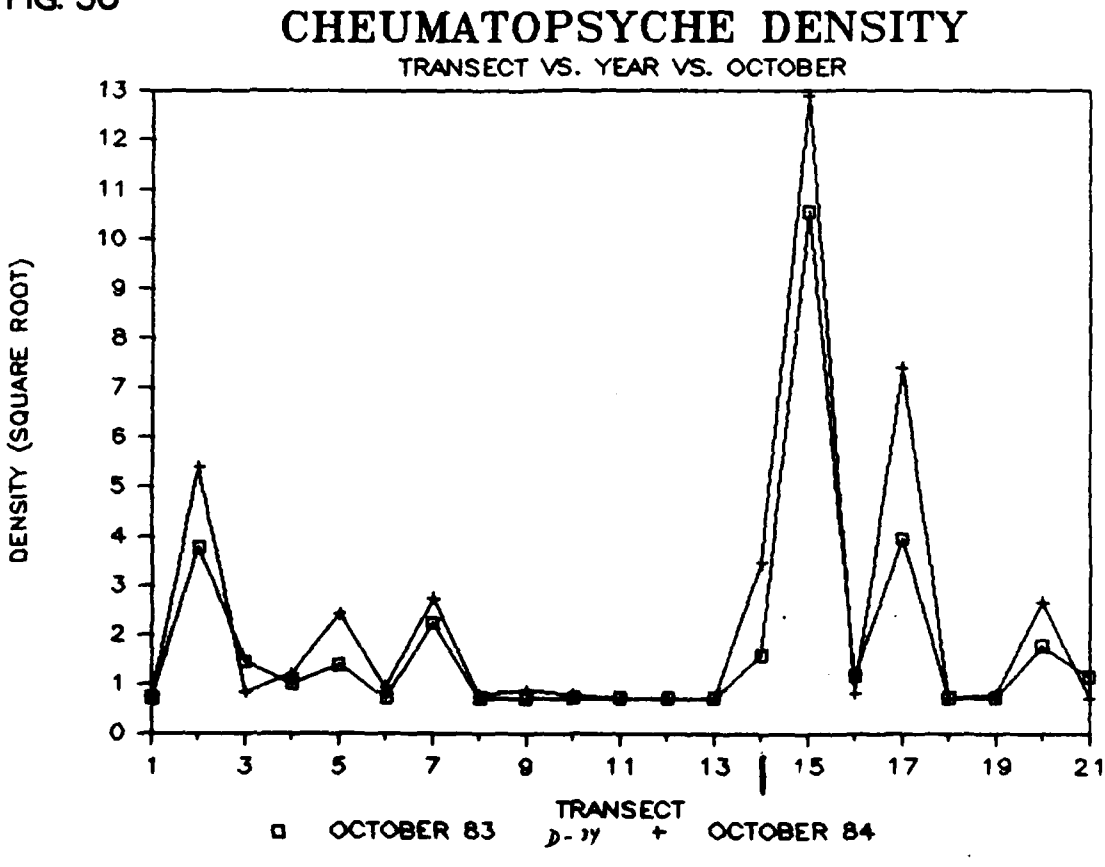

CHEUMATOPSYCHE DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
13
12
11
10
9
8
7
6
5
4
3
2
1
0
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 51

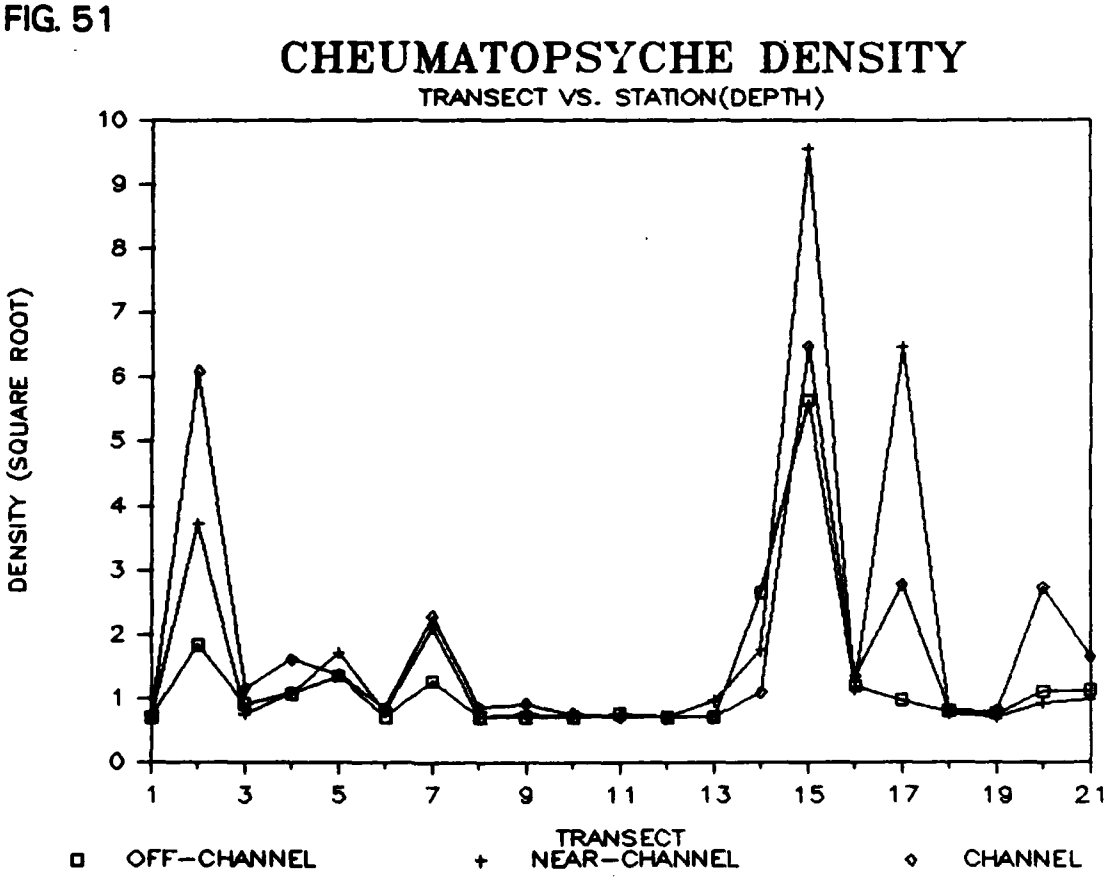

CHEUMATOPSYCHE DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 52

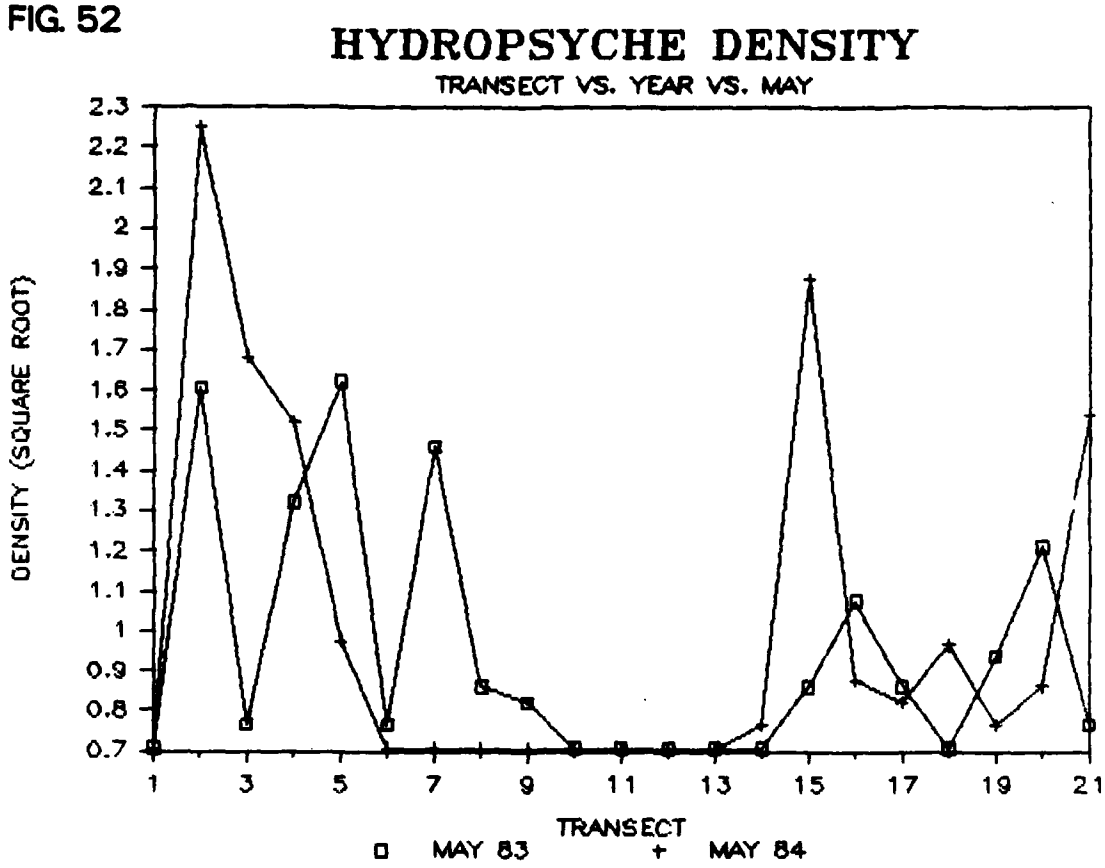

HYDROPSYCHE DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 53

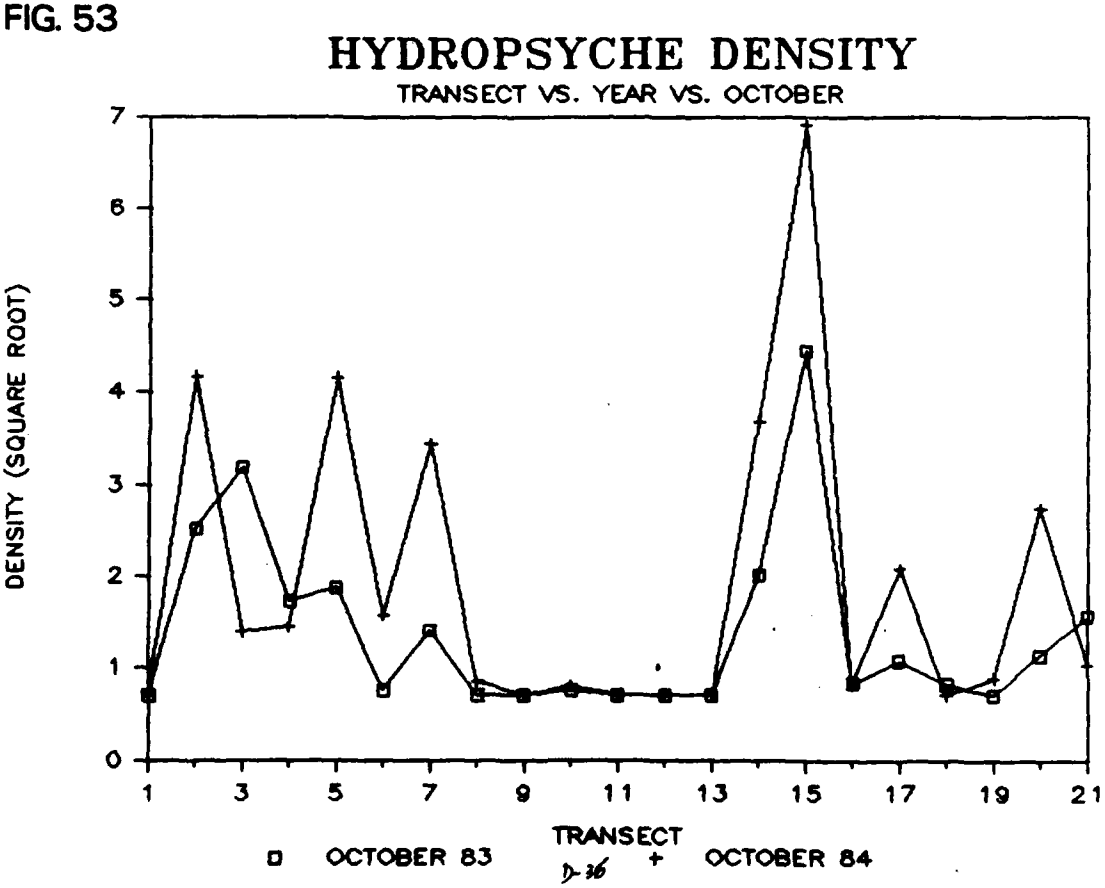

HYDROPSYCHE DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
7
6
5
4
3
2
1
0
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 54

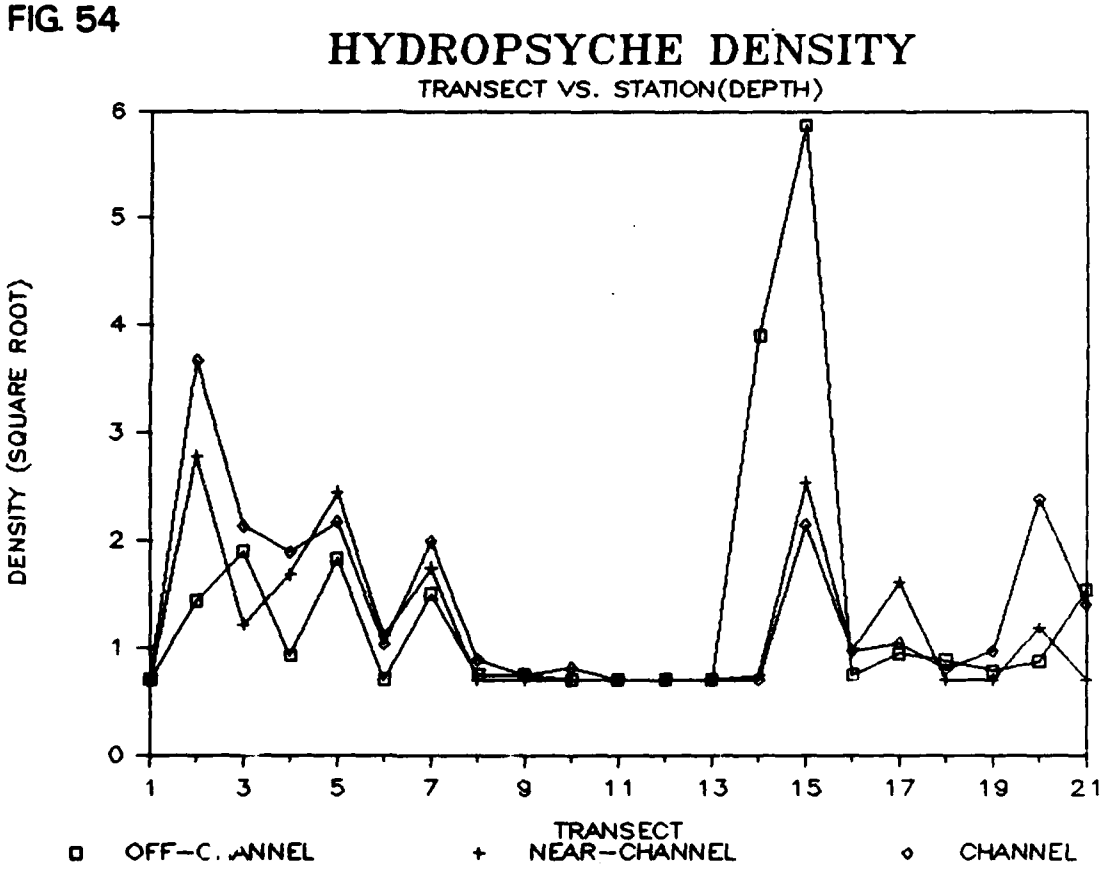

HYDROPSYCHE DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 55

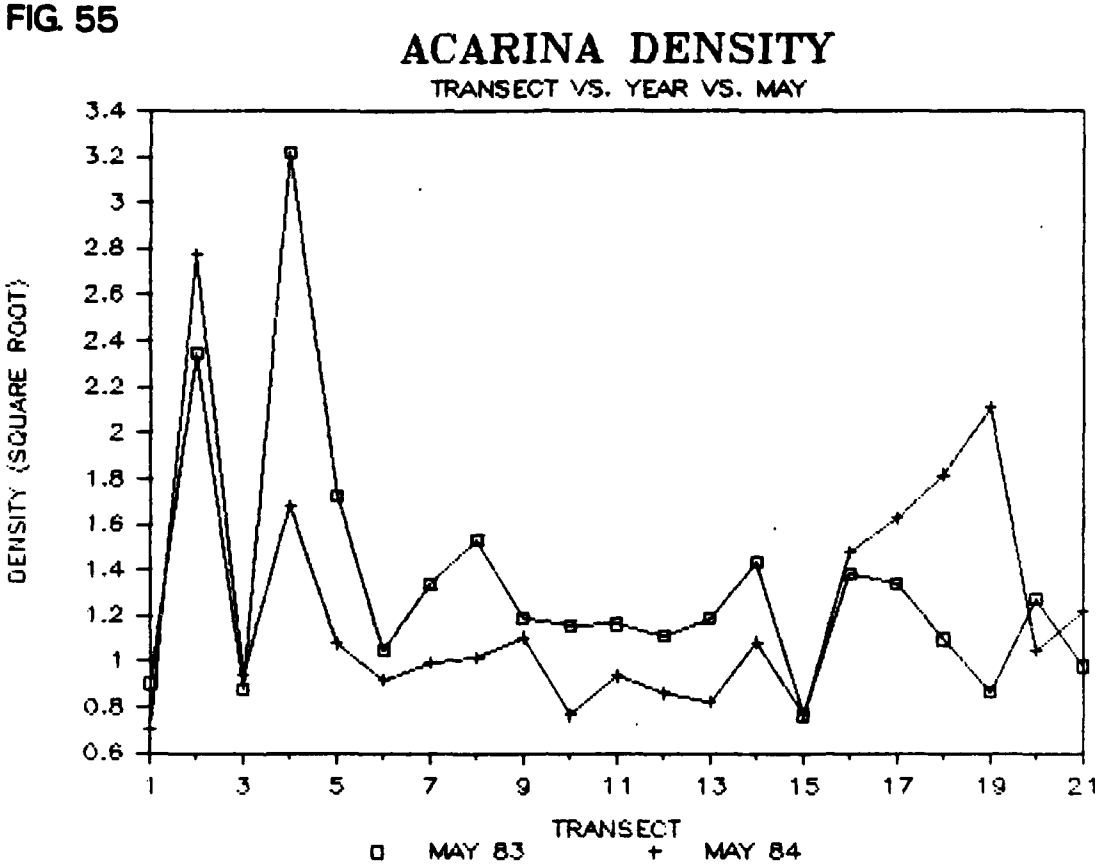

ACARINA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 56

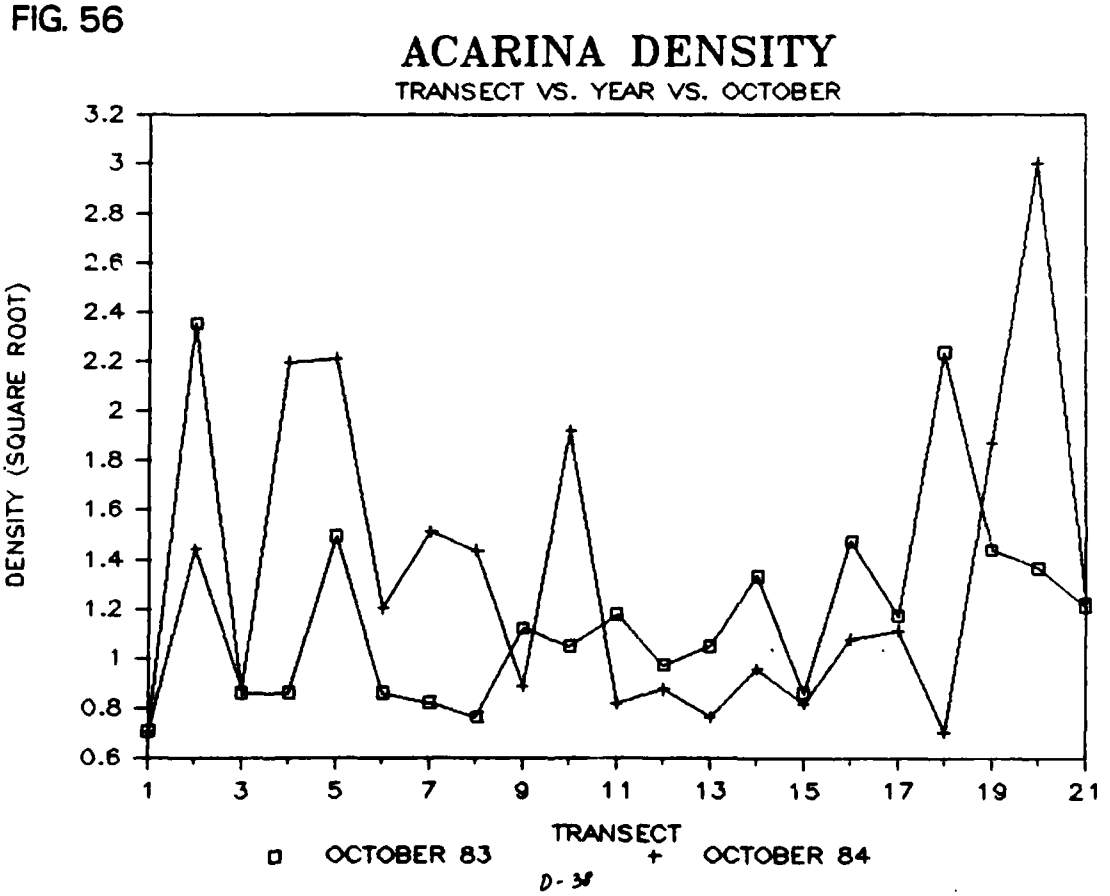

ACARINA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 57

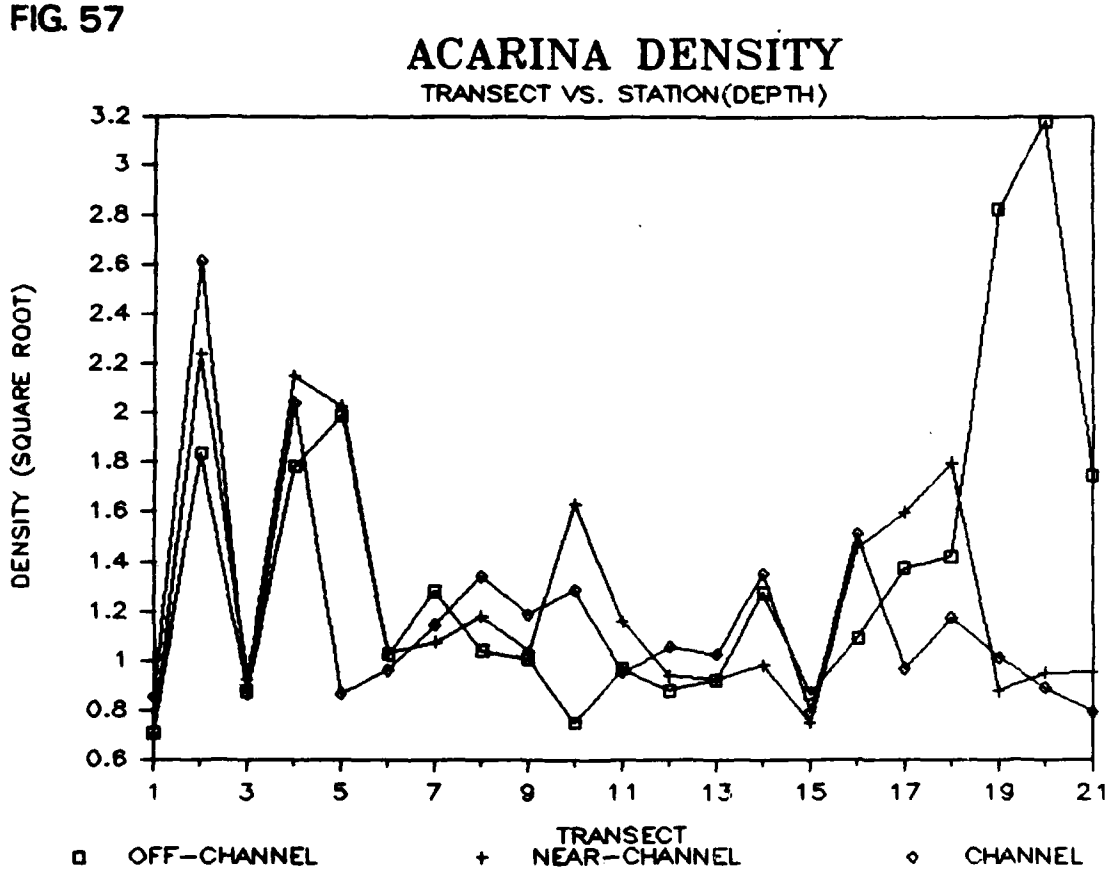

ACARINA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 58

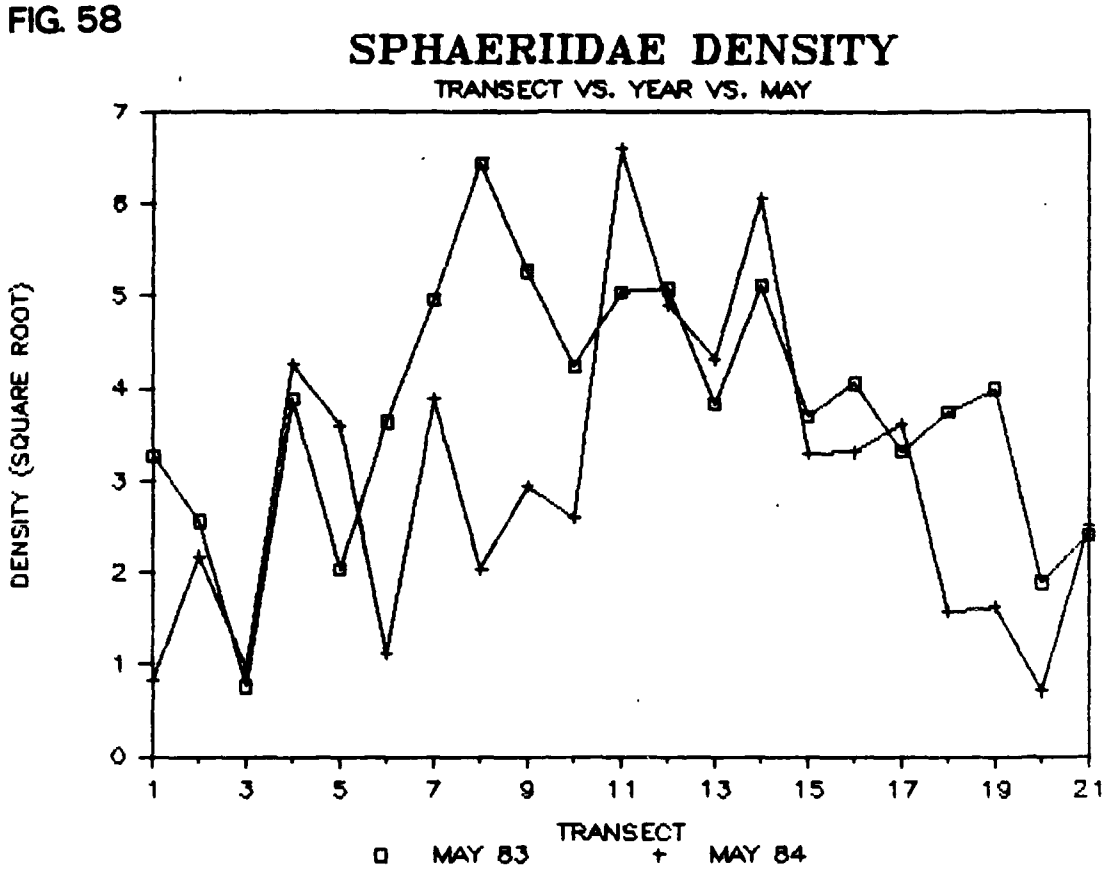

SPHAERIIDAE DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 59

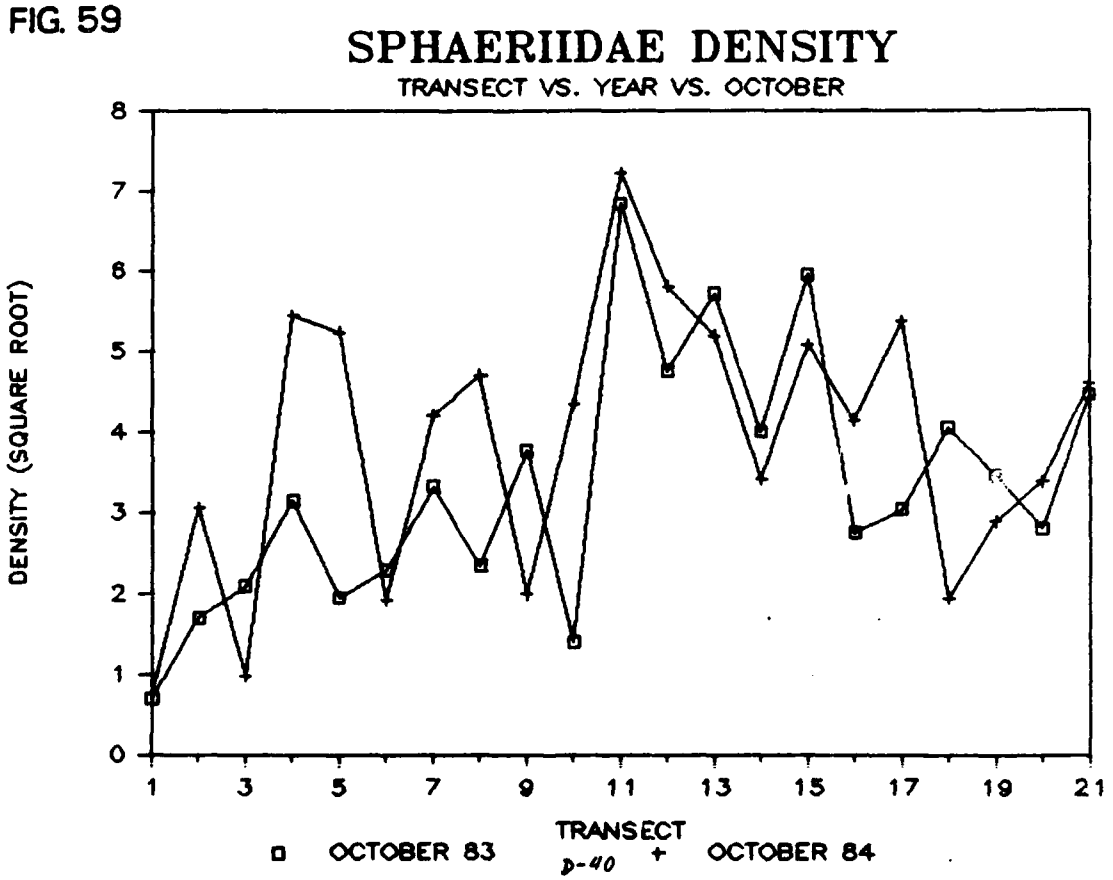

SPHAERIIDAE DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 60

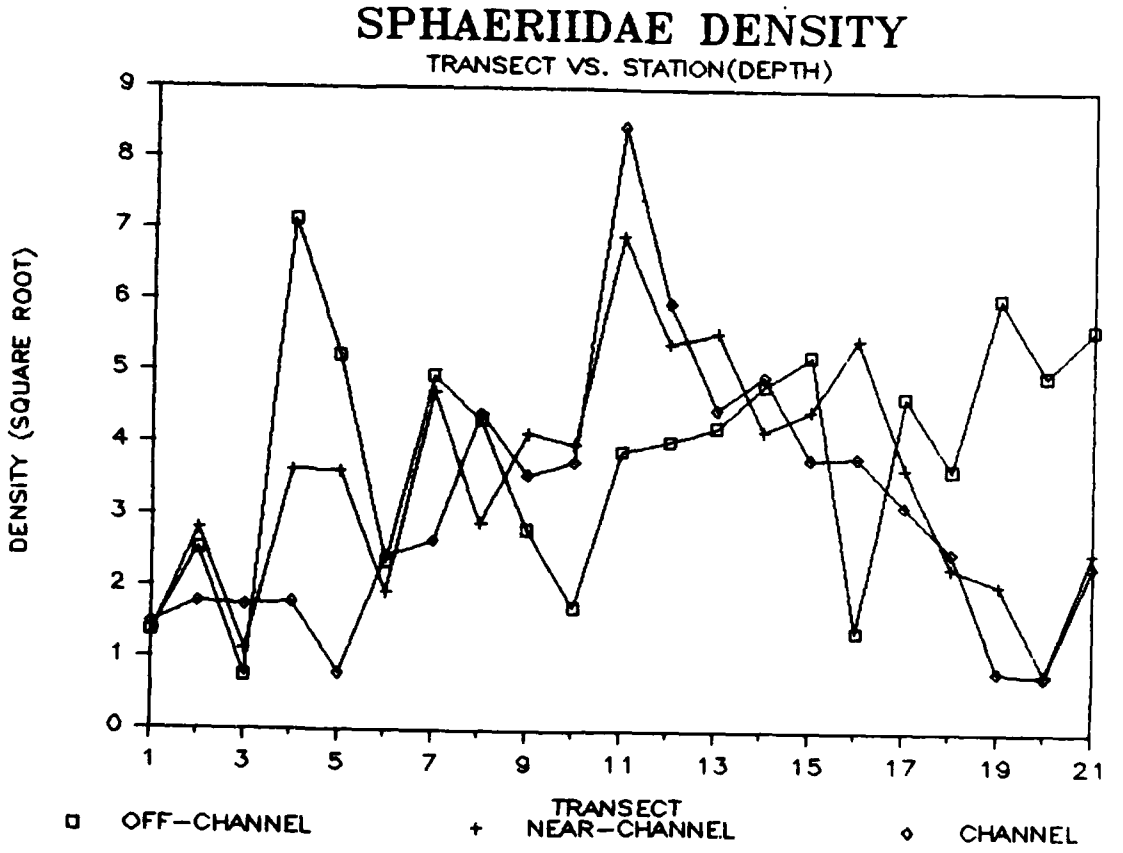

SPHAERIIDAE DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 61

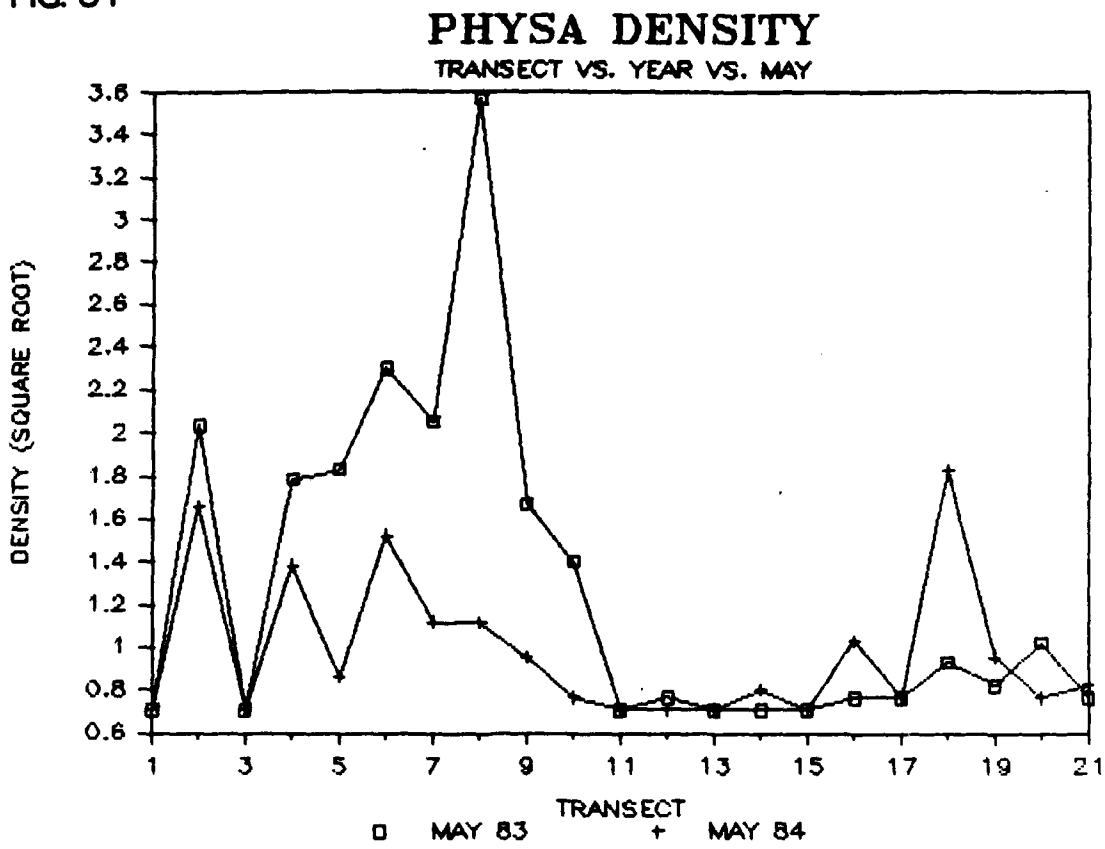

PHYSA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 62

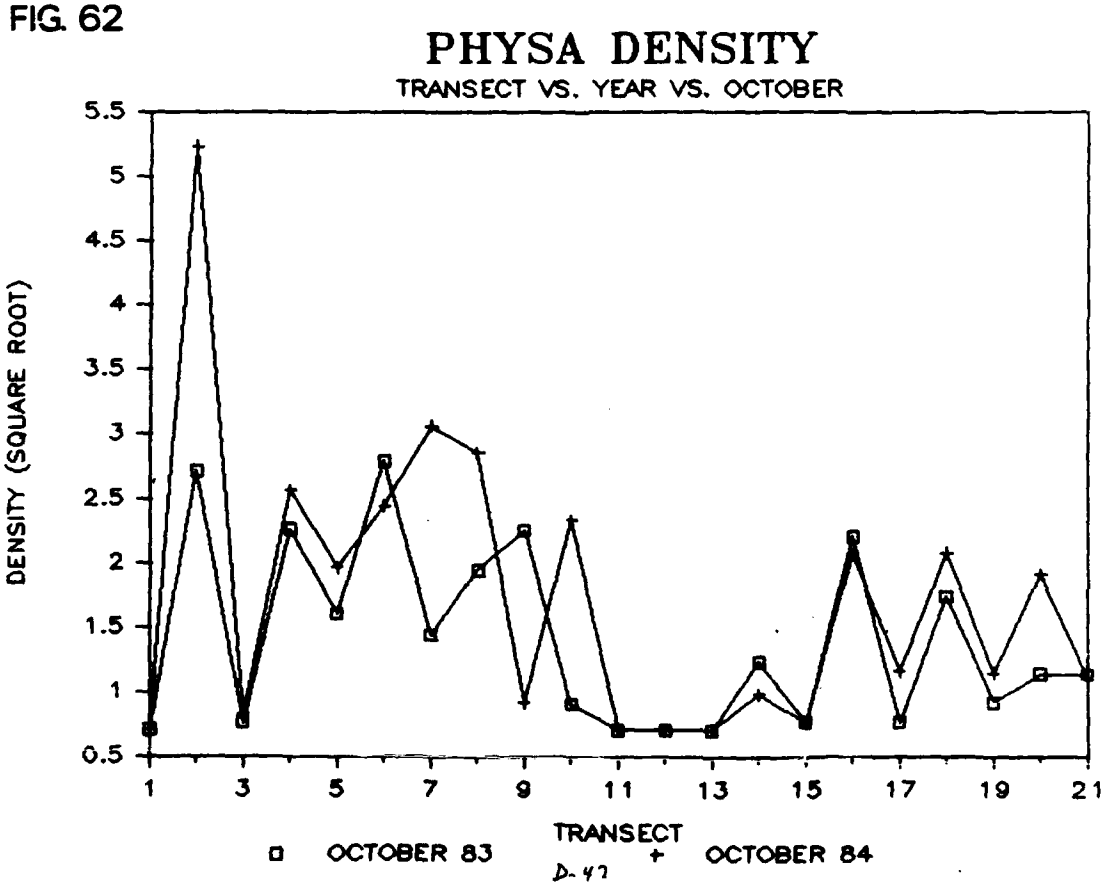

PHYSA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 63

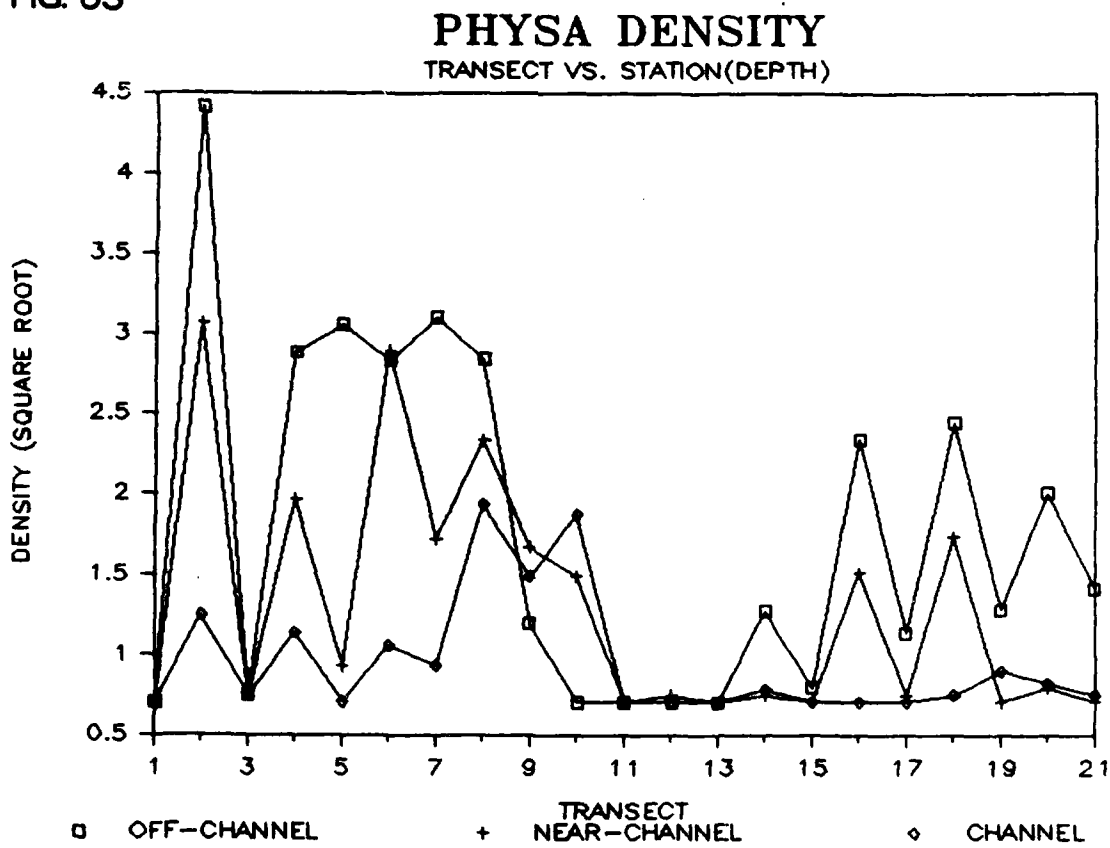

PHYSA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 64

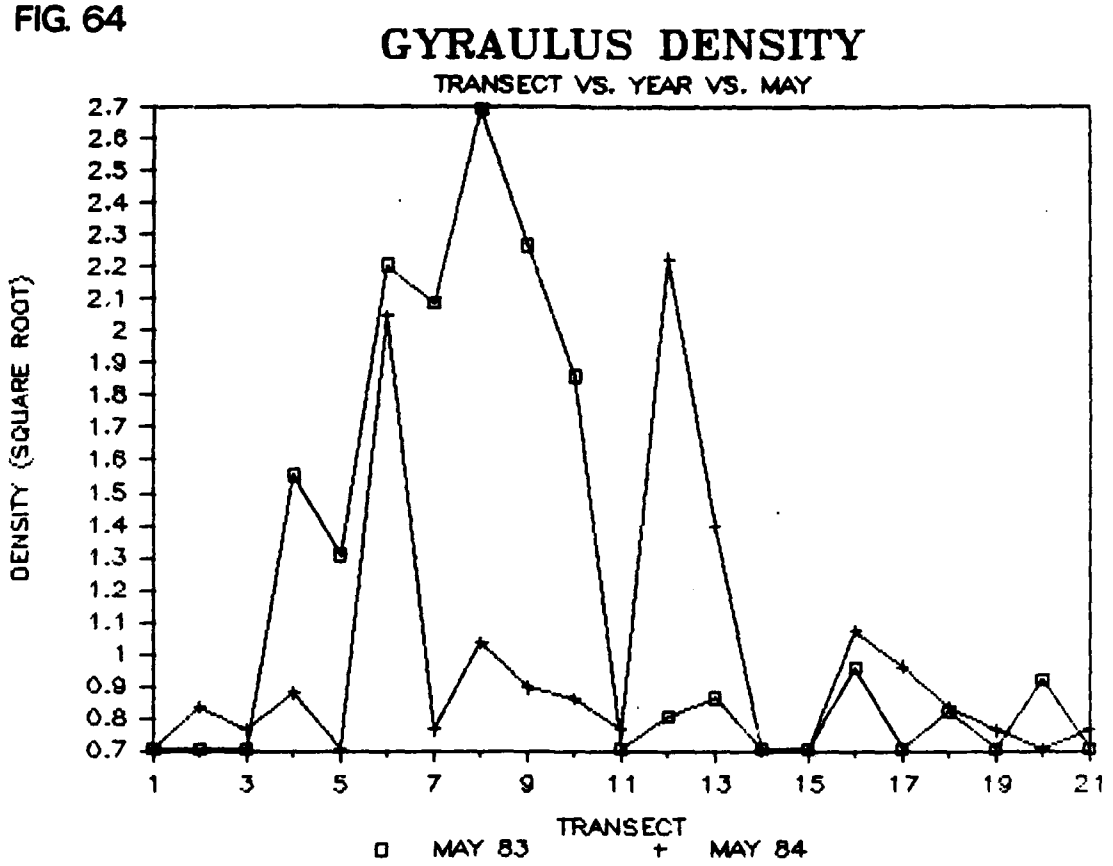

GYRAULUS DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 65

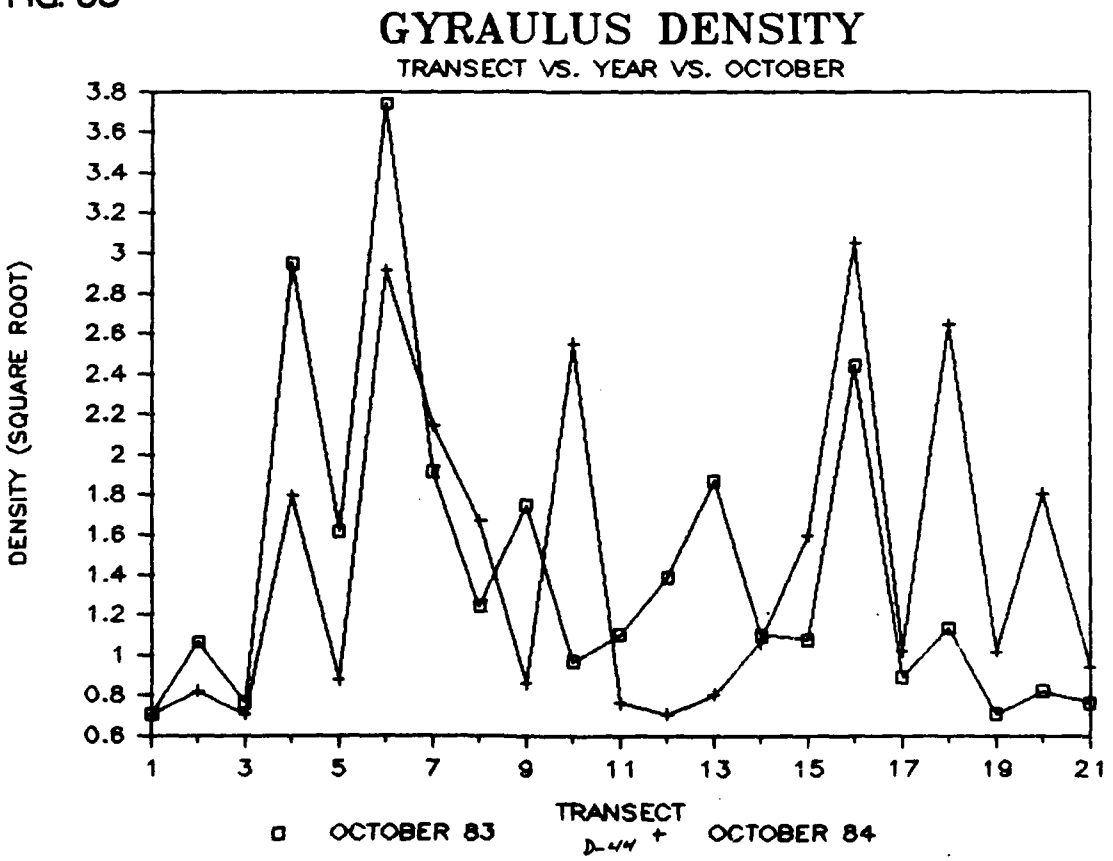

GYRAULUS DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
3.8
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 66

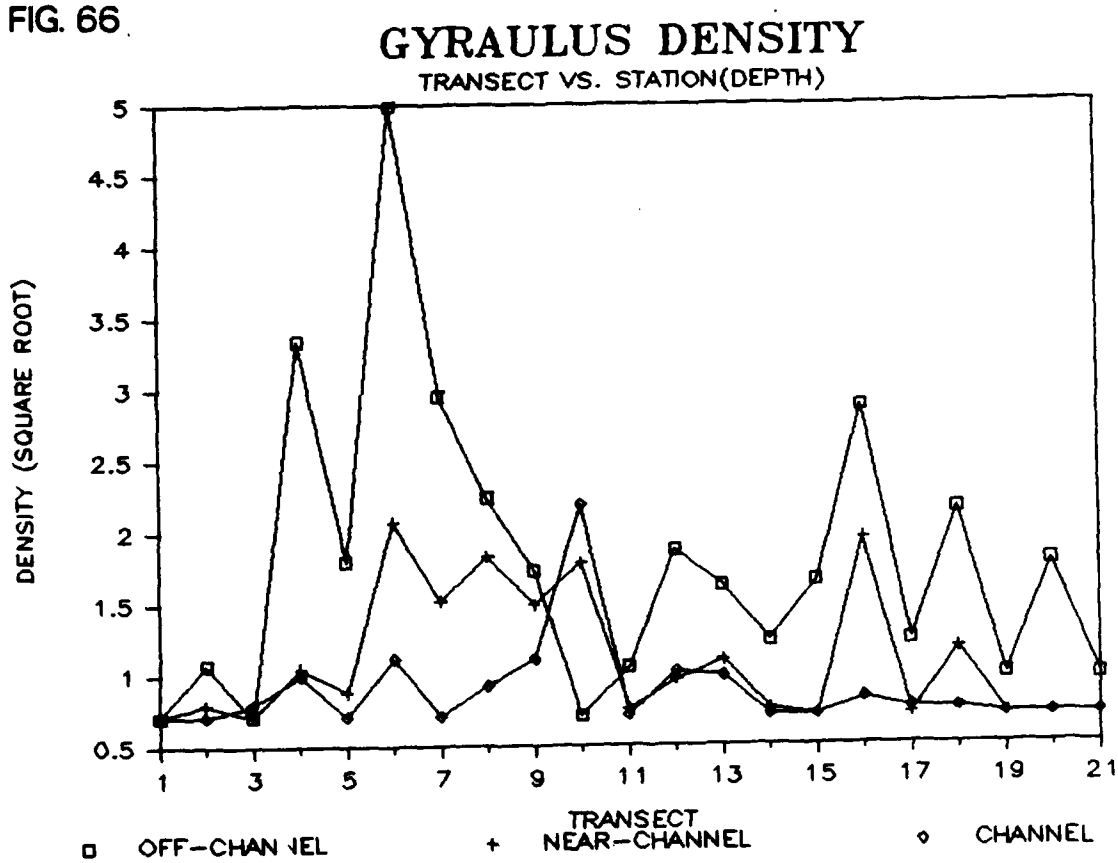

GYRAULUS DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 67

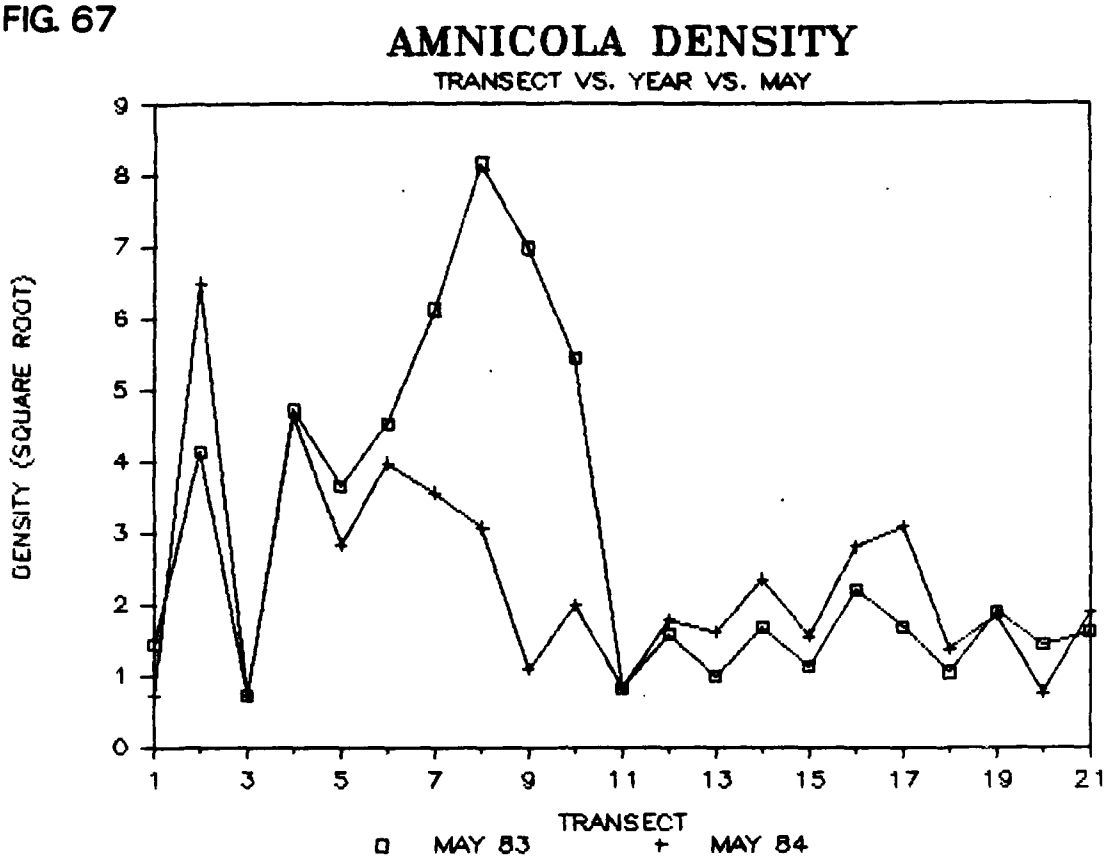

AMNICOLA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 68

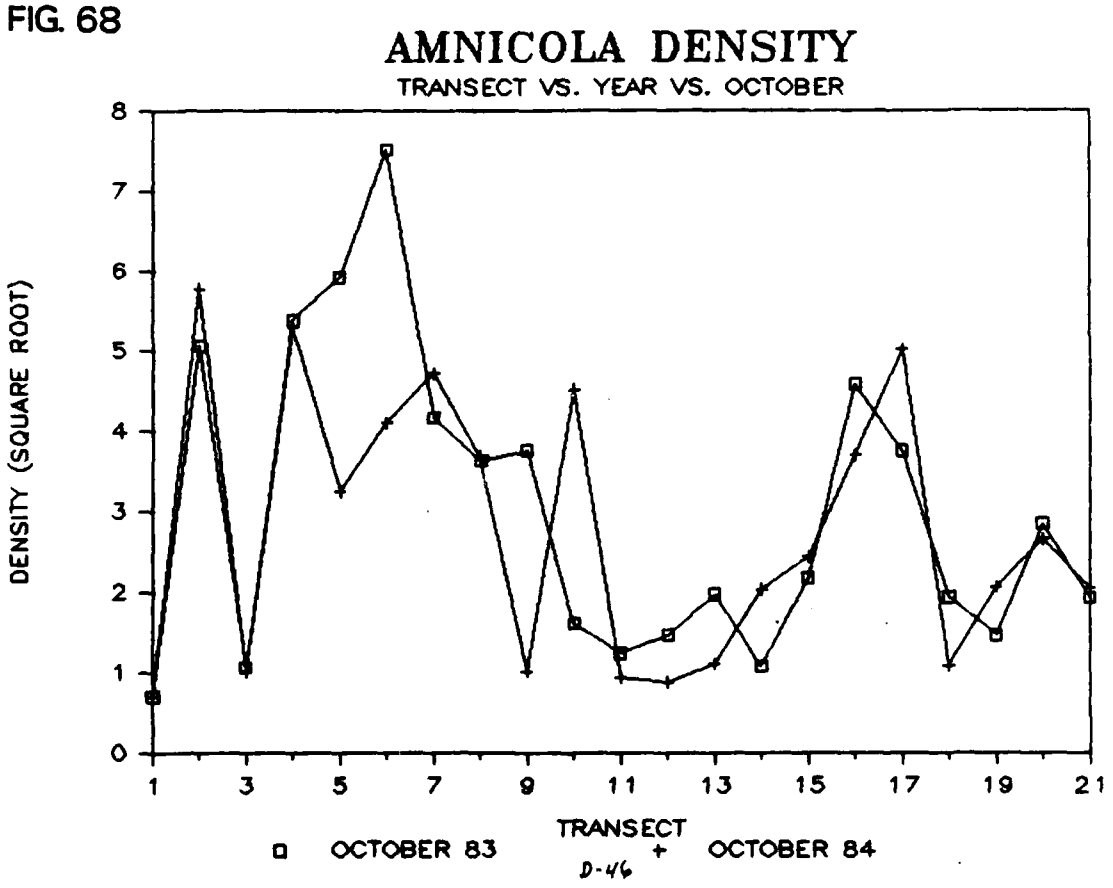

AMNICOLA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 69

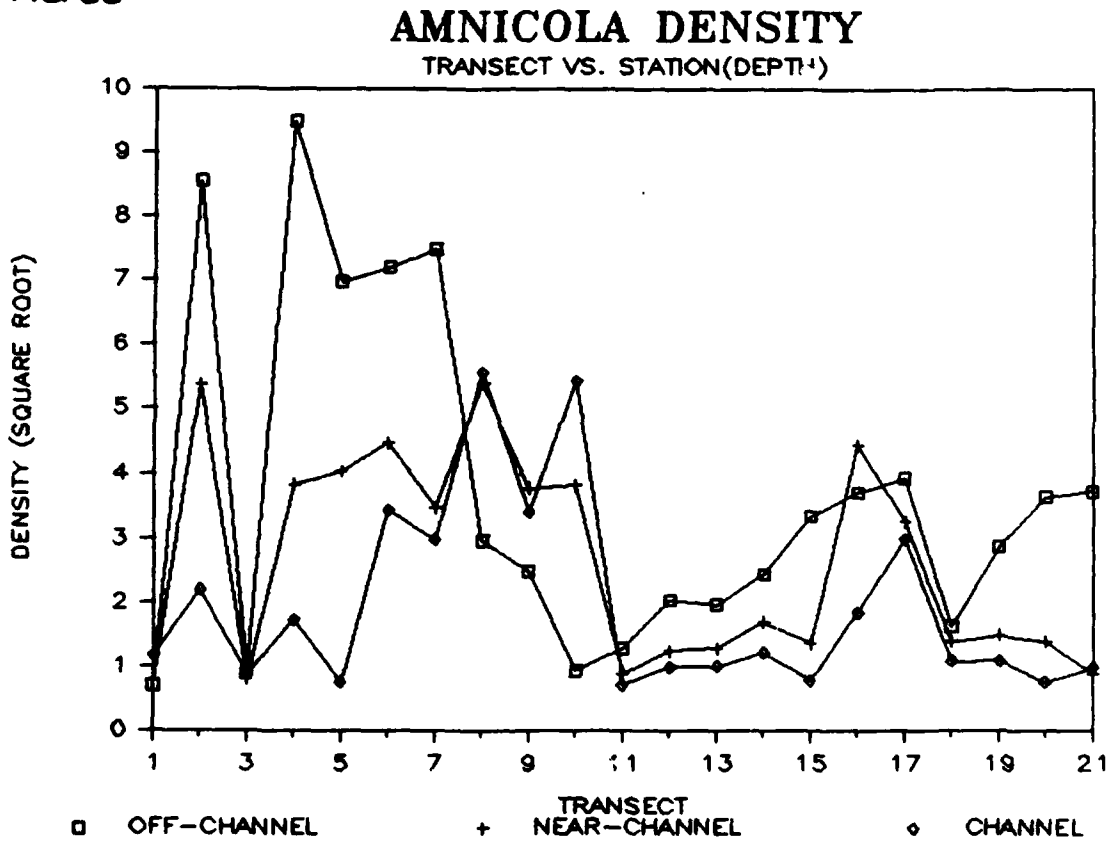

AMNICOLA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
7
8
9
10
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 70

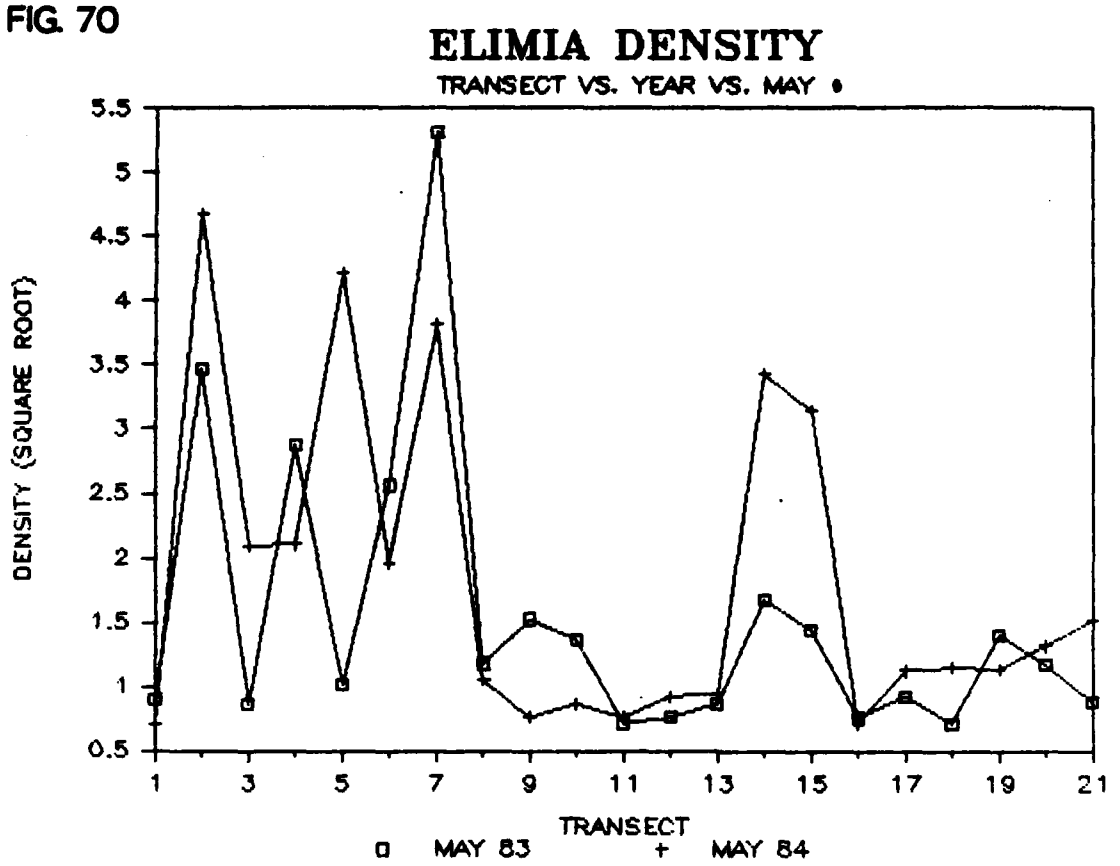

ELIMIA DENSITY
TRANSECT VS. YEAR VS. MAY
DENSITY (SQUARE ROOT)
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 71

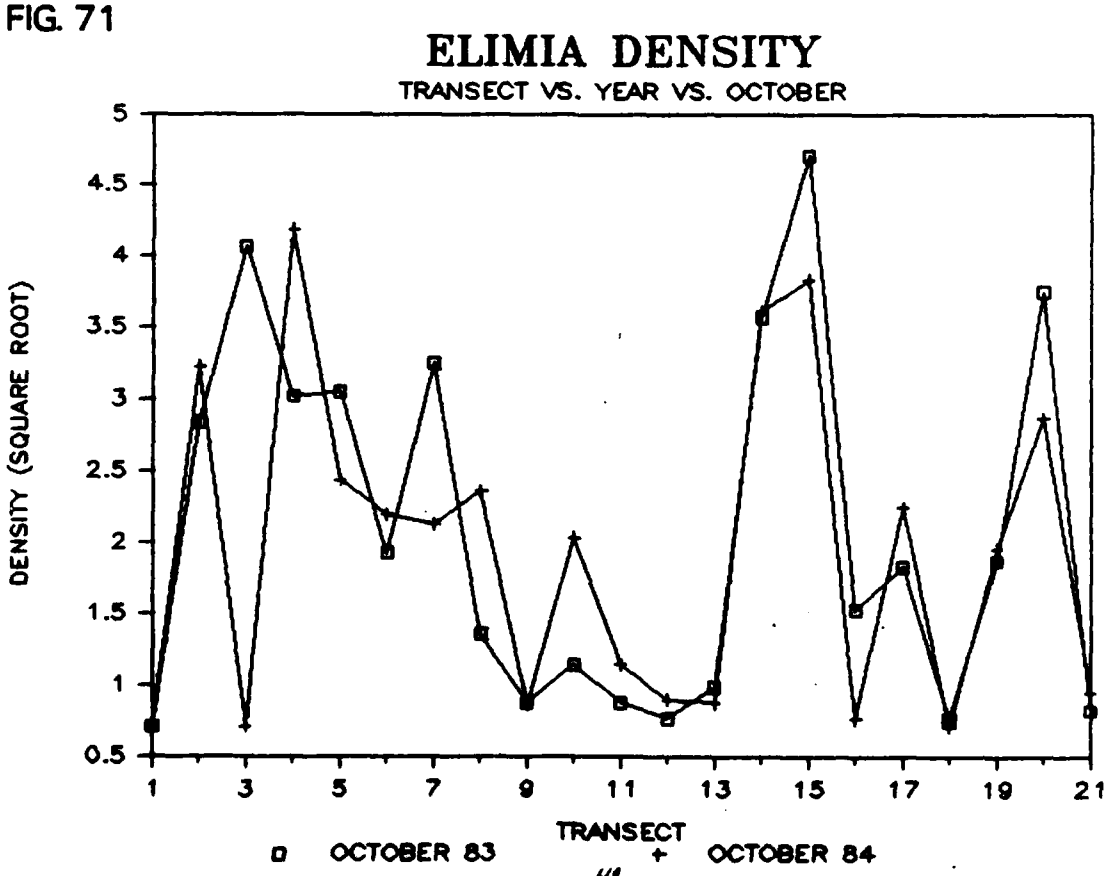

ELIMIA DENSITY
TRANSECT VS. YEAR VS. OCTOBER
DENSITY (SQUARE ROOT)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 72

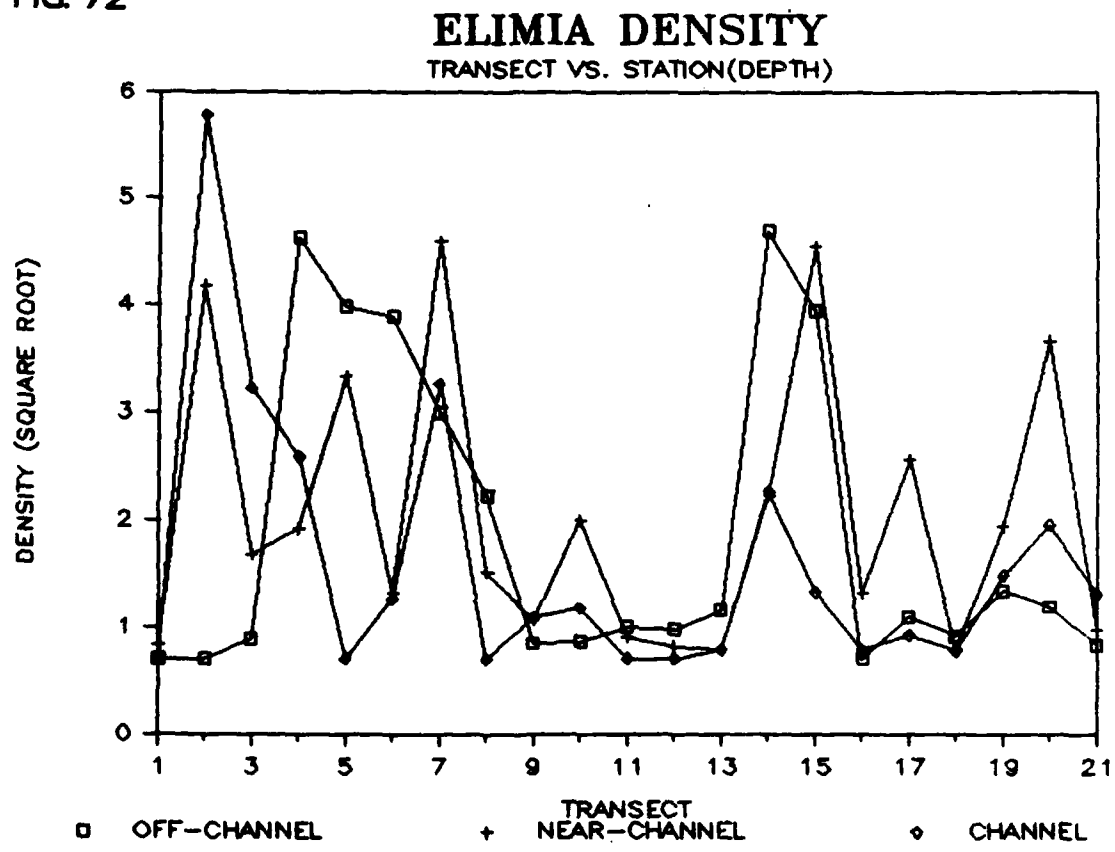

ELIMIA DENSITY
TRANSECT VS. STATION(DEPTH)
DENSITY (SQUARE ROOT)
0
1
2
3
4
5
6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

FIG. 73

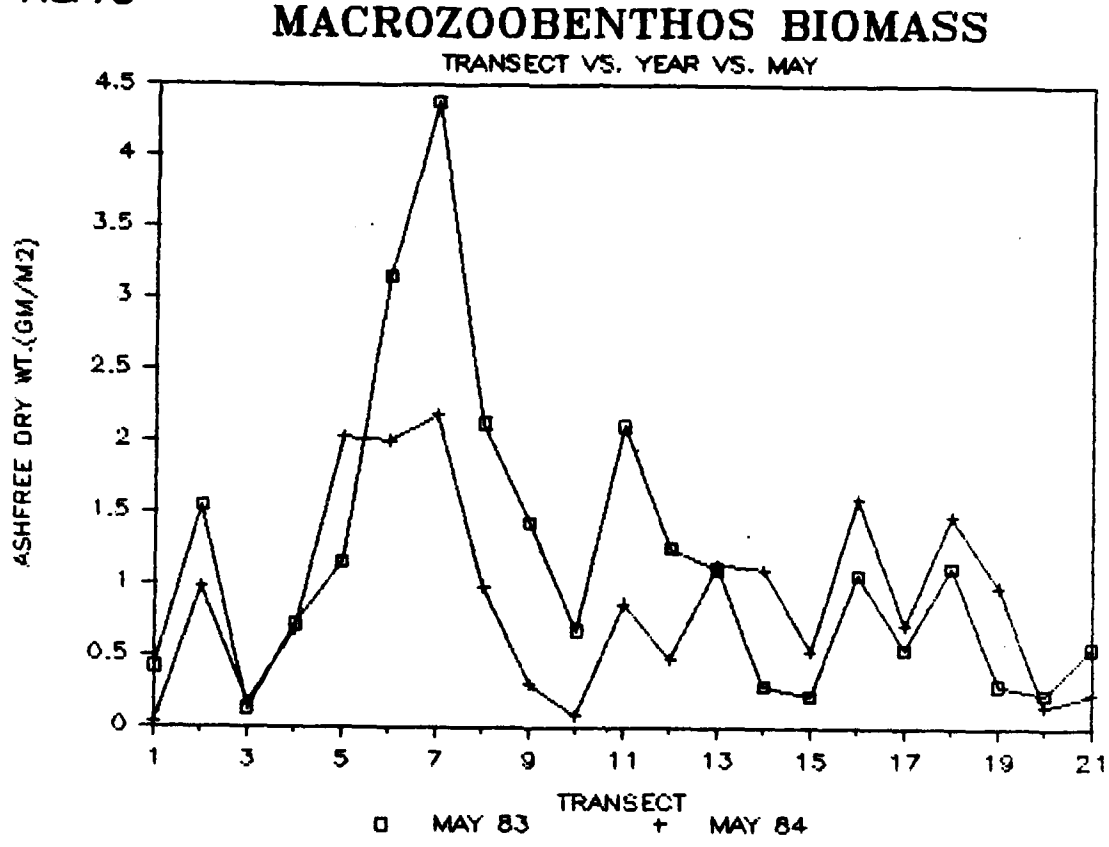

MACROZOOBENTHOS BIOMASS
TRANSECT VS. YEAR VS. MAY
ASHFREE DRY WT.(GM/M2)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
MAY 83
MAY 84

FIG. 74

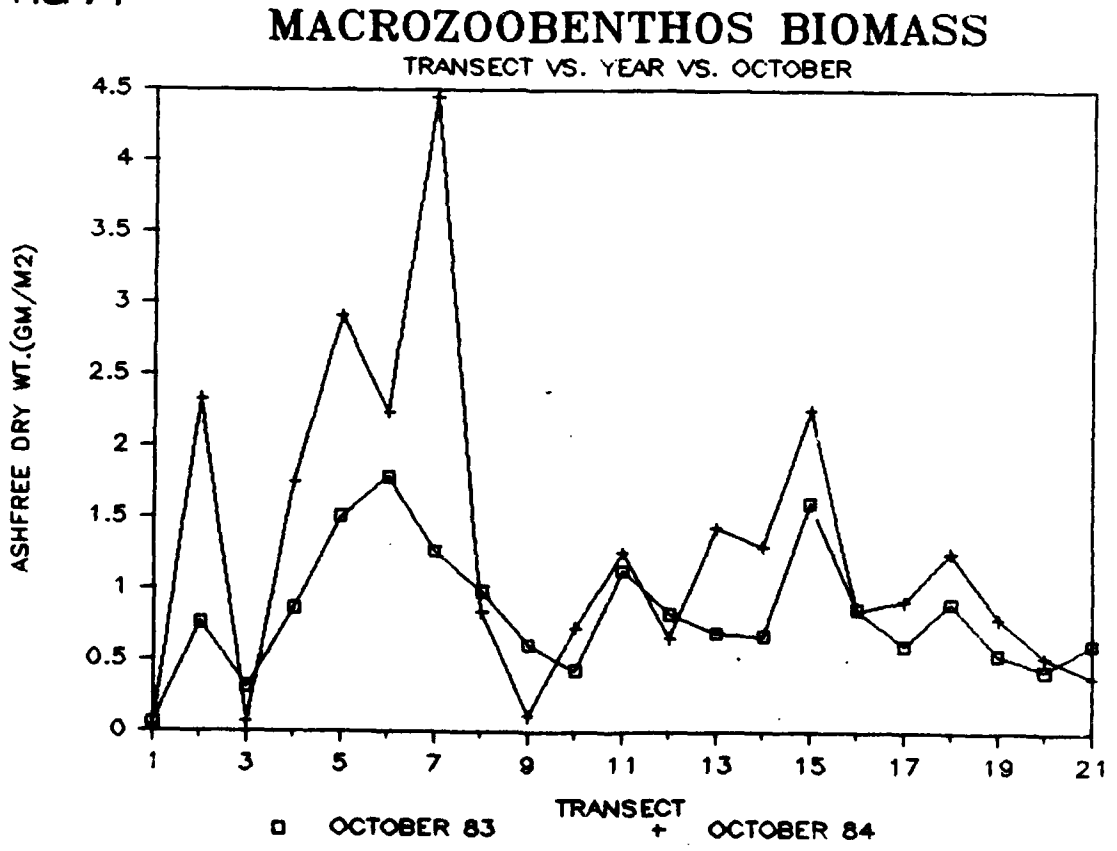
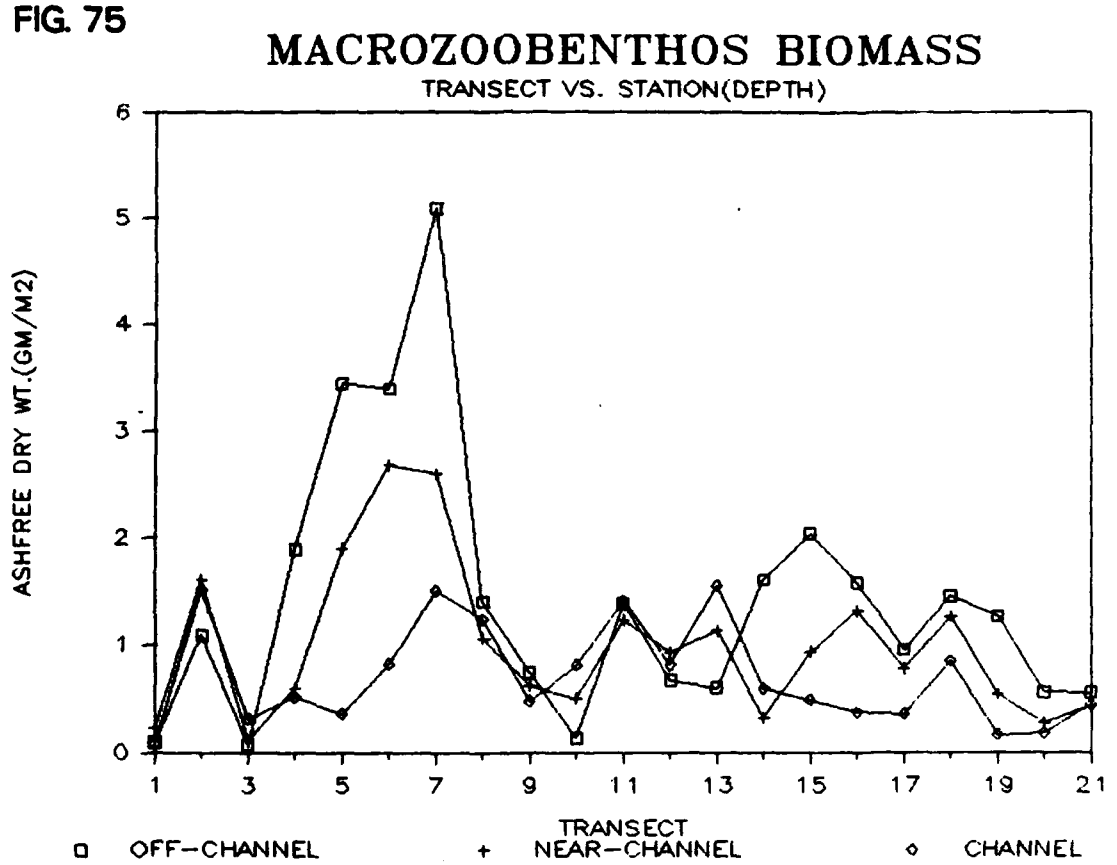

MACROZOOBENTHOS BIOMASS
TRANSECT VS. YEAR VS. OCTOBER
ASHFREE DRY WT.(GM/M2)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OCTOBER 83
OCTOBER 84

FIG. 75


MACROZOOBENTHOS BIOMASS
TRANSECT VS. STATION(DEPTH)
ASHFREE DRY WT.(GM/M2)
0
1
2
3
4
5
6
1
3
5
7
9
11
13
15
17
19
21
TRANSECT
OFF-CHANNEL
NEAR-CHANNEL
CHANNEL

APPENDIX E

Macrozoobenthos Ponar Grab Biomass Data

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	1	1	0.0065	0.0268	0.0031	0.2507
		2	0.0274	0.0259	0.0601	0.7809
		3	0.0048	0.0082	0.0211	0.2348
	2	1	0.1036	0.0553	0.0636	1.5323
		2	0.0697	0.1408	0.0386	1.7155
		3	0.0552	0.0646	0.0818	1.3884
	3	1	0.0053	0.0083	0.0101	0.1632
		2	0.0115	0.0033	0.0093	0.1660
		3	0.0020	0.0023	0.0010	0.0365
	4	1	0.0335	0.1174	0.0533	1.4063
		2	0.0250	0.0317	0.0130	0.4800
		3	0.0113	0.0091	0.0170	0.2576
	5	1	0.1672	0.0876	0.0901	2.3752
		2	0.0004	0.0088	0.0244	0.2314
		3	0.0006	0.0004	0.1235	0.8574
	6	1	0.0645	0.0818	0.0344	1.2444
		2	0.2199	0.1451	0.7318	7.5533
		3	0.0663	0.0079	0.0205	0.6522
	7	1	0.3510	0.2050	0.6299	8.1669
		2	0.2840	0.2232	0.1609	4.6010
		3	0.0270	0.0104	0.0150	0.3609
	8	1	0.1889	0.1719	0.0237	2.6478
		2	0.0408	0.0848	0.1248	1.7244
		3	0.1231	0.0570	0.1117	2.0096

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	9	1	0.0718	0.1365	0.0967	2.1004
		2	0.0915	0.0345	0.0871	1.4675
		3	0.0423	0.0239	0.0363	0.7059
	10	1	0.0034	0.0041	0.0206	0.1935
		2	0.0471	0.0291	0.0845	1.1067
		3	0.0705	0.0124	0.0222	0.7238

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
LAKE ST. CLAIR	11	1	0.0705	0.0709	0.2015	2.3614
		2	0.0862	0.1169	0.1003	2.0894
		3	0.1002	0.0563	0.1166	1.8807
	12	1	0.0478	0.0828	0.0382	1.1625
		2	0.0611	0.0575	0.0517	1.1728
		3	0.0573	0.0795	0.0716	1.4352
	13	1	0.0264	0.0448	0.0234	0.6515
		2	0.0476	0.0586	0.0383	0.9951
		3	0.1115	0.0352	0.0980	1.6852

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
DETROIT RIVER	14	1	0.0140	0.0256	0.0081	0.3285
		2	0.0054	0.0222	0.0125	0.2761
		3	0.0176	0.0097	0.0096	0.2541
	15	1	0.0055	0.0134	0.0237	0.2934
		2	0.0130	0.0092	0.0054	0.1901
		3	0.0149	0.0063	0.0058	0.1859
	16	1	0.0659	0.0918	0.0815	1.6473
		2	0.0440	0.0619	0.0454	1.0419
		3	0.0247	0.0297	0.0196	0.5096
	17	1	0.0479	0.0321	0.0606	0.9682
		2	0.0105	0.0252	0.0408	0.5268
		3	0.0076	0.0077	0.0079	0.1598
	18	1	0.0480	0.0613	0.0806	1.3078
		2	0.0652	0.1533	0.0214	1.6521
		3	0.0179	0.0177	0.0236	0.4077
	19	1	0.0160	0.0127	0.0328	0.4235
		2	0.0122	0.0038	0.0189	0.2403
		3	0.0107	0.0196	0.0023	0.2245
	20	1	0.0077	0.0220	0.0502	0.5503
		2	0.0055	0.0016	0.0034	0.0723
		3	0.0025	0.0022	0.0085	0.0909
	21	1	0.0074	0.0166	0.0200	0.3031
		2	0.0026	0.0071	0.0405	0.3457
		3	0.1426	0.0053	0.0014	1.0282

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	1	1	0.0072	0.0041	0.0003	0.0799
		2	0.0022	0.0027	0.0029	0.0537
		3	0.0023	0.0020	0.0024	0.0461
	2	1	0.0131	0.0217	0.0246	0.4091
		2	0.1090	0.0110	0.0519	1.1838
		3	0.0411	0.0426	0.0188	0.7059
	3	1	0.0016	0.0030	0.0022	0.0468
		2	0.0116	0.0059	0.0089	0.1818
		3	0.0111	0.0599	0.0325	0.7128
	4	1	0.1158	0.1829	0.0319	2.2767
		2	0.0041	0.0051	0.0146	0.1639
		3	0.0026	0.0106	0.0101	0.1605
	5	1	0.0309	0.2114	0.2334	3.2759
		2	0.0427	0.0518	0.0686	1.1232
		3	0.0025	0.0014	0.0166	0.1412
	6	1	0.2308	0.1909	0.0753	3.4227
		2	0.0854	0.0604	0.0570	1.3966
		3	0.0221	0.0135	0.0451	0.5557
	7	1	0.0339	0.0143	0.0094	0.3967
		2	0.1266	0.2583	0.0440	2.9536
		3	0.0288	0.0290	0.0091	0.4607
	8	1	0.0230	0.1357	0.0182	1.2182
		2	0.0591	0.0548	0.0477	1.1129
		3	0.0606	0.0135	0.0191	0.6418

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	9	1	0.0028	0.0020	0.0019	0.0461
		2	0.0454	0.0394	0.0515	0.9387
		3	0.0553	0.0145	0.0563	0.8684
	10	1	0.0130	0.0261	0.0020	0.2830
		2	0.0260	0.0043	0.0033	0.2314
		3	0.0252	0.0684	0.0207	0.7872

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
LAKE ST. CLAIR	11	1	0.0868	0.0607	0.0511	1.3677
		2	0.0600	0.0287	0.0283	0.8057
		3	0.1090	0.0360	0.0363	1.2486
	12	1	0.0214	0.0365	0.0284	0.5943
		2	0.0663	0.0717	0.0341	1.1852
		3	0.0562	0.0145	0.0339	0.7203
	13	1	0.0169	0.0229	0.0487	0.6095
		2	0.0556	0.0424	0.0309	0.8877
		3	0.0253	0.0333	0.0294	0.6060

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1983 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
DETROIT RIVER	14	1	0.1404	0.0313	0.0809	1.7396
		2	0.0033	0.0021	0.0023	0.0530
		3	0.0103	0.0115	0.0125	0.2362
	15	1	0.2904	0.0858	0.0897	3.2085
		2	0.0605	0.0626	0.0829	1.4186
		3	0.0194	0.0034	0.0068	0.2039
	16	1	0.0747	0.0323	0.0498	1.0798
		2	0.0501	0.0188	0.0941	1.1225
		3	0.0110	0.0244	0.0224	0.3981
	17	1	0.0236	0.0324	0.0378	0.6460
		2	0.0384	0.0622	0.0182	0.8181
		3	0.0126	0.0169	0.0243	0.3705
	18	1	0.0603	0.0408	0.0253	0.8705
		2	0.0490	0.0828	0.0770	1.4378
		3	0.0303	0.0187	0.0285	0.5338
	19	1	0.0038	0.0203	0.0339	0.3995
		2	0.0980	0.0564	0.0240	1.2286
		3	0.0015	0.0035	0.0007	0.0393
	20	1	0.0283	0.0198	0.0159	0.4408
		2	0.0543	0.0222	0.0207	0.6694
		3	0.0033	0.0051	0.0207	0.2004
	21	1	0.0405	0.0410	0.0519	0.9186
		2	0.0312	0.0166	0.0165	0.4428
		3	0.0193	0.0347	0.0196	0.5068

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	1	1	0.0013	0.0015	0.0014	0.0289
		2	0.0012	0.0013	0.0017	0.0289
		3	0.0015	0.0014	0.0019	0.0331
	2	1	0.0568	0.0695	0.0215	1.0178
		2	0.0645	0.1001	0.0451	1.4441
		3	0.0150	0.0350	0.0182	0.4697
	3	1	0.0010	0.0011	0.0021	0.0289
		2	0.0016	0.0024	0.0016	0.0386
		3	0.0414	0.0042	0.0192	0.4463
	4	1	0.0157	0.0476	0.0366	0.6880
		2	0.0330	0.0274	0.0557	0.7995
		3	0.0222	0.0101	0.0461	0.5400
	5	1	0.1658	0.1989	0.1244	3.3683
		2	0.0372	0.1618	0.1908	2.6844
		3	0.0021	0.0016	0.0015	0.0358
	6	1	0.2447	0.4382	0.1552	5.7717
		2	0.0079	0.0074	0.0100	0.1742
		3	0.0041	0.0040	0.0017	0.0675
	7	1	0.0747	0.0880	0.0406	1.4001
		2	0.0083	0.1453	0.0944	1.7079
		3	0.0830	0.2072	0.2087	3.4359
	8	1	0.0477	0.0812	0.0024	0.9041
		2	0.0381	0.0097	0.0216	0.4780
		3	0.0956	0.0742	0.0590	1.5758

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	9	1	0.0407	0.0427	0.0277	0.7651
		2	0.0039	0.0023	0.0029	0.0627
		3	0.0095	0.0009	0.0019	0.0847
	10	1	0.0011	0.0009	0.0012	0.0220
		2	0.0038	0.0036	0.0144	0.1501
		3	0.0050	0.0034	0.0011	0.0654

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
LAKE ST. CLAIR	11	1	0.0276	0.0480	0.0503	0.8670
		2	0.0329	0.0480	0.0321	0.7782
		3	0.0488	0.0565	0.0336	0.9566
	12	1	0.0168	0.0208	0.0278	0.4504
		2	0.0210	0.0293	0.0378	0.6067
		3	0.0180	0.0211	0.0143	0.3677
	13	1	0.0125	0.0779	0.0499	0.9662
		2	0.0764	0.0635	0.0737	1.4710
		3	0.0328	0.0434	0.0670	0.9862

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 MAY

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
DETROIT RIVER	14	1	0.0425	0.0451	0.0537	0.9731
		2	0.0470	0.0368	0.0293	0.7789
		3	0.0901	0.0524	0.0844	1.5626
	15	1	0.0068	0.0100	0.0060	0.1570
		2	0.1546	0.0265	0.0166	1.3615
		3	0.0017	0.0029	0.0082	0.0881
	16	1	0.1454	0.1047	0.1543	2.7850
		2	0.1072	0.0528	0.0641	1.5432
		3	0.0265	0.0242	0.0162	0.4607
	17	1	0.0381	0.0456	0.0308	0.7885
		2	0.0511	0.0397	0.0272	0.8127
		3	0.0702	0.0037	0.0071	0.5578
	18	1	0.1862	0.0653	0.0796	2.2801
		2	0.0364	0.0318	0.0559	0.8547
		3	0.0909	0.0277	0.0704	1.3015
	19	1	0.1089	0.2377	0.0209	2.5309
		2	0.0156	0.0162	0.0140	0.3154
		3	0.0030	0.0017	0.0114	0.1109
	20	1	0.0105	0.0065	0.0069	0.1646
		2	0.0042	0.0139	0.0032	0.1467
		3	0.0110	0.0047	0.0050	0.1426
	21	1	0.0219	0.0167	0.0086	0.3250
		2	0.0031	0.0084	0.0206	0.2210
		3	0.0106	0.0018	0.0088	0.1460

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	1	1	0.0015	0.0020	0.0020	0.0379
		2	0.0021	0.0019	0.0016	0.0386
		3	0.0019	0.0006	0.0008	0.0227
	2	1	0.0840	0.0478	0.0706	1.3938
		2	0.1177	0.1101	0.0748	2.0839
		3	0.2513	0.1896	0.0708	3.5240
	3	1	0.0039	0.0015	0.0029	0.0572
		2	0.0060	0.0032	0.0022	0.0785
		3	0.0018	0.0039	0.0034	0.0627
	4	1	0.1332	0.1658	0.1670	3.2092
		2	0.0580	0.0449	0.0332	0.9373
		3	0.0078	0.0529	0.1007	1.1115
	5	1	0.2297	0.3163	0.1466	4.7697
		2	0.1522	0.2071	0.1590	3.5694
		3	0.0463	0.0069	0.0057	0.4056
	6	1	0.0823	0.1496	0.2234	3.1355
		2	0.0655	0.0875	0.0788	1.5963
		3	0.1217	0.0656	0.1044	2.0089
	7	1	0.2464	1.0654	0.1994	10.4071
		2	0.0942	0.0507	0.0210	1.1423
		3	0.0684	0.1028	0.0892	1.7934
	8	1	0.0203	0.0442	0.0602	0.8587
		2	0.0594	0.0497	0.0262	0.9318
		3	0.0326	0.0448	0.0301	0.7403

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
ST. CLAIR RIVER	9	1	0.0033	0.0022	0.0030	0.0585
		2	0.0019	0.0022	0.0017	0.0399
		3	0.0124	0.0025	0.0197	0.2383
	10	1	0.0020	0.0019	0.0014	0.0365
		2	0.0295	0.0125	0.0320	0.5096
		3	0.0716	0.0708	0.0988	1.6611

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
LAKE ST. CLAIR	11	1	0.0387	0.0605	0.0424	0.9751
		2	0.0569	0.0511	0.0776	1.2782
		3	0.0821	0.0581	0.0860	1.5577
	12	1	0.0295	0.0213	0.0187	0.4786
		2	0.0341	0.0505	0.0257	0.7596
		3	0.0382	0.0403	0.0297	0.7451
	13	1	0.0088	0.0087	0.0087	0.1804
		2	0.0236	0.1121	0.0368	1.1880
		3	0.3903	0.0182	0.0208	2.9564

MACROZOOBENTHOS PONAR GRAB BIOMASS DATA-1984 OCTOBER

LOCATION	TRANSECT NO.	STATION NO.	GRAB WEIGHT(GM) REP. 1	REP. 2	REP. 3	MEAN ASH FREE DRY WEIGHT (G/SQ. METER)
DETROIT RIVER	14	1	0.1840	0.2080	0.1020	3.4020
		2	0.0068	0.0051	0.0157	0.1901
		3	0.0235	0.0127	0.0116	0.3292
	15	1	0.3209	0.1518	0.1823	4.5108
		2	0.0521	0.0169	0.0444	0.7809
		3	0.0650	0.0153	0.1347	1.4806
	16	1	0.0448	0.0413	0.0365	0.8443
		2	0.0344	0.0353	0.1594	1.5777
		3	0.0078	0.0039	0.0092	0.1440
	17	1	0.0532	0.0775	0.0766	1.4276
		2	0.0651	0.0191	0.0574	0.9752
		3	0.0232	0.0111	0.0181	0.3609
	18	1	0.0416	0.0813	0.0771	1.3774
		2	0.0467	0.0670	0.0673	1.2466
		3	0.0616	0.0510	0.0568	1.1667
	19	1	0.1810	0.0429	0.0246	1.7114
		2	0.0173	0.0271	0.0151	0.4097
		3	0.0104	0.0045	0.0262	0.2830
	20	1	0.0378	0.0733	0.0466	1.0860
		2	0.0178	0.0087	0.0059	0.2231
		3	0.0214	0.0161	0.0049	0.2920
	21	1	0.0515	0.0236	0.0225	0.6721
		2	0.0210	0.0124	0.0218	0.3802
		3	0.0021	0.0071	0.0068	0.1102

APPENDIX F

Macrozoobenthos Physical Data

MACROZOOBENTHOS PHYSICAL DATA-1983 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	BOTTOM	WATER VEL. (FT./SEC.) SURF.	BOTTOM	LIGHT (FT. CANDLES) SURF.	BOTTOM
ST. CLAIR RIVER	1	1	308574	496881	10.0	SILTY GRAVEL	7.0	7.2	1.7	1.1	600	200
		2	308574	496878	14.0	SAND	5.9	6.0	1.6	1.1	250	100
		3	308572	496881	17.0	SAND	5.1	5.0	1.8	1.3	500	200
	2	1	308755	497136	3.0	SANDY GRAVEL	6.3	6.3	1.1	0.9	300	15
		2	308752	497137	10.0	SILT	6.0	6.0	1.9	1.0	400	5
		3	308754	497138	15.0	GRAVEL	6.0	6.0	2.2	1.9	400	0
	3	1	309029	497390	7.0	SANDY GRAVEL	5.0	5.0	0.6	1.1	700	280
		2	309023	497380	13.0	GRAVEL	5.0	5.0	1.2	1.3	650	210
		3	309019	497375	18.0	GRAVEL	5.0	5.0	1.8	0.9	700	200
	4	1	309578	498266	3.0	SANDY SILT	6.1	6.1	1.2	1.1	3500	2000
		2	309569	498252	10.0	SAND	6.0	6.0	1.8	1.1	3000	350
		3	309568	498259	15.0	SAND	6.0	6.0	2.4	2.0	300	300
	5	1	309945	498663	5.0	SANDY SILT	6.0	6.0	2.2	0.2	3000	1800
		2	309945	498653	10.0	SANDY CLAY	5.9	5.9	2.1	1.0	1000	600
		3	309941	498651	15.0	SANDY GRAVEL	6.1	6.0	3.0	0.9	3000	250
	6	1	310125	498762	4.0	SANDY SILT	6.5	6.1	0.3	0.0	3500	900
		2	310123	498761	10.0	SANDY SILT	5.9	5.9	1.2	0.6	4000	1300
		3	310123	498763	15.0	SANDY SILT	6.0	6.0	1.4	1.2	1000	480
	7	1	310379	498903	5.0	SANDY SILT	6.0	6.0	0.5	0.4	450	500
		2	310378	498904	10.0	SANDY SILT	6.0	5.9	0.9	0.1	630	550
		3	310378	498904	20.0	SANDY SILT	6.0	6.0	1.5	1.2	800	520
	8	1	310662	499026	3.0	SANDY SILT	6.1	6.0	0.5	0.5	3500	2100
		2	310662	499026	7.0	SILT	6.0	6.0	1.1	0.5	800	450
		3	310662	499026	13.0	SILT	5.7	5.7	0.5	0.5	900	200

9	1	310776 499058	4.0	SANDY SILT	6.0	5.9	0.3	0.0	4300	270
	2	310776 499059	7.0	SANDY SILT	6.0	5.9	0.7	0.2	600	450
	3	310776 499060	10.0	SANDY SILT	5.7	5.6	0.8	1.1	430	310
10	1	310895 499088	3.0	SAND	5.6	5.6	0.7	0.2	3600	1400
	2	310895 499089	7.0	SANDY SILT	5.5	5.5	0.2	0.1	3500	1500
	3	310895 499090	10.0	SANDY SILT	5.6	5.6	0.6	0.6	400	180

MACROZOOBENTHOS PHYSICAL DATA-1983 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	BOTTOM	WATER VEL. (FT./SEC.) SURF.	BOTTOM	LIGHT (FT. CANDLES) SURF.	BOTTOM
LAKE ST. CLAIR	11	1	311490	499370	17.0	CLAY	7.3	7.3	0.7	0.0	350	15
		2	311485	499375	20.0	CLAY	7.1	7.1	0.3	0.0	1000	10
		3	311480	499380	25.0	CLAY	6.5	6.1	0.2	0.1	750	45
	12	1	311635	499445	20.0	CLAY	10.0	9.0	0.2	0.2	300	2
		2	311630	499450	20.0	CLAY	10.0	9.0	0.3	0.2	250	2
		3	311625	499455	25.0	CLAY	7.1	7.0	0.2	0.2	300	10
	13	1	311732	499492	20.0	CLAY	8.9	7.9	1.0	0.0	2500	35
		2	311728	499497	20.0	CLAY	9.0	8.0	0.3	0.2	2500	12
		3	311723	499502	25.0	CLAY	9.0	8.1	0.9	0.0	410	2

MACROZOOBENTHOS PHYSICAL DATA-1983 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	BOTTOM	WATER VEL. (FT./SEC.) SURF.	BOTTOM	LIGHT (FT. CANDLES) SURF.	BOTTOM
DETROIT RIVER	14	1	312583	499891	6.0	SAND	9.2	9.0	0.9	0.7	3200	39
		2	312580	499892	10.0	SANDY SILT	9.0	9.0	0.7	0.9	3500	10
		3	312578	499895	19.0	SILT	9.0	8.5	0.5	0.6	3200	18
	15	1	312646	499935	6.0	SAND	9.8	9.6	0.7	0.6	3500	120
		2	312647	499931	11.0	SANDY SILT	9.9	9.9	1.3	1.3	3100	12
		3	312646	499926	19.0	SANDY SILT	8.6	8.4	1.6	1.1	3000	3
	16	1	312841	499995	6.0	SILT	8.3	8.1	0.1	0.1	3500	150
		2	312841	499996	11.0	SILT	8.2	8.1	0.2	0.1	3400	17
		3	312842	499998	18.0	SANDY SILT	9.1	9.1	0.9	0.8	3500	4
	17	1	313064	500029	9.0	SANDY SILT	9.1	8.7	0.3	0.1	3000	70
		2	313098	500033	12.0	SILT	8.4	8.3	1.3	0.8	3100	30
		3	313110	500037	20.0	SILT	8.5	8.6	1.4	0.8	3400	7
	18	1	314085	500676	5.0	SILT	10.2	10.2	0.4	0.2	4000	700
		2	314083	500675	10.0	SILT	10.2	10.1	0.3	0.3	2500	850
		3	314083	500675	15.0	SILT	10.2	10.2	0.9	0.4	3100	66
	19	1	314160	500808	6.0	SILTY CLAY	10.0	9.9	0.4	0.1	3500	740
		2	314154	500806	11.0	GRAVEL	10.0	9.9	0.7	0.7	3500	11
		3	314141	500802	20.0	GRAVEL	9.9	9.9	1.3	0.8	650	65
	20	1	314176	500888	5.0	GRAVEL	9.1	9.1	0.7	0.4	4300	800
		2	314158	500888	14.0	SILTY GRAVEL	9.3	9.1	1.7	1.2	3000	15
		3	314152	500889	23.0	SILTY GRAVEL	9.1	9.1	1.9	1.3	3000	28
	21	1	314194	500942	9.0	SANDY SILT	9.1	9.1	0.8	0.5	8	8
		2	314166	500940	20.0	CLAY	9.5	9.5	0.8	0.4	2400	13
		3	314162	500941	25.0	CLAY	9.9	9.7	1.1	0.8	3300	1

MACROZOOBENTHOS PHYSICAL DATA-1983 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LORAN COORD. LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	TEMP. (C.) BOTTOM	WATER VEL. (FT./SEC.) SURF.	WATER VEL. (FT./SEC.) BOTTOM	LIGHT (FT. CANDLES) SURF.	LIGHT (FT. CANDLES) BOTTOM
ST. CLAIR RIVER	1	1	308577	496881	6.0	SAND	-0.1	-0.1	1.8	1.3	2100	1300
		2	308577	496882	9.5	SAND	-0.1	-0.1	1.4	1.1	1400	420
		3	308574	496880	17.0	SAND	-0.1	-0.1	1.6	1.9	1700	460
	2	1	308753	497136	6.0	SANDY SILT	-0.1	-0.1	0.4	0.1	1400	350
		2	308754	497137	11.0	GRAVEL	-0.1	-0.1	1.6	1.4	1000	370
		3	308753	497135	17.0	GRAVEL	-0.1	-0.1	3.0	2.7	1200	200
	3	1	309026	497389	5.5	GRAVEL	-0.1	-0.1	1.9	2.0	570	240
		2	309025	497375	14.0	GRAVEL	-0.1	-0.1	1.4	1.0	400	75
		3	309030	497379	20.0	CLAY	-0.1	-0.1	1.7	1.8	240	66
	4	1	309578	498265	5.0	SANDY SILT	-0.1	-0.1	1.2	0.5	82	46
		2	309568	498254	13.0	SILT	-0.1	-0.1	2.3	1.2	130	64
		3	309566	498258	16.0	SILTY GRAVEL	-0.1	-0.1	2.6	2.8	140	66
	5	1	309946	498662	6.0	SILT	-0.1	-0.1	0.8	0.2	340	12
		2	309937	498651	10.0	SANDY SILT	-0.1	-0.1	1.5	1.2	450	37
		3	309940	498650	16.0	GRAVEL	-0.1	-0.1	2.6	2.0	430	200
	6	1	310122	498756	4.0	SANDY SILT	-0.1	-0.1	1.0	1.0	390	130
		2	310122	498760	7.0	SANDY SILT	-0.1	-0.1	0.7	1.0	640	330
		3	310125	498760	11.0	SILT	-0.1	-0.1	1.2	0.6	1500	330
	7	1	310377	498901	7.0	SANDY SILT	-0.1	-0.1	0.7	0.6	4200	1500
		2	310378	498904	10.0	ORGANIC DEBRIS	-0.1	-0.1	1.6	1.5	550	570
		3	310379	498904	17.0	CLAY	-0.1	-0.1	2.2	1.3	1700	610
	8	1	310652	499021	4.0	CLAY	-0.1	-0.1	0.1	0.1	470	300
		2	310653	499021	8.0	SANDY SILT	-0.1	-0.1	0.4	0.2	480	280
		3	310654	499023	13.0	SANDY SILT	-0.1	-0.1	0.9	0.8	180	34

9	1	310766	499051	5.0	SAND	-0.1	-0.1	0.4	0.4	590	42
	2	310761	499057	7.0	SANDY SILT	-0.1	-0.1	1.0	0.6	250	100
	3	310760	499057	15.0	SILT	-0.1	-0.1	0.4	0.8	270	33
10	1	310888	499088	4.0	SAND	-0.1	-0.1	0.2	0.3	870	410
	2	310881	499091	8.0	SAND	-0.1	-0.1	0.4	0.2	680	300
	3	310878	499090	15.0	SANDY SILT	-0.1	-0.1	0.2	0.1	73	26

MACROZOOBENTHOS PHYSICAL DATA-1983 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	BOTTOM	WATER VEL. (FT./SEC.) SURF.	BOTTOM	LIGHT (FT. CANDLES) SURF.	BOTTOM
LAKE ST. CLAIR	11	1	311479	499365	20.0	SILT	13.0	13.0	0.7	0.5	2500	56
		2	311467	499370	21.0	SILT	13.0	13.0	0.3	0.3	2700	24
		3	311465	499378	27.0	SILT	13.0	13.0	0.3	0.2	3800	25
	12	1	311626	499444	22.0	SILT	12.5	12.5	0.3	0.3	1300	11
		2	311620	499448	23.0	SILT	12.1	12.5	0.3	0.2	1700	7
		3	311619	499450	27.0	SILT	12.0	12.5	0.3	0.3	3300	1
	13	1	311713	499486	20.0	SILT	12.0	12.0	0.5	0.1	1000	29
		2	311712	499495	21.0	SILT	12.0	12.1	0.3	0.3	1900	40
		3	311711	499493	27.0	SILT	12.0	12.0	0.3	0.2	1400	28

MACROZOOBENTHOS PHYSICAL DATA-1983 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	BOTTOM	WATER VEL. (FT./SEC.) SURF.	BOTTOM	LIGHT (FT. CANDLES) SURF.	BOTTOM
DETROIT RIVER	14	1	312573	499878	7.0	GRAVEL	12.5	12.5	0.7	0.7	1700	260
		2	312575	499890	10.5	SAND	12.0	12.0	1.5	1.0	3400	150
		3	312574	499884	20.0	SAND	12.0	12.0	1.5	1.4	2800	48
	15	1	312650	499940	6.0	SANDY CLAY	11.8	11.8	1.1	0.9	270	73
		2	312649	499930	10.5	SANDY CLAY	11.8	11.8	1.7	0.9	380	50
		3	312648	499930	16.5	SANDY CLAY	11.8	11.8	1.8	1.4	530	26
	16	1	312841	499990	6.0	SILT	11.0	11.0	0.1	0.0	520	140
		2	312840	499992	7.0	SILT	11.5	11.3	0.1	0.0	850	80
		3	312839	499998	15.0	SILT	11.2	11.1	0.6	0.5	450	10
	17	1	313067	500029	9.5	SILTY CLAY	11.0	11.0	0.2	0.1	770	320
		2	313099	500031	11.0	SANDY SILT	11.2	11.2	1.3	0.8	480	140
		3	313109	500039	18.0	SANDY SILT	11.3	11.2	1.3	0.7	280	48
	18	1	314083	500674	6.5	SILT	12.0	12.0	0.3	0.2	250	83
		2	314084	500672	7.0	SILT	12.0	12.0	0.4	0.1	1300	810
		3	314083	500672	15.0	SILT	12.0	12.0	1.0	0.7	1200	30
	19	1	314162	500801	5.5	CLAY	11.5	11.5	0.5	0.2	2900	1600
		2	314158	500804	11.5	SANDY GRAVEL	11.7	11.7	0.5	0.3	670	46
		3	314155	500803	22.0	SANDY GRAVEL	12.0	11.5	1.9	1.3	1700	29
	20	1	314177	500974	6.5	SILT	12.0	12.0	0.5	0.2	1500	400
		2	314165	500881	11.5	SANDY GRAVEL	12.0	12.0	1.4	1.4	470	43
		3	314158	500886	17.0	CLAY	12.0	12.0	1.9	1.7	330	23
	21	1	314200	500941	10.0	SILT	12.0	12.0	0.5	0.4	390	35
		2	314183	500940	11.0	SANDY SILT	12.0	12.0	0.7	0.5	780	42
		3	314178	500940	18.0	SANDY SILT	12.0	12.0	0.7	0.5	560	27

MACROZOOBENTHOS PHYSICAL DATA-1984 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LORAN COORD. LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	TEMP. (C.) BOTTOM	WATER VEL. (FT./SEC.) SURF.	WATER VEL. (FT./SEC.) BOTTOM	LIGHT (FT. CANDLES) SURF.	LIGHT (FT. CANDLES) BOTTOM
ST. CLAIR RIVER	1	1	308676	496880	6.5	SAND	4.0	4.0	1.8	1.1	4300	3500
		2	308676	496885	10.5	SAND	4.0	3.9	1.7	1.1	4400	2800
		3	308675	496881	16.0	SAND	4.0	3.9	1.9	0.9	4200	2600
	2	1	308752	497136	5.0	SANDY SILT	4.8	4.7	0.8	1.0	1000	820
		2	308754	497137	10.0	GRAVELLY CLAY	4.7	4.6	0.6	0.4	580	270
		3	308755	497137	17.0	SANDY GRAVEL	4.6	4.6	2.3	1.7	1100	400
	3	1	309028	497390	6.0	SANDY GRAVEL	4.7	4.6	2.4	2.3	3500	2000
		2	309023	497378	13.0	SANDY GRAVEL	4.7	4.6	3.1	2.1	3600	1000
		3	309026	497376	17.5	GRAVEL	4.7	4.6	2.1	1.5	2800	350
	4	1	309576	498265	4.5	SANDY SILT	5.0	5.0	1.2	0.8	300	200
		2	309571	498261	10.5	SANDY SILT	5.1	5.1	2.2	1.8	180	49
		3	309568	498258	17.0	SANDY SILT	5.2	5.1	2.5	1.9	320	65
	5	1	309948	498664	5.0	SANDY SILT	4.9	4.8	1.5	0.2	730	440
		2	309941	498653	9.5	SANDY SILT	4.8	4.8	2.1	1.6	500	170
		3	309936	498650	15.0	GRAVEL	4.8	4.8	2.8	1.5	200	80
	6	1	310122	498758	4.0	SANDY SILT	5.1	5.0	0.6	0.1	520	270
		2	310121	498760	8.5	SANDY SILT	4.9	4.9	1.1	0.8	1000	400
		3	310122	498760	14.0	SANDY SILT	5.0	5.0	1.3	0.8	1200	410
	7	1	310376	498901	6.0	SANDY SILT	5.2	5.2	0.6	0.5	750	210
		2	310377	498901	11.0	SILTY CLAY	5.1	5.1	2.4	2.4	1100	230
		3	310377	498903	19.0	SILTY CLAY	5.0	5.0	2.6	1.3	1000	56
	8	1	310652	499021	4.0	SILTY CLAY	5.2	5.2	0.3	0.1	750	390
		2	310650	499024	6.0	SANDY SILT	5.3	5.3	0.9	0.6	800	280
		3	310650	499024	15.0	SANDY SILT	5.1	5.1	1.0	0.5	1000	100

9	1	310769	499057	5.0	SANDY SILT	6.8	6.7	0.2	0.1	5400	900
	2	310762	499059	8.0	SANDY SILT	6.1	6.0	0.6	0.4	5000	1300
	3	310761	499058	14.0	SAND	6.1	6.0	0.3	0.1	2500	1000
10	1	310885	499092	4.0	SAND	7.2	7.1	0.3	0.3	2200	1400
	2	310880	499093	7.5	SANDY SILT	6.2	6.2	0.2	0.2	4500	550
	3	310880	499095	12.0	SANDY SILT	6.1	6.0	0.4	0.2	2300	720

MACROZOOBENTHOS PHYSICAL DATA-1984 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LORAN COORD. LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	TEMP. (C.) BOTTOM	WATER VEL. (FT./SEC.) SURF.	WATER VEL. (FT./SEC.) BOTTOM	LIGHT (FT. CANDLES) SURF.	LIGHT (FT. CANDLES) BOTTOM
LAKE ST. CLAIR	11	1	311488	499369	21.0	SILT	6.5	6.4	0.2	0.1	3200	100
		2	311473	499375	23.0	SILT	6.3	6.2	0.2	0.2	1000	100
		3	311472	499377	25.0	SILT	6.3	6.1	0.2	0.0	1300	630
	12	1	311626	499449	21.0	SILT	7.0	6.9	0.2	0.1	1400	100
		2	311625	499455	22.0	SILT	7.0	6.9	0.2	0.1	1400	120
		3	311626	499456	25.0	SILT	7.0	6.9	0.1	0.0	1500	45
	13	1	311725	499491	21.0	SILT	6.8	6.7	0.5	0.2	200	1
		2	311722	499495	21.5	SILTY CLAY	6.8	6.7	0.4	0.1	160	1
		3	311716	499499	25.0	SILTY CLAY	6.8	6.7	0.4	0.2	150	1

MACROZOOBENTHOS PHYSICAL DATA-1984 MAY

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LORAN COORD. LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	TEMP. (C.) BOTTOM	WATER VEL. (FT./SEC.) SURF.	WATER VEL. (FT./SEC.) BOTTOM	LIGHT (FT. CANDLES) SURF.	LIGHT (FT. CANDLES) BOTTOM
DETROIT RIVER	14	1	312578	499884	8.5	SAND	6.3	6.3	0.8	0.0	100	15
		2	312579	499888	11.0	SAND	6.4	6.4	1.0	0.4	150	25
		3	312574	499892	18.0	SANDY SILT	7.2	7.1	1.1	1.0	200	5
	15	1	312648	499938	8.0	SANDY CLAY	7.8	7.8	0.4	0.4	15	0
		2	312651	499933	11.0	SANDY GRAVEL	7.8	7.8	0.7	0.4	35	0
		3	312650	499930	19.0	SANDY SILT	7.8	7.7	1.0	0.9	120	0
	16	1	312842	499994	6.0	SILT	8.3	8.3	0.1	0.1	150	10
		2	312844	499998	9.0	SILTY CLAY	8.2	8.1	0.4	0.3	150	15
		3	312850	499998	17.0	SANDY SILT	7.8	7.7	1.4	1.3	140	0
	17	1	313066	500028	9.5	SILT	7.3	7.2	0.4	0.1	16000	29
		2	313089	500032	12.0	SILT	7.6	7.4	0.8	0.5	650	20
		3	313109	500038	20.0	SANDY SILT	7.4	7.4	1.4	1.0	1300	0
	18	1	314083	500675	7.0	SILT	6.7	6.7	0.4	0.4	570	48
		2	314083	500674	9.0	SILT	6.7	6.7	0.4	0.6	650	66
		3	314084	500676	16.0	SILT	6.8	6.6	0.9	0.2	4500	4
	19	1	314161	500806	6.0	SANDY SILT	6.7	6.6	0.5	0.2	580	160
		2	314156	500801	12.5	SANDY SILT	6.6	6.4	0.9	0.9	3300	12
		3	314155	500800	19.0	GRAVELLY CLAY	6.4	6.3	0.7	0.8	3100	10
	20	1	314180	500886	5.5	COBBLE	3.7	3.7	1.1	0.7	2000	130
		2	314163	500890	12.0	SILTY CLAY	3.5	3.5	1.5	0.8	2300	2
		3	314155	500886	19.0	SANDY SILT	3.9	3.8	1.6	0.7	2400	0
	21	1	314198	500943	8.5	SANDY SILT	3.7	3.6	1.2	0.9	2100	35
		2	314180	500939	14.0	SILTY CLAY	3.7	3.7	0.8	0.4	3700	5
		3	314172	500937	20.0	GRAVELLY CLAY	3.9	3.9	1.7	1.3	2000	0

MACROZOOBENTHOS PHYSICAL DATA-1984 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LORAN COORD. LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	TEMP. (C.) BOTTOM	WATER VEL. (FT./SEC.) SURF.	WATER VEL. (FT./SEC.) BOTTOM	LIGHT (FT. CANDLES) SURF.	LIGHT (FT. CANDLES) BOTTOM
ST. CLAIR RIVER	1	1	308678	496880	6.0	SAND	15.2	15.1	1.6	1.0	1600	750
		2	308673	496882	11.0	SANDY GRAVEL	15.2	15.1	1.8	1.1	2000	800
		3	308672	496976	15.0	SAND	15.2	15.1	1.9	1.1	1300	710
	2	1	308754	497134	5.5	SANDY SILT	15.2	15.1	0.5	0.4	1400	1000
		2	308752	497134	10.0	SANDY SILT	15.2	15.1	1.0	1.1	2500	650
		3	308755	497139	15.0	GRAVEL	15.2	15.1	1.8	1.2	1500	670
	3	1	309023	497389	5.5	GRAVEL	14.1	14.0	2.2	2.1	1100	870
		2	309020	497381	13.0	GRAVEL	14.1	14.0	2.4	1.9	770	450
		3	309016	497374	17.0	GRAVEL	14.1	14.0	2.7	2.7	870	430
	4	1	309580	498265	4.0	SANDY SILT	14.3	14.3	0.9	0.2	670	460
		2	309570	498253	10.0	SANDY SILT	14.4	14.3	2.0	0.3	3000	650
		3	309568	498257	15.0	SAND	14.3	14.2	2.5	1.2	1300	370
	5	1	309948	498661	4.5	SANDY SILT	14.2	14.1	1.2	1.0	560	250
		2	309942	498653	9.0	SANDY SILT	14.2	14.1	1.7	0.2	480	28
		3	309939	498650	16.0	SANDY GRAVEL	14.1	14.1	2.6	2.6	300	75
	6	1	310122	498761	4.0	SANDY SILT	14.3	14.2	0.2	0.1	400	320
		2	310121	498760	10.0	SANDY SILT	14.2	14.2	0.4	0.2	650	120
		3	310120	498761	13.0	SANDY SILT	14.2	14.1	0.7	0.5	350	13
	7	1	310376	498902	6.0	SANDY SILT	14.5	14.3	0.7	0.5	270	170
		2	310376	498904	10.0	SANDY SILT	14.4	14.2	0.7	0.7	520	25
		3	310377	498902	16.0	SANDY CLAY	14.2	14.1	1.4	1.1	580	140
	8	1	310651	499021	3.0	SANDY SILT	14.7	14.7	0.1	0.1	210	150
		2	310652	499025	7.5	SANDY SILT	14.5	14.3	0.1	0.0	170	82
		3	310652	499027	13.0	SANDY SILT	14.4	14.2	0.3	0.0	500	10

9	1	310769	499054	6.0	SAND	14.4	14.3	0.2	0.1	250	110
	2	310770	499058	7.0	SAND	14.5	14.4	0.3	0.2	240	100
	3	310771	499059	14.0	SAND	14.5	14.3	0.3	0.3	270	14
10	1	310888	499088	4.0	SAND	14.5	14.4	0.3	0.3	95	63
	2	310887	499090	8.0	SAND	14.5	14.4	0.3	0.3	110	46
	3	310888	499095	12.0	SANDY SILT	14.4	14.3	0.5	0.2	91	23

MACROZOOBENTHOS PHYSICAL DATA-1984 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	BOTTOM	WATER VEL. (FT./SEC.) SURF.	BOTTOM	LIGHT (FT. CANDLES) SURF.	BOTTOM
LAKE ST. CLAIR	11	1	311486	499374	20.0	SILT	14.3	14.1	0.4	0.1	840	100
		2	311476	499376	21.5	SILT	14.5	14.2	0.2	0.1	1300	68
		3	311478	499380	24.0	SILT	14.3	14.1	0.2	0.1	700	27
	12	1	311628	499444	20.0	SILT	14.8	14.4	0.2	0.1	3200	160
		2	311623	499451	23.0	SILT	14.5	14.3	0.3	0.2	3200	100
		3	311623	499453	25.5	SILT	14.9	14.5	0.3	0.2	3300	98
	13	1	311715	499490	20.0	SILT	14.9	14.5	0.3	0.4	3100	160
		2	311715	499499	23.0	SILT	14.9	14.5	0.5	0.2	3300	100
		3	311720	499501	28.0	SILT	14.8	14.5	0.5	1.1	4200	55

MACROZOOBENTHOS PHYSICAL DATA-1984 OCTOBER

NOTE (-) NUMBERS INDICATE MISSING DATA

LOCATION	TRANSECT	STATION	LORAN COORD. UPPER	LORAN COORD. LOWER	DEPTH (FT.)	BOTTOM TYPE	TEMP. (C.) SURF.	TEMP. (C.) BOTTOM	WATER VEL. (FT./SEC.) SURF.	WATER VEL. (FT./SEC.) BOTTOM	LIGHT (FT. CANDLES) SURF.	LIGHT (FT. CANDLES) BOTTOM
DETROIT RIVER	14	1	312581	499885	7.0	SANDY GRAVEL	14.9	14.8	1.0	0.3	500	100
		2	312575	499890	10.0	SANDY GRAVEL	14.8	14.7	0.9	0.5	550	57
		3	312574	499890	16.0	SAND	14.8	14.7	1.5	0.8	430	32
	15	1	312647	499938	6.0	SANDY GRAVEL	14.8	14.7	0.6	0.4	180	100
		2	312651	499936	10.0	SANDY CLAY	14.8	14.5	1.4	0.8	230	55
		3	312648	499932	15.0	SANDY CLAY	14.8	14.8	2.0	0.9	100	34
	16	1	312842	499994	6.0	SILT	14.8	14.7	0.1	0.1	630	110
		2	312845	499993	9.0	SILT	14.9	14.8	0.1	0.1	560	10
		3	312845	499998	15.0	SANDY SILT	14.2	14.2	0.8	0.6	430	63
	17	1	313065	500031	9.0	SILTY GRAVEL	14.9	14.9	0.2	0.1	320	18
		2	313101	500032	12.0	SAND	14.5	14.4	1.7	1.2	200	40
		3	313108	500037	16.0	SAND	14.4	14.3	1.6	0.8	1000	13
	18	1	314089	500681	6.0	SILT	14.8	14.8	0.4	0.1	220	10
		2	314089	500679	9.5	SILT	14.8	14.8	0.2	0.1	160	28
		3	314089	500680	15.0	SANDY SILT	14.8	14.7	0.7	0.3	240	38
	19	1	314162	500801	6.0	SILTY CLAY	14.5	14.5	0.3	0.0	330	140
		2	314157	500801	11.0	SANDY GRAVEL	14.7	14.7	0.8	1.0	150	36
		3	314155	500803	21.0	SANDY GRAVEL	14.5	14.5	1.4	0.2	220	67
	20	1	314179	500888	4.5	COBBLE	14.5	14.5	0.4	0.2	500	300
		2	314164	500886	12.0	GRAVELLY CLAY	14.5	14.5	2.2	1.3	260	43
		3	314157	500891	20.5	SANDY CLAY	14.5	14.5	2.2	1.6	420	60
	21	1	314199	500944	9.0	SANDY CLAY	14.5	14.5	0.7	0.2	220	56
		2	314181	500942	12.0	SILT	14.5	14.5	0.8	0.3	440	100
		3	314180	500945	20.0	GRAVELLY CLAY	14.5	14.5	0.9	0.7	410	40

APPENDIX G

Macrozoobenthos Physical Data - A Summary

Appendix G
Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

Transect	Station	Water depth (ft.)	Frequency of occurrence of substrate type*	Mean current velocity (ft/sec) Surface	Bottom
1	1	6-10	**Sa(3),SiGr(1)***	1.7(1.6-1.8)	1.1(1.0-1.3)
	2	10-14	Sa(3),SaGr(1)	1.6(1.4-1.7)	1.1(1.1-1.1)
	3	15-17	Sa(4)	1.8(1.6-1.9)	1.3(0.9-1.9)
2	1	3-6	SaSi(3),SaGr(1)	0.7(.4-1.1)	0.6(0.1-1.0)
	2	10-11	Si(1),GrCl(1),SaSi(1),Gr(1)	1.3(0.6-1.9)	1.0(0.4-1.4)
	3	15-17	Gr(3),SaGr(1)	2.3(1.8-3.0)	1.9(1.2-2.7)
3	1	6-7	SaGr(2),Gr(2)	1.8(0.6-2.4)	1.9(1.1-2.3)
	2	13-14	Gr(3),SaGr(1)	2.0(1.2-3.1)	1.6(1.0-2.1)
	3	17-20	Gr(3),Cl(1)	2.1(1.7-2.7)	1.7(0.9-2.7)
4	1	3-5	SaSi(4)	1.1(0.9-1.2)	0.6(0.2-1.1)
	2	10-13	SaSi(2),Sa(1)Si(1)	2.1(1.8-2.3)	1.1(0.3-1.8)
	3	15-17	Sa(2),SaSi(1),SiGr(1)	2.5(2.4-2.6)	2.0(1.2-2.8)
5	1	4-6	SaSi(3),Si(1)	1.4(0.8-2.2)	0.4(0.2-1.0)
	2	9-10	SaSi(3),SaCl(1)	1.8(1.5-2.1)	1.0(0.2-1.6)
	3	15-16	SaGr(2),Gr(2)	2.8(2.6-3.0)	1.8(0.9-2.6)
6	1	4	SaSi(4)	0.5(0.2-1.0)	0.3(0.0-1.0)
	2	7-10	SaSi(4)	0.8(0.4-1.2)	0.6(0.2-1.0)
	3	11-15	SaSi(3)Si(1)	1.2(0.7-1.4)	0.8(0.5-1.2)
7	1	5-7	SaSi(4)	0.6(0.5-0.7)	0.5(0.4-0.6)
	2	10-11	SaSi(2),SiCl(1),OrDe(1)	1.4(0.7-2.4)	1.2(0.1-2.4)
	3	16-20	Cl(1),SiCl(1),SaCl(1),SaSi(1)	1.9(1.4-2.6)	1.2(1.1-1.3)
8	1	3-4	SaSi(2),SiCl(1),Cl(1)	0.2(0.1-0.5)	0.2(0.1-0.5)
	2	6-8	SaSi(3)Si(1)	0.6(0.1-1.1)	0.3(0.0-0.6)
	3	13-15	SaSi(3),Si(1)	0.7(0.3-1.0)	0.4(0.0-0.8)

CONTINUED

Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

Transect	Station	Water depth (ft.)	Frequency of occurrence of substrate type*	Mean current velocity (ft/sec) Surface	Bottom
9	1	4-6	SaSi(2),Sa(2)	0.3(0.2-0.4)	0.2(0.0-0.4)
	2	7-8	SaSi(3),Sa(1)	0.6(0.3-1.0)	0.4(0.2-0.6)
	3	10-15	Sa(2),SaSi(1),Si(1)	0.4(0.3-0.8)	0.6(0.1-1.1)
10	1	3-4	Sa(4)	0.4(0.2-0.7)	0.3(0.2-0.3)
	2	7-8	Sa(2),SaSi(2)	0.3(0.2-0.4)	0.2(0.1-0.3)
	3	10-15	SaSi(4)	0.4(0.2-0.6)	0.3(0.1-0.6)
11	1	17-21	SiCl(4)	0.5(0.2-0.7)	0.2(0.0-0.5)
	2	20-23	SiCl(4)	0.2(0.2-0.3)	0.2(0.0-0.3)
	3	24-27	SiCl(4)	0.2(0.2-0.3)	0.1(0.0-0.2)
12	1	20-22	SiCl(4)	0.2(0.2-0.3)	0.2(0.1-0.3)
	2	20-23	SiCl(4)	0.3(0.2-0.3)	0.2(0.1-0.2)
	3	25-27	SiCl(4)	0.2(0.1-0.3)	0.2(0.0-0.3)
13	1	20-21	SiCl(4)	0.6(0.3-1.0)	0.2(0.0-0.4)
	2	20-23	SiCl(4)	0.4(0.3-0.5)	0.2(0.1-0.3)
	3	25-28	SiCl(4)	0.5(0.3-0.9)	0.4(0.0-1.1)
14	1	6-8	Sa(2),SaGr(1),Gr(1)	0.8(0.7-1.0)	0.4(0.0-0.7)
	2	10-11	Sa(2),SaSi(1),SaGr(1)	1.0(0.7-1.5)	0.7(0.4-1.0)
	3	16-20	Sa(2),Si(1),SaSi(1)	1.2(0.5-1.5)	1.0(0.6-1.4)
15	1	6-8	SaCl(2),SaSi(1),SaGr(1)	0.7(0.4-1.1)	0.6(0.4-0.9)
	2	10-11	SaCl(2),SaSi(1),SaGr(1)	1.3(0.7-1.7)	0.7(0.4-0.9)
	3	15-19	SaCl(2),SaSi(2)	1.6(1.0-2.0)	1.1(0.9-1.4)
16	1	6	Si(4)	0.1(0.1-0.1)	0.1(0.1-0.1)
	2	7-11	Si(3),SiCl(1)	0.2(0.1-0.4)	0.1(0.0-0.3)
	3	15-18	SaSi(3),Si(1)	0.9(0.6-1.4)	0.8(0.5-1.3)

CONTINUED

Table 1. Summary of hydrographic data taken at macrobenthos sampling stations in the St. Clair-Detroit River system in May and October, 1983 and 1984.

Transect	Station	Water depth (ft.)	Frequency of occurrence of substrate type*	Mean current velocity (ft/sec) Surface	Bottom
17	1	9-10	Si(1),SiCl(1),SaSi(1),SiGr(1)	0.3(0.2-0.4)	0.1(0.1-0.1)
	2	11-12	Si(2),SaSi(1),Sa(1)	1.3(0.8-1.7)	0.8(0.5-1.2)
	3	16-20	SaSi(2),Si(1),Sa(1)	1.4(1.3-1.6)	0.8(0.7-1.0)
18	1	5-7	Si(4)	0.4(0.3-0.4)	0.2(0.1-0.4)
	2	7-10	Si(4)	0.3(0.2-0.4)	0.3(0.1-0.6)
	3	15-16	Si(3),SaSi(1)	0.9(0.7-1.0)	0.4(0.2-0.7)
19	1	5-6	SiCl(2),Cl(1),SaSi(1)	0.4(0.3-0.5)	0.1(0.0-0.2)
	2	11-12	SaGr(2),SaSi(1),Gr(1)	0.7(0.5-0.9)	0.7(0.3-1.0)
	3	19-22	SaGr(2),GrCl(1),Gr(1)	1.3(0.7-1.9)	0.8(0.2-1.3)
20	1	4-6	Co(2),Si(1),Gr(1)	0.7(0.4-1.1)	0.4(0.2-0.7)
	2	12-14	SiCl(1),GrCl(1),SiGr(1),SaGr(1)	1.7(1.4-2.2)	1.2(0.8-1.4)
	3	17-23	Cl(1),SaCl(1),SaSi(1),SiGr(1)	1.9(1.6-2.2)	1.3(0.7-1.7)
21	1	8-10	SaSi(2),Si(1),SaCl(1)	0.8(0.5-1.2)	0.5(0.2-0.9)
	2	11-20	Cl(1),Si(1),SiCl(1),SaSi(1)	0.8(0.7-0.8)	0.4(0.3-0.5)
	3	18-25	GrCl(2),Cl(1),SaSi(1)	1.1(0.7-1.7)	0.8(0.5-1.3)

* Cl = clay, SiCl = silty clay, SaCl = sandy clay, GrCl = gravely clay, Si = silt, SaSi = sandy silt, Sa = sand, SiGr = silty gravel, SaGr = sandy gravel, Gr = gravel, Co = cobble, OrDe = organic debris.

** Clay = very cohesive and malleable fine sediments
Silt = unconsolidate fine sediments
Sand = 0.062 - 2 mm
Gravel = 2-64 mm
Cobble = 64 mm

***Frequency of occurrence, each station was sampled four times, twice in May and October.

APPENDIX H

Macrozoobenthos ANOVA Tables

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG1 [LYCR4]

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	235229.58215788	873.42463425	23.50
ERROR	504	18730.85666556	37.16436853	
CORRECTED TOTAL	755	253960.44006747		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2	61748.82715738	83.08	0.0001
YEAR	1	841.84545577	22.15	0.0001
TRANSECT*YEAR	2	1676.21716700	22.48	0.0001
PCATH	1	5267.74200238	141.74	0.0001
TRANSECT*PCATH	2	4220.61735504	56.79	0.0001
YEAR*PCATH	1	2006.82267702	54.04	0.0001
TRANSECT*YEAR*PCATH	2	3384.78822388	45.53	0.0001
STATION	2	1356.22222310	18.78	0.0001
TRANSECT*STATION	4	1138.96234162	7.66	0.0001
YEAR*STATION	2	335.26736606	4.51	0.0114
TRANSEC*YEAR*STATION	4	1527.83517548	5.06	0.0001
PCATH*STATION	2	671.95546227	9.03	0.0001
TRANSEC*PCATH*STATIC	4	1080.06647088	7.27	0.0001
YEAR*PCATH*STATION	2	420.00142373	5.65	0.0037
TRANS*YEAR*PCAT*STAT	4	596.82415128	4.01	0.0001

R-SQUARE	C.V.
0.926266	71.1635

ROOT MSE	LOG1 MEAN
6.09626103	8.56414546

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG2 [TURBELLARIA]

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4245.65166223	16.93104328	7.75
ERROR	504	1100.25637476	2.18332614	
CORRECTED TOTAL	755	5350.08823699		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2	1237.90257283	28.35	0.0001
YEAR	1	162.02335106	74.07	0.0001
TRANSECT*YEAR	2	270.46410297	6.19	0.0021
PCATH	1	81.39302401	37.26	0.0001
TRANSECT*PCATH	2	332.65054221	7.62	0.0006
YEAR*PCATH	1	38.53614500	17.65	0.0001
TRANSECT*YEAR*PCATH	2	185.31324550	4.24	0.0001
STATION	2	291.06521271	66.66	0.0001
TRANSECT*STATION	4	833.95134523	9.54	0.0001
YEAR*STATION	2	12.06715616	2.95	0.0531
TRANSEC*YEAR*STATION	4	224.77266058	2.57	0.0361
PCATH*STATION	2	14.13653635	3.24	0.0401
TRANSEC*PCATH*STATIC	4	341.66283885	3.91	0.0041
YEAR*PCATH*STATION	2	16.43265485	3.76	0.0239
TRANS*YEAR*PCAT*STAT	4	205.65382741	2.35	0.0541

R-SQUARE	C.V.
0.793922	56.3196

ROOT MSE	LOG2 MEAN
1.47760825	2.62263892

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG3 — NEMERTINEA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	2564.39556342	15.874C8758	6.80
ERROR	504	1176.32675663	2.33396563	
CORRECTED TOTAL	755	3740.72474C25		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	1725.6C526523	37.C5	C.CCC1
YEAR	1	C.95276E57	C.41	C.5232
TRANSECT*YEAR	2C	119.33EE2232	2.56	C.CCC3
PCNTP	1	498.C5217751	213.41	C.CCC1
TRANSECT*PCNTP	2C	482.63746256	1C.34	C.CCC1
YEAR*PCNTP	1	2.7496CC21	-1.1E	C.2783
TRANSECT*YEAR*PCNTP	2C	18C.C8233217	3.8E	C.CCC1
STATICN	2	14.73C16716	3.16	C.C435
TRANSECT*STATICN	4C	199.77764CCC	2.14	C.CCC1
YEAR*STATICN	2	2.82652415	C.61	C.5450
TRANSEC*YEAR*STATICN	4C	254.C4512EE4	2.72	C.CCC1
PCNTP*STATICN	2	5.62772527	2.CE	C.1282
TRANSEC*PCNTP*STATIC	4C	262.44672502	2.C3	C.CCC1
YEAR*PCNTP*STATICN	2	12.33424166	2.64	C.C722
TRANS*YEAR*PCNT*STAT	4C	195.13762365	2.C5	C.CCC2

FR > F	R-SQUARE	C.V.
0.0001	C.772C61	67.5724

ROOT MSE	BUG3 MEAN
1.52773872	2.26CE5715

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG4 — NEMATODA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	9715.81EEC744	38.7CB44146	8.97
ERROR	504	2174.4C27124C	4.3142511C	
CORRECTED TOTAL	755	11E9C.22151584		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	4C71.42CC5C67	47.1E	C.CCC1
YEAR	1	33.C1E32465	7.65	C.CC59
TRANSECT*YEAR	2C	366.C2565E22	4.24	C.CCC1
PCNTP	1	516.CC527472	12C.3C	C.CCC1
TRANSECT*PCNTP	2C	361.6556CC16	4.2C	C.CCC1
YEAR*PCNTP	1	11C.2C52E365	25.55	C.CCC1
TRANSECT*YEAR*PCNTP	2C	172.25E55645	2.CC	C.C064
STATICN	2	133.71356725	15.5C	C.CCC1
TRANSECT*STATICN	4C	25CC.C1526151	14.4E	C.CCC1
YEAR*STATICN	2	12.45146455	1.45	C.2361
TRANSEC*YEAR*STATICN	4C	322.441C17EE	1.E7	C.CC13
PCNTP*STATICN	2	135.37722467	15.65	C.CCC1
TRANSEC*PCNTP*STATIC	4C	611.57672676	3.54	C.CCC1
YEAR*PCNTP*STATICN	2	16.2C3CE465	1.9C	C.1514
TRANS*YEAR*PCNT*STAT	4C	345.75271C25	2.C3	C.CCC3

FR > F	R-SQUARE	C.V.
0.0001	C.817127	39.C94C

ROOT MSE	BUG4 MEAN
2.07708717	5.212C54C1

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUGS — PIRLINEA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	64.67127658	0.25765449	4.16
ERROR	504	31.15666591	0.06195256	
CORRECTED TOTAL	755	95.82793748		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	20.17672705	16.30	0.0001
YEAR	1	0.13584558	2.26	0.1335
TRANSECT*YEAR	20	1.46460658	1.18	0.2639
PCAT	1	0.45476671	7.35	0.0069
TRANSECT*PCAT	20	2.22752620	1.80	0.0182
YEAR*PCAT	1	0.08466255	1.37	0.2422
TRANSECT*YEAR*PCAT	20	1.20059585	0.97	0.4977
STATION	2	5.06155516	40.85	0.0001
TRANSECT*STATION	40	21.68522791	8.76	0.0001
YEAR*STATION	2	0.14405242	1.16	0.3132
TRANSEC*YEAR*STATION	40	2.53385015	1.02	0.4343
PCAT*STATION	2	0.02154457	0.17	0.8403
TRANSEC*PCAT*STATIC	40	3.77666622	1.53	0.0230
YEAR*PCAT*STATION	2	0.46753655	3.78	0.0236
TRANS*YEAR*PCAT*STAT	40	5.22556552	2.11	0.0001

FR > F	R-SQUARE	C.V.
0.0001	0.674571	29.2956

ROOT MSE	BUGS MEAN
0.24886225	0.84915512

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUGS — CLIGOCHAETA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	138874.5646CE77	553.28511756	14.21
ERROR	504	19622.93622156	38.93447663	
CORRECTED TOTAL	755	158497.54CE3C33		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	72356.5631E351	92.92	0.0001
YEAR	1	63.17E5CEE7	1.62	0.2033
TRANSECT*YEAR	20	4665.87E19119	6.00	0.0001
PCAT	1	554.712E7ECE	15.27	0.0001
TRANSECT*PCAT	20	7705.554C932E	9.90	0.0001
YEAR*PCAT	1	3944.CC17E5C1	101.30	0.0001
TRANSECT*YEAR*PCAT	20	1C7CC.5165E527	13.74	0.0001
STATION	2	22EC.1ECC7225	30.57	0.0001
TRANSECT*STATION	40	1827E.46EC1154	11.74	0.0001
YEAR*STATION	2	156.2CC7CE22	2.01	0.1356
TRANSEC*YEAR*STATION	40	742C.572E5546	4.77	0.0001
PCAT*STATION	2	262.63E67210	3.37	0.0351
TRANSEC*PCAT*STATIC	40	5215.37214225	3.41	0.0001
YEAR*PCAT*STATION	2	48C.24C57CE8	6.17	0.0023
TRANS*YEAR*PCAT*STAT	40	4543.C5C14712	2.92	0.0001

FR > F	R-SQUARE	C.V.
0.0001	0.876194	43.7413

ROOT MSE	BUGS MEAN
6.23974972	14.26513205

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG2 — MANAYUNKIA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	27655.C7655CCE7	11C.19552550	16.61
ERROR	5C4	3344.C2545559C	6.634575C8	
CORRECTED TOTAL	755	31CC3.1CE35E77		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	1C345.4133C1E5	77.56	C.CCC1
YEAR	1	374.52476723	56.45	C.CCC1
TRANSECT*YEAR	2C	1183.41553195C	8.52	C.CCC1
MONTH	1	83.5662776E	12.59	C.C004
TRANSECT*MONTH	2C	251C.7926463C	1E.52	C.CCC1
YEAR*MONTH	1	132.CC211CCC	19.5C	C.CCC1
TRANSECT*YEAR*MONTH	2C	43C.2146116	3.24	C.CCC1
STATION	2	1C4.54147411	7.51	C.C004
TRANSECT*STATION	4C	6E4E.3221546S	25.EC	C.CCC1
YEAR*STATION	2	2E6.46467752	21.59	C.CCC1
TRANSEC*YEAR*STATION	4C	1E61.83725C1C	7.C2	C.CCC1
MONTH*STATION	2	125.2115CEE7	5.44	C.CCC1
TRANSEC*MONTH*STATIC	4C	2725.43245C4E	1C.2E	C.CCC1
YEAR*MONTH*STATION	2	E2.5473155C5	6.25	C.CC21
TRANS*YEAR*MONT*STAT	4C	555.8E5C427E	2.11	C.CCC1

PR > F	R-SQUARE	C.V.
0.CCC1	C.852139	62.5561

ROOT MSE	BUG2 MEAN
2.57584531	4.C5136615

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG8 — +ARPACTICOIDA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	2747.57577166	1C.946517C2	6.71
ERROR	5C4	822.67252252	1.63228755	
CORRECTED TOTAL	755	3570.24E69512		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	625.82427271	19.17	C.CCC1
YEAR	1	162.94726525	1CC.44	C.CCC1
TRANSECT*YEAR	2C	211.14556186	6.47	C.CCC1
MONTH	1	62.C7161267	3E.C3	C.CCC1
TRANSECT*MONTH	2C	274.42EE6165	8.41	C.CCC1
YEAR*MONTH	1	32.4661CC54	19.E5	C.CCC1
TRANSECT*YEAR*MONTH	2C	157.41227757	4.E2	C.CCC1
STATION	2	5C.815E7757	27 E2	C.CCC1
TRANSECT*STATION	4C	6C2.77561746	9.23	C.CCC1
YEAR*STATION	2	9.4218E255	2.85	C.C565
TRANSEC*YEAR*STATION	4C	175.2226165C	2.6E	C.CCC1
MONTH*STATION	2	16.7C276514	5.12	C.C063
TRANSEC*MONTH*STATIC	4C	175.216EC777	2.74	C.CCC1
YEAR*MONTH*STATION	2	11.7C142C57	3.58	C.C285
TRANS*YEAR*MONT*STAT	4C	124.3542E543	2.C6	C.CCC2

PR > F	R-SQUARE	C.V.
C.CCC1	C.765575	72.4755

ROOT MSE	BUG8 MEAN
1.27761009	1.73EE15E5

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOGS — CSTRACOCA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4385.18556C6C	17.47C87474	9.78
ERROR	5C4	9CC.36141147	1.78643137	
CORRECTED TOTAL	755	5285.55C572C7		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	821.76447734	23.28	C.CCC1
YEAR	1	14.5E643362	8.39	C.CC39
TRANSECT*YEAR	2C	11C.17732531	3.CE	C.CCC1
PCAT*	1	45.5EEE4415	27.75	C.CCC1
TRANSECT*PCAT*	2C	9EC.72C55E31	26.89	C.CCC1
YEAR*PCAT*	1	4.C1174245	2.25	C.1346
TRANSECT*YEAR*PCAT*	2C	155.76E454CC	4.47	C.CCC1
STATICA	2	25.2C75C125	7.CE	C.CC1C
TRANSECT*STATICA	4C	E17.E5212445	11.44	C.CCC1
YEAR*STATICA	2	7.7455C5E7	2.17	C.1155
TRANSEC*YEAR*STATICA	4C	337.3295C2EC	4.72	C.CCC1
PCAT*STATICA	2	37.431CC75C	1C.4E	C.CCC1
TRANSEC*PCAT*STATIC	4C	729.33655E5E	1C.21	C.CCC1
YEAR*PCAT*STATICA	2	11.17784E41	3.13	C.C446
TRANS*YEAR*PCAT*STAT	4C	2EE.25E59E47	4.C3	C.CCC1

FR > F	R-SQUARE	C.V.
0.0001	C.829E5E	E1.57E5

ROOT MSE	BLOG MEAN
1.33657449	1.62E431C7

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG1C — GAMMARUS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	E8C2.3155E7C3	35.C8E5EECC	8.74
ERROR	5C4	2C21.375C46E5	4.C1CEE478	
CORRECTED TOTAL	755	1CE23.651C23EE		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	2SC5.E7492EE5	26.28	C.CCC1
YEAR	1	16.51E1EC15	4.22	C.C4C5
TRANSECT*YEAR	2C	363.36221EC5	4.53	C.CCC1
PCAT*	1	435.E45C5515	1C5.67	C.CCC1
TRANSECT*PCAT*	2C	614.5162E356	7.67	C.CCC1
YEAR*PCAT*	1	16.16657EEC	4.C3	C.C452
TRANSECT*YEAR*PCAT*	2C	655.1EE45753	E.67	C.CCC1
STATICA	2	6E1.E5753456	E2.51	C.CCC1
TRANSECT*STATICA	4C	1353.75C57262	E.44	C.CCC1
YEAR*STATICA	2	4C.EEEEC4C4	5.C7	C.CC66
TRANSEC*YEAR*STATICA	4C	323.EE3555E5	2.C2	C.CCC3
PCAT*STATICA	2	7C.57E55536	E.EC	C.CCC2
TRANSEC*PCAT*STATIC	4C	532.2CE1C4CC	5.E1	C.CCC1
YEAR*PCAT*STATICA	2	9.EE5E3525	1.23	C.2932
TRANS*YEAR*PCAT*STAT	4C	353.23257135	2.2C	C.CCC1

FR > F	R-SQUARE	C.V.
0.0001	C.E13245	E4.5325

ROOT MSE	BLG1C MEAN
2.CC266442	3.CE42C3E6

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG11 — PYALLELA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	1616.11496704	6.43877505	6.68
ERROR	504	485.85476666	0.96359756	
CORRECTED TOTAL	755	2101.96972585		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	420.24667854	22.32	0.0001
YEAR	1	5.08245545	5.27	0.0221
TRANSECT*YEAR	20	93.41215041	4.85	0.0001
PCNTP	1	0.86787550	0.90	0.3432
TRANSECT*PCNTP	20	85.61566572	4.44	0.0001
YEAR*PCNTP	1	6.76270435	7.02	0.0083
TRANSECT*YEAR*PCNTP	20	90.65672442	4.70	0.0001
STATION	2	80.52736136	41.57	0.0001
TRANSECT*STATION	40	321.11215544	8.33	0.0001
YEAR*STATION	2	4.55655079	2.36	0.0951
TRANSEC*YEAR*STATION	40	53.05655503	1.38	0.0662
PCNTP*STATION	2	3.65642375	1.90	0.1512
TRANSEC*PCNTP*STATIC	40	262.50044035	6.81	0.0001
YEAR*PCNTP*STATION	2	4.19204795	2.17	0.1148
TRANS*YEAR*PCNT*STAT	40	173.32313343	4.49	0.0001

PR > F	R-SQUARE	C.V.
0.0001	0.768857	71.5867

ROOT MSE	BLG11 MEAN
0.98183277	1.37145277

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG12 — CHIRONOMIDAE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	24906.42376006	99.22877992	20.01
ERROR	504	2499.67111524	4.95966492	
CORRECTED TOTAL	755	27406.09487530		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	5562.77972000	56.41	0.0001
YEAR	1	417.08087623	84.09	0.0001
TRANSECT*YEAR	20	1612.38667445	16.26	0.0001
PCNTP	1	394.77846252	79.60	0.0001
TRANSECT*PCNTP	20	1271.75546526	12.82	0.0001
YEAR*PCNTP	1	1034.85077047	208.65	0.0001
TRANSECT*YEAR*PCNTP	20	1333.25418776	13.44	0.0001
STATION	2	1047.25652693	105.58	0.0001
TRANSECT*STATION	40	4121.17475205	20.77	0.0001
YEAR*STATION	2	5.55812155	0.56	0.5714
TRANSEC*YEAR*STATION	40	1005.81767266	5.05	0.0001
PCNTP*STATION	2	56.62825276	5.71	0.0035
TRANSEC*PCNTP*STATIC	40	2057.84950143	10.37	0.0001
YEAR*PCNTP*STATION	2	99.40657516	10.02	0.0001
TRANS*YEAR*PCNT*STAT	40	841.84372268	4.24	0.0001

PR > F	R-SQUARE	C.V.
0.0001	0.908751	31.8851

ROOT MSE	BLG12 MEAN
2.22703052	6.98652766

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG13 **CAENIS**

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	2337.76560488	9.31382313	14.59
ERROR	504	321.62564558	0.63815406	
CORRECTED TOTAL	755	2659.39125046		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	735.65235573	57.56	0.0001
YEAR	1	2.14726504	3.36	0.0672
TRANSECT*YEAR	20	139.20156044	10.91	0.0001
PCATP	1	6.75614405	10.59	0.0012
TRANSECT*PCATP	20	157.85426058	12.36	0.0001
YEAR*PCATP	1	62.47860432	97.90	0.0001
TRANSECT*YEAR*PCATP	20	100.05672205	7.84	0.0001
STATION	2	126.23462299	98.98	0.0001
TRANSECT*STATION	40	365.65588615	14.33	0.0001
YEAR*STATION	2	2.05000738	1.64	0.1955
TRANSEC*YEAR*STATION	40	130.08001662	5.10	0.0001
PCATP*STATION	2	0.24722640	0.19	0.8240
TRANSEC*PCATP*STATIC	40	330.54164032	12.96	0.0001
YEAR*PCATP*STATION	2	15.26452623	12.04	0.0001
TRANS*YEAR*PCAT*STAT	40	118.82488655	4.66	0.0001

PR > F	R-SQUARE	C.V.
0.0001	0.879059	52.7837

ROOT MSE	LOG13 MEAN
0.79884545	1.51343225

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG14 **HEXACENTA**

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	8283.79103163	33.00315152	32.72
ERROR	504	508.37478779	1.00860013	
CORRECTED TOTAL	755	8792.16581942		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	4150.25128446	207.71	0.0001
YEAR	1	45.65467265	45.27	0.0001
TRANSECT*YEAR	20	322.52042325	16.01	0.0001
PCATP	1	148.51604546	147.24	0.0001
TRANSECT*PCATP	20	941.66614135	46.68	0.0001
YEAR*PCATP	1	23.83058114	23.63	0.0001
TRANSECT*YEAR*PCATP	20	1108.28184146	54.94	0.0001
STATION	2	0.95474111	0.47	0.6232
TRANSECT*STATION	40	621.84066276	15.41	0.0001
YEAR*STATION	2	9.00141999	4.46	0.0120
TRANSEC*YEAR*STATION	40	194.45395427	4.82	0.0001
PCATP*STATION	2	7.42540554	3.68	0.0259
TRANSEC*PCATP*STATIC	40	295.84611048	8.82	0.0001
YEAR*PCATP*STATION	2	23.66315504	11.73	0.0001
TRANS*YEAR*PCAT*STAT	40	285.35416420	7.07	0.0001

PR > F	R-SQUARE	C.V.
0.0001	0.942179	36.1575

ROOT MSE	LOG14 MEAN
1.00433069	2.77765853

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: EUG1S — CECETIS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	299.47485340	1.19312571	7.35
ERROR	504	81.86900599	0.16243850	
CORRECTED TOTAL	755	381.34385939		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	76.15578200	23.44	0.0001
YEAR	1	1.54426785	9.51	0.0022
TRANSECT*YEAR	20	9.03666690	2.94	0.0001
PCNTP	1	0.11515512	0.71	0.4002
TRANSECT*PCNTP	20	18.51737652	5.82	0.0001
YEAR*PCNTP	1	0.07566661	0.47	0.4943
TRANSECT*YEAR*PCNTP	20	10.25467700	3.17	0.0001
STATION	2	21.20272645	65.26	0.0001
TRANSECT*STATION	40	93.35230645	14.37	0.0001
YEAR*STATION	2	2.76555660	8.51	0.0002
TRANSEC*YEAR*STATION	40	15.49412254	2.38	0.0001
PCNTP*STATION	2	0.55215764	1.82	0.1626
TRANSEC*PCNTP*STATIC	40	33.66725512	5.18	0.0001
YEAR*PCNTP*STATION	2	2.10522137	6.48	0.0017
TRANS*YEAR*PCNT*STAT	40	13.61452675	2.10	0.0002

R-SQUARE	C.V.
0.785314	35.5257

ROOT MSE	EUG1S MEAN
0.40303660	1.01542538

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: EUG1E — CHELMATOPSYCHE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4122.65155121	16.46570514	13.23
ERROR	504	627.19426521	1.24443307	
CORRECTED TOTAL	755	4749.84581652		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	1737.16410383	69.80	0.0001
YEAR	1	10.86505551	8.73	0.0033
TRANSECT*YEAR	20	75.45162714	3.03	0.0001
PCNTP	1	143.54833610	115.35	0.0001
TRANSECT*PCNTP	20	852.65085627	34.26	0.0001
YEAR*PCNTP	1	15.62156224	12.55	0.0004
TRANSECT*YEAR*PCNTP	20	38.68821107	1.55	0.0593
STATION	2	43.82617188	17.61	0.0001
TRANSECT*STATION	40	409.85836525	8.23	0.0001
YEAR*STATION	2	1.38525560	0.56	0.5735
TRANSEC*YEAR*STATION	40	156.13455250	3.14	0.0001
PCNTP*STATION	2	2.26514650	0.91	0.4031
TRANSEC*PCNTP*STATIC	40	262.27020788	5.27	0.0001
YEAR*PCNTP*STATION	2	3.49021522	1.40	0.2470
TRANS*YEAR*PCNT*STAT	40	376.61177561	7.63	0.0001

R-SQUARE	C.V.
0.868239	70.0013

ROOT MSE	EUG1E MEAN
1.11554160	1.55260235

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG17 — PCROPSYCPE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	1525.3C1822SC	6.C7609572	8.56
ERROR	5C4	357.78585622C	C.7C55CC59	
CORRECTED TOTAL	755	1883.C5172511		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	4C5.272C7552	28.54	C.CCC1
YEAR	1	16.6C2C5C71	22.67	C.CCC1
TRANSECT*YEAR	2C	47.51EEE1C2	3.35	C.CCC1
PCNTP	1	85.C52CE425	115.81	C.CCC1
TRANSECT*PCNTP	2C	2C7.77EEE656	14.63	C.CCC1
YEAR*PCNTP	1	1C.2C315726	14.27	C.CCC2
TRANSECT*YEAR*PCNTP	2C	73.61624714	5.18	C.CCC1
STATICN	2	5.C2725436	3.55	C.C295
TRANSECT*STATICN	4C	247.27177214	8.71	C.CCC1
YEAR*STATICN	2	5.C264CE5E	3.54	C.C297
TRANSEC*YEAR*STATICN	4C	42.12C2E215	1.4E	C.C315
PCNTP*STATICN	2	1E.24473667	12.85	C.CCC1
TRANSEC*PCNTP*STATIC	4C	273.4672EC3E	9.63	C.CCC1
YEAR*PCNTP*STATICN	2	2.63E3C14C	1.EE	C.157C
TRANS*YEAR*PCNT*STAT	4C	E5.25216557	3.CC	C.CCC1

PR > F	R-SQUARE	C.V.
0.CCC1	C.EC5555	64.C577

ROOT MSE	LOG17 MEAN
0.84295598	1.2152CEEE

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG18 — ACARINA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	446.CE2C2253	1.78518734	3.78
ERROR	5C4	237.58333E65	C.47218516	
CORRECTED TOTAL	755	6EE.CE536142		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	1C4.26542C25	11.C4	C.CCC1
YEAR	1	C.CC6E11CC	C.C1	C.9C45
TRANSECT*YEAR	2C	17.6E8C4555	1.89	C.C113
PCNTP	1	C.C6475EE7	C.14	C.7113
TRANSECT*PCNTP	2C	27.54111462	2.56	C.CCC1
YEAR*PCNTP	1	2.31CC7322	4.89	C.C274
TRANSECT*YEAR*PCNTP	2C	55.56522C65	5.53	C.CCC1
STATICN	2	4.56216657	5.25	C.CC55
TRANSECT*STATICN	4C	55.14777433	5.25	C.CCC1
YEAR*STATICN	2	4.C5144248	4.25	C.C142
TRANSEC*YEAR*STATICN	4C	34.21651175	1.81	C.C022
PCNTP*STATICN	2	5.73225234	6.C7	C.C025
TRANSEC*PCNTP*STATIC	4C	44.4C755133	2.35	C.CCC1
YEAR*PCNTP*STATICN	2	1.51427C52	1.6C	C.2022
TRANS*YEAR*PCNT*STAT	4C	45.62E354CC	2.42	C.CCC1

PR > F	R-SQUARE	C.V.
0.CCC1	C.653115	54.13E6

ROOT MSE	LOG18 MEAN
0.68716022	1.26526146

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG1S — PHYSA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	970.033CC829	3.86467334	6.54
ERROR	504	297.770C3351	0.59081419	
CORRECTED TOTAL	755	1267.8033622C		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	299.54261761	25.35	0.0001
YEAR	1	0.05818556	0.10	0.7538
TRANSECT*YEAR	20	36.07732263	3.05	0.0001
PCNTP	1	36.17230656	61.22	0.0001
TRANSECT*PCNTP	20	46.56670556	3.97	0.0001
YEAR*PCNTP	1	17.90024832	30.30	0.0001
TRANSECT*YEAR*PCNTP	20	60.93217257	5.16	0.0001
STATION	2	85.44145045	72.31	0.0001
TRANSECT*STATION	40	157.92266544	6.66	0.0001
YEAR*STATION	2	2.06253119	1.75	0.1756
TRANSEC*YEAR*STATION	40	83.92302938	3.55	0.0001
PCNTP*STATION	2	10.16826045	8.61	0.0002
TRANSEC*PCNTP*STATIC	40	73.23347576	3.10	0.0001
YEAR*PCNTP*STATION	2	5.85341857	4.24	0.0003
TRANS*YEAR*PCNT*STAT	40	49.77759238	2.11	0.0001

R-SQUARE	C.V.
0.765129	57.1572

ROOT MSE	LOG1S MEAN
0.76864439	1.34475028

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG2C — CYRALLLS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	992.37888750	3.95537007	6.15
ERROR	504	324.01429121	0.64288550	
CORRECTED TOTAL	755	1316.39315871		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	182.21767235	14.17	0.0001
YEAR	1	1.55244232	2.48	0.1161
TRANSECT*YEAR	20	41.67446175	3.24	0.0001
PCNTP	1	25.42827059	39.55	0.0001
TRANSECT*PCNTP	20	54.48474556	4.24	0.0001
YEAR*PCNTP	1	2.41037537	3.75	0.0534
TRANSECT*YEAR*PCNTP	20	55.83631556	4.34	0.0001
STATION	2	114.42665752	88.99	0.0001
TRANSECT*STATION	40	163.10561247	6.34	0.0001
YEAR*STATION	2	0.84526805	0.66	0.5170
TRANSEC*YEAR*STATION	40	103.67258765	4.03	0.0001
PCNTP*STATION	2	15.97482413	12.42	0.0001
TRANSEC*PCNTP*STATIC	40	122.61479226	4.77	0.0001
YEAR*PCNTP*STATION	2	6.85661656	5.33	0.0051
TRANS*YEAR*PCNT*STAT	40	101.22810646	3.94	0.0001

R-SQUARE	C.V.
0.753662	63.7578

ROOT MSE	LOG2C MEAN
0.80180141	1.25757327

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG21 — AMNICOLA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	4665.5426550C7	18.666C5438	9.68
ERROR	5C4	972.1C552743	1.92870CE1	
CORRECTED TOTAL	755	5638.C4821750		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	1664.97446552	43.6E	C.COC1
YEAR	1	35.25C47E1C	18.28	C.COC1
TRANSECT*YEAR	2C	311.12672725	8.C7	C.COC1
PCAT#	1	11.24521555	5.83	C.C161
TRANSECT*PCAT#	2C	195.4E4E3441	5.C7	C.CCC1
YEAR*PCAT#	1	6.31555564	3.27	C.C71C
TRANSECT*YEAR*PCAT#	2C	237.27123411	6.15	C.CC01
STATICN	2	4C5.2548E5C5	1C5.C7	C.CCC1
TRANSECT*STATICN	4C	1135.25357254	14.71	C.CCC1
YEAR*STATICN	2	12.6CC5E623	3.27	C.C389
TRANSEC*YEAR*STATICN	4C	286.C8EE4C51	3.71	C.COC1
PCAT#*STATICN	2	3.4654C213	C.9C	C.4079
TRANSEC*PCAT#*STATIC	4C	214.4EE5E441	2.7E	C.CCC1
YEAR*PCAT#*STATICN	2	11.41515215	2.9E	C.C528
TRANS*YEAR*PCAT*STAT	4C	135.64563C62	1.76	C.C035

PR > F	R-SQUARE	C.V.
0.0001	C.82E151	5C.24C4

ROOT MSE	LOG21 MEAN
1.3888C553	2.7643221C

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LOG22 — ELIMIA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	2C23.25675225	E.C6134164	9.26
ERROR	5C4	438.64171C17	C.E7C32CE5	
CORRECTED TOTAL	755	2462.C3E46246		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	2C	712.51CE5461	4C.56	C.COC1
YEAR	1	1.CC114155	1.15	C.2846
TRANSECT*YEAR	2C	64.C476C243	3.68	C.CCC1
PCAT#	1	2C.453C6262	23.5C	C.COC1
TRANSECT*PCAT#	2C	148.323E1E57	8.52	C.COC1
YEAR*PCAT#	1	E.E117CCC1	1C.12	C.CC16
TRANSECT*YEAR*PCAT#	2C	118.71571145	6.82	C.CCC1
STATICN	2	26.515C9C87	15.23	C.CCC1
TRANSECT*STATICN	4C	568.1752CC5E	16.32	C.COC1
YEAR*STATICN	2	7.C1414131	4.C3	C.C184
TRANSEC*YEAR*STATICN	4C	98.CC6CE537	2.82	C.CCC1
PCAT#*STATICN	2	2.483C2255	1.43	C.2411
TRANSEC*PCAT#*STATIC	4C	55.65165245	2.86	C.COC1
YEAR*PCAT#*STATICN	2	8.257E2EE7	4.74	C.CC91
TRANS*YEAR*PCAT*STAT	4C	128.56567433	3.69	C.CCC1

PR > F	R-SQUARE	C.V.
0.0001	C.821836	5C.51C1

ROOT MSE	LOG22 MEAN
0.9329C988	1.E4E5772C

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG23 SPHAERICAE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	3624.43461267	14.43557854	7.87
ERROR	504	924.19069441	1.83371217	
CORRECTED TOTAL	755	4548.62530708		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	1132.45566051	30.91	0.0001
YEAR	1	2.85210151	1.56	0.2097
TRANSECT*YEAR	20	244.55263213	6.68	0.0001
PCAT	1	11.11256660	6.06	0.0142
TRANSECT*PCAT	20	213.63746266	5.83	0.0001
YEAR*PCAT	1	80.85125188	44.11	0.0001
TRANSECT*YEAR*PCAT	20	177.36234685	4.84	0.0001
STATION	2	75.01666645	20.45	0.0001
TRANSECT*STATION	40	1049.82661102	14.31	0.0001
YEAR*STATION	2	7.46546611	2.04	0.1317
TRANSEC*YEAR*STATION	40	148.69273243	2.03	0.0003
PCAT*STATION	2	10.73522152	2.93	0.0545
TRANSEC*PCAT*STATIC	40	237.31229170	3.24	0.0001
YEAR*PCAT*STATION	2	33.82215119	9.23	0.0001
TRANS*YEAR*PCAT*STAT	40	191.20656588	2.61	0.0001

PR > F	R-SQUARE	C.V.
0.0001	0.796622	38.6017

ROOT MSE	BUG23 MEAN
1.35414629	3.50795613

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: BUG24 ISOPODA

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	496.83919624	1.99139122	7.76
ERROR	504	129.39669513	0.25674543	
CORRECTED TOTAL	755	626.23589547		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
TRANSECT	20	102.06252717	19.88	0.0001
YEAR	1	2.99130412	11.50	0.0008
TRANSECT*YEAR	20	18.94336502	3.69	0.0001
PCAT	1	0.53242554	2.07	0.1505
TRANSECT*PCAT	20	35.42044502	6.90	0.0001
YEAR*PCAT	1	0.05744668	0.22	0.6376
TRANSECT*YEAR*PCAT	20	40.47124454	7.88	0.0001
STATION	2	29.53256618	57.51	0.0001
TRANSECT*STATION	40	111.81134203	10.89	0.0001
YEAR*STATION	2	1.46343021	2.91	0.0555
TRANSEC*YEAR*STATION	40	19.11025252	1.87	0.0344
PCAT*STATION	2	0.60386128	1.18	0.3094
TRANSEC*PCAT*STATIC	40	97.56342766	9.61	0.0001
YEAR*PCAT*STATION	2	1.08216551	2.11	0.1226
TRANS*YEAR*PCAT*STAT	40	82.20219642	8.00	0.0001

PR > F	R-SQUARE	C.V.
0.0001	0.793355	54.4466

ROOT MSE	BUG24 MEAN
0.50670054	0.93068748

ANALYSIS OF VARIANCE TABLES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: EICMASS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	251	1227.25616613	4.89046681	4.17
ERROR	504	596.32877281	1.18319201	
CORRECTED TOTAL	755	1823.62494094		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEAR	1	1.54715265	1.31	0.2534
MONTH	1	0.24415222	0.21	0.6498
MONTH*YEAR	1	25.48539342	21.51	0.0001
TRANSECT	20	360.62215504	15.24	0.0001
TRANSECT*YEAR	20	45.52675093	1.92	0.0095
TRANSECT*MONTH	20	45.25276004	1.91	0.0101
TRANSECT*MONTH*YEAR	20	71.21452883	3.01	0.0001
STATION	2	66.53625375	28.12	0.0001
STATION*YEAR	2	12.54701506	5.30	0.0053
STATION*MONTH	2	3.21645665	1.36	0.2578
STATION*MONTH*YEAR	2	1.72555455	0.73	0.4820
TRANSECT*STATION	40	185.56736021	4.01	0.0001
TRANSEC*STATION*YEAR	40	105.27661255	2.23	0.0001
TRANSEC*STATIC*MONTH	40	77.84662955	1.64	0.0091
TRANS*STAT*MONT*YEAR	40	220.71106161	4.66	0.0001

FR > F	R-SQUARE	C.V.
0.0001	0.674781	102.6015

ROOT MSE	EICMASS MEAN
1.08774630	1.04791016

APPENDIX I

Aquatic Macrophyte Sampling Locations

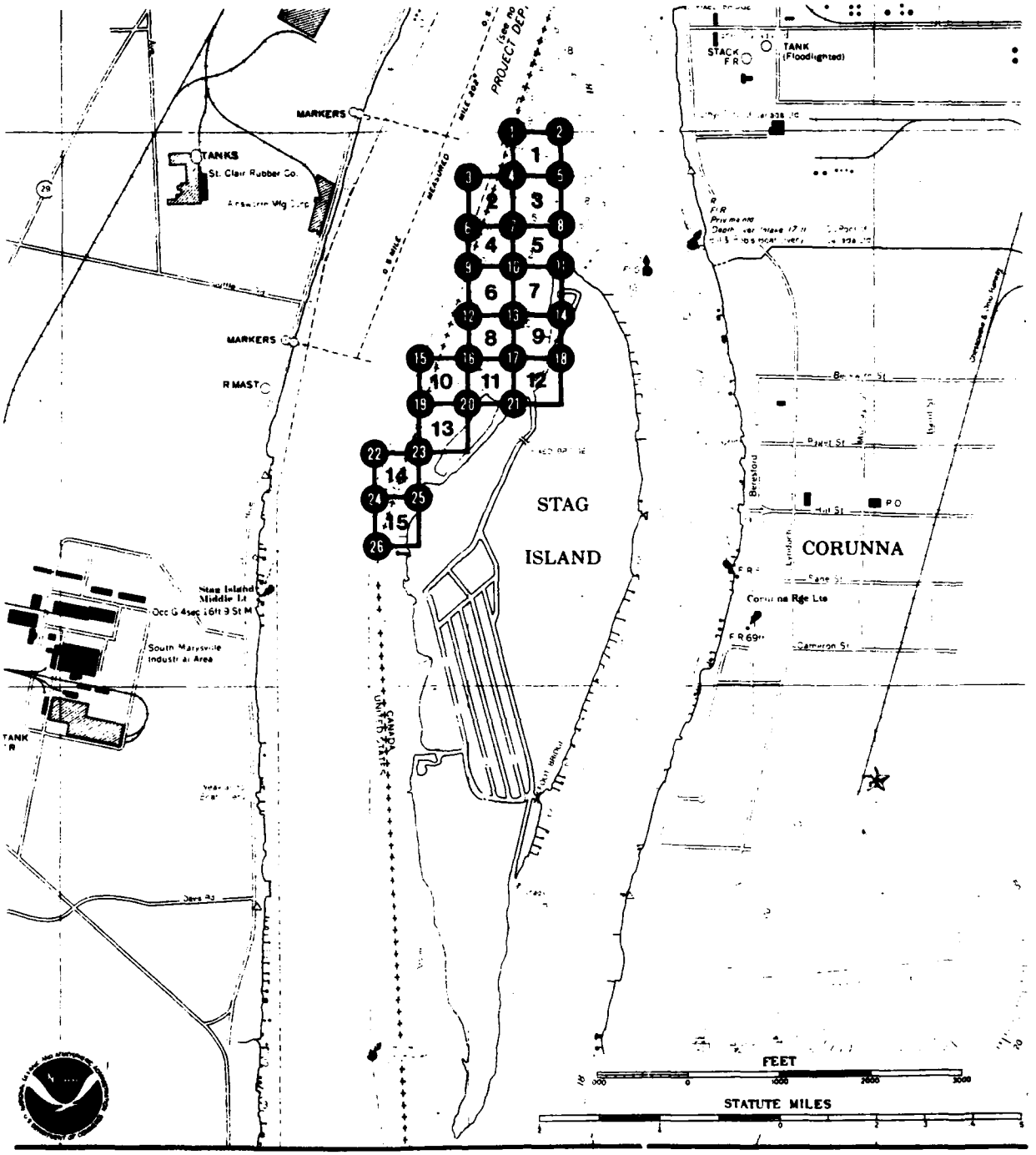


Fig. 1.
Stag Island is in the St. Clair River about 8.5 miles downstream from Port Huron. The starting point for the grid network is in an area on the western side of Stag Island, about 1400 feet downriver from the island's northernmost tip. The set point (grid intersect number 21) is located at a breakwall along the eastern edge of the channel entrance leading to the inner island canals. From this set point the first grid line (grid intersects 21, 17, 13, 10, 7, 4, and 1) ran 3000 ft. at 4° north. The second grid line (intersects 21, 20, and 19) ran 1000 ft. from the set point at 276° west. All other grid points were set by using these two initial lines as markers.

ST. CLAIR RIVER

STAG ISLAND

Fig. 1.

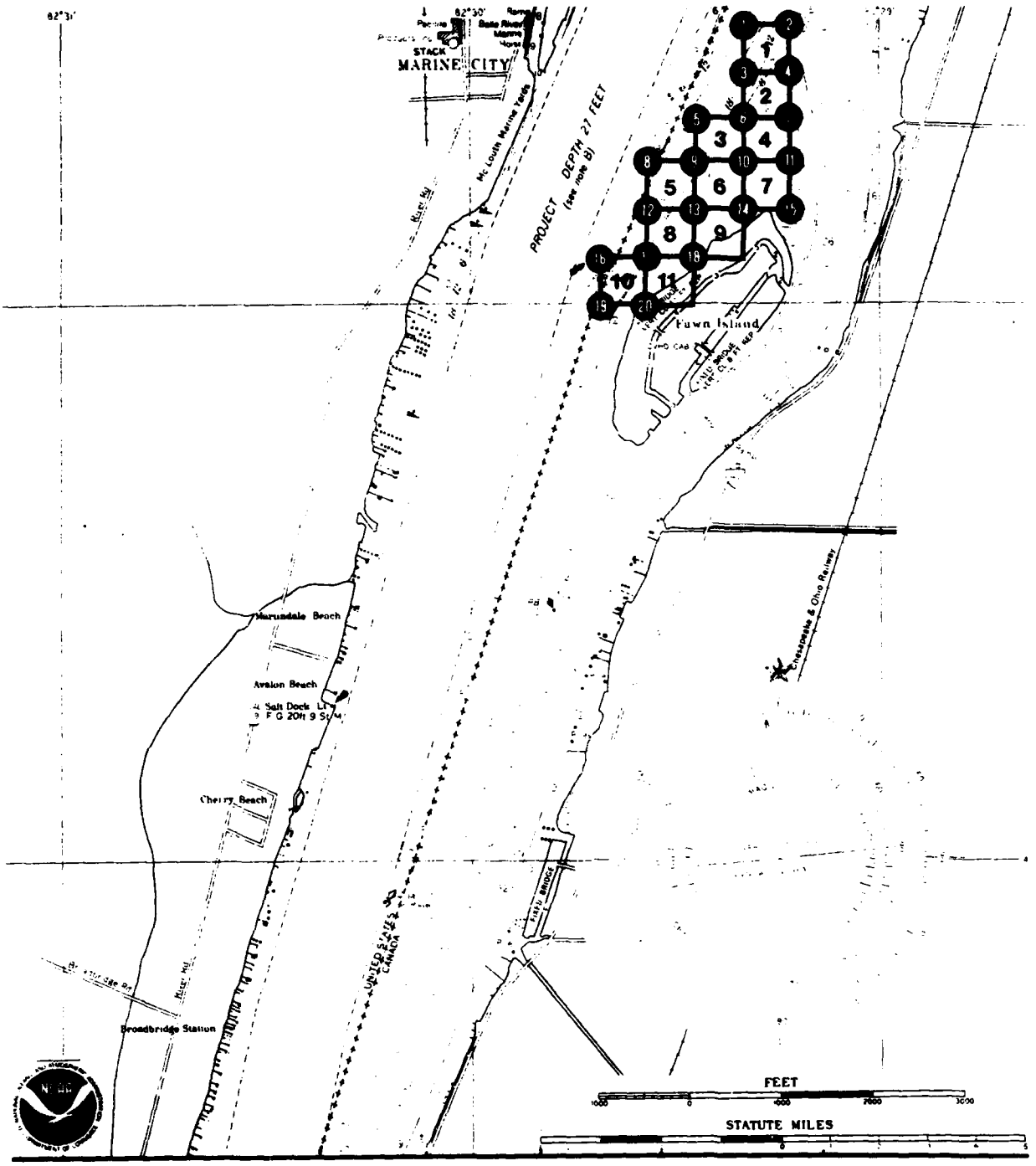


Fig. 2.
Fawn Island is in the St. Clair River about 13 miles downstream from Stag Island. The starting point for the grid network is located on the island's west side, at the northernmost entrance to the inner island canals. The first grid intersection (buoy number 15) is at the junction of a line across the northern tip of the island and a 4° north compass sighting taken from the set point. Once buoy number 15 is positioned the first grid line (grid intersects 11, 7, 4, and 2) is established, running 2500 feet at 4° north from the set point. The second grid line (intersects 14, 13, and 12) is 1500 feet long, and is sighted off buoy number 15, at 276° west. All other grid points were set by using these two initial lines as markers.

ST. CLAIR RIVER

FAWN ISLAND

Fig. 2.

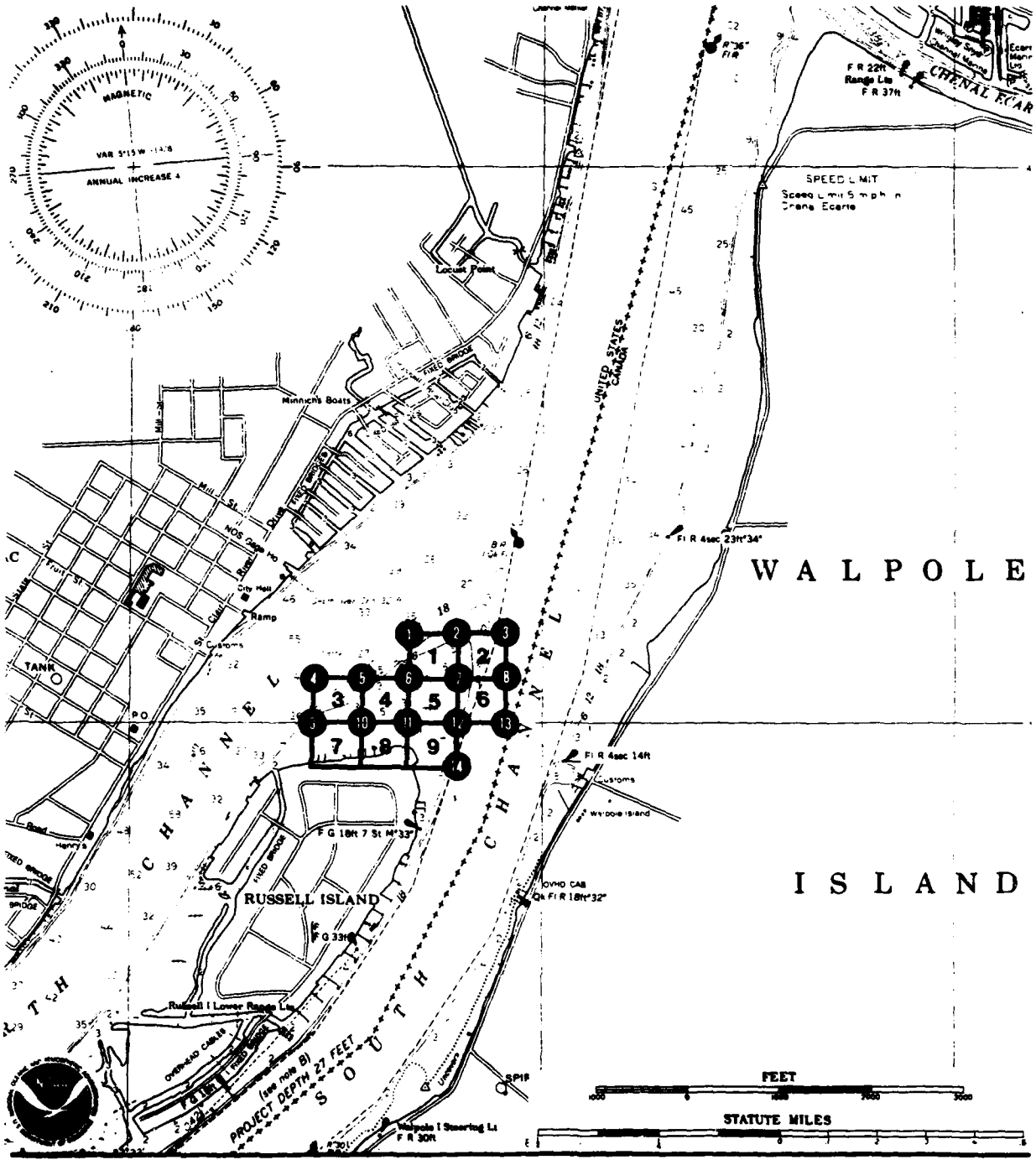


Fig. 3.
Russell Island is in the St. Clair River about 5.5 miles downstream from Fawn Island. The starting point for the grid network is a U.S. Geological Survey stake located at the northeastern point of the island. The first buoy (number 11) is 200 feet offshore in the line with the survey stake and 4° north. From this buoy the first grid line (intersects 6 and 1) is set at a heading of 4° north. The second grid line is evenly divided by buoy number 11. The western half of this grid line (intersects 9 and 10) is set at 276° west from buoy 11. The rest of the grid line (intersects 12 and 13) is set at 96° east.

ST. CLAIR RIVER

RUSSELL ISLAND

Fig. 3.

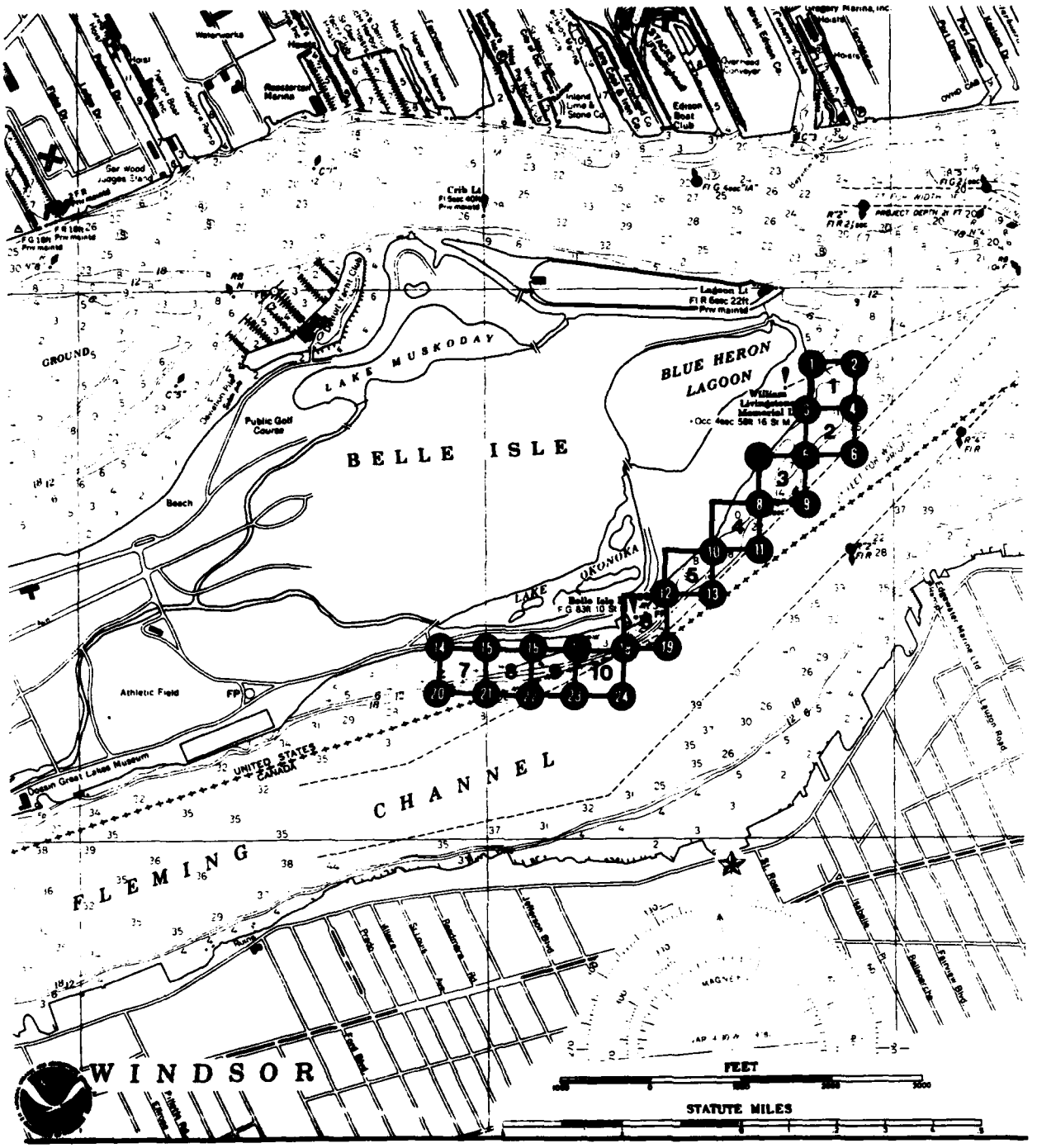


Fig. 4.
Belle Isle is at the head of the Detroit River. The starting point for the grid network is the entrance onto the Michigan DNR fishing pier just west of the Belle Isle Coast Guard Station at grid intersect number 17. Grid intersects 1, 3, 7, 10, 12, 14, 15, 16, and 18 were located from shore with a steel tape. All other grid points were located by boat by sighting from shore at a compass reading of 184°S.

DETROIT RIVER

BELLE ISLE

Fig. 4.

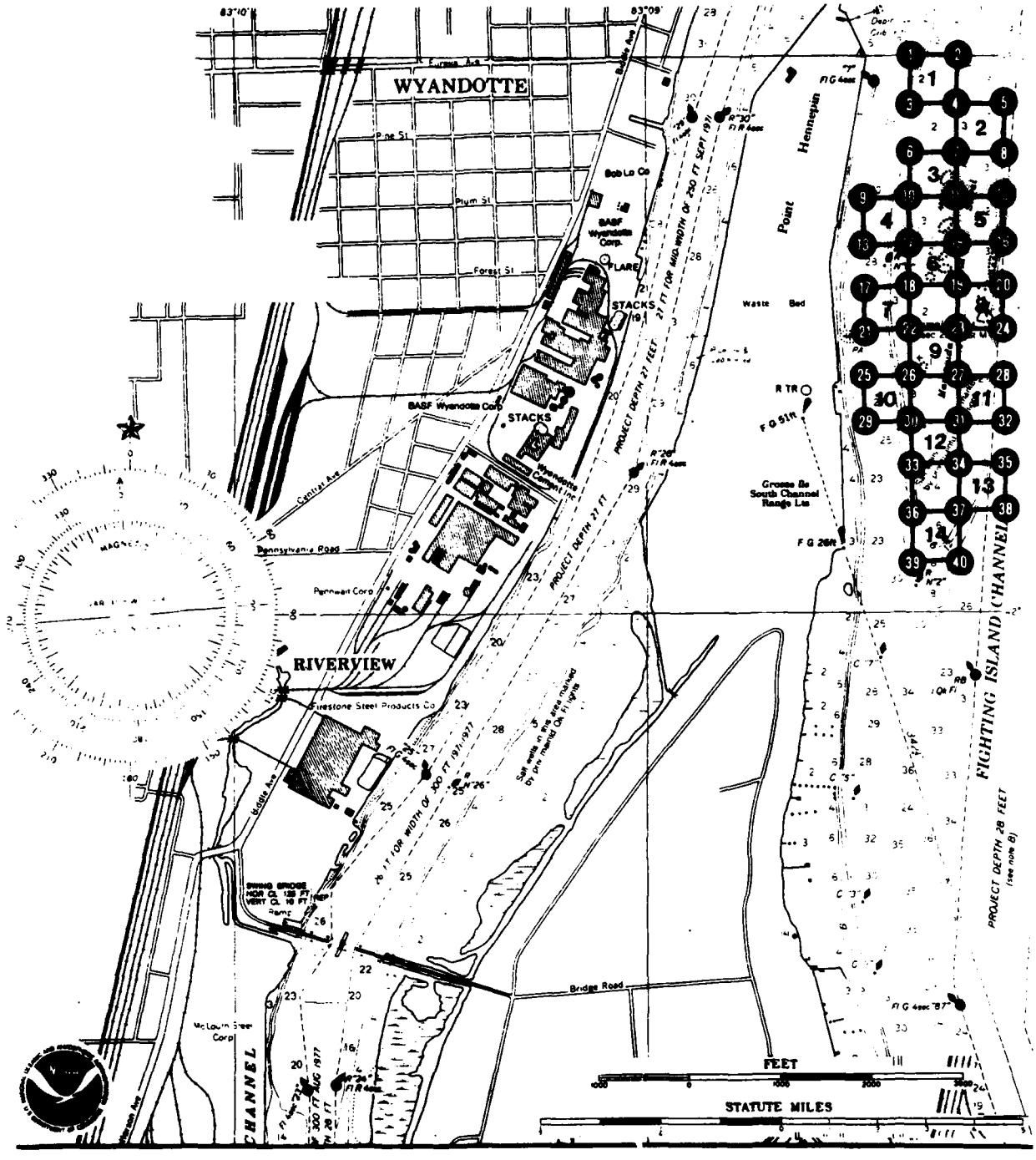


Fig. 5.
Point Hennepin is in the Detroit River about 12.6 miles downstream from Belle Isle. The grid was set along the northeast side of Point Hennepin in the Mamajuda Shoals area. The starting point for setting the was the southeast corner of the Mamajuda light. Grid intersect number 23 was set 100 feet north and 250 feet east of this corner. From this grid intersection the first line (intersects 19, 15, 11, 7, 4, and 2) was placed running 3000 feet at 4°N. The lower half of this line (intersects 27, 31, 34, 37, and 40) ran 2500 feet at 184°S. The east-west lines were set from shore on a compass bearing of 94°E based on shore measurements north and south of the Grosse Isle South Channel Range Light (FG 51 ft.).

DETROIT RIVER

POINT HENNEPIN

Fig. 5.

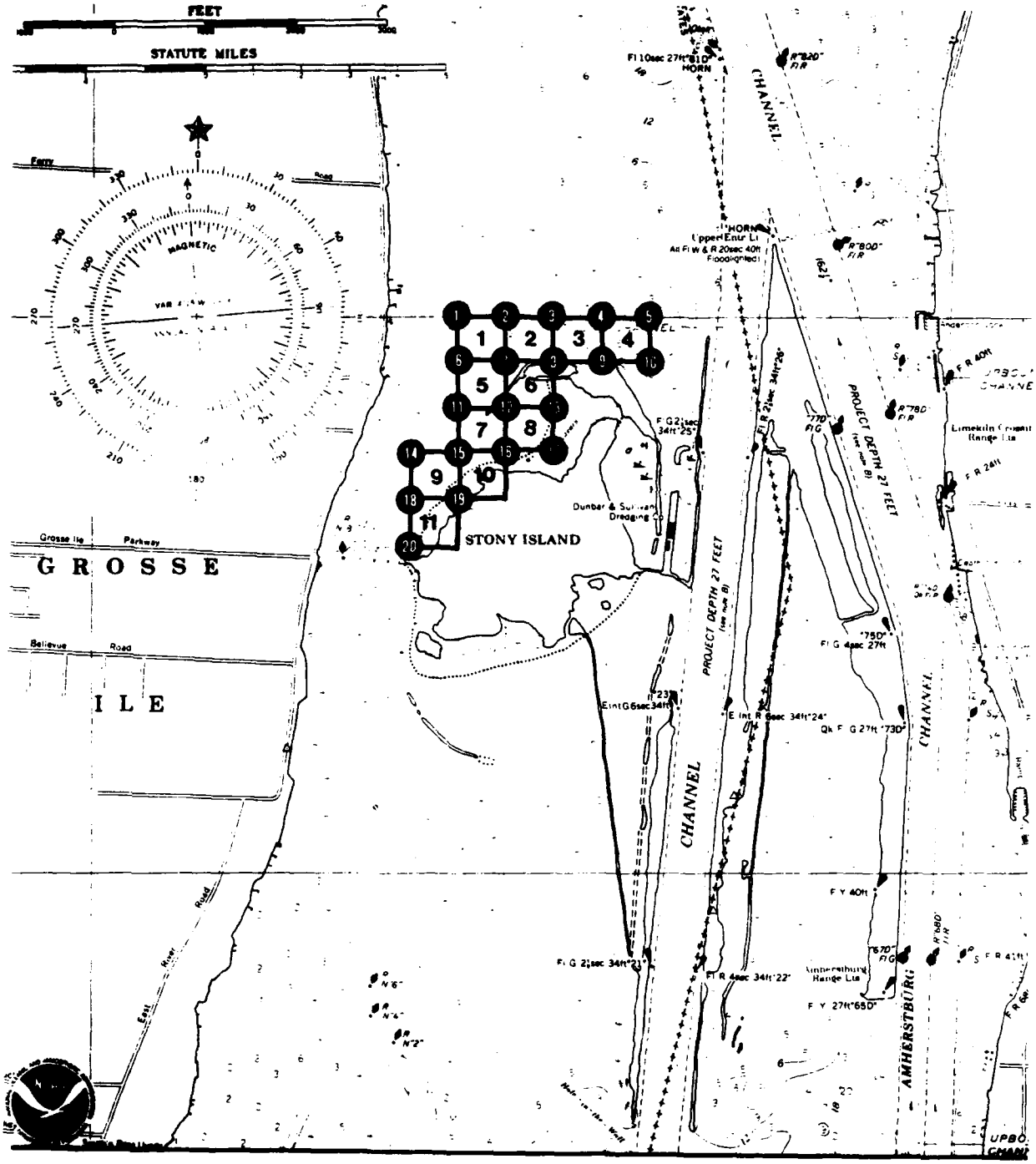
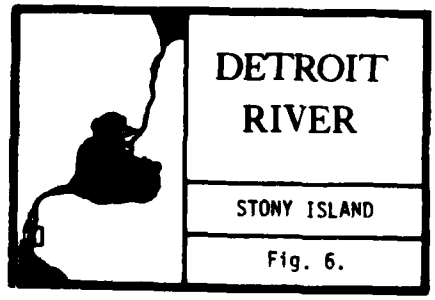


Fig. 6.
Stony Island is in the Detroit River about 5 miles downstream from Point Hennepin. The starting point for the grid network is at grid intersect number 8 which is located 250 feet east of the upper northwest corner of Stony Island. From this set point the first grid line (intersects 6-10) is set using the front edge of the island as a line. Grid intersect number 3 is then set from number 8 on a compass bearing of 4°N. All other points are set in relation to these two lines.



APPENDIX J

Grapnel Collections of Submersed Macrophytes

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	STAG	1	309033	497382	14.0	No Plants Present			1600	850	-	-
		2	309024	497381	12.0	No Plants Present			3500	2400	2.5	1.3
		3	309041	497386	32.0	No Plants Present			3400	1400	-	-
		4	309034	497386	15.0	No Plants Present			4000	2500	2.7	2.5
		5	309024	497387	8.0	No Plants Present			3000	2600	2.6	2.3
		6	309043	497392	24.0	No Plants Present			2400	1400	-	-
		7	309036	497392	13.0	No Plants Present			4100	2100	2.1	1.7
		8	309025	497391	4.0	No Plants Present			3400	2900	2.6	2.5
		9	309051	497395	32.0	No Plants Present			4000	1100	-	-
		10	309040	497397	13.0	No Plants Present			4200	2100	1.7	1.5
		11	309027	497395	2.0	No Plants Present			4100	4000	2.0	2.0
		12	309054	497404	20.0	No Plants Present			3800	2100	2.0	1.0
		13	309042	497403	10.0	MYRIO. SPICATUM	98	4500	4000	2100	1.5	0.6
						CHARA SPP.	1					
						ELODEA CANADENS	1					
		14	309034	497399	2.0	No Plants Present			4200	4100	0.6	0.2
		15	309056	497408	20.0	No Plants Present			4000	1300	2.2	2.2
		16	309057	497410	18.0	POT. NARROW	50	10	4100	2100	2.5	2.4
						CHARA SPP.	25					
						NITELLA HYALINA	25					
		17	309045	497410	16.0	MYRIO. SPICATUM	100	1800	4100	720	0.6	0.3
		18	309037	497406	2.0	No Plants Present			4000	3900	0.3	0.3
		19	309062	497413	23.0	CHARA SPP.	70	5	4100	1700	2.4	2.1
						POT. NARROW	30					
		20	309057	497416	14.0	POT. CRISPUS	97	80	4000	1700	1.0	0.3
						POT. GRAMINEUS	1					
						CHARA SPP.	1					
						ELODEA CANADENS	1					
		21	309049	497414	3.0	POT. NARROW	95	50	4500	4100	0.3	0.3
						ELODEA CANADENS	4					
						CHARA SPP.	1					

J-1

22	309075	497423	31.0	No Plants Present			2600	1100	-	-
23	309068	497421	9.0	POT. NARROW	100	10	4100	2400	1.3	1.0
24	309080	497427	33.0	No Plants Present			3200	1300	-	-
25	309075	497427	5.0	No Plants Present			4000	3000	1.9	1.8
26	309085	497434	34.0	No Plants Present			3000	1200	-	-

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	FAWN	1	309573	498255	8.5	POT. GRAMINEUS	100	160	1600	110	-	-
		2	309566	498255	15.0	CHARA SPP.	100	5	2000	1300	1.9	1.5
		3	309592	498252	13.0	POT. NARROW CHARA SPP. ELODEA CANADENS	85 10 5	180	1900	850	0.9	0.2
		4	309570	498259	15.0	CHARA SPP.	100	10	2100	1200	2.1	1.7
		5	309602	498257	36.0	CHARA SPP.	100	5	2000	800	1.2	0.7
		6	309593	498258	24.0	CHARA SPP.	100	5	2100	980	1.1	1.5
		7	309572	498263	12.0	POT. GRAMINEUS CHARA SPP.	60 40	20	2000	1000	1.6	1.1
		8	309603	496265	24.0	No Plants Present			450	310	-	-
		9	309604	498261	21.0	No Plants Present			1900	630	1.3	0.4
		10	309595	498264	9.0	CHARA SPP. POT. GRAMINEUS POT. NARROW	60 25 15	10	2000	870	1.8	1.0
		11	309575	498266	6.0	CHARA SPP. POT. GRAMINEUS	70 30	20	2400	950	2.0	0.9
		12	309610	498268	27.5	No Plants Present			830	300	-	-
		13	309604	498269	28.0	No Plants Present			1800	860	1.5	0.7
		14	309594	498272	2.0	CHARA SPP.	100	5	2000	1500	1.2	1.2
		15	309578	498274	4.0	CHARA SPP. POT. NARROW	80 20	20	2400	1700	1.9	0.8
		16	309633	498287	36.0	No Plants Present			1500	420	-	-
		17	309622	498283	30.0	No Plants Present			2000	830	1.3	1.3
		18	309604	498273	2.0	No Plants Present			2000	1400	1.6	1.2
		19	309626	498280	34.0	No Plants Present			1500	430	-	-
		20	309622	498287	4.0	CHARA SPP. POT. GRAMINEUS	90 10	5	2100	1500	1.0	0.5

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	BELLE	1	312760	499947	4.0	POT. NARROW	50	320	3500	43	-	-
						POT. RICHARDSONI	45					
						POT. CRISPUS	3					
						MYRIO. SPICATUM	1					
						ELODEA CANADENS	1					
		2	312753	499945	6.0	POT. RICHARDSONI	99	80	3700	66	-	-
						CHARA SPP.	1					
		3	312772	499961	7.0	POT. CRISPUS	90	620	3500	360	-	-
						POT. RICHARDSONI	9					
						POT. NARROW	1					
		4	312753	499951	13.0	No Plants Present			3600	15	-	-
		5	312773	499964	15.0	No Plants Present			3400	36	-	-
		6	312751	499957	30.0	No Plants Present			3900	6	-	-
		7	312779	499968	8.0	POT. CRISPUS	80	140	2500	150	-	-
						POT. NARROW	15					
						CHARA SPP.	5					
		8	312781	499969	18.5	No Plants Present			3700	14	-	-
		9	312770	499967	34.5	No Plants Present			3600	15	-	-
		10	312790	499975	12.0	No Plants Present			3400	20	-	-
		11	312777	499973	35.0	No Plants Present			3600	13	-	-
		12	312803	499983	7.5	POT. RICHARDSONI	80	40	3400	15	-	-
						CHARA SPP.	15					
						POT. NARROW	5					
		13	312786	499978	34.0	No Plants Present			3500	22	-	-
		14	312859	499995	3.0	CHARA SPP.	95	5	3000	1600	-	-
		15	312848	499993	3.5	CHARA SPP.	75	20	3700	1000	-	-
						VALLISNERIA AMER	25					
		16	312838	499994	4.0	CHARA SPP.	85	60	3700	320	-	-
						VALLISNERIA AMER	15					
		17	312828	499993	2.0	CHARA SPP.	100	330	3400	410	-	-
		18	312813	499988	6.0	CHARA SPP.	100	5	3400	12	-	-
		19	312801	499987	24.0	No Plants Present			2500	15	-	-

21	312849	499999	16.0	No Plants Present	3700	7	-	-
22	312840	499998	13.5	No Plants Present	3700	15	-	-
23	312830	499997	33.0	No Plants Present	3600	18	-	-
24	312814	499993	34.0	No Plants Present	3200	15	-	-

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	HENNEPIN	1	314077	500675	31.0	No Plants Present			3300	360	0.9	0.8
		2	314065	500673	5.0	POT. NARROW	100	80	3500	1400	0.2	0.0
		3	314079	500680	24.0	No Plants Present			3500	360	0.8	0.7
		4	314070	500679	4.0	POT. NARROW	100	120	3100	1700	0.2	0.1
		5	314063	500678	8.0	POT. RICHARDSONI	100	80	3000	850	0.7	0.4
		6	314081	500685	6.0	POT. NARROW	100	70	3300	1500	0.7	0.3
		7	314073	500684	6.0	POT. NARROW	100	180	3200	1100	0.2	0.1
		8	314065	500684	9.0	POT. RICHARDSONI POT. NARROW	90 10	5	3000	550	0.9	0.7
		9	314096	500694	33.0	No Plants Present			3200	480	1.1	0.8
		10	314087	500692	7.0	POT. NARROW NITELLA HYALINA	90 10	100	3300	1100	0.1	0.1
		11	314076	500690	6.0	POT. NARROW	100	10	3800	1100	0.4	0.3
		12	314066	500691	31.0	No Plants Present			3500	600	1.5	1.3
		13	314096	500696	34.0	No Plants Present			3400	510	1.4	0.9
		14	314089	500693	7.0	NITELLA HYALINA POT. NARROW	60 40	60	3300	1600	0.2	0.1
		15	314080	500697	4.0	POT. NARROW NITELLA HYALINA	65 35	30	3600	1800	0.5	0.2
		16	314671	500698	28.0	No Plants Present			3500	320	1.0	0.7
		17	314101	500705	32.0	No Plants Present			3400	570	0.7	0.1
		18	314093	500704	7.0	NITELLA HYALINA	100	65	3100	1300	0.3	0.2
		19	314082	500702	6.0	NITELLA HYALINA POT. NARROW	60 40	60	4400	2100	0.0	0.0
		20	314074	500703	27.0	No Plants Present			3000	660	0.9	0.3
		21	314104	500711	31.0	No Plants Present			3200	480	1.4	0.6
		22	314095	500710	5.0	POT. NARROW	100	10	3000	1800	0.3	0.2
		23	314086	500709	5.0	POT. NARROW	100	60	3500	2000	0.6	0.4
		24	314077	500709	34.0	No Plants Present			3300	450	1.0	1.0

25	314107	500719	31.0	No Plants Present			3500	440	0.7	0.3
26	314100	500718	7.0	POT. NARROW	70	110	3000	1300	0.2	0.2
				NITELLA HYALINA	29					
				MYRIO. EXALBESC	1					
27	314090	500716	4.0	POT. NARROW	85	200	3400	1100	0.2	0.0
				POT. CRISPUS	15					
28	314082	500715	32.0	No Plants Present			3600	500	1.2	0.5
29	314108	500723	29.0	No Plants Present			3300	380	1.8	0.5
30	314104	500725	6.0	POT. NARROW	80	205	3000	1200	0.2	0.1
				NITELLA HYALINA	20					
31	314093	500722	6.0	POT. NARROW	80	160	3500	1400	0.3	0.1
				NITELLA HYALINA	20					
32	314085	500725	34.0	No Plants Present			3300	830	0.9	0.8
33	314107	500733	9.0	POT. NARROW	100	55	3400	1100	0.1	0.1
34	314097	500731	12.0	POT. NARROW	100	10	3600	500	0.8	0.6
35	314089	500730	33.0	No Plants Present			3600	590	1.0	0.9
36	314110	500741	9.0	POT. NARROW	98	25	3000	870	0.5	0.2
				VALLISNERIA AMER	2					
37	314102	500739	37.0	No Plants Present			3600	740	0.7	0.6
38	314096	500740	32.0	No Plants Present			3400	550	1.5	1.1
39	314111	500745	13.0	No Plants Present			2500	270	0.6	0.3
40	314110	500752	34.0	No Plants Present			3700	830	1.1	0.9

Submersed Macrophyte Grapnel Data, JUNE, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	STONEY	1	314229	500974	9.0	POT. NARROW	100	100	4100	510	1.3	1.0
		2	314216	500973	9.0	POT. NARROW	100	80	3900	660	0.8	0.4
		3	314205	500974	8.0	POT. NARROW	100	30	4300	1100	0.8	0.5
		4	314193	500973	8.8	MYRIO. SPICATUM POT. NARROW	60 40	20	4000	750	0.4	0.1
		5	314183	500972	17.0	No Plants Present			4000	310	0.8	0.6
		6	314236	500982	12.0	POT. NARROW	100	40	3800	190	1.2	0.8
		7	314222	500982	7.0	POT. NARROW	100	100	3600	340	1.4	0.7
		8	314212	500981	4.0	VALLISNERIA AMER POT. NARROW POT. CRISPUS	45 45 10	5	3500	2000	0.4	0.1
		9	314199	500980	3.0	No Plants Present			4000	500	0.0	0.0
		10	314189	500979	10.0	No Plants Present			4000	410	0.2	0.1
		11	314244	500992	10.0	No Plants Present			4200	530	1.7	1.1
		12	314232	500991	4.0	POT. CRISPUS	100	2500	3500	130	0.0	0.0
		13	314220	500991	3.0	POT. CRISPUS	100	2700	3500	15	0.0	0.0
		14	314264	501004	11.0	No Plants Present			3100	360	2.6	2.0
		15	314252	501000	7.0	No Plants Present			4100	830	1.8	1.6
		16	314241	500999	2.0	POT. CRISPUS	100	80	3600	2100	0.8	0.8
		17	314229	500999	0.5	TYPHA ANGUSTIFOL	100	*	3500	3400	0.2	0.0
		18	314273	501012	10.0	No Plants Present			3600	300	2.4	0.7
		19	314201	501010	6.0	No Plants Present			3000	650	2.1	0.7
		20	314279	501020	8.0	No Plants Present			3500	400	2.5	1.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	STAG	1	309034	497381	14.0	No Plants Present			1000	400	2.9	2.7
		2	309019	497380	15.0	No Plants Present			1100	900	2.6	2.4
		3	309042	497382	32.0	No Plants Present			500	200	2.1	2.0
		4	309036	497386	15.0	No Plants Present			1000	600	2.9	2.8
		5	309021	497384	15.0	No Plants Present			1000	700	2.4	2.0
		6	309046	497389	24.0	No Plants Present			400	200	2.8	2.6
		7	309037	497391	14.6	No Plants Present			1000	900	1.9	1.6
		8	309024	497390	6.0	No Plants Present			800	500	2.6	2.4
		9	309056	497396	22.0	No Plants Present			500	100	1.9	1.6
		10	309038	497397	12.2	No Plants Present			900	300	1.9	1.7
		11	309026	497395	3.1	CHARA SPP.	100	*	700	500	1.4	1.1
		12	309053	497395	20.0	No Plants Present			500	200	2.4	2.2
		13	309042	497404	15.0	ELODEA CANADENS	90	20	900	500	0.5	0.5
						POT. NARROW	5					
						NITELLA HYALINA	5					
		14	309037	497405	2.0	POT. CRISPUS	80	3700	4000	90	0.2	0.2
						POT. RICHARDSONI	17					
						ELODEA CANADENS	2					
						NITELLA HYALINA	1					
		15	309070	497404	20.0	No Plants Present			500	200	2.1	2.0
		16	309053	497405	18.0	No Plants Present			650	200	2.3	2.1
		17	309046	497412	15.0	ELODEA CANADENS	60	1150	500	100	0.6	0.5
						POT. RICHARDSONI	35					
						MYRIO. SPICATUM	5					
		18	309041	497411	4.5	CHARA SPP.	85	400	440	2500	0.4	0.3
						POT. CRISPUS	10					
						POT. NARROW	5					
		19	309071	497409	23.0	No Plants Present			500	200	1.9	1.8
		20	309055	497412	15.0	POT. RICHARDSONI	50	20	600	200	0.7	0.5
						CHARA SPP.	50					
		21	309046	497413	3.4	CHARA SPP.	95	140	500	180	0.5	0.4
						POT. RICHARDSONI	4					

				MYRIO. SPICATUM	1					
22	309077	497421	31.0	No Plants Present			600	200	2.6	2.3
23	309070	497420	9.0	POT. NARROW	80	100	550	200	0.9	0.6
				POT. GRAMINEUS	20					
24	309080	497427	33.0	No Plants Present			400	200	3.4	3.1
25	309072	497426	6.0	CHARA SPP.	70	80	440	110	1.2	0.4
				POT. GRAMINEUS	30					
26	309086	497434	34.0	No Plants Present			500	200	3.1	2.8

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	FAWN	1	309573	498243	12.0	No Plants Present			2000	340	2.4	2.1
		2	309566	498247	12.0	POT. NARROW	100	*	2300	440	1.1	0.5
		3	309580	498253	12.0	CHARA SPP.	100	5	2500	350	2.9	1.8
		4	309568	498253	12.0	POT. NARROW	100	340	2500	1000	1.1	0.3
		5	309592	498250	24.0	No Plants Present			2800	500	1.9	1.1
		6	309584	498259	9.1	ELODEA CANADENS	50	660	2200	450	0.2	0.0
						POT. RICHARDSONI	50					
		7	309573	498259	8.7	POT. GRAMINEUS	95	80	3200	1600	1.0	0.7
						CHARA SPP.	5					
		8	309619	498263	34.0	No Plants Present			3000	500	2.0	1.4
		9	309600	498263	12.0	CHARA SPP.	100	5	2400	900	2.4	2.3
		10	309587	498265	4.5	CHARA SPP.	95	20	2200	700	1.0	0.4
						POT. NARROW	5					
		11	309576	498265	5.1	CHARA SPP.	100	40	3300	2000	0.5	0.2
		12	309623	498271	28.0	No Plants Present			2700	600	2.5	2.2
		13	309602	498270	6.2	POT. GRAMINEUS	90	40	2000	980	1.0	0.5
						CHARA SPP.	10					
		14	309590	498269	3.0	CHARA SPP.	100	10	2200	1800	0.6	0.6
		15	309582	498263	4.0	CHARA SPP.	100	10	2500	2300	0.8	0.3
		16	309643	498284	36.0	No Plants Present			3000	200	3.0	2.4
		17	309622	498280	14.0	No Plants Present			2700	800	2.5	1.8
		18	309606	498278	2.5	CHARA SPP.	100	10	1900	1600	0.5	0.3
		19	309629	498284	33.0	No Plants Present			3000	500	2.5	2.0
		20	309620	498285	5.9	CHARA SPP.	100	10	2500	1100	0.9	0.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	RUSSELL	1	309951	498651	32.0	No Plants Present			2500	120	3.8	1.1
		2	309943	498649	24.0	No Plants Present			2800	180	3.5	2.8
		3	309927	498650	31.0	No Plants Present			2800	260	2.2	1.3
		4	309983	498658	52.0	No Plants Present			3800	150	2.6	1.9
		5	309969	498657	34.0	No Plants Present			3400	280	2.6	2.2
		6	309952	498656	13.0	CHARA SPP.	100	5	3500	1200	3.2	3.1
		7	309944	498655	8.0	POT. GRAMINEUS	75	1100	3400	1400	2.7	2.6
						CHARA SPP.	25					
		8	309929	498654	32.0	No Plants Present			3300	1500	2.7	2.3
		9	309987	498663	40.0	No Plants Present			3300	240	3.3	0.3
		10	309973	498662	11.0	ELODEA CANADENS	90	1020	3400	410	1.6	0.3
						POT. RICHARDSONI	10					
		11	309954	498662	4.0	CHARA SPP.	100	10	3500	1400	2.8	0.2
		12	309943	498662	6.0	CHARA SPP.	50	20	3400	510	2.2	0.6
						POT. GRAMINEUS	50					
		13	309925	498660	33.0	No Plants Present			3700	710	2.0	1.8
		14	309953	498670	5.0	POT. GRAMINEUS	80	550	3400	210	2.0	1.7
						CHARA SPP.	20					

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	BELLE	1	312760	499950	4.0	POT. ZOSTERIFORM	80	180	4500	600	0.6	0.4
						VALLISNERIA AMER	19					
						MYRIO. SPICATUM	1					
		2	312754	499950	12.0	POT. NARROW	100	20	4600	750	2.0	0.3
		3	312766	499959	9.0	VALLISNERIA AMER	50	50	4500	500	0.1	0.1
						POT. NARROW	45					
						CHARA SPP.	5					
		4	312757	499957	24.0	No Plants Present			4700	150	2.5	2.0
		5	312772	499967	15.0	No Plants Present			3200	130	2.6	1.8
		6	312759	499962	30.0	No Plants Present			3300	100	2.8	2.2
		7	312779	499966	2.0	POT. RICHARDSONI	80	1350	4500	3500	0.2	0.2
						POT. NARROW	8					
						POT. CRISPUS	5					
						VALLISNERIA AMER	5					
						CHARA SPP.	2					
		8	312781	499971	18.5	No Plants Present			3000	130	2.6	1.9
		9	312774	499973	35.0	No Plants Present			3000	110	2.7	2.0
		10	312796	499978	3.0	CHARA SPP.	100	10	4600	900	0.2	0.2
		11	312779	499974	35.0	No Plants Present			3100	130	2.8	2.0
		12	312807	499985	10.0	POT. GRAMINEUS	60	70	4900	500	1.2	0.9
						CHARA SPP.	38					
						VALLISNERIA AMER	2					
						NITELLOP. OBTUSA	<1					
						NAJAS FLEXILIS	<1					
		13	312795	499982	34.0	No Plants Present			3300	120	2.3	1.4
		14	312857	499995	2.5	CHARA SPP.	98	60	4300	4000	0.2	0.2
						NITELLOP. OBTUSA	2					
		15	312849	499994	2.0	CHARA SPP.	55	20	4000	3100	0.2	0.2
						NITELLOP. OBTUSA	15					
						VALLISNERIA AMER	15					
						MYRIO. SPICATUM	15					
		16	312839	499993	3.0	CHARA SPP.	90	250	4300	2500	0.3	0.3
						VALLISNERIA AMER	5					
						NITELLOP. OBTUSA	3					
						NAJAS FLEXILIS	2					
						POT. ZOSTERIFORM	<1					

17	312829	499993	1.5	CHARA SPP.	100	110	4600	3600	0.3	0.3
18	312822	499991	12.0	POT. RICHARDSONI	45	440	5000	150	1.1	0.8
				POT. GRAMINEUS	45					
				CHARA SPP.	5					
				VALLISNERIA AMER	5					
				POT. ZOSTERIFORM	<1					
				POT. NARROW	<1					
19	312806	499989	26.0	No Plants Present			3900	120	2.0	1.4
20	312859	500002	26.0	No Plants Present			3400	160	1.6	1.5
21	312851	500000	25.0	No Plants Present			3400	200	1.6	1.6
22	312839	499997	33.0	No Plants Present			3700	200	1.7	1.5
23	312829	499996	32.0	No Plants Present			4300	200	2.1	2.0
24	312823	499996	34.0	No Plants Present			4200	220	2.8	2.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	HENNEPIN	1	314072	500666	31.0	No Plants Present			2700	120	0.5	0.5
		2	314059	500666	7.0	VALLISNERIA AMER	70	1040	3800	100	0.1	0.1
						POT. NARROW	30					
		3	314079	500675	33.0	No Plants Present			1200	32	0.6	0.3
		4	314063	500673	8.0	POT. NARROW	90	1210	3800	270	0.3	0.1
						VALLISNERIA AMER	10					
		5	314050	500669	32.0	No Plants Present			3400	130	2.2	2.0
		6	314079	500680	10.0	VALLISNERIA AMER	100	120	5100	830	0.4	0.2
		7	314068	500679	7.0	POT. NARROW	100	1320	4000	240	0.2	0.1
		8	314054	500677	31.0	No Plants Present			4300	150	2.0	1.6
		9	314094	500689	30.0	No Plants Present			3600	110	1.3	0.5
		10	314082	500687	10.0	VALLISNERIA AMER	100	160	4700	270	0.2	0.2
		11	314072	500685	6.0	VALLISNERIA AMER	100	140	4000	230	0.3	0.2
		12	314060	500684	31.0	No Plants Present			1500	50	2.1	1.6
		13	314100	500696	29.0	No Plants Present			4200	9	0.9	0.8
		14	314086	500693	11.0	VALLISNERIA AMER	60	40	1900	800	0.5	0.4
						NITELLOP. OBTUSA	40					
		15	314076	500692	6.5	VALLISNERIA AMER	100	60	4500	400	0.4	0.3
		16	314066	500690	31.0	No Plants Present			4700	170	1.6	1.2
		17	314105	500702	25.0	No Plants Present			4000	100	1.3	0.5
		18	314091	500700	11.0	VALLISNERIA AMER	100	100	5000	1000	0.1	0.1
		19	314081	500699	5.5	VALLISNERIA AMER	75	40	4800	100	0.1	0.1
						CHARA SPP.	25					
		20	314070	500697	30.0	No Plants Present			4600	130	1.6	1.5
		21	314108	500709	27.0	No Plants Present			4200	110	1.1	1.0
		22	314095	500707	11.0	VALLISNERIA AMER	90	40	5100	360	0.6	0.4
						POT. NARROW	10					
		23	314084	500706	5.0	VALLISNERIA AMER	98	180	4000	110	0.3	0.2
						CHARA SPP.	2					

24	314074	500705	30.0	No Plants Present			4000	180	1.9	1.9
25	314112	500715	23.0	No Plants Present			3900	100	1.0	0.8
26	314099	500714	15.0	VALLISNERIA AMER	100	40	4300	100	0.3	0.2
27	314089	500712	6.0	VALLISNERIA AMER CHARA SPP.	90 10	20	3900	220	0.4	0.2
28	314078	500711	31.0	No Plants Present			4800	190	2.0	2.0
29	314114	500721	24.0	No Plants Present			3800	9	1.1	0.4
30	314102	500719	13.0	CHARA SPP. VALLISNERIA AMER	80 20	60	4800	320	0.4	0.1
31	314094	500719	7.0	VALLISNERIA AMER MYRIO. SPICATUM	98 2	80	3500	150	0.3	0.2
32	314082	500719	31.0	No Plants Present			1500	50	2.4	2.0
33	314107	500727	22.0	No Plants Present			3800	9	0.2	0.0
34	314098	500726	7.0	VALLISNERIA AMER	100	240	4000	100	0.2	0.1
35	314087	500726	30.0	No Plants Present			4700	53	2.0	1.8
36	314111	500733	17.0	No Plants Present			3300	110	0.4	0.3
37	314103	500733	8.5	VALLISNERIA AMER	100	200	4000	50	0.5	0.3
38	314093	500733	30.0	No Plants Present			2800	120	2.0	1.6
39	314115	500740	22.0	No Plants Present			3400	110	1.3	1.1
40	314109	500742	15.0	No Plants Present			3800	260	1.5	1.1

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	STONEY	1	314229	500974	9.5	VALLISNERIA AMER	90	180	3500	55	1.5	1.3
						POT. ZOSTERIFORM	10					
		2	314218	500974	8.0	POT. NARROW	90	2000	2100	120	0.9	0.5
						VALLISNERIA AMER	10					
						POT. RICHARDSONI	<1					
		3	314209	500973	7.0	VALLISNERIA AMER	100	620	1700	100	1.4	0.7
		4	314200	500972	9.0	VALLISNERIA AMER	98	80	2500	95	0.5	0.4
						POT. NARROW	2					
		5	314191	500972	9.0	POT. NARROW	85	60	3500	280	0.6	0.3
						ELODEA CANADENS	8					
						POT. CRISPUS	7					
		6	314232	500979	6.0	VALLISNERIA AMER	99	200	3500	70	1.0	0.7
						POT. ZOSTERIFORM	1					
		7	314223	500980	7.0	POT. NARROW	80	1720	4600	350	1.0	0.7
						VALLISNERIA AMER	20					
		8	314209	500979	2.0	No Plants Present			2500	250	1.9	1.4
		9	314200	500977	2.0	VALLISNERIA AMER	90	140	2500	450	1.5	0.8
						HETERANTHERA DUB	10					
		10	314192	500977	10.0	No Plants Present			2300	200	0.3	0.2
		11	314239	500986	7.0	No Plants Present			1200	100	1.2	1.1
		12	314228	500988	3.0	MYRIO. SPICATUM	33	1480	3000	520	0.3	0.2
						ELODEA CANADENS	33					
						HETERANTHERA DUB	33					
		13	314220	500988	3.0	HETERANTHERA DUB	98	680	4500	1500	0.0	0.0
						ELODEA CANADENS	2					
						BUTOMUS UMBELLAT	<1					
		14	314254	500994	11.0	No Plants Present			3500	120	2.6	2.2
		15	314244	500993	5.0	VALLISNERIA AMER	100	340	1400	110	1.6	1.0
		16	314236	500994	3.0	MYRIO. SPICATUM	100	120	4400	2200	0.6	0.6
		17	314229	500994	2.0	HETERANTHERA DUB	100	350	2100	1500	0.4	0.2
		18	314261	501001	11.0	No Plants Present			4100	330	2.7	1.7
		19	314251	501001	3.0	MYRIO. SPICATUM	80	140	3600	1100	1.5	0.5
						HETERANTHERA DUB	10					
						VALLISNERIA AMER	10					

20	314267	501009	11.0	No Plants Present	4000	240	2.5	2.3

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	STAG	1	309030	497375	31.5	No Plants Present			140	110	2.9	2.5
		2	309018	497375	14.0	No Plants Present			140	100	2.9	2.1
		3	309045	497383	35.0	No Plants Present			150	100	2.6	2.2
		4	309031	497380	12.5	No Plants Present			150	100	3.0	2.5
		5	309021	497381	10.0	No Plants Present			130	100	2.4	2.0
		6	309046	497388	34.0	No Plants Present			150	110	2.4	2.3
		7	309034	497385	12.0	No Plants Present			130	100	1.9	1.9
		8	309024	497386	5.5	No Plants Present			120	100	2.3	2.3
		9	309048	497393	32.0	No Plants Present			190	140	2.7	2.5
		10	309038	497392	11.5	No Plants Present			100	70	1.8	1.6
		11	309027	497392	2.0	No Plants Present			100	98	1.0	0.9
		12	309051	497399	16.5	No Plants Present			220	170	1.8	1.7
		13	309039	497398	5.5	CHARA SPP.	75	160	70	50	0.9	0.5
						POT. GRAMINEUS	25					
		14	309033	497398	2.0	CHARA SPP.	70	100	60	59	1.0	0.9
						POT. GRAMINEUS	30					
		15	309063	497404	33.0	No Plants Present			200	170	2.8	2.7
		16	309054	497405	16.0	No Plants Present			220	160	2.1	2.1
		17	309043	497405	11.0	POT. NARROW	80	910	60	10	0.8	0.2
						POT. RICHARDSONI	20					
		18	309036	497404	2.0	CHARA SPP.	100	10	57	56	0.9	0.8
		19	309063	497410	24.0	No Plants Present			200	150	2.0	2.0
		20	309059	497411	14.0	POT. RICHARDSONI	95	170	170	110	0.6	0.4
						VALLISNERIA AMER	5					
		21	309044	497410	3.5	CHARA SPP.	85	260	70	50	0.6	0.5
						POT. GRAMINEUS	10					
						POT. RICHARDSONI	4					
						ELODEA CANADENS	1					
		22	309073	497416	33.0	No Plants Present			270	200	2.8	2.8
		23	309066	497416	16.0	CHARA SPP.	100	20	210	120	1.5	0.6

24	309079	497424	33.0	No Plants Present			290	200	3.2	2.6
25	309069	497421	3.0	CHARA SPP.	100	5	390	350	1.1	1.1
26	309087	497436	34.0	No Plants Present			230	220	3.1	2.8

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	FAWN	1	309576	498257	25.0	No Plants Present			2900	670	2.0	1.9
		2	309566	498246	16.0	POT. NARROW	65	232	3300	730	2.1	1.1
						CHARA SPP.	25					
						ELODEA CANADENS	7					
						POT. RICHARDSONI	3					
		3	309580	498249	22.5	No Plants Present			1800	500	2.5	2.3
		4	309569	498251	12.0	POT. NARROW	100	182	3200	1100	1.5	1.0
		5	309595	498257	24.0	No Plants Present			2100	580	2.8	2.6
		6	309584	498257	8.0	POT. GRAMINEUS	85	4830	1300	36	0.1	0.0
						POT. RICHARDSONI	5					
						POT. NARROW	5					
						CHARA SPP.	5					
		7	309572	498257	7.0	POT. GRAMINEUS	60	722	3500	2400	0.8	0.3
						CHARA SPP.	40					
		8	309609	498263	29.5	No Plants Present			3300	630	1.5	0.5
		9	309599	498262	27.0	No Plants Present			2300	570	2.6	2.1
		10	309587	498262	3.0	CHARA SPP.	100	51	1300	1000	1.0	0.7
		11	309575	498262	4.0	CHARA SPP.	60	82	3600	2500	0.8	0.6
						POT. RICHARDSONI	38					
						ELODEA CANADENS	2					
		12	309612	498269	27.0	No Plants Present			3000	780	2.5	1.9
		13	309501	498267	3.0	CHARA SPP.	90	162	2200	1600	0.5	0.3
						POT. GRAMINEUS	10					
		14	309590	498268	2.5	POT. GRAMINEUS	50	98	1000	900	0.5	0.3
						CHARA SPP.	50					
		15	309580	498268	3.0	CHARA SPP.	100	16	3800	3000	1.0	0.8
		16	309625	498275	39.0	No Plants Present			3500	1100	2.4	2.3
		17	309613	498275	15.0	POT. RICHARDSONI	40	142	2900	520	1.2	0.9
						VALLISNERIA AMER	30					
						NITELLA HYALINA	20					
						NITELLOP. OBTUSA	5					
						ELODEA CANADENS	5					
		18	309606	498276	2.2	CHARA SPP.	69	218	1800	510	0.3	0.0
						POT. GRAMINEUS	30					
						ELODEA CANADENS	1					

19	309626	498279	34.0	No Plants Present			2300	1300	2.3	1.9
20	309619	498282	3.0	POT. RICHARDSONI	85	792	3600	2800	0.7	0.6
				CHARA SPP.	7					
				POT. GRAMINEUS	7					
				NAJAS FLEXILIS	1					

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	RUSSELL	1	309950	498649	27.0	No Plants Present			3500	800	3.1	3.1
		2	309941	498647	18.0	No Plants Present			550	370	2.6	2.3
		3	309930	498646	27.0	No Plants Present			3500	830	1.8	1.5
		4	309973	498651	42.0	No Plants Present			3600	760	2.9	2.8
		5	309961	498654	25.0	No Plants Present			3400	900	2.6	2.2
		6	309952	498654	6.0	POT. NARROW	90	3200	350	150	1.0	0.7
						POT. RICHARDSONI	10					
		7	309945	498653	4.0	POT. GRAMINEUS	50	1000	800	310	1.5	0.8
						POT. NARROW	40					
						CHARA SPP.	10					
		8	309932	498653	33.0	No Plants Present			3500	1000	2.3	2.0
		9	309980	498661	33.0	No Plants Present			3200	700	2.6	2.2
		10	309968	498661	4.0	CHARA SPP.	90	224	3500	2000	0.7	0.5
						POT. GRAMINEUS	10					
		11	309958	498660	3.5	POT. GRAMINEUS	80	85	2000	1900	1.2	0.7
						CHARA SPP.	18					
						NAJAS FLEXILIS	2					
		12	309947	498661	4.0	CHARA SPP.	60	20	2700	1500	0.5	0.4
						POT. GRAMINEUS	40					
		13	309936	498660	40.0	No Plants Present			3500	820	2.1	2.0
		14	309948	498668	34.0	No Plants Present			3400	840	2.4	2.3

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	BELLE	1	312758	499948	7.0	POT. RICHARDSONI	50	4520	4000	280	0.7	0.4
						VALLISNERIA AMER	50					
		2	312752	499947	10.0	No Plants Present			3900	300	1.7	1.1
		3	312763	499955	8.0	No Plants Present			3600	400	2.0	1.5
		4	312755	499955	24.0	No Plants Present			4100	400	1.7	1.0
		5	312770	499961	12.0	No Plants Present			4000	270	2.1	1.4
		6	312758	499963	40.0	No Plants Present			1100	41	2.7	2.6
		7	312777	499963	5.0	POT. RICHARDSONI	80	3540	4000	700	0.3	0.0
						ELODEA CANADENS	10					
						VALLISNERIA AMER	7					
						CHARA SPP.	3					
		8	312784	499970	28.0	No Plants Present			3600	180	1.9	1.8
		9	312774	499971	36.0	No Plants Present			1400	75	3.1	3.0
		10	312794	499975	4.0	POT. RICHARDSONI	50	30	3800	1800	0.6	0.4
						NAJAS FLEXILIS	20					
						POT. NARROW	20					
						VALLISNERIA AMER	5					
						CHARA SPP.	5					
		11	312784	499978	37.0	No Plants Present			610	19	2.6	2.5
		12	312807	499982	11.0	VALLISNERIA AMER	100	50	3400	190	1.9	1.0
		13	312794	499979	33.0	No Plants Present			840	43	2.9	2.6
		14	312856	499992	3.0	CHARA SPP.	80	170	3000	1900	0.1	0.0
						NAJAS FLEXILIS	10					
						NITELLOP. OBTUSA	10					
		15	312847	499990	3.0	NITELLOP. OBTUSA	40	430	3300	2000	0.2	0.2
						CHARA SPP.	40					
						NAJAS FLEXILIS	10					
						MYRIO. SPICATUM	5					
						VALLISNERIA AMER	5					
		16	312837	499989	3.0	NAJAS FLEXILIS	40	450	3300	1300	0.5	0.1
						VALLISNERIA AMER	20					
						CHARA SPP.	20					
						ELODEA CANADENS	10					
						MYRIO. SPICATUM	5					
						NITELLOP. OBTUSA	5					

				NAJAS FLEXILIS	50					
18	312821	499989	11.0	CHARA SPP.	35	2600	3700	1200	0.3	0.0
				POT. GRAMINEUS	25					
				NAJAS FLEXILIS	15					
				POT. RICHARDSONI	10					
				NITELLOP. OBTUSA	5					
				ELODEA CANADENS	5					
				VALLISNERIA AMER	4					
				POT. CRISPUS	1					
19	312805	499987	35.0	No Plants Present			530	28	2.7	2.5
20	312860	499998	26.5	No Plants Present			1300	16	1.6	1.3
21	312849	499997	26.0	No Plants Present			820	13	1.8	1.7
22	312839	499994	21.0	No Plants Present			3900	48	1.5	1.5
23	312828	499994	34.0	No Plants Present			4300	49	2.3	1.7
24	312821	499992	32.0	No Plants Present			2100	34	1.8	2.0

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	HENNEPIN	1	314069	500667	33.0	No Plants Present			650	55	1.1	1.0
		2	314060	500663	7.0	VALLISNERIA AMER	97	562	3400	650	0.4	0.2
						POT. NARROW	3					
		3	314077	500671	35.5	No Plants Present			700	46	0.9	0.5
		4	314064	500673	6.5	VALLISNERIA AMER	100	268	3100	180	0.2	0.0
		5	314054	500673	36.0	No Plants Present			330	48	1.5	1.5
		6	314081	500678	33.0	No Plants Present			550	48	2.0	1.0
		7	314069	500678	6.0	VALLISNERIA AMER	99	894	3600	870	0.4	0.0
						RANUN. LONGIROST	1					
		8	314058	500679	35.0	No Plants Present			390	65	1.7	1.1
		9	314096	500689	25.0	No Plants Present			250	55	1.6	0.9
		10	314086	500687	7.0	VALLISNERIA AMER	99	352	2100	230	0.4	0.1
						NITELLOP. OBTUSA	1					
		11	314074	500684	6.0	VALLISNERIA AMER	94	275	3100	1200	0.3	0.3
						CHARA SPP.	3					
						ELODEA CANADENS	3					
		12	314063	500686	34.0	No Plants Present			200	55	1.8	1.2
		13	314100	500696	23.0	No Plants Present			180	63	1.7	0.8
		14	314089	500692	6.0	VALLISNERIA AMER	99	386	3200	490	0.1	0.1
						POT. NARROW	1					
		15	314079	500694	8.0	VALLISNERIA AMER	55	196	3000	490	0.2	0.1
						CHARA SPP.	40					
						MYRIO. SPICATUM	4					
						NITELLOP. OBTUSA	1					
		16	314066	500694	27.0	No Plants Present			300	70	1.5	1.0
		17	314104	500703	25.0	No Plants Present			650	50	1.1	0.7
		18	314093	500702	6.0	VALLISNERIA AMER	99	170	3400	880	0.2	0.1
						CHARA SPP.	1					
		19	314083	500701	7.0	VALLISNERIA AMER	60	558	3400	1600	0.3	0.1
						POT. RICHARDSONI	39					
						CHARA SPP.	1					
		20	314073	500702	25.0	No Plants Present			500	48	1.5	1.1

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21	314108	500708	22.0	No Plants Present			750	140	0.9	0.8
22	314096	500708	7.0	CHARA SPP.	90	80	3300	630	0.2	0.1
				VALLISNERIA AMER	5					
				POT. NARROW	5					
23	314087	500706	6.0	VALLISNERIA AMER	70	60	3800	1100	0.2	0.0
				MYRIO. SPICATUM	10					
				POT. NARROW	10					
				CHARA SPP.	4					
				POT. NARROW	4					
				ELODEA CANADENS	2					
24	314076	500707	26.0	No Plants Present			1200	55	1.7	1.0
25	314111	500716	23.0	No Plants Present			600	100	0.7	0.6
26	314101	500714	12.0	VALLISNERIA AMER	95	302	3300	480	0.6	0.5
				POT. NARROW	25					
				CHARA SPP.	25					
27	314092	500712	6.0	VALLISNERIA AMER	60	46	2900	850	0.3	0.2
				CHARA SPP.	20					
				MYRIO. SPICATUM	20					
28	314080	500712	32.0	No Plants Present			450	71	2.1	1.1
29	314116	500726	13.0	No Plants Present			1200	75	0.9	0.5
30	314104	500722	25.0	No Plants Present			950	190	0.7	0.3
31	314096	500722	7.0	VALLISNERIA AMER	99	192	2700	590	0.3	0.1
				CHARA SPP.	1					
32	314086	500721	33.0	No Plants Present			480	48	2.3	0.9
33	314111	500729	27.0	No Plants Present			650	250	0.8	0.2
34	314101	500730	7.0	VALLISNERIA AMER	98	988	2700	260	0.2	0.1
				POT. RICHARDSONI	1					
				MYRIO. SPICATUM	1					
35	314092	500730	34.0	No Plants Present			550	45	2.0	1.0
36	314116	500737	27.0	No Plants Present			500	71	1.1	0.7
37	314106	500736	9.0	VALLISNERIA AMER	99	206	3000	240	0.2	0.2
				POT. NARROW	1					
38	314098	500737	33.0	No Plants Present			280	48	2.5	1.5
39	314120	500744	31.0	No Plants Present			1000	68	0.9	0.5
40	314113	500746	20.0	No Plants Present			1600	140	2.0	1.4

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1983

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	STONEY	1	314229	500974	7.0	VALLISNERIA AMER	100	582	1300	33	1.3	0.2
		2	314217	500972	8.0	VALLISNERIA AMER	95	1208	1000	130	0.2	0.1
						POT. NARROW	5					
		3	314208	500974	6.5	VALLISNERIA AMER	95	470	1000	130	0.4	0.1
						MYRIO. SPICATUM	5					
		4	314198	500973	9.0	VALLISNERIA AMER	100	1400	750	44	0.5	0.1
		5	314187	500972	9.0	VALLISNERIA AMER	55	738	480	35	0.5	0.2
						HETERANTHERA DUB	45					
		6	314233	500982	11.5	No Plants Present			1100	720	2.6	1.6
		7	314221	500979	6.0	VALLISNERIA AMER	60	1104	700	180	0.9	0.1
						HETERANTHERA DUB	40					
		8	314210	500978	13.0	VALLISNERIA AMER	50	78	650	34	1.8	0.9
						HETERANTHERA DUB	50					
		9	314200	500978	10.0	MYRIO. SPICATUM	80	80	500	240	0.4	0.2
						HETERANTHERA DUB	20					
		10	314190	500978	10.5	No Plants Present			480	50	0.4	0.0
		11	314237	500986	8.0	VALLISNERIA AMER	100	144	3400	370	1.6	0.4
		12	314227	500982	4.0	VALLISNERIA AMER	50	1214	2000	730	0.3	0.1
						HETERANTHERA DUB	50					
		13	314215	500987	2.0	HETERANTHERA DUB	70	1851	1100	630	0.1	0.0
						ELODEA CANADENS	30					
		14	314253	500995	9.0	No Plants Present			1800	110	2.9	1.4
		15	314242	500995	5.5	HETERANTHERA DUB	60	390	1700	320	0.5	0.1
						VALLISNERIA AMER	40					
		16	314232	500992	2.5	HETERANTHERA DUB	100	8148	320	1	0.0	0.0
		17	314219	500989	3.0	ELODEA CANADENS	65	568	1000	260	0.1	0.1
						MYRIO. SPICATUM	35					
		18	314257	500003	6.0	No Plants Present			1100	530	2.4	1.7
		19	314249	501002	2.0	HETERANTHERA DUB	75	74	2800	-0.	0.5	0.0
						VALLISNERIA AMER	25					
		20	314259	501008	5.0	VALLISNERIA AMER	100	20	840	280	2.2	2.0

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: 1. (-) indicates missing data
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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	STAG	1	309032	497377	31.5	No Plants Present			1200	650	3.0	2.8
		2	309019	497378	12.0	No Plants Present			830	530	2.9	2.7
		3	309043	497387	34.0	No Plants Present			2100	1500	3.2	2.8
		4	309034	497385	13.5	No Plants Present			1100	690	3.1	2.9
		5	309022	497382	10.5	No Plants Present			510	340	3.2	2.9
		6	309044	497392	32.0	No Plants Present			2700	1200	3.0	2.9
		7	309036	497389	13.5	No Plants Present			1100	550	3.0	3.0
		8	309025	497388	5.5	No Plants Present			600	320	2.7	2.1
		9	309046	497397	14.5	No Plants Present			2200	1300	2.7	2.7
		10	309038	497396	13.5	No Plants Present			820	580	2.8	2.8
		11	309026	497393	3.0	No Plants Present			540	430	2.0	1.9
		12	309050	497402	15.5	No Plants Present			2200	1300	2.6	2.6
		13	309041	497403	7.5	POT. NARROW	100	140	1000	550	2.5	1.9
		14	309032	497401	3.0	POT. NARROW	100	1	2000	1500	0.0	0.0
		15	309058	497407	22.0	No Plants Present			2500	1400	3.0	2.9
		16	309053	497408	14.5	POT. NARROW POT. GRAMINEUS	80 20	110	2100	1100	2.3	2.0
		17	309042	497408	18.0	POT. NARROW ELODEA CANADENS	95 5	30	730	490	1.4	1.2
		18	309038	497409	2.0	CHARA SPP.	100	1	3500	2700	0.0	0.0
		19	309062	497413	23.0	No Plants Present			2700	1200	2.8	2.6
		20	309057	497413	12.0	NITELLA HYALINA POT. NARROW ELODEA CANADENS	65 34 1	208	1900	750	1.9	1.8
		21	309046	497413	4.0	CHARA SPP. ELODEA CANADENS	95 5	20	660	430	0.4	0.4
		22	309073	497418	33.0	No Plants Present			2700	1200	3.8	3.6
		23	309064	497419	11.5	CHARA SPP.	100	5	2900	1300	2.4	2.3
		24	309077	497424	32.0	No Plants Present			2600	1400	3.7	3.4

25	309070	497424	4.5	No Plants Present	1800	960	2.7	1.9
26	309084	497433	34.0	No Plants Present	1800	1500	4.0	3.8

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	FAWN	1	309572	498246	19.0	CHARA SPP.	100	10	1700	780	2.4	2.2
		2	309565	498250	15.0	POT. NARROW	100	10	820	520	2.6	2.3
		3	309576	498255	10.0	POT. NARROW CHARA SPP.	90 10	10	3400	1200	2.2	0.8
		4	309569	498254	11.0	POT. GRAMINEUS CHARA SPP.	80 20	5	1600	910	2.8	2.3
		5	309595	498264	26.0	No Plants Present			2800	1000	2.4	2.3
		6	309582	498262	5.0	CHARA SPP. POT. GRAMINEUS	98 2	5	3500	2400	1.8	1.4
		7	309573	498259	7.0	POT. NARROW	100	5	1400	700	2.9	1.8
		8	309601	498265	28.0	No Plants Present			2900	1800	3.0	2.4
		9	309595	498267	20.0	CHARA SPP.	100	2	3700	1600	1.8	1.5
		10	309585	498266	3.0	CHARA SPP.	100	1	2500	2000	1.6	1.3
		11	309576	498264	4.0	CHARA SPP.	100	1	1700	1200	2.4	1.6
		12	309608	498272	29.0	No Plants Present			3000	1600	2.9	2.5
		13	309598	498272	3.0	CHARA SPP.	100	1	3100	2600	1.7	1.1
		14	309590	498272	2.5	CHARA SPP. POT. GRAMINEUS	90 10	7	2400	1600	1.5	1.0
		15	309578	498272	3.0	CHARA SPP.	100	1	1500	1100	2.6	1.8
		16	309620	498274	33.0	No Plants Present			5100	1000	2.8	2.2
		17	309613	498276	15.0	POT. GRAMINEUS	100	2	3900	2600	1.4	1.0
		18	309607	498280	3.0	CHARA SPP.	100	30	3800	1500	0.9	0.8
		19	309630	498284	32.0	No Plants Present			3900	1500	2.8	2.2
		20	309620	498286	3.0	CHARA SPP.	100	10	3900	1500	0.9	0.5

Submersed Macrophyte Grapnel Data, JUNE, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	RUSSELL	1	309954	498651	30.0	No Plants Present			2500	1200	2.8	2.6
		2	309942	498647	27.0	No Plants Present			3200	1400	2.5	2.5
		3	309932	498642	17.0	POT. NARROW	100	1	3200	1600	2.7	2.5
		4	309980	498658	43.0	No Plants Present			3500	1900	3.1	2.9
		5	309972	498658	37.0	No Plants Present			3400	1900	2.8	2.7
		6	309954	498656	12.5	No Plants Present			2900	1000	2.7	1.5
		7	309945	498654	9.0	POT. GRAMINEUS	100	5	4200	1400	2.7	2.2
		8	309933	498655	33.0	No Plants Present			2800	1700	2.5	2.5
		9	309980	498661	34.0	No Plants Present			3200	1800	3.6	3.4
		10	309970	498662	7.0	POT. NARROW CHARA SPP.	70 30	15	3200	1000	2.2	1.5
		11	309957	498661	3.5	CHARA SPP.	100	1	4300	2400	2.4	1.5
		12	309946	498661	4.5	CHARA SPP.	100	5	2400	2000	2.0	1.5
		13	309936	498662	37.0	No Plants Present			2900	1600	2.5	2.2
		14	309949	498670	35.0	No Plants Present			2900	1800	2.7	2.7

Submersed Macrophyte Grapnel Data, JUNE, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	BELLE	1	312759	499951	11.5	POT. NARROW	60	3	1800	480	0.3	0.2
						POT. CRISPUS	40					
		2	312754	499954	12.5	No Plants Present			4500	480	1.7	1.4
		3	312767	499960	8.0	POT. CRISPUS	100	3	1100	120	0.2	0.1
		4	312758	499962	23.0	No Plants Present			4500	74	2.6	1.6
		5	312772	499966	17.5	No Plants Present			3800	180	2.6	1.7
		6	312763	499967	33.0	No Plants Present			4200	18	2.5	1.9
		7	312780	499966	8.5	POT. CRISPUS	100	78	4100	1400	0.1	0.1
		8	312783	499973	26.5	No Plants Present			3500	11	2.1	1.5
		9	312772	499971	34.0	No Plants Present			2500	15	2.9	1.8
		10	312796	499978	8.0	POT. RICHARDSONI	100	1	3800	2900	0.1	0.0
		11	312786	499978	37.5	No Plants Present			2600	15	2.8	2.4
		12	312809	499984	11.0	CHARA SPP.	100	1	3800	230	1.5	1.3
		13	312795	500983	30.0	No Plants Present			1100	25	3.1	2.3
		14	312858	499994	3.5	CHARA SPP.	100	8	1300	1100	0.1	0.0
		15	312848	499991	3.5	CHARA SPP.	65	22	4100	2200	0.1	0.0
						MYRIO. SPICATUM	35					
		16	312838	499993	4.0	CHARA SPP.	96	80	1100	560	0.2	0.1
						MYRIO. SPICATUM	2					
						ELODEA CANADENS	1					
						VALLISNERIA AMER	1					
		17	312827	499990	3.5	CHARA SPP.	95	50	1200	820	0.1	0.1
						MYRIO. SPICATUM	5					
		18	312816	499989	12.5	CHARA SPP.	60	4	3500	410	0.5	0.0
						POT. NARROW	40					
		19	312812	500994	38.0	No Plants Present			460	4	2.7	2.5
		20	312859	500001	19.0	No Plants Present			3700	230	0.7	0.1
		21	312848	500000	18.5	No Plants Present			3600	280	1.1	1.0
		22	312840	499998	18.0	No Plants Present			3500	64	1.1	0.9
		23	312827	499995	30.0	No Plants Present			1500	35	1.6	1.1

24	312818	500995	35.0	No Plants Present		3000	20	3.0	2.0

Submersed Macrophyte Grapnel Data, JUNE, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	HENNEPIN	1	314073	500668	34.0	No Plants Present			3600	3	0.7	0.6
		2	314063	500667	6.5	POT. NARROW	100	178	4500	800	0.5	0.1
		3	314077	500676	34.5	No Plants Present			3400	6	1.0	0.8
		4	314067	500675	7.0	POT. NARROW	100	180	4300	400	0.3	0.2
		5	314058	500671	13.0	POT. RICHARDSONI	100	170	2600	330	1.4	0.9
		6	314081	500682	15.0	POT. NARROW NITELLA HYALINA	90 10	58	3500	610	0.6	0.4
		7	314071	500683	7.0	POT. NARROW	100	150	3900	470	0.4	0.2
		8	314061	500678	12.0	No Plants Present			3500	450	1.8	0.8
		9	314094	500691	32.5	No Plants Present			3700	5	1.1	1.1
		10	314086	500690	7.0	CHARA SPP. POT. NARROW VALLISNERIA AMER	45 45 10	120	3200	1400	0.1	0.0
		11	314074	500688	7.0	CHARA SPP. POT. NARROW	70 30	150	3700	1400	0.4	0.1
		12	314064	500686	11.5	POT. RICHARDSONI	100	280	1200	150	2.1	1.7
		13	314100	500698	28.0	No Plants Present			4000	10	0.9	0.8
		14	314089	500696	7.0	POT. NARROW CHARA SPP.	60 40	320	3000	820	0.2	0.0
		15	314078	500694	6.5	CHARA SPP. POT. NARROW POT. CRISPUS	80 15 5	70	3500	1100	0.5	0.3
		16	314069	500693	8.0	POT. NARROW	100	20	3800	1100	1.2	0.4
		17	314105	500704	27.5	No Plants Present			4300	25	0.6	0.6
		18	314094	500703	7.0	CHARA SPP. POT. NARROW	95 5	110	3300	1100	0.4	0.2
		19	314083	500703	7.0	POT. NARROW CHARA SPP.	50 50	30	3200	1500	0.2	0.1
		20	314073	500700	35.0	No Plants Present			4100	12	1.5	1.0
		21	314107	500709	27.5	No Plants Present			4100	11	1.0	0.6
		22	314098	500711	7.0	CHARA SPP.	95	160	3000	730	0.3	0.0

				POT. NARROW	5					
23	314087	500710	7.5	POT. NARROW	95	170	2200	870	0.5	0.0
				CHARA SPP.	5					
24	314078	500709	30.0	No Plants Present			3900	81	1.2	0.5
25	314111	500717	28.0	No Plants Present			3900	8	1.3	0.8
26	314103	500718	9.5	POT. NARROW	50	20	2800	340	0.5	0.1
				CHARA SPP.	45					
				VALLISNERIA AMER	5					
27	314091	500716	7.0	POT. NARROW	100	300	2500	250	0.2	0.1
28	314083	500716	34.5	No Plants Present			3900	10	2.2	1.6
29	314117	500729	21.0	No Plants Present			3500	390	1.1	0.3
30	314107	500728	27.0	No Plants Present			3200	4	0.7	0.6
31	314095	500726	7.0	CHARA SPP.	70	420	4100	1100	0.2	0.1
				POT. NARROW	30					
32	314086	500725	34.0	No Plants Present			3800	14	1.9	1.3
33	314112	500734	32.0	No Plants Present			2900	4	1.2	1.0
34	314101	500734	10.5	POT. GRAMINEUS	25	5	3500	300	1.4	0.1
				POT. CRISPUS	25					
				VALLISNERIA AMER	25					
				POT. NARROW	25					
35	314092	500732	34.0	No Plants Present			4100	11	2.1	1.5
36	314117	500742	32.0	No Plants Present			2800	4	1.3	0.6
37	314103	500740	35.5	No Plants Present			4500	8	1.6	1.5
38	314097	500738	34.0	No Plants Present			4400	10	2.1	1.5
39	314119	500748	38.0	No Plants Present			2600	17	1.2	0.9
40	314107	500743	36.5	No Plants Present			4100	9	2.3	1.4

Submersed Macrophyte Grapnel Data, JUNE, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	STONEY	1	314231	501975	10.0	POT. NARROW	90	8	2700	53	1.2	1.1
						MYRIO. EXALBESC	10					
		2	314220	501973	10.0	POT. NARROW	50	4	2400	55	1.3	1.0
						VALLISNERIA AMER	50					
		3	314208	501974	8.0	POT. NARROW	45	88	590	40	1.0	0.6
						POT. CRISPUS	45					
						VALLISNERIA AMER	10					
		4	314199	501972	10.0	VALLISNERIA AMER	25	104	2700	53	0.7	0.2
						MYRIO. SPICATUM	25					
						POT. NARROW	25					
						ELODEA CANADENS	25					
		5	314188	501972	9.0	POT. NARROW	70	99	640	100	0.7	0.4
						MYRIO. SPICATUM	30					
		6	314235	501980	11.0	No Plants Present			4400	5	1.5	0.9
		7	314222	501981	8.0	POT. NARROW	100	840	4300	17	1.0	0.7
		8	314212	501980	9.0	No Plants Present			2300	260	1.4	1.0
		9	314201	501978	13.0	POT. CRISPUS	60	5	2600	65	0.3	0.2
						MYRIO. SPICATUM	35					
						POT. NARROW	5					
		10	314191	501980	11.0	POT. CRISPUS	100	1	460	10	0.6	0.4
		11	314238	501985	9.5	No Plants Present			820	28	1.2	0.8
		12	314226	501988	5.0	POT. CRISPUS	95	922	5000	380	0.3	0.0
						MYRIO. SPICATUM	4					
						ELODEA CANADENS	1					
		13	314213	501989	4.0	POT. CRISPUS	90	3696	3800	53	0.0	0.0
						ELODEA CANADENS	10					
		14	314252	501996	11.5	No Plants Present			2600	29	2.4	0.7
		15	314242	501992	7.5	No Plants Present			630	65	2.1	1.1
		16	314232	501995	3.0	POT. CRISPUS	100	3698	480	110	0.1	0.0
		17	314217	501940	3.5	ELODEA CANADENS	95	2712	4100	1500	0.2	0.0
						POT. CRISPUS	5					
		18	314256	501000	8.0	No Plants Present			2600	240	2.2	2.0
		19	314250	501005	2.5	VALLISNERIA AMER	100	1	4200	2800	1.8	1.3

20	314260	501010	6.0	HETERANTHERA DUB	100		2	600	220	3.1	1.8

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data
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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	STAG	1	309032	497377	31.0	No Plants Present			760	150	3.0	2.8
		2	309019	497377	15.0	No Plants Present			3300	1000	3.1	2.9
		3	309040	497383	34.5	No Plants Present			550	90	3.0	2.9
		4	309032	497383	13.5	No Plants Present			750	230	2.7	2.2
		5	309021	497382	12.0	No Plants Present			3500	1400	2.9	2.6
		6	309045	497389	32.0	No Plants Present			410	79	2.9	2.9
		7	309035	497387	12.5	No Plants Present			3000	1000	3.0	2.3
		8	309024	497387	7.0	No Plants Present			3400	2000	2.8	2.0
		9	309050	497394	32.0	No Plants Present			500	90	3.0	3.0
		10	309038	497394	12.0	No Plants Present			640	260	2.7	2.0
		11	309027	497394	4.0	No Plants Present			1000	840	1.7	1.5
		12	309052	497401	18.5	CHARA SPP.	100	1	500	85	2.9	2.7
		13	309040	497402	6.0	POT. GRAMINEUS	60	50	680	520	1.4	0.5
						CHARA SPP.	40					
		14	309034	497404	4.0	POT. GRAMINEUS	80	104	640	550	0.1	0.1
						ZANN. PALUSTRIS	10					
						CHARA SPP.	10					
		15	309059	497405	31.5	No Plants Present			440	100	3.3	2.8
		16	309053	497407	17.5	No Plants Present			730	180	2.8	2.1
		17	309043	497410	15.5	POT. NARROW	50	128	1000	170	0.8	0.3
						POT. RICHARDSONI	45					
						NITELLA HYALINA	5					
		18	309038	497407	3.0	POT. RICHARDSONI	90	10	650	540	0.1	0.1
						CHARA SPP.	5					
						POT. ZOSTERIFORM	5					
		19	309063	497412	22.0	No Plants Present			380	80	2.8	2.1
		20	309056	497412	10.0	POT. RICHARDSONI	99	110	380	220	1.3	0.7
						CHARA SPP.	1					
		21	309045	497413	4.0	CHARA SPP.	55	110	600	500	0.6	0.4
						POT. GRAMINEUS	40					
						VALLISNERIA AMER	5					

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22	309074	497417	32.5	No Plants Present			740	120	3.3	3.0
23	309065	497416	12.5	POT. NARROW POT. GRAMINEUS	90 10	118	420	130	1.5	0.9
24	309078	497424	32.0	No Plants Present			650	140	3.7	3.0
25	309070	497427	4.0	CHARA SPP.	100	1	430	370	1.5	0.9
26	309085	497432	31.5	No Plants Present			440	100	3.8	3.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

Note: 1. (-) indicates missing data
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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	FAWN	1	309569	498245	22.0	CHARA SPP.	100	2	4700	750	2.6	1.9
		2	309564	498247	18.0	POT. NARROW POT. GRAMINEUS	95 5	140	1100	300	2.5	2.0
		3	309578	498252	19.0	CHARA SPP.	100	1	4200	670	2.4	1.9
		4	309567	498250	10.0	POT. GRAMINEUS POT. NARROW	90 10	90	1300	720	2.2	1.0
		5	309593	498257	21.0	No Plants Present			5000	420	0.7	0.3
		6	309581	498257	7.0	POT. GRAMINEUS CHARA SPP.	85 15	160	3700	1700	1.7	1.1
		7	309570	498258	8.0	POT. GRAMINEUS CHARA SPP.	98 2	102	4500	650	2.5	0.5
		8	309606	498261	25.0	No Plants Present			2200	100	2.2	1.4
		9	309598	498262	25.0	CHARA SPP.	100	2	4500	290	3.0	2.4
		10	309585	498264	4.0	CHARA SPP.	100	14	3400	2900	1.7	1.3
		11	309575	498263	5.0	CHARA SPP.	100	20	1000	570	1.7	1.1
		12	309612	498271	26.0	No Plants Present			3500	210	3.1	2.6
		13	309601	498271	3.0	POT. GRAMINEUS CHARA SPP.	50 50	32	2700	2500	1.2	0.9
		14	309590	498270	3.0	POT. GRAMINEUS CHARA SPP.	50 50	40	2000	1500	0.8	0.5
		15	309579	498271	4.0	CHARA SPP.	100	8	1000	880	1.6	1.2
		16	309619	498273	29.5	No Plants Present			2500	150	3.5	2.9
		17	309611	498276	10.0	POT. NARROW POT. GRAMINEUS CHARA SPP.	47 47 6	26	3500	100	1.0	0.4
		18	309606	498277	3.0	CHARA SPP. POT. GRAMINEUS	80 20	20	2500	2000	0.8	0.7
		19	309626	498284	29.0	No Plants Present			2000	77	3.6	2.9
		20	309619	498285	3.0	POT. GRAMINEUS CHARA SPP.	80 20	130	1200	900	0.8	0.5

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	RUSSELL	1	309951	498650	30.5	No Plants Present			3500	210	2.7	2.4
		2	309939	498650	15.0	POT. NARROW	97	140	3800	800	2.6	1.1
						POT. GRAMINEUS	2					
						CHARA SPP.	1					
		3	309928	498649	30.0	No Plants Present			3500	320	2.5	2.0
		4	309974	498653	39.0	No Plants Present			3300	140	3.3	2.8
		5	309967	498659	32.0	No Plants Present			3400	120	3.4	2.9
		6	309954	498655	11.0	POT. NARROW	100	460	4000	900	2.6	1.4
		7	309943	498655	8.0	POT. GRAMINEUS	94	230	4300	1800	1.5	0.8
						CHARA SPP.	6					
		8	309931	498657	35.0	No Plants Present			3500	320	2.3	1.9
		9	309977	498664	27.0	No Plants Present			3000	140	1.5	1.2
		10	309969	498666	4.5	POT. GRAMINEUS	75	88	3800	2000	1.2	0.6
						CHARA SPP.	25					
		11	309958	498662	4.0	CHARA SPP.	70	14	4100	2500	1.3	0.7
						POT. GRAMINEUS	30					
		12	309949	498664	5.5	CHARA SPP.	100	2	4200	2300	1.9	1.4
		13	309937	498662	36.0	No Plants Present			3600	320	2.8	2.2
		14	309952	498670	7.0	CHARA SPP.	100	5	4300	1500	1.7	1.0

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	BELLE	1	312760	449952	11.0	VALLISNERIA AMER	100	10	3600	300	1.1	0.3
		2	312753	499950	12.0	No Plants Present			3500	290	1.8	1.2
		3	312766	499959	6.0	VALLISNERIA AMER	40	46	3100	1600	0.4	0.2
						POT. ZOSTERIFORM	25					
						POT. CRISPUS	25					
						POT. RICHARDSONI	10					
		4	312757	499959	26.5	No Plants Present			3300	16	2.5	1.4
		5	312773	499968	13.0	No Plants Present			3400	100	2.9	2.0
		6	312759	499967	39.0	No Plants Present			3400	8	2.6	2.6
		7	312780	499967	7.5	VALLISNERIA AMER	60	30	2500	1100	0.1	0.1
						POT. NARROW	25					
						POT. CRISPUS	15					
		8	312782	499971	18.0	No Plants Present			2800	28	2.3	1.5
		9	312775	499973	33.5	No Plants Present			3200	27	3.0	2.7
		10	312796	499978	6.5	POT. RICHARDSONI	40	118	2800	410	0.4	0.2
						POT. NARROW	30					
						CHARA SPP.	24					
						VALLISNERIA AMER	5					
						POT. ZOSTERIFORM	1					
		11	312784	499970	35.0	No Plants Present			3300	28	2.9	2.7
		12	312807	499985	8.0	POT. RICHARDSONI	95	155	4600	350	1.5	1.4
						VALLISNERIA AMER	3					
						MYRIO. SPICATUM	1					
						POT. ZOSTERIFORM	1					
		13	312795	499980	34.5	No Plants Present			3300	37	3.0	2.8
		14	312859	499995	4.0	CHARA SPP.	85	68	4400	2600	0.1	0.1
						VALLISNERIA AMER	10					
						NAJAS FLEXILIS	5					
		15	312847	499994	3.5	CHARA SPP.	84	200	4200	2000	0.1	0.0
						MYRIO. SPICATUM	10					
						VALLISNERIA AMER	3					
						NAJAS FLEXILIS	2					
						NITELLOP. OBTUSA	1					
		16	312838	499993	4.0	CHARA SPP.	87	372	4600	1600	0.3	0.2
						NITELLOP. OBTUSA	3					
						VALLISNERIA AMER	2					
						NAJAS FLEXILIS	2					

				POT. NARROW	2					
				MYRIO. SPICATUM	2					
				POT. GRAMINEUS	2					
17	312828	499991	4.6	CHARA SPP.	90	154	4300	2800	0.2	0.2
				NITELLOP. OBTUSA	4					
				NAJAS FLEXILIS	4					
				VALLISNERIA AMER	2					
18	312817	499988	7.5	CHARA SPP.	55	*	2300	230	0.6	0.5
				POT. NARROW	20					
				CHARA SPP.	10					
				POT. RICHARDSONI	6					
				POT. ZOSTERIFORM	5					
				NAJAS FLEXILIS	2					
				NITELLA HYALINA	2					
19	312809	499992	32.0	No Plants Present			3500	13	3.1	2.4
20	312860	499000	20.5	No Plants Present			4100	14	1.3	1.3
21	312851	499000	19.5	No Plants Present			4600	20	1.1	1.0
22	312840	499998	22.5	No Plants Present			4200	17	1.7	1.2
23	312829	499994	27.5	No Plants Present			3500	11	2.1	2.1
24	312818	499994	34.0	No Plants Present			3500	32	3.2	2.7

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	HENNEPIN	1	314073	500665	33.0	No Plants Present			700	4	1.4	1.1
		2	314063	500666	3.6	POT. NARROW	80	2625	1300	360	0.2	0.1
						VALLISNERIA AMER	20					
		3	314075	500671	34.5	No Plants Present			780	3	1.2	0.8
		4	314067	500673	4.0	POT. NARROW	75	3390	1300	91	0.3	0.1
						VALLISNERIA AMER	20					
						POT. CRISPUS	5					
		5	314057	500671	13.0	VALLISNERIA AMER	100	38	530	18	1.2	1.1
		6	314079	500679	22.0	No Plants Present			900	4	0.6	0.3
		7	314070	500680	4.2	POT. NARROW	50	2800	1500	35	0.3	0.1
						VALLISNERIA AMER	50					
		8	314060	500679	12.0	VALLISNERIA AMER	100	8	800	42	2.0	1.7
		9	314093	500690	30.5	No Plants Present			1100	3	0.7	0.3
		10	314083	500686	3.9	VALLISNERIA AMER	100	100	1800	220	0.2	0.1
		11	314075	500688	4.5	POT. NARROW	45	2540	1700	150	0.3	0.1
						CHARA SPP.	45					
						VALLISNERIA AMER	9					
						ELODEA CANADENS	1					
		12	314064	500684	8.0	POT. RICHARDSONI	65	348	800.	120	1.8	0.2
						VALLISNERIA AMER	34					
						POT. ZOSTERIFORM	1					
		13	314096	500693	32.0	No Plants Present			1200	5	1.3	0.9
		14	314087	500693	5.1	VALLISNERIA AMER	100	130	1900	360	0.3	0.0
		15	314079	500695	4.0	CHARA SPP.	90	490	1200	260	0.2	0.2
						VALLISNERIA AMER	10					
		16	314068	500693	8.0	POT. ZOSTERIFORM	66	408	470	120	0.2	0.1
						VALLISNERIA AMER	30					
						CHARA SPP.	2					
						POT. GRAMINEUS	2					
		17	314101	500700	30.5	No Plants Present			1000	4	1.3	1.1
		18	314091	500700	5.0	VALLISNERIA AMER	95	75	1900	310	0.2	0.2
						MYRIO. SPICATUM	5					
		19	314081	500697	4.5	CHARA SPP.	70	138	1300	150	0.3	0.3
						VALLISNERIA AMER	30					

20	314071	500700	8.0	No Plants Present			310	44	0.3	0.1
21	314105	500710	30.0	No Plants Present			1300	5	1.4	1.1
22	314095	500706	7.1	CHARA SPP.	70	*	2400	550	0.3	0.1
				POT. RICHARDSONI	25					
				VALLISNERIA AMER	5					
23	314086	500708	4.9	VALLISNERIA AMER	50	676	1300	260	0.3	0.2
				CHARA SPP.	45					
				MYRIO. SPICATUM	5					
24	314080	500709	7.5	POT. RICHARDSONI	60	70	460	120	0.2	0.1
				VALLISNERIA AMER	38					
				NAJAS FLEXILIS	1					
				POT. ZOSTERIFORM	1					
25	314108	500716	29.5	No Plants Present			2400	10	1.5	0.7
26	314099	500712	6.9	VALLISNERIA AMER	100	110	2800	730	0.2	0.1
27	314089	500714	4.7	VALLISNERIA AMER	45	550	1100	170	0.1	0.1
				CHARA SPP.	40					
				MYRIO. SPICATUM	10					
				NAJAS FLEXILIS	5					
28	314080	500712	31.5	No Plants Present			570	4	1.7	1.4
29	314112	500722	26.5	No Plants Present			2200	6	0.6	0.5
30	314103	500721	10.1	CHARA SPP.	50	10	2400	46	0.4	0.2
				VALLISNERIA AMER	40					
				POT. NARROW	10					
31	314093	500719	4.8	VALLISNERIA AMER	100	110	1100	230	0.3	0.2
32	314082	500719	34.5	No Plants Present			500	5	2.3	1.8
33	314106	500727	21.0	No Plants Present			1900	5	0.5	0.4
34	314097	500727	5.3	VALLISNERIA AMER	70	396	1400	120	0.2	0.0
				CHARA SPP.	25					
				POT. CRISPUS	5					
35	314085	500722	32.0	No Plants Present			460	6	2.5	2.3
36	314111	500736	31.0	No Plants Present			2000	2	0.9	0.2
37	314102	500734	8.1	POT. RICHARDSONI	100	1674	760	86	0.6	0.2
38	314089	500733	33.0	No Plants Present			430	5	2.6	2.2
39	314114	500741	23.5	No Plants Present			1600	3	1.0	0.6
40	314105	500741	33.0	No Plants Present			350	3	2.1	1.9

Submersed Macrophyte Grapnel Data, JULY - AUGUST, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	STONEY	1	314230	501976	9.0	VALLISNERIA AMER	100	110	2800	260	1.6	0.5
		2	314218	501976	5.0	POT. NARROW	70	430	2300	210	0.7	0.2
						VALLISNERIA AMER	30					
		3	314209	501974	8.0	VALLISNERIA AMER	50	190	3300	730	0.6	0.3
						POT. NARROW	35					
						POT. ZOSTERIFORM	15					
		4	314216	501974	11.0	VALLISNERIA AMER	100	188	3600	630	0.6	0.1
		5	314286	501973	9.0	POT. RICHARDSONI	70	430	3600	470	0.5	0.1
						VALLISNERIA AMER	30					
		6	314235	501983	14.0	POT. ZOSTERIFORM	100	5	2900	150	2.3	1.0
		7	314221	500982	7.5	POT. NARROW	50	530	2800	250	1.0	0.2
						VALLISNERIA AMER	50					
		8	314212	500980	12.5	No Plants Present			2200	250	1.2	1.2
		9	314200	500980	9.5	No Plants Present			2700	1900	0.1	0.0
		10	314191	500979	10.5	No Plants Present			3000	160	0.5	0.1
		11	314238	501989	9.5	VALLISNERIA AMER	80	12	3000	840	1.0	0.5
						POT. NARROW	20					
		12	314228	501989	3.0	ELODEA CANADENS	40	864	2000	1500	0.1	0.0
						VALLISNERIA AMER	30					
						MYRIO. SPICATUM	20					
						HETERANTHERA DUB	7					
						POT. CRISPUS	3					
		13	314217	501987	3.0	ELODEA CANADENS	99	1920	2500	1100	0.0	0.0
						VALLISNERIA AMER	1					
		14	314254	501996	10.5	No Plants Present			2700	260	2.4	1.6
		15	314243	501997	6.5	VALLISNERIA AMER	45	98	3000	700	1.5	0.7
						POT. NARROW	25					
						POT. CRISPUS	25					
						BUTOMUS UMBELLAT	5					
		16	314233	501996	3.0	HETERANTHERA DUB	100	200	3000	2000	0.1	0.0
		17	314222	501995	2.5	RANUN. LONGIROST	50	1120	2700	1600	0.1	0.1
						HETERANTHERA DUB	30					
						ELODEA CANADENS	20					
		18	314258	501004	7.0	No Plants Present			2200	710	1.7	0.9

19	314249	501105	4.0	VALLISNERIA AMER	100	28	3700	1200	0.7	0.6
20	314259	501009	3.0	POT. CRISPUS	60	38	1200	440	1.5	1.0
				VALLISNERIA AMER	40					

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	STAG	1	309030	497378	30.5	No Plants Present			3500	600	3.0	2.5
		2	309018	497371	15.5	No Plants Present			2000	350	2.9	2.4
		3	309041	497381	35.5	No Plants Present			3000	320	2.7	2.4
		4	309032	497384	14.0	CHARA SPP.	100	1	4300	1100	2.7	2.4
		5	309022	497382	12.0	No Plants Present			3800	1300	3.0	2.3
		6	309045	497390	32.5	No Plants Present			3800	520	2.9	2.3
		7	309034	497388	13.0	No Plants Present			4500	1100	2.5	1.6
		8	309024	497386	7.0	No Plants Present			3400	1300	2.3	2.0
		9	309047	497395	31.5	No Plants Present			3600	580	2.4	2.3
		10	309037	497394	12.0	No Plants Present			3700	1200	2.2	1.7
		11	309028	497395	3.5	No Plants Present			4000	3500	1.6	1.5
		12	309049	497399	14.5	No Plants Present			3000	590	2.1	1.6
		13	309039	497399	6.0	POT. RICHARDSONI	45	1830	4000	2500	0.5	0.3
						POT. GRAMINEUS	45					
						POT. NARROW	5					
						CHARA SPP.	4					
						ELODEA CANADENS	1					
		14	309033	497401	3.0	CHARA SPP.	80	100	4300	3500	1.4	1.0
						POT. GRAMINEUS	20					
		15	309061	497406	31.0	No Plants Present			500	47	2.6	1.6
		16	309053	497407	19.0	No Plants Present			3200	580	2.6	1.4
		17	309043	497407	20.0	NITELLA HYALINA	35	360	4000	300	1.0	0.2
						POT. NARROW	35					
						POT. RICHARDSONI	25					
						ELODEA CANADENS	5					
		18	309036	497406	3.0	CHARA SPP.	100	20	4000	3200	0.4	0.4
		19	309065	497412	24.0	No Plants Present			230	60	2.2	1.7
		20	309057	497411	12.0	POT. NARROW	70	620	4000	470	1.0	0.1
						ELODEA CANADENS	25					
						POT. RICHARDSONI	5					
		21	309046	497412	3.5	POT. GRAMINEUS	55	54	4000	3000	0.9	0.8
						POT. RICHARDSONI	20					

				CHARA SPP.	20					
				NAJAS FLEXILIS	5					
22	309074	497418	31.0	No Plants Present			410	40	3.0	2.5
23	309068	497419	16.0	CHARA SPP.	100	10	2500	600	2.0	1.2
24	309076	497423	29.0	No Plants Present			370	40	3.0	2.7
25	309070	497423	3.0	CHARA SPP.	100	10	3000	2300	1.7	1.3
26	309083	497430	31.5	No Plants Present			580	100	3.2	3.1

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	FAWN	1	309578	498245	23.0	No Plants Present			3500	58	2.1	1.2
		2	309564	498243	18.0	POT. RICHARDSONI	50	40	1000	130	2.5	0.9
						POT. NARROW	40					
						POT. GRAMINEUS	5					
						CHARA SPP.	5					
		3	309579	498247	20.0	CHARA SPP.	100	1	1800	110	2.8	2.3
		4	309567	498251	15.0	POT. NARROW	80	70	1000	120	2.4	0.4
						CHARA SPP.	20					
		5	309591	498257	24.0	CHARA SPP.	100	3	4300	150	3.1	2.4
		6	309583	498255	9.0	POT. GRAMINEUS	99	1080	1200	20	0.5	0.1
						CHARA SPP.	1					
		7	309571	498256	9.0	POT. RICHARDSONI	70	800	4500	100	1.3	0.3
						POT. GRAMINEUS	30					
		8	309606	498265	25.0	No Plants Present			3300	53	2.3	1.6
		9	309595	498262	10.0	POT. RICHARDSONI	98	2490	930	230	0.7	0.1
						ELODEA CANADENS	1					
						POT. NARROW	1					
		10	309587	498262	4.0	CHARA SPP.	100	40	700	480	1.2	0.7
		11	309575	498265	5.0	CHARA SPP.	95	40	3000	1100	1.0	0.4
						POT. ZOSTERIFORM	5					
		12	309611	498269	24.0	No Plants Present			2500	160	3.2	2.7
		13	309600	498270	4.0	CHARA SPP.	95	40	4500	1500	1.3	0.8
						POT. GRAMINEUS	5					
		14	309589	498269	3.0	CHARA SPP.	98	20	4500	3300	0.7	0.5
						POT. NARROW	2					
		15	309579	498269	4.0	CHARA SPP.	100	25	3900	2200	1.2	1.0
		16	309619	498275	28.0	No Plants Present			3300	110	2.9	2.2
		17	309612	498273	9.0	POT. GRAMINEUS	98	380	3500	450	0.4	0.2
						POT. NARROW	1					
						POT. ZOSTERIFORM	1					
		18	309607	498275	3.0	CHARA SPP.	80	12	4800	2600	0.4	0.3
						POT. GRAMINEUS	20					
		19	309626	498284	29.0	No Plants Present			3500	310	3.2	3.0

20	309619	498282	3.0	POT. RICHARDSONI	50	640	850	440	0.7	0.6
				CHARA SPP.	25					
				POT. GRAMINEUS	20					
				POT. NARROW	5					

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
ST. CLAIR	RUSSELL	1	309952	498649	32.5	No Plants Present			2000	1.	3.1	2.9
		2	309942	498647	24.0	No Plants Present			1800	1	2.7	0.6
		3	309929	498648	25.5	No Plants Present			3700	1.	2.6	1.6
		4	309973	498656	39.0	No Plants Present			580	0.	3.5	2.7
		5	309967	498653	34.5	No Plants Present			2500	2	3.4	3.2
		6	309954	498655	11.5	POT. NARROW	100	646	3300	4	1.4	0.2
		7	309945	498653	8.0	POT. GRAMINEUS	95	650	4700	120	0.8	0.2
						POT. NARROW	3					
						CHARA SPP.	2					
		8	309934	498654	31.0	No Plants Present			3200	1.	2.4	1.9
		9	309979	498662	31.0	No Plants Present			1500	3	3.1	2.8
		10	309967	498663	6.0	POT. GRAMINEUS	70	186	3000	730	0.5	0.1
						CHARA SPP.	30					
		11	309957	498661	4.5	POT. GRAMINEUS	50	10	3400	1900	0.6	0.3
						CHARA SPP.	50					
		12	309948	498664	5.0	POT. GRAMINEUS	50	10	3700	820	0.9	0.7
						CHARA SPP.	50					
		13	309934	498661	38.5	No Plants Present			1500	2	2.5	2.5
		14	309949	498671	15.5	No Plants Present			3600	1.	2.2	1.4

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	BELLE	1	312760	499950	4.0	VALLISNERIA AMER	100	258	440	250	1.2	0.9
		2	312753	499952	11.5	No Plants Present			300	15	1.8	1.6
		3	312768	499954	8.0	VALLISNERIA AMER	94	132	430	55	0.4	0.1
						NAJAS FLEXILIS	3					
						POT. ZOSTERIFORM	1					
						POT. CRISPUS	1					
						CHARA SPP.	1					
		4	312757	499959	24.0	No Plants Present			270	2	3.1	2.9
		5	312772	499967	15.5	No Plants Present			430	20	3.0	2.7
		6	312762	499965	35.0	No Plants Present			300	1	3.2	2.8
		7	312780	499968	6.0	VALLISNERIA AMER	95	90	100	25	0.3	0.1
						CHARA SPP.	5					
		8	312782	499971	19.0	No Plants Present			300	1.	2.5	1.5
		9	312776	499969	32.5	No Plants Present			460	2	3.0	2.8
		10	312796	499978	8.0	VALLISNERIA AMER	40	4	1000	560	0.6	0.5
						CHARA SPP.	40					
						POT. NARROW	10					
						POT. RICHARDSONI	10					
		11	312785	499975	33.5	No Plants Present			270	1	3.2	3.0
		12	312809	499985	11.0	VALLISNERIA AMER	100	32	1000	47	1.5	1.0
		13	312794	499983	35.5	No Plants Present			1600	14	3.3	3.0
		14	312858	499894	3.0	CHARA SPP.	60	218	3900	2300	0.4	0.1
						VALLISNERIA AMER	20					
						NAJAS FLEXILIS	10					
						MYRIO. SPICATUM	7					
						NITELLOP. OBTUSA	3					
		15	312849	499990	3.0	CHARA SPP.	45	248	3000	800	0.6	0.3
						NAJAS FLEXILIS	30					
						MYRIO. SPICATUM	12					
						NITELLOP. OBTUSA	4					
						NITELLA HYALINA	4					
						VALLISNERIA AMER	3					
						POT. ZOSTERIFORM	1					
		16	312838	499992	5.0	CHARA SPP.	45	380	210	61	0.2	0.2
						NAJAS FLEXILIS	40					
						VALLISNERIA AMER	8					
						MYRIO. SPICATUM	3					

				NITELLOP. OBTUSA	2					
				ELODEA CANADENS	2					
17	312828	499990	3.0	CHARA SPP.	85	475	1700	800	0.2	0.2
				NITELLOP. OBTUSA	5					
				POT. RICHARDSONI	4					
				VALLISNERIA AMER	3					
				NAJAS FLEXILIS	2					
				MYRIO. SPICATUM	1					
18	312818	499988	13.5	NAJAS FLEXILIS	45	58	3000	17	1.1	1.0
				CHARA SPP.	35					
				VALLISNERIA AMER	10					
				POT. ZOSTERIFORM	5					
				POT. RICHARDSONI	3					
				NITELLOP. OBTUSA	2					
19	312810	499993	34.5	No Plants Present			1300	10	3.0	2.5
20	312860	499999	21.0	No Plants Present			1600	120	1.0	0.6
21	312850	499998	18.0	No Plants Present			1600	20	0.6	0.3
22	312840	499995	21.0	No Plants Present			2100	1	1.9	1.4
23	312828	499993	25.0	No Plants Present			3200	1.	1.6	0.4
24	312817	499989	33.0	No Plants Present			2800	2	2.7	1.6

Submersed Macrophyte Grapnel Data. SEPTEMBER, 1984

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RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	HENNEPIN	1	314076	500672	33.5	No Plants Present			1100	3	1.3	0.8
		2	314064	500668	7.0	VALLISNERIA AMER	70	470	290	76	0.3	0.1
						POT. NARROW	30					
		3	314081	500675	36.0	No Plants Present			1300	3	1.5	0.9
		4	314067	500674	6.5	VALLISNERIA AMER	100	352	300	97	0.2	0.1
		5	314058	500675	12.0	VALLISNERIA AMER	100	20	410	11	1.4	0.8
		6	314082	500682	21.0	No Plants Present			670	10	0.7	0.4
		7	314071	500681	7.0	VALLISNERIA AMER	100	160	280	96	0.4	0.1
		8	314062	500682	12.0	VALLISNERIA AMER	100	2	480	46	2.0	1.4
		9	314094	500691	32.5	No Plants Present			1100	2	1.5	0.8
		10	314085	500690	6.0	VALLISNERIA AMER	100	260	570	15	0.4	0.1
		11	314072	500691	6.5	VALLISNERIA AMER	100	370	340	1	0.5	0.1
		12	314065	500689	9.0	VALLISNERIA AMER	100	10	660	120	1.0	0.2
		13	314099	500696	27.0	No Plants Present			1200	3	1.6	0.7
		14	314088	500695	6.5	VALLISNERIA AMER	100	250	560	100	0.2	0.1
		15	314077	500695	6.0	VALLISNERIA AMER	95	134	370	160	0.3	0.2
						CHARA SPP.	5					
		16	314071	500696	8.0	VALLISNERIA AMER	100	125	420	1	1.4	0.2
		17	314103	500704	29.5	No Plants Present			980	2	1.3	0.3
		18	314091	500705	6.0	VALLISNERIA AMER	70	200	630	110	0.3	0.1
						CHARA SPP.	30					
		19	314081	500702	6.0	VALLISNERIA AMER	50	188	380	170	0.3	0.0
						CHARA SPP.	50					
		20	314075	500705	7.0	POT. RICHARDSONI	80	115	490	130	0.6	0.1
						VALLISNERIA AMER	20					
		21	314107	500708	30.0	No Plants Present			850	4	1.3	0.5
		22	314094	500709	6.0	VALLISNERIA AMER	100	580	480	22	0.3	0.1
		23	314085	500707	6.0	VALLISNERIA AMER	95	160	450	150	0.3	0.1
						MYRIO. SPICATUM	5					

24	314079	500707	8.0	POT. RICHARDSONI	60	538	240	1.	1.1	0.8
				VALLISNERIA AMER	25					
				NAJAS FLEXILIS	15					
25	314109	500715	28.5	No Plants Present			560	2	1.3	0.4
26	314097	500715	5.0	VALLISNERIA AMER	90	810	580	170	0.1	0.0
				CHARA SPP.	10					
27	314089	500716	6.0	VALLISNERIA AMER	100	172	360	91	0.2	0.1
28	314081	500714	34.0	No Plants Present			210	1	2.0	1.6
29	314112	500718	26.0	No Plants Present			600	3	1.4	0.5
30	314101	500720	7.0	VALLISNERIA AMER	100	92	700	180	0.5	0.1
31	314092	500719	6.0	VALLISNERIA AMER	100	400	300	3	0.3	0.1
32	314083	500723	32.0	No Plants Present			230	1.	2.4	1.6
33	314105	500728	10.0	VALLISNERIA AMER	99	110	1000	130	0.2	0.1
				CHARA SPP.	1					
34	314096	500729	9.0	VALLISNERIA AMER	100	130	360	7	0.4	0.2
35	314087	500728	31.5	No Plants Present			240	1	2.1	1.5
36	314109	500734	10.0	VALLISNERIA AMER	100	200	1100	130	0.2	0.1
37	314101	500736	32.0	No Plants Present			430	2	1.9	1.1
38	314098	500737	30.0	No Plants Present			230	1	2.5	1.7
39	314114	500743	12.5	No Plants Present			1000	16	1.5	0.5
40	314106	500746	30.0	No Plants Present			440	2	2.1	1.5

Submersed Macrophyte Grapnel Data, SEPTEMBER, 1984

Note: 1. (-) indicates missing data
2. (*) indicates < 0.100 g/m2

RIVER	ISLAND	GRID NUMBER	LORAN COORDINATES Upper	LORAN COORDINATES Lower	DEPTH (Ft.)	MACROPHYTE TAXON	PERCENT COMPOSITION	WET WEIGHT (gm.)	LIGHT (Foot Candles) Surface	LIGHT (Foot Candles) Bottom	CURRENT (Ft./Sec.) Surface	CURRENT (Ft./Sec.) Bottom
DETROIT	STONEY	1	314228	501972	9.0	VALLISNERIA AMER	100	236	4300	340	1.1	0.3
		2	314217	501971	11.0	No Plants Present			4100	320	2.2	1.2
		3	314207	501972	8.0	VALLISNERIA AMER	100	670	4000	150	0.8	0.1
		4	314197	501971	9.0	VALLISNERIA AMER	100	92	4100	250	0.5	0.3
		5	314187	501971	9.5	VALLISNERIA AMER	100	670	4100	130	0.4	0.1
		6	314233	501980	13.0	No Plants Present			3500	150	2.3	1.6
		7	314221	501980	7.5	POT. NARROW	70	918	4000	100	0.5	0.0
						VALLISNERIA AMER	30					
		8	314212	501978	10.0	VALLISNERIA AMER	100	418	3800	100	1.6	1.1
		9	314200	501978	8.5	No Plants Present			3500	790	0.4	0.3
		10	314191	501978	10.0	No Plants Present			4400	400	0.4	0.1
		11	314237	501986	9.0	VALLISNERIA AMER	100	28	4200	610	1.2	0.3
		12	314225	501982	4.0	HETERANTHERA DUB	60	3024	4000	2500	0.1	0.0
						ELODEA CANADENS	38					
						MYRIO. SPICATUM	1					
						VALLISNERIA AMER	1					
		13	314216	501985	3.5	HETERANTHERA DUB	98	351	4000	2000	0.3	0.1
						ELODEA CANADENS	1					
						POT. CRISPUS	1					
		14	314250	501992	10.0	No Plants Present			3200	450	2.7	1.6
		15	314240	501994	6.0	VALLISNERIA AMER	100	48	3900	900	1.4	0.4
		16	314230	501995	3.0	HETERANTHERA DUB	100	3080	3400	500	0.2	0.2
		17	314220	501993	3.5	ELODEA CANADENS	60	620	3800	1800	0.1	0.0
						HETERANTHERA DUB	40					
		18	314254	502001	7.0	No Plants Present			3500	1000	2.3	1.5
		19	314246	502001	2.0	VALLISNERIA AMER	100	60	3900	3500	0.7	0.6
		20	314260	502010	5.0	HETERANTHERA DUB	100	5	4200	1500	2.3	1.6

APPENDIX K

Submersed Macrophyte Grapnel Data - A Summary

Composition and frequency of occurrence (six dates) of submersed plants, biomass of plants per haul, and physical data from measurements associated with the sampling grid at the six islands or shoals. Potamogeton spp. are the narrow-leaf forms of the genus.

Appendix K

Table 1. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stag Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	No plants	0	25	44	3.0	2.7
2	No plants	0	14	56	2.8	2.3
3	No plants	0	34	41	2.7	2.5
4	No plants	0	14	52	2.8	2.6
5	No plants	0	11	62	2.8	2.4
6	No plants	0	30	43	2.8	2.6
7	No plants	0	13	54	2.4	2.0
8	No plants	0	6	63	2.6	2.2
9	No plants	0	27	37		
10	No plants	0	12	50	2.2	1.9
11	Chara (1)	Tr	3	86	1.6	1.5
12	Chara (1)	Tr	18	45	2.3	2.1
13	Chara (4) Elodea (3) P. gramineus (3) Potamogeton spp. (3) Myriophyllum (1) Nitella (1) P. richardsonii (1)	1117	8	62	1.2	0.7
14	Chara (3) P. gramineus (3) Elodea (1) Nitella (1) P. crispus (1) P. richardsonii (1) Potamogeton spp. (1) Zannichellia (1)	668	3	73	0.6	0.4
15	No plants	0	26	41	2.7	2.4
16	Potamogeton spp. (2) Chara (1) Nitella (1) P. gramineus (1)	20	17	42	2.4	2.2
17	P. richardsonii (4) Potamogeton spp. (4) Elodea (3) Myriophyllum (2) Nitella (2)	730	16	24	0.9	0.4
18	Chara (5) P. crispus (1) P. richardsonii (1) Potamogeton spp. (1) P. zosteriformis (1)	74	3	82	0.4	0.3
19	Chara (1) Potamogeton spp. (1)	1	23	41	2.4	2.0

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Appendix K
Table 1. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stag Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
20	P. richardsonii (4) Chara (3) Elodea (3) Potamogeton spp. (2) Nitella (1) P. crispus (1) P. gramineus (1) Vallisneria (1)	201	13	42	1.1	0.6
21	Chara (6) Elodea (3) P. gramineus (3) P. richardsonii (3) Myriophyllum (1) Najas (1) Potamogeton spp. (1) Vallisneria (1)	106	4	70	0.6	0.5
22	No plants	0	32	36	3.1	2.8
23	Chara (3) Potamogeton spp. (3) P. gramineus (2)	44	12	42	1.6	1.1
24	No plants	0	32	41	3.4	3.0
25	Chara (4) P. gramineus (1)	16	4	68	1.7	1.2
26	No plants	0	33	50	3.4	3.2

Appendix K
Table 2. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Fawn Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	Chara (2) P. gramineus (1)	29	18	18	2.3	1.6
2	Potamogeton spp. (5) Chara (3) P. gramineus (2) P. richardsonii (2) Elodea (1)	71	16	35	2.1	1.4
3	Chara (5) Potamogeton spp. (2) Elodea (1)	33	16	24	2.3	1.6
4	Potamogeton spp. (4) Chara (3) P. gramineus (2)	116	12	42	2.0	1.1
5	Chara (2)	1	26	22	2.0	1.6
6	Chara (5) P. gramineus (4) P. richardsonii (2) Elodea (1) Potamogeton spp. (1)	1123	10	31	0.9	0.7
7	P. gramineus (5) Chara (4) Potamogeton spp. (1) P. richardsonii (1)	288	9	39	1.7	0.8
8	No plants	0	28	29	2.3	1.7
9	Chara (3) Elodea (1) Potamogeton spp. (1) P. richardsonii (1)	416	19	28	2.0	1.5
10	Chara (6) Potamogeton spp. (2) P. gramineus (1)	23	5	64	1.4	0.9
11	Chara (6) Elodea (1) P. gramineus (1) P. richardsonii (1) P. zosteriformis (1)	34	5	56	1.4	0.8
12	No plants	0	27	25	2.8	2.4
13	Chara (5) P. gramineus (4)	46	8	63	1.2	0.7
14	Chara (6) P. gramineus (1) P. narrow (1)	30	3	77	0.9	0.7
15	Chara (6) Potamogeton spp. (1)	13	4	76	1.5	1.0
16	No plants	0	34	16	2.9	2.4

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Appendix K
Table 2. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Fawn Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
17	P. gramineus (3) Potamogeton spp. (2) Chara (1) Elodea (1) Nitella (1) Nitellopsis (1) P. zosteriformis (1)	92	16	29	1.3	1.0
18	Chara (5) P. gramineus (3) Elodea (1)	48	3	59	0.8	0.6
19	No plants	0	32	26	2.9	2.4
20	Chara (6) P. gramineus (4) P. richardsonii (2) Najas (1) Potamogeton spp. (1)	264	4	60	0.8	0.5

Appendix K

Table 3. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Russell Island. Means are based on six sampling dates in June, July-August and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	No plants	0	31	29	3.1	2.4
2	Chara (1) P. gramineus (1) Potamogeton spp. (1)	23	22	24	2.8	2.0
3	Potamogeton spp. (2) Chara (1)	17	23	20	2.3	1.8
4	No plants	0	41	24	3.1	2.6
5	No plants	0	31	16	3.0	2.6
6	Potamogeton spp. (3) Chara (2) P. richardsonii (1)	725	11	25	2.1	1.4
7	P. gramineus (6) Chara (5) Potamogeton spp. (3)	508	7	30	1.9	1.1
8	No plants	0	33	36	2.4	2.1
9	Chara (1) Elodea (1)	20	28	18	2.8	2.1
10	Chara (5) P. gramineus (4) Potamogeton spp. (2) Elodea (1) P. richardsonii (1)	269	6	36	1.2	0.5
11	Chara (6) P. gramineus (3) Najas (1)	27	4	62	1.6	0.7
12	Chara (6) P. gramineus (3)	14	5	47	1.5	0.8
13	No plants	0	36	21	2.4	2.1
14	Chara (3) P. gramineus (2) Potamogeton spp. (1)	99	17	33	2.2	1.8

Appendix K
Table 4. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Belle Isle. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	Vallisneria (4) Myriophyllum (2) P. crispus (2) Potamogeton spp. (2) P. richardsonii (2) Elodea (1) P. zosteriformis (1)	882	7	19	0.8	0.4
2	Chara (1) Potamogeton spp. (1) P. richardsonii (1)	17	11	8	1.8	1.1
3	P. crispus (4) Vallisneria (3) Chara (2) Potamogeton spp. (2) P. richardsonii (2) P. zosteriformis (2) Najas (1)	142	8	18	0.6	0.5
4	No plants	0	22	3	2.5	1.8
5	No plants	0	15	4	2.6	1.9
6	No plants	0	34	2	2.8	2.4
7	Chara (4) P. crispus (4) Vallisneria (4) Potamogeton spp. (3) P. richardsonii (2) Elodea (1)	871	6	34	0.2	0.1
8	No plants	0	21	2	2.3	1.6
9	No plants	0	34	2	2.9	2.5
10	Chara (4) P. richardsonii (4) Potamogeton spp. (3) Vallisneria (3) Najas (1) P. zosteriformis (1)	27	7	36	0.4	0.3
11	No plants	0	36	2	2.9	2.5
12	Vallisneria (4) Chara (3) P. richardsonii (2) Myriophyllum (1) Najas (1) Nitellopsis (1) P. gramineus (1) Potamogeton spp. (1) P. zosteriformis (1)	58	10	6	1.5	1.1
13	No plants	0	34	2	2.9	2.4
14	Chara (6) Najas (3) Nitellopsis (3) Vallisneria (2) Myriophyllum (1)	88	3	69	0.2	0.1

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Appendix K
Table 4. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Belle Isle. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
15	Chara (6) Myriophyllum (5) Vallisneria (5) Nitellopsis (4) Najas (3) Nitella (1) P. zosteriformis (1)	157	3	49	0.2	0.1
16	Chara (6) Vallisneria (6) Myriophyllum (4) Najas (4) Nitellopsis (4) Elodea (3) P. gramineus (1) Potamogeton spp. (1) P. zosteriformis (1)	265	4	37	0.3	0.2
17	Chara (6) Najas (3) Myriophyllum (2) Nitellopsis (2) Vallisneria (2) P. gramineus (1)	246	3	57	0.2	0.2
18	Chara (6) P. richardsonii (4) Vallisneria (4) Najas (3) Potamogeton spp. (3) P. zosteriformis (3) Nitellopsis (2) P. gramineus (2) Elodea (1) Nitella (1) P. crispus (1)	621	10	10	0.7	0.5
19	No plants	0	32	2	2.7	2.3
20	No plants	0	22	4	1.2	1.0
21	No plants	0	20	3	1.2	1.1
22	No plants	0	22	2	1.6	1.3
23	No plants	0	30	2	1.9	1.5
24	No plants	0	34	2	2.7	2.2

Appendix K
Table 5. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	No plants	0	33	4	1.0	0.8
2	Potamogeton spp. (6) Vallisneria (4)	826	6	22	0.3	0.1
3	No plants	0	33	4	1.0	0.7
4	Potamogeton spp. (4) Vallisneria (4) P. crispus (1)	920	6	19	0.2	0.1
5	P. richardsonii (2) Vallisneria (2)	51	19	11	1.4	1.1
6	Potamogeton spp. (2) Nitella (1) Vallisneria (1)	42	18	15	0.8	0.4
7	Potamogeton spp. (4) Vallisneria (3) Ranunculus (1)	917	6	19	0.3	0.1
8	Vallisneria (2) Potamogeton spp. (1) P. richardsonii (1)	2	18	11	1.7	1.2
9	No plants	0	31	7	1.2	0.7
10	Vallisneria (5) Potamogeton spp. (2) Chara (1) Nitella (1) Nitellopsis (1)	182	7	18	0.2	0.1
11	Vallisneria (4) Chara (3) Potamogeton spp. (3) Elodea (2)	581	6	20	0.4	0.2
12	P. richardsonii (2) Vallisneria (2) P. zosteriformis (1)	106	21	16	1.7	1.0
13	No plants	0	29	9	1.3	0.8
14	Vallisneria (4) Potamogeton spp. (2) Chara (1) Heteranthera (1) Nitella (1) Nitellopsis (1)	198	7	28	0.2	0.1
15	Chara (4) Vallisneria (4) Nitella (2) Potamogeton spp. (2) Myriophyllum (1) P. crispus (1)	163	6	28	0.4	0.2
16	Vallisneria (2) Chara (1) P. gramineus (1) Potamogeton spp. (1) P. zosteriformis (1)	92	18	15	1.2	0.6
17	No plants	0	28	[illegible]	1.0	0.6

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Appendix K
Table 5. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
18	Vallisneria (4) Chara (3) Myriophyllum (1) Nitella (1) Potamogeton spp. (1)	120	7	26	0.2	0.2
19	Chara (5) Vallisneria (4) Potamogeton spp. (2) Nitella (1) P. richardsonii (1)	169	6	34	0.2	0.1
20	P. richardsonii (1) Vallisneria (1)	19	22	13	1.1	0.7
21	No plants	0	28	6	1.2	0.8
22	Vallisneria (4) Potamogeton spp. (3) Chara (3) Heteranthera (1) P. richardsonii (1)	174	7	23	0.3	0.2
23	Chara (4) Vallisneria (4) Myriophyllum (3) Potamogeton spp. (3) Elodea (1) Heteranthera (1)	266	6	30	0.4	0.2
24	Najas (2) P. richardsonii (2) Vallisneria (2) P. zosteriformis (1)	101	23	8	1.2	0.9
25	No plants	0	27	6	1.1	0.6
26	Vallisneria (5) Chara (3) Potamogeton spp. (2) Heteranthera (1) Myriophyllum (1) Nitella (1)	232	9	16	0.3	0.2
27	Vallisneria (4) Chara (3) Myriophyllum (1) Potamogeton spp. (1) Najas (1) P. crispus (1)	215	6	20	0.2	0.1
28	No plants	0	32	6	1.9	1.4
29	No plants	0	23	5	1.2	0.4
30	Vallisneria (3) Chara (2) Potamogeton spp. (2) Nitella (1)	61	15	16	0.5	0.2
31	Vallisneria (4) Chara (2) Potamogeton spp. (2) Myriophyllum (1) Nitella (1)	227	6	19	0.3	0.1
32	No plants	0	33	7	2.0	1.4

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Appendix K
Table 5. Composition and abundance of submersed macrophytes and physical cata from measurements associated with the sampling grid at Point Hennepin. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
33	Chara (1) Potamogeton spp. (1) Vallisneria (1)	28	20	14	0.5	0.3
34	Vallisneria (5) P. crispus (2) Potamogeton spp. (2) Chara (1) Myriophyllum (1) P. gramineus (1) P. richardsonii (1)	295	8	8	0.5	0.2
35	No plants	0	32	4	2.0	1.5
36	Vallisneria (2) Potamogeton spp. (1)	38	21	10	0.7	0.4
37	Vallisneria (2) Potamogeton spp. (1) P. richardsonii (1)	347	22	7	0.9	0.6
38	No plants	0	32	7	2.2	1.6
39	No plants	0	23	4	1.1	0.6
40	No plants	0	28	7	1.8	1.5

Appendix K
Table 6. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stony Island. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
1	Vallisneria (4) Potamogeton spp. (2) Myriophyllum (1) P. zosteriformis (1)	203	9	6	1.3	0.7
2	Potamogeton spp. (5) Vallisneria (4) P. richardsonii (1)	620	8	9	1.0	0.6
3	Vallisneria (5) Potamogeton spp. (3) Myriophyllum (1) P. crispus (1) P. zosteriformis (1)	345	8	13	0.8	0.4
4	Vallisneria (5) Potamogeton spp. (3) Myriophyllum (2) Elodea (1)	314	10	9	0.5	0.2
5	Vallisneria (3) Potamogeton spp. (2) Elodea (1) Heteranthera (1) Myriophyllum (1) P. crispus (1) P. richardsonii (1)	333	10	9	0.6	0.3
6	P. zosteriformis (2) Potamogeton spp. (1) Vallisneria (1)	41	11	14	1.8	1.1
7	Potamogeton spp. (5) Vallisneria (4) Heteranthera (1)	869	7	9	1.0	0.4
8	Vallisneria (3) Heteranthera (1) P. crispus (1) Potamogeton spp. (1)	84	8	16	1.4	1.0
9	Heteranthera (2) Myriophyllum (2) P. crispus (1) Potamogeton spp. (1) Vallisneria (1)	38	8	29	0.4	0.2
10	P. crispus (1)	1	10	8	0.4	0.2
11	Vallisneria (3) Potamogeton spp. (1)	31	9	13	1.3	0.7
12	Elodea (4) Heteranthera (4) Myriophyllum (4) P. crispus (3) Vallisneria (3)	1667	4	32	0.2	0.1
13	Elodea (5) Heteranthera (3) P. crispus (3) Butomus (1) Vallisneria (1)	1866	3	31	0.1	0.0

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Appendix K
Table 6. Composition and abundance of submersed macrophytes and physical data from measurements associated with the sampling grid at Stony Island. Means are based on six sampling dates in June, July-August, and September, 1983 and 1984.

Grid intersection	Taxon composition (frequency)	Mean plant weight (g/30 ft. haul)	Mean depth (ft.)	Mean light transmission (%)	Mean current velocity (ft./s)	
					Surface	Bottom
14	No plants	0	10	8	2.6	1.6
15	Vallisneria (4) Butomus (1) Heteranthera (1) P. crispus (1) Potamogeton spp. (1)	146	6	17	1.5	0.8
16	Heteranthera (3) P. crispus (2) Myriophyllum (1)	2554	3	36	0.3	0.3
17	Elodea (4) Heteranthera (3) Myriophyllum (1) P. crispus (1) Ranunculus (1) Typha (1)	895	2	56	0.2	0.1
18	No plants	0	8	22	2.3	1.4
19	Vallisneria (5) Heteranthera (2) Myriophyllum (1)	50	3	48	1.2	0.6
20	Heteranthera (2) Vallisneria (2) P. crispus (1)	11	6	27	2.4	1.7

APPENDIX L

Ponar Grab Collections of Submersed Macrophytes

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	STAG	1	1	309026	497383	12.0	NO PLANTS PRESENT			3200	1900	2.1	1.0
			2	309026	497383	12.0	NO PLANTS PRESENT			3000	2400	2.2	1.2
			3	309027	497384	12.0	NO PLANTS PRESENT			3500	2200	2.1	1.2
			4	309027	497384	11.0	NO PLANTS PRESENT			3400	2100	2.3	1.3
		2	1	309041	497387	12.0	NO PLANTS PRESENT			3200	2300	2.4	1.0
			2	309041	497387	12.0	NO PLANTS PRESENT			3400	2300	2.5	1.5
			3	309041	497388	12.0	NO PLANTS PRESENT			3500	2400	2.2	1.0
			4	309042	497388	12.0	NO PLANTS PRESENT			3100	2200	1.9	1.3
		3	1	309031	497388	9.0	NO PLANTS PRESENT			3400	2100	2.1	1.3
			2	309031	497388	9.0	NO PLANTS PRESENT			4100	2900	2.4	1.5
			3	309030	497389	8.0	NO PLANTS PRESENT			3500	2200	2.4	1.4
			4	309030	497390	8.0	NO PLANTS PRESENT			3600	2200	2.0	1.1
		4	1	309038	497394	13.0	NO PLANTS PRESENT			3200	2100	1.8	0.9
			2	309041	497394	13.0	NO PLANTS PRESENT			3500	2200	2.0	1.2
			3	309042	497395	12.0	NO PLANTS PRESENT			3300	2200	2.0	1.3
			4	309042	497395	11.0	NO PLANTS PRESENT			3300	2300	2.1	1.5
		5	1	309037	497397	5.5	CHARA SPP.	6.7	3.2	3200	2100	1.6	1.4
							POT. NARROW	30.4	20.1				
							POT. GRAMINEUS	14.4	7.8				
			2	309035	497397	6.0	POT. NARROW	15.2	10.7	4000	2500	2.0	1.6
							POT. GRAMINEUS	7.4	4.6				
							POT. RICHARDSONI	10.6	7.1				
			3	309035	497396	6.0	POT. NARROW	38.4	26.4	3700	2700	2.1	0.9
			4	309036	497398	6.0	CHARA SPP.	7.4	2.9	3500	2900	2.1	1.3
							POT. NARROW	73.0	40.2				
							POT. GRAMINEUS	8.7	4.4				
		6	1	309041	497398	9.0	CHARA SPP.	32.4	7.5	3600	2500	2.4	1.0
							POT. NARROW	13.9	8.2				
			2	309042	497400	9.0	CHARA SPP.	6.1	3.8	3900	2000	2.4	1.5
							POT. NARROW	48.3	33.0				
			3	309043	497400	7.0	CHARA SPP.	18.9	8.1	3800	1000	2.2	0.6
							POT. NARROW	6.2	3.4				
			4	309043	497401	6.0	CHARA SPP.	4.4	1.8	3100	2600	1.9	1.6
							POT. NARROW	36.2	23.0				
			5	309042	497400	7.5	POT. GRAMINEUS	9.9	6.6	3700	1300	-	-
							POT. NARROW	68.5	53.9				
			6	309042	497401	6.5	CHARA SPP.	127.1	31.8	3700	1300	-	-
							POT. GRAMINEUS	5.0	3.9				

7	1	309039	497401	8.0	CHARA SPP.	26.3	15.1	3500	2700	0.8	0.4
					ELODEA CANADENS	22.8	15.3				
					POT. NARROW	5.2	4.1				
	2	309034	497398	4.5	POT. NARROW	8.5	5.8	2600	2500	1.4	1.3
					POT. GRAMINEUS	49.0	23.7				
	3	309035	497399	4.0	CHARA SPP.	21.5	5.6	3000	2900	1.1	0.5
					POT. NARROW	41.7	29.0				
	4	309035	497399	4.0	CHARA SPP.	1.5	0.6	3800	2600	1.4	0.9
					POT. RICHARDSONI	43.4	14.9				
8	1	309044	497403	8.5	CHARA SPP.	0.8	0.5	2100	1900	1.2	0.9
					ELODEA CANADENS	5.4	3.7				
					POT. NARROW	6.5	4.7				
					MYRIO. EXALBESC	8.1	6.7				
	2	309044	497405	9.0	ELODEA CANADENS	1.0	0.6	3000	2200	0.9	0.4
					MYRIO. SPICATUM	44.2	34.5				
					POT. RICHARDSONI	7.7	3.9				
	3	309044	497403	10.0	CHARA SPP.	11.2	6.6	2900	2200	1.4	0.7
					ELODEA CANADENS	63.0	39.0				
					POT. RICHARDSONI	6.0	4.9				
	4	309046	497404	7.0	POT. NARROW	159.0	124.4	3100	1400	-	-
	5	309045	497403	7.0	POT. NARROW	55.2	41.7	3100	1400	-	-
	6	309046	497403	7.0	POT. NARROW	111.1	84.6	3100	1400	-	-
	7	309045	497404	7.0	POT. NARROW	24.8	17.6	2500	1300	-	-
					NITELLA HYALINA	58.0	19.5				
					POT. GRAMINEUS	0.7	0.5				
	8	309046	497403	7.0	CHARA SPP.	0.2	0.0	2500	1300	-	-
					POT. NARROW	0.1	0.1				
					POT. GRAMINEUS	20.9	10.1				
	9	309046	497403	7.5	POT. NARROW	32.5	25.6	2500	1300	-	-
					POT. GRAMINEUS	22.2	15.2				
	10	309045	497406	9.0	CHARA SPP.	7.9	4.4	3000	2000	1.0	0.6
					ELODEA CANADENS	45.9	34.1				
					POT. RICHARDSONI	4.6	3.6				
9	1	309037	497403	11.0	CHARA SPP.	21.4	11.2	2500	1900	0.5	0.3
					ELODEA CANADENS	65.9	39.5				
					POT. NARROW	2.3	1.5				
	2	309043	497403	9.5	CHARA SPP.	14.0	7.2	4500	2300	1.7	1.0
					ELODEA CANADENS	6.6	4.3				
					MYRIO. SPICATUM	27.7	23.1				
					POT. RICHARDSONI	18.8	13.1				
	3	309044	497406	10.0	CHARA SPP.	14.7	7.5	3100	2000	0.9	0.4
					ELODEA CANADENS	36.6	19.3				
					MYRIO. SPICATUM	40.1	29.0				

	4	309035	497404	4.0	CHARA SPP.	93.4	34.7	2900	2700	0.1	0.1
10	1	309056	497412	12.0	CHARA SPP.	25.3	11.9	2500	2000	1.5	0.7
	2	309054	497412	9.0	CHARA SPP.	19.1	8.6	1900	1800	1.5	0.9
					ELODEA CANADENS	TRACE					
					POT. NARROW	0.9	0.6				
	3	309056	497412	11.0	CHARA SPP.	12.0	6.5	3600	2100	0.9	0.3
	4	309055	497411	8.0	CHARA SPP.	12.9	8.2	3000	2300	1.7	0.8
11	1	309099	497410	4.0	CHARA SPP.	14.8	6.7	3200	1000	1.2	0.7
	2	309050	497411	3.0	CHARA SPP.	4.6	2.9	2500	700	0.9	0.5
	3	309048	497411	10.0	CHARA SPP.	TRACE		3700	1800	0.4	0.1
					ELODEA CANADENS	2.3	1.6				
					POT. NARROW	39.4	28.3				
					MYRIO. SPICATUM	47.6	35.8				
					POT. CRISPUS	12.6	10.7				
	4	309052	497413	4.0	CHARA SPP.	34.4	14.0	3500	2900	1.2	0.9
	5	309048	497411	9.5	ELODEA CANADENS	125.9	83.5	3200	1300	-	-
					NITELLA HYALINA	1.8	0.9				
	6	309048	497411	6.5	ELODEA CANADENS	248.3	160.9	3200	1300	-	-
					POT. NARROW	23.1	17.9				
					POT. RICHARDSONI	3.4	2.8				
12	1	309039	497408	12.0	ELODEA CANADENS	83.3	55.7	2900	1300	0.6	0.3
					NITELLA HYALINA	6.9	3.5				
					POT. CRISPUS	43.1	37.8				
	2	309038	497408	9.0	CHARA SPP.	3.8	1.9	3000	1700	0.7	0.3
					ELODEA CANADENS	78.9	53.0				
					MYRIO. SPICATUM	2.7	2.2				
					POT. CRISPUS	20.3	14.2				
	3	309039	497407	10.0	ELODEA CANADENS	22.7	15.1	3300	1500	0.3	0.3
					MYRIO. SPICATUM	17.0	12.2				
	4	309039	497407	4.0	CHARA SPP.	37.7	13.6	3700	2900	0.4	0.3
	5	309039	497408	3.0	CHARA SPP.	56.3	17.9	3500	2400	-	-
	6	309039	497407	4.0	CHARA SPP.	174.1	58.7	3500	2400	-	-
13	1	309058	497414	12.0	ELODEA CANADENS	21.3	12.8	340	170	1.0	0.1
					MYRIO. SPICATUM	2.7	1.8				
					POT. CRISPUS	28.3	14.7				
	2	309058	497416	9.0	ELODEA CANADENS	36.3	15.7	570	250	1.0	0.1
					POT. NARROW	2.5	1.9				
					MYRIO. SPICATUM	3.7	2.6				
	3	309058	497414	12.0	CHARA SPP.	0.2	0.2	700	450	0.1	0.1
					ELODEA CANADENS	39.8	25.8				
					POT. NARROW	7.5	5.8				

					POT. CRISPUS	27.3	21.3				
					POT. ZOSTERIFORM	7.4	5.4				
	4	309060	497416	10.5	CHARA SPP.	0.8	0.5	2300	600	2.0	0.1
					ELODEA CANADENS	20.9	12.7				
					POT. NARROW	3.2	2.5				
					MYRIO. SPICATUM	1.1	0.6				
					POT. CRISPUS	110.3	76.1				
14	1	309069	497422	6.0	CHARA SPP.	7.1	3.1	250	160	2.5	0.7
	2	309070	497424	6.0	CHARA SPP.	20.9	7.9	180	130	2.4	0.2
	3	309072	497424	7.0	CHARA SPP.	11.6	7.7	210	140	2.3	0.3
	4	309073	497425	7.0	POT. NARROW	14.3	9.1	260	140	1.9	1.1
					POT. GRAMINEUS	25.4	11.6				
	5	309079	497425	6.0	CHARA SPP.	10.8	3.0	2600	1300	-	-
					POT. GRAMINEUS	6.3	5.1				
	6	309078	497425	6.0	POT. NARROW	19.7	14.3	2600	1300	-	-
15	1	309075	497429	3.0	CHARA SPP.	5.4	3.7	230	190	1.2	1.1
	2	309075	497431	3.5	CHARA SPP.	31.7	12.9	260	210	0.8	0.8
	3	309075	497430	3.5	CHARA SPP.	54.3	22.4	240	180	0.7	0.4
					POT. GRAMINEUS	1.4	1.1				
	4	309077	497433	2.5	CHARA SPP.	3.0	1.3	320	240	1.2	0.7
					POT. NARROW	27.0	19.6				
					POT. GRAMINEUS	8.3	3.1				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	1	1	309569	498251	10.0	CHARA SPP.	69.3	26.2	3000	1000	1.3	1.1
							POT. NARROW	17.3	9.4				
							POT. GRAMINEUS	73.3	39.2				
			2	309570	498252	9.5	POT. GRAMINEUS	57.2	30.0	3200	900	1.5	1.4
							POT. RICHARDSONI	2.6	2.1				
			3	309571	498252	8.5	CHARA SPP.	22.6	6.2	3400	1000	1.4	1.0
							POT. GRAMINEUS	33.6	21.0				
			4	309570	498251	9.5	POT. GRAMINEUS	72.1	46.5	3500	1700	1.5	1.3
		2	1	309572	498255	8.0	CHARA SPP.	8.5	2.0	4300	1900	1.5	1.1
							POT. GRAMINEUS	16.4	9.9				
			2	309570	498255	8.0	POT. NARROW	1.9	1.2	4400	2100	1.4	1.2
							POT. GRAMINEUS	5.0	3.3				
							POT. RICHARDSONI	4.0	2.8				
			3	309571	498256	8.0	CHARA SPP.	10.8	4.9	4000	1900	1.5	1.4
							POT. RICHARDSONI	5.8	2.0				
							POT. NARROW	147.3	91.4				
			4	309571	498257	9.0	POT. NARROW	101.1	41.2	4200	1700	1.5	1.3
							POT. RICHARDSONI	28.7	14.8				
			5	309572	498257	8.5	POT. NARROW	2.8	1.0	1000	580	-	-
							NITELLA HYALINA	0.8	0.5				
							POT. RICHARDSONI	65.4	48.7				
			6	309571	498257	9.0	POT. NARROW	12.0	9.4	1000	580	-	-
							NITELLA HYALINA	56.8	20.6				
							POT. GRAMINEUS	23.4	16.6				
		3	1	309578	498255	9.0	CHARA SPP.	4.3	1.9	3500	1900	2.1	1.5
							POT. RICHARDSONI	104.6	70.2				
			2	309579	498255	8.0	POT. GRAMINEUS	4.3	2.0	3200	1900	1.7	1.3
			3	309581	498256	8.0	CHARA SPP.	1.9	1.2	3600	2000	1.4	1.3
							POT. GRAMINEUS	16.4	9.7				
			4	309584	498259	7.0	CHARA SPP.	5.5	2.9	4200	2000	1.4	1.2
							POT. GRAMINEUS	17.2	11.0				
		4	1	309573	498259	6.0	CHARA SPP.	52.6	22.8	3000	1800	1.6	1.4
							POT. GRAMINEUS	9.0	6.1				
			2	309574	498260	5.5	CHARA SPP.	2.9	1.2	3200	2100	2.0	1.4
							POT. GRAMINEUS	16.0	7.7				
			3	309575	498259	6.0	CHARA SPP.	0.7	0.1	3500	2300	1.9	1.4

	4	309579	498261	5.0	CHARA SPP.	77.2	20.5	3500	2300	2.0	1.7
					POT. GRAMINEUS	3.6	2.2				
					POT. NARROW	41.0	31.7				
	5	309573	498260	4.5	CHARA SPP.	77.8	23.2	1300	1000	-	-
	6	309574	498261	7.0	CHARA SPP.	6.0	2.7	1300	680	-	-
					NITELLA HYALINA	1.2	0.4				
					POT. RICHARDSONI	76.2	62.9				
	7	309574	498261	7.5	CHARA SPP.	249.0	82.8	1300	680	-	-
					POT. GRAMINEUS	37.2	27.4				
	8	309575	498261	5.0	CHARA SPP.	1.1	0.3	1400	590	-	-
					POT. NARROW	39.2	31.7				
					POT. GRAMINEUS	28.3	22.5				
	9	309575	498261	5.0	CHARA SPP.	85.6	23.0	1400	590	-	-
					POT. NARROW	68.3	50.8				
5	1	309588	498260	7.0	CHARA SPP.	10.0	5.0	3300	1600	1.7	1.2
					POT. NARROW	4.0	2.7				
					POT. GRAMINEUS	10.5	7.1				
	2	309589	498261	8.0	POT. NARROW	9.5	6.2	3500	1500	1.6	1.2
					POT. GRAMINEUS	10.4	6.5				
					POT. RICHARDSONI	1.1	0.9				
	3	309590	498260	11.0	ELODEA CANADENS	11.0	8.7	3600	1300	1.9	0.6
					POT. RICHARDSONI	16.7	8.3				
					POT. NARROW	1.8	1.1				
	4	309592	498262	12.0	CHARA SPP.	1.2	0.6	3000	1300	1.8	1.2
					ELODEA CANADENS	1.5	0.8				
					POT. RICHARDSONI	13.7	6.3				
6	1	309586	498263	4.0	CHARA SPP.	16.0	8.6	2600	1900	1.8	1.6
	2	309586	498262	4.0	CHARA SPP.	14.9	8.5	3500	2000	1.5	1.4
	3	309587	498263	4.0	CHARA SPP.	1.0	0.6	3000	1900	1.4	1.0
	4	309587	498265	4.0	CHARA SPP.	12.4	6.3	3200	2200	1.5	1.1
7	1	309577	498265	4.0	CHARA SPP.	9.0	4.5	2300	1800	1.8	1.7
	2	309578	498266	3.5	CHARA SPP.	10.6	4.4	2400	1700	2.0	1.3
	3	309578	498267	4.0	CHARA SPP.	14.0	6.2	2700	1900	1.6	1.2
	4	309579	498270	4.0	NO PLANTS PRESENT			2700	2100	1.6	1.3
8	1	309600	498270	4.5	CHARA SPP.	25.9	11.7	2900	1700	1.8	1.3
					POT. GRAMINEUS	0.9	0.6				
	2	309601	498270	4.0	CHARA SPP.	37.2	22.2	2700	1800	1.6	1.2
	3	309602	498272	5.5	CHARA SPP.	11.9	8.3	2700	1500	1.6	1.1
					POT. NARROW	1.5	1.2				
					POT. GRAMINEUS	0.4	0.3				

	4	309603	498272	5.0	CHARA SPP.	18.8	11.6	2600	1500	1.7	1.2
					POT. NARROW	1.3	1.0				
					POT. GRAMINEUS	2.2	1.7				
9	1	309596	498271	3.0	CHARA SPP.	6.6	4.1	2400	2100	1.4	0.9
	2	309596	498274	2.5	CHARA SPP.	16.8	9.5	2600	2200	1.2	1.2
					POT. GRAMINEUS	0.9	0.7				
	3	309598	498274	2.5	CHARA SPP.	18.2	10.0	2400	2100	1.3	1.2
	4	309600	498274	3.0	CHARA SPP.	8.4	5.2	2300	1900	1.4	1.1
10	1	309621	498285	8.5	CHARA SPP.	1.7	0.8	3000	900	1.4	1.1
					POT. CRISPUS	0.2	0.1				
					POT. GRAMINEUS	0.6	0.5				
	2	309625	498287	11.5	CHARA SPP.	7.5	4.1	3000	900	1.3	1.1
	3	309624	498287	8.5	CHARA SPP.	23.5	10.8	2900	900	1.3	1.1
	4	309624	498287	8.0	CHARA SPP.	11.4	5.1	3100	900	1.5	1.3
					POT. GRAMINEUS	4.3	2.8				
11	1	309611	498279	2.5	CHARA SPP.	10.7	6.0	3000	2500	0.7	0.4
	2	309613	498279	3.0	CHARA SPP.	48.0	22.6	3000	2500	1.3	0.9
	3	309613	498280	3.5	CHARA SPP.	41.4	20.3	3200	2600	1.4	0.7
	4	309615	498282	4.0	CHARA SPP.	97.4	34.1	3100	2100	1.2	0.8

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	RUSSELL	1	1	309950	498655	8.0	POT. NARROW	18.5	14.2	2800	800	1.5	0.3
							POT. GRAMINEUS	8.4	5.1				
			2	309951	498655	7.0	POT. NARROW	83.8	65.9	3000	800	2.1	0.7
							POT. RICHARDSONI	14.3	11.0				
			3	309953	498657	7.5	CHARA SPP.	12.1	4.6	2500	800	1.5	0.7
							POT. NARROW	15.3	11.0				
							POT. GRAMINEUS	23.9	11.9				
			4	309954	498657	7.0	POT. NARROW	45.3	32.9	3000	900	1.9	1.8
							POT. RICHARDSONI	3.1	2.6				
		2	1	309941	498653	9.0	CHARA SPP.	79.6	39.0	3500	1100	2.4	1.1
			2	309943	498654	8.5	CHARA SPP.	65.0	29.8	3700	1100	2.4	1.5
							POT. NARROW	2.7	2.2				
			3	309944	498655	8.0	CHARA SPP.	121.6	62.6	3400	1100	2.2	1.0
			4	309946	498655	8.0	CHARA SPP.	71.1	33.6	3200	1200	2.1	1.2
							POT. NARROW	7.6	5.4				
							POT. GRAMINEUS	20.7	12.2				
		3	1	309964	498660	11.0	CHARA SPP.	7.7	4.8	3300	800	2.0	0.4
							ELODEA CANADENS	31.4	22.8				
			2	309964	498659	11.5	CHARA SPP.	6.3	3.3	3100	800	2.1	0.9
							ELODEA CANADENS	93.5	58.5				
			3	309966	498660	12.0	CHARA SPP.	8.1	4.6	3000	900	2.0	1.7
							ELODEA CANADENS	99.1	66.2				
			4	309967	498660	12.0	CHARA SPP.	24.3	13.2	2700	700	1.3	0.9
							ELODEA CANADENS	87.7	59.2				
		4	1	309958	498660	7.5	CHARA SPP.	2.2	1.3	3200	800	2.1	0.8
							ELODEA CANADENS	35.8	28.3				
			2	309958	498659	7.5	CHARA SPP.	76.1	43.8	3200	900	2.0	0.7
							ELODEA CANADENS	77.9	56.2				
							POT. RICHARDSONI	14.3	10.9				
			3	309960	498659	8.0	CHARA SPP.	21.0	11.3	3100	1100	1.8	1.3
							ELODEA CANADENS	33.0	18.4				
							POT. NARROW	2.0	1.5				
							MYRIO. SPICATUM	81.0	66.0				
			4	309961	498659	8.0	CHARA SPP.	8.6	4.5	3000	1000	2.1	0.5
							ELODEA CANADENS	126.9	80.9				
							POT. RICHARDSONI	5.4	2.8				

	5	309957	498658	8.5	CHARA SPP.	7.5	3.7	2900	1700	-	-
					ELODEA CANADENS	5.4	3.7				
					POT. NARROW	20.6	14.9				
					POT. RICHARDSONI	38.2	30.1				
	6	309959	498660	9.5	POT. NARROW	3.9	3.0	2900	1700	-	-
					POT. RICHARDSONI	36.3	28.3				
5	1	309951	498660	6.5	CHARA SPP.	35.9	18.2	2800	900	1.7	1.3
					POT. NARROW	19.7	16.1				
					POT. GRAMINEUS	4.5	3.3				
	2	309952	498660	6.0	CHARA SPP.	110.8	67.4	2800	900	1.0	0.1
					POT. NARROW	19.6	14.9				
	3	309953	498660	5.0	POT. NARROW	58.7	47.4	2800	1100	2.1	0.8
					POT. GRAMINEUS	7.5	5.6				
	4	309954	498660	5.0	CHARA SPP.	123.4	70.3	2900	1300	1.9	1.0
					POT. NARROW	25.9	20.1				
	5	309955	498659	7.0	CHARA SPP.	6.4	3.1	1500	1100	-	-
					ELODEA CANADENS	0.7	0.5				
					POT. NARROW	71.9	54.7				
					POT. RICHARDSONI	55.5	46.0				
	6	309955	498659	7.5	POT. RICHARDSONI	93.1	70.1	1500	1100	-	-
					POT. NARROW	9.9	7.5				
6	1	309946	498661	5.0	CHARA SPP.	33.6	20.8	2700	1000	1.5	0.5
	2	309947	498663	5.0	CHARA SPP.	46.0	27.3	1900	1100	1.8	0.3
	3	309947	498662	5.0	CHARA SPP.	29.8	17.8	2500	1100	1.6	1.5
	4	309949	498664	5.0	CHARA SPP.	31.8	16.7	2800	1200	1.7	0.1
7	1	309967	498665	5.0	CHARA SPP.	99.9	49.2	1700	900	1.4	0.5
					POT. NARROW	28.8	23.6				
					POT. GRAMINEUS	3.8	3.0				
	2	309968	498665	4.0	CHARA SPP.	117.2	61.6	1800	1000	1.3	1.0
					POT. NARROW	2.8	2.4				
	3	309970	498665	4.5	CHARA SPP.	109.4	63.3	1800	1100	1.2	0.3
	4	309968	498664	4.5	CHARA SPP.	39.4	18.3	2400	1400	1.3	0.4
					POT. NARROW	221.9	175.2				
	5	309971	498664	5.5	CHARA SPP.	47.0	19.9	3700	3300	-	-
					POT. NARROW	30.6	23.7				
					POT. GRAMINEUS	25.9	18.9				
	6	309969	498666	5.0	CHARA SPP.	69.0	22.6	3700	3300	-	-
					ELODEA CANADENS	TRACE					
					POT. NARROW	37.2	28.6				
					POT. GRAMINEUS	28.7	21.2				
8	1	309958	498665	4.0	CHARA SPP.	79.4	42.5	2400	900	1.7	1.1

	2	309960	498666	4.0	CHARA SPP.	102.3	47.0	2300	1000	2.0	1.5
					POT. GRAMINEUS	2.8	1.6				
	3	309961	498665	4.0	CHARA SPP.	106.5	55.6	1800	1000	1.9	1.7
	4	309963	498664	4.0	CHARA SPP.	41.9	20.5	1600	1000	2.0	1.7
					POT. NARROW	202.2	155.7				
	5	309963	498665	4.5	POT. NARROW	11.3	9.1	1100	950	-	-
					NITELLA HYALINA	78.0	29.7				
					POT. GRAMINEUS	25.0	18.3				
	6	309964	498664	5.0	CHARA SPP.	67.9	28.3	1100	950	-	-
					POT. GRAMINEUS	17.8	14.5				
					POT. NARROW	24.0	19.5				
9	1	309951	498664	4.0	CHARA SPP.	25.0	13.4	2200	1000	1.5	1.1
	2	309955	498665	3.5	CHARA SPP.	1.8	0.8	2000	1000	1.0	0.8
					POT. NARROW	12.0	8.5				
					POT. GRAMINEUS	7.4	5.4				
	3	309954	498665	4.0	CHARA SPP.	5.3	2.5	2300	900	0.7	0.2
					POT. NARROW	87.4	67.8				
					POT. GRAMINEUS	15.6	9.8				
	4	309956	498665	4.0	CHARA SPP.	0.8	0.7	2500	1300	0.8	0.5
					POT. NARROW	127.6	98.6				
					POT. GRAMINEUS	7.9	5.9				
	5	309951	498668	4.5	CHARA SPP.	87.6	30.7	3700	3500	-	-
	6	309951	498668	4.5	CHARA SPP.	73.5	27.1	3700	3500	-	-
					POT. GRAMINEUS	8.1	6.1				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	BELLE	1	1	312757	499947	7.5	POT. GRAMINEUS	35.9	27.1	500	20	0.4	0.1
							VALLISNERIA AMER	7.0	4.1				
			2	312758	499947	7.0	CHARA SPP.	0.5	0.1	500	20	0.4	0.1
							POT. GRAMINEUS	32.2	24.2				
							POT. RICHARDSONI	9.7	8.3				
							VALLISNERIA AMER	6.8	3.8				
			3	312758	499947	7.5	CHARA SPP.	1.1	0.1	500	20	0.4	0.1
							POT. GRAMINEUS	48.0	37.3				
							VALLISNERIA AMER	1.6	0.7				
		2	1	312761	499954	9.5	POT. NARROW	0.2	0.1	480	20	0.7	0.5
							NITELLA HYALINA	6.2	1.7				
							VALLISNERIA AMER	2.6	1.9				
			2	312761	499954	9.5	CHARA SPP.	4.4	1.6	480	20	0.7	0.5
							POT. NARROW	0.1	0.0				
							VALLISNERIA AMER	3.1	2.2				
			3	312761	499954	9.5	CHARA SPP.	4.1	1.1	480	20	0.7	0.5
							VALLISNERIA AMER	30.8	15.0				
		3	1	312778	499966	7.5	POT. NARROW	0.4	0.2	500	29	-	-
							VALLISNERIA AMER	2.9	1.9				
			2	312777	499965	9.0	CHARA SPP.	2.3	0.7	500	29	-	-
							POT. NARROW	1.2	0.8				
							VALLISNERIA AMER	6.7	4.7				
			3	312777	499968	10.0	CHARA SPP.	1.6	0.3	500	29	-	-
							POT. RICHARDSONI	1.1	0.7				
							POT. NARROW	3.9	2.2				
							VALLISNERIA AMER	5.8	3.6				
			4	312782	499965	9.5	CHARA SPP.	TRACE		3700	450	-	-
							ELODEA CANADENS	TRACE					
							POT. CRISPUS	8.6	6.8				
							POT. RICHARDSONI	7.6	5.5				
							POT. NARROW	11.7	8.8				
							VALLISNERIA AMER	4.5	3.4				
			5	312782	499966	9.5	POT. CRISPUS	5.4	3.7	3700	450	-	-
							POT. RICHARDSONI	22.4	13.7				
							VALLISNERIA AMER	1.8	1.2				
			6	312782	499967	9.5	ELODEA CANADENS	0.3	0.1	3700	450	-	-
							NITELLA HYALINA	0.1	0.0				
							POT. CRISPUS	27.2	20.7				
							POT. NARROW	0.3	0.2				
		4	1	312786	499972	9.5	CHARA SPP.	1.4	0.3	450	21	0.7	0.5

					POT. NARROW	0.9	0.5				
					MYRIO. SPICATUM	0.2	0.0				
					POT. NARROW	1.4	1.0				
					VALLISNERIA AMER	0.7	0.6				
	2	312786	499971	9.5	NITELLA HYALINA	58.4	-0.1	450	21	0.7	0.5
					POT. NARROW	3.0	1.9				
					VALLISNERIA AMER	5.8	4.0				
	3	312786	499972	9.5	CHARA SPP.	41.1	10.2	450	21	0.7	0.5
					POT. NARROW	0.8	0.5				
					VALLISNERIA AMER	2.8	2.0				
5	1	312802	499983	7.5	POT. NARROW	24.2	16.8	550	25	0.8	0.7
					NITELLA HYALINA	40.0	8.5				
	2	312807	499983	8.0	POT. CRISPUS	0.7	0.5	550	25	0.8	0.7
					POT. NARROW	0.5	0.2				
					VALLISNERIA AMER	8.3	4.1				
	3	312802	499982	11.0	NITELLA HYALINA	7.1	2.1	550	25	0.8	0.7
					POT. NARROW	1.0	0.7				
					VALLISNERIA AMER	6.4	3.4				
6	1	312809	499987	9.5	NITELLA HYALINA	1.6	0.3	380	30	1.2	0.9
					POT. GRAMINEUS	8.6	3.9				
					VALLISNERIA AMER	1.3	0.0				
	2	312809	499987	9.5	CHARA SPP.	0.3	0.0	330	33	1.2	0.9
					POT. GRAMINEUS	7.4	6.9				
					POT. NARROW	0.2	0.1				
					VALLISNERIA AMER	1.0	0.5				
	3	312809	499985	9.5	CHARA SPP.	5.7	1.2	330	33	1.2	0.9
					POT. NARROW	1.0	0.5				
					POT. RICHARDSONI	5.9	4.1				
					VALLISNERIA AMER	1.9	1.3				
7	1	312853	499997	3.5	CHARA SPP.	186.7	83.3	400	170	0.1	0.0
	2	312853	499994	3.0	CHARA SPP.	62.6	14.0	400	170	0.1	0.0
					VALLISNERIA AMER	0.6	0.3				
	3	312853	499995	3.5	NITELLA HYALINA	33.1	6.7	400	170	0.1	0.0
8	1	312845	499996	2.0	MYRIO. SPICATUM	61.1	36.1	170	56	0.3	0.2
					NITELLA HYALINA	48.8	17.5				
					VALLISNERIA AMER	2.0	1.6				
	2	312845	499996	2.0	MYRIO. SPICATUM	27.2	17.1	170	56	0.3	0.2
					NITELLA HYALINA	53.7	21.5				
					POT. NARROW	TRACE					
					VALLISNERIA AMER	TRACE					
	3	312845	499996	2.0	MYRIO. SPICATUM	47.9	27.5	170	56	0.3	0.2
					NITELLA HYALINA	19.5	6.7				
					VALLISNERIA AMER	0.7	0.4				
9	1	312837	499995	6.5	ELODEA CANADENS	TRACE		100	30	0.3	0.3
					NITELLA HYALINA	116.8	33.1				

	2	312836	499994	6.5	CHARA SPP.	170.7	55.0	100	30	0.3	0.3
	3	312838	499995	6.5	CHARA SPP.	166.1	66.5	100	30	0.3	0.3
					VALLISNERIA AMER	0.3	0.1				
	4	312835	499998	9.5	MYRIO. SPICATUM	TRACE		220	38	0.8	0.7
					NITELLA HYALINA	28.7	7.7				
					POT. RICHARDSONI	11.2	9.3				
					POT. NARROW	8.8	6.9				
					VALLISNERIA AMER	3.6	2.6				
	5	312836	499996	10.0	NITELLA HYALINA	10.1	2.6	220	38	0.8	0.7
					POT. RICHARDSONI	22.9	17.2				
					POT. NARROW	5.1	2.5				
	6	312836	499995	10.0	ELODEA CANADENS	0.9	0.5	220	38	0.8	0.7
					NITELLA HYALINA	24.5	5.7				
					POT. NARROW	5.8	3.2				
					VALLISNERIA AMER	4.4	3.3				
	7	312835	499995	10.0	NITELLA HYALINA	27.0	7.1	220	38	0.8	0.7
					POT. NARROW	19.3	12.1				
					VALLISNERIA AMER	1.9	1.4				
	8	312835	499995	10.0	NITELLA HYALINA	31.3	8.7	220	38	0.8	0.7
					POT. RICHARDSONI	1.6	1.0				
					POT. NARROW	7.9	5.4				
					VALLISNERIA AMER	8.6	6.2				
	9	312839	499997	10.0	NITELLA HYALINA	82.3	43.2	220	38	0.8	0.7
					POT. RICHARDSONI	12.8	10.7				
					POT. NARROW	5.0	3.5				
					VALLISNERIA AMER	0.1	0.1				
10	1	312827	499992	6.5	NITELLA HYALINA	49.8	4.0	560	100	0.9	0.8
					POT. NARROW	0.5	0.3				
					VALLISNERIA AMER	1.2	0.8				
	2	312827	499992	6.5	CHARA SPP.	25.2	5.9	560	100	0.9	0.8
					POT. GRAMINEUS	3.1	2.3				
					POT. NARROW	TRACE					
					VALLISNERIA AMER	1.5	1.0				
	3	312827	499992	6.5	NITELLA HYALINA	69.8	17.7	560	100	0.9	0.8
					POT. CRISPUS	0.5	0.4				
					POT. NARROW	3.3	2.4				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	HENNEPIN	1	1	314069	500673	6.0	CHARA SPP.	TRACE		3400	1100	0.4	0.1
							POT. NARROW	32.6	24.3				
							VALLISNERIA AMER	3.6	2.6				
			2	314070	500673	5.0	POT. NARROW	10.8	7.5	3400	1300	0.4	0.1
							VALLISNERIA AMER	5.4	3.5				
			3	314067	500674	6.0	POT. NARROW	36.7	23.8	3500	1500	0.4	0.2
			4	314069	500672	6.0	POT. NARROW	12.2	9.1	3800	1800	0.3	0.2
		2	1	314064	500680	8.0	POT. RICHARDSONI	1.8	1.3	3500	620	0.5	0.0
							POT. NARROW	4.3	3.0				
							VALLISNERIA AMER	5.1	2.3				
			2	314065	500680	8.0	POT. NARROW	25.8	17.1	3500	1200	0.3	0.2
			3	314068	500683	7.0	POT. NARROW	57.6	39.5	3500	820	0.4	0.2
			4	314068	500682	7.0	POT. NARROW	22.9	15.3	3600	300	0.7	0.2
							VALLISNERIA AMER	4.2	3.0				
		3	1	314078	500687	6.0	CHARA SPP.	4.2	1.2	3800	1500	0.1	0.1
							POT. NARROW	35.4	21.5				
							VALLISNERIA AMER	0.7	0.4				
			2	314078	500688	6.0	POT. NARROW	81.5	44.1	3500	280	0.2	0.1
							VALLISNERIA AMER	3.0	1.9				
			3	314080	500685	7.0	CHARA SPP.	TRACE		3400	430	0.3	0.1
							POT. NARROW	54.7	-0.1				
							VALLISNERIA AMER	0.6	0.4				
			4	314077	500685	7.0	CHARA SPP.	TRACE		4000	320	0.1	0.1
							POT. NARROW	23.2	13.5				
							VALLISNERIA AMER	6.9	5.5				
		4	1	314088	500692	7.0	CHARA SPP.	3.0	0.8	1000	430	0.0	0.0
							POT. NARROW	16.7	10.9				
			2	314090	500695	6.0	CHARA SPP.	1.1	0.3	1800	630	0.1	0.1
							POT. NARROW	1.7	1.0				
							VALLISNERIA AMER	3.6	2.3				
			3	314089	500691	6.0	CHARA SPP.	40.3	9.4	4400	360	0.2	0.2
							POT. NARROW	25.6	15.3				
							VALLISNERIA AMER	3.9	2.8				
			4	314089	500694	6.0	POT. NARROW	86.6	55.7	3500	440	0.1	0.1
							VALLISNERIA AMER	4.0	3.0				
		5	1	314076	500695	6.0	POT. NARROW	0.6	0.4	3700	540	0.4	0.2

	2	314073	500693	6.0	NITELLA HYALINA	1.2	0.3	3600	420	0.2	0.2
					POT. NARROW	22.5	14.9				
					VALLISNERIA AMER	2.2	1.5				
	3	314073	500693	6.0	NITELLA HYALINA	15.1	5.3	3900	720	0.1	0.1
					POT. NARROW	1.8	1.3				
					VALLISNERIA AMER	0.4	0.3				
	4	314071	500692	7.0	CHARA SPP.	3.5	1.3	3600	1500	0.7	0.2
					POT. NARROW	5.8	3.6				
					VALLISNERIA AMER	3.8	2.8				
6	1	314082	500700	6.0	CHARA SPP.	108.4	26.3	3400	1400	0.0	0.0
					VALLISNERIA AMER	0.4	0.3				
	2	314083	500702	5.5	NITELLA HYALINA	96.9	23.1	3800	1300	0.5	0.2
					POT. NARROW	4.1	2.6				
					VALLISNERIA AMER	3.5	2.4				
	3	314084	500702	5.5	NITELLA HYALINA	43.2	12.5	3800	1400	0.2	0.2
					VALLISNERIA AMER	4.5	3.2				
	4	314090	500700	6.5	NITELLA HYALINA	20.0	4.6	3200	610	0.0	0.0
					POT. NARROW	45.9	23.5				
	5	314091	500701	6.0	NITELLA HYALINA	10.5	2.0	3100	570	0.3	0.2
					POT. NARROW	24.7	17.1				
	6	314091	500700	6.0	NITELLA HYALINA	69.5	16.6	3400	520	0.6	0.2
					POT. NARROW	14.5	10.2				
7	1	314094	500706	6.0	NITELLA HYALINA	88.2	27.7	2400	920	0.1	0.1
					POT. NARROW	8.3	5.5				
	2	314095	500706	6.0	CHARA SPP.	120.2	33.5	2400	860	0.2	0.1
	3	314096	500707	6.0	NITELLA HYALINA	74.5	17.1	2900	670	0.5	0.3
					VALLISNERIA AMER	TRACE					
8	1	314077	500704	5.0	POT. NARROW	36.7	27.2	2900	1200	0.3	0.2
					VALLISNERIA AMER	3.8	2.8				
	2	314078	500704	5.0	NITELLA HYALINA	3.3	0.5	2800	1300	0.3	0.1
					POT. NARROW	27.8	19.6				
					VALLISNERIA AMER	4.5	3.4				
	3	314078	500704	5.0	POT. NARROW	24.4	15.8	3200	760	0.0	0.0
					VALLISNERIA AMER	11.9	7.6				
	4	314079	500704	6.0	POT. CRISPUS	44.8	31.4	3700	940	0.1	0.1
					POT. NARROW	31.9	21.1				
	5	314082	500705	5.0	MYRIO. SPICATUM	164.1	125.6	2800	380	0.5	0.3
	6	314080	500707	5.0	MYRIO. SPICATUM	79.6	59.1	3100	640	0.1	0.0
	7	314081	500707	5.0	MYRIO. SPICATUM	128.8	96.5	3500	2300	0.3	0.2
					VALLISNERIA AMER	1.1	0.7				

9	1	314087	500710	5.5	POT. NARPOW	41.5	27.4	3500	140	0.1	0.1
	2	314088	500711	5.5	POT. NARROW	37.5	23.2	3800	170	0.0	0.0
	3	314086	500709	6.0	POT. NARROW	33.1	22.1	4300	430	0.1	0.0
	4	314086	500713	6.0	POT. CRISPUS	126.2	99.5	4200	570	0.0	0.0
					POT. NARROW	11.6	8.6				
	5	314088	500715	6.0	MYRIO. SPICATUM	TRACE		3800	190	0.3	0.3
					POT. CRISPUS	130.0	103.4				
					POT. NARROW	10.8	8.2				
	6	314089	500714	6.0	POT. CRISPUS	35.3	27.2	4700	490	0.0	0.0
					POT. NARROW	28.4	19.9				
10	1	314100	500718	6.0	CHARA SPP.	6.5	2.9	4100	160	0.2	0.0
					POT. NARROW	54.1	40.2				
	2	314100	500718	6.0	POT. NARROW	26.5	18.2	4100	510	0.0	0.0
	3	314101	500719	6.0	POT. NARROW	41.5	29.7	3500	1000	0.0	0.0
					VALLISNERIA AMER	TRACE					
11	1	314088	500715	6.0	POT. NARROW	77.5	53.6	4200	600	0.0	0.0
					VALLISNERIA AMER	2.0	1.5				
	2	314088	500715	6.0	POT. NARROW	40.0	25.8	3600	340	0.0	0.0
					VALLISNERIA AMER	9.2	6.5				
	3	314090	500718	6.0	POT. NARROW	36.1	23.5	4100	150	0.0	0.0
					VALLISNERIA AMER	6.2	4.2				
12	1	314099	500728	7.0	CHARA SPP.	2.8	0.8	3800	1100	0.0	0.0
					POT. NARROW	25.0	17.0				
	2	314099	500728	7.0	CHARA SPP.	10.9	3.7	4100	1000	0.0	0.0
					POT. NARROW	35.5	24.1				
					VALLISNERIA AMER	3.2	2.3				
	3	314099	500728	6.5	CHARA SPP.	1.6	0.6	4700	1400	0.0	0.0
					POT. NARROW	40.1	25.1				
					VALLISNERIA AMER	1.1	0.8				
13	1	314099	500732	12.0	NO PLANTS PRESENT			3800	360	1.4	0.8
	2	314100	500733	12.0	NO PLANTS PRESENT			4100	340	0.5	0.4
	3	314102	500735	10.0	NO PLANTS PRESENT			4200	410	0.6	0.4
14	1	314109	500739	9.0	POT. NARROW	1.3	0.8	4100	430	0.3	0.0
	2	314109	500738	9.0	POT. NARROW	2.4	1.4	4500	860	0.0	0.1
					VALLISNERIA AMER	0.4	0.3				
	3	314110	500740	8.5	POT. NARROW	0.8	0.5	4100	910	0.0	0.0

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	1	1	314225	500979	7.5	POT. NARROW	12.2	4.9	4400	850	0.9	0.7
							VALLISNERIA AMER	12.2	8.9				
			2	314225	500980	8.0	POT. NARROW	5.0	2.3	4400	850	0.9	0.7
							VALLISNERIA AMER	8.2	2.4				
			3	314225	500980	7.0	POT. NARROW	4.1	2.6	4400	850	0.9	0.7
							VALLISNERIA AMER	1.7	1.1				
		2	1	314215	500977	7.0	POT. NARROW	7.9	4.4	4000	1200	0.7	0.7
							VALLISNERIA AMER	4.5	3.4				
			2	314215	500977	7.0	POT. NARROW	3.7	1.8	4000	1200	0.7	0.7
							VALLISNERIA AMER	0.2	0.1				
			3	314216	500977	7.0	CHARA SPP.	4.0	0.8	4000	1200	0.7	0.7
							POT. NARROW	9.0	6.1				
							VALLISNERIA AMER	6.2	4.7				
		3	1	314201	500978	6.5	ELODEA CANADENS	1.4	0.7	3600	920	0.1	0.0
							MYRIO. SPICATUM	25.0	16.5				
							POT. NARROW	3.0	2.0				
							VALLISNERIA AMER	17.1	11.5				
			2	314200	500976	8.0	ELODEA CANADENS	0.3	0.2	3500	250	0.5	0.2
							MYRIO. SPICATUM	TRACE					
							POT. CRISPUS	82.6	47.4				
			3	314200	500975	7.5	POT. CRISPUS	46.0	27.7	3600	200	0.3	0.2
			4	314206	500978	6.5	POT. CRISPUS	18.6	9.4	3500	1000	0.4	0.2
							VALLISNERIA AMER	15.4	10.5				
			5	314202	500978	6.5	MYRIO. SPICATUM	3.1	2.2	4000	650	0.0	0.0
							POT. GRAMINEUS	34.0	25.6				
							POT. NARROW	1.7	0.8				
			6	314201	500977	6.5	POT. GRAMINEUS	25.2	19.5	4000	1200	0.1	0.1
							RANUN. LONGIROST	1.7	1.5				
			7	314201	500977	6.5	MYRIO. SPICATUM	11.2	7.4	4000	1200	0.1	0.1
							POT. NARROW	3.2	2.1				
							VALLISNERIA AMER	1.2	0.7				
			8	314201	500977	6.0	POT. RICHARDSONI	49.6	35.9	4000	1200	0.1	0.1
							POT. NARROW	1.0	0.8				
							VALLISNERIA AMER	1.6	0.9				
			9	314202	500978	6.0	MYRIO. SPICATUM	27.8	19.8	4000	1200	0.1	0.1
							POT. NARROW	0.7	0.5				
							VALLISNERIA AMER	2.8	1.7				

4	1	314194	500974	8.0	POT. RICHARDSONI	46.3	32.1	4200	420	0.4	0.2
					POT. NARROW	4.7	0.2				
	2	314194	500975	8.0	ELODEA CANADENS	0.2	0.0	4200	420	0.4	0.2
					MYRIO. SPICATUM	0.6	0.3				
					POT. RICHARDSONI	34.7	17.6				
					POT. NARROW	0.2	0.1				
					VALLISNERIA AMER	4.4	3.1				
	3	314195	500975	8.0	POT. RICHARDSONI	45.6	34.6	4200	420	0.4	0.2
5	1	314232	500986	9.0	POT. NARROW	1.4	0.3	3900	760	0.4	0.4
					VALLISNERIA AMER	31.3	19.8				
	2	314233	500986	8.0	HETERANTHERA DUB	0.7	0.3	3900	760	0.4	0.4
					VALLISNERIA AMER	17.4	12.5				
	3	314232	500986	8.0	POT. NARROW	0.8	0.5	3900	760	0.4	0.4
					VALLISNERIA AMER	19.3	14.0				
	4	314233	500991	4.0	POT. CRISPUS	186.2	133.4	3900	1100	0.3	0.2
					VALLISNERIA AMER	4.1	3.4				
	5	314233	500991	4.0	POT. CRISPUS	378.9	279.8	3900	1100	0.3	0.2
	6	314233	500991	4.0	MYRIO. SPICATUM	7.3	5.1	3900	1100	0.3	0.2
					POT. CRISPUS	26.1	20.6				
6	1	314225	500986	4.0	ELODEA CANADENS	40.5	-0.1	3000	18	0.1	0.1
					HETERANTHERA DUB	3.0	1.4				
					POT. CRISPUS	223.7	157.9				
					RANUN. LONGIROST	2.1	1.7				
	2	314225	500987	3.5	ELODEA CANADENS	166.7	112.0	3000	18	0.1	0.1
					RANUN. LONGIROST	402.7	279.1				
	3	314224	500986	4.0	ELODEA CANADENS	141.9	108.0	3000	18	0.1	0.1
					HETERANTHERA DUB	16.0	12.2				
					MYRIO. SPICATUM	6.0	4.8				
					POT. CRISPUS	143.9	111.5				
					RANUN. LONGIROST	3.1	2.5				
7	1	314242	500998	3.5	POT. CRISPUS	256.2	211.3	640	25	0.1	0.0
					POT. NARROW	1.7	1.3				
	2	314242	500998	4.0	POT. CRISPUS	70.1	57.4	640	25	0.1	0.0
	3	314242	500997	5.0	HETERANTHERA DUB	9.0	5.4	640	25	0.1	0.0
					POT. CRISPUS	112.4	90.1				
8	1	314232	500994	3.5	POT. CRISPUS	394.2	232.8	2500	11	0.1	0.0
	2	314232	500995	4.0	POT. CRISPUS	282.6	213.6	2500	11	0.1	0.0
	3	314232	500995	4.0	ELODEA CANADENS	0.6	0.5	2500	11	0.1	0.0
					HETERANTHERA DUB	0.8	0.6				
					POT. CRISPUS	174.2	127.5				
9	1	314257	501003	7.0	NO PLANTS PRESENT			3500	1000	1.6	1.6
	2	314262	501002	10.0	NO PLANTS PRESENT			2900	630	2.4	2.4

	3	314262	501002	10.0	NO PLANTS PRESENT			2900	630	2.4	2.4
10	1	314254	501003	5.0	HETERANTHERA DUB	61.3	44.9	4100	1700	1.4	1.2
					POT. CRISPUS	24.4	13.9				
	2	314255	501005	6.5	POT. CRISPUS	3.9	2.8	4100	1800	1.5	1.2
					POT. NARROW	3.7	2.6				
	3	314254	501003	6.5	POT. CRISPUS	9.4	7.8	3900	1700	1.4	1.0
11	1	314267	501013	6.5	NO PLANTS PRESENT			3000	1100	2.6	1.9
	2	314267	501013	6.5	NO PLANTS PRESENT			3000	1100	2.6	1.9
	3	314267	501013	6.0	NO PLANTS PRESENT			3000	1100	2.6	1.9

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	STAG	1	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
			2	-	-	-	NO PLANTS PRESENT			-	-	-	-
			3	-	-	-	NO PLANTS PRESENT			-	-	-	-
		2	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
			2	-	-	-	NO PLANTS PRESENT			-	-	-	-
			3	-	-	-	NO PLANTS PRESENT			-	-	-	-
		3	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
			2	-	-	-	NO PLANTS PRESENT			-	-	-	-
			3	-	-	-	NO PLANTS PRESENT			-	-	-	-
		4	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
			2	-	-	-	NO PLANTS PRESENT			-	-	-	-
			3	-	-	-	NO PLANTS PRESENT			-	-	-	-
		5	1	309035	497396	6.0	POT. GRAMINEUS	32.9	25.1	500	350	1.0	0.6
			2	309035	497396	6.0	CHARA SPP.	12.0	4.1	500	350	1.0	0.6
							POT. GRAMINEUS	56.2	43.4				
							POT. NARROW	14.2	11.3				
			3	309035	497396	5.5	CHARA SPP.	0.4	0.1	500	350	1.0	0.6
							POT. GRAMINEUS	33.7	27.1				
							POT. NARROW	103.7	86.1				
			4	309035	497396	4.0	CHARA SPP.	7.1	2.5	600	500	1.7	1.3
							POT. GRAMINEUS	2.6	0.8				
							POT. NARROW	5.0	4.2				
			5	309035	497396	4.0	CHARA SPP.	50.2	19.9	600	500	1.7	1.3
							POT. GRAMINEUS	13.1	9.7				
							POT. NARROW	4.4	3.4				
			6	309035	497396	4.0	CHARA SPP.	42.3	16.3	600	500	1.7	1.3
							POT. NARROW	10.1	8.8				
		6	1	309040	497402	3.0	CHARA SPP.	5.4	2.2	1000	120	-	-
							ELODEA CANADENS	14.1	10.6				
							POT. RICHARDSONI	31.4	25.7				
							POT. NARROW	22.2	17.3				
			2	309040	497402	7.0	CHARA SPP.	1.8	0.6	1000	120	-	-
							ELODEA CANADENS	0.6	0.4				
							MYRIO. SPICATUM	12.6	10.3				
							POT. RICHARDSONI	51.1	42.1				
							POT. NARROW	2.6	2.0				
			3	309040	497402	9.0	ELODEA CANADENS	93.3	68.0	1000	120	-	-
							POT. RICHARDSONI	12.0	9.7				
			4	309045	497403	6.5	CHARA SPP.	394.8	121.3	1300	270	1.6	0.6

					POT. GRAMINEUS	6.5	5.0				
					POT. NARROW	20.7	16.3				
	5	309045	497403	6.5	CHARA SPP.	173.1	59.7	1300	270	1.6	0.6
					POT. GRAMINEUS	34.4	25.4				
					POT. NARROW	6.5	5.3				
	6	309045	497403	6.5	CHARA SPP.	TRACE		1300	270	1.6	0.6
					POT. NARROW	28.9	22.7				
7	1	309037	497398	6.0	CHARA SPP.	131.0	42.0	420	280	-	-
					POT. GRAMINEUS	67.3	46.0				
	2	309037	497398	6.0	CHARA SPP.	321.3	99.2	420	280	-	-
					POT. GRAMINEUS	11.5	8.2				
					POT. NARROW	10.7	8.8				
	3	309037	497398	6.0	CHARA SPP.	279.8	97.1	420	280	-	-
					POT. GRAMINEUS	32.3	25.0				
					POT. NARROW	5.1	4.0				
	4	309037	497398	6.0	CHARA SPP.	0.8	0.3	670	320	-	-
					ELODEA CANADENS	0.9	0.6				
					POT. GRAMINEUS	33.4	26.4				
					POT. RICHARDSONI	2.5	2.0				
					POT. NARROW	62.9	50.2				
	5	309037	497398	7.0	ELODEA CANADENS	4.6	3.5	670	320	-	-
					NITELLA HYALINA	19.7	7.2				
					POT. GRAMINEUS	96.5	73.4				
					POT. NARROW	110.3	89.9				
	6	309037	497398	6.5	CHARA SPP.	2.8	1.0	670	320	-	-
					POT. GRAMINEUS	48.3	35.6				
					POT. NARROW	78.5	63.9				
8	1	309042	497404	9.0	CHARA SPP.	0.7	0.3	1000	800	0.6	0.3
					ELODEA CANADENS	63.8	47.3				
					MYRIO. SPICATUM	7.1	5.9				
					POT. RICHARDSONI	45.2	35.9				
	2	309042	497404	9.0	CHARA SPP.	1.0	0.5	1000	800	0.6	0.3
					ELODEA CANADENS	21.2	15.9				
					MYRIO. SPICATUM	83.3	66.1				
					POT. RICHARDSONI	71.8	58.9				
	3	309042	497404	9.0	ELODEA CANADENS	56.5	40.2	1000	800	0.6	0.3
					MYRIO. SPICATUM	3.3	2.6				
					POT. RICHARDSONI	47.2	38.5				
9	1	309038	497407	11.0	ELODEA CANADENS	18.5	13.4	360	150	0.0	0.0
					POT. CRISPUS	45.1	35.3				
					POT. RICHARDSONI	39.8	30.9				
					VALLISNERIA AMER	0.9	0.6				
	2	309038	497407	11.0	ELODEA CANADENS	28.6	21.8	360	150	0.0	0.0
					POT. CRISPUS	78.7	72.4				
					POT. ZOSTERIFORM	1.8	1.3				
	3	309038	497407	11.1	ELODEA CANADENS	12.6	9.7	360	150	0.0	0.0

					MYRIO. SPICATUM	2.4	1.7				
					NITELLA HYALINA	50.1	27.3				
					POT. CRISPUS	31.8	26.4				
	4	309039	497408	6.0	ELODEA CANADENS	9.8	5.3	440	150	0.4	0.0
					POT. CRISPUS	56.0	42.5				
					POT. RICHARDSONI	8.1	5.5				
	5	309039	497408	6.5	ELODEA CANADENS	9.4	5.3	440	150	0.4	0.0
					MYRIO. SPICATUM	14.4	11.0				
					POT. CRISPUS	43.8	38.6				
					POT. RICHARDSONI	47.9	33.5				
	6	309039	497408	6.0	ELODEA CANADENS	0.7	0.5	440	150	0.4	0.0
					POT. RICHARDSONI	11.9	9.8				
10	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
	2	-	-	-	NO PLANTS PRESENT			-	-	-	-
	3	-	-	-	NO PLANTS PRESENT			-	-	-	-
11	1	309049	497413	7.0	ELODEA CANADENS	6.7	5.1	1600	190	0.5	0.3
					MYRIO. SPICATUM	2.6	2.1				
					POT. RICHARDSONI	124.4	105.2				
					POT. NARROW	6.5	5.4				
	2	309049	497413	7.0	ELODEA CANADENS	13.3	9.4	1600	190	0.5	0.3
					MYRIO. SPICATUM	6.8	5.6				
					POT. RICHARDSONI	29.4	23.4				
					POT. NARROW	78.4	60.0				
	3	309049	497413	7.0	ELODEA CANADENS	7.3	5.5	1600	190	0.5	0.3
					POT. NARROW	118.8	94.2				
	4	309048	497412	7.0	ELODEA CANADENS	2.8	2.0	1500	180	0.5	0.3
					MYRIO. SPICATUM	59.9	47.3				
					POT. NARROW	131.7	105.3				
	5	309048	497412	7.0	ELODEA CANADENS	10.7	8.1	1500	180	0.5	0.3
					MYRIO. SPICATUM	51.0	40.7				
					POT. NARROW	39.8	31.1				
	6	309048	497412	7.0	ELODEA CANADENS	53.7	40.2	1500	180	0.5	0.3
					MYRIO. SPICATUM	1.4	1.0				
					POT. NARROW	65.6	52.6				
12	1	309046	497412	4.0	CHARA SPP.	82.4	21.2	770	560	0.1	0.0
					POT. CRISPUS	0.4	0.2				
					POT. NARROW	TRACE					
	2	309046	497412	4.0	CHARA SPP.	182.8	44.0	770	560	0.1	0.0
					POT. GRAMINEUS	0.2	0.2				
	3	309046	497412	4.0	CHARA SPP.	82.4	33.1	770	560	0.1	0.0
	4	309046	497412	8.0	ELODEA CANADENS	71.3	43.3	450	220	0.1	0.0
					MYRIO. SPICATUM	0.2	0.2				
					POT. RICHARDSONI	10.0	6.9				
					POT. NARROW	41.2	33.5				
	5	309046	497412	10.1	ELODEA CANADENS	40.7	32.3	450	220	0.1	0.0

					POT. RICHARDSONI	7.7	6.1				
					POT. NARROW	110.1	89.0				
	6	309046	497412	9.5	ELODEA CANADENS	19.2	15.0	450	220	0.1	0.0
					POT. RICHARDSONI	5.3	4.0				
					POT. NARROW	11.1	8.1				
	7	309045	497412	4.0	ELODEA CANADENS	27.1	20.8	560	150	0.6	0.4
					POT. CRISPUS	12.9	11.3				
					POT. RICHARDSONI	30.4	24.1				
					POT. ZOSTERIFORM	3.3	2.9				
	8	309045	497412	5.0	CHARA SPP.	TRACE		560	150	0.6	0.4
					ELODEA CANADENS	28.0	15.1				
					POT. CRISPUS	28.6	24.6				
					POT. ZOSTERIFORM	19.4	15.4				
	9	309045	497412	9.0	ELODEA CANADENS	33.2	22.0	560	150	0.6	0.4
					POT. CRISPUS	3.5	2.9				
					POT. RICHARDSONI	4.4	3.5				
					POT. ZOSTERIFORM	12.2	8.3				
13	1	309067	497421	6.0	CHARA SPP.	265.2	60.7	600	510	1.5	1.5
	2	309067	497421	6.0	CHARA SPP.	35.4	10.5	600	510	1.5	1.5
	3	309067	497421	6.0	CHARA SPP.	206.2	42.0	600	510	1.5	1.5
	4	309066	497420	7.0	CHARA SPP.	71.6	20.5	1300	490	0.7	0.5
					POT. NARROW	0.5	0.4				
	5	309066	497420	7.0	CHARA SPP.	177.9	29.9	1300	490	0.7	0.5
	6	309066	497420	7.0	CHARA SPP.	31.9	8.9	1300	490	0.7	0.5
14	1	309074	497427	6.0	CHARA SPP.	19.2	4.9	350	200	1.3	1.1
					POT. RICHARDSONI	0.2	0.2				
	2	309074	497427	5.5	CHARA SPP.	91.7	27.1	350	200	1.3	1.1
					POT. GRAMINEUS	4.8	3.7				
	3	309074	497427	6.0	CHARA SPP.	23.2	7.4	350	200	1.3	1.1
					POT. GRAMINEUS	0.2	0.2				
15	1	309075	497428	3.0	CHARA SPP.	214.2	65.1	1000	450	1.5	0.8
					POT. NARROW	0.6	0.5				
	2	309075	497428	3.0	CHARA SPP.	94.8	32.4	1000	450	1.5	0.8
	3	309075	497428	3.0	CHARA SPP.	142.1	50.5	1000	450	1.5	0.8
					POT. GRAMINEUS	8.9	6.0				
	4	309081	497436	3.0	CHARA SPP.	85.4	34.6	1100	1000	0.4	0.3
					POT. GRAMINEUS	66.4	45.2				
					POT. NARROW	13.6	11.8				
					SAGITTARIA SPP.	1.5	1.0				
	5	309081	497436	3.0	CHARA SPP.	125.0	41.8	1100	1000	0.4	0.3
					POT. GRAMINEUS	62.4	36.4				
					POT. NARROW	TRACE					

6	309081	497436	3.0	CHARA SPP.	37.2	13.4	1100	1000	0.4	0.3
				POT. GRAMINEUS	40.7	23.6				
				POT. NARROW	1.8	1.4				
7	309078	497434	4.0	CHARA SPP.	154.7	57.0	1300	1000	0.4	0.4
				POT. GRAMINEUS	6.5	4.7				
8	309078	497434	4.0	CHARA SPP.	95.2	29.4	1300	1000	0.4	0.4
				POT. NARROW	12.5	8.5				
9	309078	497434	4.0	CHARA SPP.	11.2	3.9	1300	1000	0.4	0.4
				POT. GRAMINEUS	136.0	81.3				

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	1	1	309576	498253	9.0	CHARA SPP.	1.5	0.4	4100	660	0.8	0.2
							ELODEA CANADENS	0.7	0.4				
							POT. NARROW	170.5	141.3				
			2	309576	498253	10.5	POT. ZOSTERIFORM	1.8	1.2	4100	660	0.8	0.2
							POT. NARROW	57.5	44.5				
			3	309576	498253	9.0	POT. NARROW	167.6	132.3	4100	660	0.8	0.2
			4	309568	498252	9.0	CHARA SPP.	4.2	1.3	3400	1500	1.1	0.2
							POT. GRAMINEUS	52.2	40.1				
							POT. RICHARDSONI	44.2	27.7				
							POT. NARROW	9.4	7.5				
			5	309568	498252	10.0	ELODEA CANADENS	0.6	0.4	3400	1500	1.1	0.2
							POT. GRAMINEUS	0.9	0.7				
							POT. RICHARDSONI	89.6	70.8				
							POT. NARROW	11.5	9.1				
			6	309568	498252	10.0	CHARA SPP.	24.7	8.0	3400	1500	1.1	0.2
							POT. GRAMINEUS	6.0	4.8				
							POT. RICHARDSONI	71.9	57.9				
							POT. NARROW	7.1	5.6				
		2	1	309578	498255	9.0	POT. RICHARDSONI	178.2	143.7	3900	120	0.5	0.2
							POT. NARROW	9.9	7.7				
			2	309578	498255	8.1	CHARA SPP.	4.0	1.8	3900	120	0.5	0.2
							POT. GRAMINEUS	48.1	33.4				
							POT. RICHARDSONI	105.8	80.2				
			3	309578	498255	8.5	CHARA SPP.	0.8	0.2	3900	120	0.5	0.2
							POT. GRAMINEUS	6.1	4.7				
							POT. RICHARDSONI	28.8	21.2				
							POT. NARROW	11.9	8.8				
			4	309570	498254	6.0	CHARA SPP.	39.6	15.8	3200	1000	1.2	0.0
							POT. GRAMINEUS	26.0	19.8				
							POT. RICHARDSONI	26.3	13.4				
							POT. NARROW	30.1	24.5				
			5	309570	498254	6.1	POT. GRAMINEUS	35.8	28.5	3200	1000	1.2	0.0
							POT. RICHARDSONI	82.2	65.1				
							POT. NARROW	49.4	39.6				
			6	309570	498254	6.2	CHARA SPP.	13.9	4.9	3200	1000	1.2	0.0
							POT. GRAMINEUS	62.7	48.5				
							POT. NARROW	33.6	27.3				
		3	1	309586	498259	11.5	ELODEA CANADENS	10.4	7.9	3700	1000	0.4	0.2
							MYRIO. SPICATUM	5.2	4.2				
							POT. RICHARDSONI	95.1	79.3				

					POT. ZOSTERIFORM	TRACE					
	2	309586	498259	12.0	ELODEA CANADENS	1.0	0.6	3700	1000	0.4	0.2
					POT. RICHARDSONI	55.6	42.4				
	3	309586	498259	12.0	ELODEA CANADENS	9.7	6.7	3700	1000	0.4	0.2
					POT. RICHARDSONI	43.2	33.5				
4	1	309579	498262	4.0	CHARA SPP.	108.2	40.9	3500	2700	0.8	0.3
					POT. ZOSTERIFORM	18.8	14.4				
					POT. NARROW	26.3	20.6				
	2	309579	498262	4.0	CHARA SPP.	8.9	3.1	3500	2700	0.8	0.3
					POT. GRAMINEUS	39.1	31.7				
					POT. RICHARDSONI	1.0	0.8				
					POT. ZOSTERIFORM	0.4	0.3				
					POT. NARROW	64.0	53.4				
	3	309579	498262	4.0	CHARA SPP.	247.0	86.9	3500	2700	0.8	0.3
					POT. ZOSTERIFORM	0.6	0.3				
					POT. NARROW	18.1	15.1				
5	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
	2	-	-	-	NO PLANTS PRESENT			-	-	-	-
	3	-	-	-	NO PLANTS PRESENT			-	-	-	-
6	1	309606	498270	3.5	CHARA SPP.	64.7	19.3	2800	270	0.4	0.2
					POT. GRAMINEUS	34.5	24.1				
					POT. ZOSTERIFORM	TRACE					
					POT. NARROW	13.7	11.2				
	2	309606	498270	4.0	CHARA SPP.	165.8	46.9	2800	270	0.4	0.2
					POT. GRAMINEUS	22.2	24.2				
					POT. NARROW	27.6	22.7				
	3	309606	498270	4.0	POT. GRAMINEUS	53.0	46.4	2800	270	0.4	0.2
					POT. NARROW	50.4	41.2				
	4	309596	498266	12.0	ELODEA CANADENS	11.9	9.0	3600	1600	0.2	0.2
					POT. RICHARDSONI	37.7	29.2				
					POT. NARROW	61.9	47.2				
	5	309596	498266	12.0	CHARA SPP.	17.7	8.5	3600	1600	0.2	0.2
					POT. RICHARDSONI	45.5	35.8				
					POT. NARROW	54.7	41.4				
	6	309596	498266	11.5	ELODEA CANADENS	11.8	8.3	3600	1600	0.2	0.2
					POT. GRAMINEUS	4.4	3.2				
					POT. RICHARDSONI	65.4	53.1				
					POT. NARROW	91.3	72.6				
7	1	309584	498270	2.5	CHARA SPP.	203.4	71.8	2500	2200	0.3	0.1
					POT. CRISPUS	11.2	8.2				
					POT. GRAMINEUS	7.8	5.6				
					POT. NARROW	29.2	22.6				
	2	309584	498270	3.0	CHARA SPP.	176.3	53.6	2500	2200	0.3	0.1
					POT. GRAMINEUS	6.3	4.3				
					POT. RICHARDSONI	20.2	16.6				
					POT. NARROW	3.7	2.8				

	3	309584	498270	2.5	CHARA SPP.	186.2	55.4	2500	2200	0.3	0.1
					POT. GRAMINEUS	12.4	9.0				
					POT. RICHARDSONI	1.3	1.0				
8	1	309608	498273	10.0	CHARA SPP.	10.4	6.1	2600	1300	0.1	0.1
					POT. RICHARDSONI	36.0	28.6				
	2	309608	498273	6.5	CHARA SPP.	2.2	0.9	2600	1300	0.1	0.1
					POT. RICHARDSONI	64.8	50.2				
					POT. NARROW	5.2	3.7				
	3	309608	498273	7.0	POT. RICHARDSONI	25.4	20.3	2600	1300	0.1	0.1
					POT. NARROW	16.9	12.5				
9	1	309603	498277	2.5	CHARA SPP.	164.4	47.9	2300	2100	0.9	0.9
					POT. RICHARDSONI	32.1	20.9				
					VALLISNERIA AMER	0.2	0.1				
	2	309603	498277	2.5	CHARA SPP.	179.1	37.9	2300	2100	0.9	0.9
					POT. RICHARDSONI	4.2	2.8				
					POT. NARROW	0.5	0.4				
	3	309603	498277	2.5	CHARA SPP.	65.9	20.2	2300	2100	0.9	0.9
					POT. RICHARDSONI	98.0	74.6				
	4	309599	498274	3.0	CHARA SPP.	149.8	49.2	3800	3000	0.6	0.4
	5	309599	498274	2.5	CHARA SPP.	72.5	23.6	3800	3000	0.6	0.4
	6	309599	498274	3.1	CHARA SPP.	139.3	37.8	3800	3000	0.6	0.4
					POT. RICHARDSONI	0.7	0.5				
10	1	309620	498284	7.0	CHARA SPP.	85.1	29.4	2200	1500	0.4	0.2
					POT. CRISPUS	0.4	0.3				
					POT. GRAMINEUS	19.1	13.1				
					POT. NARROW	0.7	0.5				
					VALLISNERIA AMER	1.3	0.8.				
	2	309620	498284	8.0	CHARA SPP.	80.1	24.6	2200	1500	0.4	0.2
					POT. GRAMINEUS	5.5	3.9				
					POT. NARROW	0.8	0.4				
	3	309620	498284	5.0	CHARA SPP.	158.5	50.0	2200	1500	0.4	0.2
					POT. GRAMINEUS	2.4	1.6				
11	1	309619	498285	3.5	CHARA SPP.	15.7	4.7	310	230	0.4	0.0
					POT. GRAMINEUS	59.0	43.7				
					POT. RICHARDSONI	72.2	57.9				
	2	309619	498285	3.2	CHARA SPP.	3.2	1.0	310	230	0.4	0.0
					POT. GRAMINEUS	56.5	35.6				
					POT. RICHARDSONI	62.6	49.1				
					POT. NARROW	1.3	0.9				
					SAGITTARIA SPP.	31.0	2.3				
	3	309619	498285	3.5	POT. GRAMINEUS	124.8	83.1	310	230	0.4	0.0
					POT. RICHARDSONI	100.1	79.7				
					POT. NARROW	1.2	0.7				

4	309612	498281	3.0	CHARA SPP.	381.1	101.2	1500	1000	0.4	0.3
				POT. RICHARDSONI	1.0	0.7				
5	309612	498281	3.0	CHARA SPP.	99.8	34.0	1500	1000	0.4	0.3
6	309612	498281	3.0	CHARA SPP.	432.6	194.4	1500	1000	0.4	0.3

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	RUSSELL	1	1	309943	498653	9.0	CHARA SPP.	14.6	5.3	4300	2500	-	-
							POT. GRAMINEUS	34.6	26.1				
							POT. NARROW	4.5	3.5				
			2	309943	498653	9.0	CHARA SPP.	29.2	5.4	4300	2500	-	-
							POT. GRAMINEUS	18.3	14.4				
							POT. NARROW	9.0	7.2				
			3	309943	498653	9.0	CHARA SPP.	44.8	14.3	4300	2500	-	-
							HETERANTHERA DUB	1.5	1.0				
							POT. GRAMINEUS	42.8	32.7				
							POT. NARROW	21.8	18.0				
		2	1	309975	498660	15.0	NO PLANTS PRESENT			-	-	-	-
			2	309975	498660	15.0	NO PLANTS PRESENT			-	-	-	-
			3	309975	498660	15.0	NO PLANTS PRESENT			-	-	-	-
		3	1	309975	498659	15.0	NO PLANTS PRESENT			-	-	-	-
			2	309975	498659	15.0	NO PLANTS PRESENT			-	-	-	-
			3	309975	498659	15.0	NO PLANTS PRESENT			-	-	-	-
		4	1	309956	498659	6.0	CHARA SPP.	0.7	0.2	3000	1100	2.0	0.0
							ELODEA CANADENS	1.0	0.7				
							POT. RICHARDSONI	52.9	37.4				
							POT. NARROW	2.1	1.6				
			2	309956	498659	6.0	CHARA SPP.	0.3	0.0	3000	1100	2.0	0.0
							ELODEA CANADENS	15.1	10.0				
							POT. RICHARDSONI	27.2	21.1				
							POT. NARROW	34.1	27.8				
			3	309956	498659	7.0	CHARA SPP.	1.6	0.5	3000	1100	2.0	0.0
							ELODEA CANADENS	89.9	84.7				
							POT. RICHARDSONI	82.6	64.1				
							POT. NARROW	48.1	38.9				
			4	309966	498661	10.0	ELODEA CANADENS	112.3	69.1	3800	1100	1.9	0.0
							MYRIO. SPICATUM	1.3	0.9				
							POT. RICHARDSONI	53.5	39.7				
			5	309966	498661	11.0	ELODEA CANADENS	151.8	100.2	3800	1100	1.9	0.0
							POT. GRAMINEUS	1.3	1.0				
			6	309966	498661	12.0	ELODEA CANADENS	192.6	130.7	3800	1100	1.9	0.0
		5	1	309950	498657	7.0	POT. RICHARDSONI	41.8	30.8	3100	1100	1.1	0.0
							POT. NARROW	22.2	17.8				
			2	309950	498657	7.0	POT. RICHARDSONI	55.9	44.0	3100	1100	1.1	0.0
							POT. NARROW	29.6	24.1				
			3	309950	498657	7.0	CHARA SPP.	0.8	0.2	3100	1100	1.1	0.0

					POT. GRAMINEUS	16.3	12.6				
					POT. RICHARDSONI	104.5	74.5				
					POT. NARROW	79.9	59.6				
	4	309950	498660	5.0	CHARA SPP.	224.8	70.7	3400	2400	1.1	0.9
	5	309950	498660	6.0	CHARA SPP.	116.0	43.4	3400	2400	1.1	0.9
	6	309950	498660	5.5	CHARA SPP.	167.1	60.0	3400	2400	1.1	0.9
					POT. GRAMINEUS	4.3	3.3				
6	1	309945	498659	8.0	CHARA SPP.	95.9	30.4	4200	2400	0.4	0.0
					POT. GRAMINEUS	27.0	18.8				
					POT. NARROW	13.4	10.9				
	2	309945	498659	8.0	CHARA SPP.	58.6	18.9	4200	2400	0.4	0.0
					POT. GRAMINEUS	12.8	8.5				
					POT. NARROW	13.2	10.1				
	3	309945	498659	8.0	CHARA SPP.	48.8	14.2	4200	2400	0.4	0.0
					POT. GRAMINEUS	4.9	3.8				
					POT. NARROW	0.8	0.6				
7	1	309976	498664	8.0	ELODEA CANADENS	15.4	10.4	1800	410	0.7	0.0
					POT. RICHARDSONI	1.4	1.2				
					POT. NARROW	33.3	26.5				
	2	309976	498664	7.0	CHARA SPP.	75.9	36.2	1800	410	0.7	0.0
					ELODEA CANADENS	12.2	8.8				
					POT. RICHARDSONI	7.6	6.2				
					POT. NARROW	25.8	20.0				
	3	309976	498664	9.0	CHARA SPP.	16.2	7.1	1800	410	0.7	0.0
					ELODEA CANADENS	54.3	38.6				
					POT. GRAMINEUS	5.5	4.6				
					POT. RICHARDSONI	3.4	2.5				
					POT. NARROW	19.5	16.1				
	4	309978	498666	3.5	CHARA SPP.	62.4	21.3	3700	3000	0.8	0.7
	5	309978	498666	3.0	CHARA SPP.	123.4	36.2	3700	3000	0.8	0.7
	6	309978	498666	3.5	CHARA SPP.	42.0	17.5	3700	3000	0.8	0.7
8	1	309969	498665	5.0	CHARA SPP.	1.3	0.5	2000	230	0.6	0.0
					ELODEA CANADENS	13.0	9.2				
					POT. GRAMINEUS	8.7	6.1				
					POT. RICHARDSONI	22.4	16.7				
					POT. NARROW	48.7	38.7				
	2	309969	498665	4.0	ELODEA CANADENS	38.0	25.2	2000	230	0.6	0.0
					POT. GRAMINEUS	56.6	40.7				
					POT. RICHARDSONI	3.3	2.6				
					POT. NARROW	17.0	14.2				
	3	309969	498665	5.0	CHARA SPP.	2.2	0.8	2000	230	0.6	0.0
					ELODEA CANADENS	8.9	6.6				
					POT. GRAMINEUS	76.0	57.6				
					POT. RICHARDSONI	8.1	6.5				
					POT. NARROW	119.0	90.9				

	4	309967	498664	4.0	CHARA SPP.	228.7	69.9	3200	2800	0.0	0.0
					POT. GRAMINEUS	1.[illegible]	1.0				
	5	309967	498664	4.0	CHARA SPP.	516.2	139.5	3200	2800	0.0	0.0
	6	309967	498664	4.0	CHARA SPP.	573.0	137.5	3200	2800	0.0	0.0
9	1	309955	498665	3.5	POT. GRAMINEUS	42.2	31.3	2500	250	0.4	0.1
					POT. NARROW	40.4	31.9				
	2	309955	498665	4.0	CHARA SPP.	59.7	17.7	2500	250	0.4	0.1
					POT. GRAMINEUS	64.4	40.6				
					POT. NARROW	119.1	80.4				
	3	309955	498665	3.0	CHARA SPP.	60.4	20.8	2500	250	0.4	0.1
					POT. GRAMINEUS	47.0	35.3				
					POT. NARROW	60.2	50.0				
	4	309954	498663	4.0	CHARA SPP.	120.8	36.8	3400	3200	1.0	0.8
					POT. GRAMINEUS	5.9	4.2				
	5	309954	498663	4.0	CHARA SPP.	195.5	55.1	3400	3200	1.0	0.8
					POT. GRAMINEUS	1.2	0.6				
	6	309954	498663	4.0	CHARA SPP.	214.3	67.7	3400	3200	1.0	0.8
					POT. GRAMINEUS	1.3	0.9				

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	BELLE	1	1	312758	499951	9.0	POT. RICHARDSONI	117.6	91.1	4500	220	0.5	0.1
							POT. ZOSTERIFORM	TRACE					
			2	312758	499951	9.0	POT. RICHARDSONI	173.2	135.0	4500	220	0.5	0.1
			3	312758	499951	9.0	POT. RICHARDSONI	52.7	39.9	4500	220	0.5	0.1
			4	312760	499953	7.5	CHARA SPP.	21.3	7.5	3800	650	0.6	0.6
							NAJAS FLEXILIS	3.2	2.0				
							POT. RICHARDSONI	0.6	0.3				
							VALLISNERIA AMER	11.0	7.7				
			5	312760	499953	7.5	CHARA SPP.	49.9	13.0	3800	650	0.6	0.6
							NAJAS FLEXILIS	0.6	0.3				
							VALLISNERIA AMER	20.9	14.8				
			6	312760	499953	8.0	NAJAS FLEXILIS	2.4	1.4	3800	650	0.6	0.6
							POT. ZOSTERIFORM	TRACE					
							VALLISNERIA AMER	43.7	30.0				
							NITELLOP. OBTUSA	45.2	9.7				
		2	1	312765	499959	11.0	NO PLANTS PRESENT			4000	400	2.3	1.8
			2	312765	499959	11.0	NO PLANTS PRESENT			4000	400	2.3	1.8
			3	312765	499959	11.0	NO PLANTS PRESENT			4000	400	2.3	1.8
		3	1	312778	499966	8.5	POT. RICHARDSONI	140.0	104.0	4500	310	0.5	0.0
							VALLISNERIA AMER	4.6	2.7				
			2	312778	499966	8.5	POT. RICHARDSONI	52.0	37.6	4500	310	0.5	0.0
							VALLISNERIA AMER	3.5	2.1				
							NITELLOP. OBTUSA	0.7	0.4				
			3	312778	499966	8.5	POT. RICHARDSONI	88.4	63.8	4500	310	0.5	0.0
							VALLISNERIA AMER	2.9	2.2				
		4	1	312788	499972	11.0	POT. ZOSTERIFORM	1.6	0.7	4500	810	1.0	0.9
							VALLISNERIA AMER	16.9	10.0				
			2	312788	499972	9.0	VALLISNERIA AMER	40.7	28.6	4500	810	1.0	0.9
							NITELLOP. OBTUSA	0.5	0.1				
			3	312788	499972	9.0	VALLISNERIA AMER	27.8	19.2	4500	810	1.0	0.9
		5	1	312803	499981	5.5	CHARA SPP.	16.4	5.4	3700	1100	0.7	0.1
							POT. RICHARDSONI	44.4	33.0				
							POT. NARROW	9.3	6.9				
							VALLISNERIA AMER	25.7	18.5				
			2	312803	499981	7.0	POT. RICHARDSONI	18.4	14.4	3700	1100	0.7	0.1
							POT. ZOSTERIFORM	4.6	3.4				
							VALLISNERIA AMER	74.9	49.8				

	3	312803	499981	7.0	POT. CRISPUS	0.6	0.4	3700	1100	0.7	0.1
					POT. RICHARDSONI	56.0	46.3				
					VALLISNERIA AMER	34.2	25.1				
6	1	312809	499986	11.0	VALLISNERIA AMER	31.0	18.5	4000	650	1.7	1.6
					NITELLOP. OBTUSA	0.3	0.1				
	2	312809	499986	11.0	NAJAS FLEXILIS	TRACE		4000	650	1.7	1.6
					VALLISNERIA AMER	43.4	27.9				
					NITELLOP. OBTUSA	TRACE					
	3	312809	499986	11.0	VALLISNERIA AMER	65.9	42.0	4000	650	1.7	1.6
7	1	312854	499997	7.0	VALLISNERIA AMER	8.8	6.0	1700	1200	0.1	0.0
					NITELLOP. OBTUSA	249.5	150.6				
	2	312854	499997	7.0	MYRIO. SPICATUM	1.5	0.7	1700	1200	0.1	0.0
					POT. ZOSTERIFORM	TRACE					
					VALLISNERIA AMER	14.7	10.1				
					NITELLOP. OBTUSA	121.0	41.3				
	3	312854	499997	7.0	MYRIO. SPICATUM	3.4	2.0	1700	1200	0.1	0.0
					NAJAS FLEXILIS	0.7	0.4				
					VALLISNERIA AMER	28.2	18.3				
					NITELLOP. OBTUSA	71.2	26.4				
	4	312861	499999	6.0	MYRIO. SPICATUM	63.2	46.6	4400	550	0.3	0.1
					NAJAS FLEXILIS	TRACE					
					POT. CRISPUS	27.7	21.0				
					VALLISNERIA AMER	TRACE					
					NITELLOP. OBTUSA	49.8	20.5				
	5	312861	499999	6.0	MYRIO. SPICATUM	126.4	97.9	4400	550	0.3	0.1
					POT. CRISPUS	0.6	0.3				
					VALLISNERIA AMER	10.5	6.2				
	6	312861	499999	7.0	ELODEA CANADENS	0.5	0.4	4400	550	0.3	0.1
					MYRIO. SPICATUM	4.5	3.5				
					POT. CRISPUS	18.5	14.1				
					POT. ZOSTERIFORM	9.1	5.9				
					VALLISNERIA AMER	14.1	8.7				
					NITELLOP. OBTUSA	15.1	7.2				
8	1	312843	499995	5.0	ELODEA CANADENS	TRACE		3400	450	0.2	0.1
					MYRIO. SPICATUM	TRACE					
					NITELLOP. OBTUSA	161.8	56.0				
	2	312843	499995	5.0	MYRIO. SPICATUM	4.9	3.4	3400	450	0.2	0.1
					NITELLOP. OBTUSA	184.9	67.2				
	3	312843	499995	5.0	MYRIO. SPICATUM	25.6	16.3	3400	450	0.2	0.1
					VALLISNERIA AMER	7.0	4.9				
					NITELLOP. OBTUSA	166.1	62.5				
	4	312843	499995	6.0	MYRIO. SPICATUM	202.1	136.8	3500	1500	0.5	0.3
	5	312843	499995	6.0	MYRIO. SPICATUM	115.0	79.6	3500	1500	0.5	0.3
					VALLISNERIA AMER	4.0	2.8				
					NITELLOP. OBTUSA	35.2	13.2				

	6	312843	499995	6.0	MYRIO. SPICATUM	129.1	93.7	3500	1500	0.5	0.3
					NITELLOP. OBTUSA	65.6	22.5				
9	1	312835	499993	6.0	CHARA SPP.	102.8	38.6	3500	1100	0.3	0.2
					MYRIO. SPICATUM	1.9	1.6				
					NITELLOP. OBTUSA	0 6	0.2				
	2	312835	499993	6.0	NITELLOP. OBTUSA	87.5	33.6	3500	1100	0.3	0.2
	3	312835	499993	6.0	VALLISNERIA AMER	92.6	55.2	3500	1100	0.3	0.2
					NITELLOP. OBTUSA	110.9	37.6				
	4	312834	499995	9.0	MYRIO. SPICATUM	202.3	157.1	3100	600	0.3	0.0
					POT. RICHARDSONI	23.9	17.0				
					VALLISNERIA AMER	8.9	6.2				
	5	312834	499995	9.0	MYRIO. SPICATUM	121.8	95.0	3100	600	0.3	0.0
					VALLISNERIA AMER	9.4	6.7				
	6	312834	499995	9.0	MYRIO. SPICATUM	122.5	88.6	3100	600	0.3	0.0
					POT. RICHARDSONI	11.1	9.3				
					POT. ZOSTERIFORM	2.1	1.6				
					POT. NARROW	1.4	1.0				
					VALLISNERIA AMER	16.7	11.6				
					NITELLOP. OBTUSA	13.1	4.1				
10	1	312825	499994	7.0	POT. RICHARDSONI	74.4	59.9	3700	350	0.8	0.2
					NITELLOP. OBTUSA	45.3	16.1				
	2	312825	499994	7.0	POT. RICHARDSONI	177.7	132.1	3700	350	0.8	0.2
					POT. NARROW	TRACE					
					VALLISNERIA AMER	11.7	7.7				
					NITELLOP. OBTUSA	3.1	0.9				
	3	312825	499994	7.0	NITELLA HYALINA	4.4	1.3	3700	350	0.8	0.2
					POT. RICHARDSONI	48.6	37.1				
					POT. ZOSTERIFORM	0.7	0.4				
					VALLISNERIA AMER	38.1	18.3				

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	HENNEPIN	1	1	314061	500667	8.0	POT. NARROW	28.6	20.6	4000	1000	0.2	0.0
			2	314061	500667	8.0	POT. NARROW	50.1	32.5	4000	1000	0.2	0.0
							VALLISNERIA AMER	9.0	4.1				
			3	314061	500667	8.0	POT. NARROW	54.4	36.9	4000	1000	0.2	0.0
							VALLISNERIA AMER	3.7	2.7				
			4	314067	500670	6.0	POT. NARROW	15.6	10.7	3900	2500	0.2	0.0
							VALLISNERIA AMER	50.8	22.4				
			5	314067	500670	6.0	POT. NARROW	10.2	4.5	3900	2500	0.2	0.0
							VALLISNERIA AMER	14.7	8.3				
			6	314067	500670	6.0	VALLISNERIA AMER	37.6	19.1	3900	2500	0.2	0.0
		2	1	314061	500675	9.0	POT. RICHARDSONI	101.3	73.4	3600	330	0.6	0.1
			2	314061	500675	9.0	POT. RICHARDSONI	212.2	147.0	3600	330	0.6	0.1
			3	314061	500675	9.0	POT. RICHARDSONI	72.0	55.1	3600	330	0.6	0.1
			4	314063	500676	8.0	MYRIO. SPICATUM	2.9	2.2	3600	130	0.3	0.1
							POT. NARROW	77.6	57.2				
			5	314063	500676	8.0	POT. NARROW	90.2	61.7	3600	130	0.3	0.1
							VALLISNERIA AMER	48.6	24.1				
			6	314063	500676	8.0	POT. NARROW	65.9	51.0	3600	130	0.3	0.1
		3	1	314073	500683	5.0	VALLISNERIA AMER	64.7	34.3	4100	2500	0.2	0.0
			2	314073	500683	5.0	VALLISNERIA AMER	24.8	14.9	4100	2500	0.2	0.0
			3	314073	500683	5.0	VALLISNERIA AMER	126.1	94.4	4100	2500	0.2	0.0
		4	1	314088	500691	6.0	VALLISNERIA AMER	74.9	40.7	3600	270	0.4	0.3
			2	314088	500691	6.0	VALLISNERIA AMER	44.5	26.3	3600	270	0.4	0.3
			3	314088	500691	6.0	VALLISNERIA AMER	9.3	3.8	3600	270	0.4	0.3
		5	1	314067	500687	8.0	POT. RICHARDSONI	133.8	93.4	3300	300	0.1	0.0
							POT. NARROW	4.9	3.5				
			2	314067	500687	8.0	POT. RICHARDSONI	165.7	114.1	3300	300	0.1	0.0
							POT. NARROW	1.0	0.6				
			3	314067	500687	8.0	POT. RICHARDSONI	143.6	101.7	3300	300	0.1	0.0
							POT. NARROW	13.0	8.9				
		6	1	314083	500696	5.0	POT. RICHARDSONI	66.2	36.8	2100	400	0.3	0.0

	2	314083	500696	5.0	POT. RICHARDSONI	223.6	169.0	2100	400	0.3	0.0
	3	314083	500696	5.0	POT. RICHARDSONI	101.5	58.8	2100	400	0.3	0.0
7	1	314094	500703	6.0	VALLISNERIA AMER	32.7	20.9	2700	90	0.4	0.0
	2	314094	500703	6.0	VALLISNERIA AMER	28.2	17.5	2700	90	0.4	0.0
	3	314094	500703	6.0	VALLISNERIA AMER	44.9	25.2	2700	90	0.4	0.0
8	1	314076	500704	5.0	MYRIO. SPICATUM	12.1	9.6	3500	540	0.4	0.3
					POT. RICHARDSONI	219.1	165.9				
					POT. NARROW	31.0	25.8				
					VALLISNERIA AMER	11.4	5.0				
	2	314076	500704	5.0	POT. RICHARDSONI	76.5	54.9	3500	540	0.4	0.3
					POT. NARROW	31.6	25.0				
					VALLISNERIA AMER	7.4	3.8				
	3	314076	500704	5.0	POT. RICHARDSONI	52.9	36.1	3500	540	0.4	0.3
					POT. NARROW	58.3	46.9				
					VALLISNERIA AMER	0.8	0.6				
	4	314076	500703	5.0	POT. RICHARDSONI	30.0	24.2	3500	540	0.4	0.3
					POT. NARROW	12.4	9.1				
					VALLISNERIA AMER	257.8	230.4				
	5	314076	500703	5.0	POT. RICHARDSONI	74.2	53.7	3500	540	0.4	0.3
					POT. NARROW	22.8	18.0				
					VALLISNERIA AMER	25.5	14.9				
	6	314076	500703	5.0	POT. RICHARDSONI	31.1	19.1	3500	540	0.4	0.3
					POT. NARROW	19.0	14.5				
					VALLISNERIA AMER	338.0	317.0				
	7	314075	500702	6.0	MYRIO. SPICATUM	265.6	204.6	4000	350	0.2	0.1
					NAJAS FLEXILIS	0.6	0.2				
					POT. RICHARDSONI	59.3	44.4				
					POT. NARROW	1.3	0.8				
					VALLISNERIA AMER	3.0	1.8				
	8	314075	500702	6.0	MYRIO. SPICATUM	252.6	183.7	4000	350	0.2	0.1
					POT. RICHARDSONI	3.5	3.1				
					VALLISNERIA AMER	3.0	2.3				
	9	314075	500702	6.0	MYRIO. SPICATUM	555.4	502.6	4000	350	0.2	0.1
					POT. RICHARDSONI	3.4	1.9				
9	1	314088	500708	5.0	POT. RICHARDSONI	35.1	29.0	3900	150	0.3	0.1
					VALLISNERIA AMER	18.9	10.6				
	2	314088	500708	5.0	MYRIO. SPICATUM	1.5	0.9	3900	150	0.3	0.1
					POT. RICHARDSONI	176.8	155.8				
					VALLISNERIA AMER	32.7	19.0				
	3	314088	500708	5.0	POT. RICHARDSONI	12.1	6.3	3900	150	0.3	0.1
					VALLISNERIA AMER	111.9	54.7				
	4	314088	500708	5.0	CHARA SPP.	3.2	1.1	3900	150	0.3	0.1

					MYRIO. SPICATUM	37.4	30.0				
					POT. RICHARDSONI	21.0	16.7				
					POT. NARROW	3.6	2.5				
					VALLISNERIA AMER	5.3	3.5				
	5	314088	500708	5.0	CHARA SPP.	2.1	0.6	3900	150	0.3	0.1
					POT. RICHARDSONI	71.2	48.7				
					POT. NARROW	1.3	0.9				
					VALLISNERIA AMER	0.7	0.3				
	6	314088	500708	5.0	CHARA SPP.	4.0	2.5	3900	150	0.3	0.1
					POT. RICHARDSONI	74.9	48.4				
					VALLISNERIA AMER	22.2	13.5				
10	1	314100	500716	6.0	VALLISNERIA AMER	86.8	59.3	2700	1100	0.1	0.0
	2	314100	500716	6.0	VALLISNERIA AMER	42.2	24.8	2700	1100	0.1	0.0
					NITELLOP. OBTUSA	1.0	0.3				
	3	314100	500716	6.0	VALLISNERIA AMER	19.8	11.5	2700	1100	0.1	0.0
11	1	314086	500717	7.0	POT. NARROW	29.9	20.5	4100	600	0.2	0.1
					VALLISNERIA AMER	20.1	13.7				
	2	314086	500717	7.0	POT. RICHARDSONI	39.7	28.1	4100	600	0.2	0.1
					POT. NARROW	3.8	2.8				
					VALLISNERIA AMER	89.3	72.0				
	3	314086	500717	7.0	VALLISNERIA AMER	125.1	72.3	4100	600	0.2	0.1
12	1	314100	500723	6.5	VALLISNERIA AMER	32.8	14.9	3200	680	0.0	0.0
	2	314100	500723	6.5	VALLISNERIA AMER	15.1	8.9	3200	680	0.0	0.0
	3	314100	500723	6.5	VALLISNERIA AMER	11.0	6.7	3200	680	0.0	0.0
13	1	314097	500728	8.0	POT. RICHARDSONI	4.2	3.3	4000	600	0.1	0.0
					POT. NARROW	201.5	145.7				
					VALLISNERIA AMER	0.1	0.0				
	2	314097	500728	8.0	POT. NARROW	71.6	52.1	4000	600	0.1	0.0
	3	314097	500728	8.0	POT. NARROW	29.1	21.8	4000	600	0.1	0.0
	4	314100	500731	9.0	POT. RICHARDSONI	112.2	70.1	4000	600	0.1	0.0
	5	314100	500731	9.0	POT. RICHARDSONI	88.2	62.8	4000	600	0.1	0.0
	6	314100	500731	9.0	POT. RICHARDSONI	96.9	64.3	4000	600	0.1	0.0
14	1	314108	500737	8.0	VALLISNERIA AMER	142.5	52.6	3000	500	0.0	0.0
	2	314108	500737	8.0	VALLISNERIA AMER	47.6	38.2	3000	500	0.0	0.0
	3	314108	500737	8.0	VALLISNERIA AMER	15.3	9.5	3000	500	0.0	0.0

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	1	1	314222	-	9.0	VALLISNERIA AMER	62.0	42.2	3600	260	1.7	1.2
			2	314222	-	9.0	VALLISNERIA AMER	120.1	81.0	3600	260	1.7	1.2
			3	314222	-	9.0	VALLISNERIA AMER	22.8	12.9	3600	260	1.7	1.2
		2	1	314215	-	7.0	POT. RICHARDSONI	19.6	14.1	3500	50	0.4	0.2
							VALLISNERIA AMER	114.4	75.7				
			2	314215	-	7.0	POT. GRAMINEUS	32.3	23.6	3500	50	0.4	0.2
							VALLISNERIA AMER	80.9	51.8				
			3	314215	-	7.0	POT. NARROW	11.1	8.9	3500	50	0.4	0.2
							VALLISNERIA AMER	75.0	46.4				
		3	1	314204	-	7.0	POT. RICHARDSONI	36.9	25.5	1100	72	0.2	0.1
							VALLISNERIA AMER	47.4	26.1				
			2	314204	-	7.0	ELODEA CANADENS	1.0	0.5	1100	72	0.2	0.1
							POT. RICHARDSONI	62.9	42.4				
							POT. NARROW	40.8	31.9				
							VALLISNERIA AMER	6.8	4.2				
			3	314204	-	7.0	POT. RICHARDSONI	77.8	54.8	1100	72	0.2	0.1
							POT. NARROW	4.7	3.4				
							VALLISNERIA AMER	6.5	3.5				
		4	1	314201	-	9.0	MYRIO. SPICATUM	89.9	65.4	3000	200	0.4	0.1
							POT. CRISPUS	5.6	5.2				
							VALLISNERIA AMER	30.3	19.6				
			2	314201	-	9.0	MYRIO. SPICATUM	174.4	123.0	3000	200	0.4	0.1
							VALLISNERIA AMER	22.0	14.3				
			3	314201	-	9.0	MYRIO. SPICATUM	121.8	89.8	3000	200	0.4	0.1
							VALLISNERIA AMER	18.6	12.2				
		5	1	-	-	7.0	POT. ZOSTERIFORM	0.3	0.1	2100	250	0.6	0.4
							POT. NARROW	15.9	12.0				
							VALLISNERIA AMER	57.1	34.8				
			2	-	-	7.0	POT. NARROW	26.1	20.0	2100	250	0.6	0.4
							VALLISNERIA AMER	33.3	22.9				
			3	-	-	7.0	POT. NARROW	18.4	12.6	2100	250	0.6	0.4
							VALLISNERIA AMER	85.8	53.8				
		6	1	-	-	3.0	ELODEA CANADENS	532.4	282.2	2400	62	0.0	0.0
							HETERANTHERA DUB	TRACE					
			2	-	-	3.0	ELODEA CANADENS	486.6	259.4	2400	62	0.0	0.0

	3	-	-	3.0	ELODEA CANADENS	308.0	211.7	2400	62	0.0	0.0
					HETERANTHERA DUB	2.4	1.9				
7	1	-	-	3.0	MYRIO. SPICATUM	432.0	331.5	1500	100	0.2	0.1
	2	-	-	3.0	MYRIO. SPICATUM	112.1	85.0	1500	100	0.2	0.1
					VALLISNERIA AMER	0.3	0.1				
	3	-	-	3.0	MYRIO. SPICATUM	103.9	77.4	1500	100	0.2	0.1
					VALLISNERIA AMER	0.5	0.2				
8	1	-	-	3.5	ELODEA CANADENS	2.5	1.6	4000	1300	0.2	0.2
					HETERANTHERA DUB	95.5	70.9				
					MYRIO. SPICATUM	4.4	3.1				
	2	-	-	3.5	ELODEA CANADENS	2.1	1.4	4000	1300	0.2	0.2
					HETERANTHERA DUB	94.9	68.3				
	3	-	-	3.5	ELODEA CANADENS	1.1	0.7	4000	1300	0.2	0.2
					HETERANTHERA DUB	180.8	136.1				
					MYRIO. SPICATUM	8.4	6.2				
9	1	-	-	6.0	HETERANTHERA DUB	2.9	2.1	2300	600	2.1	2.0
					VALLISNERIA AMER	5.0	3.7				
	2	-	-	6.0	ELODEA CANADENS	14.8	10.2	2300	600	2.1	2.0
					HETERANTHERA DUB	13.4	9.6				
					MYRIO. SPICATUM	1.3	1.0				
					POT. CRISPUS	2.9	2.0				
	3	-	-	6.0	HETERANTHERA DUB	0.9	0.7	2300	600	2.1	2.0
					MYRIO. SPICATUM	0.1	0.0				
					POT. CRISPUS	1.5	1.2				
					VALLISNERIA AMER	9.0	6.6				
10	1	-	-	3.0	MYRIO. SPICATUM	50.8	39.7	3000	1700	0.5	0.5
					VALLISNERIA AMER	0.8	0.5				
	2	-	-	3.0	MYRIO. SPICATUM	130.0	91.1	3000	1700	0.5	0.5
	3	-	-	3.0	MYRIO. SPICATUM	51.9	32.7	3000	1700	0.5	0.5
11	1	-	-	4.0	MYRIO. SPICATUM	7.4	3.4	2000	1100	0.9	0.8
					VALLISNERIA AMER	5.3	3.7				
	2	-	-	4.0	HETERANTHERA DUB	20.1	13.8	2000	1100	0.9	0.8
					MYRIO. SPICATUM	151.5	112.7				
	3	-	-	4.0	MYRIO. SPICATUM	23.3	17.1	2000	1100	0.9	0.8
					VALLISNERIA AMER	3.5	2.4				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	STAG	1	1	309021	497380	11.0	NO PLANTS PRESENT			1200	630	2.8	2.4
			2	309021	497380	11.0	NO PLANTS PRESENT			1200	630	2.8	2.4
			3	309021	497380	11.0	NO PLANTS PRESENT			1200	630	2.8	2.4
		2	1	309035	497386	12.0	NO PLANTS PRESENT			1200	600	2.6	1.7
			2	309035	497386	12.0	NO PLANTS PRESENT			1200	600	2.6	1.7
			3	309035	497386	12.0	NO PLANTS PRESENT			1200	600	2.6	1.7
		3	1	309029	497386	11.0	NO PLANTS PRESENT			1000	610	2.2	1.3
			2	309029	497386	11.0	NO PLANTS PRESENT			1000	610	2.2	1.3
			3	309029	497386	11.0	NO PLANTS PRESENT			1000	610	2.2	1.3
		4	1	309038	497390	12.0	NO PLANTS PRESENT			720	480	2.4	1.3
			2	309038	497390	12.0	NO PLANTS PRESENT			720	480	2.4	1.3
			3	309038	497390	12.0	NO PLANTS PRESENT			720	480	2.4	1.3
		5	1	309032	497391	9.0	POT. GRAMINEUS	1.0	0.9	1000	120	1.7	0.0
							POT. NARROW	115.1	103.4				
			2	309032	497391	9.0	POT. NARROW	330.8	288.1	1000	120	1.7	0.0
			3	309032	497391	9.0	POT. NARROW	143.3	115.1	1000	120	1.7	0.0
		6	1	309039	497397	5.0	CHARA SPP.	534.4	183.7	1000	720	1.0	0.0
							POT. GRAMINEUS	9.9	8.4				
							POT. NARROW	8.7	7.2				
			2	309039	497397	5.0	CHARA SPP.	677.2	213.8	1000	720	1.0	0.0
							POT. GRAMINEUS	18.0	12.8				
							POT. NARROW	9.0	7.2				
			3	309039	497397	5.0	CHARA SPP.	422.2	143.2	1000	720	1.0	0.0
							POT. GRAMINEUS	7.3	5.9				
							POT. NARROW	TRACE					
		7	1	309037	497397	7.5	ELODEA CANADENS	7.6	5.5	1100	560	0.9	0.4
							POT. GRAMINEUS	42.3	29.2				
							POT. NARROW	252.6	202.8				
			2	309037	497397	7.5	POT. NARROW	320.1	280.9	1100	560	0.9	0.4
			3	309037	497397	7.5	POT. GRAMINEUS	1.9	1.6	1100	560	0.9	0.4
							POT. NARROW	309.5	274.7				
			4	309034	497396	5.0	POT. RICHARDSONI	289.6	214.7	3500	250	0.4	0.0
							POT. NARROW	18.2	14.7				
			5	309034	497396	5.0	POT. RICHARDSONI	372.7	275.0	3500	250	0.4	0.0
							POT. NARROW	24.4	19.6				
			6	309034	497396	5.0	POT. GRAMINEUS	336.4	250.2	3500	250	0.4	0.0
							POT. NARROW	115.1	96.6				

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	7	309032	497393	3.0	CHARA SPP.	617.6	212.5	1000	800	1.5	0.2
					POT. NARROW	4.1	3.4				
	8	309032	497393	3.0	CHARA SPP.	351.0	144.0	1000	800	1.5	0.2
					POT. NARROW	4.9	4.1				
	9	309032	497393	3.0	CHARA SPP.	106.7	46.2	1000	800	1.5	0.2
					POT. NARROW	153.4	130.1				
8	1	309041	497399	5.0	CHARA SPP.	175.6	61.3	650	400	0.7	0.1
					NAJAS FLEXILIS	2.0	1.4				
					POT. GRAMINEUS	55.4	39.1				
					POT. NARROW	2.8	2.4				
	2	309041	497399	5.0	CHARA SPP.	256.6	96.4	650	400	0.7	0.1
					POT. GRAMINEUS	82.8	65.2				
					POT. NARROW	20.1	17.2				
	3	309041	497399	5.0	CHARA SPP.	90.5	32.5	650	400	0.7	0.1
					POT. GRAMINEUS	90.6	70.4				
					POT. NARROW	19.5	17.1				
	4	309043	497399	6.0	POT. GRAMINEUS	115.1	90.3	590	380	1.0	0.3
					POT. NARROW	105.6	89.3				
	5	309043	497399	6.0	POT. GRAMINEUS	57.7	44.8	590	380	1.0	0.3
					POT. NARROW	241.7	215.1				
	6	309043	497399	6.0	POT. GRAMINEUS	160.5	126.6	590	380	1.0	0.3
					POT. NARROW	133.9	118.2				
9	1	309034	497400	8.0	ELODEA CANADENS	29.9	22.5	4000	700	0.6	0.0
					POT. RICHARDSONI	136.0	108.4				
	2	309034	497400	8.0	ELODEA CANADENS	19.3	14.5	4000	700	0.6	0.0
					POT. RICHARDSONI	88.1	72.4				
					NITELLOP. OBTUSA	5.5	2.8				
	3	309034	497400	8.0	ELODEA CANADENS	10.8	7.9	4000	700	0.6	0.0
					POT. RICHARDSONI	93.7	74.7				
	4	309038	497398	8.0	CHARA SPP.	3.2	1.5	3600	390	1.0	0.2
					ELODEA CANADENS	3.6	2.6				
					MYRIO. SPICATUM	189.2	161.9				
					POT. RICHARDSONI	17.0	13.9				
					POT. NARROW	22.3	8.1				
	5	309038	497398	8.0	ELODEA CANADENS	125.6	90.4	3600	390	1.0	0.2
					MYRIO. SPICATUM	132.1	98.7				
					POT. RICHARDSONI	42.8	43.9				
					POT. NARROW	33.6	28.0				
	6	309038	497398	8.0	ELODEA CANADENS	29.7	19.0	3600	390	1.0	0.2
					MYRIO. SPICATUM	98.3	78.0				
					NITELLA HYALINA	9.2	4.8				
					POT. RICHARDSONI	45.7	35.7				
					POT. NARROW	59.2	47.5				
10	1	309056	497407	12.0	NITELLA HYALINA	44.7	16.9	41	21	0.4	0.1

					POT. RICHARDSONI	16.0	11.6				
					POT. NARROW	1.5	1.2				
	2	309056	497407	12.0	CHARA SPP.	186.2	76.4	41	21	0.4	0.1
					POT. GRAMINEUS	15.5	13.0				
	3	309056	497407	12.0	CHARA SPP.	77.0	32.3	41	21	0.4	0.1
					POT. RICHARDSONI	46.7	38.3				
					POT. NARROW	34.0	28.4				
11	1	309046	497409	8.5	ELODEA CANADENS	18.5	12.7	420	58	0.5	0.0
					MYRIO. SPICATUM	9.1	7.3				
					POT. RICHARDSONI	85.7	68.9				
					POT. NARROW	135.8	114.4				
	2	309046	497409	8.5	ELODEA CANADENS	46.8	31.0	420	58	0.5	0.0
					POT. RICHARDSONI	27.9	17.5				
					POT. NARROW	311.1	245.7				
	3	309046	497409	8.5	ELODEA CANADENS	15.7	11.1	420	58	0.5	0.0
					MYRIO. SPICATUM	0.5	0.3				
					POT. RICHARDSONI	83.7	63.6				
					POT. NARROW	117.1	91.3				
	4	309048	497403	11.0	ELODEA CANADENS	2.7	1.7	470	9	0.3	0.0
					MYRIO. SPICATUM	0.7	0.6				
					POT. RICHARDSONI	114.8	77.2				
					NITELLOP. OBTUSA	0.5	0.1				
	5	309048	497403	11.0	ELODEA CANADENS	30.7	21.0	470	9	0.3	0.0
					POT. RICHARDSONI	114.5	88.0				
					NITELLOP. OBTUSA	10.4	5.1				
	6	309048	497403	11.0	CHARA SPP.	13.9	4.6	470	9	0.3	0.0
					ELODEA CANADENS	1.9	1.4				
					MYRIO. SPICATUM	0.8	0.5				
					POT. RICHARDSONI	80.9	62.2				
					POT. NARROW	0.4	0.3				
	7	309046	497410	2.5	CHARA SPP.	55.5	16.9	46	43	0.4	0.3
					POT. GRAMINEUS	3.0	2.5				
	8	309046	497410	2.5	CHARA SPP.	231.1	84.9	46	43	0.4	0.3
					NAJAS FLEXILIS	4.7	3.7				
					POT. GRAMINEUS	26.7	11.3				
	9	309046	497410	2.5	CHARA SPP.	264.2	93.2	46	43	0.4	0.3
					NAJAS FLEXILIS	8.2	5.9				
					POT. GRAMINEUS	13.1	9.9				
					POT. NARROW	0.7	0.6				
12	1	309044	497408	8.5	ELODEA CANADENS	10.6	8.4	2000	1000	0.3	0.0
					MYRIO. SPICATUM	152.5	111.0				
					POT. NARROW	2.6	2.1				
	2	309044	497408	8.5	CHARA SPP.	TRACE		2000	1000	0.3	0.0
					ELODEA CANADENS	1.0	0.7				
					MYRIO. SPICATUM	87.2	69.8				
					POT. NARROW	156.1	127.3				

	3	309044	497408	8.5	ELODEA CANADENS	57.6	43.1	2000	1000	0.3	0.0
					MYRIO. SPICATUM	81.1	60.1				
	4	309044	497409	3.0	CHARA SPP.	176.9	56.0	3400	2500	0.7	0.4
					POT. GRAMINEUS	2.1	1.7				
	5	309044	497409	3.0	CHARA SPP.	222.1	75.2	3400	2500	0.7	0.4
	6	309044	497409	3.0	CHARA SPP.	229.3	74.4	3400	2500	0.7	0.4
	7	309041	497408	5.5	CHARA SPP.	182.4	53.2	720	390	0.2	0.0
					ELODEA CANADENS	27.5	20.2				
					MYRIO. SPICATUM	0.8	0.6				
					POT. RICHARDSONI	53.4	43.9				
					POT. ZOSTERIFORM	15.1	12.0				
					VALLISNERIA AMER	18.0	11.3				
	8	309041	497408	5.5	CHARA SPP.	141.2	48.4	720	390	0.2	0.0
					ELODEA CANADENS	0.9	0.7				
					POT. RICHARDSONI	27.3	22.3				
					VALLISNERIA AMER	34.4	22.0				
	9	309041	497408	5.5	CHARA SPP.	114.2	34.1	720	390	0.2	0.0
					ELODEA CANADENS	56.0	37.6				
					MYRIO. EXALBESC	3.8	2.9				
					POT. RICHARDSONI	65.2	51.2				
					VALLISNERIA AMER	59.9	35.1				
13	1	309060	497414	9.0	ELODEA CANADENS	10.0	7.4	110	1	0.2	0.0
					MYRIO. SPICATUM	28.2	21.8				
					POT. RICHARDSONI	65.2	52.2				
					NITELLOP. OBTUSA	1.2	0.6				
	2	309060	497414	9.0	ELODEA CANADENS	44.9	32.0	110	1	0.2	0.0
					MYRIO. SPICATUM	83.9	64.1				
					NAJAS FLEXILIS	0.2	0.1				
	3	309060	497414	9.0	ELODEA CANADENS	18.7	13.4	110	1	0.2	0.0
					MYRIO. SPICATUM	104.5	82.7				
					POT. RICHARDSONI	8.7	7.0				
14	1	309068	497418	9.0	POT. RICHARDSONI	5.9	5.1	70	55	1.5	0.2
					POT. NARROW	226.9	197.2				
	2	309068	497418	9.0	CHARA SPP.	7.9	2.6	70	55	1.5	0.2
					NITELLA HYALINA	13.1	4.3				
					POT. NARROW	166.3	132.8				
	3	309068	497418	9.0	NITELLA HYALINA	TRACE		70	55	1.5	0.2
					POT. GRAMINEUS	6.3	3.2				
					POT. NARROW	113.2	88.6				
15	1	309074	497426	2.5	CHARA SPP.	261.7	78.2	140	110	0.4	0.2
					POT. GRAMINEUS	6.6	4.5				
					POT. NARROW	0.5	0.4				
	2	309074	497426	2.5	CHARA SPP.	100.7	30.2	140	110	0.4	0.2
					POT. NARROW	0.4	0.3				
	3	309074	497426	2.5	CHARA SPP.	142.9	58.0	140	110	0.4	0.2

				POT. GRAMINEUS	9.3	6.2				
				POT. NARROW	1.9	1.5				
4	309076	497427	7.0	NITELLA HYALINA	31.5	12.5	210	100	0.7	0.3
				POT. GRAMINEUS	110.9	71.1				
5	309076	497427	7.0	CHARA SPP.	3.3	1.1	210	100	0.7	0.3
				POT. GRAMINEUS	155.4	114.4				
6	309076	497427	7.0	CHARA SPP.	45.9	18.5	210	100	0.7	0.3
				POT. GRAMINEUS	83.8	58.8				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	1	1	309568	498248	10.0	CHARA SPP.	12.1	4.5	3700	110	1.7	0.1
							POT. GRAMINEUS	183.0	146.5				
							POT. NARROW	32.3	26.0				
			2	309568	498248	10.0	POT. RICHARDSONI	213.9	174.7	3700	110	1.7	0.1
							POT. NARROW	153.8	128.8				
			3	309568	498248	10.0	POT. RICHARDSONI	62.1	51.2	3700	110	1.7	0.1
							POT. NARROW	41.4	34.7				
		2	1	309582	498256	8.0	ELODEA CANADENS	8.8	6.2	3100	230	0.3	0.0
							POT. GRAMINEUS	278.0	214.2				
			2	309582	498256	8.0	ELODEA CANADENS	7.7	5.6	3100	230	0.3	0.0
							NITELLA HYALINA	23.4	11.5				
							POT. GRAMINEUS	101.2	80.8				
			3	309582	498256	8.0	CHARA SPP.	4.9	1.6	3100	230	0.3	0.0
							ELODEA CANADENS	1.5	1.0				
							POT. GRAMINEUS	90.7	69.8				
		3	1	309589	498259	9.0	ELODEA CANADENS	280.6	253.5	3400	8	0.1	0.0
							POT. RICHARDSONI	12.9	10.3				
			2	309589	498259	9.0	ELODEA CANADENS	271.1	210.1	3400	8	0.1	0.0
							POT. GRAMINEUS	45.7	29.8				
							POT. RICHARDSONI	13.4	11.1				
							POT. NARROW	0.4	0.2				
			3	309589	498259	9.0	ELODEA CANADENS	177.8	137.1	3400	8	0.1	0.0
							POT. RICHARDSONI	40.5	32.4				
							POT. NARROW	7.3	6.0				
			4	309586	498257	12.0	ELODEA CANADENS	5.8	4.1	3500	70	0.1	0.0
							NITELLA HYALINA	TRACE					
							POT. RICHARDSONI	126.2	97.8				
			5	309586	498257	12.0	ELODEA CANADENS	0.5	0.3	3500	70	0.1	0.0
							MYRIO. SPICATUM	2.2	1.8				
							POT. RICHARDSONI	128.3	99.3				
							POT. NARROW	3.1	2.6				
			6	309586	498257	12.0	ELODEA CANADENS	10.2	7.7	3500	70	0.1	0.0
							POT. RICHARDSONI	186.7	147.8				
		4	1	309572	498256	6.0	CHARA SPP.	389.5	114.9	2700	530	0.6	0.1
							POT. GRAMINEUS	73.5	53.2				
			2	309572	498256	6.0	CHARA SPP.	231.2	67.4	2700	530	0.6	0.1
							ELODEA CANADENS	1.5	1.0				
							POT. GRAMINEUS	325.4	210.7				
							POT. ZOSTERIFORM	0.8	0.6				

	3	309572	498256	6.0	CHARA SPP.	62.7	21.7	2700	530	0.6	0.1
					ELODEA CANADENS	1.6	1.1				
					POT. GRAMINEUS	202.2	141.9				
					POT. NARROW	33.3	25.6				
5	1	309600	498266	9.0	CHARA SPP.	2.9	1.1	4000	2500	0.7	0.2
					POT. GRAMINEUS	68.4	50.5				
					POT. RICHARDSONI	51.7	42.1				
					POT. NARROW	1.2	0.9				
	2	309600	498266	9.0	CHARA SPP.	24.2	7.7	4000	2500	0.7	0.2
					NAJAS FLEXILIS	1.0	0.6				
					POT. GRAMINEUS	54.2	38.5				
					POT. RICHARDSONI	67.9	54.7				
					POT. NARROW	0.3	0.2				
					VALLISNERIA AMER	5.1	3.7				
	3	309600	498266	9.0	CHARA SPP.	47.3	15.3	4000	2500	0.7	0.2
					POT. GRAMINEUS	62.2	46.7				
					POT. RICHARDSONI	3.2	2.4				
					POT. NARROW	2.9	2.3				
					VALLISNERIA AMER	18.8	13.5				
6	1	309595	498266	3.0	CHARA SPP.	195.2	60.1	3800	3000	0.6	0.6
					POT. GRAMINEUS	0.5	0.2				
					POT. RICHARDSONI	0.4	0.3				
	2	309595	498266	3.0	CHARA SPP.	182.9	58.7	3800	3000	0.6	0.6
					NAJAS FLEXILIS	TRACE					
	3	309595	498266	3.0	CHARA SPP.	114.9	32.4	3800	3000	0.6	0.6
					NAJAS FLEXILIS	0.3	0.1				
	4	309595	498263	8.5	CHARA SPP.	3.2	1.2	3900	110	0.4	0.0
					ELODEA CANADENS	10.5	7.3				
					POT. RICHARDSONI	52.5	41.1				
					POT. NARROW	84.2	62.9				
	5	309595	498263	8.5	ELODEA CANADENS	260.7	188.4	3900	110	0.4	0.0
					POT. RICHARDSONI	8.9	6.7				
					POT. NARROW	22.3	18.7				
	6	309595	498263	8.5	ELODEA CANADENS	90.1	64.8	3900	110	0.4	0.0
					POT. GRAMINEUS	4.9	3.3				
					POT. RICHARDSONI	34.9	28.1				
					POT. NARROW	22.6	18.7				
7	1	309584	498266	3.0	CHARA SPP.	112.5	46.1	1500	350	0.2	0.0
					ELODEA CANADENS	1.1	0.7				
					NAJAS FLEXILIS	TRACE					
					POT. GRAMINEUS	42.1	33.9				
					POT. RICHARDSONI	17.7	14.5				
					POT. NARROW	58.4	33.9				
	2	309584	498266	3.0	POT. GRAMINEUS	69.3	55.3	1500	350	0.2	0.0
					POT. NARROW	62.2	48.8				
	3	309584	498266	3.0	CHARA SPP.	25.9	10.3	1500	350	0.2	0.0
					POT. GRAMINEUS	117.1	88.7				

					POT. RICHARDSONI	14.9	11.2				
					POT. NARROW	52.3	38.7				
	4	309585	498263	3.0	CHARA SPP.	49.0	16.1	2100	1800	0.8	0.6
	5	309585	498263	3.0	CHARA SPP.	73.4	27.1	2100	1800	0.8	0.6
	6	309585	498263	3.0	CHARA SPP.	72.5	27.3	2100	1800	0.8	0.6
8	1	309605	498270	5.0	CHARA SPP.	1.7	0.6	4400	1800	0.5	0.1
					POT. GRAMINEUS	134.2	100.1				
					POT. RICHARDSONI	23.5	18.4				
					POT. NARROW	TRACE					
					VALLISNERIA AMER	2.7	2.0				
	2	309605	498270	5.0	CHARA SPP.	7.4	3.0	4400	1800	0.5	0.1
					POT. GRAMINEUS	133.3	102.1				
					POT. RICHARDSONI	10.0	8.1				
	3	309605	498270	5.0	CHARA SPP.	2.1	0.8	4400	1800	0.5	0.1
					POT. GRAMINEUS	159.1	119.2				
					POT. RICHARDSONI	49.5	39.6				
					POT. NARROW	0.9	0.7				
9	1	309598	498273	2.5	CHARA SPP.	131.4	43.5	4100	3900	0.4	0.2
					POT. GRAMINEUS	1.0	0.6				
	2	309598	498273	2.5	CHARA SPP.	342.6	98.4	4100	3900	0.4	0.2
					POT. GRAMINEUS	2.4	1.4				
	3	309598	498273	2.5	CHARA SPP.	219.5	69.7	4100	3900	0.4	0.2
					POT. GRAMINEUS	TRACE					
10	1	309619	498281	8.0	CHARA SPP.	338.3	117.1	4100	1400	1.1	1.0
					NAJAS FLEXILIS	9.6	7.2				
					POT. GRAMINEUS	51.5	38.4				
					VALLISNERIA AMER	11.8	8.0				
	2	309619	498281	8.0	CHARA SPP.	171.6	56.9	4100	1400	1.1	1.0
					NAJAS FLEXILIS	4.9	3.6				
					POT. GRAMINEUS	15.4	11.1				
					VALLISNERIA AMER	2.5	1.4				
	3	309619	498281	8.0	CHARA SPP.	159.0	58.3	4100	1400	1.1	1.0
					NAJAS FLEXILIS	7.8	5.4				
					POT. GRAMINEUS	20.0	14.2				
11	1	309612	498279	3.5	CHARA SPP.	194.3	61.7	4200	2500	0.6	0.3
					NAJAS FLEXILIS	0.1	0.1				
					POT. GRAMINEUS	58.2	45.1				
					POT. RICHARDSONI	20.8	16.4				
					POT. NARROW	12.3	10.2				
					VALLISNERIA AMER	14.5	10.4				
	2	309612	498279	3.5	CHARA SPP.	163.1	54.5	4200	2500	0.6	0.3
					POT. GRAMINEUS	34.3	24.1				
					POT. RICHARDSONI	7.3	4.8				
					POT. NARROW	4.4	3.3				
					VALLISNERIA AMER	18.5	13.3				

3	309612	498279	3.5	CHARA SPP.	34.1	11.1	4200	2500	0.6	0.3
				POT. GRAMINEUS	48.9	31.8				
				POT. RICHARDSONI	26.7	21.4				
				POT. NARROW	11.0	8.6				

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SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	RUSSELL	1	1	309949	498651	9.0	POT. NODOSUS	2.1	1.7	2000	100	1.5	0.3
							POT. NARROW	95.5	82.9				
			2	309949	498651	9.0	CHARA SPP.	4.0	1.5	2000	100	1.5	0.3
							POT. NATANS	TRACE					
							POT. GRAMINEUS	38.5	30.1				
							POT. NARROW	149.2	127.4				
			3	309949	498651	9.0	POT. GRAMINEUS	13.8	11.5	2000	100	1.5	0.3
							POT. NARROW	137.2	119.2				
		2	1	309940	498650	9.0	CHARA SPP.	122.2	42.9	2700	950	1.9	0.4
							POT. GRAMINEUS	36.7	29.7				
							POT. NARROW	4.7	3.8				
			2	309940	498650	9.0	CHARA SPP.	129.3	48.1	2700	950	1.9	0.4
							POT. GRAMINEUS	54.7	42.1				
							POT. NARROW	28.8	24.5				
			3	309940	498650	9.0	CHARA SPP.	235.8	86.1	2700	950	1.9	0.4
							POT. GRAMINEUS	55.7	43.4				
							POT. NARROW	1.2	0.9				
		3	1	309970	498660	8.0	ELODEA CANADENS	20.9	15.2	1500	330	0.2	0.1
							POT. RICHARDSONI	42.2	35.2				
							POT. NARROW	32.8	27.3				
							NITELLOP. OBTUSA	57.3	29.4				
			2	309970	498660	8.0	ELODEA CANADENS	5.6	4.0	1500	330	0.2	0.1
							NITELLA HYALINA	5.8	2.8				
							POT. RICHARDSONI	37.3	30.7				
							POT. NARROW	90.9	76.3				
			3	309970	498660	8.0	CHARA SPP.	1.1	0.4	1500	330	0.2	0.1
							ELODEA CANADENS	0.1	0.0				
							POT. NODOSUS	6.0	4.7				
							POT. NARROW	121.9	102.1				
							NITELLOP. OBTUSA	80.0	38.4				
			4	309968	498659	11.0	ELODEA CANADENS	158.4	117.1	3100	1100	0.3	0.1
							MYRIO. SPICATUM	0.5	0.5				
			5	309968	498659	11.0	ELODEA CANADENS	137.6	97.0	3100	1100	0.3	0.1
			6	309968	498659	11.0	ELODEA CANADENS	143.6	110.1	3100	1100	0.3	0.1
							MYRIO. SPICATUM	0.6	0.4				
							POT. GRAMINEUS	0.7	0.6				
		4	1	309955	498659	7.0	CHARA SPP.	65.7	22.6	1500	5	0.5	0.1
							POT. NATANS	77.0	52.8				
							POT. GRAMINEUS	108.2	78.7				
							VALLISNERIA AMER	15.7	9.6				

	2	309955	498659	7.0	CHARA SPP.	3.7	1.3	1500	5	0.5	0.1
					POT. NATANS	68.2	57.1				
					POT. GRAMINEUS	89.0	71.0				
					VALLISNERIA AMER	8.7	6.1				
	3	309955	498659	7.0	CHARA SPP.	22.2	7.9	1500	5	0.5	0.1
					POT. NATANS	71.5	57.8				
					POT. GRAMINEUS	40.5	31.1				
					VALLISNERIA AMER	6.8	4.7				
5	1	309950	498657	7.0	CHARA SPP.	1.8	0.6	820	25	0.3	0.1
					ELODEA CANADENS	17.8	14.7				
					POT. GRAMINEUS	156.0	120.5				
					POT. NARROW	64.0	53.9				
	2	309950	498657	7.0	CHARA SPP.	2.5	1.1	820	25	0.3	0.1
					POT. GRAMINEUS	69.4	56.5				
					POT. NARROW	11.3	9.2				
	3	309950	498657	7.0	CHARA SPP.	6.9	2.5	820	25	0.3	0.1
					ELODEA CANADENS	0.9	0.7				
					POT. GRAMINEUS	119.1	90.4				
					POT. NARROW	31.0	25.9				
6	1	309944	498658	7.0	CHARA SPP.	53.8	15.7	2500	1500	1.1	0.6
					POT. GRAMINEUS	119.9	84.8				
					POT. NARROW	47.5	39.3				
	2	309944	498658	7.0	CHARA SPP.	TRACE		2500	1500	1.1	0.6
					POT. GRAMINEUS	222.7	182.1				
					POT. NARROW	39.4	32.4				
	3	309944	498658	7.0	CHARA SPP.	6.5	2.0	2500	1500	1.1	0.6
					POT. GRAMINEUS	116.5	94.3				
7	1	309968	498664	4.0	POT. GRAMINEUS	71.5	50.8	2000	1500	0.5	0.1
					POT. RICHARDSONI	55.1	40.1				
					POT. NARROW	54.9	46.0				
	2	309968	498664	4.0	ELODEA CANADENS	2.0	1.5	2000	1500	0.5	0.1
					POT. RICHARDSONI	117.7	88.0				
					POT. NARROW	100.7	84.5				
	3	309968	498664	4.0	POT. NODOSUS	6.9	5.5	2000	1500	0.5	0.1
					POT. RICHARDSONI	139.3	105.2				
					POT. NARROW	153.6	127.7				
8	1	309963	498663	4.0	CHARA SPP.	11.1	4.0	1000	250	1.1	0.6
					POT. GRAMINEUS	63.3	48.3				
					POT. NARROW	107.0	93.4				
	2	309963	498663	4.0	CHARA SPP.	4.3	1.4	1000	250	1.1	0.6
					POT. GRAMINEUS	31.1	25.0				
					POT. NARROW	167.8	144.4				
	3	309963	498663	4.0	CHARA SPP.	7.0	2.5	1000	250	1.1	0.6
					POT. GRAMINEUS	26.9	21.7				
					POT. NARROW	119.5	103.2				

	4	309961	498661	4.0	CHARA SPP.	95.3	32.7	2900	1900	0.8	0.7
	5	309961	498661	4.0	CHARA SPP.	396.7	128.0	2900	1900	0.8	0.7
					POT. GRAMINEUS	3.2	2.3				
	6	309961	498661	4.0	CHARA SPP.	257.7	91.3	2900	1900	0.8	0.7
					POT. GRAMINEUS	5.9	4.7				
9	1	309954	498664	4.0	CHARA SPP.	189.1	65.8	3000	2000	0.6	0.2
					NAJAS FLEXILIS	1.5	1.0				
					POT. GRAMINEUS	76.4	56.9				
					POT. NARROW	18.4	15.4				
	2	309954	498664	4.0	CHARA SPP.	144.8	50.3	3000	2000	0.6	0.2
					NAJAS FLEXILIS	0.5	0.4				
					POT. GRAMINEUS	32.5	26.3				
					POT. NARROW	84.2	70.2				
	3	309954	498664	4.0	CHARA SPP.	30.6	10.5	3000	2000	0.6	0.2
					POT. GRAMINEUS	75.3	57.5				
					POT. NARROW	211.0	181.7				
					VALLISNERIA AMER	0.3	0.1				
	4	309950	498662	4.0	CHARA SPP.	136.8	43.8	3100	2000	0.6	0.2
	5	309950	498662	4.0	CHARA SPP.	205.5	69.6	3100	2000	0.6	0.2
					POT. GRAMINEUS	2.3	1.7				
	6	309950	498662	4.0	CHARA SPP.	213.2	71.9	3100	2000	0.6	0.2
					POT. GRAMINEUS	1.2	0.8				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	BELLE	1	1	312756	499946	8.0	CHARA SPP.	TRACE		2900	41	0.6	0.0
							POT. RICHARDSONI	135.4	109.9				
							VALLISNERIA AMER	51.0	35.9				
			2	312756	499946	8.0	POT. RICHARDSONI	48.8	38.0	2900	41	0.6	0.0
							VALLISNERIA AMER	60.5	41.7				
			3	312756	499946	8.0	POT. RICHARDSONI	152.3	112.5	2900	41	0.6	0.0
							VALLISNERIA AMER	13.7	9.3				
		2	1	312765	499956	9.0	VALLISNERIA AMER	85.1	52.8	3100	150	1.1	0.7
			2	312765	499956	9.0	VALLISNERIA AMER	67.4	41.0	3100	150	1.1	0.7
			3	312765	499956	9.0	POT. NARROW	3.4	2.0	3100	150	1.1	0.7
							VALLISNERIA AMER	91.9	53.8				
		3	1	312777	499962	8.5	POT. CRISPUS	5.0	4.5	3500	31	0.3	0.1
							POT. RICHARDSONI	310.0	181.4				
							VALLISNERIA AMER	16.6	9.4				
			2	312777	499962	8.5	POT. RICHARDSONI	51.4	35.6	3500	31	0.3	0.1
							VALLISNERIA AMER	97.7	54.7				
			3	312777	499962	8.5	POT. RICHARDSONI	220.0	134.0	3500	31	0.3	0.1
							POT. NARROW	12.9	10.3				
							VALLISNERIA AMER	28.0	17.9				
		4	1	312785	499969	10.5	CHARA SPP.	1.6	0.6	4500	340	1.1	0.7
							VALLISNERIA AMER	25.6	16.6				
			2	312785	499969	10.5	VALLISNERIA AMER	81.2	51.0	4500	340	1.1	0.7
			3	312785	499969	10.5	VALLISNERIA AMER	114.0	75.5	4500	340	1.1	0.7
		5	1	312802	499978	8.0	NAJAS FLEXILIS	14.4	8.7	4200	18	0.2	0.1
							POT. RICHARDSONI	60.4	45.7				
							VALLISNERIA AMER	111.8	66.0				
			2	312802	499978	8.0	POT. RICHARDSONI	244.6	165.6	4200	18	0.2	0.1
							VALLISNERIA AMER	45.8	29.6				
			3	312802	499978	8.0	POT. RICHARDSONI	165.5	101.5	4200	18	0.2	0.1
							VALLISNERIA AMER	77.1	45.7				
		6	1	312808	499983	11.0	CHARA SPP.	TRACE		1000	130	1.4	0.9
							VALLISNERIA AMER	103.3	68.0				
			2	312808	499983	11.0	VALLISNERIA AMER	152.9	88.0	1000	130	1.4	0.9
			3	312808	499983	11.0	VALLISNERIA AMER	120.3	82.4	1000	130	1.4	0.9

	4	312818	499987	8.0	CHARA SPP.	TRACE		2000	45	0.4	0.1
					POT. RICHARDSONI	53.6	32.9				
					VALLISNERIA AMER	53.7	25.4				
	5	312818	499987	8.0	NITELLA HYALINA	36.7	12.8	2000	45	0.4	0.1
					POT. GRAMINEUS	37.1	22.5				
					POT. RICHARDSONI	54.4	38.6				
					VALLISNERIA AMER	78.8	46.4				
	6	312818	499987	8.0	CHARA SPP.	3.8	1.4	2000	45	0.4	0.1
					ELODEA CANADENS	0.2	0.1				
					POT. RICHARDSONI	126.6	80.4				
					VALLISNERIA AMER	33.4	20.4				
7	1	312851	499991	4.0	MYRIO. SPICATUM	2.2	1.8	3500	600	0.1	0.0
					NAJAS FLEXILIS	0.7	0.4				
					NITELLA HYALINA	122.9	45.9				
					POT. RICHARDSONI	20.3	16.4				
					VALLISNERIA AMER	47.9	26.1				
					NITELLOP. OBTUSA	9.1	3.2				
	2	312851	499991	4.0	MYRIO. SPICATUM	1.3	1.0	3500	600	0.1	0.0
					POT. RICHARDSONI	87.8	65.7				
					VALLISNERIA AMER	20.9	12.4				
					NITELLOP. OBTUSA	9.8	3.0				
	3	312851	499991	4.0	NITELLA HYALINA	128.3	46.0	3500	600	0.1	0.0
					POT. RICHARDSONI	18.7	11.4				
					VALLISNERIA AMER	31.3	18.4				
	4	312852	499994	7.0	MYRIO. SPICATUM	10.3	7.3	4600	490	0.0	0.0
					NAJAS FLEXILIS	0.2	0.1				
					VALLISNERIA AMER	18.3	10.1				
					NITELLOP. OBTUSA	193.9	65.8				
	5	312852	499994	7.0	CHARA SPP.	TRACE		4600	490	0.0	0.0
					MYRIO. SPICATUM	41.5	23.5				
					NITELLA HYALINA	204.4	59.8				
					VALLISNERIA AMER	45.8	26.7				
	6	312852	499994	7.0	MYRIO. SPICATUM	2.0	1.4	4600	490	0.0	0.0
					NAJAS FLEXILIS	1.7	0.8				
					VALLISNERIA AMER	9.8	5.1				
					NITELLOP. OBTUSA	288.5	90.3				
8	1	312837	499991	6.0	MYRIO. SPICATUM	229.4	176.6	3600	400	0.1	0.1
					VALLISNERIA AMER	35.6	24.7				
	2	312837	499991	6.0	MYRIO. SPICATUM	182.1	130.3	3600	400	0.1	0.1
					VALLISNERIA AMER	68.8	47.2				
					NITELLOP. OBTUSA	43.3	16.0				
	3	312837	499991	6.0	MYRIO. SPICATUM	124.9	79.5	3600	400	0.1	0.1
					VALLISNERIA AMER	3.2	2.1				
					NITELLOP. OBTUSA	54.9	23.3				
	4	312841	499991	5.5	MYRIO. SPICATUM	0.6	0.5	1100	330	0.2	0.1
					NAJAS FLEXILIS	TRACE					
					VALLISNERIA AMER	0.4	0.2				
					NITELLOP. OBTUSA	219.9	75.1				

	5	312841	499991	5.5	MYRIO. SPICATUM	11.6	8.2	1100	330	0.2	0.1
					NITELLOP. OBTUSA	262.0	92.9				
	6	312841	499991	5.5	MYRIO. SPICATUM	1.1	0.8	1100	330	0.2	0.1
					NITELLA HYALINA	448.2	141.8				
					VALLISNERIA AMER	7.5	3.6				
9	1	312831	499989	3.0	CHARA SPP.	8.0	3.0	3900	2300	0.4	0.2
					NAJAS FLEXILIS	1.6	1.0				
					VALLISNERIA AMER	161.5	79.2				
	2	312831	499989	3.0	VALLISNERIA AMER	51.1	33.2	3900	2300	0.4	0.2
					NITELLOP. OBTUSA	51.8	18.8				
	3	312831	499989	3.0	CHARA SPP.	48.2	19.4	3900	2300	0.4	0.2
					VALLISNERIA AMER	205.2	107.4				
	4	312833	499991	7.0	MYRIO. SPICATUM	129.1	101.9	4200	490	0.2	0.1
					VALLISNERIA AMER	14.7	10.0				
	5	312833	499991	7.0	MYRIO. SPICATUM	153.7	115.5	4200	490	0.2	0.1
					VALLISNERIA AMER	6.6	5.0				
	6	312833	499991	7.0	MYRIO. SPICATUM	123.5	95.9	4200	490	0.2	0.1
					VALLISNERIA AMER	1.4	1.0				
					NITELLOP. OBTUSA	34.8	14.7				
10	1	312821	499987	4.0	NAJAS FLEXILIS	1.0	0.7	4500	2100	0.7	0.3
					NITELLA HYALINA	61.1	24.9				
					POT. GRAMINEUS	7.1	4.3				
					POT. RICHARDSONI	14.4	9.3				
					VALLISNERIA AMER	6.2	4.0				
					NITELLOP. OBTUSA	17.4	7.1				
	2	312821	499987	4.0	CHARA SPP.	13.1	4.8	4500	2100	0.7	0.3
					NAJAS FLEXILIS	TRACE					
					POT. GRAMINEUS	2.6	1.7				
					POT. RICHARDSONI	0.7	0.3				
					NITELLOP. OBTUSA	82.1	24.3				
	3	312821	499987	4.0	POT. GRAMINEUS	63.3	42.8	4500	2100	0.7	0.3
					POT. RICHARDSONI	5.6	3.2				
					VALLISNERIA AMER	12.3	8.6				
					NITELLOP. OBTUSA	82.9	37.2				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	HENNEPIN	1	1	314064	500669	5.0	VALLISNERIA AMER	30.0	18.8	2100	250	0.2	0.1
			2	314064	500669	5.0	VALLISNERIA AMER	70.6	45.8	2100	250	0.2	0.1
			3	314064	500669	5.0	VALLISNERIA AMER	25.6	15.6	2100	250	0.2	0.1
		2	1	314067	500675	6.0	POT. NARROW	2.3	1.5	2300	410	0.2	0.1
							VALLISNERIA AMER	37.3	21.3				
			2	314067	500675	6.0	VALLISNERIA AMER	98.1	60.9	2300	410	0.2	0.1
			3	314067	500675	6.0	VALLISNERIA AMER	103.3	48.1	2300	410	0.2	0.1
		3	1	314074	500682	5.0	VALLISNERIA AMER	149.1	123.3	2500	700	0.1	0.1
			2	314074	500682	5.0	VALLISNERIA AMER	76.5	47.8	2500	700	0.1	0.1
			3	314074	500682	5.0	VALLISNERIA AMER	101.9	13.3	2500	700	0.1	0.1
		4	1	314088	500692	6.0	VALLISNERIA AMER	66.1	32.6	2700	500	0.1	0.1
			2	314088	500692	6.0	VALLISNERIA AMER	134.5	73.3	2700	500	0.1	0.1
			3	314088	500692	6.0	CHARA SPP.	1.4	0.5	2700	500	0.1	0.1
							VALLISNERIA AMER	74.1	38.8				
		5	1	314070	500686	6.0	VALLISNERIA AMER	42.0	17.9	2700	45	0.5	0.1
			2	314070	500686	6.0	VALLISNERIA AMER	187.4	91.3	2700	45	0.5	0.1
			3	314070	500686	6.0	VALLISNERIA AMER	151.4	71.6	2700	45	0.5	0.1
		6	1	314078	500695	5.0	VALLISNERIA AMER	116.8	65.4	3100	170	0.2	0.1
			2	314078	500695	5.0	VALLISNERIA AMER	207.3	89.5	3100	170	0.2	0.1
			3	314078	500695	5.0	VALLISNERIA AMER	141.5	28.7	3100	170	0.2	0.1
		7	1	314095	500702	6.0	VALLISNERIA AMER	37.6	21.3	3400	240	0.2	0.1
			2	314095	500702	6.0	VALLISNERIA AMER	86.1	44.8	3400	240	0.2	0.1
			3	314095	500702	6.0	VALLISNERIA AMER	42.1	21.4	3400	240	0.2	0.1
		8	1	314084	500702	5.0	VALLISNERIA AMER	93.5	33.4	1100	100	0.1	0.1
			2	314084	500702	5.0	VALLISNERIA AMER	68.3	37.7	1100	100	0.1	0.1
			3	314084	500702	5.0	VALLISNERIA AMER	167.6	83.1	1100	100	0.1	0.1
			4	314079	500707	6.0	MYRIO. SPICATUM	106.8	80.5	1200	560	0.2	0.2
							VALLISNERIA AMER	5.5	3.6				

	5	314079	500707	6.0	MYRIO. SPICATUM	179.8	117.3	1200	560	0.2	0.2
					VALLISNERIA AMER	10.4	6.5				
	6	314079	500707	6.0	MYRIO. SPICATUM	207.9	97.6	1200	560	0.2	0.2
					VALLISNERIA AMER	4.3	2.6				
	7	314076	500702	5.0	POT. RICHARDSONI	272.1	200.6	3800	650	0.2	0.1
					POT. NARROW	0.9	0.6				
					VALLISNERIA AMER	1.2	0.8				
	8	314076	500702	5.0	POT. RICHARDSONI	143.8	102.5	3800	650	0.2	0.1
					VALLISNERIA AMER	76.8	43.7				
	9	314076	500702	5.0	MYRIO. SPICATUM	3.9	3.4	3800	650	0.2	0.1
					POT. RICHARDSONI	226.9	164.4				
	10	314078	500705	3.0	POT. NARROW	140.9	100.3	1800	1600	0.1	0.0
	11	314078	500705	3.0	POT. NARROW	363.7	226.0	1800	1600	0.1	0.0
	12	314078	500705	3.0	POT. NARROW	109.3	80.8	1800	1600	0.1	0.0
9	1	314094	500711	4.0	CHARA SPP.	0.6	0.2	3600	2200	0.2	0.2
					VALLISNERIA AMER	40.6	18.1				
	2	314094	500711	4.0	CHARA SPP.	0.9	0.3	3600	2200	0.2	0.2
					VALLISNERIA AMER	83.0	12.6				
	3	314094	500711	4.0	VALLISNERIA AMER	60.0	37.4	3600	2200	0.2	0.2
10	1	314101	500717	7.5	HETERANTHERA DUB	15.3	6.6	3600	1000	0.1	0.1
	2	314101	500717	7.5	HETERANTHERA DUB	3.2	1.7	3600	1000	0.1	0.1
	3	314101	500717	7.5	CHARA SPP.	1.4	0.4	3600	1000	0.1	0.1
					VALLISNERIA AMER	18.1	9.5				
11	1	314088	500717	8.0	HETERANTHERA DUB	2.2	7.9	3700	130	0.1	0.1
					VALLISNERIA AMER	114.6	15.3				
	2	314088	500717	8.0	CHARA SPP.	2.0	0.8	3700	130	0.1	0.1
					VALLISNERIA AMER	102.4	14.7				
	3	314088	500717	8.0	VALLISNERIA AMER	40.2	19.4	3700	130	0.1	0.1
	4	314086	500716	7.0	POT. NARROW	124.9	34.6	4000	25	0.3	0.1
					VALLISNERIA AMER	39.9	10.6				
	5	314086	500716	7.0	POT. NARROW	128.9	35.4	4000	25	0.3	0.1
					VALLISNERIA AMER	50.2	26.2				
	6	314086	500716	7.0	POT. NARROW	91.2	22.6	4000	25	0.3	0.1
					VALLISNERIA AMER	57.0	30.6				
12	1	314099	500726	6.0	NAJAS FLEXILIS	TRACE		1500	200	0.5	0.2
					POT. RICHARDSONI	1.4	1.0				
					VALLISNERIA AMER	123.4	63.2				
	2	314099	500726	6.0	VALLISNERIA AMER	93.5	173.9	1500	200	0.5	0.2

	3	314099	500726	6.0	CHARA SPP.	TRACE		1500	200	0.5	0.2
					HETERANTHERA DUB	0.3	0.2				
					VALLISNERIA AMER	44.5	24.1				
13	1	314100	500733	8.0	POT. RICHARDSONI	88.8	17.4	2400	210	0.6	0.0
					POT. NARROW	1.3	0.9				
	2	314100	500733	8.0	POT. RICHARDSONI	43.5	19.6	2400	210	0.6	0.0
					VALLISNERIA AMER	TRACE					
	3	314100	500733	8.0	POT. RICHARDSONI	24.2	18.7	2400	210	0.6	0.0
	4	314103	500732	9.0	VALLISNERIA AMER	127.1	55.0	3500	15	0.1	0.2
	5	314103	500732	9.0	VALLISNERIA AMER	55.2	9.1	3500	15	0.1	0.2
	6	314103	500732	9.0	ELODEA CANADENS	1.8	1.2	3500	15	0.1	0.2
					NAJAS FLEXILIS	0.3	0.2				
					VALLISNERIA AMER	40.1	23.3				
14	1	314108	500736	8.0	VALLISNERIA AMER	60.4	27.9	2000	120	0.3	0.1
	2	314108	500736	8.0	VALLISNERIA AMER	109.6	47.8	2000	120	0.3	0.1
	3	314108	500736	8.0	VALLISNERIA AMER	56.6	13.0	2000	120	0.3	0.1

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	1	1	314223	500981	7.0	VALLISNERIA AMER	150.5	90.1	2300	51	0.7	0.0
			2	314223	500981	7.0	VALLISNERIA AMER	131.3	84.4	2300	51	0.7	0.0
			3	314223	500981	7.0	VALLISNERIA AMER	160.6	120.0	2300	51	0.7	0.0
		2	1	314217	500976	6.0	POT. NARROW	0.6	0.5	2100	180	0.5	0.3
							VALLISNERIA AMER	125.5	62.0				
			2	314217	500976	6.0	VALLISNERIA AMER	156.4	92.8	2100	180	0.5	0.3
			3	314217	500976	6.0	VALLISNERIA AMER	205.0	105.4	2100	180	0.5	0.3
		3	1	314205	500976	6.0	MYRIO. SPICATUM	27.4	16.1	1500	6	0.5	0.1
							VALLISNERIA AMER	142.7	94.3				
			2	314205	500976	6.0	MYRIO. SPICATUM	130.4	91.7	1500	6	0.5	0.1
							VALLISNERIA AMER	150.2	94.7				
			3	314205	500976	6.0	MYRIO. SPICATUM	287.3	206.5	1500	6	0.5	0.1
							VALLISNERIA AMER	104.5	51.7				
		4	1	314199	500975	6.0	MYRIO. SPICATUM	125.8	92.8	1800	230	0.5	0.2
							VALLISNERIA AMER	34.5	18.7				
			2	314199	500975	6.0	MYRIO. SPICATUM	57.9	40.1	1800	230	0.5	0.2
							VALLISNERIA AMER	140.2	133.4				
			3	314199	500975	6.0	MYRIO. SPICATUM	169.1	108.6	1800	230	0.5	0.2
							VALLISNERIA AMER	58.8	32.6				
		5	1	314217	500983	6.0	VALLISNERIA AMER	34.8	18.5	2900	150	0.8	0.1
			2	314217	500983	6.0	VALLISNERIA AMER	96.1	58.1	2900	150	0.8	0.1
			3	314217	500983	6.0	VALLISNERIA AMER	107.8	59.2	2900	150	0.8	0.1
		6	1	314220	500983	2.0	ELODEA CANADENS	0.4	0.3	1100	210	0.1	0.0
							VALLISNERIA AMER	198.8	115.7				
			2	314220	500983	2.0	MYRIO. SPICATUM	1.2	0.8	1100	210	0.1	0.0
							VALLISNERIA AMER	192.0	113.2				
			3	314220	500983	2.0	VALLISNERIA AMER	157.4	98.8	1100	210	0.1	0.0
		7	1	314235	500990	2.5	MYRIO. SPICATUM	53.6	40.0	1000	270	0.3	0.2
							VALLISNERIA AMER	TRACE					
			2	314235	500990	2.5	HETERANTHERA DUB	2.8	2.0	1000	270	0.3	0.2
							MYRIO. SPICATUM	301.3	240.1				
			3	314235	500990	2.5	HETERANTHERA DUB	6.8	4.7	1000	270	0.3	0.2

					MYRIO. SPICATUM	169.2	116.6				
8	1	314227	500990	4.0	ELODEA CANADENS	0.4	0.2	2500	210	0.1	0.1
					HETERANTHERA DUB	324.2	218.6				
					MYRIO. SPICATUM	14.3	10.0				
					POT. CRISPUS	5.5	4.8				
	2	314227	500990	4.0	HETERANTHERA DUB	178.1	134.4	2500	210	0.1	0.1
	3	314227	500990	4.0	ELODEA CANADENS	1.4	1.0	2500	210	0.1	0.1
					HETERANTHERA DUB	260.6	188.4				
9	1	314244	500996	4.0	MYRIO. SPICATUM	133.8	102.5	1600	1300	0.5	0.4
	2	314244	500996	4.0	MYRIO. SPICATUM	377.2	290.7	1600	1300	0.5	0.4
					VALLISNERIA AMER	2.3	1.5				
	3	314244	500996	4.0	HETERANTHERA DUB	4.1	3.0	1600	1300	0.5	0.4
					MYRIO. SPICATUM	324.8	239.1				
10	1	314246	501000	2.0	MYRIO. SPICATUM	0.2	0.1	3500	800	0.3	0.2
					VALLISNERIA AMER	194.2	96.8				
	2	314246	501000	2.0	VALLISNERIA AMER	309.2	154.1	3500	800	0.3	0.2
	3	314246	501000	2.0	VALLISNERIA AMER	139.1	83.9	3500	800	0.3	0.2
11	1	314252	501004	3.0	VALLISNERIA AMER	117.3	64.8	1800	-	0.6	-
	2	314252	501004	3.0	VALLISNERIA AMER	158.1	91.8	1800	-	0.6	-
	3	314252	501004	3.0	VALLISNERIA AMER	115.5	72.4	1800	-	0.6	-

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	STAG	1	1	309028	497379	12.0	NO PLANTS PRESENT			510	330	3.0	2.8
			2	309028	497379	12.0	NO PLANTS PRESENT			510	330	3.0	2.8
			3	309028	497379	12.0	NO PLANTS PRESENT			510	330	3.0	2.8
		2	1	309039	497385	12.0	NO PLANTS PRESENT			1100	550	3.0	2.9
			2	309039	497385	12.0	NO PLANTS PRESENT			1100	550	3.0	2.9
			3	309039	497385	12.0	NO PLANTS PRESENT			1100	550	3.0	2.9
		3	1	309029	497386	10.5	NO PLANTS PRESENT			510	340	2.9	2.5
			2	309029	497386	10.5	NO PLANTS PRESENT			510	340	2.9	2.5
			3	309029	497386	10.5	NO PLANTS PRESENT			510	340	2.9	2.5
		4	1	309044	497393	12.0	NO PLANTS PRESENT			820	580	2.9	2.8
			2	309044	497393	12.0	NO PLANTS PRESENT			820	580	2.9	2.8
			3	309044	497393	12.0	NO PLANTS PRESENT			820	580	2.9	2.8
		5	1	309027	497392	7.0	NO PLANTS PRESENT			600	300	2.8	2.2
			2	309027	497392	7.0	NO PLANTS PRESENT			600	300	2.8	2.2
			3	309027	497392	7.0	NO PLANTS PRESENT			600	300	2.8	2.2
		6	1	309042	497402	5.0	CHARA SPP.	0.6	0.2	620	580	2.6	2.0
							POT. NARROW	35.3	21.5				
			2	309042	497402	5.0	POT. GRAMINEUS	4.6	2.9	620	580	2.6	2.0
							POT. NARROW	19.3	12.3				
			3	309042	497402	5.0	POT. NARROW	6.2	5.0	620	580	2.6	2.0
			4	309043	497403	3.0	CHARA SPP.	11.6	4.8	2200	1000	2.2	1.7
							POT. GRAMINEUS	5.8	3.5				
							POT. NARROW	1.7	1.1				
			5	309043	497403	3.0	CHARA SPP.	TRACE		2200	1000	2.2	1.7
							POT. GRAMINEUS	23.0	8.8				
							POT. NARROW	2.0	1.2				
			6	309043	497403	3.0	CHARA SPP.	0.3	0.1	2200	1000	2.2	1.7
							POT. GRAMINEUS	23.7	14.2				
		7	1	309035	497405	8.0	CHARA SPP.	7.5	4.7	3100	520	0.8	0.8
							ELODEA CANADENS	7.4	5.2				
							MYRIO. SPICATUM	0.2	0.1				
							POT. CRISPUS	19.4	13.2				
							POT. RICHARDSONI	9.4	6.5				
			2	309035	497405	8.0	ELODEA CANADENS	0.9	0.6	3100	520	0.8	0.8
							NITELLA HYALINA	1.9	1.1				
							POT. RICHARDSONI	30.1	22.7				
			3	309035	497405	8.0	CHARA SPP.	4.2	2.6	3100	520	0.8	0.8
							ELODEA CANADENS	11.2	8.1				
							POT. BROAD	8.7	7.4				

					POT. CRISPUS	1.7	1.6				
	4	309036	497397	6.0	POT. GRAMINEUS	5.6	3.8	1500	780	1.9	0.4
					POT. RICHARDSONI	10.8	6.8				
					POT. NARROW	27.4	18.6				
	5	309036	497397	6.0	POT. NARROW	47.9	31.8	1500	780	1.9	0.4
	6	309036	497397	6.0	POT. GRAMINEUS	3.5	2.0	1500	780	1.9	0.4
					POT. NARROW	60.6	39.4				
	7	309040	497402	2.5	CHARA SPP.	0.9	0.6	1800	900	2.2	1.0
					POT. GRAMINEUS	4.1	2.8				
	8	309040	497402	2.5	CHARA SPP.	7.3	5.0	1800	900	2.2	1.0
					POT. GRAMINEUS	5.6	4.0				
					POT. NARROW	1.1	0.8				
	9	309040	497402	2.5	CHARA SPP.	43.1	20.3	1800	900	2.2	1.0
					POT. GRAMINEUS	7.3	3.1				
8	1	309045	497408	7.0	CHARA SPP.	2.0	1.0	3900	2300	0.9	0.1
					ELODEA CANADENS	1.6	1.0				
					MYRIO. SPICATUM	172.8	121.4				
					POT. BROAD	1.3	0.9				
	2	309045	497408	7.0	CHARA SPP.	1.7	0.9	3900	2300	0.9	0.1
					ELODEA CANADENS	0.7	0.3				
					MYRIO. SPICATUM	131.9	77.3				
					POT. BROAD	9.9	0.8				
	3	309045	497408	7.0	CHARA SPP.	3.8	2.1	3900	2300	0.9	0.1
					ELODEA CANADENS	4.8	3.4				
					MYRIO. SPICATUM	49.4	32.4				
					POT. BROAD	0.8	0.7				
					POT. RICHARDSONI	6.0	3.4				
	4	309042	497402	4.5	CHARA SPP.	0.9	0.4	1500	1200	2.3	1.9
					POT. NARROW	21.1	16.0				
	5	309042	497402	4.5	CHARA SPP.	185.6	74.5	1500	1200	2.3	1.9
					POT. NARROW	56.4	38.8				
	6	309042	497402	4.5	CHARA SPP.	1.9	1.0	1500	1200	2.3	1.9
					POT. NARROW	58.7	47.7				
9	1	309037	497407	8.0	CHARA SPP.	1.7	0.5	3500	2100	0.5	0.1
					ELODEA CANADENS	2.0	1.4				
					MYRIO. EXALBESC	1.3	1.1				
					POT. CRISPUS	22.6	19.0				
					POT. ZOSTERIFORM	3.4	2.9				
	2	309037	497407	8.0	CHARA SPP.	0.2	0.1	3500	2100	0.5	0.1
					POT. BROAD	1.7	1.5				
					POT. CRISPUS	1.8	1.5				
	3	309037	497407	8.0	ELODEA CANADENS	6.7	1.1	3500	2100	0.5	0.1
					MYRIO. EXALBESC	3.8	3.0				
					POT. CRISPUS	44.9	33.5				

	4	309036	497406	2.5	CHARA SPP.	77.4	51.3	900	780	0.1	0.0
	5	309036	497406	2.5	CHARA SPP.	12.7	4.7	900	780	0.1	0.0
	6	309036	497406	2.5	CHARA SPP.	29.3	13.1	900	780	0.1	0.0
					ELODEA CANADENS	0.1	0.1				
	7	309039	497402	10.0	CHARA SPP.	3.3	1.8	2300	780	1.9	1.3
					ELODEA CANADENS	27.1	16.3				
					MYRIO. SPICATUM	22.9	17.7				
					POT. BROAD	1.3	1.0				
	8	309039	497402	10.0	CHARA SPP.	7.2	3.8	2300	780	1.9	1.3
					ELODEA CANADENS	2.9	1.9				
					POT. RICHARDSONI	8.1	4.2				
					POT. NARROW	1.2	1.0				
	9	309039	497402	10.0	CHARA SPP.	5.2	2.5	2300	780	1.9	1.3
					ELODEA CANADENS	20.3	11.8				
					MYRIO. SPICATUM	0.5	0.2				
					POT. RICHARDSONI	9.7	5.5				
					POT. NARROW	8.1	5.5				
10	1	309056	497412	9.0	CHARA SPP.	36.7	18.8	1500	500	1.7	0.7
					ELODEA CANADENS	58.1	36.0				
					NITELLA HYALINA	1.7	1.2				
					POT. NARROW	41.5	31.4				
	2	309056	497412	9.0	CHARA SPP.	109.5	53.8	1500	500	1.7	0.7
					ELODEA CANADENS	16.2	10.5				
					POT. NARROW	24.1	17.5				
	3	309056	497412	9.0	CHARA SPP.	13.7	6.6	1500	500	1.7	0.7
					ELODEA CANADENS	32.2	17.7				
					POT. RICHARDSONI	1.8	1.4				
					POT. NARROW	2.9	2.2				
11	1	309046	497414	3.5	CHARA SPP.	70.1	29.4	1300	900	0.3	0.0
					POT. NARROW	1.1	0.9				
	2	309046	497414	3.5	CHARA SPP.	154.4	61.0	1300	900	0.3	0.0
	3	309046	497414	3.5	CHARA SPP.	74.2	30.3	1300	900	0.3	0.0
					ELODEA CANADENS	0.4	0.3				
					POT. NARROW	2.3	2.1				
	4	309045	497410	6.2	ELODEA CANADENS	72.4	38.7	4800	3500	0.3	0.1
					MYRIO. SPICATUM	21.0	14.0				
					POT. NARROW	48.7	35.6				
	5	309045	497410	6.2	CHARA SPP.	TRACE		4800	3500	0.3	0.1
					ELODEA CANADENS	18.1	11.2				
					POT. NARROW	48.3	35.8				
	6	309045	497410	6.2	CHARA SPP.	TRACE		4800	3500	0.3	0.1
					ELODEA CANADENS	84.5	57.1				
					POT. RICHARDSONI	6.1	4.7				
					POT. NARROW	13.0	10.2				
	7	309054	497413	9.0	ELODEA CANADENS	2.6	1.6	2400	810	1.6	1.2

					MYRIO. EXALBESC	TRACE					
					NITELLA HYALINA	142.9	81.6				
					POT. NARROW	19.2	13.1				
	8	309054	497413	9.0	ELODEA CANADENS	5.0	3.4	2400	810	1.6	1.2
					NITELLA HYALINA	129.0	70.7				
					POT. NARROW	14.1	9.9				
	9	309054	497413	9.0	CHARA SPP.	96.4	45.2	2400	810	1.6	1.2
					POT. NARROW	0.2	0.1				
	10	309054	497414	8.0	ELODEA CANADENS	10.2	6.9	2500	800	1.6	1.3
					NITELLA HYALINA	45.5	26.9				
					POT. NARROW	27.6	19.6				
	11	309054	497414	8.0	CHARA SPP.	8.2	3.4	2500	800	1.6	1.3
					ELODEA CANADENS	17.8	9.6				
					NITELLA HYALINA	105.6	52.2				
					POT. NARROW	36.6	21.1				
	12	309054	497414	8.0	ELODEA CANADENS	1.4	0.7	2500	800	1.6	1.3
					NITELLA HYALINA	3.4	1.6				
					POT. RICHARDSONI	2.6	1.7				
					POT. NARROW	21.0	14.8				
12	1	309041	497413	3.0	CHARA SPP.	446.2	309.9	3500	2500	0.1	0.0
	2	309041	497413	3.0	CHARA SPP.	470.7	337.2	3500	2500	0.1	0.0
	3	309041	497413	3.0	CHARA SPP.	389.6	294.2	3500	2500	0.1	0.0
	4	309044	497411	7.0	ELODEA CANADENS	65.7	45.2	2500	1400	0.6	0.0
					POT. BROAD	3.2	13.8				
	5	309044	497411	7.0	ELODEA CANADENS	37.6	23.9	2500	1400	0.6	0.0
					MYRIO. SPICATUM	1.6	1.1				
					NITELLA HYALINA	0.5	0.3				
					POT. BROAD	1.2	0.9				
					POT. NARROW	1.6	1.2				
	6	309044	497411	7.0	CHARA SPP.	0.3	0.1	2500	1400	0.6	0.0
					ELODEA CANADENS	14.1	9.4				
					MYRIO. SPICATUM	0.5	0.4				
					POT. NARROW	5.4	3.9				
13	1	309057	497413	11.0	CHARA SPP.	3.8	1.8	3000	520	1.3	0.6
					ELODEA CANADENS	5.1	2.9				
					NITELLA HYALINA	112.5	58.1				
					POT. GRAMINEUS	3.0	2.2				
	2	309057	497413	11.0	CHARA SPP.	3.0	1.4	3000	520	1.3	0.6
					ELODEA CANADENS	10.9	7.7				
					MYRIO. SPICATUM	0.3	0.2				
					NITELLA HYALINA	93.6	52.3				
					POT. BROAD	3.7	2.9				
					POT. NARROW	0.9	0.7				
	3	309057	497413	11.0	CHARA SPP.	131.5	62.8	3000	520	1.3	0.6
					ELODEA CANADENS	5.9	3.7				
					POT. RICHARDSONI	0.6	0.5				

					POT. NARROW	0.6	0.4				
14	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
	2	-	-	-	NO PLANTS PRESENT			-	-	-	-
	3	-	-	-	NO PLANTS PRESENT			-	-	-	-
15	1	309076	497428	7.0	POT. GRAMINEUS	27.6	15.7	3000	1200	2.2	1.6
	2	309076	497428	7.0	CHARA SPP.	2.1	0.7	3000	1200	2.2	1.6
					POT. GRAMINEUS	17.0	11.5				
	3	309076	497428	7.0	CHARA SPP.	0.3	0.1	3000	1200	2.2	1.6
					POT. GRAMINEUS	2.9	2.0				
	4	309073	497430	3.0	CHARA SPP.	39.7	18.4	3500	3100	1.3	0.9
	5	309073	497430	3.0	CHARA SPP.	17.2	7.3	3500	3100	1.3	0.9
					POT. NARROW	0.4	0.3				
	6	309073	497430	3.0	CHARA SPP.	182.8	132.6	3500	3100	1.3	0.9
					POT. NARROW	0.2	0.1				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	1	1	309569	498255	11.0	CHARA SPP.	2.2	0.6	4500	1500	2.6	2.5
							POT. GRAMINEUS	17.2	10.4				
							POT. NARROW	12.4	7.9				
			2	309569	498255	11.0	POT. GRAMINEUS	26.2	15.2	4500	1500	2.6	2.5
							POT. NARROW	0.2	0.1				
			3	309569	498255	11.0	NITELLA HYALINA	4.8	1.7	4500	1500	2.6	2.5
							POT. GRAMINEUS	6.0	3.4				
							POT. NARROW	4.2	2.1				
		2	1	309571	498260	9.0	CHARA SPP.	0.6	0.2	3500	1200	2.8	1.8
							POT. GRAMINEUS	9.4	6.8				
							POT. NARROW	5.0	4.0				
			2	309571	498260	9.0	POT. GRAMINEUS	23.4	19.2	3500	1200	2.8	1.8
							POT. RICHARDSONI	1.9	1.0				
			3	309571	498260	9.0	POT. GRAMINEUS	0.9	0.7	3500	1200	2.8	1.8
							POT. RICHARDSONI	1.5	1.2				
							POT. NARROW	16.1	10.6				
		3	1	309584	498262	4.0	CHARA SPP.	29.3	9.1	2100	1200	2.0	1.6
			2	309584	498262	4.0	CHARA SPP.	23.0	11.0	2100	1200	2.0	1.6
			3	309584	498262	4.0	CHARA SPP.	2.8	1.8	2100	1200	2.0	1.6
			4	309589	498263	7.0	POT. GRAMINEUS	0.9	9.3	1800	760	2.7	1.9
							POT. NARROW	1.6	1.1				
			5	309589	498263	7.0	POT. GRAMINEUS	2.4	1.5	1800	760	2.7	1.9
							POT. NARROW	5.6	4.6				
			6	309589	498263	7.0	POT. GRAMINEUS	1.5	1.2	1800	760	2.7	1.9
		4	1	309574	498262	5.0	CHARA SPP.	2.7	1.2	4000	1500	2.4	0.6
			2	309574	498262	5.0	CHARA SPP.	5.8	3.6	4000	1500	2.4	0.6
			3	309574	498262	5.0	CHARA SPP.	4.9	2.7	4000	1500	2.4	0.6
							POT. NARROW	0.3	0.1				
		5	1	309602	498270	6.0	CHARA SPP.	0.4	0.3	3200	1800	2.2	1.3
							POT. GRAMINEUS	1.1	0.7				
							POT. NARROW	1.1	0.8				
			2	309602	498270	6.0	CHARA SPP.	1.6	1.1	3200	1800	2.2	1.3
							POT. GRAMINEUS	1.3	0.8				
			3	309602	498270	6.0	CHARA SPP.	0.1	0.1	3200	1800	2.2	1.3
							POT. NARROW	6.6	3.8				

6	1	309590	498270	3.0	CHARA SPP.	2.6	1.7	3200	1900	1.8	1.3
	2	309590	498270	3.0	CHARA SPP.	10.0	4.8	3200	1900	1.8	1.3
	3	309590	498270	3.0	CHARA SPP.	8.3	4.4	3200	1900	1.8	1.3
7	1	309584	498268	3.0	CHARA SPP.	17.9	8.0	3700	2900	1.0	0.5
	2	309584	498268	3.0	CHARA SPP.	31.5	18.6	3700	2900	1.0	0.5
	3	309584	498268	3.0	CHARA SPP.	12.7	5.8	3700	2900	1.0	0.5
					POT. GRAMINEUS	3.2	1.8				
8	1	309606	498275	4.0	CHARA SPP.	12.2	6.8	3400	1900	0.9	0.7
	2	309606	498275	4.0	CHARA SPP.	21.3	6.2	3400	1900	0.9	0.7
	3	309606	498275	4.0	CHARA SPP.	4.3	2.2	3400	1900	0.9	0.7
					POT. NARROW	0.8	0.5				
9	1	309601	498277	3.0	POT. RICHARDSONI	5.2	3.1	3600	2100	1.7	1.5
	2	309601	498277	3.0	POT. RICHARDSONI	9.6	7.5	3600	2100	1.7	1.5
					POT. NARROW	3.7	2.2				
	3	309601	498277	3.0	POT. RICHARDSONI	26.6	18.3	3600	2100	1.7	1.5
	4	309593	498273	2.5	CHARA SPP.	0.5	0.2	1500	1300	1.6	1.1
					POT. GRAMINEUS	2.5	2.1				
					POT. NARROW	8.8	6.1				
	5	309593	498273	2.5	POT. CRISPUS	2.9	2.2	1500	1300	1.6	1.1
					POT. NARROW	1.8	1.3				
	6	309593	498273	2.5	POT. GRAMINEUS	4.6	3.4	1500	1300	1.6	1.1
					POT. RICHARDSONI	3.9	3.0				
					POT. NARROW	0.5	0.3				
10	1	309619	498284	2.0	CHARA SPP.	10.0	7.3	3800	3000	1.2	0.7
					POT. CRISPUS	5.5	4.4				
	2	309619	498284	2.0	CHARA SPP.	4.8	3.7	3800	3000	1.2	0.7
					POT. GRAMINEUS	6.4	4.6				
	3	309619	498284	2.0	CHARA SPP.	3.4	2.3	3800	3000	1.2	0.7
					POT. GRAMINEUS	6.3	4.8				
	4	309619	498285	4.0	CHARA SPP.	163.8	81.4	3400	2500	1.1	0.9
					POT. GRAMINEUS	16.5	11.8				
					POT. RICHARDSONI	9.8	7.6				
	5	309619	498285	4.0	CHARA SPP.	21.9	11.1	3400	2500	1.1	0.9
					POT. GRAMINEUS	3.7	3.1				
					POT. RICHARDSONI	25.9	19.6				
	6	309619	498285	4.0	CHARA SPP.	2693.3	1706.8	3400	2500	1.1	0.9
					POT. RICHARDSONI	7.3	5.5				
					POT. NARROW	2.8	2.2				

11	1	309615	498283	3.0	CHARA SPP.	1.3	0.6	3600	1800	0.7	0.5
					POT. GRAMINEUS	5.9	3.2				
					POT. NARROW	0.7	0.4				
	2	309615	498283	3.0	POT. GRAMINEUS	9.4	5.9	3600	1800	0.7	0.5
	3	309615	498283	3.0	CHARA SPP.	0.7	0.3	3600	1800	0.7	0.5
					POT. GRAMINEUS	0.9	0.7				
					VALLISNERIA AMER	0.5	0.3				
	4	309616	498279	4.0	CHARA SPP.	17.8	10.6	4500	3100	1.0	0.8
	5	309616	498279	4.0	CHARA SPP.	38.2	16.3	4500	3100	1.0	0.8
	6	309616	498279	4.0	CHARA SPP.	96.9	47.0	4500	3100	1.0	0.8
					POT. NARROW	0.2	0.1				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	RUSSELL	1	1	309953	498657	10.0	CHARA SPP.	3.8	1.2	4000	450	2.5	0.8
							POT. NARROW	33.7	17.4				
			2	309953	498657	10.0	CHARA SPP.	TRACE		4000	450	2.5	0.8
							POT. NARROW	6.0	4.1				
			3	309953	498657	10.0	CHARA SPP.	0.1	0.1	4000	450	2.5	0.8
							POT. GRAMINEUS	2.5	1.9				
							POT. NARROW	9.7	6.8				
		2	1	309944	498653	8.5	CHARA SPP.	52.8	28.0	3500	1700	2.3	2.1
							NITELLA HYALINA	2.6	1.9				
							POT. GRAMINEUS	3.8	2.6				
			2	309944	498653	8.5	CHARA SPP.	80.8	30.9	3500	1700	2.3	2.1
							POT. GRAMINEUS	2.9	2.2				
							POT. NARROW	1.3	0.9				
			3	309944	498653	8.5	CHARA SPP.	67.9	32.1	3500	1700	2.3	2.1
							POT. NARROW	1.5	1.3				
			4	309944	498655	8.5	ELODEA CANADENS	0.1	0.0	3000	1600	2.4	1.9
							POT. GRAMINEUS	14.1	10.2				
			5	309944	498655	8.5	CHARA SPP.	19.6	8.9	3000	1600	2.4	1.9
							POT. GRAMINEUS	6.0	3.9				
			6	309944	498655	8.5	CHARA SPP.	0.8	0.4	3000	1600	2.4	1.9
							POT. GRAMINEUS	16.2	8.7				
		3	1	309970	498663	11.0	CHARA SPP.	1.5	0.7	3800	1300	2.5	1.1
							ELODEA CANADENS	14.8	10.9				
			2	309970	498663	11.0	CHARA SPP.	6.6	3.3	3800	1300	2.5	1.1
							ELODEA CANADENS	15.9	11.5				
							POT. RICHARDSONI	1.8	1.5				
							POT. NARROW	1.4	0.9				
			3	309970	498663	11.0	CHARA SPP.	7.0	3.4	3800	1300	2.5	1.1
							ELODEA CANADENS	28.0	20.3				
							NITELLA HYALINA	TRACE					
							POT. BROAD	1.5	1.2				
							POT. ZOSTERIFORM	1.0	0.7				
		4	1	309968	498662	7.0	POT. RICHARDSONI	19.1	13.1	3800	1900	1.8	0.5
			2	309968	498662	7.0	CHARA SPP.	1.0	0.5	3800	1900	1.8	0.5
							ELODEA CANADENS	1.0	0.6				
							POT. RICHARDSONI	33.3	20.0				
			3	309968	498662	7.0	CHARA SPP.	2.7	1.2	3800	1900	1.8	0.5
							POT. RICHARDSONI	24.2	18.3				

5	1	-	-	8.0	CHARA SPP.	12.4	6.3	3800	1700	1.8	1.3
					ELODEA CANADENS	4.0	2.4				
					NITELLA HYALINA	4.0	2.7				
					POT. RICHARDSONI	12.7	8.1				
					POT. NARROW	8.8	6.1				
	2	-	-	8.0	CHARA SPP.	4.2	2.0	3800	1700	1.8	1.3
					POT. RICHARDSONI	5.5	2.5				
					POT. NARROW	3.8	2.0				
	3	-	-	8.0	POT. RICHARDSONI	5.4	3.6	3800	1700	1.8	1.3
6	1	-	-	6.0	CHARA SPP.	93.2	42.3	3800	1900	1.8	1.5
					POT. GRAMINEUS	0.3	0.2				
	2	-	-	6.0	CHARA SPP.	50.7	23.9	3800	1900	1.8	1.5
					ELODEA CANADENS	0.3	0.1				
	3	-	-	6.0	CHARA SPP.	19.6	10.4	3800	1900	1.8	1.5
					POT. GRAMINEUS	0.5	0.3				
7	1	309974	498666	3.5	CHARA SPP.	102.9	47.1	3800	3500	1.6	1.5
					POT. NARROW	4.1	3.3				
	2	309974	498666	3.5	CHARA SPP.	156.2	52.6	3800	3500	1.6	1.5
					POT. NARROW	0.2	0.2				
	3	309974	498666	3.5	CHARA SPP.	16.2	7.9	3800	3500	1.6	1.5
					POT. NARROW	9.4	7.4				
	4	309977	498664	10.0	POT. RICHARDSONI	44.3	36.1	3800	1300	2.3	1.7
	5	309977	498664	10.0	NITELLA HYALINA	0.1	0.0	3800	1300	2.3	1.7
					POT. RICHARDSONI	32.1	21.2				
	C	309977	498664	10.0	POT. RICHARDSONI	22.5	18.6	3800	1300	2.3	1.7
8	1	309963	498664	6.5	CHARA SPP.	3.2	1.2	4500	2800	1.9	1.4
					POT. GRAMINEUS	1.9	1.2				
					POT. NARROW	15.4	11.3				
	2	309963	498664	6.5	CHARA SPP.	5.4	2.6	4500	2800	1.9	1.4
					POT. GRAMINEUS	8.9	5.5				
					POT. NARROW	25.2	20.2				
	3	309963	498664	6.5	CHARA SPP.	2.7	1.4	4500	2800	1.9	1.4
					POT. GRAMINEUS	5.0	3.2				
					POT. NARROW	26.2	19.5				
	4	309968	498665	4.0	CHARA SPP.	0.2	0.1	3000	1700	2.1	0.6
					ELODEA CANADENS	0.3	0.1				
					POT. RICHARDSONI	4.2	2.6				
					POT. NARROW	18.6	13.4				
	5	309968	498665	4.0	CHARA SPP.	18.8	7.3	3000	1700	2.1	0.6
					POT. GRAMINEUS	0.9	0.7				
					POT. NARROW	72.2	52.7				
	6	309968	498665	4.0	CHARA SPP.	0.3	0.1	3000	1700	2.1	0.6

					POT. RICHARDSONI	1.0	0.6				
					POT. NARROW	22.5	16.6				
9	1	309957	498662	5.5	CHARA SPP.	196.1	75.6	2000	1200	1.6	1.4
	2	309957	498662	5.5	CHARA SPP.	141.1	56.7	2000	1200	1.6	1.4
					POT. NARROW	0.5	0.4				
	3	309957	498662	5.5	CHARA SPP.	105.6	81.4	2000	1200	1.6	1.4
					POT. NARROW	0.3	0.2				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	BELLE	1	1	312761	499953	9.0	POT. NARROW	2.1	1.3	3000	370	0.8	0.4
							VALLISNERIA AMER	1.4	1.0				
			2	312761	499953	9.0	POT. NARROW	0.8	0.2	3000	370	0.8	0.4
							VALLISNERIA AMER	6.2	4.5				
			3	312761	499953	9.0	VALLISNERIA AMER	7.5	5.5	3000	370	0.8	0.4
		2	1	312766	499958	8.0	POT. RICHARDSONI	0.8	0.5	3500	450	0.3	0.1
							VALLISNERIA AMER	4.1	3.9				
			2	312766	499958	8.0	VALLISNERIA AMER	1.4	0.9	3500	450	0.3	0.1
			3	312766	499958	8.0	POT. NARROW	0.2	0.1	3500	450	0.3	0.1
							VALLISNERIA AMER	0.9	0.6				
		3	1	312779	499966	4.0	POT. CRISPUS	9.9	7.3	3000	150	0.8	0.3
							POT. RICHARDSONI	3.7	2.7				
							POT. NARROW	1.0	0.6				
							VALLISNERIA AMER	1.7	1.1				
			2	312779	499966	4.0	CHARA SPP.	0.2	0.1	3000	150	0.8	0.3
							POT. RICHARDSONI	2.6	1.8				
							POT. NARROW	1.7	1.1				
			3	312779	499966	4.0	POT. CRISPUS	2.9	2.5	3000	150	0.8	0.3
							POT. RICHARDSONI	14.1	11.3				
							POT. NARROW	0.6	0.3				
							VALLISNERIA AMER	2.5	1.7				
		4	1	312786	499972	5.0	CHARA SPP.	3.2	0.9	3600	820	0.8	0.5
							POT. NARROW	0.1	0.1				
							VALLISNERIA AMER	0.4	0.3				
			2	312786	499972	5.0	POT. NARROW	0.3	0.1	3600	820	0.8	0.5
							VALLISNERIA AMER	0.3	0.2				
			3	312786	499972	5.0	NITELLA HYALINA	15.1	4.9	3600	820	0.8	0.5
							POT. CRISPUS	0.4	0.2				
							POT. NARROW	0.1	0.0				
							VALLISNERIA AMER	1.0	0.8				
		5	1	312802	499982	6.0	NITELLA HYALINA	17.5	5.6	3200	400	1.1	0.5
							POT. RICHARDSONI	2.6	2.0				
							VALLISNERIA AMER	0.5	0.3				
			2	312802	499982	6.0	CHARA SPP.	12.1	3.5	3200	400	1.1	0.5
							POT. NARROW	1.1	0.7				
							VALLISNERIA AMER	1.0	0.7				
			3	312802	499982	6.0	NITELLA HYALINA	32.8	13.9	3200	400	1.1	0.5
							POT. RICHARDSONI	6.9	0.5				

					POT. NARROW	4.3	2.8				
6	1	312810	499988	11.0	CHARA SPP.	12.6	2.8	3000	510	1.9	0.9
					POT. GRAMINEUS	2.9	2.0				
	2	312810	499988	11.0	CHARA SPP.	38.7	8.2	3000	510	1.9	0.9
					POT. GRAMINEUS	0.2	0.2				
					POT. NARROW	TRACE					
					VALLISNERIA AMER	1.4	1.1				
	3	312810	499988	11.0	CHARA SPP.	0.6	0.2	3000	510	1.9	0.9
					POT. RICHARDSONI	13.8	9.3				
					POT. NARROW	1.0	0.5				
					VALLISNERIA AMER	1.2	1.0				
7	1	312858	499996	4.5	CHARA SPP.	12.6	5.2	4300	2500	0.2	0.0
	2	312858	499996	4.5	NITELLA HYALINA	66.9	21.5	4300	2500	0.2	0.0
					POT. NARROW	TRACE					
	3	312858	499996	4.5	CHARA SPP.	26.3	10.7	4300	2500	0.2	0.0
					POT. NARROW	TRACE					
	4	312858	499996	6.5	ELODEA CANADENS	TRACE		4000	1600	0.2	0.1
					NITELLA HYALINA	7.9	5.4				
					POT. NARROW	0.8	0.4				
					VALLISNERIA AMER	1.2	0.8				
	5	312858	499996	6.5	MYRIO. SPICATUM	18.3	14.2	4000	1600	0.2	0.1
					NITELLA HYALINA	37.6	16.7				
					POT. NARROW	TRACE					
					VALLISNERIA AMER	TRACE					
	6	312858	499996	6.5	NITELLA HYALINA	5.3	3.6	4000	1600	0.2	0.1
					POT. NARROW	1.5	0.9				
					VALLISNERIA AMER	2.4	1.8				
8	1	312846	499996	5.0	MYRIO. SPICATUM	48.0	33.9	4100	1700	0.3	0.1
					NITELLA HYALINA	16.2	7.6				
	2	312846	499996	5.0	ELODEA CANADENS	TRACE		4100	1700	0.3	0.1
					MYRIO. SPICATUM	34.3	14.1				
					NITELLA HYALINA	8.8	0.4				
					POT. NARROW	TRACE					
	3	312846	499996	5.0	MYRIO. SPICATUM	1.5	1.1	4100	1700	0.3	0.1
					NITELLA HYALINA	40.8	16.6				
					POT. NARROW	0.1	0.0				
	4	312846	499997	5.0	NITELLA HYALINA	25.8	15.0	4100	1700	0.3	0.1
					POT. NARROW	TRACE					
	5	312846	499997	5.0	CHARA SPP.	TRACE		4100	1700	0.3	0.1
					NITELLA HYALINA	42.9	21.4				
					POT. NARROW	TRACE					
	6	312846	499997	5.0	NITELLA HYALINA	11.1	6.5	4100	1700	0.3	0.1
9	1	312835	499991	3.5	CHARA SPP.	120.5	45.8	4000	2000	0.4	0.0
					POT. NARROW	TRACE					

					VALLISNERIA AMER	0.8	0.5				
	2	312835	499991	3.5	CHARA SPP.	126.8	44.2	4000	2000	0.4	0.0
	3	312835	499991	3.5	NITELLA HYALINA	35.0	13.6	4000	2000	0.4	0.0
					VALLISNERIA AMER	0.2	0.2				
	4	312835	499993	6.0	MYRIO. SPICATUM	8.8	6.8	4100	1500	0.4	0.1
					NITELLA HYALINA	1.5	0.7				
					POT. NARROW	0.6	0.4				
					VALLISNERIA AMER	0.6	0.5				
	5	312835	499993	6.0	MYRIO. SPICATUM	38.7	26.1	4100	1500	0.4	0.1
					NITELLA HYALINA	119.1	41.9				
					POT. NARROW	0.7	0.4				
					VALLISNERIA AMER	0.6	0.3				
	6	312835	499993	6.0	MYRIO. SPICATUM	17.8	13.7	4100	1500	0.4	0.1
					NITELLA HYALINA	110.2	27.1				
	7	312836	499998	10.0	NITELLA HYALINA	6.2	2.3	4200	700	1.1	0.4
					POT. NARROW	5.4	3.8				
					VALLISNERIA AMER	3.1	2.3				
	8	312836	499998	10.0	NITELLA HYALINA	5.6	1.9	4200	700	1.1	0.4
					POT. CRISPUS	0.9	0.6				
					POT. NARROW	3.4	2.3				
					VALLISNERIA AMER	1.5	1.2				
	9	312836	499998	10.0	CHARA SPP.	10.2	4.8	4200	700	1.1	0.4
					POT. RICHARDSONI	5.0	3.6				
					POT. NARROW	3.3	2.1				
10	1	312822	499992	3.0	NITELLA HYALINA	12.2	5.6	3800	1900	0.4	0.1
					POT. GRAMINEUS	3.9	3.2				
					POT. NARROW	4.5	3.3				
	2	312822	499992	3.0	CHARA SPP.	22.8	6.7	3800	1900	0.4	0.1
					POT. GRAMINEUS	1.4	1.0				
					POT. NARROW	0.3	0.2				
					VALLISNERIA AMER	0.5	0.3				
	3	312822	499992	3.0	NITELLA HYALINA	6.6	2.0	3800	1900	0.4	0.1
					POT. GRAMINEUS	3.0	2.4				
					POT. RICHARDSONI	23.4	2.1				
					POT. NARROW	1.0	0.7				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	HENNEPIN	1	1	314064	500665	8.5	POT. NARROW	40.7	28.1	4500	810	0.5	0.1
			2	314064	500665	8.5	POT. NARROW	38.6	23.3	4500	810	0.5	0.1
			3	314064	500665	8.5	POT. NARROW	44.3	29.6	4500	810	0.5	0.1
		2	1	314067	500672	7.0	POT. NARROW	34.8	22.7	4500	500	0.4	0.1
							VALLISNERIA AMER	1.8	1.3				
			2	314067	500672	7.0	ELODEA CANADENS	0.1	0.0	4500	500	0.4	0.1
							POT. ZOSTERIFORM	2.4	1.3				
							POT. NARROW	41.2	27.4				
							SAGITTARIA SPP.	2.2	1.5				
			3	314067	500672	7.0	POT. NARROW	42.9	28.5	4500	500	0.4	0.1
							SAGITTARIA SPP.	7.3	4.9				
			4	314059	500677	9.5	POT. RICHARDSONI	43.7	29.6	2600	330	1.3	0.8
							POT. NARROW	TRACE					
							VALLISNERIA AMER	1.8	1.1				
			5	314059	500677	9.5	POT. RICHARDSONI	36.0	26.6	2600	330	1.3	0.8
							POT. NARROW	3.4	2.1				
							VALLISNERIA AMER	9.1	6.4				
			6	314059	500677	9.5	POT. RICHARDSONI	64.1	45.8	2600	330	1.3	0.8
							POT. NARROW	TRACE					
							VALLISNERIA AMER	6.4	4.6				
		3	1	314075	500683	7.5	POT. ZOSTERIFORM	0.2	0.1	3900	1100	0.2	0.1
							POT. NARROW	25.1	18.1				
							SAGITTARIA SPP.	1.4	0.9				
							VALLISNERIA AMER	2.4	1.8				
			2	314075	500683	7.5	POT. NARROW	22.4	15.3	3900	1100	0.2	0.1
							VALLISNERIA AMER	0.3	0.2				
			3	314075	500683	7.5	NITELLA HYALINA	1.1	0.3	3900	1100	0.2	0.1
							POT. ZOSTERIFORM	15.8	13.7				
							POT. NARROW	1.1	0.7				
							SAGITTARIA SPP.	8.3	2.8				
		4	1	314089	500694	8.0	NITELLA HYALINA	29.1	7.9	2500	400	0.2	0.0
							POT. ZOSTERIFORM	3.5	2.2				
							POT. NARROW	29.4	19.0				
							VALLISNERIA AMER	7.1	4.8				
			2	314089	500694	8.0	CHARA SPP.	2.8	1.0	2500	400	0.2	0.0
							POT. NARROW	26.7	18.4				
							VALLISNERIA AMER	3.7	2.7				
			3	314089	500694	8.0	POT. NARROW	45.4	31.1	2500	400	0.2	0.0

					SAGITTARIA SPP.	6.8	4.9				
5	1	314075	500688	7.0	POT. ZOSTERIFORM	1.6	0.8	4000	1100	0.5	0.2
					POT. NARROW	14.5	9.5				
					SAGITTARIA SPP.	2.7	2.0				
	2	314075	500688	7.0	POT. ZOSTERIFORM	6.9	3.6	4000	1100	0.5	0.2
					VALLISNERIA AMER	2.8	2.0				
	3	314075	500688	7.0	NITELLA HYALINA	10.4	4.0	4000	1100	0.5	0.2
					POT. NARROW	13.8	6.9				
					VALLISNERIA AMER	1.1	0.7				
	4	314066	500688	9.5	POT. RICHARDSONI	22.3	59.8	2400	730	1.3	0.3
	5	314066	500688	9.5	POT. RICHARDSONI	29.3	20.7	2400	730	1.3	0.3
					VALLISNERIA AMER	2.6	1.7				
	6	314066	500688	9.5	POT. RICHARDSONI	26.7	18.0	2400	730	1.3	0.3
					POT. ZOSTERIFORM	2.1	0.9				
6	1	314080	500694	7.0	NITELLA HYALINA	85.7	18.7	3500	1100	0.5	0.3
					POT. NARROW	13.1	8.4				
	2	314080	500694	7.0	NITELLA HYALINA	2.8	1.0	3500	1100	0.5	0.3
					POT. NARROW	4.8	3.6				
	3	314080	500694	7.0	NITELLA HYALINA	3.0	0.5	3500	1100	0.5	0.3
					POT. NARROW	2.2	1.6				
7	1	314096	500706	7.5	VALLISNERIA AMER	6.8	5.1	2600	1000	0.3	0.1
	2	314096	500706	7.5	POT. ZOSTERIFORM	11.3	0.4	2600	1000	0.3	0.1
					VALLISNERIA AMER	11.1	7.2				
	3	314096	500706	7.5	NITELLA HYALINA	6.3	1.8	2600	1000	0.3	0.1
					POT. ZOSTERIFORM	0.6	0.4				
					VALLISNERIA AMER	4.1	3.1				
8	1	314078	500706	6.0	NITELLA HYALINA	0.8	0.4	4100	1000	0.1	0.0
					POT. NARROW	46.1	34.3				
	2	314078	500706	6.0	NITELLA HYALINA	4.5	1.6	4100	1000	0.1	0.0
					POT. NARROW	37.5	22.6				
	3	314078	500706	6.0	CHARA SPP.	0.9	0.2	4100	1000	0.1	0.0
					POT. NARROW	55.9	30.8				
	4	314079	500709	9.0	POT. RICHARDSONI	8.6	6.6	3000	650	0.4	0.2
					POT. ZOSTERIFORM	5.5	2.8				
					VALLISNERIA AMER	2.3	1.3				
	5	314079	500709	9.0	POT. RICHARDSONI	2.6	1.6	3000	650	0.4	0.2
					POT. ZOSTERIFORM	1.0	0.1				
					VALLISNERIA AMER	7.5	5.4				
	6	314079	500709	9.0	POT. RICHARDSONI	4.8	3.8	3000	650	0.4	0.2
					POT. NARROW	0.4	0.2				
9	1	314092	500710	6.5	NITELLA HYALINA	28.4	8.1	3100	1100	0.1	0.0

					POT. NARROW	8.8	6.5				
	2	314092	500710	6.5	POT. NARROW	17.1	3.6	3100	1100	0.1	0.0
					VALLISNERIA AMER	0.8	0.4				
	3	314092	500710	6.5	POT. NARROW	19.3	13.3	3100	1100	0.1	0.0
10	1	314103	500718	10.0	POT. ZOSTERIFORM	0.5	0.2	3500	530	0.4	0.1
	2	314103	500718	10.0	POT. NARROW	1.2	0.6	3500	530	0.4	0.1
	3	314103	500718	10.0	CHARA SPP.	0.3	0.1	3500	530	0.4	0.1
					POT. NARROW	1.1	0.7				
11	1	314088	500718	7.0	POT. RICHARDSONI	9.9	6.5	4000	180	0.1	0.1
					POT. ZOSTERIFORM	2.7	1.7				
					POT. NARROW	3.9	2.8				
	2	314088	500718	7.0	POT. RICHARDSONI	2.5	1.6	4000	180	0.1	0.1
					POT. ZOSTERIFORM	1.5	0.9				
					POT. NARROW	14.2	9.2				
					VALLISNERIA AMER	2.4	1.8				
	3	314088	500718	7.0	POT. RICHARDSONI	21.1	5.8	4000	180	0.1	0.1
					POT. ZOSTERIFORM	1.1	0.6				
					POT. NARROW	45.9	28.5				
					VALLISNERIA AMER	0.1	0.1				
	4	314094	500723	7.0	NITELLA HYALINA	75.4	25.1	3200	1000	0.5	0.3
					POT. ZOSTERIFORM	3.7	2.5				
					POT. NARROW	6.7	4.2				
					SAGITTARIA SPP.	0.8	0.5				
					VALLISNERIA AMER	6.7	4.6				
	5	314094	500723	7.0	NITELLA HYALINA	55.2	23.0	3200	1000	0.5	0.3
					POT. NARROW	8.9	5.0				
					VALLISNERIA AMER	6.0	4.5				
	6	314094	500723	7.0	NITELLA HYALINA	46.1	17.2	3200	1000	0.5	0.3
					POT. NARROW	18.4	12.5				
					VALLISNERIA AMER	7.6	5.7				
12	1	314098	500728	8.0	NITELLA HYALINA	43.8	13.7	3800	350	0.1	0.1
					POT. ZOSTERIFORM	1.0	0.5				
					POT. NARROW	18.4	11.5				
					VALLISNERIA AMER	0.2	0.2				
	2	314098	500728	8.0	NITELLA HYALINA	44.6	13.3	3800	350	0.1	0.1
					POT. ZOSTERIFORM	6.6	3.7				
					VALLISNERIA AMER	7.1	5.9				
	3	314098	500728	8.0	CHARA SPP.	64.5	15.6	3800	350	0.1	0.1
					POT. NARROW	2.9	1.7				
					VALLISNERIA AMER	3.0	2.1				
	4	314098	500729	8.5	NITELLA HYALINA	43.6	15.0	2200	360	0.2	0.0
					POT. RICHARDSONI	9.9	8.1				
					POT. ZOSTERIFORM	4.1	2.6				
					SAGITTARIA SPP.	7.6	0.6				

	5	314098	500729	8.5	CHARA SPP.	37.8	12.7	2200	360	0.2	0.0
					POT. RICHARDSONI	21.7	15.8				
					POT. NARROW	5.0	3.0				
					VALLISNERIA AMER	TRACE					
	6	314098	500729	8.5	NITELLA HYALINA	58.4	22.1	2200	360	0.2	0.0
					POT. RICHARDSONI	12.0	8.7				
					POT. ZOSTERIFORM	1.2	0.8				
					SAGITTARIA SPP.	4.3	3.2				
					VALLISNERIA AMER	3.6	2.7				
13	1	314100	500735	12.5	VALLISNERIA AMER	6.5	4.6	3500	300	1.5	0.2
	2	314100	500735	12.5	POT. NARROW	0.2	0.1	3500	300	1.5	0.2
					VALLISNERIA AMER	5.7	3.7				
	3	314100	500735	12.5	VALLISNERIA AMER	9.5	6.7	3500	300	1.5	0.2
14	1	314109	500741	9.0	CHARA SPP.	1.3	0.5	4300	460	0.4	0.2
					POT. NARROW	0.6	0.3				
					VALLISNERIA AMER	4.5	2.9				
	2	314109	500741	9.0	NITELLA HYALINA	4.6	1.8	4300	460	0.4	0.2
					POT. ZOSTERIFORM	1.0	0.5				
					SAGITTARIA SPP.	5.5	0.3				
	3	314109	500741	9.0	NITELLA HYALINA	1.6	0.8	4300	460	0.4	0.2
					POT. ZOSTERIFORM	2.1	1.3				
					VALLISNERIA AMER	2.1	1.5				

SUBMERSED MACROPHYTE PONAR DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	1	1	314227	500982	8.0	POT. NARROW	0.7	0.4	4000	120	1.5	1.2
							VALLISNERIA AMER	16.1	10.0				
			2	314227	500982	8.0	POT. NARROW	1.2	0.8	4000	120	1.5	1.2
							VALLISNERIA AMER	4.5	3.0				
			3	314227	500982	8.0	POT. NARROW	1.2	0.8	4000	120	1.5	1.2
							VALLISNERIA AMER	10.6	6.3				
		2	1	314217	500977	8.0	MYRIO. SPICATUM	0.4	0.2	4100	150	1.1	0.2
							NITELLA HYALINA	3.1	0.7				
							POT. NARROW	1.6	0.7				
							VALLISNERIA AMER	15.4	8.7				
			2	314217	500977	8.0	POT. NARROW	4.0	2.4	4100	150	1.1	0.2
							VALLISNERIA AMER	5.6	3.7				
			3	314217	500977	8.0	POT. NARROW	3.5	1.8	4100	150	1.1	0.2
							VALLISNERIA AMER	5.0	3.4				
		3	1	314207	500976	8.0	POT. CRISPUS	0.2	0.1	3700	160	0.6	0.6
							POT. NARROW	0.2	0.1				
							VALLISNERIA AMER	2.7	1.7				
			2	314207	500976	8.0	POT. CRISPUS	TRACE		3700	160	0.6	0.6
							VALLISNERIA AMER	15.4	11.2				
			3	314207	500976	8.0	VALLISNERIA AMER	2.1	1.4	3700	160	0.6	0.6
		4	1	314200	500975	10.0	VALLISNERIA AMER	6.1	4.5	3500	71	0.2	0.0
			2	314200	500975	10.0	VALLISNERIA AMER	4.2	2.4	3500	71	0.2	0.0
			3	314200	500975	10.0	POT. CRISPUS	3.6	2.0	3500	71	0.2	0.0
		5	1	314228	500984	8.0	VALLISNERIA AMER	1.5	1.1	4000	180	1.3	0.6
							BUTOMUS UMBELLAT	107.6	54.5				
			2	314228	500984	8.0	POT. NARROW	1.6	0.9	4000	180	1.3	0.6
							VALLISNERIA AMER	16.3	10.2				
							BUTOMUS UMBELLAT	0.9	0.6				
			3	314228	500984	8.0	POT. NARROW	3.7	2.4	4000	180	1.3	0.6
							VALLISNERIA AMER	11.2	7.6				
		6	1	314224	500988	4.0	ELODEA CANADENS	233.2	159.4	4200	1	0.0	0.0
							MYRIO. SPICATUM	12.6	8.2				
							POT. CRISPUS	7.3	5.1				
			2	314224	500988	4.0	ELODEA CANADENS	606.6	487.4	4200	1	0.0	0.0
							NITELLA HYALINA	TRACE					
							POT. CRISPUS	12.9	2.5				

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	3	314224	500988	4.0	ELODEA CANADENS	287.2	208.6	4200	1	0.0	0.0
	4	314221	500985	4.0	ELODEA CANADENS	59.3	42.8	3500	1	0.0	0.0
					POT. CRISPUS	119.5	86.0				
	5	314221	500985	4.0	ELODEA CANADENS	43.7	30.7	3500	1	0.0	0.0
					POT. CRISPUS	121.7	82.8				
	6	314221	500985	4.0	ELODEA CANADENS	13.4	9.7	3500	1	0.0	0.0
					POT. CRISPUS	154.8	116.8				
7	1	314233	500994	5.5	POT. CRISPUS	82.6	63.6	3500	200	0.9	0.4
					POT. NARROW	TRACE					
	2	314233	500994	5.5	HETERANTHERA DUB	6.7	3.9	3500	200	0.9	0.4
					POT. CRISPUS	227.7	134.3				
					VALLISNERIA AMER	TRACE					
	3	314233	500994	5.5	POT. CRISPUS	242.4	183.7	3500	200	0.9	0.4
					VALLISNERIA AMER	TRACE					
8	1	314213	500985	4.0	ELODEA CANADENS	286.6	221.8	3800	53	0.0	0.0
					POT. CRISPUS	116.0	92.3				
	2	314213	500985	4.0	ELODEA CANADENS	21.3	15.9	3800	53	0.0	0.0
					POT. CRISPUS	227.6	196.5				
	3	314213	500985	4.0	ELODEA CANADENS	14.0	9.8	3800	53	0.0	0.0
					MYRIO. SPICATUM	0.5	0.3				
					POT. CRISPUS	298.0	201.7				
9	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
	2	-	-	-	NO PLANTS PRESENT			-	-	-	-
	3	-	-	-	NO PLANTS PRESENT			-	-	-	-
10	1	314230	500995	4.0	ELODEA CANADENS	1.5	0.9	3000	4	0.1	0.0
					HETERANTHERA DUB	4.5	3.0				
					POT. CRISPUS	180.2	111.2				
	2	314230	500995	4.0	POT. CRISPUS	210.0	115.1	3000	4	0.1	0.0
	3	314230	500995	4.0	ELODEA CANADENS	TRACE		3000	4	0.1	0.0
					MYRIO. SPICATUM	TRACE					
					POT. CRISPUS	98.3	75.8				
11	1	-	-	-	NO PLANTS PRESENT			-	-	-	-
	2	-	-	-	NO PLANTS PRESENT			-	-	-	-
	3	-	-	-	NO PLANTS PRESENT			-	-	-	-

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	STAG	1	1	309021	497380	12.0	NO PLANTS PRESENT			3500	1500	2.9	2.6
			2	309021	497380	12.0	NO PLANTS PRESENT			3500	1500	2.9	2.6
			3	309021	497380	12.0	NO PLANTS PRESENT			3500	1500	2.9	2.6
		2	1	309037	497386	12.5	NO PLANTS PRESENT			3100	1100	2.8	2.5
			2	309037	497386	12.5	NO PLANTS PRESENT			3100	1100	2.8	2.5
			3	309037	497386	12.5	NO PLANTS PRESENT			3100	1100	2.8	2.5
		3	1	309023	497386	11.0	NO PLANTS PRESENT			3300	1200	2.8	2.3
			2	309023	497386	11.0	NO PLANTS PRESENT			3300	1200	2.8	2.3
			3	309023	497386	11.0	NO PLANTS PRESENT			3300	1200	2.8	2.3
		4	1	309039	497392	12.0	NO PLANTS PRESENT			3100	1100	2.9	2.5
			2	309039	497392	12.0	NO PLANTS PRESENT			3100	1100	2.9	2.5
			3	309039	497392	12.0	NO PLANTS PRESENT			3100	1100	2.9	2.5
		5	1	309034	497393	9.0	NO PLANTS PRESENT			3500	2100	2.8	2.2
			2	309034	497393	9.0	NO PLANTS PRESENT			3500	2100	2.8	2.2
			3	309034	497393	9.0	NO PLANTS PRESENT			3500	2100	2.8	2.2
		6	1	309040	497399	4.0	CHARA SPP.	414.2	131.0	4200	1300	1.6	1.2
							POT. GRAMINEUS	17.5	10.6				
							POT. NARROW	34.1	11.8				
			2	309040	497399	4.0	CHARA SPP.	311.8	74.5	4200	1300	1.6	1.2
							POT. GRAMINEUS	2.6	2.1				
			3	309040	497399	4.0	CHARA SPP.	314.7	85.6	4200	1300	1.6	1.2
							POT. GRAMINEUS	27.6	19.9				
		7	1	309034	497400	6.0	CHARA SPP.	4.8	1.7	4700	28	0.8	0.1
							ELODEA CANADENS	37.8	20.0				
							MYRIO. SPICATUM	8.5	6.3				
							POT. RICHARDSONI	16.3	11.7				
							POT. NARROW	27.6	18.5				
			2	309034	497400	6.0	CHARA SPP.	2.1	1.0	4700	28	0.8	0.1
							ELODEA CANADENS	23.1	16.1				
							MYRIO. SPICATUM	20.7	16.8				
							POT. RICHARDSONI	41.5	32.3				
							POT. NARROW	70.2	56.3				
			3	309034	497400	6.0	CHARA SPP.	1.5	0.7	4700	28	0.8	0.1
							ELODEA CANADENS	15.0	10.3				
							MYRIO. SPICATUM	3.6	2.6				
							POT. RICHARDSONI	18.3	9.5				
							POT. NARROW	143.2	113.7				
			4	309034	497400	5.0	ELODEA CANADENS	0.5	0.4	4500	1000	0.8	0.0
							POT. RICHARDSONI	9.3	7.9				
							POT. NARROW	48.5	40.4				

	5	309034	497400	5.0	CHARA SPP.	1.1	0.4	4500	1000	0.8	0.0
					POT. RICHARDSONI	110.6	84.6				
					POT. NARROW	60.2	44.8				
	6	309034	497400	5.0	ELODEA CANADENS	211.5	61.7	4500	1000	0.8	0.0
					POT. RICHARDSONI	191.2	71.3				
					POT. NARROW	104.3	76.2				
	7	309033	497402	3.0	CHARA SPP.	277.6	81.2	2700	2600	1.2	1.0
					POT. NARROW	1.2	0.8				
	8	309033	497402	3.0	CHARA SPP.	94.2	24.7	2700	2600	1.2	1.0
					POT. GRAMINEUS	4.2	2.6				
					ZANN. PALUSTRIS	2.3	1.7				
	9	309033	497402	3.0	CHARA SPP.	601.4	115.3	2700	2600	1.2	1.0
					POT. NARROW	TRACE					
8	1	309042	497404	5.1	ELODEA CANADENS	5.5	4.2	4300	73	0.2	0.1
					MYRIO. SPICATUM	145.2	115.5				
	2	309042	497404	5.1	MYRIO. SPICATUM	80.8	46.5	4300	73	0.2	0.1
					POT. RICHARDSONI	21.4	17.8				
	3	309042	497404	5.1	ELODEA CANADENS	0.5	0.2	4300	73	0.2	0.1
					MYRIO. SPICATUM	28.4	17.7				
					POT. RICHARDSONI	91.3	69.3				
					POT. NARROW	11.6	9.3				
	4	309047	497406	7.1	CHARA SPP.	276.4	184.0	4200	1800	1.2	0.5
					POT. RICHARDSONI	5.3	4.1				
					POT. NARROW	19.0	14.5				
	5	309047	497406	7.1	CHARA SPP.	0.2	0.1	4200	1800	1.2	0.5
					POT. NARROW	15.0	12.1				
	6	309047	497406	7.1	NITELLA HYALINA	0.4	0.1	4200	1800	1.2	0.5
					POT. RICHARDSONI	29.9	23.5				
					POT. NARROW	16.2	12.5				
9	1	309039	497406	8.6	POT. CRISPUS	29.4	20.8	4900	750	0.1	0.1
					POT. RICHARDSONI	9.4	7.9				
	2	309039	497406	8.6	ELODEA CANADENS	2.1	1.4	4900	750	0.1	0.1
					POT. CRISPUS	62.1	55.0				
					POT. RICHARDSONI	5.4	3.9				
	3	309039	497406	8.6	ELODEA CANADENS	12.2	8.8	4900	750	0.1	0.1
					POT. CRISPUS	47.8	40.0				
	4	309036	497405	10.0	ELODEA CANADENS	180.0	79.7	3000	180	0.7	0.1
					NITELLA HYALINA	5.4	2.1				
	5	309036	497405	10.0	CHARA SPP.	9.4	3.9	3000	180	0.7	0.1
					ELODEA CANADENS	97.0	65.9				
					MYRIO. SPICATUM	4.8	3.6				
					POT. RICHARDSONI	27.8	20.6				
	6	309036	497405	10.0	CHARA SPP.	3.8	1.5	3000	180	0.7	0.1
					ELODEA CANADENS	232.9	119.7				

	7	309040	497402	3.0	CHARA SPP.	50.4	19.3	4000	3500	0.1	0.1
	8	309040	497402	3.0	CHARA SPP.	145.0	43.3	4000	3500	0.1	0.1
	9	309040	497402	3.0	CHARA SPP.	67.0	24.8	4000	3500	0.1	0.1
					ELODEA CANADENS	1.0	0.2				
10	1	309056	497414	6.5	ELODEA CANADENS	17.4	13.2	820	110	1.3	0.0
					NITELLA HYALINA	17.1	3.8				
					POT. RICHARDSONI	89.8	66.2				
	2	309056	497414	6.5	ELODEA CANADENS	50.5	21.5	820	110	1.3	0.0
					POT. RICHARDSONI	260.2	119.7				
	3	309056	497414	6.5	CHARA SPP.	4.3	1.5	820	110	1.3	0.0
					ELODEA CANADENS	39.8	27.8				
					POT. RICHARDSONI	114.1	79.8				
					POT. NARROW	1.2	0.7				
11	1	309047	497408	5.5	CHARA SPP.	0.1	0.0	4400	1500	0.8	0.5
					ELODEA CANADENS	0.5	0.4				
					NAJAS FLEXILIS	TRACE					
					POT. CRISPUS	0.1	0.1				
					POT. RICHARDSONI	66.2	32.3				
					POT. NARROW	41.4	33.2				
	2	309047	497408	5.5	ELODEA CANADENS	2.3	1.1	4400	1500	0.8	0.5
					NITELLA HYALINA	1.4	0.6				
					POT. RICHARDSONI	59.6	37.9				
					POT. NARROW	115.4	86.2				
	3	309047	497408	5.5	CHARA SPP.	1.2	0.5	4400	1500	0.8	0.5
					ELODEA CANADENS	1.8	1.3				
					POT. RICHARDSONI	69.0	54.3				
					POT. NARROW	32.5	25.8				
	4	309054	497411	7.0	CHARA SPP.	40.5	8.0	1100	530	1.0	0.6
	5	309054	497411	7.0	CHARA SPP.	201.2	24.7	1100	530	1.0	0.6
	6	309054	497411	7.0	CHARA SPP.	256.9	27.4	1100	530	1.0	0.6
	7	309047	497412	6.5	ELODEA CANADENS	88.1	54.8	750	320	0.6	0.0
					MYRIO. SPICATUM	30.8	21.7				
					POT. NARROW	89.5	68.4				
	8	309047	497412	6.5	ELODEA CANADENS	267.2	137.2	750	320	0.6	0.0
					POT. NARROW	39.3	25.8				
	9	309047	497412	6.5	ELODEA CANADENS	62.7	35.8	750	320	0.6	0.0
					MYRIO. SPICATUM	0.8	0.5				
					POT. NARROW	100.6	66.6				
12	1	309040	497409	3.0	CHARA SPP.	239.6	46.1	5100	3600	0.2	0.0
	2	309040	497409	3.0	CHARA SPP.	213.8	49.3	5100	3600	0.2	0.0
	3	309040	497409	3.0	CHARA SPP.	120.0	46.4	5100	3600	0.2	0.0
					VALLISNERIA AMER	1.4	1.0				

	4	309044	497411	5.3	ELODEA CANADENS	6.2	4.1	570	230	0.2	0.0
					MYRIO. SPICATUM	72.9	50.4				
	5	309044	497411	5.3	ELODEA CANADENS	23.5	14.8	570	230	0.2	0.0
					MYRIO. SPICATUM	83.7	43.9				
					POT. CRISPUS	0.7	0.5				
	6	309044	497411	5.3	ELODEA CANADENS	63.1	47.6	570	230	0.2	0.0
					MYRIO. SPICATUM	7.7	4.4				
					NITELLA HYALINA	TRACE					
13	1	309058	497413	12.0	ELODEA CANADENS	2.1	1.3	750	250	1.0	0.0
					NITELLA HYALINA	318.8	117.5				
					POT. RICHARDSONI	5.1	4.1				
	2	309058	497413	12.0	ELODEA CANADENS	96.8	66.3	750	250	1.0	0.0
					NITELLA HYALINA	235.7	189.7				
					POT. RICHARDSONI	26.1	20.7				
	3	309058	497413	12.0	NITELLA HYALINA	298.8	108.1	750	250	1.0	0.0
					POT. RICHARDSONI	34.6	24.0				
	4	309057	497413	11.0	CHARA SPP.	2.3	1.6	1300	150	1.0	0.1
					POT. RICHARDSONI	15.3	12.6				
					POT. NARROW	11.3	9.0				
	5	309057	497413	11.0	POT. RICHARDSONI	58.2	37.7	1300	150	1.0	0.1
					POT. NARROW	38.6	29.2				
	6	309057	497413	11.0	NITELLA HYALINA	8.3	5.5	1300	150	1.0	0.1
					POT. RICHARDSONI	25.3	20.3				
					POT. NARROW	4.9	3.6				
					VALLISNERIA AMER	12.1	8.1				
14	1	309069	497423	7.1	CHARA SPP.	3.9	1.4	650	430	2.1	1.6
	2	309069	497423	7.1	CHARA SPP.	6.7	2.4	650	430	2.1	1.6
	3	309069	497423	7.1	CHARA SPP.	34.6	10.3	650	430	2.1	1.6
					POT. NARROW	3.6	1.2				
15	1	309075	497427	3.5	POT. NARROW	17.7	12.6	650	420	1.9	1.2
	2	309075	497427	3.5	CHARA SPP.	5.5	2.0	650	420	1.9	1.2
					POT. NARROW	4.3	2.8				
	3	309075	497427	3.5	POT. NARROW	16.4	11.5	650	420	1.9	1.2
	4	309074	497432	2.2	CHARA SPP.	198.1	54.4	620	400	1.5	0.8
	5	309074	497432	2.2	CHARA SPP.	281.9	76.2	620	400	1.5	0.8
	6	309074	497432	2.2	CHARA SPP.	314.9	85.4	620	400	1.5	0.8

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	1	1	309569	498249	11.5	NITELLA HYALINA	1.1	0.4	1800	650	2.3	1.7
							POT. NARROW	31.5	20.4				
			2	309569	498249	11.5	NITELLA HYALINA	2.3	0.6	1800	650	2.3	1.7
							POT. NARROW	69.2	51.7				
			3	309569	498249	11.5	POT. NARROW	76.3	57.7	1800	650	2.3	1.7
		2	1	309572	498258	8.4	CHARA SPP.	109.2	27.7	4100	410	1.6	0.4
							POT. GRAMINEUS	15.6	3.4				
							POT. RICHARDSONI	34.5	33.5				
							POT. NARROW	0.8	0.5				
			2	309572	498258	8.4	NITELLA HYALINA	3.8	1.4	4100	410	1.6	0.4
							POT. GRAMINEUS	46.0	37.6				
			3	309572	498258	8.4	CHARA SPP.	13.8	4.4	4100	410	1.6	0.4
							POT. GRAMINEUS	14.4	11.5				
		3	1	309582	498256	8.2	MYRIO. EXALBESC	TRACE		2600	520	3.0	2.7
							NITELLA HYALINA	44.0	18.7				
							POT. GRAMINEUS	66.8	53.1				
							POT. RICHARDSONI	5.2	4.2				
			2	309582	498256	8.2	NITELLA HYALINA	54.2	20.5	2600	520	3.0	2.7
							POT. GRAMINEUS	45.8	35.7				
			3	309582	498256	8.2	NITELLA HYALINA	51.4	19.5	2600	520	3.0	2.7
							POT. GRAMINEUS	24.2	10.8				
		4	1	309579	498263	3.5	CHARA SPP.	240.3	62.2	4300	3500	1.6	1.2
							POT. GRAMINEUS	22.2	16.8				
							POT. ZOSTERIFORM	50.6	38.7				
							POT. NARROW	42.4	33.8				
							ZANN. PALUSTRIS	1.1	0.4				
			2	309579	498263	3.5	CHARA SPP.	172.4	39.9	4300	3500	1.6	1.2
							POT. ZOSTERIFORM	1.0	0.6				
							POT. NARROW	75.9	59.8				
			3	309579	498263	3.5	CHARA SPP.	590.7	72.0	4300	3500	1.6	1.2
							POT. NARROW	114.2	114.0				
		5	1	309602	498270	3.7	CHARA SPP.	118.4	29.7	1500	1000	1.4	1.0
							NAJAS FLEXILIS	0.4	0.2				
							POT. GRAMINEUS	21.0	14.7				
			2	309602	498270	3.7	CHARA SPP.	81.4	25.1	1500	1000	1.4	1.0
							NAJAS FLEXILIS	0.6	0.3				
							POT. GRAMINEUS	23.1	16.4				
			3	309602	498270	3.7	CHARA SPP.	77.4	15.4	1500	1000	1.4	1.0

					NAJAS FLEXILIS	0.5	0.3				
					POT. GRAMINEUS	4.6	3.0				
6	1	309593	498265	3.4	CHARA SPP.	176.8	56.9	2500	1300	1.3	1.0
					POT. ZOSTERIFORM	1.3	1.0				
					POT. NARROW	27.9	22.1				
	2	309593	498265	3.4	CHARA SPP.	261.7	74.8	2500	1300	1.3	1.0
					NAJAS FLEXILIS	0.6	0.3				
					POT. NARROW	36.3	29.4				
	3	309593	498265	3.4	CHARA SPP.	170.7	41.3	2500	1300	1.3	1.0
					POT. ZOSTERIFORM	0.3	0.2				
					POT. NARROW	8.1	6.1				
7	1	309584	498270	2.8	CHARA SPP.	21.3	8.6	3200	1900	0.6	0.3
					POT. GRAMINEUS	109.5	72.7				
					POT. NARROW	0.3	0.2				
	2	309584	498270	2.8	CHARA SPP.	141.7	33.8	3200	1900	0.6	0.3
					POT. GRAMINEUS	14.0	10.3				
					POT. RICHARDSONI	10.5	8.2				
					POT. NARROW	2.0	1.5				
	3	309584	498270	2.8	CHARA SPP.	88.4	16.7	3200	1900	0.6	0.3
					POT. GRAMINEUS	16.8	11.8				
					POT. RICHARDSONI	47.5	31.7				
					POT. NARROW	27.1	20.2				
	4	309585	498267	3.0	CHARA SPP.	87.1	22.3	4600	2700	0.8	0.8
	5	309585	498267	3.0	CHARA SPP.	24.1	7.5	4600	2700	0.8	0.8
					POT. GRAMINEUS	4.9	3.7				
	6	309585	498267	3.0	CHARA SPP.	92.5	26.4	4600	2700	0.8	0.8
					POT. GRAMINEUS	3.0	1.9				
8	1	309608	498273	4.1	CHARA SPP.	TRACE		1000	350	1.0	0.7
					POT. GRAMINEUS	36.8	28.2				
					POT. NARROW	8.4	6.5				
	2	309608	498273	4.1	NITELLA HYALINA	3.2	0.8	1000	350	1.0	0.7
					POT. GRAMINEUS	112.0	79.8				
					POT. NARROW	0.3	0.2				
	3	309608	498273	4.1	CHARA SPP.	0.3	0.1	1000	350	1.0	0.7
					POT. GRAMINEUS	86.6	63.7				
					VALLISNERIA AMER	1.1	0.8				
9	1	309603	498277	2.0	CHARA SPP.	1.9	0.7	3500	3500	0.6	0.5
					POT. GRAMINEUS	0.8	0.7				
					POT. RICHARDSONI	20.8	17.3				
					POT. NARROW	6.6	5.6				
	2	309603	498277	2.0	CHARA SPP.	5.0	0.9	3500	3500	0.6	0.5
					POT. RICHARDSONI	91.2	72.3				
	3	309603	498277	2.0	CHARA SPP.	37.2	28.3	3500	3500	0.6	0.5
					POT. RICHARDSONI	68.6	56.4				
					POT. NARROW	13.9	11.1				

	4	309601	498273	2.5	CHARA SPP.	108.3	36.5	3300	1700	0.8	0.7
	5	309601	498273	2.5	CHARA SPP.	40.5	12.3	3300	1700	0.8	0.7
					POT. GRAMINEUS	1.4	0.9				
	6	309601	498273	2.5	CHARA SPP.	136.0	42.9	3300	1700	0.8	0.7
10	1	309620	498283	5.0	CHARA SPP.	144.0	38.4	2500	940	0.8	0.7
					NAJAS FLEXILIS	0.1	0.1				
					POT. NARROW	TRACE					
	2	309620	498283	5.0	CHARA SPP.	96.5	27.0	2500	940	0.8	0.7
					NAJAS FLEXILIS	0.9	0.5				
	3	309620	498283	5.0	CHARA SPP.	77.1	20.4	2500	940	0.8	0.7
					NAJAS FLEXILIS	0.8	0.4				
11	1	309620	498284	3.0	CHARA SPP.	533.3	177.8	1500	230	0.5	0.1
					POT. ZOSTERIFORM	153.5	109.7				
					POT. NARROW	1.0	0.7				
	2	309620	498284	3.0	CHARA SPP.	48.1	14.9	1500	230	0.5	0.1
					NAJAS FLEXILIS	TRACE					
					POT. GRAMINEUS	55.1	36.1				
					POT. RICHARDSONI	34.9	25.9				
					SAGITTARIA SPP.	0.7	0.5				
	3	309620	498284	3.0	CHARA SPP.	622.8	201.4	1500	230	0.5	0.1
					POT. RICHARDSONI	160.8	118.9				
					POT. NARROW	37.9	28.6				
	4	309616	498280	2.5	CHARA SPP.	129.3	39.5	2400	1400	0.6	0.7
					NAJAS FLEXILIS	0.1	0.1				
	5	309616	498280	2.5	CHARA SPP.	58.2	18.3	2400	1400	0.6	0.7
					POT. GRAMINEUS	13.0	2.5				
	6	309616	498280	2.5	CHARA SPP.	106.0	35.4	2400	1400	0.6	0.7
					NAJAS FLEXILIS	TRACE					
					POT. NARROW	TRACE					

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	RUSSELL	1	1	309944	498652	10.5	POT. NARROW	32.4	25.5	750	200	2.3	1.5
							NITELLOP. OBTUSA	TRACE					
			2	309944	498652	10.5	POT. NARROW	45.6	36.7	750	200	2.3	1.5
							NITELLOP. OBTUSA	TRACE					
			3	309944	498652	10.5	POT. RICHARDSONI	20.6	15.5	750	200	2.3	1.5
							POT. NARROW	32.8	25.9				
			4	309948	498654	8.0	POT. GRAMINEUS	78.4	59.8	2500	1000	1.5	0.7
							POT. NARROW	2.2	1.8				
			5	309948	498654	8.0	POT. GRAMINEUS	109.5	84.4	2500	1000	1.5	0.7
							POT. NARROW	19.5	15.1				
			6	309948	498654	8.0	NITELLA HYALINA	0.5	0.1	2500	1000	1.5	0.7
							POT. GRAMINEUS	221.2	132.4				
							POT. NARROW	28.5	21.0				
		2	1	309939	498653	9.5	CHARA SPP.	TRACE		650	240	2.3	0.3
							POT. GRAMINEUS	96.0	70.2				
							POT. NARROW	9.9	7.5				
			2	309939	498653	9.5	POT. GRAMINEUS	118.5	89.6	650	240	2.3	0.3
							POT. NARROW	29.3	23.3				
			3	309939	498653	9.5	POT. GRAMINEUS	90.6	72.3	650	240	2.3	0.3
							POT. NARROW	37.5	30.7				
							NITELLOP. OBTUSA	TRACE					
		3	1	309968	498660	8.0	ELODEA CANADENS	3.5	2.4	4000	85	0.5	0.1
							POT. RICHARDSONI	167.4	129.1				
			2	309968	498660	8.0	ELODEA CANADENS	23.1	15.3	4000	85	0.5	0.1
							POT. RICHARDSONI	944.8	886.8				
			3	309968	498660	8.0	ELODEA CANADENS	0.2	0.1	4000	85	0.5	0.1
							POT. RICHARDSONI	651.0	583.3				
		4	1	309962	498658	8.0	CHARA SPP.	8.4	4.1	3300	140	0.6	0.2
							ELODEA CANADENS	5.1	3.3				
							POT. RICHARDSONI	118.7	91.2				
							POT. NARROW	29.7	22.7				
			2	309962	498658	8.0	CHARA SPP.	10.7	4.9	3300	140	0.6	0.2
							ELODEA CANADENS	7.7	4.7				
							MYRIO. SPICATUM	0.4	0.3				
							POT. RICHARDSONI	158.2	124.2				
							POT. NARROW	14.8	11.1				
			3	309962	498658	8.0	ELODEA CANADENS	38.3	26.9	3300	140	0.6	0.2
							POT. RICHARDSONI	78.3	64.0				

					POT. NARROW	2.5	1.9				
5	1	309951	498657	8.0	POT. RICHARDSONI	95.1	76.2	550	230	1.6	0.2
					POT. NARROW	10.8	8.8				
	2	309951	498657	8.0	CHARA SPP.	TRACE		550	230	1.6	0.2
					POT. RICHARDSONI	54.4	43.5				
					POT. NARROW	40.4	32.9				
	3	309951	498657	8.0	NITELLA HYALINA	1.5	0.5	550	230	1.6	0.2
					POT. RICHARDSONI	139.4	94.5				
					POT. NARROW	22.6	17.1				
6	1	309945	498861	6.0	CHARA SPP.	186.3	132.0	1100	560	1.9	1.2
					POT. GRAMINEUS	0.6	0.4				
					POT. NARROW	1.5	1.2				
	2	309945	498861	6.0	CHARA SPP.	180.3	34.8	1100	560	1.9	1.2
	3	309945	498861	6.0	CHARA SPP.	97.7	57.9	1100	560	1.9	1.2
					POT. GRAMINEUS	TRACE					
					POT. NARROW	TRACE					
	4	309945	498658	5.0	CHARA SPP.	17.7	6.1	3600	2200	2.3	1.3
					POT. GRAMINEUS	134.8	109.1				
	5	309945	498658	5.0	CHARA SPP.	2.1	0.6	3600	2200	2.3	1.3
					POT. GRAMINEUS	134.9	106.7				
					POT. NARROW	7.8	6.6				
	6	309945	498658	5.0	CHARA SPP.	TRACE		3600	2200	2.3	1.3
					NITELLA HYALINA	9.7	2.8				
					POT. GRAMINEUS	54.4	39.8				
7	1	309972	498664	6.0	NITELLA HYALINA	13.7	4.7	3500	1800	1.4	0.6
					POT. GRAMINEUS	111.4	64.8				
					POT. RICHARDSONI	67.1	47.9				
					POT. NARROW	19.2	15.6				
	2	309972	498664	6.0	POT. RICHARDSONI	599.5	259.9	3500	1800	1.4	0.6
	3	309972	498664	6.0	NITELLA HYALINA	5.3	1.8	3500	1800	1.4	0.6
					POT. GRAMINEUS	122.9	93.0				
					POT. RICHARDSONI	50.8	40.3				
					POT. NARROW	3.7	2.8				
	4	309972	498664	3.0	CHARA SPP.	158.2	48.7	1300	1000	1.1	0.7
	5	309972	498664	3.0	CHARA SPP.	148.5	52.2	1300	1000	1.1	0.7
	6	309972	498664	3.0	CHARA SPP.	118.7	38.4	1300	1000	1.1	0.7
8	1	309963	498665	4.5	POT. GRAMINEUS	77.5	57.4	2800	1000	1.6	0.2
					POT. NARROW	62.3	50.0				
					ZANN. PALUSTRIS	1.0	0.8				
	2	309963	498665	4.5	POT. GRAMINEUS	133.2	96.7	2800	1000	1.6	0.2
					POT. NARROW	148.3	118.5				
	3	309963	498665	4.5	POT. GRAMINEUS	47.4	35.4	2800	1000	1.6	0.2

					POT. NARROW	64.8	53.1				
					NITELLOP. OBTUSA	TRACE					
9	1	309956	498665	4.0	CHARA SPP.	162.1	45.5	520	150	0.7	0.1
					POT. GRAMINEUS	97.7	68.3				
					POT. NARROW	21.6	16.5				
					VALLISNERIA AMER	3.0	1.8				
	2	309956	498665	4.0	CHARA SPP.	208.3	140.3	520	150	0.7	0.1
					NAJAS FLEXILIS	0.6	0.4				
					POT. GRAMINEUS	114.9	81.1				
					POT. RICHARDSONI	19.2	15.7				
	3	309956	498665	4.0	CHARA SPP.	275.4	190.8	520	150	0.7	0.1
					NAJAS FLEXILIS	0.8	0.4				
					POT. GRAMINEUS	79.0	57.8				
					POT. RICHARDSONI	21.2	17.1				
					POT. NARROW	1.2	0.9				

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SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	BELLE	1	1	312758	500952	10.5	POT. RICHARDSONI	186.6	118.8	3500	290	1.1	0.3
			2	312758	500952	10.5	POT. RICHARDSONI	78.1	62.2	3500	290	1.1	0.3
							VALLISNERIA AMER	1.9	1.2				
			3	312758	500952	10.5	POT. RICHARDSONI	193.4	141.3	3500	290	1.1	0.3
			4	312760	500953	9.0	NAJAS FLEXILIS	2.3	1.2	3600	700	0.9	0.7
							POT. GRAMINEUS	2.1	1.0				
							VALLISNERIA AMER	7.8	5.2				
							NITELLOP. OBTUSA	1.1	0.3				
			5	312760	500953	9.0	CHARA SPP.	0.9	0.2	3600	700	0.9	0.7
							NAJAS FLEXILIS	0.3	0.2				
							POT. RICHARDSONI	3.0	2.1				
							VALLISNERIA AMER	27.1	7.8				
			6	312760	500953	9.0	CHARA SPP.	2.4	0.9	3600	700	0.9	0.7
							NAJAS FLEXILIS	2.0	1.1				
							POT. ZOSTERIFORM	1.0	0.7				
							VALLISNERIA AMER	26.2	17.7				
		2	1	312769	500961	7.5	POT. CRISPUS	0.2	0.2	3300	470	0.3	0.1
							VALLISNERIA AMER	47.2	25.1				
			2	312769	500961	7.5	CHARA SPP.	TRACE		3300	470	0.3	0.1
							POT. CRISPUS	5.8	5.4				
							VALLISNERIA AMER	70.6	44.0				
			3	312769	500961	7.5	POT. ZOSTERIFORM	3.0	2.1	3300	470	0.3	0.1
							POT. NARROW	2.1	1.5				
							VALLISNERIA AMER	20.9	14.1				
							NITELLOP. OBTUSA	1.3	0.5				
		3	1	312781	500969	9.0	POT. RICHARDSONI	325.9	216.6	3400	500	0.2	0.1
			2	312781	500969	9.0	POT. CRISPUS	6.2	5.4	3400	500	0.2	0.1
							POT. RICHARDSONI	186.5	130.0				
			3	312781	500969	9.0	POT. RICHARDSONI	122.5	90.6	3400	500	0.2	0.1
		4	1	312788	500972	10.0	CHARA SPP.	0.7	0.2	3600	660	1.3	0.6
							NAJAS FLEXILIS	0.2	0.1				
							POT. RICHARDSONI	13.0	9.8				
							POT. ZOSTERIFORM	0.9	0.6				
							POT. NARROW	9.5	6.9				
							VALLISNERIA AMER	17.3	15.9				
			2	312788	500972	10.0	CHARA SPP.	0.7	0.2	3600	660	1.3	0.6
							NAJAS FLEXILIS	0.4	0.2				
							VALLISNERIA AMER	27.3	19.2				

	3	312788	500972	10.0	CHARA SPP.	0.7	0.2	3600	660	1.3	0.6
					NAJAS FLEXILIS	0.8	0.3				
					POT. ZOSTERIFORM	1.9	0.1				
					VALLISNERIA AMER	12.3	5.6				
5	1	312803	500982	6.0	POT. CRISPUS	17.0	9.3	3700	200	0.7	0.1
					POT. RICHARDSONI	72.4	42.8				
					POT. ZOSTERIFORM	1.6	1.0				
					VALLISNERIA AMER	28.0	14.6				
	2	312803	500982	6.0	POT. RICHARDSONI	175.6	123.1	3700	200	0.7	0.1
	3	312803	500982	6.0	POT. RICHARDSONI	129.6	82.2	3700	200	0.7	0.1
					VALLISNERIA AMER	4.2	2.9				
	4	312803	500981	7.0	POT. RICHARDSONI	8.8	6.0	3700	200	0.7	0.1
					POT. ZOSTERIFORM	2.9	2.3				
					VALLISNERIA AMER	98.4	96.2				
	5	312803	500981	7.0	CHARA SPP.	1.2	0.5	3700	200	0.7	0.1
					NAJAS FLEXILIS	0.4	0.1				
					POT. RICHARDSONI	5.2	3.6				
					VALLISNERIA AMER	68.3	52.3				
	6	312803	500981	7.0	POT. RICHARDSONI	2.4	1.7	3700	200	0.7	0.1
					POT. ZOSTERIFORM	14.4	10.2				
					VALLISNERIA AMER	24.9	15.8				
					NITELLOP. OBTUSA	3.9	1.6				
6	1	312816	500989	9.0	CHARA SPP.	39.0	14.5	3600	260	1.0	0.9
					VALLISNERIA AMER	1.1	0.6				
					NITELLOP. OBTUSA	1.3	0.6				
	2	312816	500989	9.0	CHARA SPP.	29.6	14.5	3600	260	1.0	0.9
					VALLISNERIA AMER	3.9	2.8				
	3	312816	500989	9.0	CHARA SPP.	0.7	0.4	3600	260	1.0	0.9
					NAJAS FLEXILIS	1.0	0.7				
					POT. NARROW	1.8	1.2				
					VALLISNERIA AMER	7.1	4.7				
7	1	312856	500996	9.0	MYRIO. SPICATUM	125.4	99.2	4700	380	0.2	0.0
					POT. RICHARDSONI	67.6	49.2				
					POT. ZOSTERIFORM	1.2	0.8				
					VALLISNERIA AMER	11.4	7.6				
					NITELLOP. OBTUSA	2.8	1.1				
	2	312856	500996	9.0	MYRIO. SPICATUM	151.1	112.5	4700	380	0.2	0.0
					POT. CRISPUS	29.8	23.0				
					POT. ZOSTERIFORM	3.9	2.9				
					VALLISNERIA AMER	4.8	3.2				
	3	312856	500996	9.0	MYRIO. SPICATUM	207.3	146.9	4700	380	0.2	0.0
					POT. ZOSTERIFORM	6.4	3.4				
					VALLISNERIA AMER	10.4	6.4				
	4	312857	500997	7.0	MYRIO. SPICATUM	9.5	8.1	4600	390	0.2	0.1
					NAJAS FLEXILIS	1.2	0.7				
					POT. RICHARDSONI	7.8	6.0				
					VALLISNERIA AMER	7.0	4.6				

					NITELLOP. OBTUSA	6.2	3.0			
	5	312857	500997	7.0	POT. RICHARDSONI	6.4	4.9	4600	390	0.2	0.1
					POT. ZOSTERIFORM	2.8	2.1			
					VALLISNERIA AMER	3.9	2.5			
	6	312857	500997	7.0	MYRIO. SPICATUM	2.5	2.0	4600	390	0.2	0.1
					POT. RICHARDSONI	55.4	41.3			
					VALLISNERIA AMER	0.1	0.0			
					NITELLOP. OBTUSA	36.6	15.8			
8	1	312846	500993	5.0	MYRIO. SPICATUM	2.3	1.9	3200	1400	0.1	0.0
					VALLISNERIA AMER	0.9	0.6			
					NITELLOP. OBTUSA	90.7	37.0			
	2	312846	500993	5.0	NAJAS FLEXILIS	0.4	0.3	3200	1400	0.1	0.0
					VALLISNERIA AMER	12.3	6.3			
					NITELLOP. OBTUSA	283.0	115.0			
	3	312846	500993	5.0	CHARA SPP.	162.5	58.3	3200	1400	0.1	0.0
					MYRIO. SPICATUM	1.5	1.2			
					POT. ZOSTERIFORM	TRACE				
					VALLISNERIA AMER	11.1	6.1			
					NITELLOP. OBTUSA	0.1	0.0			
9	1	312834	500993	4.5	CHARA SPP.	372.8	128.0	3600	1400	0.1	0.1
	2	312834	500993	4.5	CHARA SPP.	526.4	144.2	3600	1400	0.1	0.1
	3	312834	500993	4.5	CHARA SPP.	465.7	145.7	3600	1400	0.1	0.1
	4	312836	500997	6.0	MYRIO. SPICATUM	24.3	16.2	3400	820	0.4	0.2
					POT. NARROW	7.1	5.2			
					VALLISNERIA AMER	19.2	12.5			
					NITELLOP. OBTUSA	26.9	10.7			
	5	312836	500997	6.0	NAJAS FLEXILIS	TRACE		3400	820	0.4	0.2
					POT. ZOSTERIFORM	2.6	0.6			
					VALLISNERIA AMER	28.9	19.5			
					NITELLOP. OBTUSA	6.9	2.9			
	6	312836	500997	6.0	CHARA SPP.	1.2	0.5	3400	820	0.4	0.2
					MYRIO. EXALBESC	3.3	2.4			
					POT. ZOSTERIFORM	6.0	3.6			
					VALLISNERIA AMER	10.6	6.6			
					NITELLOP. OBTUSA	38.1	15.7			
10	1	312822	500991	4.0	CHARA SPP.	66.2	22.9	3000	2100	0.3	0.1
					NAJAS FLEXILIS	22.2	3.2			
					POT. CRISPUS	1.2	1.0			
					POT. GRAMINEUS	90.8	85.6			
					POT. ZOSTERIFORM	9.5	4.7			
					VALLISNERIA AMER	2.4	1.7			
					NITELLOP. OBTUSA	12.9	4.8			
	2	312822	500991	4.0	NAJAS FLEXILIS	5.0	3.0	3000	2100	0.3	0.1
					POT. GRAMINEUS	110.8	62.9			
					POT. NARROW	4.7	3.2			
					NITELLOP. OBTUSA	29.8	10.5			

3	312822	500991	4.0	CHARA SPP.	46.8	16.9	3000	2100	0.3	0.1
				NAJAS FLEXILIS	1.8	1.2				
				POT. CRISPUS	4.5	4.1				
				POT. GRAMINEUS	34.8	18.8				
				POT. RICHARDSONI	225.5	161.0				
				POT. NARROW	7.5	5.5				
				VALLISNERIA AMER	9.7	5.1				
				NITELLOP. OBTUSA	43.0	18.0				

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	HENNEPIN	1	1	314067	500669	4.8	POT. NARROW	45.1	33.8	1800	45	0.1	0.0
							VALLISNERIA AMER	33.5	21.7				
			2	314067	500669	4.8	POT. NARROW	50.9	39.1	1800	45	0.1	0.0
							VALLISNERIA AMER	25.7	12.3				
			3	314067	500669	4.8	POT. NARROW	27.4	13.5	1800	45	0.1	0.0
							VALLISNERIA AMER	63.0	34.1				
		2	1	314062	500676	4.2	POT. RICHARDSONI	116.4	85.1	1700	6	0.1	0.0
							POT. NARROW	28.4	21.9				
			2	314062	500676	4.2	POT. RICHARDSONI	209.6	150.8	1700	6	0.1	0.0
							POT. NARROW	20.8	15.5				
			3	314062	500676	4.2	POT. RICHARDSONI	363.4	220.3	1700	6	0.1	0.0
							POT. NARROW	65.0	38.5				
			4	314065	500667	5.5	POT. RICHARDSONI	TRACE		3400	48	0.1	0.0
							POT. NARROW	80.6	63.5				
			5	314065	500667	5.5	POT. NARROW	118.2	89.5	3400	48	0.1	0.0
							VALLISNERIA AMER	TRACE					
			6	314065	500667	5.5	POT. NARROW	37.2	28.1	3400	48	0.1	0.0
		3	1	314080	500680	6.1	NITELLA HYALINA	1.5	0.6	1600	150	0.1	0.1
							POT. NARROW	1.3	0.9				
							VALLISNERIA AMER	26.0	15.7				
			2	314080	500680	6.1	POT. NARROW	1.3	1.2	1600	150	0.1	0.1
							VALLISNERIA AMER	104.7	43.7				
			3	314080	500680	6.1	POT. NARROW	1.9	1.3	1600	150	0.1	0.1
							VALLISNERIA AMER	109.3	55.0				
			4	314075	500685	3.5	POT. RICHARDSONI	99.2	73.8	980	130	0.2	0.1
							VALLISNERIA AMER	11.7	7.2				
			5	314075	500685	3.5	POT. RICHARDSONI	105.6	63.2	980	130	0.2	0.1
							POT. NARROW	45.3	20.0				
							VALLISNERIA AMER	23.3	10.5				
			6	314075	500685	3.5	POT. RICHARDSONI	78.0	47.7	980	130	0.2	0.1
							POT. NARROW	0.6	0.2				
							VALLISNERIA AMER	10.5	6.4				
		4	1	314086	500690	3.6	VALLISNERIA AMER	70.3	42.5	850	49	0.2	0.1
			2	314086	500690	3.6	VALLISNERIA AMER	31.9	18.9	850	49	0.2	0.1
			3	314086	500690	3.6	VALLISNERIA AMER	76.7	34.6	850	49	0.2	0.1

5	1	314070	500683	4.5	POT. NARROW	22.8	12.7	1700	44	0.2	0.1
					VALLISNERIA AMER	100.1	28.1				
	2	314070	500683	4.5	POT. NARROW	47.6	19.5	1700	44	0.2	0.1
	3	314070	500683	4.5	POT. NARROW	62.5	40.1	1700	44	0.2	0.1
					VALLISNERIA AMER	52.1	23.2				
	4	314068	500686	3.8	POT. GRAMINEUS	87.9	41.6	2800	61	0.3	0.1
					POT. NARROW	2.7	1.1				
	5	314068	500686	3.8	POT. RICHARDSONI	75.2	45.6	2800	61	0.3	0.1
	6	314068	500686	3.8	POT. RICHARDSONI	92.5	55.7	2800	61	0.3	0.1
					POT. NARROW	23.2	16.3				
					VALLISNERIA AMER	8.8	3.6				
6	1	314083	500695	3.8	CHARA SPP.	42.1	6.9	1700	29	0.2	0.1
					POT. GRAMINEUS	43.6	29.2				
					VALLISNERIA AMER	37.5	16.7				
	2	314083	500695	3.8	NITELLA HYALINA	13.8	3.8	1700	29	0.2	0.1
					POT. RICHARDSONI	150.9	74.6				
	3	314083	500695	3.8	NITELLA HYALINA	9.9	3.4	1700	29	0.2	0.1
					POT. RICHARDSONI	57.1	31.4				
7	1	314097	500705	7.3	VALLISNERIA AMER	56.3	31.4	2000	20	0.1	0.1
	2	314097	500705	7.3	VALLISNERIA AMER	27.4	17.1	2000	20	0.1	0.1
	3	314097	500705	7.3	VALLISNERIA AMER	79.9	49.3	2000	20	0.1	0.1
8	1	314077	500701	5.0	POT. GRAMINEUS	60.9	44.0	1100	230	0.0	0.0
					POT. NARROW	66.6	52.8				
					VALLISNERIA AMER	8.9	6.0				
	2	314077	500701	5.0	POT. RICHARDSONI	34.1	24.7	1100	230	0.0	0.0
					POT. NARROW	2.0	1.8				
					VALLISNERIA AMER	3.0	2.0				
	3	314077	500701	5.0	POT. GRAMINEUS	97.6	70.3	1100	230	0.0	0.0
					POT. NARROW	12.3	9.6				
9	1	314091	500710	4.9	VALLISNERIA AMER	40.4	16.1	4000	590	0.2	0.0
	2	314091	500710	4.9	CHARA SPP.	1.2	0.3	4000	590	0.2	0.0
					VALLISNERIA AMER	17.3	9.9				
	3	314091	500710	4.9	CHARA SPP.	3.8	1.5	4000	590	0.2	0.0
					POT. NARROW	1.6	1.0				
					VALLISNERIA AMER	27.5	13.9				
10	1	314103	500716	8.5	VALLISNERIA AMER	85.6	30.2	2000	200	0.3	0.2
	2	314103	500716	8.5	VALLISNERIA AMER	61.9	28.9	2000	200	0.3	0.2
	3	314103	500716	8.5	VALLISNERIA AMER	153.0	53.1	2000	200	0.3	0.2

11	1	314086	500714	5.1	POT. NARROW	46.5	16.0	3800	220	0.3	0.1
					VALLISNERIA AMER	13.1	8.6				
	2	314086	500714	5.1	NITELLA HYALINA	0.6	0.3	3800	220	0.3	0.1
					POT. NARROW	0.4	0.3				
					VALLISNERIA AMER	28.3	18.8				
	3	314086	500714	5.1	NAJAS FLEXILIS	0.4	0.2	3800	220	0.3	0.1
					NITELLA HYALINA	2.6	1.2				
					VALLISNERIA AMER	15.2	8.2				
	4	314087	500714	4.1	POT. RICHARDSONI	47.7	36.8	610	47	0.1	0.1
					VALLISNERIA AMER	34.9	25.2				
	5	314087	500714	4.1	POT. RICHARDSONI	78.0	49.4	610	47	0.1	0.1
					POT. NARROW	5.2	3.5				
					VALLISNERIA AMER	18.5	12.4				
	6	314087	500714	4.1	POT. RICHARDSONI	62.5	36.6	610	47	0.1	0.1
					POT. NARROW	1.6	1.1				
					VALLISNERIA AMER	13.4	9.2				
12	1	314098	500718	3.9	NITELLA HYALINA	0.7	0.3	2100	140	0.2	0.2
					VALLISNERIA AMER	21.9	13.6				
	2	314098	500718	3.9	VALLISNERIA AMER	53.7	28.0	2100	140	0.2	0.2
	3	314098	500718	3.9	NITELLA HYALINA	TRACE		2100	140	0.2	0.2
					VALLISNERIA AMER	29.1	15.7				
13	1	314094	500727	6.3	POT. RICHARDSONI	325.0	232.0	2000	30	0.1	0.0
	2	314094	500727	6.3	POT. RICHARDSONI	99.0	66.8	2000	30	0.1	0.0
	3	314094	500727	6.3	POT. RICHARDSONI	205.6	138.2	2000	30	0.1	0.0
14	1	314106	500736	6.4	VALLISNERIA AMER	36.0	21.0	1500	80	0.1	0.0
	2	314106	500736	6.4	POT. NARROW	2.1	1.5	1500	80	0.1	0.0
					VALLISNERIA AMER	34.1	20.0				
	3	314106	500736	6.4	VALLISNERIA AMER	9.3	6.0	1500	80	0.1	0.0
	4	314103	500733	8.1	POT. RICHARDSONI	130.7	104.5	760	86	0.6	0.2
	5	314103	500733	8.1	POT. RICHARDSONI	130.9	96.0	760	86	0.6	0.2
	6	314103	500733	8.1	POT. RICHARDSONI	78.2	57.6	760	86	0.6	0.2

SUBMERSED MACROPHYTE PONAR DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	1	1	314233	500982	9.9	VALLISNERIA AMER	58.5	33.6	900	120	1.5	0.1
			2	314233	500982	9.9	VALLISNERIA AMER	35.0	20.5	900	120	1.5	0.1
			3	314233	500982	9.9	VALLISNERIA AMER	60.6	28.7	900	120	1.5	0.1
		2	1	314212	500978	8.1	POT. RICHARDSONI	36.5	33.2	1400	27	0.9	0.1
							POT. NARROW	5.6	4.1				
							VALLISNERIA AMER	4.0	2.7				
			2	314212	500978	8.1	POT. GRAMINEUS	74.7	34.8	1400	27	0.9	0.1
							VALLISNERIA AMER	5.7	3.3				
			3	314212	500978	8.1	MYRIO. SPICATUM	1.0	0.7	1400	27	0.9	0.1
							POT. RICHARDSONI	93.1	71.0				
							POT. NARROW	0.1	0.0				
							VALLISNERIA AMER	15.4	7.6				
		3	1	314200	500976	7.9	POT. RICHARDSONI	246.7	176.7	1700	7	0.5	0.0
			2	314200	500976	7.9	POT. RICHARDSONI	220.1	162.8	1700	7	0.5	0.0
							POT. NARROW	16.3	15.5				
			3	314200	500976	7.9	MYRIO. SPICATUM	9.2	7.2	1700	7	0.5	0.0
							POT. CRISPUS	12.9	2.6				
							POT. RICHARDSONI	114.7	74.6				
			4	314203	500979	8.1	ELODEA CANADENS	2.2	1.5	270	29	0.4	0.1
							VALLISNERIA AMER	10.1	5.4				
			5	314203	500979	8.1	POT. CRISPUS	23.2	20.3	270	29	0.4	0.1
							POT. NARROW	6.4	0.1				
							VALLISNERIA AMER	21.7	12.1				
			6	314203	500979	8.1	VALLISNERIA AMER	49.4	34.0	270	29	0.4	0.1
		4	1	314187	500974	8.3	POT. NARROW	125.2	94.3	1800	30	0.5	0.0
							VALLISNERIA AMER	11.3	7.6				
			2	314187	500974	8.3	POT. NARROW	149.6	78 8	1800	30	0.5	0.0
							VALLISNERIA AMER	11.6	6.9				
			3	314187	500974	8.3	POT. NARROW	16.5	12.3	1800	30	0.5	0.0
							VALLISNERIA AMER	11.3	6.9				
		5	1	314228	500984	7.9	POT. NARROW	0.7	0.3	4500	410	0.9	0.0
							VALLISNERIA AMER	37.5	20.6				
			2	314228	500984	7.9	POT. ZOSTERIFORM	TRACE		4500	410	0.9	0.0
							VALLISNERIA AMER	120.6	36.0				
			3	314228	500984	7.9	POT. NARROW	TRACE		4500	410	0.9	0.0

					VALLISNERIA AMER	15.7	9.8				
6	1	314224	500987	1.8	ELODEA CANADENS	524.6	285.9	-	-	0.1	0.0
					MYRIO. SPICATUM	110.8	59.8				
	2	314224	500987	1.8	ELODEA CANADENS	210.6	148.7	-	-	0.1	0.0
					MYRIO. SPICATUM	90.2	65.4				
					POT. CRISPUS	8.9	7.6				
	3	314224	500987	1.8	ELODEA CANADENS	447.6	250.1	-	-	0.1	0.0
					MYRIO. SPICATUM	97.6	56.8				
7	1	314237	500992	4.0	MYRIO. SPICATUM	1.3	1.0	3700	130	1.2	0.0
					POT. CRISPUS	61.4	56.7				
					POT. CRISPUS	1.8	1.1				
					VALLISNERIA AMER	101.7	67.1				
					BUTOMUS UMBELLAT	6.0	4.1				
	2	314237	500992	4.0	MYRIO. SPICATUM	25.2	11.4	3700	130	1.2	0.0
					POT. CRISPUS	204.4	144.3				
					POT. CRISPUS	14.4	7.9				
					VALLISNERIA AMER	298.4	113.2				
	3	314237	500992	4.0	MYRIO. SPICATUM	137.0	70.2	3700	130	1.2	0.0
					POT. CRISPUS	0.9	4.4				
					VALLISNERIA AMER	265.2	104.8				
					BUTOMUS UMBELLAT	2.3	1.3				
8	1	314227	500994	2.8	HETERANTHERA DUB	188.5	115.5	3000	510	0.4	0.0
					POT. CRISPUS	13.7	10.9				
	2	314227	500994	2.8	ELODEA CANADENS	2.3	0.1	3000	510	0.4	0.0
					HETERANTHERA DUB	50.8	36.0				
					POT. CRISPUS	23.0	16.8				
	3	314227	500994	2.8	HETERANTHERA DUB	306.1	153.6	3000	510	0.4	0.0
9	1	314247	500999	4.1	HETERANTHERA DUB	0.6	0.4	3500	270	1.3	0.5
					MYRIO. SPICATUM	157.3	127.4				
	2	314247	500999	4.1	MYRIO. SPICATUM	98.6	78.5	3500	270	1.3	0.5
	3	314247	500999	4.1	MYRIO. SPICATUM	171.1	102.3	3500	270	1.3	0.5
10	1	314238	500998	2.0	HETERANTHERA DUB	174.7	77.4	1400	81	0.2	0.1
	2	314238	500998	2.0	ELODEA CANADENS	7.8	4.9	1400	81	0.2	0.1
					HETERANTHERA DUB	19.8	11.0				
	3	314238	500998	2.0	ELODEA CANADENS	0.2	0.1	1400	81	0.2	0.1
					HETERANTHERA DUB	125.0	55.1				
					POT. CRISPUS	2.0	1.5				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	STAG	1	1	309027	497379	12.0	NO PLANTS PRESENT			3800	1300	2.9	2.4
			2	309027	497379	12.0	NO PLANTS PRESENT			3800	1300	2.9	2.4
			3	309027	497379	12.0	NO PLANTS PRESENT			3800	1300	2.9	2.4
		2	1	309038	497383	12.5	NO PLANTS PRESENT			4500	1100	2.6	2.0
			2	309038	497383	12.5	NO PLANTS PRESENT			4500	1100	2.6	2.0
			3	309038	497383	12.5	NO PLANTS PRESENT			4500	1100	2.6	2.0
		3	1	309026	497384	11.5	NO PLANTS PRESENT			3000	1200	2.5	2.0
			2	309026	497384	11.5	NO PLANTS PRESENT			3000	1200	2.5	2.0
			3	309026	497384	11.5	NO PLANTS PRESENT			3000	1200	2.5	2.0
		4	1	309040	497391	12.0	NO PLANTS PRESENT			3800	1200	2.4	2.0
			2	309040	497391	12.0	NO PLANTS PRESENT			3800	1200	2.4	2.0
			3	309040	497391	12.0	NO PLANTS PRESENT			3800	1200	2.4	2.0
		5	1	309034	497394	9.5	CHARA SPP.	1.7	0.5	180	140	1.7	1.0
							POT. NARROW	35.2	30.4				
			2	309034	497394	9.5	CHARA SPP.	1.2	0.4	180	140	1.7	1.0
							POT. NARROW	7.8	5.6				
			3	309034	497394	9.5	POT. NARROW	18.8	13.7	180	140	1.7	1.0
		6	1	309041	497398	7.0	CHARA SPP.	48.0	15.5	2700	240	1.2	0.4
							POT. GRAMINEUS	79.3	58.3				
			2	309041	497398	7.0	CHARA SPP.	244.1	74.9	2700	240	1.2	0.4
							POT. GRAMINEUS	74.6	52.5				
							POT. NARROW	3.0	2.3				
			3	309041	497398	7.0	CHARA SPP.	1.7	0.6	2700	240	1.2	0.4
							POT. GRAMINEUS	163.4	117.6				
		7	1	309038	497396	7.0	CHARA SPP.	43.7	14.2	3500	0	1.4	0.2
							POT. GRAMINEUS	122.0	80.1				
							POT. NARROW	10.6	8.1				
			2	309038	497396	7.0	CHARA SPP.	124.5	41.4	3500	0	1.4	0.2
							POT. GRAMINEUS	145.4	101.9				
							POT. NARROW	32.9	26.3				
			3	309038	497396	7.0	CHARA SPP.	9.4	3.0	3500	0	1.4	0.2
							POT. GRAMINEUS	158.4	105.3				
							POT. RICHARDSONI	5.2	4.1				
							POT. NARROW	26.0	20.5				
			4	309033	497391	4.0	CHARA SPP.	182.0	53.8	3200	1900	1.9	1.5
							POT. GRAMINEUS	32.3	24.3				
			5	309033	497391	4.0	CHARA SPP.	170.1	64.9	3200	1900	1.9	1.5
							POT. GRAMINEUS	31.4	6.4				

	6	309033	497391	4.0	CHARA SPP.	103.9	46.1	3200	1900	1.9	1.5
					POT. GRAMINEUS	60.0	42.7				
					POT. NARROW	1.4	1.1				
8	1	309048	497406	12.0	POT. RICHARDSONI	108.7	81.6	5100	29	0.6	0.2
					POT. NARROW	67.2	53.3				
	2	309048	497406	12.0	ELODEA CANADENS	0.5	0.3	5100	29	0.6	0.2
					NITELLA HYALINA	1.6	0.6				
					POT. RICHARDSONI	42.7	32.8				
					POT. NARROW	43.6	33.6				
	3	309048	497406	12.0	ELODEA CANADENS	60.0	51.0	5100	29	0.6	0.2
					NITELLA HYALINA	4.4	1.5				
					POT. RICHARDSONI	60.1	45.3				
					POT. NARROW	35.1	26.5				
	4	309045	497405	9.0	CHARA SPP.	TRACE		4500	0	0.6	0.1
					ELODEA CANADENS	64.3	46.2				
					MYRIO. SPICATUM	30.0	24.2				
					POT. NARROW	162.1	131.0				
	5	309045	497405	9.0	CHARA SPP.	3.2	1.3	4500	0	0.6	0.1
					ELODEA CANADENS	173.7	118.2				
					POT. RICHARDSONI	13.5	9.7				
	6	309045	497405	9.0	CHARA SPP.	TRACE		4500	0	0.6	0.1
					ELODEA CANADENS	38.0	27.1				
					MYRIO. SPICATUM	TRACE					
					POT. NARROW	57.9	46.4				
9	1	309039	497397	10.0	CHARA SPP.	3.1	1.3	3700	0	0.3	0.1
					ELODEA CANADENS	1.0	0.7				
					MYRIO. SPICATUM	55.3	43.1				
					POT. RICHARDSONI	66.4	54.6				
	2	309039	497397	10.0	ELODEA CANADENS	0.5	0.3	3700	0	0.3	0.1
					MYRIO. SPICATUM	39.3	32.2				
					POT. RICHARDSONI	46.5	37.2				
	3	309039	497397	10.0	MYRIO. SPICATUM	60.0	47.5	3700	0	0.3	0.1
					POT. RICHARDSONI	76.8	59.3				
	4	309035	497396	9.0	CHARA SPP.	TRACE		3700	2	0.2	0.1
					ELODEA CANADENS	10.6	7.9				
					MYRIO. SPICATUM	212.7	153.6				
	5	309035	497396	9.0	ELODEA CANADENS	7.5	5.3	3700	2	0.2	0.1
					MYRIO. SPICATUM	70.6	56.7				
	6	309035	497396	9.0	ELODEA CANADENS	1.5	1.0	3700	2	0.2	0.1
					MYRIO. SPICATUM	140.5	104.3				
					POT. CRISPUS	TRACE					
	7	309036	497405	3.0	CHARA SPP.	111.4	38.4	190	140	0.5	0.4
	8	309036	497405	3.0	CHARA SPP.	120.1	41.7	190	140	0.5	0.4
	9	309036	497405	3.0	CHARA SPP.	144.8	45.0	190	140	0.5	0.4

10	1	309058	497410	12.0	ELODEA CANADENS	20.0	14.5	5100	500	0.9	0.2
					NITELLA HYALINA	TRACE					
					POT. RICHARDSONI	1.7	1.3				
					POT. NARROW	41.7	33.1				
					VALLISNERIA AMER	TRACE					
	2	309058	497410	12.0	ELODEA CANADENS	14.4	10.1	5100	500	0.9	0.2
					NITELLA HYALINA	0.5	0.3				
					POT. RICHARDSONI	8.6	5.8				
					POT. NARROW	156.3	119.7				
	3	309058	497410	12.0	ELODEA CANADENS	5.9	4.5	5100	500	0.9	0.2
					MYRIO. SPICATUM	3.5	2.8				
					NITELLA HYALINA	4.1	2.6				
					POT. RICHARDSONI	6.6	5.2				
					POT. NARROW	106.2	85.4				
					VALLISNERIA AMER	TRACE					
11	1	309055	497413	12.0	CHARA SPP.	2.0	1.2	160	140	0.9	0.1
					POT. RICHARDSONI	3.5	2.7				
					POT. NARROW	33.1	26.7				
	2	309055	497413	12.0	POT. NARROW	198.4	154.7	160	140	0.9	0.1
	3	309055	497413	12.0	ELODEA CANADENS	3.4	2.1	160	140	0.9	0.1
					NITELLA HYALINA	0.1	0.0				
					POT. RICHARDSONI	0.7	0.5				
					POT. NARROW	148.5	117.5				
	4	309047	497407	8.0	CHARA SPP.	TRACE		4600	2800	1.1	0.5
					ELODEA CANADENS	TRACE					
					POT. GRAMINEUS	29.3	20.3				
					POT. RICHARDSONI	182.6	83.2				
					POT. NARROW	TRACE					
	5	309047	497407	8.0	CHARA SPP.	10.2	4.9	4600	2800	1.1	0.5
					ELODEA CANADENS	1.2	0.7				
					MYRIO. SPICATUM	TRACE					
					POT. GRAMINEUS	79.3	61.5				
					POT. RICHARDSONI	1.2	0.9				
					POT. NARROW	51.9	40.6				
	6	309047	497407	8.0	CHARA SPP.	TRACE		4600	2800	1.1	0.5
					ELODEA CANADENS	2.0	1.3				
					MYRIO. SPICATUM	33.3	25.8				
					POT. GRAMINEUS	85.0	59.4				
					POT. NARROW	19.5	15.3				
	7	309053	497410	7.0	CHARA SPP.	98.8	34.5	330	140	0.2	0.2
	8	309053	497410	7.0	CHARA SPP.	65.7	22.3	330	140	0.2	0.2
	9	309053	497410	7.0	CHARA SPP.	63.7	25.4	330	140	0.2	0.2
12	1	309042	497412	9.0	ELODEA CANADENS	64.8	52.1	4000	3100	0.2	0.1
					MYRIO. SPICATUM	22.9	15.6				
					POT. CRISPUS	9.8	7.6				
					POT. RICHARDSONI	12.1	12.1				
					POT. ZOSTERIFORM	19.6	16.5				

	2	309042	497412	9.0	ELODEA CANADENS	60.7	47.0	4000	3100	0.2	0.1
					MYRIO. SPICATUM	37.7	27.9				
					POT. ZOSTERIFORM	0.8	0.6				
	3	309042	497412	9.0	POT. RICHARDSONI	19.1	15.5	4000	3100	0.2	0.1
					VALLISNERIA AMER	11.4	7.7				
	4	309041	497411	9.5	ELODEA CANADENS	10.2	7.3	4000	3100	0.2	0.1
					NITELLA HYALINA	9.5	3.0				
					POT. RICHARDSONI	18.1	12.0				
					POT. ZOSTERIFORM	0.7	0.6				
					VALLISNERIA AMER	0.8	0.4				
	5	309041	497411	9.5	ELODEA CANADENS	10.3	7.7	4000	3100	0.2	0.1
					POT. CRISPUS	0.9	0.7				
					POT. RICHARDSONI	54.7	44.7				
					POT. ZOSTERIFORM	30.0	24.7				
	6	309041	497411	9.5	ELODEA CANADENS	41.3	32.8	4000	3100	0.2	0.1
					POT. RICHARDSONI	58.5	47.3				
					POT. ZOSTERIFORM	16.3	12.7				
					VALLISNERIA AMER	7.1	4.3				
	7	309042	497411	4.0	CHARA SPP.	276.4	99.4	140	100	0.2	0.1
					VALLISNERIA AMER	4.2	2.8				
	8	309042	497411	4.0	CHARA SPP.	261.9	86.5	140	100	0.2	0.1
					VALLISNERIA AMER	TRACE					
	9	309042	497411	4.0	CHARA SPP.	251.1	90.9	140	100	0.2	0.1
13	1	309058	497414	12.0	ELODEA CANADENS	21.1	18.1	4700	33	0.1	0.0
					MYRIO. SPICATUM	3.5	2.3				
					POT. CRISPUS	22.8	20.4				
					POT. RICHARDSONI	34.2	15.3				
	2	309058	497414	12.0	MYRIO. SPICATUM	23.8	9.3	4700	33	0.1	0.0
					POT. RICHARDSONI	48.8	36.6				
	3	309058	497414	12.0	ELODEA CANADENS	0.6	0.5	4700	33	0.1	0.0
					MYRIO. SPICATUM	14.7	10.6				
					POT. RICHARDSONI	14.7	11.8				
14	1	309070	497423	6.0	CHARA SPP.	3.1	1.1	4900	2700	2.3	1.9
					POT. RICHARDSONI	90.2	71.0				
					POT. NARROW	36.7	28.8				
	2	309070	497423	6.0	CHARA SPP.	0.3	0.1	4900	2700	2.3	1.9
					POT. RICHARDSONI	28.2	18.2				
					POT. NARROW	6.1	3.3				
	3	309070	497423	6.0	CHARA SPP.	TRACE		4900	2700	2.3	1.9
					POT. RICHARDSONI	78.6	52.8				
					POT. NARROW	8.1	6.4				
15	1	309073	497433	5.0	POT. NARROW	33.7	19.3	3700	3100	0.5	0.5
	2	309073	497433	5.0	CHARA SPP.	TRACE		3700	3100	0.5	0.5
					POT. NARROW	125.8	87.7				

3	309073	497433	5.0	POT. GRAMINEUS	4.8	2.9	3700	3100	0.5	0.5
				POT. NARROW	47.6	27.3				
4	309074	497429	2.5	CHARA SPP.	140.5	54.6	350	240	0.7	0.4
				POT. NARROW	6.6	5.2				
5	309074	497429	2.5	CHARA SPP.	119.8	36.1	350	240	0.7	0.4
				POT. GRAMINEUS	0.6	0.5				
6	309074	497429	2.5	CHARA SPP.	157.2	56.2	350	240	0.7	0.4
				POT. NARROW	14.8	11.7				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR FAWN		1	1	309568	498250	10.0	POT. GRAMINEUS	86.4	65.8	550	24	2.6	0.3
			2	309568	498250	10.0	POT. GRAMINEUS	76.8	60.3	550	24	2.6	0.3
			3	309568	498250	10.0	POT. GRAMINEUS	93.5	73.4	550	24	2.6	0.3
							POT. NARROW	5.6	4.4				
		2	1	309580	498256	9.5	CHARA SPP.	0.3	0.1	850	3	0.5	0.0
							ELODEA CANADENS	3.9	2.9				
							POT. GRAMINEUS	144.5	105.1				
							POT. NARROW	18.0	14.1				
			2	309580	498256	9.5	NITELLA HYALINA	3.0	1.6	850	3	0.5	0.0
							POT. RICHARDSONI	123.5	90.7				
							POT. NARROW	9.5	7.7				
			3	309580	498256	9.5	ELODEA CANADENS	0.8	0.6	850	3	0.5	0.0
							NITELLA HYALINA	5.5	2.5				
							POT. RICHARDSONI	199.9	135.3				
			4	309581	498255	7.0	CHARA SPP.	362.5	97.3	1400	410	1.7	0.9
							POT. GRAMINEUS	14.4	10.6				
			5	309581	498255	7.0	CHARA SPP.	94.1	29.2	1400	410	1.7	0.9
							POT. GRAMINEUS	6.0	4.6				
			6	309581	498255	7.0	CHARA SPP.	219.2	48.2	1400	410	1.7	0.9
							POT. GRAMINEUS	4.0	2.9				
		3	1	309590	498263	10.0	NITELLA HYALINA	1.8	0.8	1700	13	0.3	0.0
							POT. RICHARDSONI	70.3	45.4				
							POT. NARROW	0.2	0.1				
			2	309590	498263	10.0	CHARA SPP.	1.3	0.5	1700	13	0.3	0.0
							POT. RICHARDSONI	135.9	99.1				
							POT. NARROW	2.3	1.7				
							NITELLOP. OBTUSA	13.5	5.1				
			3	309590	498263	10.0	POT. RICHARDSONI	54.6	39.1	1700	13	0.3	0.0
							NITELLOP. OBTUSA	9.4	3.9				
			4	309579	498261	5.0	CHARA SPP.	265.0	59.9	1500	440	1.6	1.4
			5	309579	498261	5.0	CHARA SPP.	224.3	65.9	1500	440	1.6	1.4
			6	309579	498261	5.0	CHARA SPP.	211.4	65.1	1500	440	1.6	1.4
		4	1	309578	498261	4.5	CHARA SPP.	159.1	33.6	1500	840	1.2	0.9
							POT. NARROW	3.4	2.4				
			2	309578	498261	4.5	CHARA SPP.	282.7	58.1	1500	840	1.2	0.9

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	3	309578	498261	4.5	CHARA SPP.	170.1	34.9	1500	840	1.2	0.9
5	1	309601	498269	5.5	CHARA SPP.	556.9	289.0	1100	400	1.4	0.2
					NAJAS FLEXILIS	23.5	14.4				
					POT. GRAMINEUS	49.5	31.0				
					VALLISNERIA AMER	7.4	3.6				
	2	309601	498269	5.5	CHARA SPP.	327.8	104.3	1100	400	1.4	0.2
					NAJAS FLEXILIS	0.7	0.4				
					POT. GRAMINEUS	34.7	21.9				
					VALLISNERIA AMER	5.2	3.8				
	3	309601	498269	5.5	CHARA SPP.	350.3	134.6	1100	400	1.4	0.2
					NAJAS FLEXILIS	9.0	5.3				
					POT. GRAMINEUS	26.0	18.1				
					POT. NARROW	0.6	0.4				
					VALLISNERIA AMER	2.6	1.8				
6	1	309594	498269	4.0	CHARA SPP.	251.3	49.9	2400	2200	0.9	0.9
					POT. GRAMINEUS	0.4	0.3				
	2	309594	498269	4.0	CHARA SPP.	460.8	124.2	2400	2200	0.9	0.9
					NAJAS FLEXILIS	1.8	1.1				
					POT. GRAMINEUS	1.2	0.6				
					POT. NARROW	2.9	2.3				
	3	309594	498269	4.0	CHARA SPP.	58.5	17.6	2400	2200	0.9	0.9
					POT. GRAMINEUS	TRACE					
7	1	309585	498267	3.0	CHARA SPP.	29.9	9.8	820	71	0.2	0.1
					NAJAS FLEXILIS	0.4	0.2				
					POT. GRAMINEUS	76.3	58.7				
					POT. RICHARDSONI	12.6	10.4				
					POT. NARROW	37.8	30.2				
	2	309585	498267	3.0	CHARA SPP.	0.4	0.1	820	71	0.2	0.1
					POT. GRAMINEUS	76.1	51.5				
					POT. RICHARDSONI	12.9	10.2				
					POT. NARROW	34.3	27.6				
	3	309585	498267	3.0	CHARA SPP.	4.1	1.3	820	71	0.2	0.1
					POT. GRAMINEUS	133.2	106.3				
					POT. RICHARDSONI	3.5	3.0				
					POT. NARROW	13.6	10.4				
8	1	309607	498273	5.0	CHARA SPP.	0.3	0.1	1100	16	0.2	0.1
					POT. GRAMINEUS	59.4	24.8				
					POT. NARROW	4.4	3.4				
	2	309607	498273	5.0	POT. GRAMINEUS	94.1	73.6	1100	16	0.2	0.1
	3	309607	498273	5.0	CHARA SPP.	10.7	3.5	1100	16	0.2	0.1
					ELODEA CANADENS	0.3	0.2				
					POT. GRAMINEUS	79.1	55.3				
					POT. RICHARDSONI	91.0	72.0				
					POT. NARROW	15.5	12.2				
	4	309608	498276	3.5	CHARA SPP.	293.7	87.4	4100	1100	1.0	0.5
					NAJAS FLEXILIS	0.3	0.2				
					POT. GRAMINEUS	10.2	5.8				

				POT. NARROW	0.3	0.2				
	5	309608	498276	3.5	CHARA SPP.	146.7	46.2	4100	1100	1.0	0.5
					POT. GRAMINEUS	4.8	3.6				
					POT. NARROW	1.5	1.1				
	6	309608	498276	3.5	CHARA SPP.	393.0	135.5	4100	1100	1.0	0.5
					NAJAS FLEXILIS	0.4	0.2				
					POT. GRAMINEUS	8.5	5.6				
9	1	309592	498273	3.0	CHARA SPP.	167.6	56.1	3200	2600	0.5	0.4
					NAJAS FLEXILIS	8.8	6.0				
					POT. GRAMINEUS	19.3	13.6				
	2	309592	498273	3.0	CHARA SPP.	359.5	115.9	3200	2600	0.5	0.4
					NAJAS FLEXILIS	4.9	3.4				
					POT. GRAMINEUS	19.1	13.4				
	3	309592	498273	3.0	CHARA SPP.	231.4	70.7	3200	2600	0.5	0.4
					NAJAS FLEXILIS	1.8	1.0				
					POT. GRAMINEUS	9.0	6.3				
					POT. ZOSTERIFORM	0.3	0.2				
10	1	309619	498280	5.0	POT. RICHARDSONI	112.4	76.8	1800	16	0.3	0.1
					POT. NARROW	15.8	13.3				
	2	309619	498280	5.0	CHARA SPP.	77.8	22.8	1800	16	0.3	0.1
					POT. GRAMINEUS	70.9	56.0				
					POT. RICHARDSONI	12.2	9.8				
					VALLISNERIA AMER	3.4	2.5				
	3	309619	498280	5.0	POT. GRAMINEUS	71.0	45.0	1800	16	0.3	0.1
					POT. RICHARDSONI	123.9	86.0				
					POT. NARROW	50.2	41.8				
11	1	309614	498280	3.5	CHARA SPP.	111.8	39.5	4200	1100	0.4	0.4
					NAJAS FLEXILIS	TRACE					
					POT. GRAMINEUS	26.6	19.4				
					POT. RICHARDSONI	4.1	3.5				
					POT. NARROW	1.6	1.4				
					VALLISNERIA AMER	38.0	21.8				
	2	309614	498280	3.5	CHARA SPP.	148.7	52.3	4200	1100	0.4	0.4
					POT. GRAMINEUS	26.5	17.7				
					VALLISNERIA AMER	7.2	3.8				
	3	309614	498280	3.5	CHARA SPP.	114.3	37.2	4200	1100	0.4	0.4
					POT. GRAMINEUS	31.8	20.8				
					POT. RICHARDSONI	3.8	3.2				
					POT. NARROW	8.8	7.3				
					VALLISNERIA AMER	18.2	12.4				

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SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	RUSSELL	1	1	309952	498653	11.0	CHARA SPP.	42.5	17.2	530	6	2.0	1.4
							POT. ZOSTERIFORM	1.3	0.9				
							POT. NARROW	106.6	84.1				
			2	309952	498653	11.0	POT. NARROW	109.1	88.2	530	6	2.0	1.4
			3	309952	498653	11.0	POT. NARROW	87.9	68.8	530	6	2.0	1.4
		2	1	309943	498653	9.0	CHARA SPP.	553.0	381.4	260	16	1.3	0.2
							POT. GRAMINEUS	217.3	169.6				
			2	309943	498653	9.0	CHARA SPP.	220.3	63.2	260	16	1.3	0.2
							POT. GRAMINEUS	100.0	66.2				
							POT. NARROW	56.0	44.1				
			3	309943	498653	9.0	POT. GRAMINEUS	216.1	170.9	260	16	1.3	0.2
							POT. NARROW	5.5	4.3				
		3	1	309968	498658	8.0	ELODEA CANADENS	28.6	15.2	1500	20	0.5	0.2
							POT. RICHARDSONI	643.4	532.9				
			2	309968	498658	8.0	CHARA SPP.	2.9	1.2	1500	20	0.5	0.2
							POT. RICHARDSONI	324.5	268.0				
							POT. NARROW	10.4	8.2				
			3	309968	498658	8.0	CHARA SPP.	0.3	0.1	1500	20	0.5	0.2
							ELODEA CANADENS	1.0	0.6				
							POT. RICHARDSONI	189.8	148.6				
							POT. NARROW	12.5	9.9				
			4	309968	498662	7.0	CHARA SPP.	29.5	14.5	1200	55	0.7	0.1
							ELODEA CANADENS	5.6	4.2				
							POT. GRAMINEUS	68.5	47.7				
							POT. NARROW	16.6	13.7				
							VALLISNERIA AMER	4.0	2.8				
			5	309968	498662	7.0	CHARA SPP.	139.3	40.4	1200	55	0.7	0.1
							POT. GRAMINEUS	294.3	217.0				
							POT. NARROW	40.2	31.9				
							VALLISNERIA AMER	2.2	1.4				
			6	309968	498662	7.0	CHARA SPP.	181.6	50.7	1200	55	0.7	0.1
							POT. GRAMINEUS	165.0	106.2				
							POT. NARROW	14.0	10.9				
							VALLISNERIA AMER	1.9	1.0				
		4	1	309956	498654	9.0	CHARA SPP.	0.5	0.2	1800	4	0.4	0.1
							ELODEA CANADENS	0.5	0.4				
							POT. RICHARDSONI	320.3	276.9				
							POT. NARROW	19.1	15.7				
			2	309956	498654	9.0	CHARA SPP.	3.5	1.3	1800	4	0.4	0.1

					ELODEA CANADENS	5.9	3.8				
					POT. RICHARDSONI	70.7	52.7				
					POT. NARROW	54.8	46.0				
	3	309956	498654	9.0	MYRIO. SPICATUM	8.4	6.6	1800	4	0.4	0.1
					POT. RICHARDSONI	262.6	176.5				
					POT. NARROW	64.7	51.3				
5	1	309953	498656	7.0	POT. RICHARDSONI	83.2	63.4	1000	3	0.2	0.1
	2	309953	498656	7.0	CHARA SPP.	0.9	0.3	1000	3	0.2	0.1
					POT. RICHARDSONI	73.1	53.2				
					POT. NARROW	52.9	41.5				
	3	309953	498656	7.0	CHARA SPP.	TRACE		1000	3	0.2	0.1
					POT. RICHARDSONI	142.3	97.9				
					POT. NARROW	46.6	35.7				
6	1	309945	498655	7.0	CHARA SPP.	3.1	1.0	1300	10	0.9	0.2
					POT. GRAMINEUS	381.7	317.2				
					POT. NARROW	87.5	70.9				
	2	309945	498655	7.0	POT. GRAMINEUS	167.5	120.9	1300	10	0.9	0.2
					POT. NARROW	95.6	73.2				
	3	309945	498655	7.0	POT. GRAMINEUS	163.0	124.5	1300	10	0.9	0.2
					POT. NARROW	42.5	34.5				
7	1	309967	498663	7.0	CHARA SPP.	23.3	7.0	1300	36	0.8	0.1
					POT. GRAMINEUS	165.0	123.7				
					POT. NARROW	60.2	49.4				
	2	309967	498663	7.0	CHARA SPP.	53.0	15.7	1300	36	0.8	0.1
					POT. GRAMINEUS	194.6	137.5				
					POT. NARROW	62.1	50.7				
	3	309967	498663	7.0	CHARA SPP.	359.2	230.9	1300	36	0.8	0.1
					POT. GRAMINEUS	131.6	96.7				
					POT. NARROW	71.8	58.1				
8	1	309962	498664	4.0	ELODEA CANADENS	0.9	0.7	2500	1100	0.7	0.2
					POT. GRAMINEUS	195.8	152.0				
					POT. NARROW	173.1	145.6				
	2	309962	498664	4.0	ELODEA CANADENS	3.7	2.7	2500	1100	0.7	0.2
					POT. GRAMINEUS	283.3	253.1				
					POT. NARROW	376.1	344.5				
	3	309962	498664	4.0	POT. GRAMINEUS	162.3	115.0	2500	1100	0.7	0.2
					POT. NARROW	216.5	175.6				
	4	309965	498662	4.0	CHARA SPP.	630.7	315.6	2500	1200	0.8	0.2
					POT. GRAMINEUS	32.1	23.7				
	5	309965	498662	4.0	CHARA SPP.	305.7	96.1	2500	1200	0.8	0.2
					NAJAS FLEXILIS	0.7	0.4				
					POT. GRAMINEUS	14.6	10.1				
	6	309965	498662	4.0	CHARA SPP.	468.5	163.5	2500	1200	0.8	0.2
					NAJAS FLEXILIS	0.5	0.3				

					POT. NARROW	0.9	0.5				
9	1	309956	498663	5.0	CHARA SPP.	48.7	15.5	2400	1000	1.2	0.6
					POT. GRAMINEUS	227.9	155.6				
					POT. NARROW	102.3	84.8				
	2	309956	498663	5.0	CHARA SPP.	77.4	26.2	2400	1000	1.2	0.6
					POT. GRAMINEUS	559.0	512.4				
					POT. NARROW	67.1	55.5				
	3	309956	498663	5.0	POT. GRAMINEUS	159.6	113.6	2400	1000	1.2	0.6
					POT. NARROW	77.8	64.1				
	4	309951	498661	4.0	CHARA SPP.	763.3	504.9	2500	1000	1.3	0.6
					POT. GRAMINEUS	13.0	8.9				
					POT. NARROW	0.7	0.4				
	5	309951	498661	4.0	CHARA SPP.	212.5	80.5	2500	1000	1.3	0.6
					POT. GRAMINEUS	9.4	6.6				
					VALLISNERIA AMER	0.2	0.1				
	6	309951	498661	4.0	CHARA SPP.	569.8	213.2	2500	1000	1.3	0.6
					POT. GRAMINEUS	18.9	13.4				

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	BELLE	1	1	312759	499951	11.0	VALLISNERIA AMER	61.8	35.6	300	16	0.5	0.1
			2	312759	499951	11.0	POT. GRAMINEUS	7.8	6.3	300	16	0.5	0.1
							VALLISNERIA AMER	63.1	32.8				
							BUTOMUS UMBELLAT	2.4	1.6				
			3	312759	499951	11.0	NAJAS FLEXILIS	TRACE		300	16	0.5	0.1
							POT. GRAMINEUS	TRACE					
							POT. NARROW	13.6	11.2				
							VALLISNERIA AMER	44.6	34.0				
		2	1	312768	499959	8.0	VALLISNERIA AMER	72.8	40.6	620	90	0.2	0.1
			2	312768	499959	8.0	POT. ZOSTERIFORM	6.6	5.1	620	90	0.2	0.1
							VALLISNERIA AMER	22.6	13.4				
			3	312768	499959	8.0	VALLISNERIA AMER	102.0	61.8	620	90	0.2	0.1
		3	1	312780	499965	9.0	POT. RICHARDSONI	58.7	43.5	900	35	0.3	0.1
							VALLISNERIA AMER	82.0	52.3				
			2	312780	499965	9.0	POT. CRISPUS	TRACE		900	35	0.3	0.1
							POT. RICHARDSONI	118.2	80.3				
							VALLISNERIA AMER	20.8	11.2				
			3	312780	499965	9.0	POT. CRISPUS	2.3	1.6	900	35	0.3	0.1
							POT. RICHARDSONI	104.2	67.4				
							VALLISNERIA AMER	47.6	29.5				
		4	1	312789	499974	9.0	CHARA SPP.	15.2	4.8	1300	350	1.6	0.4
							NAJAS FLEXILIS	19.1	13.3				
							VALLISNERIA AMER	26.4	16.1				
			2	312789	499974	9.0	CHARA SPP.	35.6	11.1	1300	350	1.6	0.4
							NAJAS FLEXILIS	79.0	64.1				
							POT. NARROW	9.7	6.8				
							VALLISNERIA AMER	22.5	13.3				
			3	312789	499974	9.0	CHARA SPP.	19.0	2.9	1300	350	1.6	0.4
							VALLISNERIA AMER	36.3	22.4				
		5	1	312804	499983	8.0	POT. RICHARDSONI	8.6	6.7	1500	220	0.5	0.1
							VALLISNERIA AMER	20.7	14.6				
			2	312804	499983	8.0	ELODEA CANADENS	1.9	1.2	1500	220	0.5	0.1
							POT. RICHARDSONI	24.7	19.1				
							VALLISNERIA AMER	43.7	28.7				
			3	312804	499983	8.0	MYRIO. SPICATUM	3.7	2.4	1500	220	0.5	0.1
							POT. RICHARDSONI	12.0	9.6				
							VALLISNERIA AMER	43.2	28.5				

6	1	312810	499986	11.0	NAJAS FLEXILIS	1.4	0.7	2600	150	2.0	1.4
					VALLISNERIA AMER	40.4	24.3				
	2	312810	499986	11.0	VALLISNERIA AMER	44.4	25.2	2600	150	2.0	1.4
	3	312810	499986	11.0	POT. RICHARDSONI	1.6	1.2	2600	150	2.0	1.4
					VALLISNERIA AMER	8.4	4.1				
7	1	312852	499996	4.5	NAJAS FLEXILIS	TRACE		3000	280	0.1	0.0
					NITELLA HYALINA	188.5	65.6				
					POT. NARROW	TRACE					
					VALLISNERIA AMER	TRACE					
	2	312852	499996	4.5	CHARA SPP.	195.6	76.4	3000	280	0.1	0.0
					VALLISNERIA AMER	1.4	0.9				
	3	312852	499996	4.5	CHARA SPP.	198.1	65.4	3000	280	0.1	0.0
					MYRIO. SPICATUM	TRACE					
					NAJAS FLEXILIS	17.1	12.4				
					VALLISNERIA AMER	10.9	5.2				
					NITELLOP. OBTUSA	83.5	30.3				
	4	312858	499997	7.0	MYRIO. SPICATUM	6.8	5.2	4000	190	0.1	0.0
					POT. RICHARDSONI	21.8	15.8				
					VALLISNERIA AMER	58.2	36.6				
					NITELLOP. OBTUSA	11.6	5.2				
	5	312858	499997	7.0	MYRIO. SPICATUM	7.3	5.4	4000	190	0.1	0.0
					POT. RICHARDSONI	13.7	10.8				
					VALLISNERIA AMER	53.3	31.9				
					NITELLOP. OBTUSA	74.0	25.5				
	6	312858	499997	7.0	MYRIO. SPICATUM	TRACE		4000	190	0.1	0.0
					POT. RICHARDSONI	10.7	8.9				
					VALLISNERIA AMER	14.3	8.5				
					NITELLOP. OBTUSA	68.5	26.6				
8	1	312845	499994	6.0	MYRIO. SPICATUM	9.1	6.3	3500	1000	0.2	0.1
					NITELLOP. OBTUSA	242.4	95.7				
	2	312845	499994	6.0	MYRIO. SPICATUM	TRACE		3500	1000	0.2	0.1
					NITELLOP. OBTUSA	181.5	72.5				
	3	312845	499994	6.0	MYRIO. SPICATUM	6.9	5.6	3500	1000	0.2	0.1
					NITELLOP. OBTUSA	191.5	68.4				
	4	312840	499995	7.0	MYRIO. SPICATUM	361.2	175.2	4000	620	0.1	0.0
					VALLISNERIA AMER	22.0	13.1				
					NITELLOP. OBTUSA	76.4	35.2				
	5	312840	499995	7.0	MYRIO. SPICATUM	310.0	232.0	4000	620	0.1	0.0
					VALLISNERIA AMER	5.2	2.2				
					NITELLOP. OBTUSA	10.2	4.7				
	6	312840	499995	7.0	MYRIO. SPICATUM	106.1	78.8	4000	620	0.1	0.0
					POT. RICHARDSONI	9.4	6.4				
					VALLISNERIA AMER	19.8	11.2				
					NITELLOP. OBTUSA	12.5	5.1				
9	1	312833	499996	7.0	MYRIO. SPICATUM	110.5	77.0	4500	360	0.3	0.1

				VALLISNERIA AMER	8.0	5.2				
				NITELLOP. OBTUSA	9.4	4.0				
	2	312833	499996	7.0 CHARA SPP.	66.9	27.2	4500	360	0.3	0.1
				MYRIO. SPICATUM	34.8	16.2				
				POT. RICHARDSONI	2.0	1.3				
				VALLISNERIA AMER	2.5	1.6				
	3	312833	499996	7.0 CHARA SPP.	10.4	3.6	4500	360	0.3	0.1
				MYRIO. SPICATUM	47.7	35.7				
				POT. NARROW	TRACE					
				VALLISNERIA AMER	2.2	0.9				
				NITELLOP. OBTUSA	3.6	1.5				
	4	312833	499992	5.5 CHARA SPP.	157.9	65.6	4000	1500	0.4	0.1
				NITELLOP. OBTUSA	22.7	9.2				
	5	312833	499992	5.5 CHARA SPP.	234.1	80.0	4000	1500	0.4	0.1
				NITELLOP. OBTUSA	8.6	3.3				
	6	312833	499992	5.5 CHARA SPP.	75.1	31.6	4000	1500	0.4	0.1
				NITELLOP. OBTUSA	72.9	30.7				
10	1	312821	499989	5.0 CHARA SPP.	70.6	26.3	2600	1100	0.3	0.2
				NAJAS FLEXILIS	10.0	7.2				
				NITELLA HYALINA	1.4	0.6				
				POT. GRAMINEUS	68.7	39.8				
				VALLISNERIA AMER	18.2	11.0				
	2	312821	499989	5.0 CHARA SPP.	1.2	0.5	2600	1100	0.3	0.2
				NAJAS FLEXILIS	4.7	3.4				
				POT. NODOSUS	161.8	111.5				
				POT. NARROW	27.9	22.8				
				VALLISNERIA AMER	1.8	1.3				
				NITELLOP. OBTUSA	2.8	1.1				
	3	312821	499989	5.0 CHARA SPP.	22.8	8.5	2600	1100	0.3	0.2
				NAJAS FLEXILIS	17.8	13.2				
				POT. GRAMINEUS	65.3	44.7				
				POT. RICHARDSONI	20.1	13.5				
				VALLISNERIA AMER	3.2	2.2				
				NITELLOP. OBTUSA	1.1	0.4				
	4	312826	499993	5.5 CHARA SPP.	24.9	11.2	3900	1400	1.3	0.2
				NAJAS FLEXILIS	54.8	35.4				
				POT. GRAMINEUS	10.8	7.6				
				POT. NARROW	16.2	11.9				
				VALLISNERIA AMER	9.6	6.6				
				NITELLOP. OBTUSA	2.1	1.1				
	5	312826	499993	5.5 CHARA SPP.	40.8	13.1	3900	1400	1.3	0.2
				NAJAS FLEXILIS	41.3	29.1				
				POT. RICHARDSONI	19.0	11.6				
				POT. NARROW	5.1	3.4				
				VALLISNERIA AMER	9.7	6.5				
				NITELLOP. OBTUSA	55.0	19.7				
	6	312826	499993	5.5 CHARA SPP.	5.7	2.1	3900	1400	1.3	0.2
				NAJAS FLEXILIS	85.7	59.0				
				VALLISNERIA AMER	3.4	1.9				

NITELLOP. OBTUSA	45.0	18.1

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	HENNEPIN	1	1	314066	500670	6.0	VALLISNERIA AMER	97.8	44.0	1500	55	0.3	0.1
			2	314066	500670	6.0	VALLISNERIA AMER	171.0	57.7	1500	55	0.3	0.1
			3	314066	500670	6.0	VALLISNERIA AMER	182.0	76.5	1500	55	0.3	0.1
		2	1	314062	500675	9.0	POT. RICHARDSONI	83.8	62.2	3500	150	0.2	0.2
							VALLISNERIA AMER	35.6	23.7				
			2	314062	500675	9.0	POT. RICHARDSONI	86.7	59.2	3500	150	0.2	0.2
			3	314062	500675	9.0	POT. RICHARDSONI	68.0	52.5	3500	150	0.2	0.2
							VALLISNERIA AMER	2.1	1.1				
			4	314066	500676	6.5	VALLISNERIA AMER	105.4	49.2	2400	280	0.2	0.1
			5	314066	500676	6.5	VALLISNERIA AMER	33.9	13.7	2400	280	0.2	0.1
			6	314066	500676	6.5	VALLISNERIA AMER	121.2	60.4	2400	280	0.2	0.1
		3	1	314076	500684	5.5	VALLISNERIA AMER	24.2	13.0	1500	350	0.1	0.0
			2	314076	500684	5.5	VALLISNERIA AMER	79.5	46.9	1500	350	0.1	0.0
			3	314076	500684	5.5	VALLISNERIA AMER	53.0	20.5	1500	350	0.1	0.0
		4	1	314088	500682	8.0	VALLISNERIA AMER	52.6	28.2	1500	140	0.1	0.0
			2	314088	500682	8.0	VALLISNERIA AMER	152.0	75.3	1500	140	0.1	0.0
			3	314088	500682	8.0	VALLISNERIA AMER	74.9	42.5	1500	140	0.1	0.0
		5	1	314076	500692	6.0	VALLISNERIA AMER	77.8	41.8	1600	320	0.1	0.0
			2	314076	500692	6.0	VALLISNERIA AMER	119.9	50.9	1600	320	0.1	0.0
			3	314076	500692	6.0	VALLISNERIA AMER	116.5	55.3	1600	320	0.1	0.0
		6	1	314082	500696	5.0	CHARA SPP.	7.5	1.5	1800	540	0.2	0.1
							POT. RICHARDSONI	8.3	5.8				
							VALLISNERIA AMER	40.0	17.9				
			2	314082	500696	5.0	CHARA SPP.	25.9	5.2	1800	540	0.2	0.1
							POT. RICHARDSONI	14.9	12.2				
							VALLISNERIA AMER	57.5	28.4				
			3	314082	500696	5.0	CHARA SPP.	20.8	4.4	1800	540	0.2	0.1
							VALLISNERIA AMER	214.6	102.5				
		7	1	314094	500702	7.0	VALLISNERIA AMER	88.1	41.0	1500	330	0.1	0.0
			2	314094	500702	7.0	CHARA SPP.	2.2	0.7	1500	330	0.1	0.0

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					VALLISNERIA AMER	97.5	56.9				
	3	314094	500702	7.0	CHARA SPP.	TRACE		1500	330	0.1	0.0
					MYRIO. SPICATUM	1.4	1.1				
					VALLISNERIA AMER	81.0	54.8				
8	1	314078	500701	6.0	MYRIO. SPICATUM	41.8	24.8	1500	51	0.3	0.0
					VALLISNERIA AMER	180.0	92.7				
	2	314078	500701	6.0	VALLISNERIA AMER	224.2	109.2	1500	51	0.3	0.0
	3	314078	500701	6.0	MYRIO. SPICATUM	5.0	3.7	1500	51	0.3	0.0
					POT. GRAMINEUS	1.4	1.0				
					VALLISNERIA AMER	89.8	47.8				
	4	314078	500702	6.0	MYRIO. SPICATUM	147.1	78.5	1300	25	0.2	0.0
					VALLISNERIA AMER	38.9	22.2				
	5	314078	500702	6.0	MYRIO. SPICATUM	214.9	159.9	1300	25	0.2	0.0
					VALLISNERIA AMER	3.1	1.9				
	6	314078	500702	6.0	MYRIO. SPICATUM	193.8	121.7	1300	25	0.2	0.0
					VALLISNERIA AMER	30.2	16.4				
	7	314078	500716	6.0	NAJAS FLEXILIS	2.7	1.8	710	91	0.4	0.2
					POT. RICHARDSONI	23.9	17.1				
					VALLISNERIA AMER	98.2	46.1				
	8	314078	500716	6.0	POT. RICHARDSONI	32.4	22.6	710	91	0.4	0.2
					VALLISNERIA AMER	4.6	3.3				
	9	314078	500716	6.0	POT. RICHARDSONI	51.8	39.1	710	91	0.4	0.2
					VALLISNERIA AMER	6.8	2.5				
9	1	314087	500704	5.0	VALLISNERIA AMER	19.1	12.0	1200	35	0.2	0.0
	2	314087	500704	5.0	CHARA SPP.	12.3	3.5	1200	35	0.2	0.0
					VALLISNERIA AMER	155.2	72.2				
	3	314087	500704	5.0	CHARA SPP.	2.2	0.5	1200	35	0.2	0.0
					POT. RICHARDSONI	5.1	3.8				
					VALLISNERIA AMER	47.6	24.1				
10	1	314100	500715	6.5	VALLISNERIA AMER	239.5	86.8	1300	65	0.1	0.1
	2	314100	500715	6.5	VALLISNERIA AMER	116.7	45.6	1300	65	0.1	0.1
	3	314100	500715	6.5	VALLISNERIA AMER	114.7	45.9	1300	65	0.1	0.1
11	1	314088	500719	6.5	VALLISNERIA AMER	118.2	62.3	1400	290	0.2	0.0
	2	314088	500719	6.5	CHARA SPP.	TRACE		1400	290	0.2	0.0
					NAJAS FLEXILIS	5.6	3.6				
					VALLISNERIA AMER	123.5	65.5				
	3	314088	500719	6.5	CHARA SPP.	11.6	3.7	1400	290	0.2	0.0
					NITELLA HYALINA	0.4	0.2				
					VALLISNERIA AMER	62.0	29.7				
	4	314088	500719	6.5	NAJAS FLEXILIS	46.6	30.4	1400	290	0.2	0.0

					NITELLA HYALINA	TRACE					
					VALLISNERIA AMER	35.6	20.3				
	5	314088	500719	6.5	CHARA SPP.	1.0	0.4	1400	290	0.2	0.0
					NAJAS FLEXILIS	11.8	7.5				
					VALLISNERIA AMER	48.3	25.2				
	6	314088	500719	6.5	NAJAS FLEXILIS	10.3	5.8	1400	290	0.2	0.0
					NITELLA HYALINA	TRACE					
					POT. NARROW	3.2	2.2				
					VALLISNERIA AMER	131.5	65.1				
	7	314091	500716	9.0	POT. RICHARDSONI	56.6	26.6	1000	1	0.5	0.2
					VALLISNERIA AMER	95.9	69.4				
	8	314091	500716	9.0	POT. RICHARDSONI	57.4	41.3	1000	1	0.5	0.2
					VALLISNERIA AMER	12.7	7.7				
	9	314091	500716	9.0	NAJAS FLEXILIS	TRACE		1000	1	0.5	0.2
					POT. RICHARDSONI	111.6	80.6				
					VALLISNERIA AMER	13.3	8.2				
12	1	314095	500722	6.0	VALLISNERIA AMER	93.0	54.2	1500	60	0.1	0.0
	2	314095	500722	6.0	VALLISNERIA AMER	127.7	67.1	1500	60	0.1	0.0
	3	314095	500722	6.0	VALLISNERIA AMER	153.5	75.9	1500	60	0.1	0.0
13	1	314097	500727	10.0	VALLISNERIA AMER	60.8	32.4	1100	140	1.1	0.3
	2	314097	500727	10.0	VALLISNERIA AMER	13.1	8.9	1100	140	1.1	0.3
	3	314097	500727	10.0	VALLISNERIA AMER	56.5	37.4	1100	140	1.1	0.3
14	1	314109	500736	9.0	VALLISNERIA AMER	6.0	3.4	1400	85	0.3	0.3
	2	314109	500736	9.0	VALLISNERIA AMER	121.6	62.7	1400	85	0.3	0.3
	3	314109	500736	9.0	VALLISNERIA AMER	9.1	3.8	1400	85	0.3	0.3

SUBMERSED MACROPHYTE PONAR DATA, SEPTEMBER, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	1	1	314223	500978	7.5	POT. NARROW	11.9	4.5	2800	32	0.6	0.1
							VALLISNERIA AMER	114.9	50.6				
			2	314223	500978	7.5	VALLISNERIA AMER	179.3	87.4	2800	32	0.6	0.1
			3	314223	500978	7.5	POT. NARROW	55.2	39.8	2800	32	0.6	0.1
							VALLISNERIA AMER	168.6	85.5				
		2	1	314212	500975	8.0	VALLISNERIA AMER	350.3	127.2	2800	4	0.7	0.1
			2	314212	500975	8.0	VALLISNERIA AMER	126.6	70.6	2800	4	0.7	0.1
			3	314212	500975	8.0	VALLISNERIA AMER	210.0	103.3	2800	4	0.7	0.1
		3	1	314205	500973	7.5	POT. NODOSUS	119.8	82.8	2600	250	0.5	0.2
			2	314205	500973	7.5	HETERANTHERA DUB	8.4	5.8	2600	250	0.5	0.2
							POT. NODOSUS	103.3	76.3				
			3	314205	500973	7.5	POT. NODOSUS	126.3	83.2	2600	250	0.5	0.2
		4	1	314189	500972	10.0	MYRIO. SPICATUM	144.6	93.0	2100	37	0.8	0.1
							VALLISNERIA AMER	5.9	2.5				
			2	314189	500972	10.0	MYRIO. SPICATUM	71.3	50.7	2100	37	0.8	0.1
							VALLISNERIA AMER	1.6	0.9				
			3	314189	500972	10.0	MYRIO. SPICATUM	199.2	117.9	2100	37	0.8	0.1
							VALLISNERIA AMER	19.4	11.1				
		5	1	314229	500985	8.0	VALLISNERIA AMER	192.4	83.4	2800	25	0.4	0.1
			2	314229	500985	8.0	VALLISNERIA AMER	140.0	63.1	2800	25	0.4	0.1
			3	314229	500985	8.0	VALLISNERIA AMER	185.8	94.7	2800	25	0.4	0.1
		6	1	314220	500986	4.0	HETERANTHERA DUB	292.2	195.7	3000	180	0.2	0.1
							POT. CRISPUS	6.8	5.7				
			2	314220	500986	4.0	ELODEA CANADENS	0.5	0.3	3000	180	0.2	0.1
							HETERANTHERA DUB	550.1	365.2				
							POT. CRISPUS	TRACE					
			3	314220	500986	4.0	ELODEA CANADENS	2.6	1.5	3000	180	0.2	0.1
							HETERANTHERA DUB	327.4	280.5				
							POT. CRISPUS	20.6	18.4				
		7	1	314232	500988	3.0	MYRIO. SPICATUM	241.2	189.3	2900	150	0.2	0.1
			2	314232	500988	3.0	MYRIO. SPICATUM	176.2	135.0	2900	150	0.2	0.1
							VALLISNERIA AMER	19.0	14.2				

	3	314232	500988	3.0	HETERANTHERA DUB	0.9	0.6	2900	150	0.2	0.1
					MYRIO. SPICATUM	272.3	198.8				
					VALLISNERIA AMER	7.1	4.5				
8	1	314227	500991	3.5	HETERANTHERA DUB	267.7	183.4	3200	35	0.1	0.0
					POT. CRISPUS	22.7	18.7				
	2	314227	500991	3.5	HETERANTHERA DUB	246.4	167.7	3200	35	0.1	0.0
					POT. CRISPUS	52.9	41.6				
	3	314227	500991	3.5	HETERANTHERA DUB	230.2	152.9	3200	35	0.1	0.0
					POT. CRISPUS	17.7	14.2				
9	1	314245	500997	5.0	MYRIO. SPICATUM	421.0	182.9	3000	120	0.3	0.3
					VALLISNERIA AMER	2.7	1.7				
	2	314245	500997	5.0	HETERANTHERA DUB	29.7	23.5	3000	120	0.3	0.3
					MYRIO. SPICATUM	167.4	116.8				
					VALLISNERIA AMER	26.4	19.3				
	3	314245	500997	5.0	HETERANTHERA DUB	18.9	15.6	3000	120	0.3	0.3
					MYRIO. SPICATUM	251.3	171.4				
					VALLISNERIA AMER	11.5	8.0				
10	1	314239	500997	4.0	HETERANTHERA DUB	139.2	84.4	2500	160	0.3	0.2
	2	314239	500997	4.0	HETERANTHERA DUB	258.3	144.5	2500	160	0.3	0.2
					POT. CRISPUS	16.6	10.3				
	3	314239	500997	4.0	HETERANTHERA DUB	636.2	402.1	2500	160	0.3	0.2
11	1	314254	501003	5.0	MYRIO. SPICATUM	275.0	203.8	2800	830	0.8	0.2
					VALLISNERIA AMER	15.1	10.9				
	2	314254	501003	5.0	MYRIO. SPICATUM	199.9	139.6	2800	830	0.8	0.2
					VALLISNERIA AMER	10.6	7.6				
	3	314254	501003	5.0	MYRIO. SPICATUM	284.1	208.5	2800	830	0.8	0.2
					VALLISNERIA AMER	12.2	9.1				

APPENDIX M

Collections of Emergent Macrophytes

EMERGENT MACROPHYTE [redacted] DATA, JUNE, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	8	4	314234	500995	2.0	TYPHA ANGUSTIFOL	213.4	210.6	1700	-	0.1	-
			5	314234	500996	2.0	TYPHA ANGUSTIFOL	230.3	205.2	1700	-	0.1	-
			6	314234	500996	2.0	TYPHA ANGUSTIFOL	263.3	245.5	1700	-	0.1	-
		10	4	314246	501004	1.5	TYPHA ANGUSTIFOL	532.3	440.9	2400	-	0.1	-
			5	314246	501003	1.5	TYPHA ANGUSTIFOL	487.4	448.8	2400	-	0.1	-
			6	314246	501003	1.5	TYPHA ANGUSTIFOL	783.8	635.0	2400	-	0.1	-
			7	314249	501007	1.0	SPARG. EURYCARP	114.5	62.0	2500	-	0.2	-
			8	314249	501007	1.0	SPARG. EURYCARP	120.3	64.6	2500	-	0.2	-
			9	314249	501007	1.0	SPARG. EURYCARP	111.9	102.6	2500	-	0.2	-

EMERGENT MACROPHYTE [redacted] DATA, JULY-AUGUST, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	7	4	309584	498268	2.0	SCIRPUS ACUTIS	222.2	203.4	3000	200	0.2	0.0
			5	309584	498268	2.0	SCIRPUS ACUTIS	286.1	271.0	3000	200	0.2	0.0
			6	309584	498268	2.0	SCIRPUS ACUTIS	283.1	263.5	3000	200	0.2	0.0
DETROIT	STONY	8	4	0	0	2.0	TYPHA ANGUSTIFOL	1609.9	1271.3	2100	1500	0.3	-
			5	0	0	2.0	TYPHA ANGUSTIFOL	2968.9	2632.3	2100	1500	0.3	-
			6	0	0	2.0	TYPHA ANGUSTIFOL	1810.2	1470.1	2100	1500	0.3	-
		10	4	0	0	0.5	SPARG. EURYCARP	227.4	164.7	1000	-	0.1	-
			5	0	0	0.5	SPARG. EURYCARP	197.0	164.2	1000	-	0.1	-
			6	0	0	0.5	SPARG. EURYCARP	450.6	388.8	1000	-	0.1	-
			7	0	0	0.5	SAG.LATIFOLIA	35.6	30.9	1100	-	0.1	-
							SCIRPUS FLUVIATI	854.1	602.5				
			8	0	0	0.5	SAG.LATIFOLIA	5.5	4.6	1100	-	0.1	-
							SCIRPUS FLUVIATI	936.6	693.3				
							PHAL. ARUNDINACE	29.6	26.8				
			9	0	0	0.5	SAG.LATIFOLIA	11.3	9.7	1100	-	0.1	-
							SCIRPUS FLUVIATI	1106.8	898.8				
			10	0	0	1.0	SCIRPUS AMERICAN	207.0	190.2	2300	-	0.3	-
							SCIRPUS ACUTIS	2.8	2.5				
			11	0	0	1.0	E. SMALII	38.2	34.8	2300	-	0.3	-
							SCIRPUS AMERICAN	184.4	144.6				
			12	0	0	1.0	E. SMALII	36.2	33.7	2300	-	0.3	-
							SAG.LATIFOLIA	1.0	0.9				
							SCIRPUS AMERICAN	307.5	279.6				

EMERGENT MACROPHYTE [redacted] DATA, SEPTEMBER, 1983

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	7	7	309584	498268	2.0	SCIRPUS ACUTIS	317.6	292.0	2000	-	0.1	-
			8	309584	498268	2.0	SCIRPUS ACUTIS	394.1	270.4	2000	-	0.1	-
			9	309584	498268	2.0	SCIRPUS ACUTIS	317.7	296.5	2000	-	0.1	-
DETROIT	STONY	10	4	314241	500998	1.0	TYPHA ANGUSTIFOL	628.7	580.2	450	-	0.0	-
			5	314241	500998	1.0	TYPHA ANGUSTIFOL	658.1	616.3	450	-	0.0	-
			6	314241	500998	1.0	TYPHA ANGUSTIFOL	656.1	496.7	450	-	0.0	-
			7	314240	500997	1.0	SPARG. EURYCARP	111.1	79.2	650	-	0.0	-
			8	314240	500997	1.0	SPARG. EURYCARP	161.6	95.5	650	-	0.0	-
			9	314240	500997	1.0	SPARG. EURYCARP	108.6	77.7	650	-	0.0	-
			10	314239	500997	1.0	SCIRPUS AMERICAN SCIRPUS VALIDUS	147.0 10.4	111.6 9.4	600	-	0.1	-
			11	314239	500997	1.0	SCIRPUS AMERICAN SCIRPUS VALIDUS	67.7 35.0	54.3 31.2	600	-	0.1	-
			12	314239	500997	1.0	SCIRPUS AMERICAN SCIRPUS VALIDUS	158.6 38.5	121.6 27.8	600	-	0.1	-
		11	4	314250	501006	1.0	SPARG. EURYCARP	243.5	151.9	500	-	0.0	-
			5	314250	501006	1.0	SPARG. EURYCARP	219.4	140.9	500	-	0.0	-
			6	314250	501006	1.0	SPARG. EURYCARP	288.3	194.0	500	-	0.0	-

EMERGENT MACROPHYTE [redacted] DATA, JUNE, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
DETROIT	STONY	10	4	314246	501003	2.0	POT. CRISPUS	0.5	0.4	3500	3100	0.0	0.0
							TYPHA ANGUSTIFOL	686.9	601.2				
			5	314246	501003	2.0	TYPHA ANGUSTIFOL	147.1	129.6	3500	3100	0.0	0.0
			6	314246	501003	2.0	TYPHA ANGUSTIFOL	426.1	403.2	3500	3100	0.0	0.0
			7	314242	501000	2.0	SCIRPUS AMERICAN	68.7	54.0	3600	3600	0.2	0.2
							SCIRPUS VALIDUS	23.6	20.8				
							PHAL. ARUNDINACE	13.1	10.8				
			8	314242	501000	2.0	E. CF. ERYTHRO	62.2	50.4	3600	3600	0.2	0.2
							SCIRPUS AMERICAN	80.0	72.0				
							SCIRPUS VALIDUS	61.5	50.4				
			9	314242	501000	2.0	E. CF. ERYTHRO	25.5	15.3	3600	3600	0.2	0.2
							SCIRPUS AMERICAN	141.6	122.4				
							SCIRPUS VALIDUS	26.9	14.6				
							SCIRPUS ACUTIS	17.1	14.0				
							SPARG. EURYCARP	3.0	2.6				
			10	314238	500998	2.0	SAG. RIGIDA	19.5	10.7	3900	2600	0.1	0.0
							SAG. RIGIDA	9.9	6.0				
			11	314238	500998	2.0	ELODEA CANADENS	0.3	0.2	3900	2600	0.1	0.0
							SAG. RIGIDA	14.6	3.6				
							SAG. RIGIDA	33.8	32.4				
			12	314238	500998	2.0	SAG. RIGIDA	27.8	4.7	3900	2600	0.1	0.0
							SAG. RIGIDA	34.3	21.6				
		11	1	314250	501004	2.0	SPARG. EURYCARP	307.6	234.0	3200	3200	0.0	0.0
			2	314250	501004	2.0	SPARG. EURYCARP	203.0	176.4	3200	3200	0.0	0.0
			3	314250	501004	2.0	SPARG. EURYCARP	267.7	237.6	3200	3200	0.0	0.0
			4	314249	501007	2.0	SAG.LATIFOLIA	11.8	3.3	3200	3200	0.0	0.0
			5	314249	501007	2.0	POT. CRISPUS	0.2	0.1	3200	3200	0.0	0.0
							SAG.LATIFOLIA	23.9	14.1				
							SPARG. EURYCARP	1.5	1.3				
			6	314249	501007	2.0	SAG. RIGIDA	28.8	21.6	3200	3200	0.0	0.0
							SPARG. EURYCARP	0.3	0.2				
							SPARG. EURYCARP	39.0	28.4				

EMERGENT MACROPHYTE [redacted] DATA, JULY-AUGUST, 1984

NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	7	7	309583	498272	2.5	SCIRPUS ACUTIS	59.0	50.4	4000	3000	0.7	0.7
			8	309583	498272	2.5	SCIRPUS ACUTIS	101.9	61.2	4000	3000	0.7	0.7
			9	309583	498272	2.5	SCIRPUS ACUTIS	73.9	50.4	4000	3000	0.7	0.7
DETROIT	STONY	10	4	314246	501004	0.5	TYPHA SPP.	1037.0	946.8	2800	2900	0.2	0.1
			5	314246	501004	0.5	TYPHA SPP.	975.4	910.8	2800	2900	0.2	0.1
			6	314246	501004	0.5	TYPHA SPP.	1157.4	1090.8	2800	2900	0.2	0.1
			7	314241	501001	0.5	E. CF. ERYTHRO	6.1	5.2	2900	2900	0.5	0.1
							ELODEA CANADENS	1.1	0.7				
							HETERANTHERA DUB	0.2	0.2				
							MYRIO. SPICATUM	0.6	0.5				
							SCIRPUS AMERICAN	389.0	338.4				
							SCIRPUS VALIDUS	42.9	32.4				
							VALLISNERIA AMER	0.1	0.1				
			8	314241	501001	0.5	E. CF. ERYTHRO	10.8	9.2	2900	2900	0.5	0.1
							ELODEA CANADENS	0.9	0.7				
							MYRIO. SPICATUM	0.6	0.4				
							SCIRPUS AMERICAN	419.4	309.6				
							SCIRPUS VALIDUS	59.2	36.0				
							PHAL. ARUNDINACE	72.3	57.6				
			9	314241	501001	0.5	SAG.LATIFOLIA	16.7	14.5	2900	2900	0.5	0.1
							SCIRPUS AMERICAN	269.9	216.0				
							SCIRPUS VALIDUS	83.8	72.0				
							TYPHA SPP.	27.0	24.6				
							SPARG. EURYCARP	12.4	11.3				

11	1	314248	501008	0.5	ELODEA CANADENS	1.2	0.9	2400	2400	0.1	0.1
					SPARG. EURYCARP	408.3	309.6				
					SPARG. EURYCARP	341.7	302.4				
	2	314248	501008	0.5	ELODEA CANADENS	1.3	0.8	2400	2400	0.1	0.1
					SAG.LATIFOLIA	36.9	25.2				
					SPARG. EURYCARP	685.6	554.4				
	3	314248	501008	0.5	ELODEA CANADENS	0.8	0.5	2400	2400	0.1	0.1
					VALLISNERIA AMER	0.1	0.1				
					SPARG. EURYCARP	715.6	583.2				
	4	314249	501007	0.5	ELODEA CANADENS	2.0	0.9	2900	2900	0.1	0.1
					SAG. RIGIDA	313.4	201.6				
	5	314249	501007	0.5	SAG.LATIFOLIA	110.1	86.4	2900	2900	0.1	0.1
					SAG. RIGIDA	308.1	230.4				
	6	314249	501007	0.5	SAG.LATIFOLIA	48.0	32.4	2900	2900	0.1	0.1
					SAG. RIGIDA	255.5	198.0				

EMERGENT MACROPHYTE [redacted] DATA, SEPTEMBER, 1984

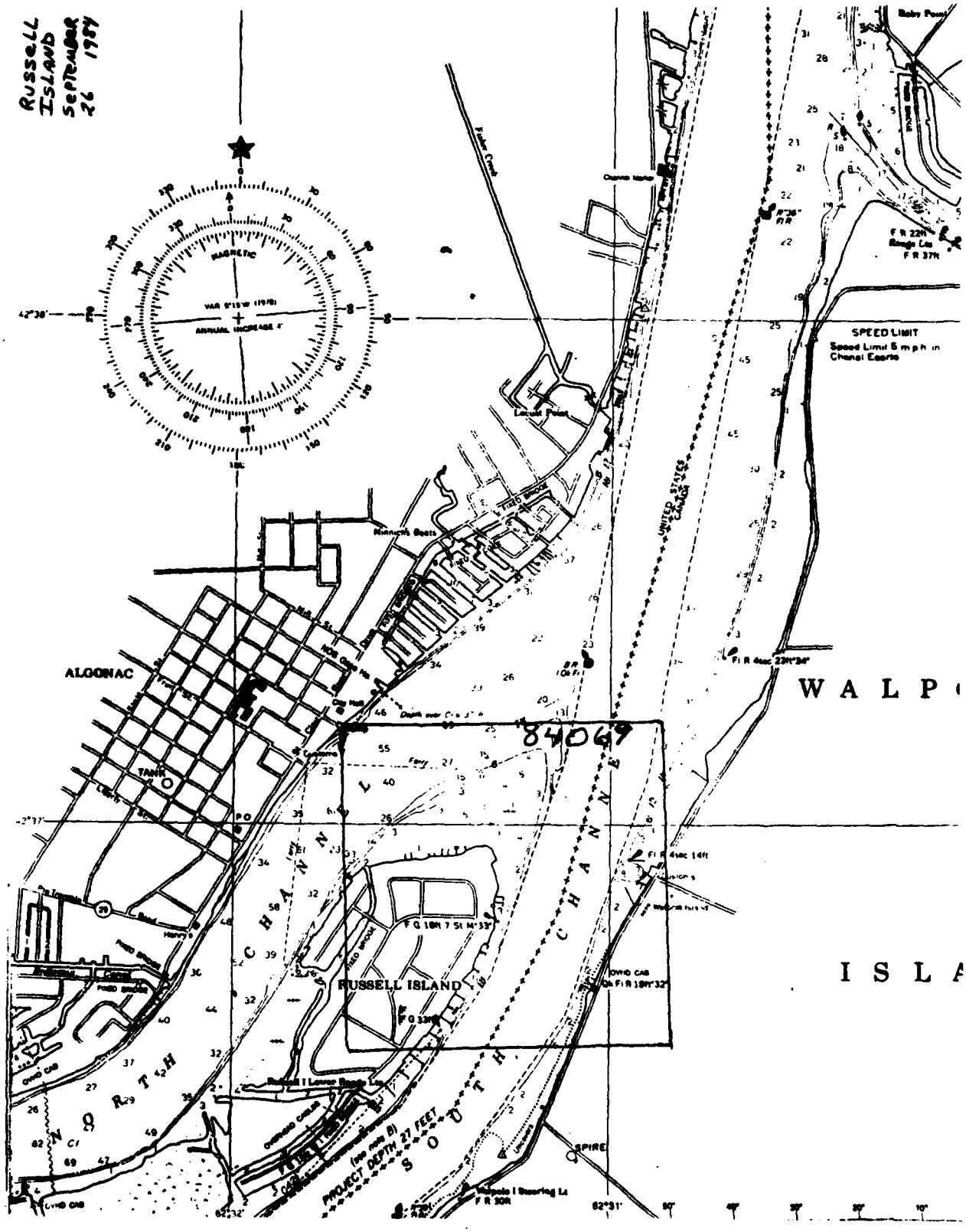
NOTE: 1. (-) INDICATES MISSING DATA
2. TRACE = LESS THAN 0.001 G/M2

RIVER	ISLAND	BLOCK NO.	REPLICATE NO.	LORAN COORDINATES UPPER	LORAN COORDINATES LOWER	DEPTH (FT.)	MACROPHYTE TAXON	DRY WEIGHT (G/M2)	ASH-FREE WEIGHT (G/M2)	LIGHT(FOOT CANDLES) SURFACE	LIGHT(FOOT CANDLES) BOTTOM	CURRENT(FT./SEC.) SURFACE	CURRENT(FT./SEC.) BOTTOM
ST. CLAIR	FAWN	7	4	309585	498271	2.5	SCIRPUS ACUTIS	403.8	291.6	560	430	0.1	0.0
			5	309585	498271	2.5	SCIRPUS ACUTIS	292.3	259.2	560	430	0.1	0.0
			6	309585	498271	2.5	SCIRPUS ACUTIS	115.4	204.9	560	430	0.1	0.0
DETROIT	STONY	10	4	314241	500998	1.0	E. CF. ERYTHRO	0.3	0.2	3400	3400	0.4	0.4
							SCIRPUS AMERICAN	413.6	316.8				
							SCIRPUS VALIDUS	46.9	43.2				
							SCIRPUS FLUVIATI	8.2	7.7				
			5	314241	500998	1.0	E. CF. ERYTHRO	5.7	5.0	3400	3400	0.4	0.4
							SCIRPUS AMERICAN	435.4	331.2				
							SCIRPUS VALIDUS	53.0	44.2				
							SCIRPUS ACUTIS	2.1	1.9				
			6	314241	500998	1.0	SCIRPUS AMERICAN	477.0	356.4	3400	3400	0.4	0.4
							SCIRPUS VALIDUS	6.0	5.8				
			7	314243	501001	1.0	TYPHA ANGUSTIFOL	1196.7	914.4	9000	9000	0.2	0.2
			8	314243	501001	1.0	TYPHA ANGUSTIFOL	2022.3	1573.2	9000	9000	0.2	0.2
			9	314243	501001	1.0	SAG.LATIFOLIA	2.4	2.0	9000	9000	0.2	0.2
							TYPHA ANGUSTIFOL	977.3	763.2				
		11	4	314248	501006	1.0	SPARG. EURYCARP	397.9	297.9	3400	3400	0.0	0.0
			5	314248	501006	1.0	SPARG. EURYCARP	313.1	217.1	3400	3400	0.0	0.0
							SPARG. EURYCARP	338.9	266.4				
			6	314248	501006	1.0	SPARG. EURYCARP	574.5	385.2	3400	3400	0.0	0.0
			7	314248	501006	1.0	SAG. RIGIDA	246.6	165.6	780	780	0.1	0.1
			8	314248	501006	1.0	SAG. RIGIDA	361.9	280.8	780	780	0.1	0.1
			9	314248	501006	1.0	SAG. RIGIDA	325.6	226.8	780	780	0.1	0.1

APPENDIX N

Index Charts for Aerial Photographs and Photographs of Macrophyte Study Areas

[Only two pages of Appendix N are reproduced as part of this report. The charts and photographs are available on request from the U.S. Army Corps of Engineers, Detroit District, or the Great Lakes Fishery Laboratory.]


RUSSELL ISLAND SEPTEMBER 26 1979
ALGONAC
RUSSELL ISLAND
SOUTH CHANNEL
NORTH CHANNEL
SPEED LIMIT
Speed Limit 5 m p h in Channel Essex
PROJECT DEPTH 27 FEET
SPIRE
84069
WALP
ISLA

87048

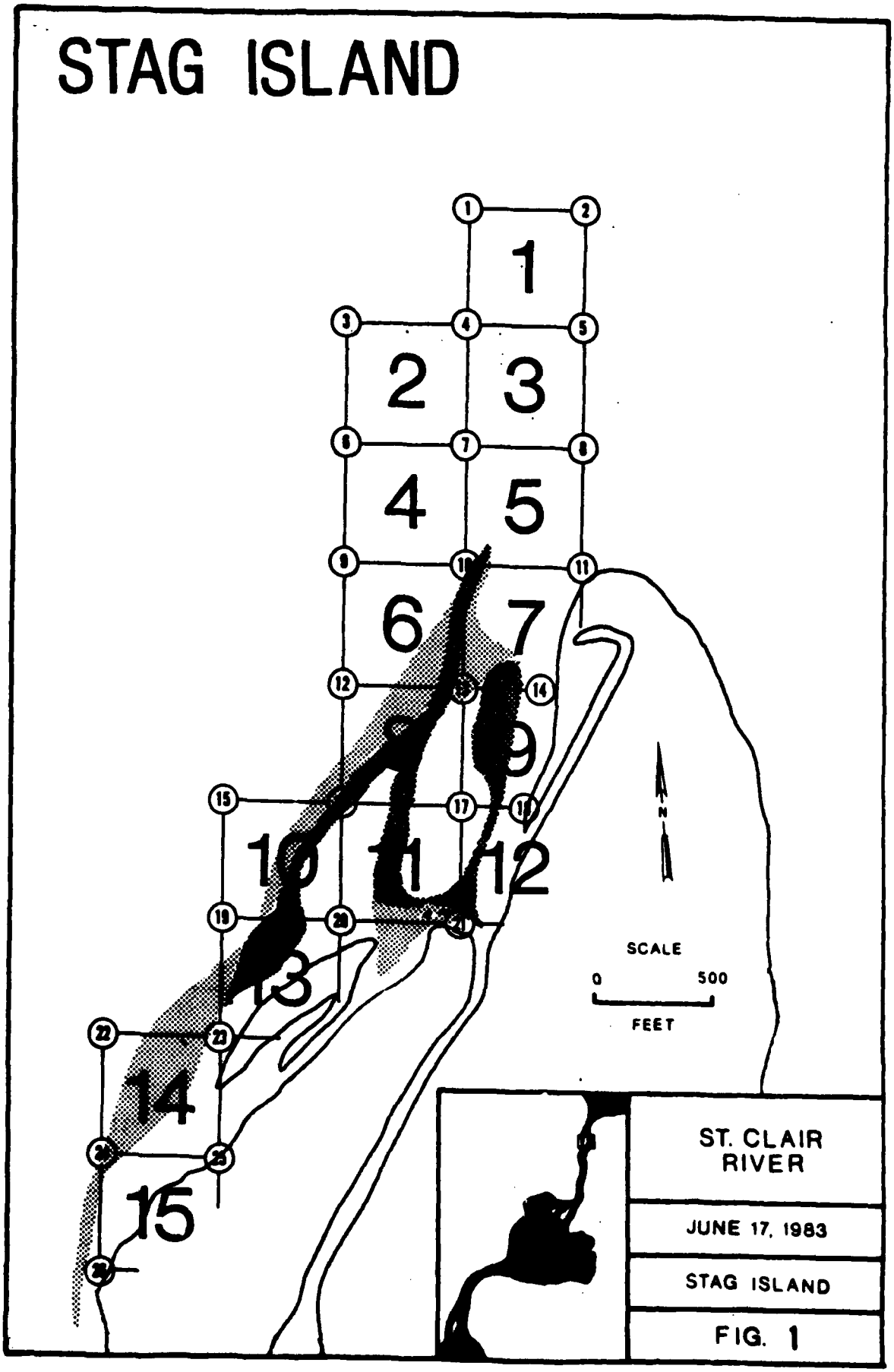
N-2

APPENDIX O

Macrophyte Distribution Maps

Because diversity of taxa within beds was great, it was not possible to outline the exact distribution of each species. The following legend places dominant taxa in a general area; the text discusses the location more specifically. The legend for Figs. 1-36 follows (see Fig. 16, for an example of the three types of shading used). In all figures "Potamogeton spp." = narrow-leaf forms of Potamogeton.

Type of Shading		
Black	Stippling	Crosshatching
St. Clair River, Figs. 1-9 (1983) and 19-27 (1984)		
Scirpus acutus	Chara Potamogeton spp.	Elodea canadensis Myriophyllum spicatum Potamogeton gramineus Potamogeton spp. Potamogeton richardsonii
Detroit River, Figs. 10-18 (1983) and 28-36 (1984)		
Scirpus americanus Sparganium eurycarpum Typha angustifolia	Potamogeton spp. Vallisneria	Heteranthera dubia Myriophyllum spicatum Potamogeton crispus Potamogeton spp. Potamogeton richardsonii


STAG ISLAND
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SCALE
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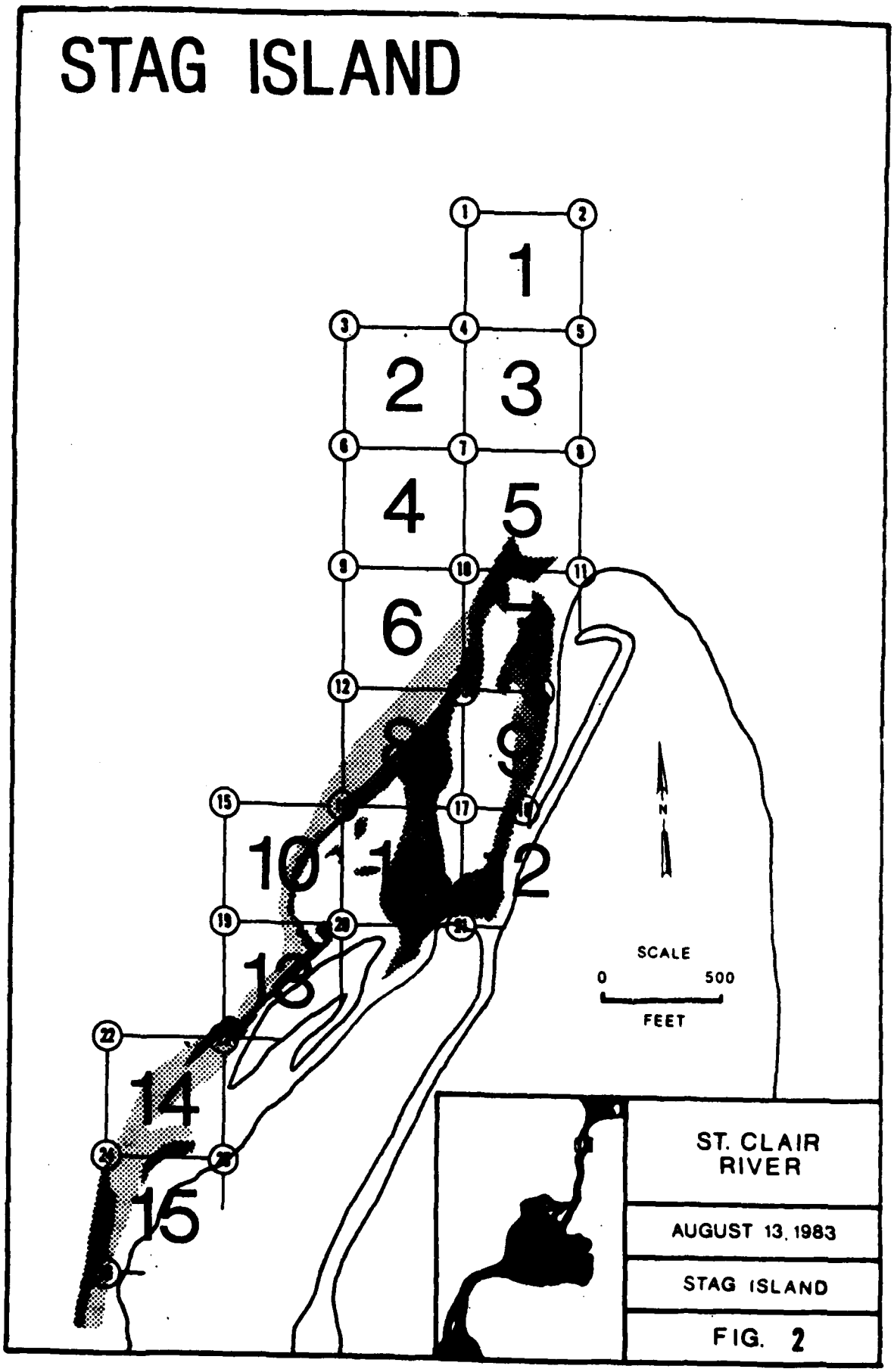
500
FEET
N
ST. CLAIR RIVER
JUNE 17, 1983
STAG ISLAND
FIG. 1


STAG ISLAND
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SCALE
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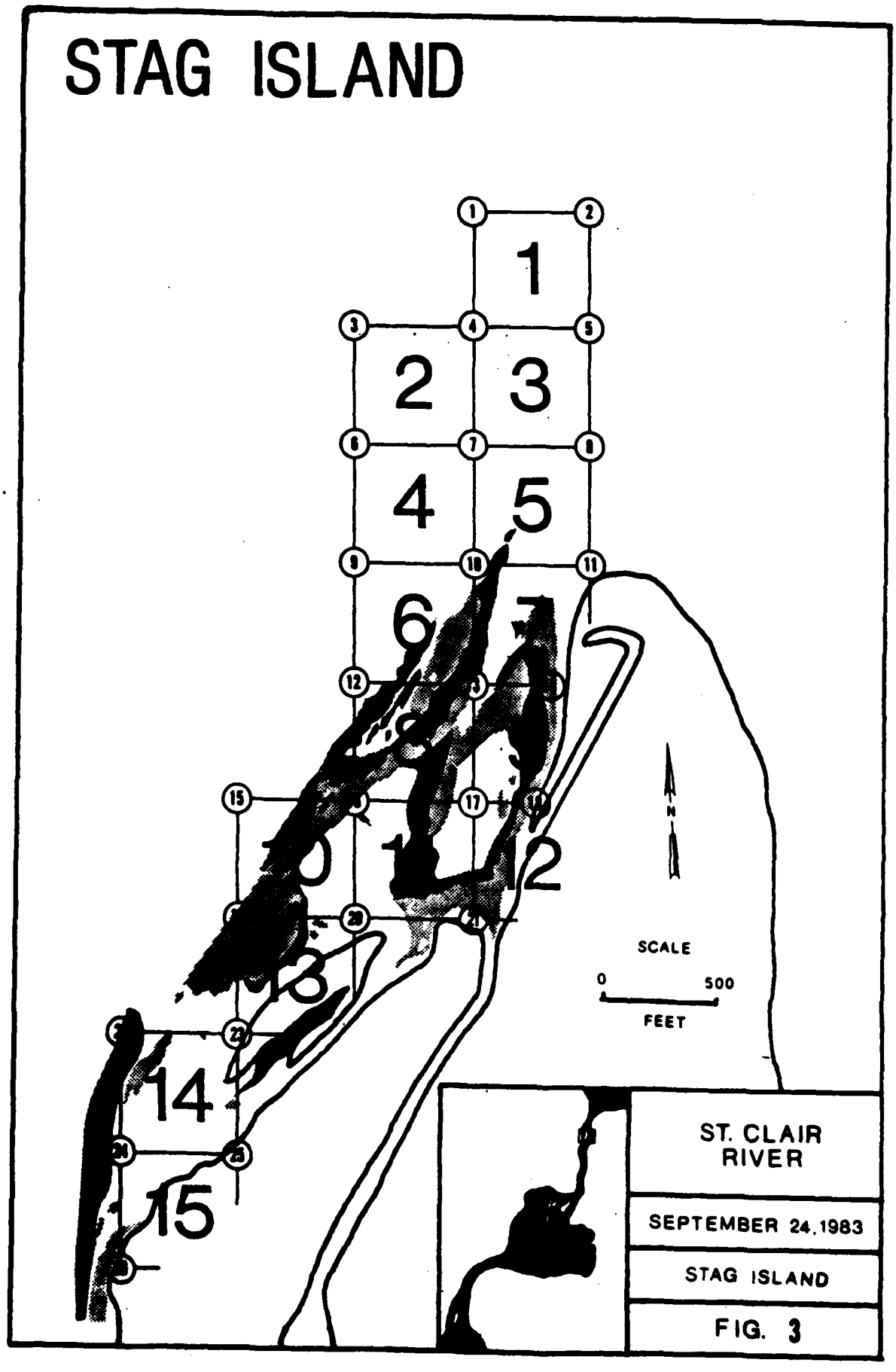
500
FEET
N
ST. CLAIR RIVER
AUGUST 13, 1983
STAG ISLAND
FIG. 2


STAG ISLAND
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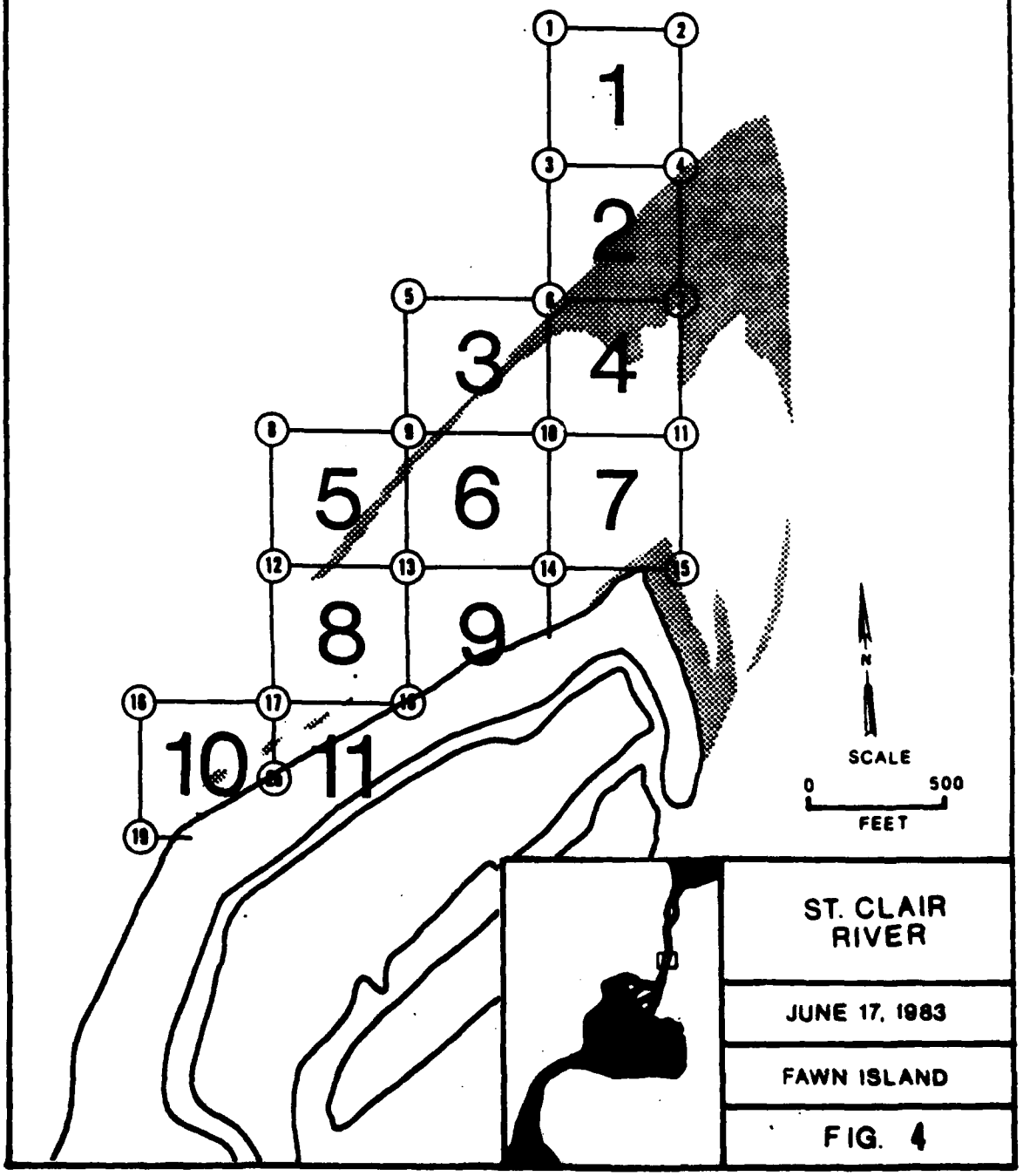
22
23
24
25
N
SCALE
0
500
FEET
ST. CLAIR RIVER
SEPTEMBER 24, 1983
STAG ISLAND
FIG. 3

FAWN ISLAND


1
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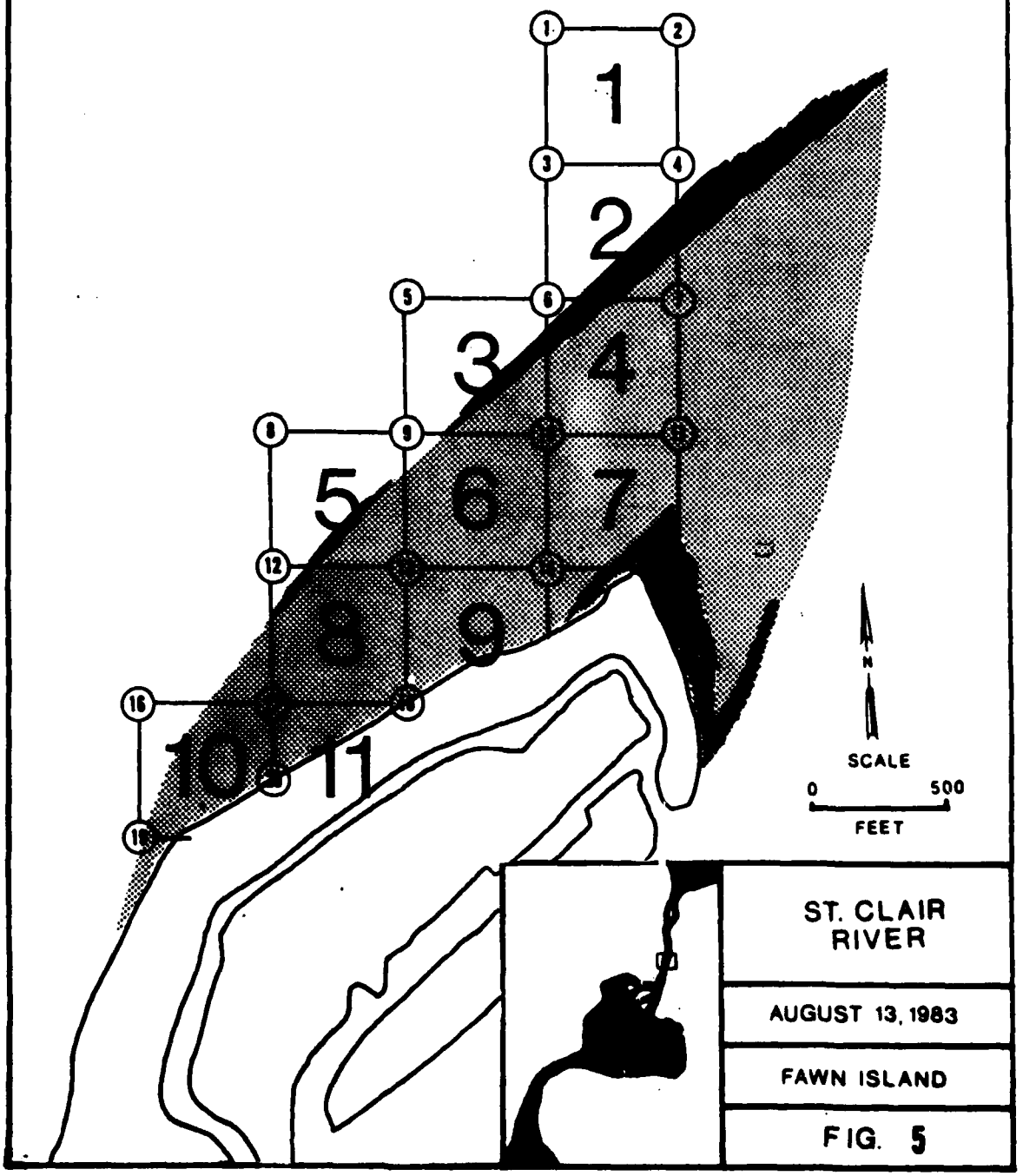
10
11
N
SCALE
0
500
FEET
ST. CLAIR RIVER
JUNE 17, 1983
FAWN ISLAND
FIG. 4

FAWN ISLAND


1
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N
SCALE
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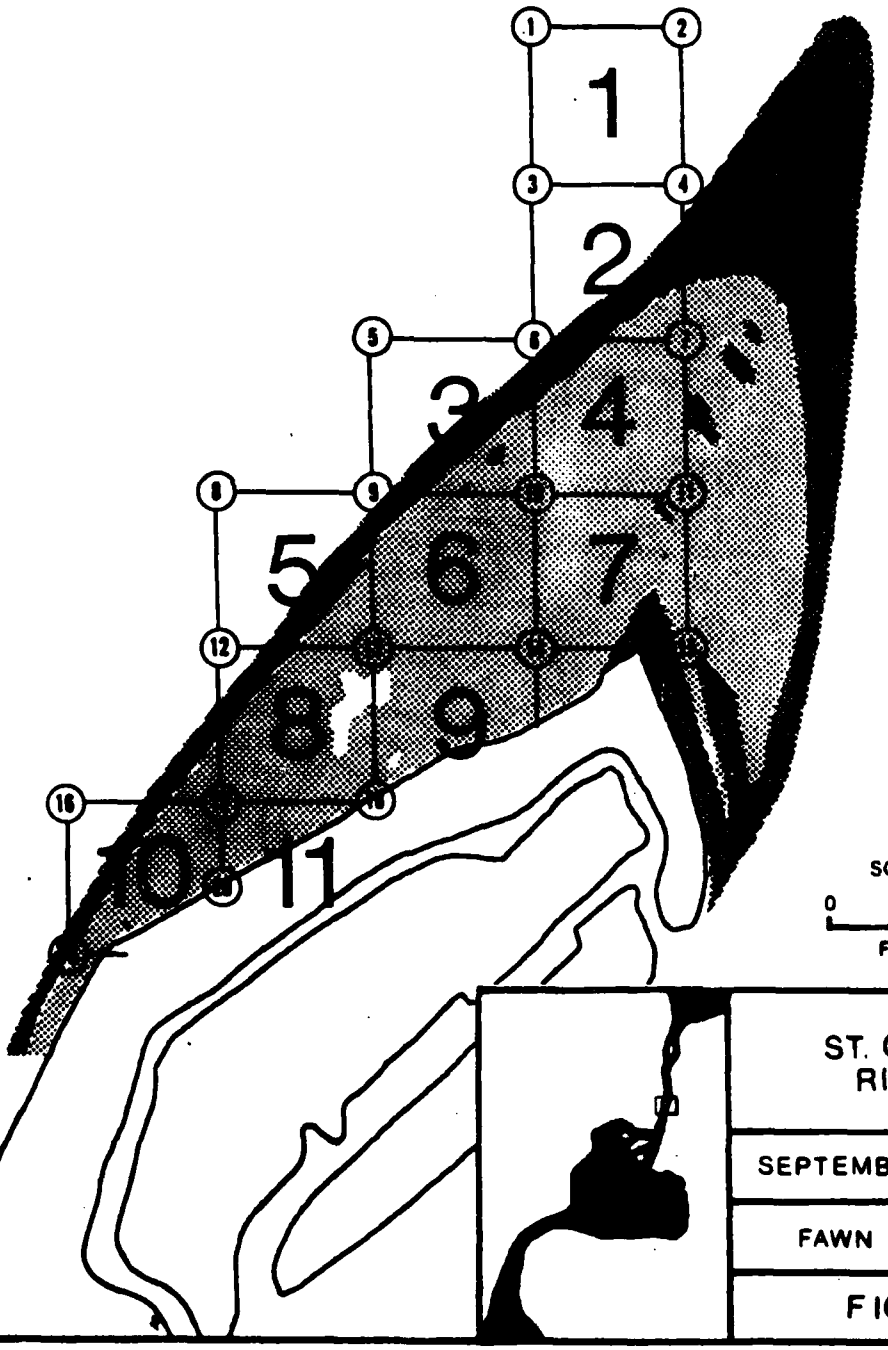
500
FEET
ST. CLAIR RIVER
AUGUST 13, 1983
FAWN ISLAND
FIG. 5

FAWN ISLAND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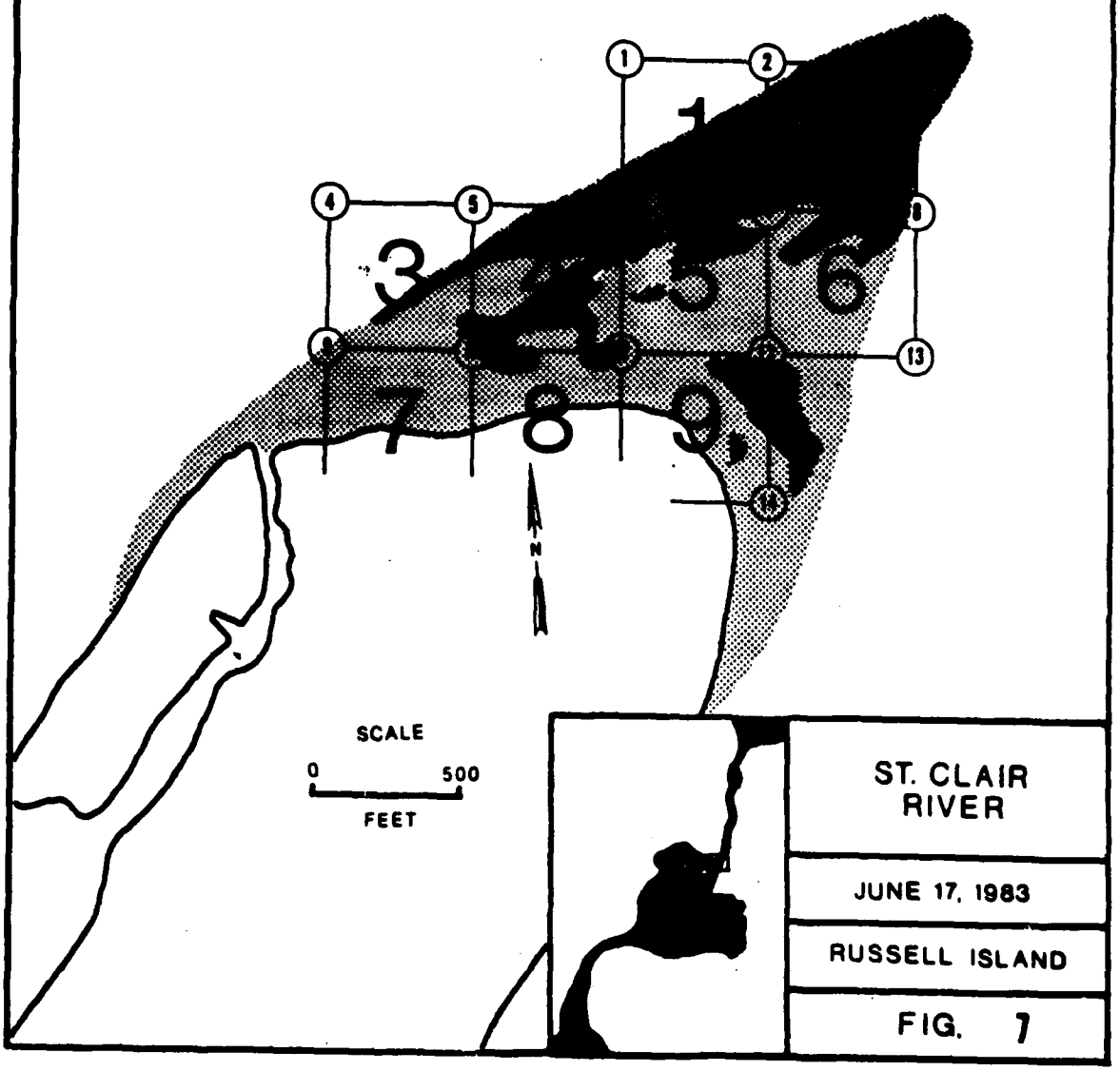
11
SCALE
0
500
FEET
ST. CLAIR RIVER
SEPTEMBER 24, 1983
FAWN ISLAND
FIG. 6

RUSSELL ISLAND



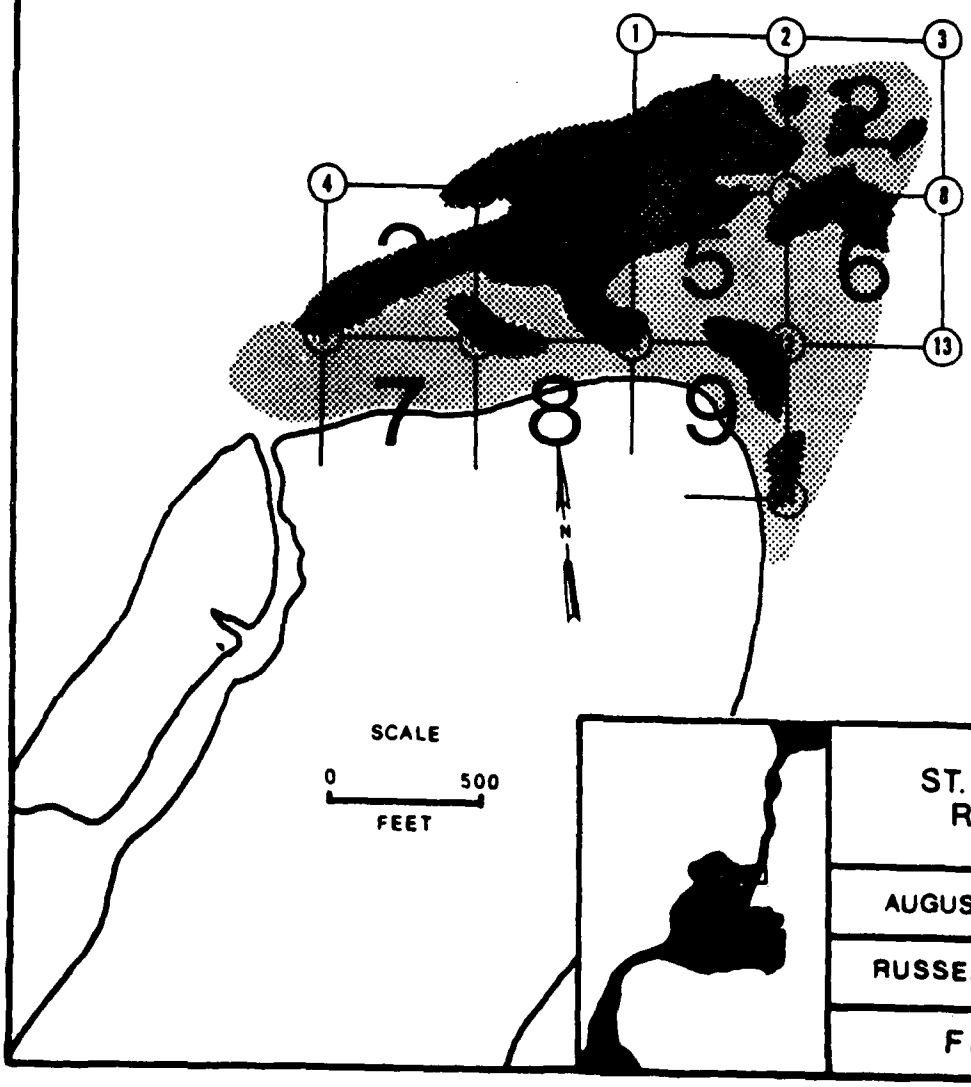
ST. CLAIR RIVER

JUNE 17, 1983

RUSSELL ISLAND

FIG. 1

RUSSELL ISLAND



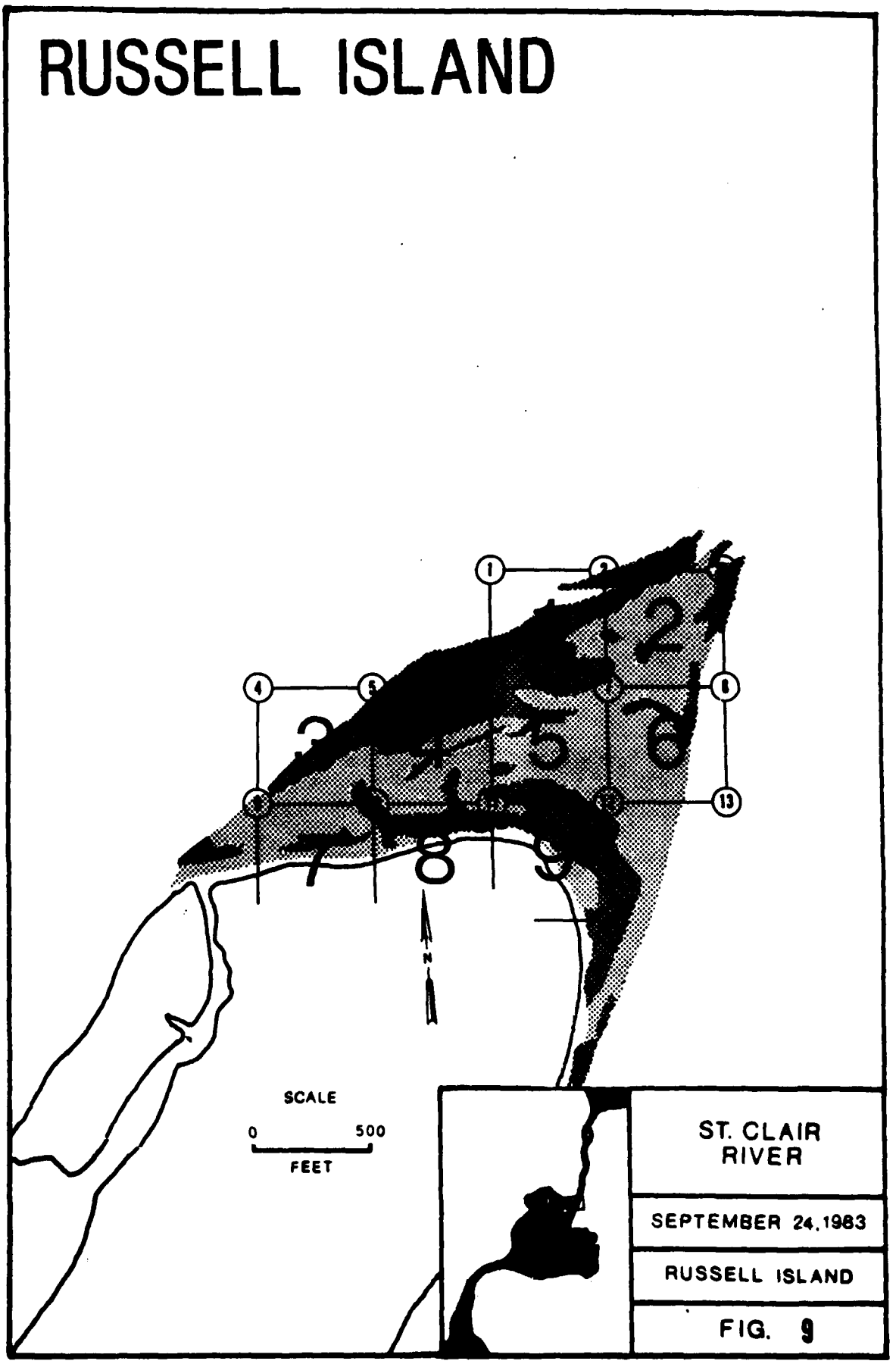
ST. CLAIR RIVER

AUGUST 13, 1983

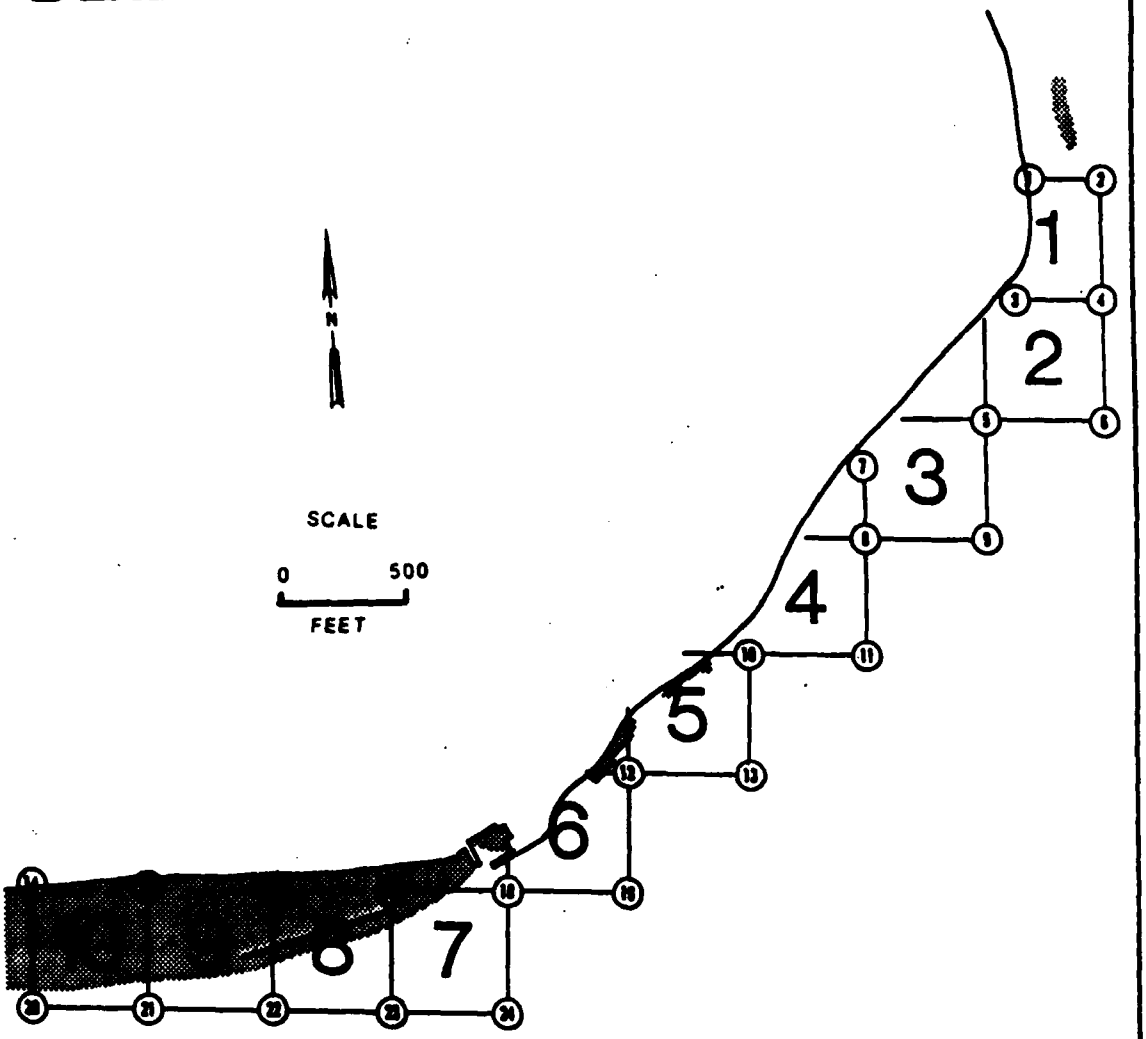
RUSSELL ISLAND

FIG. 8

RUSSELL ISLAND



BELLE ISLE



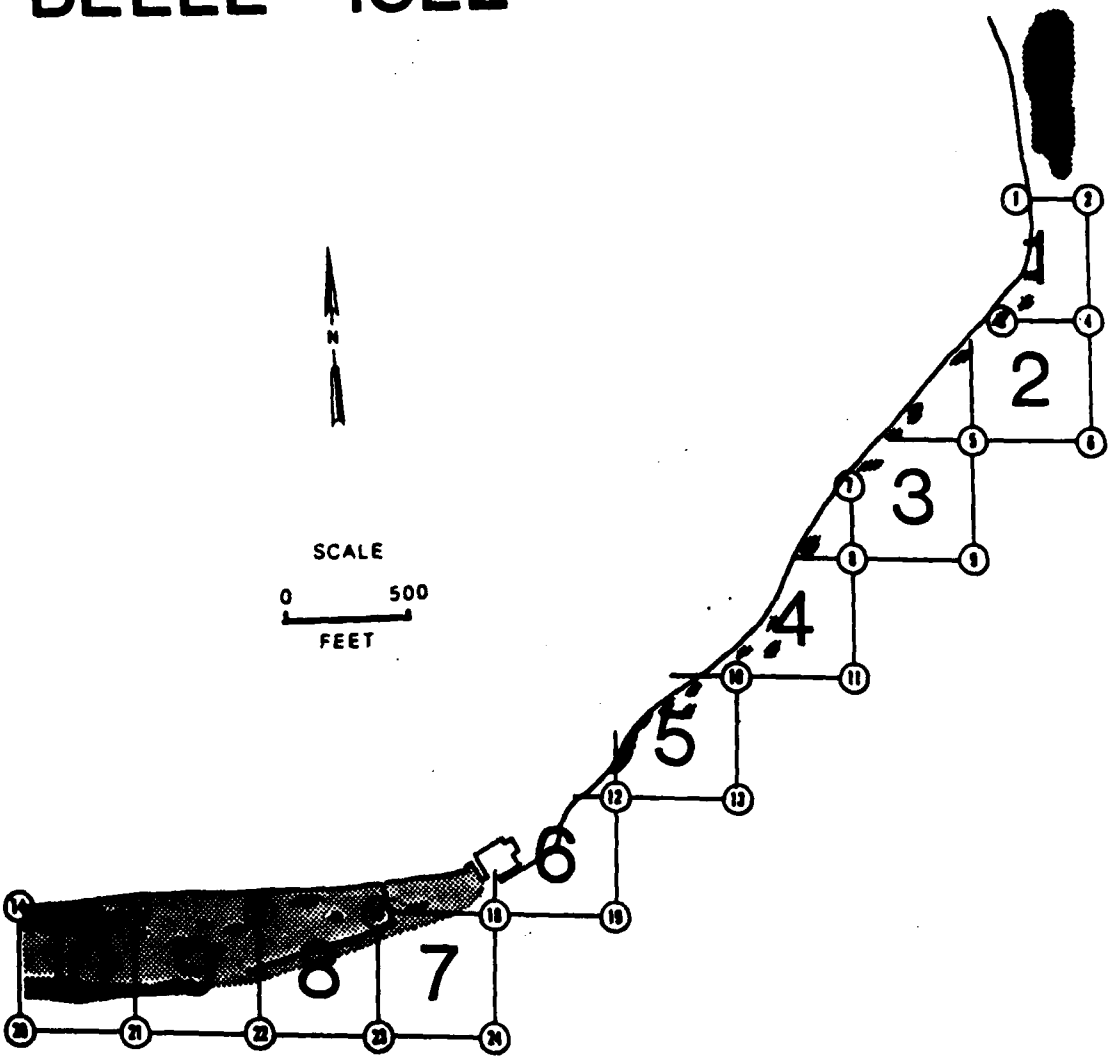
DETROIT RIVER

JUNE 17, 1983

BELLE ISLE

FIG. 10

BELLE ISLE

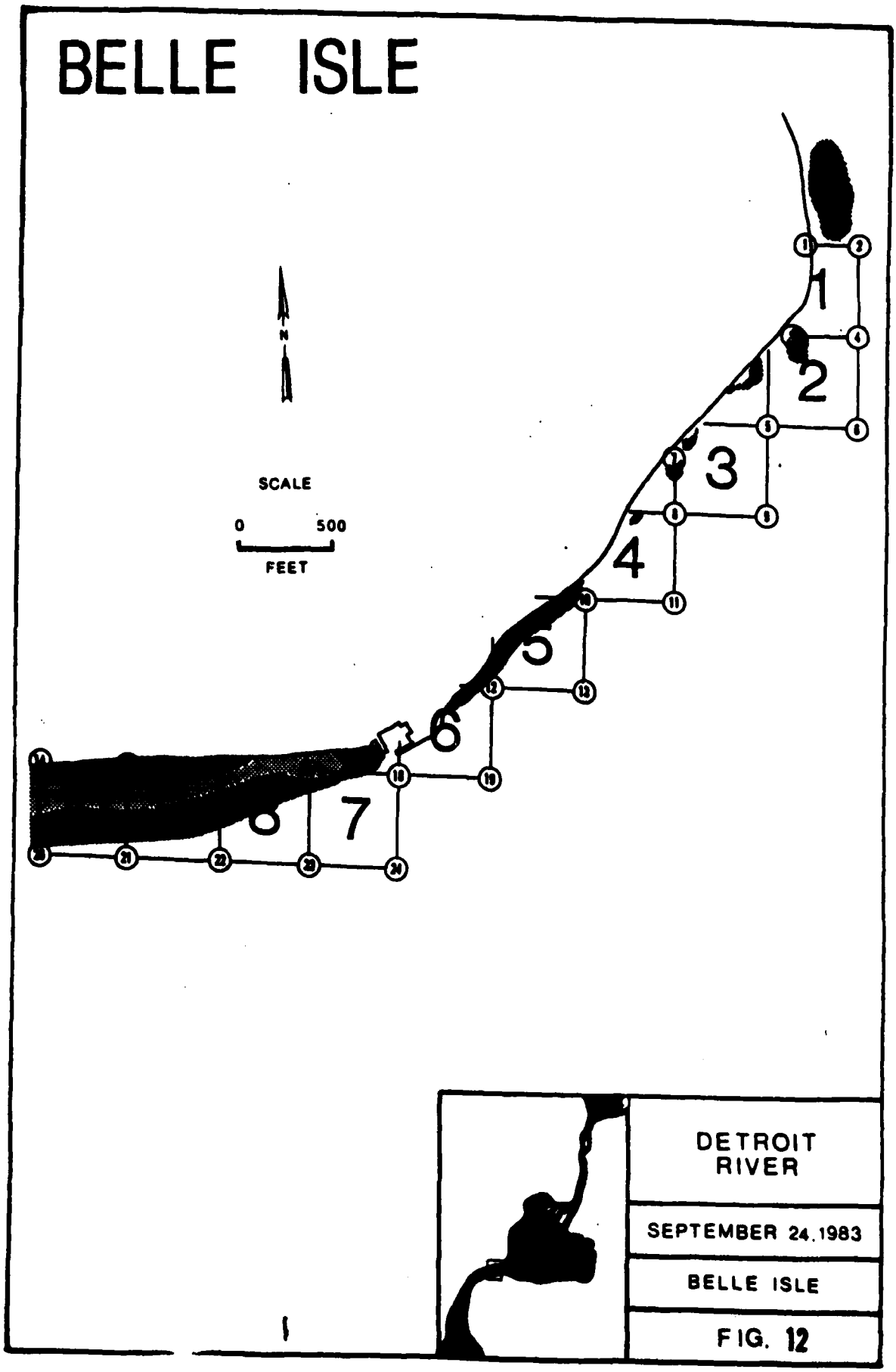


DETROIT RIVER

AUGUST 13 1983

BELLE ISLE

FIG. 11


BELLE ISLE
N
SCALE
0 500
FEET
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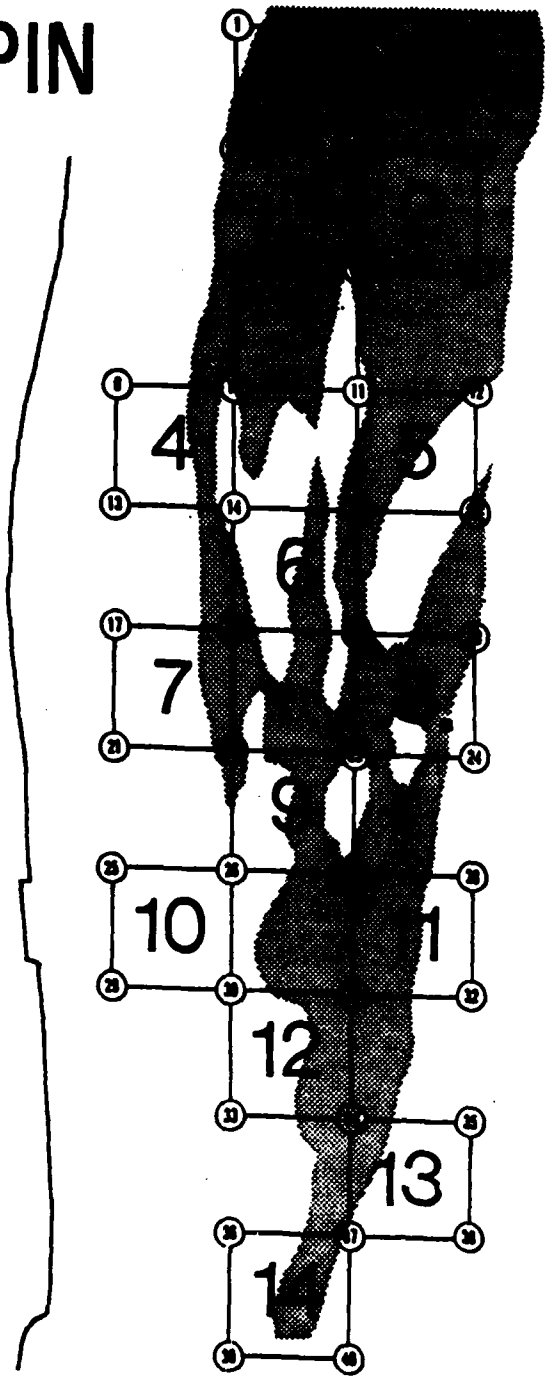
DETROIT RIVER
SEPTEMBER 24,1983
BELLE ISLE
FIG. 12

PT. HENNEPIN



N

SCALE

0 500

FEET

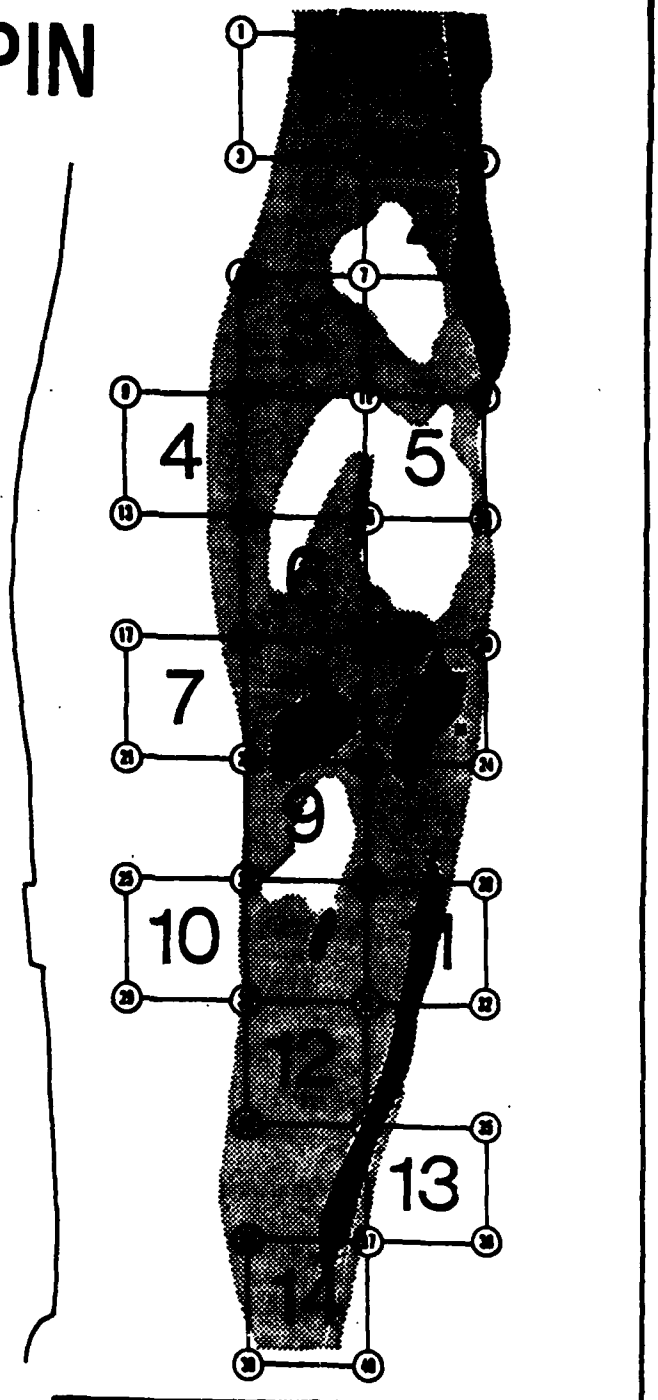
DETROIT RIVER

JUNE 17, 1983

PT. HENNEPIN

FIG. 13

PT. HENNEPIN



SCALE
0 500
FEET

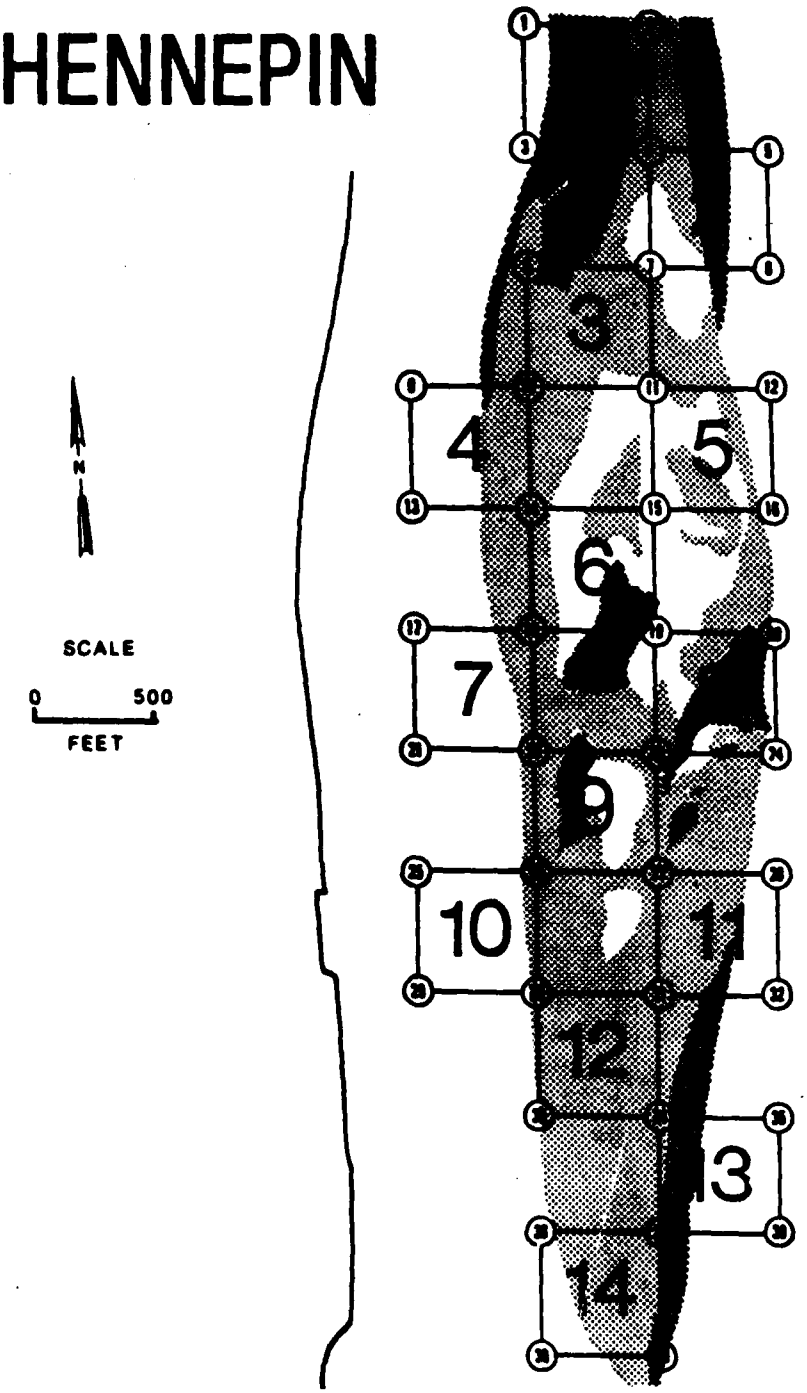
DETROIT RIVER

AUGUST 13 1983

PT. HENNEPIN

FIG. 14

PT. HENNEPIN



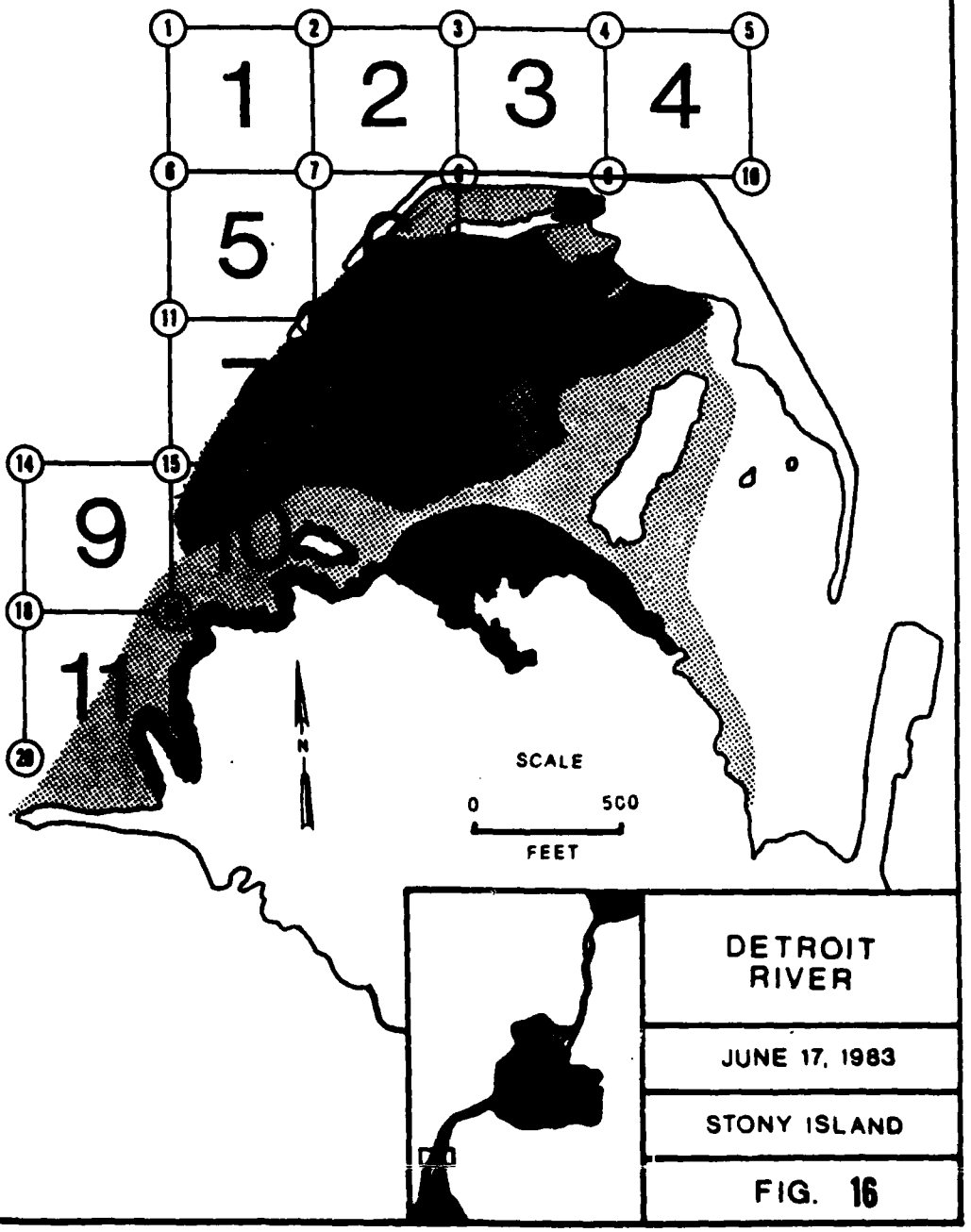
DETROIT RIVER

SEPTEMBER 24,1983

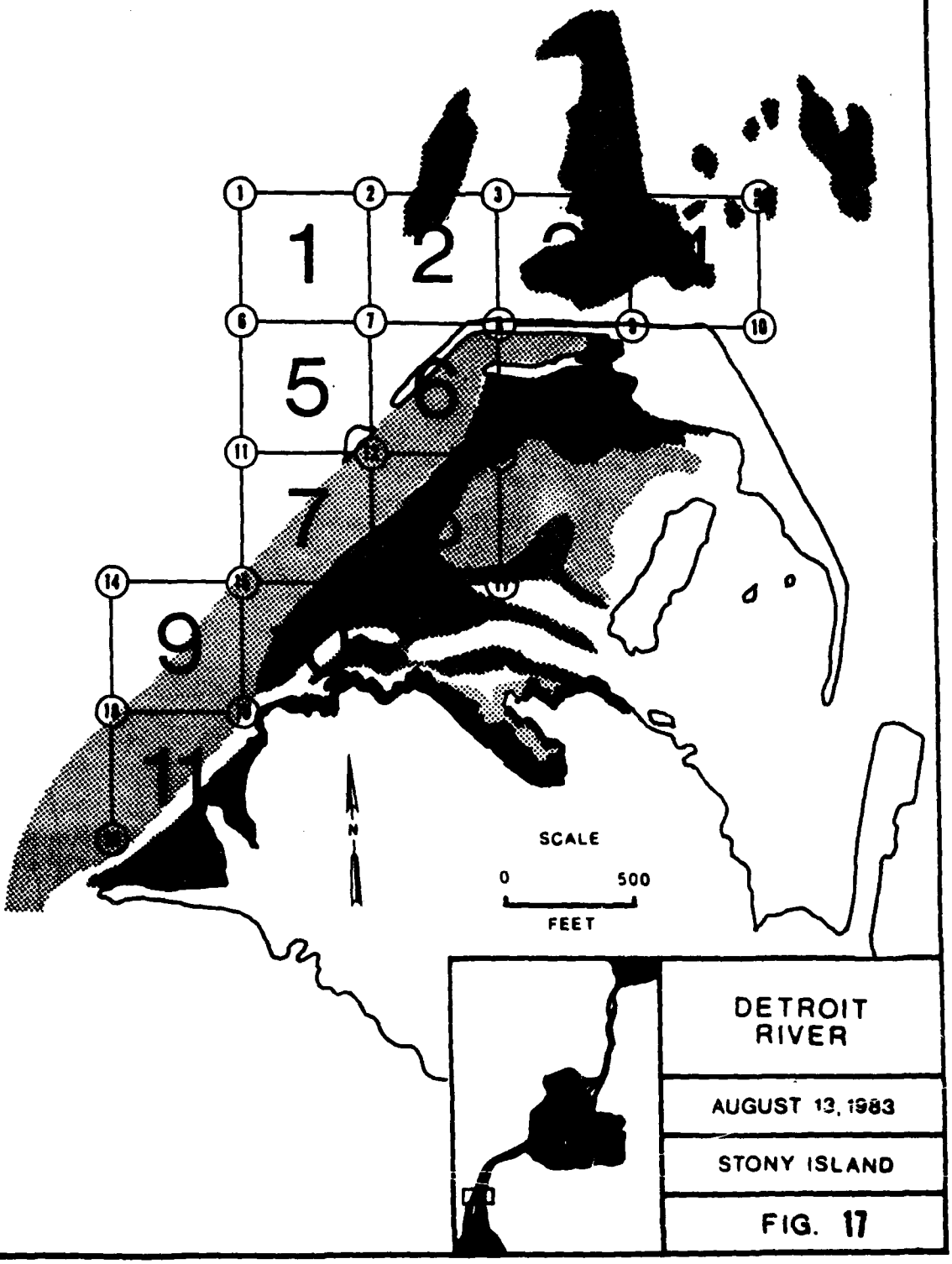
PT. HENNEPIN

FIG. 15

STONY ISLAND



STONY ISLAND

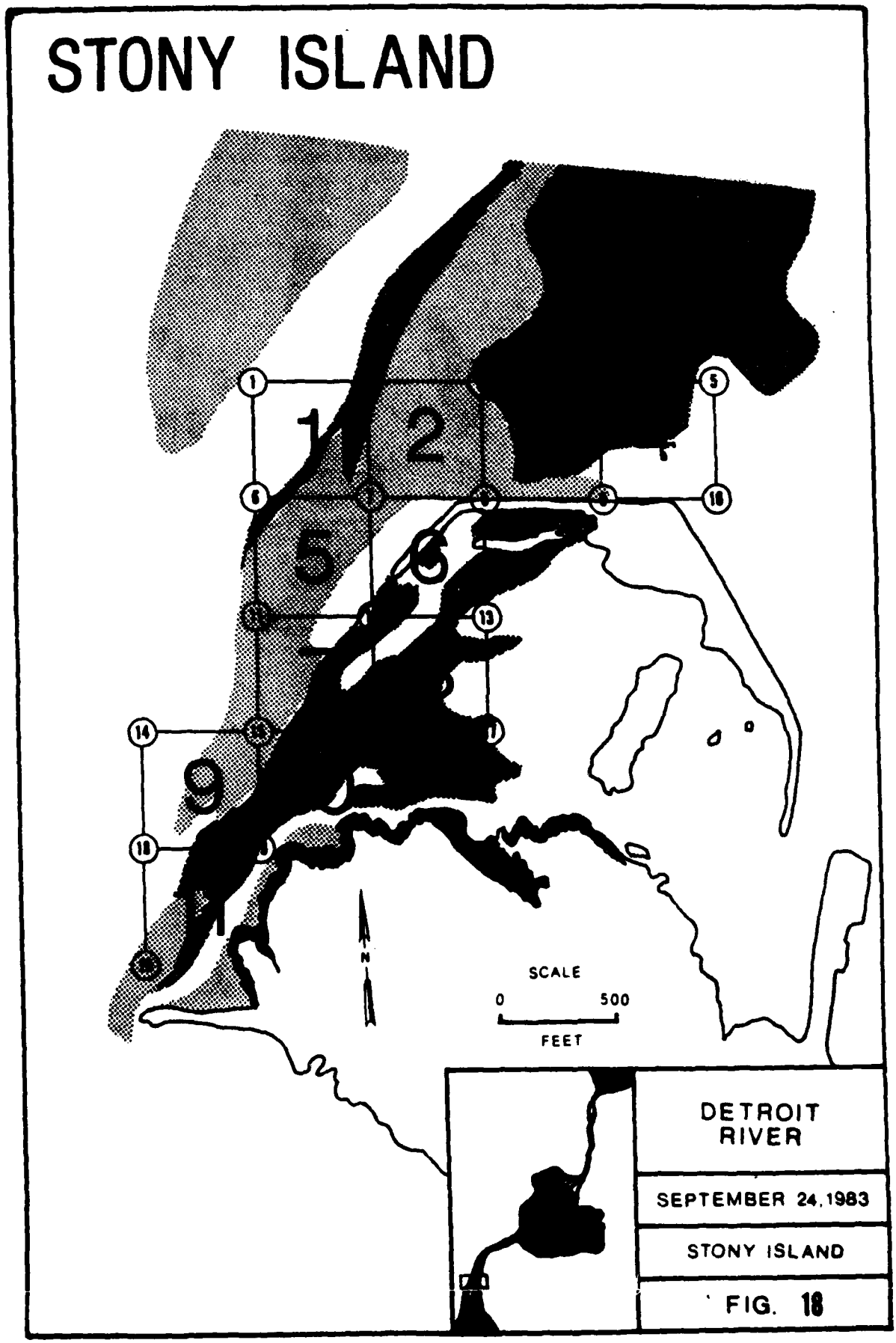


DETROIT RIVER

AUGUST 13, 1983

STONY ISLAND

FIG. 17


STONY ISLAND
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SCALE
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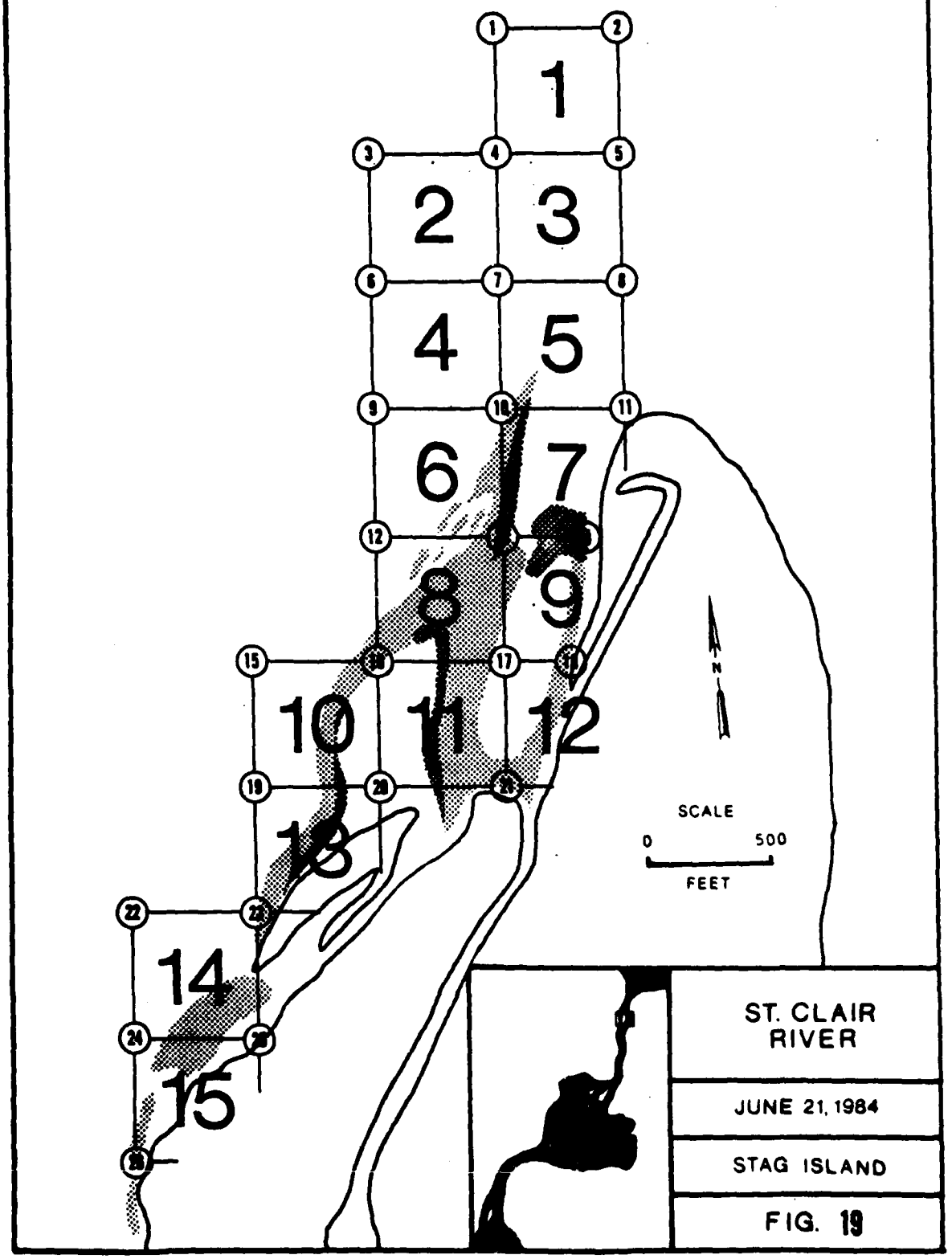
FEET
DETROIT RIVER
SEPTEMBER 24, 1983
STONY ISLAND
FIG. 18

STAG ISLAND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SCALE
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FEET
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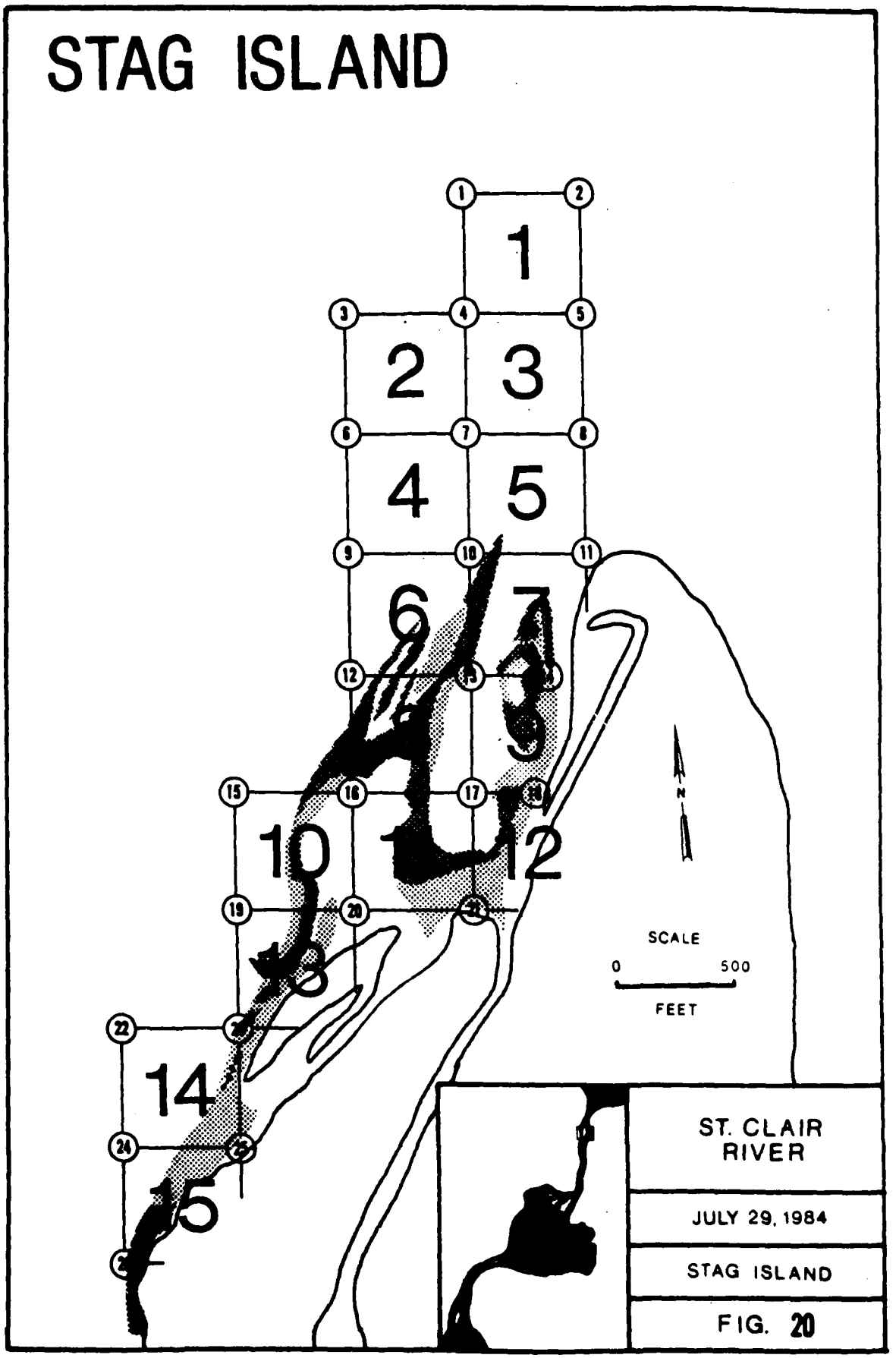
ST. CLAIR RIVER
JUNE 21, 1984
STAG ISLAND
FIG. 19


STAG ISLAND
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SCALE
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FEET
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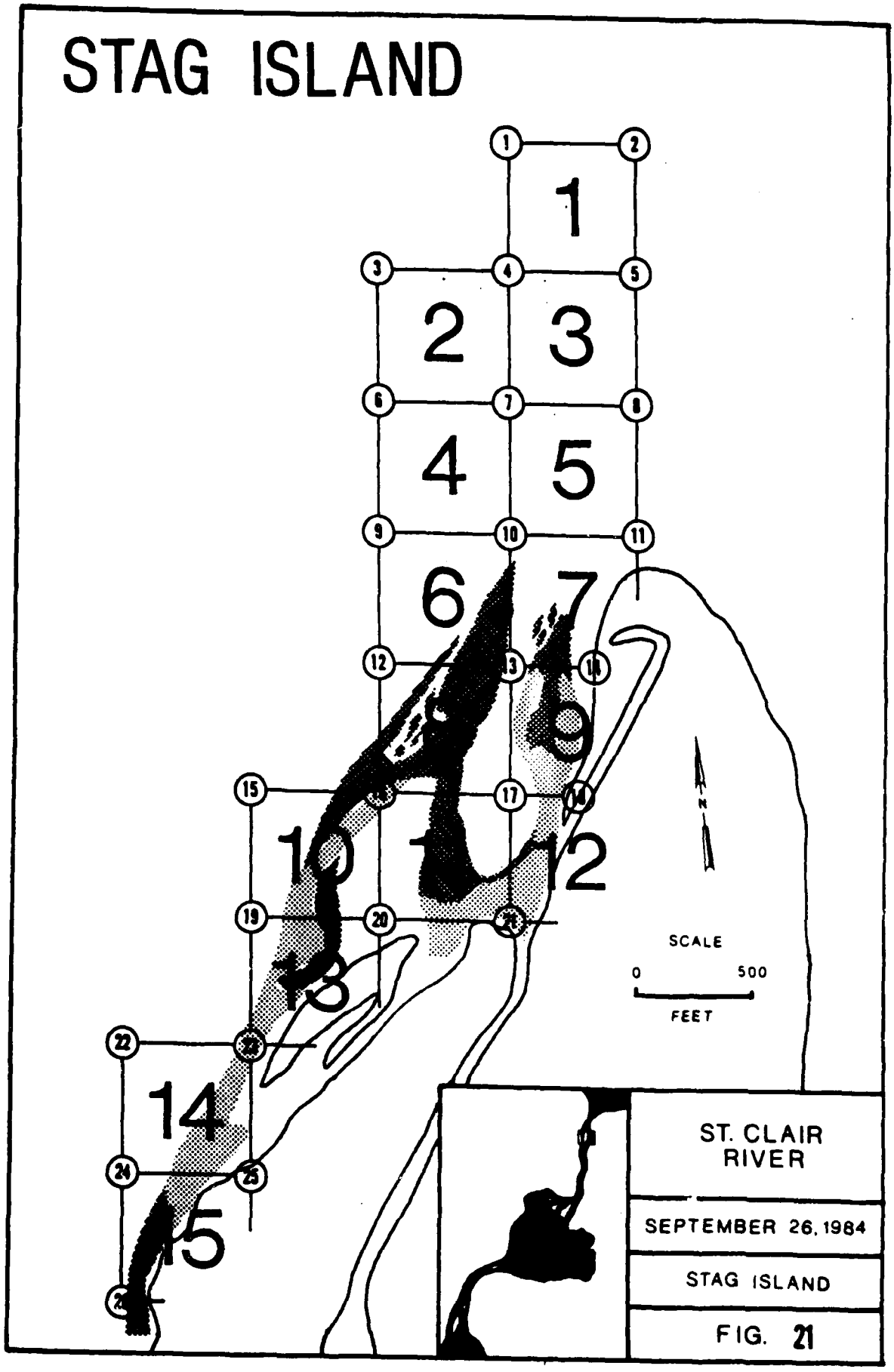
ST. CLAIR RIVER
JULY 29, 1984
STAG ISLAND
FIG. 20


STAG ISLAND
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17
18
19
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21
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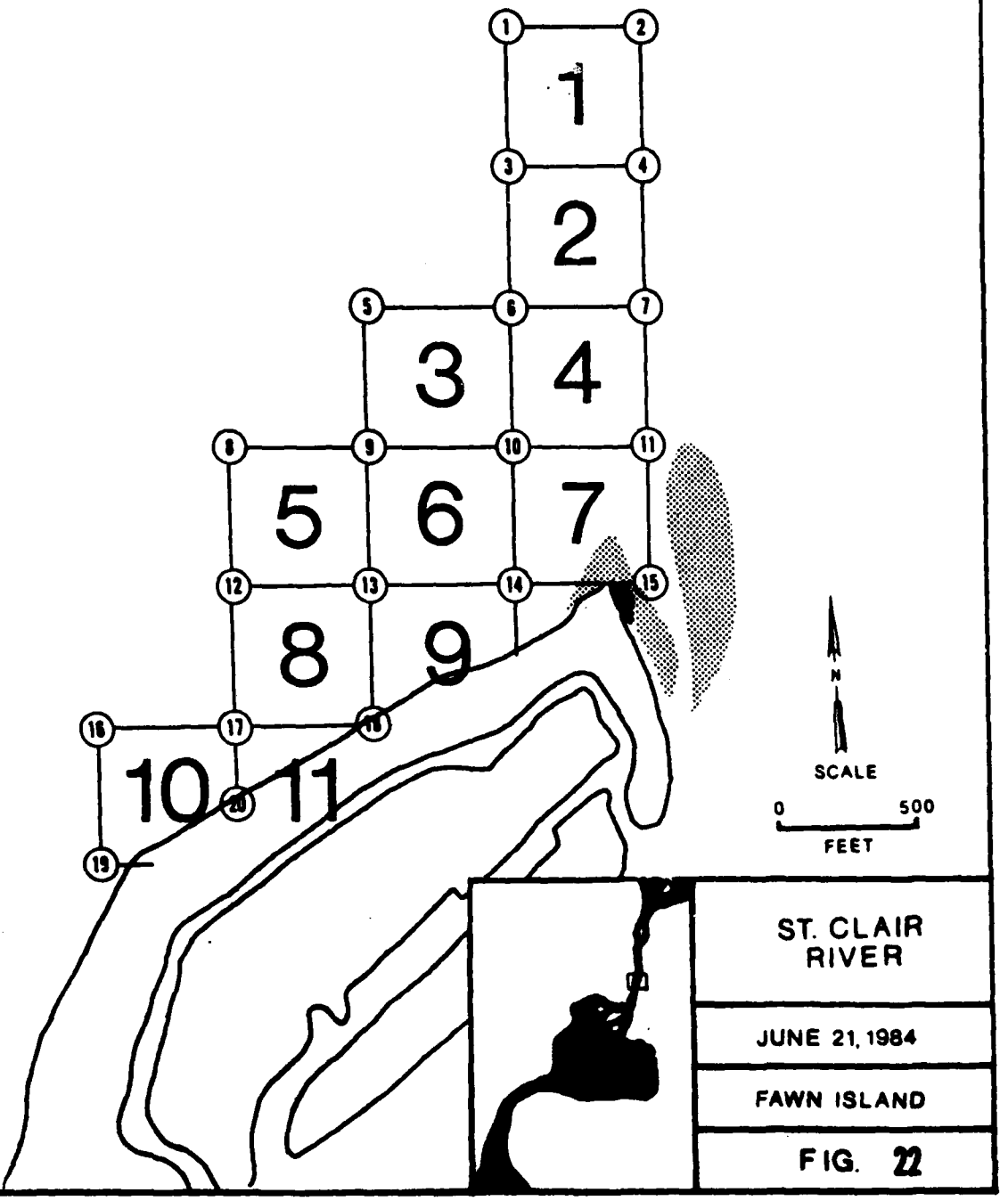
23
24
25
26
SCALE
0
500
FEET
N
ST. CLAIR RIVER
SEPTEMBER 26, 1984
STAG ISLAND
FIG. 21

FAWN ISLAND


1
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N
SCALE
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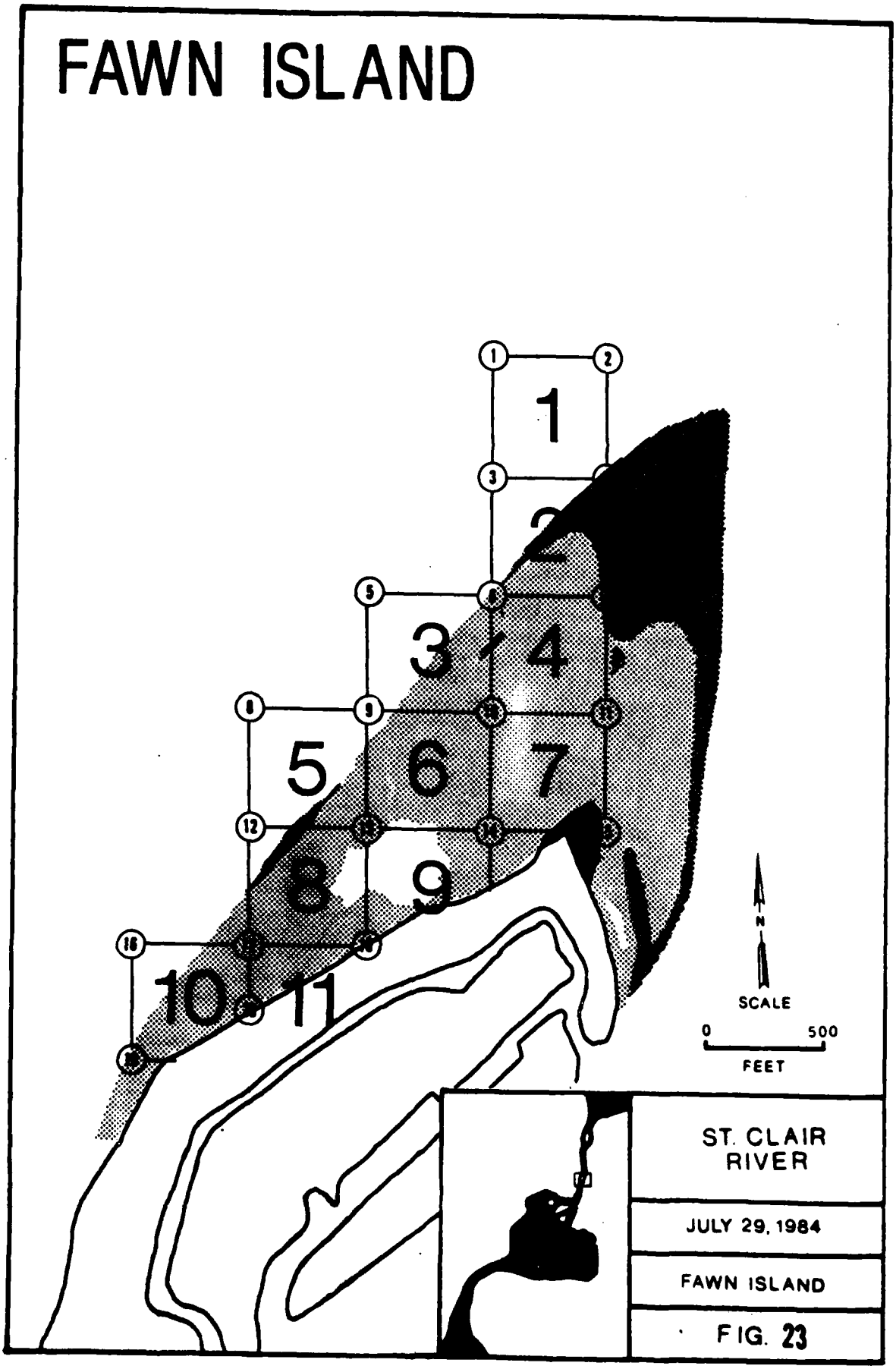
500
FEET
ST. CLAIR RIVER
JUNE 21, 1984
FAWN ISLAND
FIG. 22

FAWN ISLAND


1
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SCALE
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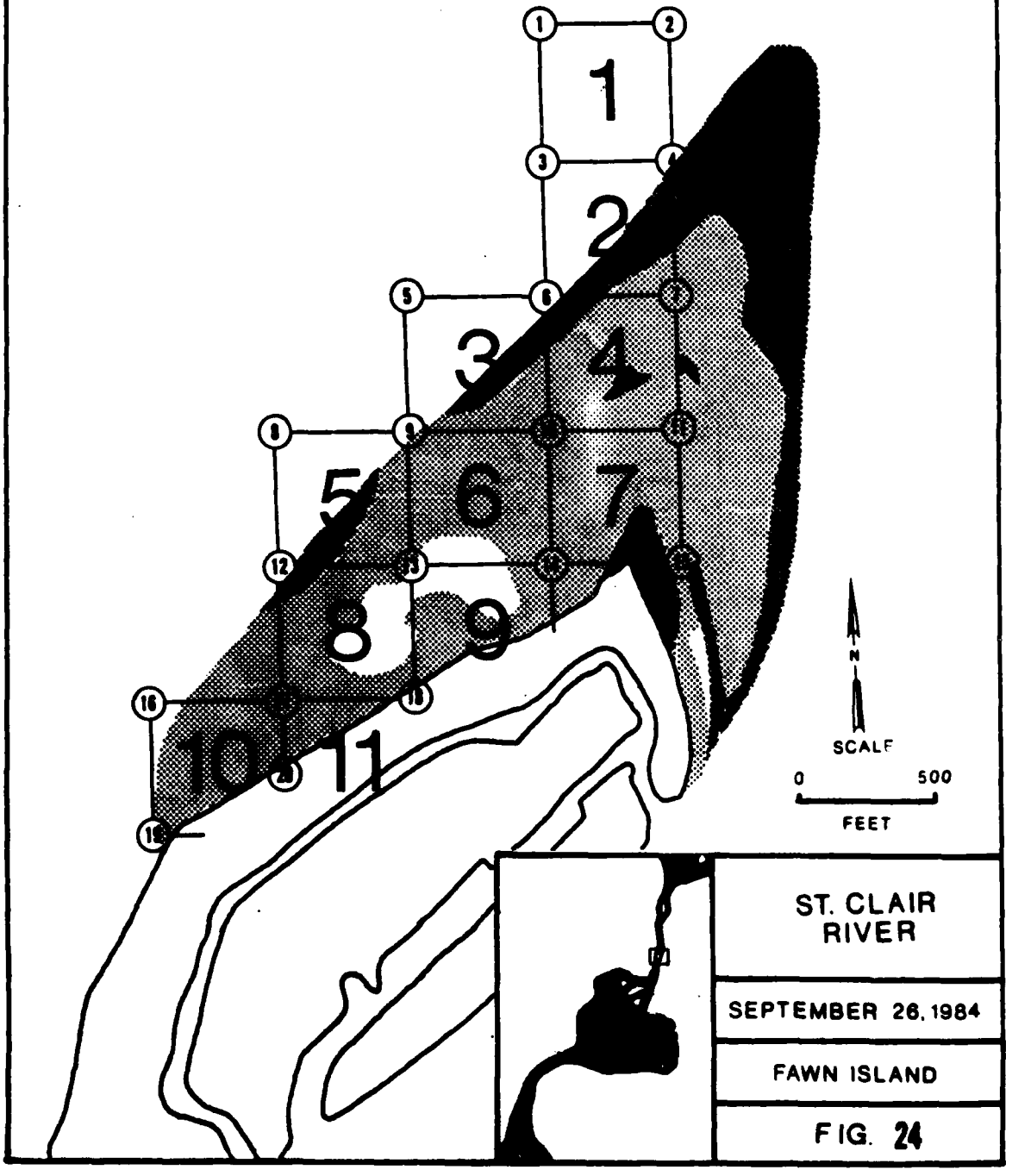
500
FEET
ST. CLAIR RIVER
JULY 29, 1984
FAWN ISLAND
FIG. 23

FAWN ISLAND



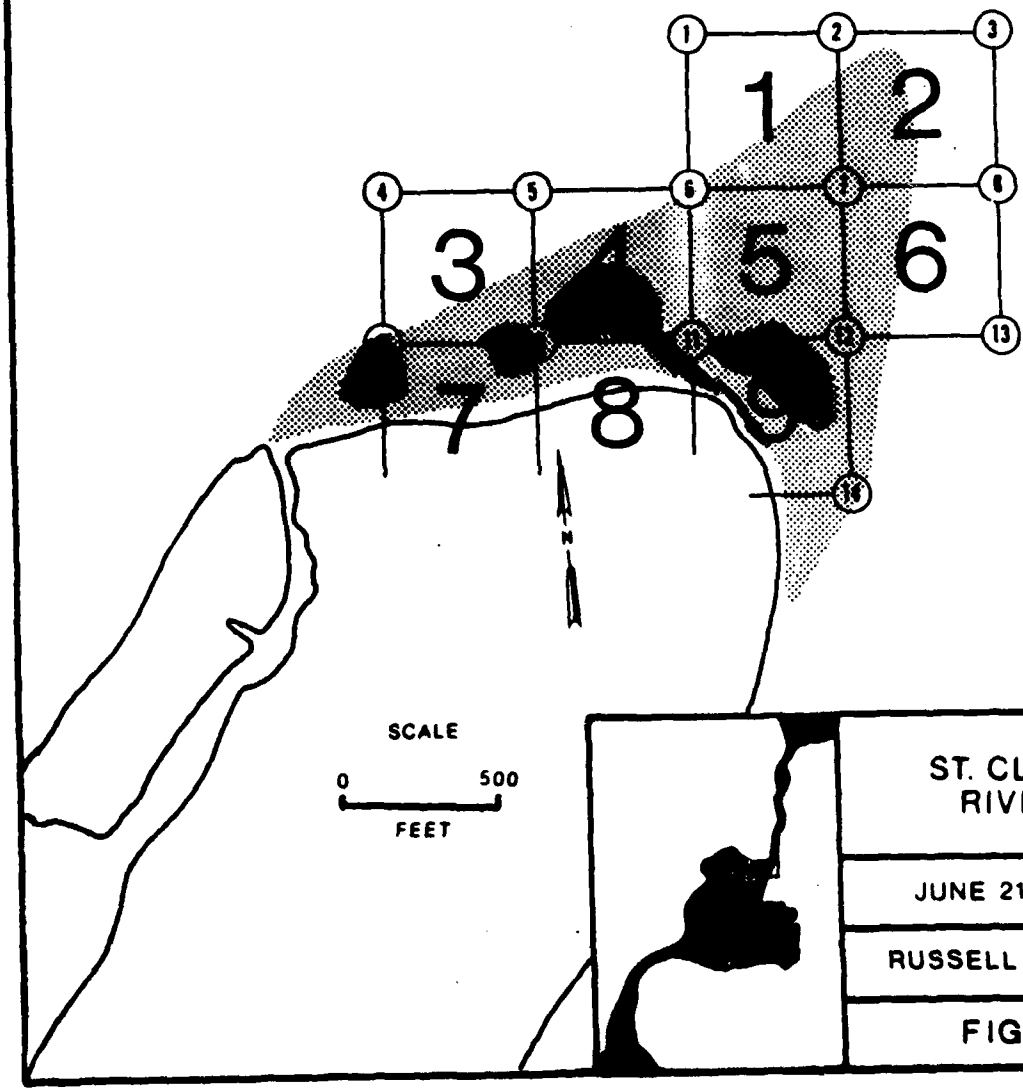
ST. CLAIR RIVER

SEPTEMBER 26, 1984

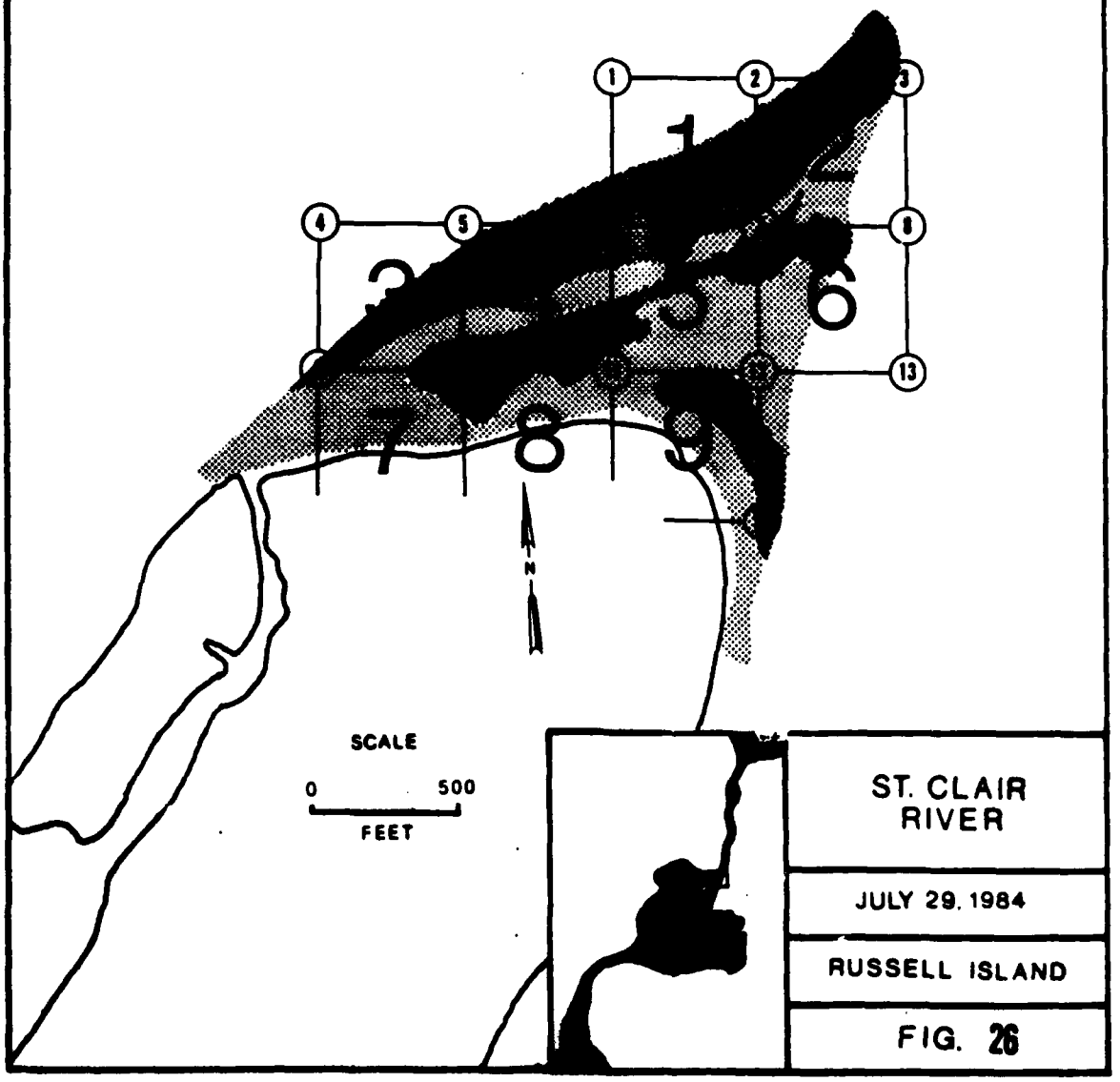
FAWN ISLAND

FIG. 24

RUSSELL ISLAND



RUSSELL ISLAND



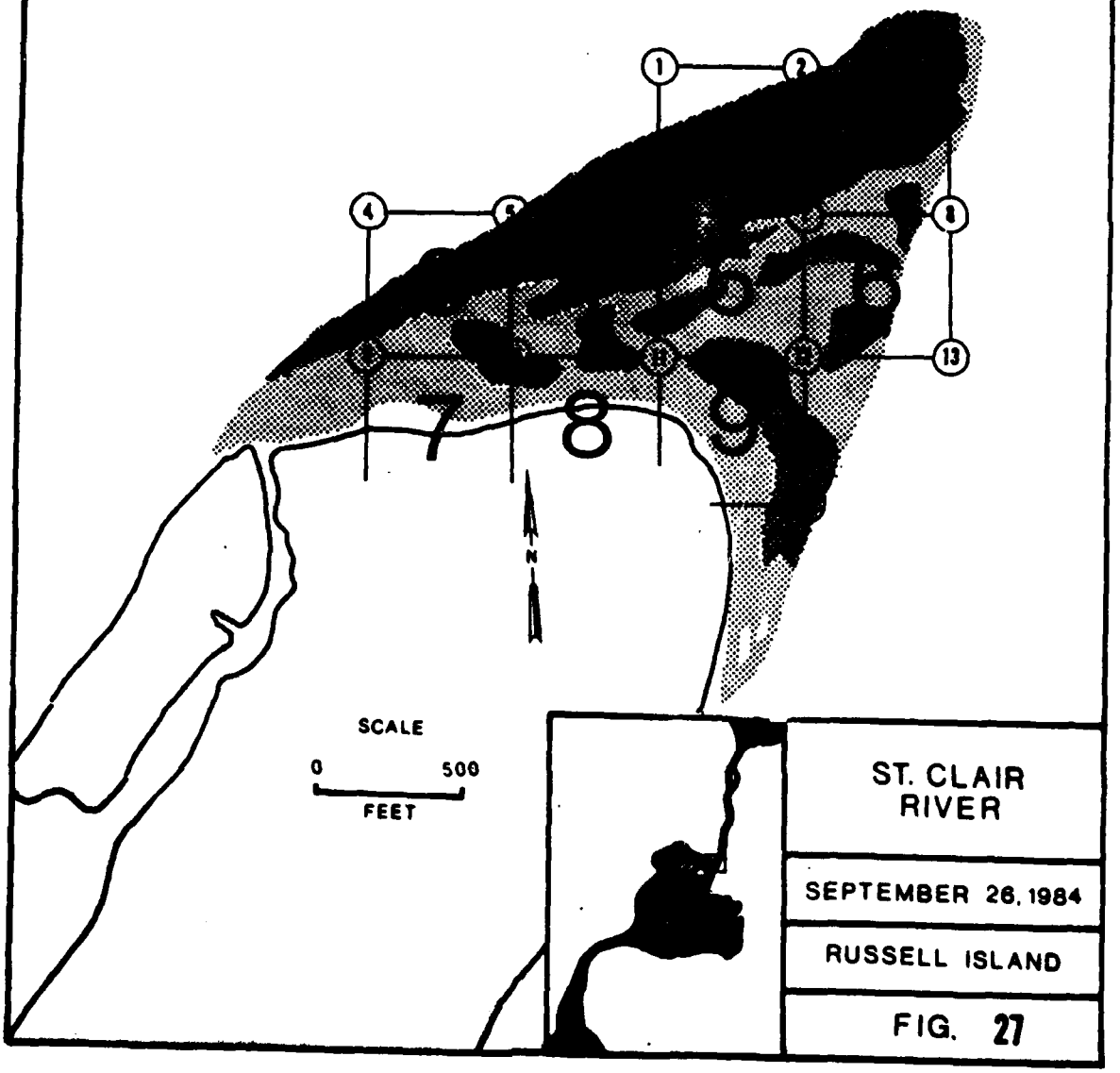
ST. CLAIR RIVER

JULY 29, 1984

RUSSELL ISLAND

FIG. 26

RUSSELL ISLAND

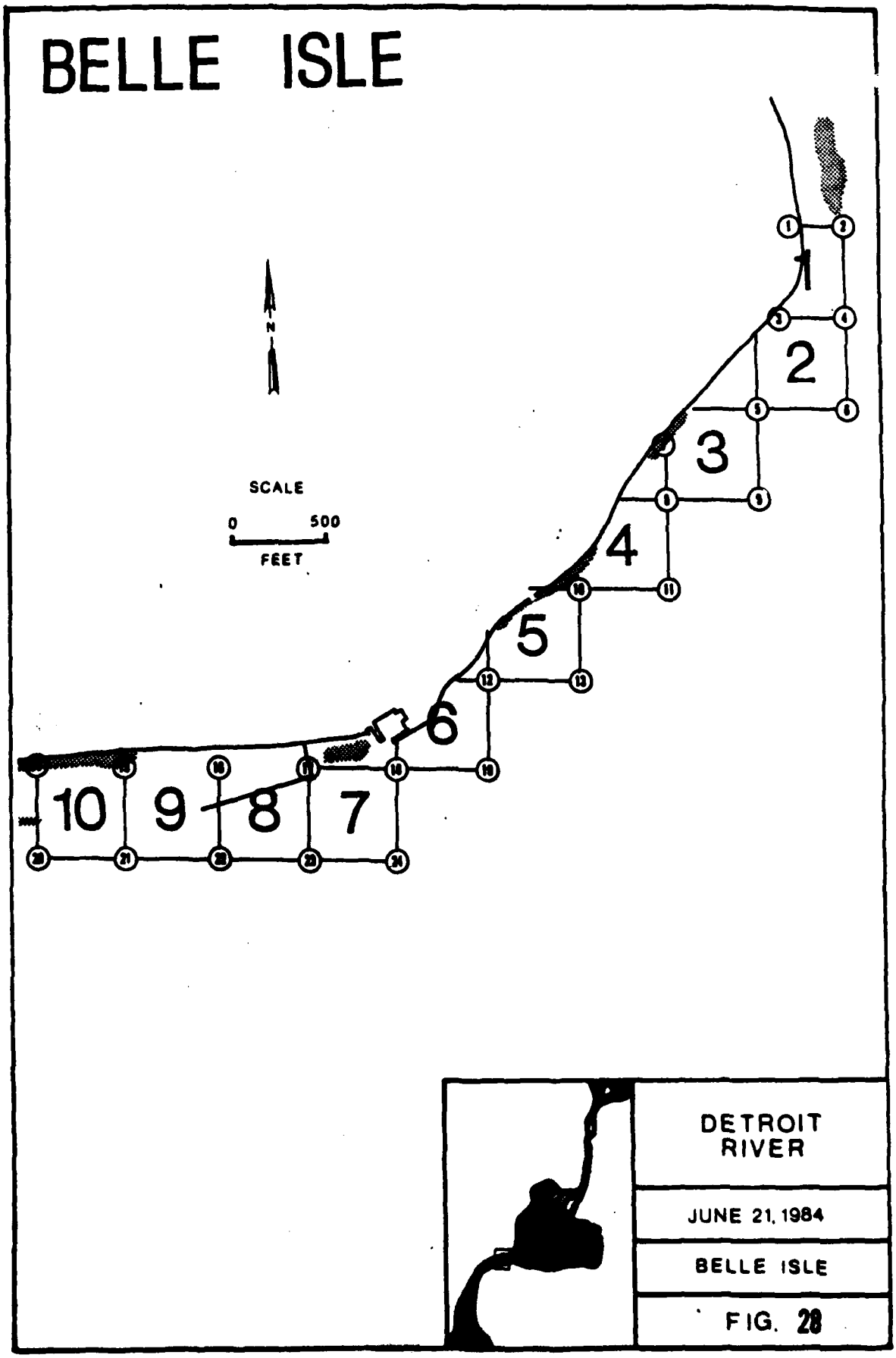


ST. CLAIR RIVER

SEPTEMBER 26, 1984

RUSSELL ISLAND

FIG. 27


BELLE ISLE
N
SCALE
0 500
FEET
1
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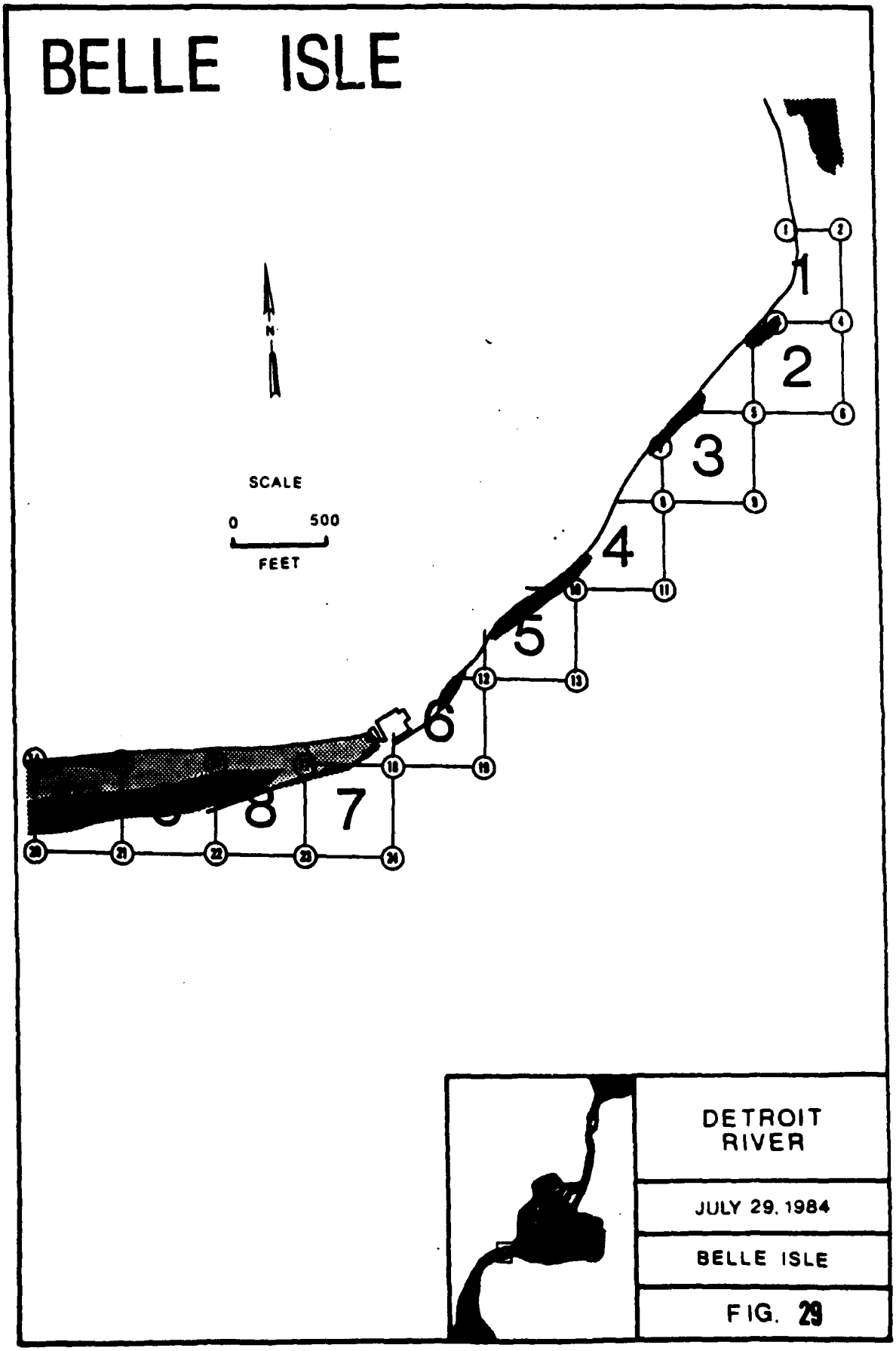
DETROIT RIVER
JUNE 21, 1984
BELLE ISLE
FIG. 28


BELLE ISLE
N
SCALE
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FEET
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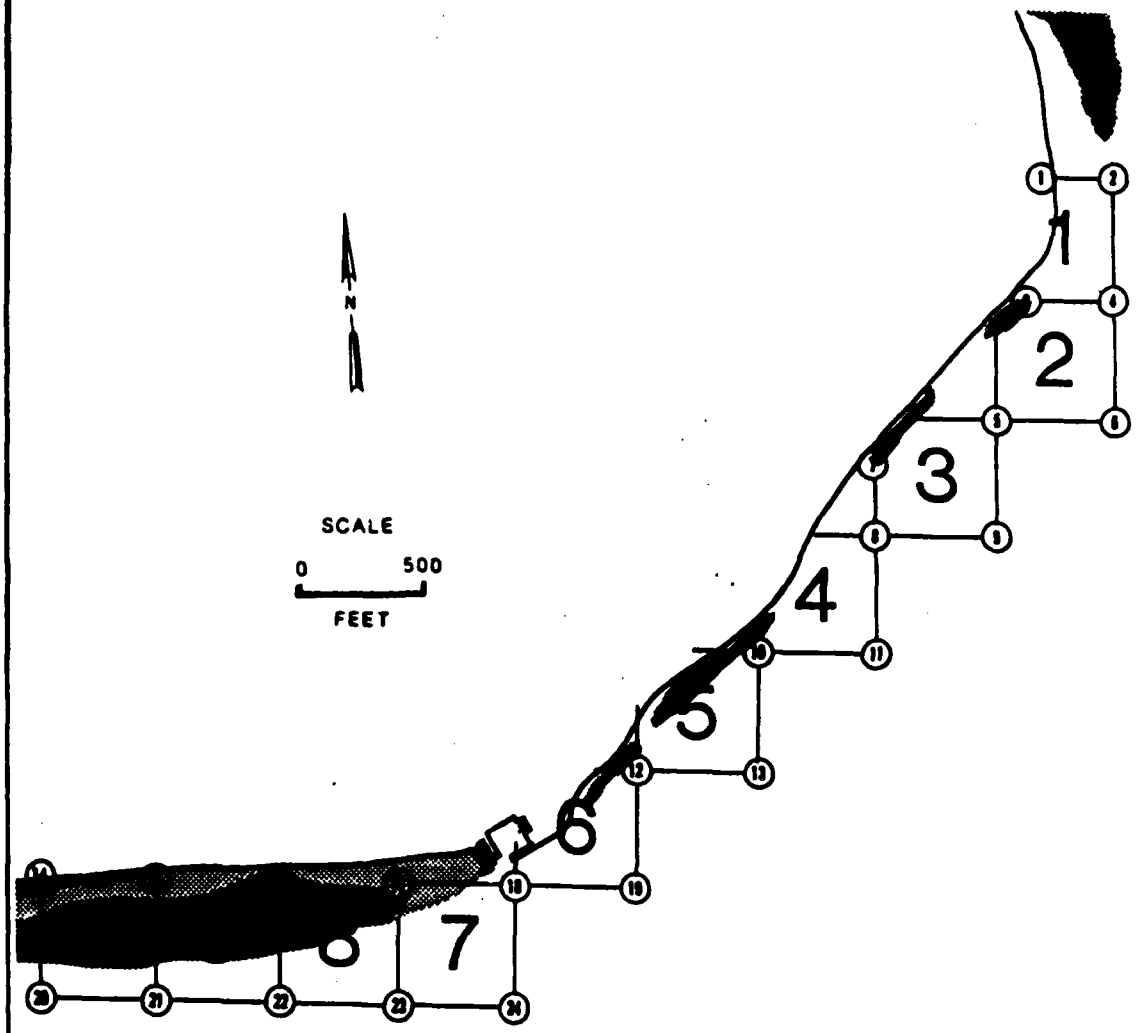
DETROIT RIVER
JULY 29, 1984
BELLE ISLE
FIG. 29

BELLE ISLE



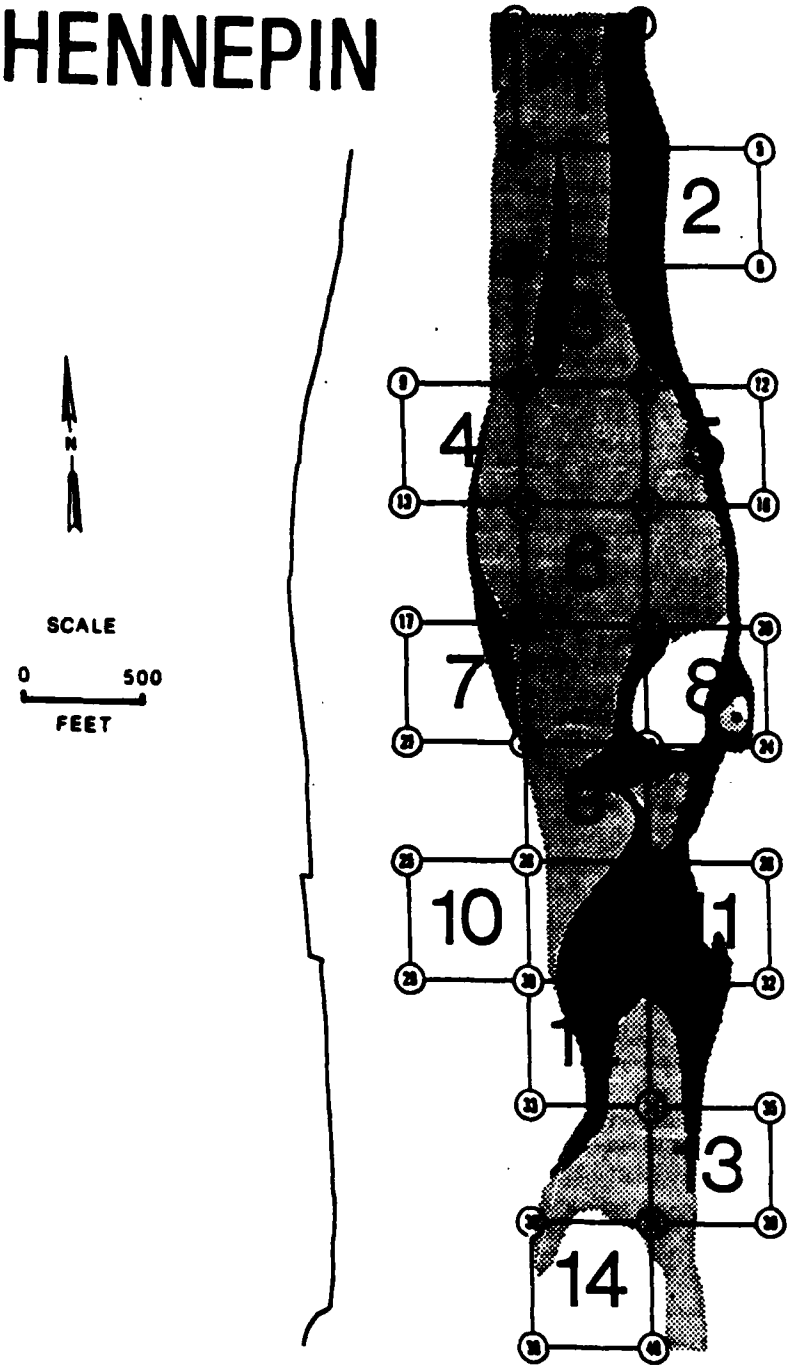
DETROIT RIVER

SEPTEMBER 26, 1984

BELLE ISLE

FIG. 30

PT. HENNEPIN

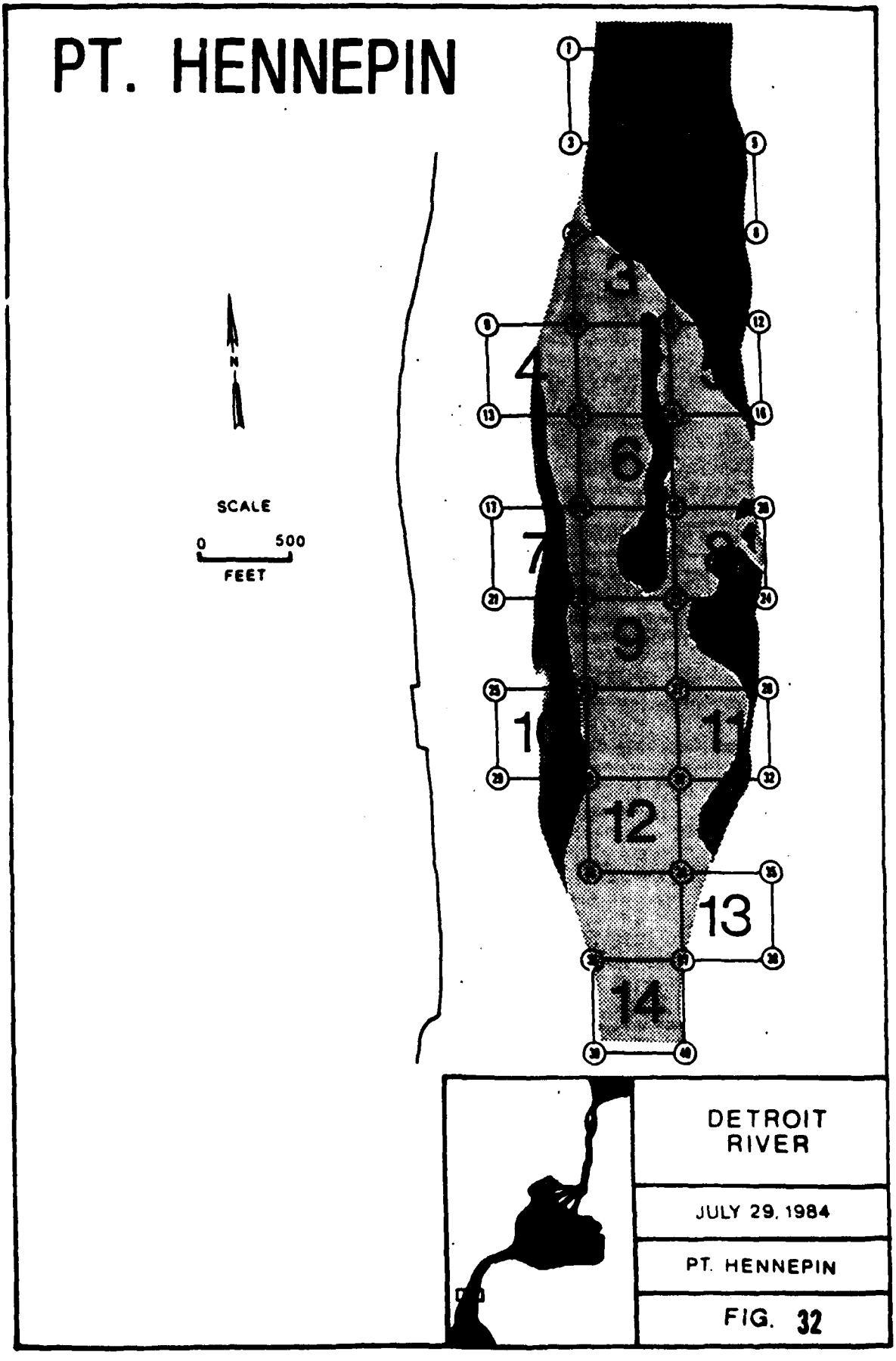


DETROIT RIVER

JUNE 21, 1984

PT. HENNEPIN

FIG. 31


PT. HENNEPIN
N
SCALE
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500
FEET
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11
12
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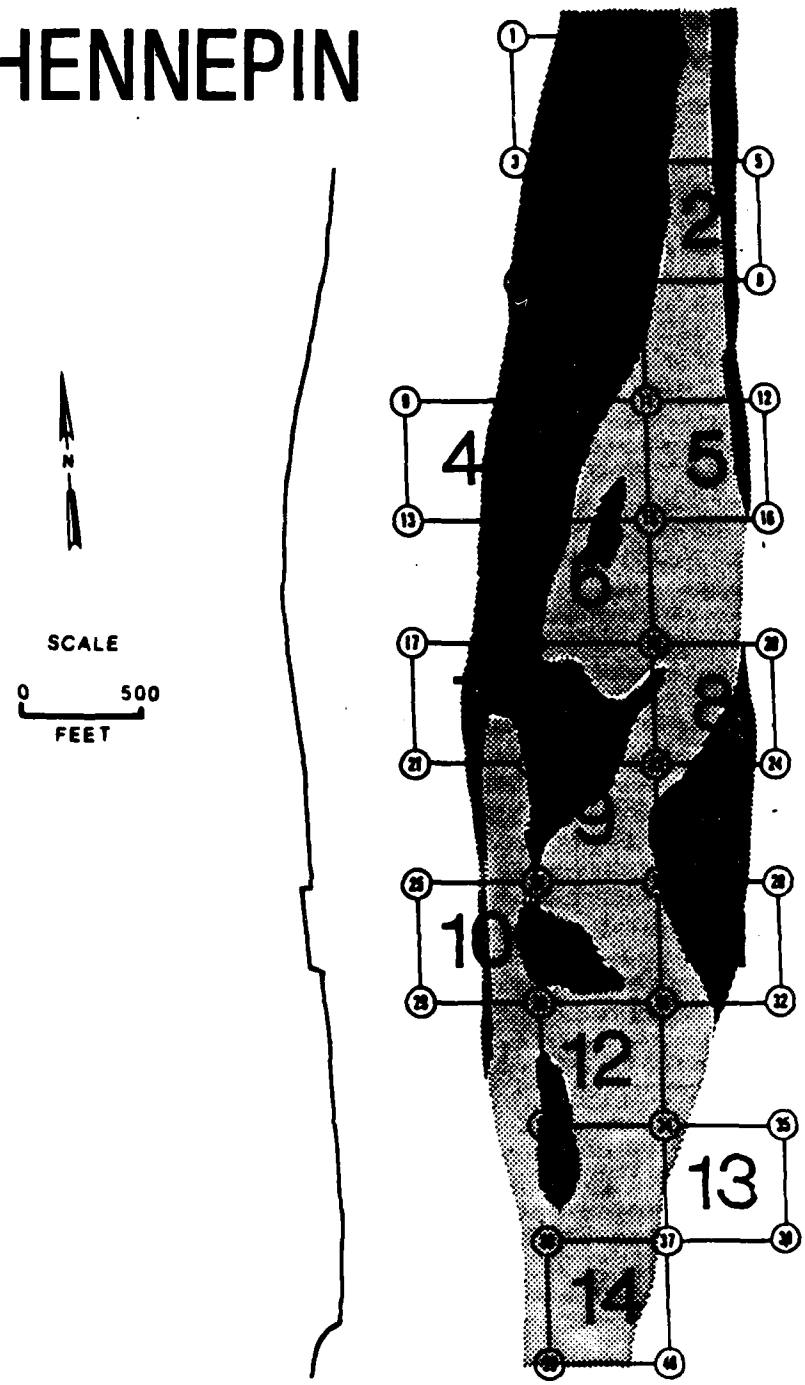
14
DETROIT RIVER
JULY 29, 1984
PT. HENNEPIN
FIG. 32

PT. HENNEPIN



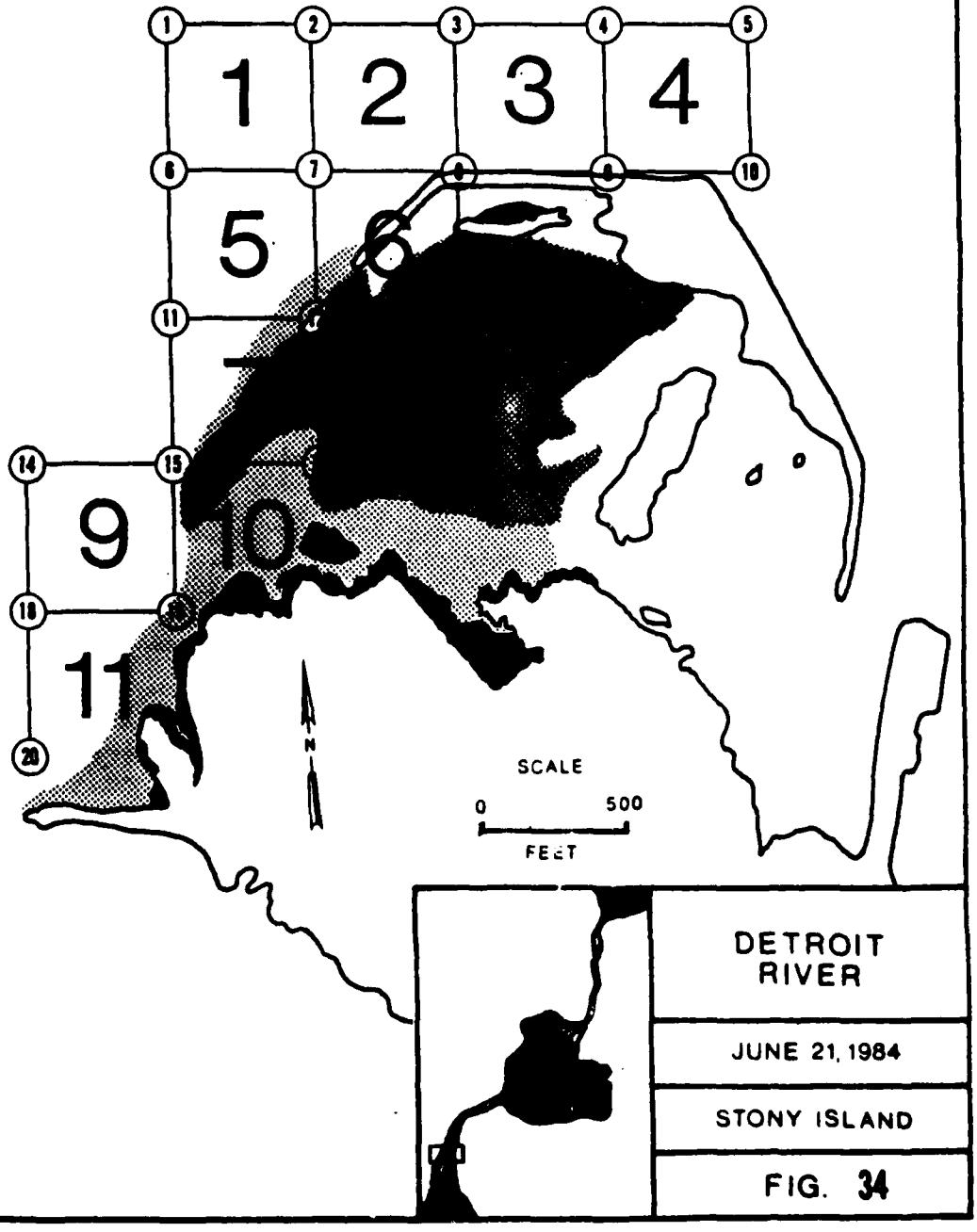
DETROIT RIVER

SEPTEMBER 26, 1984

PT. HENNEPIN

FIG. 33

STONY ISLAND



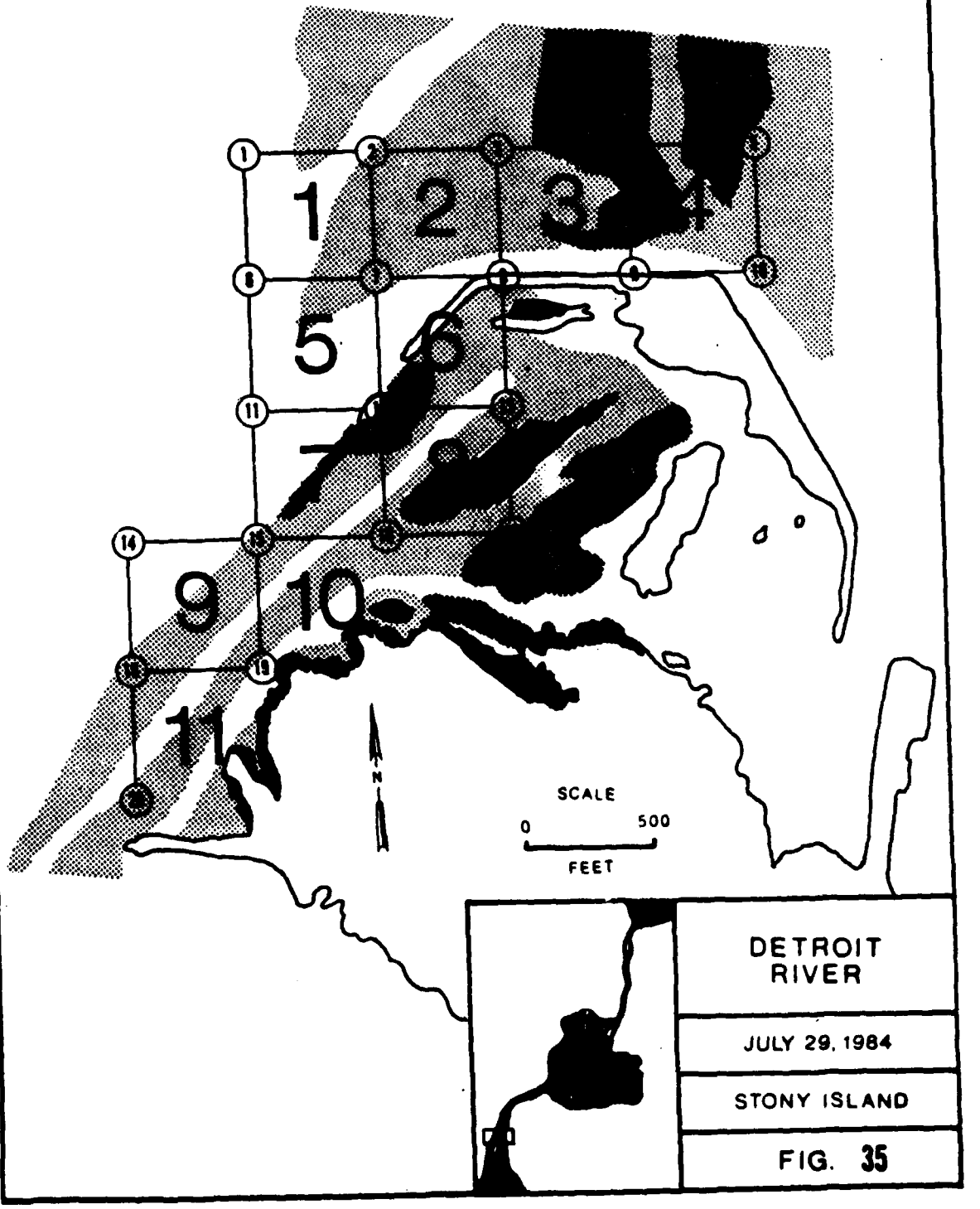
DETROIT RIVER

JUNE 21, 1984

STONY ISLAND

FIG. 34

STONY ISLAND



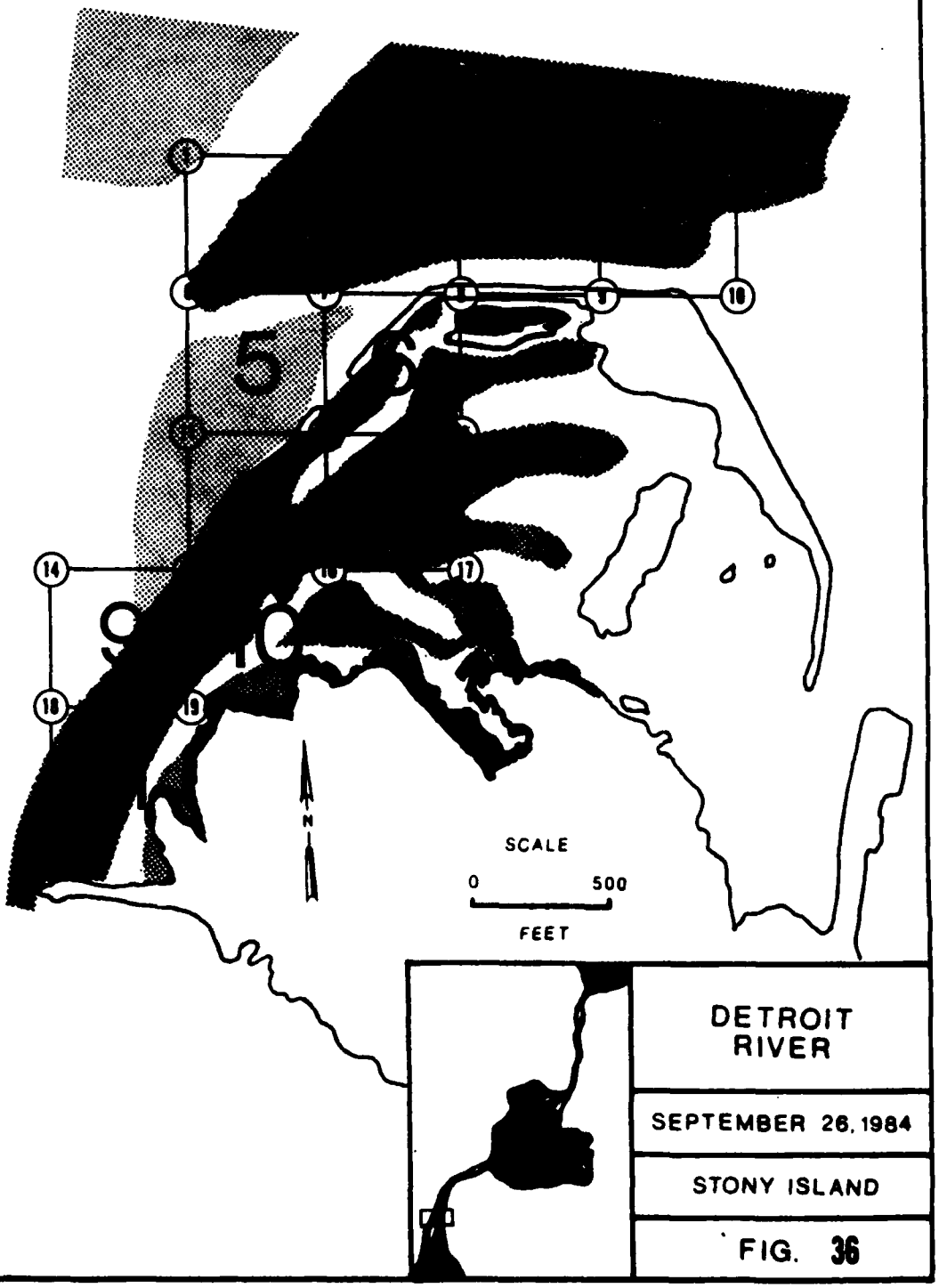
DETROIT RIVER

JULY 29, 1984

STONY ISLAND

FIG. 35

STONY ISLAND



DETROIT RIVER

SEPTEMBER 26, 1984

STONY ISLAND

FIG. 36

APPENDIX P

ANOVA Tables for Macrophytes

ANALYSIS OF VARIANCE TABLES

LOCATION=STAG

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ROOT BIC				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	65	5355.14757227	102.51177467	27.95
ERROR	180	662.83176175	3.68239879	
CORRECTED TOTAL	265	6021.97933402		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEAR	1	35.08023701	9.53	0.0023
MONTH	2	686.66556756	93.24	0.0001
YEAR*MONTH	2	231.01302638	31.37	0.0001
STATION	14	5714.07126513	110.64	0.0001
YEAR*STATION	14	701.10101105	13.60	0.0001
MONTH*STATION	28	1116.03300002	10.82	0.0001
YEAR*MONTH*STATION	28	675.12044427	6.55	0.0001

R-SQUARE	C.V.
0.889515	25.6915

ROOT MSE	ROOT BIC MEAN
1.91895772	7.46524205

LOCATION=FAIR

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ROOT BIC				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	65	5355.51242132	82.06542187	11.47
ERROR	132	956.11818124	7.24331955	
CORRECTED TOTAL	197	6255.63060257		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEAR	1	6.83266615	0.94	0.3332
MONTH	2	3410.10612146	235.40	0.0001
YEAR*MONTH	2	105.06653265	7.25	0.0010
STATION	10	313.76676454	4.33	0.0001
YEAR*STATION	10	301.22654107	4.16	0.0001
MONTH*STATION	20	795.09556182	5.49	0.0001
YEAR*MONTH*STATION	20	472.21155240	3.26	0.0001

R-SQUARE	C.V.
0.855964	27.1018

ROOT MSE	ROOT BIC MEAN
2.69134159	9.93048577

Copy available to DTIC does not permit fully legible reproduction

ANALYSIS OF VARIANCE TABLES

LOCATION=BISSELL

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ROOT BIO

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	53	4100.7069302E	77.371628E7	8.46
ERROR	108	987.3010E211	9.14167669	
CORRECTED TOTAL	161	5088.0080C1237		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEAR	1	240.3615225E	26.29	0.0001
MONTH	2	1107.1218E611	60.37	0.0001
YEAR*MONTH	2	424.98C541E6	23.24	0.0001
STATION	6	517.43524132	7.CE	0.0001
YEAR*STATION	6	428.9745E379	6.CC	0.0001
MONTH*STATION	16	263.C5613212	2.CC	0.0189
YEAR*MONTH*STATION	16	479.1742CC4E	3.2E	0.0001

R-SQUARE	C.V.
0.8C5955	26.23C6

ROOT MSE	ROOT BIO MEAN
3.02352C58	11.52665155

LOCATION=BELLE

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ROOT BIO

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	55	3337.81C42562	56.573C5E3C	14.36
ERROR	120	472.653EE452	3.93878C70	
CORRECTED TOTAL	175	3810.46412413		

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEAR	1	7.4C2E4C5C	1.8E	0.1730
MONTH	2	1146.19E15793	145.5C	0.0001
YEAR*MONTH	2	24C.C2423ECE	3C.47	0.0001
STATION	5	12CE.67C12177	34.1C	0.0001
YEAR*STATION	5	83.4E172415	2.35	0.0175
MONTH*STATION	1E	37C.1C4EE23E	5.22	0.0001
YEAR*MONTH*STATION	1E	2E1.92EE554C	3.9E	0.0001

R-SQUARE	C.V.
0.875555	21.5536

ROOT MSE	ROOT BIO MEAN
1.98462E1E	9.2C7E9566

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ANALYSIS OF VARIANCE TABLES

LOCATION=PITMANREFIN

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ACCT BIC			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	83	2225.28256227	26.85882629	5.31
ERROR	166	850.17852742	5.06058647
CORRECTED TOTAL	251	3075.46110970	

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEAR	1	1.29563369	0.26	0.6135
MONTH	2	724.38052882	72.56	0.0001
YEAR*MONTH	2	33.74088440	3.33	0.0380
STATION	13	356.32980818	6.02	0.0001
YEAR*STATION	12	201.25776017	3.06	0.0005
MONTH*STATION	26	450.62526521	3.73	0.0001
YEAR*MONTH*STATION	26	271.55216357	2.62	0.0001

R-SQUARE	C.V.	ROOT MSE	ACCT BIC MEAN
0.723520	28.7364	2.24957473	7.82632253

LOCATION=STLAX

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ACCT BIC			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	59	5142.17876619	87.15557231	10.55
ERROR	120	990.95041237	8.25752010
CORRECTED TOTAL	179	6133.12917832	

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEAR	1	48.91450467	5.92	0.0164
MONTH	2	1205.08547674	72.21	0.0001
YEAR*MONTH	2	16.45111281	1.00	0.3715
STATION	9	2266.40558654	30.49	0.0001
YEAR*STATION	9	213.47136917	2.87	0.0043
MONTH*STATION	18	1127.82073346	7.59	0.0001
YEAR*MONTH*STATION	18	285.99500270	1.75	0.0358

R-SQUARE	C.V.	ROOT MSE	ACCT BIC MEAN
0.838427	25.2808	2.87265971	11.36656228

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APPENDIX Q

Catch Data for Hoop Nets

Life stage designation as follows:

0 - fish in the first year of life (young-of-the-year);
I - fish in the second year of life (yearlings);
I+ - fish in the second or later year of life;
II+ - fish in the third or later year of life.

[Note: by convention, fish are assumed to pass into the next year of life on January 1. All ages were drived from lengths, as reported by Trautman (1981).]

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	DOMINANT TAXA	DENSITY	FISH SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
5/23/83	ST. CLAIR	STAG	1	CHARA SPP.	LOW	STRIPED SHINER	II+	2	13	82- 92
			2	ELODEA CANADENS	MED.	NO FISH CAUGHT				
			3	NO VEGETATION	0	RAINBOW SMELT	I	1	22	110
						RAINBOW SMELT	II+	1	22	184
						BLUEGILL	II+	1	62	105
			4	NO VEGETATION	0	RAINBOW SMELT	I	16	230	109-151
						RAINBOW SMELT	II+	1	20	169
						TROUT PERCH	II+	1	17	128
						WHITE SUCKER	I+	1	840	457
						ROCKBASS	I	1	6	72
		FAWN	1	CHARA SPP.	LOW	RAINBOW SMELT	I	1	2	66
			2	CHARA SPP.	LOW	NO FISH CAUGHT				
			3	NO VEGETATION	0	NO FISH CAUGHT				
			4	NO VEGETATION	0	NO FISH CAUGHT				
		RUSSELL	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	CHARA SPP.	LOW	SPOTTAIL SHINER	II+	20	200	88-109
						YELLOW PERCH	I	1	6	86
			4	CHARA SPP.	LOW	NO FISH CAUGHT				

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE (MM)
5/25/83	DETROIT	BELLE	1	NO VEGETATION	O	NO FISH CAUGHT				
			2	NO VEGETATION	O	GIZZARD SHAD	I	1	9	106
						RAINBOW SMELT	I	14	36	71- 86
						STONECAT	II+	1	220	260
						EMERALD SHINER	II+	1	7	94
						BLUEGILL	II+	1	15	94
						YELLOW PERCH	II+	1	30	133
			3	HETERANTHERA DUB	MED.	YELLOW PERCH	I	1	8	88
						YELLOW PERCH	II+	3	113	107-175
			4	HETERANTHERA DUB	MED.	ROCKBASS	I	2	31	88- 92
						ROCKBASS	II+	1	250	220
						YELLOW PERCH	II+	1	41	153
		HENNEPIN	1	NO VEGETATION	O	SPOTTAIL SHINER	II+	6	70	95-125
						HORNYHEAD CHUB	I+	1	18	112
						YELLOW PERCH	II+	2	68	144-146
			2	NO VEGETATION	O	ROCKBASS	I	1	18	107
						ROCKBASS	II+	9	870	129-205
						YELLOW PERCH	II+	1	60	171
			3	HETERANTHERA DUB	LOW	YELLOW PERCH	II+	1	34	148
			4	HETERANTHERA DUB	LOW	NO FISH CAUGHT				
		STONY	1	POT. CRISPUS	HIGH	SPOTTAIL SHINER	II+	2	21	94-102
						YELLOW PERCH	II+	1	44	157
			2	POT. CRISPUS	HIGH	RAINBOW SMELT	I	1	1	135
						SPOTTAIL SHINER	II+	2	31	97-128
						ROCKBASS	I	3	41	41-106
						ROCKBASS	II+	4	163	124-185
						YELLOW PERCH	II+	10	283	118-165
			3	NO VEGETATION	O	ROCKBASS	II+	4	245	144-231
			4	NO VEGETATION	O	RAINBOW SMELT	I	2	30	115-127
						RAINBOW SMELT	II+	1	15	166
						SPOTTAIL SHINER	II+	2	23	97-110
						YELLOW PERCH	II+	1	69	176

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
6/20/83	ST. CLAIR	STAG	1	CHARA SPP.	LOW	NO FISH CAUGHT				
			2	NO VEGETATION	0	BLUEGILL	II+	1	118	183
			3	CHARA SPP.	LOW	RAINBOW SMELT	I	1	6	111
						STRIPED SHINER	II+	4	36	84- 97
						ROCKBASS	II+	1	250	213
			4	NO VEGETATION	0	RAINBOW SMELT	I	4	49	125-143
						STRIPED SHINER	II+	10	95	82- 86
						HORNYHEAD CHUB	I+	1	40	142
		FAWN	1	POT. RICHARDSONI	LOW	RAINBOW SMELT	I	1	9	123
						HORNYHEAD CHUB	I+	10	168	97-128
						YELLOW PERCH	I	58	451	77-105
						YELLOW PERCH	II+	1	37	114
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	POT. NARROW	LOW	NO FISH CAUGHT				
			4	NO VEGETATION	0	RAINBOW SMELT	I	2	8	61-117
						TROUT PERCH	II+	1	10	113
						WHITE SUCKER	I+	1	840	440
						YELLOW PERCH	I	1	9	90
		RUSSELL	1	POT. NARROW	LOW	HORNYHEAD CHUB	I+	1	15	100
			2	NO VEGETATION	0	HORNYHEAD CHUB	0	1	10	87
						ROCKBASS	I	2	47	97- 98
						ROCKBASS	II+	2	172	113-180
						YELLOW PERCH	I	1	5	65
						YELLOW PERCH	II+	4	190	125-179
			3	POT. NARROW	LOW	BOWFIN	I+	1	1400	532
						STRIPED SHINER	II+	4	66	90-123
						ROCKBASS	I	1	9	78
						LARGEMOUTH BASS	0	1	14	98
						YELLOW PERCH	I	1	9	90
						YELLOW PERCH	II+	1	35	137
			4	NO VEGETATION	0	MOTTLED SCULPIN	I+	1	6	71

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
6/27/83	DETROIT	BELLE	1	NO VEGETATION	O	ROCKBASS	I	9	111	61- 98
						ROCKBASS	II+	5	263	115-151
			2	POT. CRISPUS	LOW	ROCKBASS	I	4	43	59- 85
						ROCKBASS	II+	3	162	117-159
			3	NITELLA HYALINA	HIGH	NO FISH CAUGHT				
			4	NO VEGETATION	O	ROCKBASS	II+	1	150	191
		HENNEPIN	1	POT. NARROW	MED.	NO FISH CAUGHT				
			2	NO VEGETATION	O	BIGMOUTH BUFFALO	II+	1	800	370
						SPOTTAIL SHINER	II+	5	57	95-113
						YELLOW PERCH	I	2	37	85- 92
						YELLOW PERCH	II+	1	42	152
			3	POT. NARROW	MED.	ROCKBASS	II+	2	150	157-164
			4	NO VEGETATION	O	SPOTTAIL SHINER	II+	3	31	101-108
						YELLOW PERCH	II+	2	110	162-182
		STONY	1	POT. CRISPUS	HIGH	WHITE PERCH	I	1	8	85
						FRESHWATER DRUM	II+	1	680	373
						ROCKBASS	II+	1	170	199
						YELLOW PERCH	I	2	26	96-100
			2	NO VEGETATION	O	CARP	I+	1	3400	620
						ROCKBASS	II+	3	600	209-225
						YELLOW PERCH	I	1	11	97
			3	POT. CRISPUS	HIGH	CARP	I+	1	1300	448
						BLACK REDHORSE	I+	1	900	448
						ROCKBASS	I	1	18	88
						ROCKBASS	II+	1	100	161
			4	NO VEGETATION	O	STONECAT	I	1	54	75
						WHITE PERCH	I	6	324	138-169
						WHITE PERCH	II+	1	103	209
						WHITE BASS	I	1	206	158
						WHITE BASS	II+	4	1021	241-283
						SPOTTAIL SHINER	II+	1	14	107
						ROCKBASS	I	1	23	102
						ROCKBASS	II+	1	120	174

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
7/25/83	ST. CLAIR	STAG	1	CHARA SPP.	LOW	YELLOW PERCH	I	1	8	94
			2	NO VEGETATION	0	YELLOW PERCH	I	1	13	101
			3	NO VEGETATION	0	NO FISH CAUGHT				
			4	POT. PRAELONGIS	MED.	NO FISH CAUGHT				
		FAWN	1	POT. PRAELONGIS	MED.	ALEWIFE	I	1	16	122
						SPOTTAIL SHINER	II+	1	9	96
						HORNYHEAD CHUB	I+	1	26	126
						ROCKBASS	I	1	27	107
						ROCKBASS	II+	4	215	110-132
						YELLOW PERCH	II+	2	36	113-118
			2	NO VEGETATION	0	ROCKBASS	II+	3	344	128-210
			3	NO VEGETATION	0	ALEWIFE	I	1	15	118
						YELLOW PERCH	II+	3	253	130-235
			4	POT. PRAELONGIS	MED.	HORNYHEAD CHUB	I	6	138	94-128
						ROCKBASS	II+	2	196	123-170
						YELLOW PERCH	I	50	583	81-108
						YELLOW PERCH	II+	23	657	111-189
		RUSSELL	1	POT. PRAELONGIS	MED.	HORNYHEAD CHUB	I+	7	101	97-133
						ROCKBASS	I	1	11	73
						YELLOW PERCH	I	6	68	86-106
						YELLOW PERCH	II+	4	165	120-175
			2	NO VEGETATION	0	ROCKBASS	II+	18	1324	105-218
						YELLOW PERCH	I	10	110	86-107
						YELLOW PERCH	II+	13	536	110-190
			3	NO VEGETATION	0	HORNYHEAD CHUB	I+	21	346	91-132
						ROCKBASS	II+	6	600	128-180
						YELLOW PERCH	I	14	158	90-106
						YELLOW PERCH	II+	21	1449	111-210
			4	POT. PRAELONGIS	MED.	COMMON SHINER	II+	1	13	106
						HORNYHEAD CHUB	0	1	10	86
						HORNYHEAD CHUB	I+	23	323	91-132
						ROCKBASS	I	1	19	96
						ROCKBASS	II+	4	860	142-245
						PUMPKINSEED	II+	1	60	131
						YELLOW PERCH	I	18	211	92-109
						YELLOW PERCH	II+	20	1269	113-212

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH				
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
8/ 1/83	DETROIT	BELLE	1	VALLISNERIA AMER	HIGH	YELLOW PERCH	I	8	89	91-106
						YELLOW PERCH	II+	1	12	110
			2	NO VEGETATION	0	ROCKBASS	I	3	43	83-102
						ROCKBASS	II+	6	697	120-240
						BLUEGILL	II+	1	30	118
						YELLOW PERCH	II+	4	256	110-202
			3	MYRIO. EXALBESC	MED.	ROCKBASS	I	1	19	100
						ROCKBASS	II+	1	216	210
						WHITE CRAPPIE	II+	1	150	205
						YELLOW PERCH	I	7	69	99-109
						YELLOW PERCH	II+	5	79	115-122
			4	NO VEGETATION	0	ROCKBASS	I	1	7	82
						ROCKBASS	II+	6	816	112-220
						YELLOW PERCH	II+	1	11	110
		HENNEPIN	1	HETERANTHERA DUB	HIGH	CHANNEL CATFISH	II+	2	870	255-380
						ROCKBASS	II+	3	190	110-174
						YELLOW PERCH	I	10	139	101-109
						YELLOW PERCH	II+	21	834	111-195
			2	NO VEGETATION	0	SPOTTAIL SHINER	II+	8	77	97-111
						ROCKBASS	II+	1	40	126
						YELLOW PERCH	I	5	61	96-106
						YELLOW PERCH	II+	11	254	110-273
			3	VALLISNERIA AMER	HIGH	ROCKBASS	II+	1	56	143
						YELLOW PERCH	I	3	31	83-102
						YELLOW PERCH	II+	2	33	113-115
			4	NO VEGETATION	0	YELLOW PERCH	II+	4	167	114-187

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
8/ 1/83	DETROIT	STONY	1	MYRIO. EXALBESC	HIGH	YELLOW BULLHEAD	II+	1	190	234
						BROWN BULLHEAD	II+	1	195	257
						YELLOW PERCH	II+	1	141	221
			2	NO VEGETATION	0	HORNYHEAD CHUB	I+	2	45	103-134
						ROCKBASS	II+	1	29	114
			3	MYRIO. EXALBESC	MED.	CHANNEL CATFISH	II+	1	220	280
						BLACK REDHORSE	I+	1	530	383
						HORNYHEAD CHUB	I+	4	78	97-131
						ROCKBASS	I	3	43	66-104
						ROCKBASS	II+	2	258	149-210
			4	NO VEGETATION	0	CHANNEL CATFISH	II+	1	680	343
						HORNYHEAD CHUB	I+	1	21	116
						ROCKBASS	I	1	25	102
						ROCKBASS	II+	3	399	180-190
						YELLOW PERCH	I	1	11	96

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
9/ 6/83	ST. CLAIR	STAG	1	NO VEGETATION	O	WHITE SUCKER	I+	1	16	118
						HORNYHEAD CHUB	O	2	18	86- 89
						HORNYHEAD CHUB	I	27	383	95-126
						YELLOW PERCH	I	33	319	76-109
						YELLOW PERCH	II+	14	489	110-215
			2	POT. PRAELONGIS	MED.	YELLOW PERCH	I	2	24	103-105
						YELLOW PERCH	II+	1	200	226
			3	NO VEGETATION	O	NORTHERN PIKE	I+	1	1500	610
						WHITE SUCKER	O	2	18	97-100
						WHITE SUCKER	I+	1	20	128
						ROCKBASS	II+	2	74	123-130
						BLACK CRAPPIE	II+	1	120	198
			4	POT. RICHARDSONI	MED.	SPOTTAIL SHINER	II+	1	10	112
						HORNYHEAD CHUB	I+	10	178	109-126
						ROCKBASS	I	2	16	75- 81
						ROCKBASS	II+	2	112	142-143
						PUMPKINSEED	II+	1	14	91
						YELLOW PERCH	I	71	973	88-109
						YELLOW PERCH	II+	50	1412	110-265
		FAWN	1	POT. RICHARDSONI	MED.	ROCKBASS	I	3	66	100-105
						ROCKBASS	II+	6	516	112-120
						YELLOW PERCH	II+	1	12	112
			2	NO VEGETATION	O	ROCKBASS	II+	3	146	133-139
			3	POT. PRAELONGIS	MED.	ROCKBASS	I	1	18	96
						ROCKBASS	II+	5	513	111-211
						SMALLMOUTH BASS	I	1	8	89
						YELLOW PERCH	I	8	124	95-108
						YELLOW PERCH	II+	5	93	110-129
			4	NO VEGETATION	O	ROCKBASS	II+	2	118	120-160
						SMALLMOUTH BASS	I	5	58	90-110
						SMALLMOUTH BASS	II+	1	168	221

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE(MM)
9/ 6 83	ST. CLAIR	RUSSELL	1	POT. PRAELONGIS	MED.	SPOTTAIL SHINER	II+	5	84	103-129
						ROCKBASS	I	1	14	86
						ROCKBASS	II+	4	194	112-154
						YELLOW PERCH	I	2	26	109
						YELLOW PERCH	II+	8	394	110-265
			2	NO VEGETATION	0	ROCKBASS	II+	5	686	127-261
						SMALLMOUTH BASS	I	6	75	95-106
						YELLOW PERCH	II+	1	14	120
			3	POT. PRAELONGIS	MED.	WHITE SUCKER	I+	1	30	136
						SPOTTAIL SHINER	II+	7	112	108-129
						HORNYHEAD CHUB	I+	2	37	116-118
						ROCKBASS	I	1	14	90
						ROCKBASS	II+	5	748	130-257
						YELLOW PERCH	I	11	119	97-109
						YELLOW PERCH	II+	16	395	111-200
			4	NO VEGETATION	0	ROCKBASS	I	1	22	101
						ROCKBASS	II+	8	630	125-190

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
9/ 8/83	DETROIT	BELLE	1	NO VEGETATION	0	SPOTTAIL SHINER	II+	1	11	100
						ROCKBASS	I	2	20	77- 91
						LOGPERCH	II+	1	10	105
						YELLOW PERCH	II+	5	237	112-244
			2	POT. RICHARDSONI	MED.	SPOTTAIL SHINER	II+	1	12	104
						ROCKBASS	I	3	53	78-108
						ROCKBASS	II+	2	44	113-115
						YELLOW PERCH	I	1	15	109
						YELLOW PERCH	II+	10	187	112-132
			3	NAJAS FLEXILIS	MED.	SPOTTAIL SHINER	II+	1	10	90
						ROCKBASS	I	1	9	80
						ROCKBASS	II+	3	124	122-140
						YELLOW PERCH	I	1	9	100
						YELLOW PERCH	II+	1	16	111
			4	NO VEGETATION	0	ROCKBASS	I	1	11	90
						ROCKBASS	II+	1	270	235
						PUMPKINSEED	II+	1	134	184
						YELLOW PERCH	I	1	14	106
						YELLOW PERCH	II+	1	20	118
		HENNEPIN	1	NO VEGETATION	0	YELLOW PERCH	II+	1	22	130
			2	POT. NARROW	MED.	YELLOW PERCH	II+	1	12	112
			3	VALLISNERIA AMER	HIGH	STONEROLLER	II+	1	13	126
						ROCKBASS	I	1	18	95
						ROCKBASS	II+	1	36	128
						PUMPKINSEED	II+	1	66	143
						YELLOW PERCH	I	4	41	100-108
						YELLOW PERCH	II+	8	218	113-195
			4	NO VEGETATION	0	NO FISH CAUGHT				

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE(MM)
9/ 8/83	DETROIT	STONY	1	VALLISNERIA AMER	HIGH	ROCKBASS	I	1	12	80
						ROCKBASS	II+	1	158	196
						YELLOW PERCH	II+	3	88	125-168
			2	NO VEGETATION	0	YELLOW BULLHEAD	II+	1	80	227
						CHANNEL CATFISH	II+	3	1650	335-410
						STONECAT	II+	3	268	152-225
						HORNYHEAD CHUB	I+	1	12	105
						ROCKBASS	I	1	2	56
			3	MYRIO. SPICATUM	HIGH	CHANNEL CATFISH	II+	1	910	435
						CARP	I+	1	780	378
						BLACK REDHORSE	I+	1	537	360
						GOLDEN REDHORSE	I+	1	708	405
						ROCKBASS	II+	2	204	117-210
						YELLOW PERCH	II+	1	60	176
			4	NO VEGETATION	0	CHANNEL CATFISH	II+	5	5144	341-545
						CARP	I+	2	2244	415-450
						GOLDEN REDHORSE	I+	1	874	436
						ROCKBASS	I	2	16	73- 80
						ROCKBASS	II+	1	72	155
						YELLOW PERCH	II+	2	102	167-175

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE(MM)
10/ 4/83	ST. CLAIR	STAG	1	POT. RICHARDSONI	MED.	WHITE SUCKER	0	1	9	95
						STRIPED SHINER	II+	35	608	95-139
						HORNYHEAD CHUB	I+	38	599	95-134
						ROCKBASS	I	3	21	64- 80
						ROCKBASS	II+	1	106	165
						YELLOW PERCH	I	22	197	92-109
						YELLOW PERCH	II+	70	1989	110-206
			2	NO VEGETATION	0	WHITE SUCKER	I+	1	10	112
						HORNYHEAD CHUB	I+	7	131	105-128
						ROCKBASS	I	3	24	69- 92
						ROCKBASS	II+	6	296	118-146
						YELLOW PERCH	II+	41	1581	112-208
						WALLEYE	I	1	120	254
			3	NO VEGETATION	0	WHITE SUCKER	I+	2	32	112-134
						HORNYHEAD CHUB	I+	2	34	116-118
						ROCKBASS	II+	9	676	112-220
						YELLOW PERCH	I	2	14	75- 96
						YELLOW PERCH	II+	11	292	112-165
			4	POT. PRAELONGIS	LOW	HORNYHEAD CHUB	I+	1	18	122
						ROCKBASS	I	1	10	82
						ROCKBASS	II+	2	88	131-136
						YELLOW PERCH	I	3	24	60-109
						YELLOW PERCH	II+	29	963	112-226
		FAWN	1	POT. PRAELONGIS	MED.	ROCKBASS	I	1	16	96
						ROCKBASS	II+	6	304	116-185
						SMALLMOUTH BASS	0	1	5	77
			2	NO VEGETATION	0	ROCKBASS	II+	1	70	150
			3	POT. PRAELONGIS	MED.	SPOTTAIL SHINER	II+	1	18	111
						HORNYHEAD CHUB	I+	2	50	134-139
						ROCKBASS	II+	3	745	178-238
						YELLOW PERCH	I	8	87	95-109
						YELLOW PERCH	II+	33	1562	110-307
			4	NO VEGETATION	0	HORNYHEAD CHUB	I+	1	14	115
						ROCKBASS	I	2	23	85- 87
						YELLOW PERCH	I	2	18	97-105
						YELLOW PERCH	II+	4	113	122-181

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE(MM)
10/ 4/83	CLAIR	RUSSELL	1	POT. PRAELONGIS	HIGH	HORNYHEAD CHUB	I+	3	47	103 117
						ROCKBASS	I	3	52	80-105
						BLACK CRAPPIE	II+	1	214	236
						YELLOW PERCH	I	8	86	98-108
						YELLOW PERCH	II+	5	68	110-120
			2	NO VEGETATION	0	HORNYHEAD CHUB	I+	8	152	106-139
						ROCKBASS	I	3	34	67- 93
						ROCKBASS	II+	8	580	127-180
						BLACK CRAPPIE	II+	3	506	213-228
						YELLOW PERCH	I	2	22	108-109
						YELLOW PERCH	II+	3	265	112-258
			3	POT. NARROW	MED.	SPOTTAIL SHINER	II+	3	32	95-107
						HORNYHEAD CHUB	I+	1	19	120
						YELLOW PERCH	I	5	55	97-106
						YELLOW PERCH	II+	5	162	110-213
			4	NO VEGETATION	0	CARP	I+	1	2700	570
						ROCKBASS	I	1	24	107
						ROCKBASS	II+	2	72	112-125
						SMALLMOUTH BASS	I	1	9	88
						YELLOW PERCH	I	1	11	102
						YELLOW PERCH	II+	2	30	116-120

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE(MM)
10/ 6/83	DETROIT	BELLE	1	POT. RICHARDSONI	MED.	HORNYHEAD CHUB	I+	2	32	101-107
						ROCKBASS	I	2	23	90- 93
						SMALLMOUTH BASS	I	1	10	96
						YELLOW PERCH	I	4	68	102-107
						YELLOW PERCH	II+	27	410	113-156
			2	NO VEGETATION	O	ROCKBASS	II+	2	310	164-216
						BLUEGILL	II+	1	40	131
						SMALLMOUTH BASS	I	1	12	99
						YELLOW PERCH	I	3	26	98-106
						YELLOW PERCH	II+	20	385	110-170
			3	NITELLA HYALINA	HIGH	ROCKBASS	I	2	11	54- 80
						ROCKBASS	II+	1	214	216
						YELLOW PERCH	II+	3	43	113-115
			4	NO VEGETATION	O	ROCKBASS	I	2	31	81-107
						ROCKBASS	II+	2	430	206-211
						YELLOW PERCH	I	2	19	97-107
						YELLOW PERCH	II+	13	232	110-141
		HENNEPIN	1	VALLISNERIA AMER	MED.	HORNYHEAD CHUB	I+	1	30	140
						ROCKBASS	II+	1	40	130
						BLUEGILL	II+	1	14	97
						SMALLMOUTH BASS	O	1	5	71
						SMALLMOUTH BASS	I	1	12	104
						YELLOW PERCH	II+	21	514	110-177
			2	NO VEGETATION	O	ROCKBASS	I	1	14	93
						ROCKBASS	II+	1	172	211
						SMALLMOUTH BASS	I	1	12	102
						YELLOW PERCH	I	1	11	108
						YELLOW PERCH	II+	3	53	120-124
			3	VALLISNERIA AMER	MED.	BROWN BULLHEAD	II+	1	254	282
						STONECAT	II+	1	164	245
						WHITE SUCKER	I+	1	100	207
						ROCKBASS	I	1	21	102
						YELLOW PERCH	II+	1	70	185
			4	NO VEGETATION	O	YELLOW PERCH	II+	1	15	117

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE(MM)
10/ 6/83	DETROIT	STONY	1	MYRIO. EXALBESC	HIGH	NORTHERN PIKE	I+	1	2000	710
						WHITE PERCH	O	1	6	78
						GOLDFISH	I+	1	74	161
						CARP	I+	3	4100	380-545
						ROCKBASS	I	7	64	58- 90
						YELLOW PERCH	II+	2	55	130-145
			2	NO VEGETATION	O	BROWN BULLHEAD	II+	1	214	253
						ROCKBASS	I	2	28	84- 95
						ROCKBASS	II+	3	160	119-168
						BLACK CRAPPIE	II+	1	350	276
						YELLOW PERCH	II+	1	26	133
			3	MYRIO. EXALBESC	MED.	CHANNEL CATFISH	II+	3	5100	459-715
						STONECAT	II+	1	50	185
						WHITE PERCH	I	1	29	129
						ROCKBASS	I	1	14	87
						ROCKBASS	II+	2	102	129-148
			4	NO VEGETATION	O	YELLOW BULLHEAD	II+	1	118	232
						CHANNEL CATFISH	II+	2	1884	420-454
						STONECAT	II+	4	628	214-235
						ROCKBASS	II+	1	222	221

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
5/21/84	ST. CLAIR	STAG	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	POT. NARROW	LOW	ALEWIFE	I	1	60	197
						GOLDEN REDHORSE	I+	1	1200	496
			3	NO VEGETATION	0	ROCKBASS	II+	2	714	231-264
			4	CHARA SPP.	LOW	NO FISH CAUGHT				
		FAWN	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	NO VEGETATION	0	NO FISH CAUGHT				
			4	NO VEGETATION	0	NO FISH CAUGHT				
		RUSSELL	1	POT. NARROW	LOW	ROCKBASS	II+	1	134	194
						YELLOW PERCH	II+	4	52	112-137
			2	NO VEGETATION	0	YELLOW PERCH	II+	1	30	145
			3	POT. NARROW	LOW	NO FISH CAUGHT				
			4	NO VEGETATION	0	NO FISH CAUGHT				

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
5/23/84	DETROIT	BELLE	1	CHARA SPP.	LOW	ROCKBASS	I	5	60	76-104
						ROCKBASS	II+	1	38	130
						YELLOW PERCH	II+	2	54	125-154
			2	NO VEGETATION	0	ROCKBASS	I	5	80	83-103
						ROCKBASS	II+	6	653	117-220
						YELLOW PERCH	I	1	10	109
						YELLOW PERCH	II+	3	82	122-144
			3	NO VEGETATION	0	ROCKBASS	I	3	32	48-106
						YELLOW PERCH	II+	3	67	112-144
			4	NO VEGETATION	0	ROCKBASS	I	1	13	90
						ROCKBASS	II+	4	873	153-254
		HENNEPIN	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	NO VEGETATION	0	ROCKBASS	II+	3	335	142-202
						YELLOW PERCH	II+	6	216	120-192
			3	NO VEGETATION	0	YELLOW PERCH	II+	4	78	115-130
			4	NO VEGETATION	0	SPOTTAIL SHINER	II+	1	12	115
						ROCKBASS	II+	1	30	116
						YELLOW PERCH	II+	5	222	128-187
						WALLEYE	II+	1	460	383
		STONY	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	NO VEGETATION	0	STONECAT	II+	2	298	233-253
						WHITE SUCKER	I+	55	46030	368-540
						SPOTTAIL SHINER	II+	2	20	96-119
						ROCKBASS	II+	1	130	189
						WALLEYE	II+	1	1200	511
			3	NO VEGETATION	0	ROCKBASS	II+	10	2233	179-230
						YELLOW PERCH	II+	2	98	137-182
			4	NO VEGETATION	0	NO FISH CAUGHT				

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
6/12/84	ST. CLAIR	STAG	1	POT. RICHARDSONI	LOW	RAINBOW SMELT	I	1	6	94
						ROCKBASS	II+	1	190	208
			2	NO VEGETATION	0	RAINBOW SMELT	I	1	10	120
						ROCKBASS	II+	1	400	244
			3	CHARA SPP.	LOW	NO FISH CAUGHT				
			4	NO VEGETATION	0	RAINBOW SMELT	I	1	12	127
						SPOTTAIL SHINER	II+	1	14	111
		FAWN	1	NO VEGETATION	0	RAINBOW SMELT	I	1	8	118
			2	NO VEGETATION	0	RAINBOW SMELT	I	1	9	119
						YELLOW PERCH	II+	2	46	119-133
			3	NO VEGETATION	0	RAINBOW SMELT	I	1	8	116
						TROUT PERCH	II+	1	12	118
						YELLOW PERCH	II+	1	24	127
			4	NO VEGETATION	0	NO FISH CAUGHT				
		RUSSELL	1	POT. NARROW	LOW	RAINBOW SMELT	I	1	8	113
						TROUT PERCH	II+	1	12	104
						ROCKBASS	II+	1	46	138
						YELLOW PERCH	II+	3	53	111-116
			2	NO VEGETATION	0	RAINBOW SMELT	I	3	29	124-127
						YELLOW PERCH	II+	6	493	119-301
			3	POT. NARROW	LOW	RAINBOW SMELT	I	97	822	96-136
						ROCKBASS	II+	1	236	227
						YELLOW PERCH	II+	1	92	210
						WALLEYE	II+	2	762	316-381
			4	NO VEGETATION	0	RAINBOW SMELT	I	39	348	100-135
						YELLOW PERCH	I	1	11	105

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
6/18/84	DETROIT	BELLE	1	POT. CRISPUS	LOW	SPOTTAIL SHINER	II+	1	18	115
						ROCKBASS	I	6	101	84-102
						ROCKBASS	II+	4	394	116-208
						YELLOW PERCH	II+	3	86	129-143
			2	NO VEGETATION	0	ROCKBASS	II+	5	730	165-227
			3	CHARA SPP.	LOW	ROCKBASS	I	4	77	85- 99
						ROCKBASS	II+	5	556	137-217
						YELLOW PERCH	II+	1	20	117
			4	NO VEGETATION	0	ROCKBASS	I	2	32	84- 95
						ROCKBASS	II+	1	150	193
						YELLOW PERCH	II+	2	49	128-130
		HENNEPIN	1	POT. NARROW	MED.	NO FISH CAUGHT				
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	POT. NARROW	MED.	SPOTTAIL SHINER	II+	1	12	112
						ROCKBASS	II+	4	312	133-173
						YELLOW PERCH	II+	3	236	113-233
			4	NO VEGETATION	0	SPOTTAIL SHINER	II+	2	19	96-104
		STONY	1	POT. CRISPUS	MED.	WHITE BASS	I	2	128	158-172
						ROCKBASS	II+	2	244	156-205
			2	NO VEGETATION	0	STONECAT	II+	3	304	194-220
						WHITE BASS	II+	1	342	308
						HORNYHEAD CHUB	I+	1	40	148
						ROCKBASS	II+	5	674	130-212
			3	POT. CRISPUS	LOW	STONECAT	II+	18	2124	201-250
						ROCKBASS	II+	2	211	136-202
			4	NO VEGETATION	0	ROCKBASS	II+	3	263	128-192
						YELLOW PERCH	II+	1	130	217

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
7/23/84	ST. CLAIR	STAG	1	POT. GRAMINEUS	MED.	NO FISH CAUGHT				
			2	NO VEGETATION	0	YELLOW PERCH	II+	1	28	146
			3	POT. RICHARDSONI	MED.	ROCKBASS	I	1	28	96
						ROCKBASS	II+	7	1090	172-217
			4	NO VEGETATION	0	HORNYHEAD CHUB	I+	1	12	97
						ROCKBASS	II+	8	932	142-199
		FAWN	1	NO VEGETATION	0	NO FISH CAUGHT				
			2	POT. GRAMINEUS	MED.	HORNYHEAD CHUB	I+	1	28	137
						ROCKBASS	II+	5	828	149-230
						YELLOW PERCH	II+	29	990	113-237
			3	POT. GRAMINEUS	MED.	NO FISH CAUGHT				
			4	NO VEGETATION	0	HORNYHEAD CHUB	I+	2	46	121-137
						ROCKBASS	II+	6	901	149-223
						SMALLMOUTH BASS	II+	1	742	375
						YELLOW PERCH	II+	8	366	119-234
		RUSSELL	1	POT. GRAMINEUS	MED.	ROCKBASS	II+	2	538	232-245
			2	NO VEGETATION	0	ROCKBASS	II+	6	616	124-215
						SMALLMOUTH BASS	II+	1	222	265
						YELLOW PERCH	II+	2	165	139-180
			3	POT. GRAMINEUS	MED.	HORNYHEAD CHUB	I+	2	63	134
						ROCKBASS	II+	4	624	151-224
						YELLOW PERCH	II+	27	1106	120-264
			4	NO VEGETATION	0	ROCKBASS	II+	6	1090	140-239
						SMALLMOUTH BASS	II+	1	980	408
						YELLOW PERCH	II+	1	30	135

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH			
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
7/30/84	DETROIT	BELLE	1	NO VEGETATION	0	WHITE PERCH/WHITE	I	1	16	106
						SPOTTAIL SHINER	II+	1	12	104
						ROCKBASS	I	2	32	83-100
						ROCKBASS	II+	2	270	112-219
						YELLOW PERCH	II+	10	376	112-161
			2	MYRIO. EXALBESC	LOW	CARP	I+	1	2700	665
						ROCKBASS	I	3	26	77- 78
						ROCKBASS	II+	1	38	118
						BLUEGILL	I	1	12	83
						YELLOW PERCH	II+	1	28	137
			3	POT. RICHARDSONI	MED.	ROCKBASS	I	6	72	67- 85
			4	NO VEGETATION	0	ROCKBASS	I	3	31	65- 83
						ROCKBASS	II+	3	196	127-170
						YELLOW PERCH	II+	2	80	134-161
		HENNEPIN	1	POT. NARROW	LOW	SPOTTAIL SHINER	II+	2	16	110-112
			2	NO VEGETATION	0	NO FISH CAUGHT				
			3	MYRIO. EXALBESC	LOW	CARP	I+	1	1300	440
						SPOTTAIL SHINER	II+	1	8	93
						ROCKBASS	II+	1	42	135
			4	NO VEGETATION	0	ROCKBASS	II+	1	22	110
						PUMPKINSEED	II+	2	224	157-190
						YELLOW PERCH	II+	2	81	132-150
						WALLEYE	II+	1	890	480
		STONY	1	MYRIO. EXALBESC	MED.	STONECAT	II+	1	100	225
						SPOTTAIL SHINER	II+	1	10	92
						HORNYHEAD CHUB	I+	1	12	110
						ROCKBASS	I	1	20	95
						ROCKBASS	II+	1	160	195
						YELLOW PERCH	II+	3	374	163-254
			2	NO VEGETATION	0	ALEWIFE	0	11	16	47- 64
			3	MYRIO. EXALBESC	LOW	CARP	I+	1	1100	452
						BLACK REDHORSE	I+	1	652	405
			4	NO VEGETATION	0	CHANNEL CATFISH	II+	2	1582	411-463
						ROCKBASS	II+	4	362	140-190

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APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH				
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
9/ 4/84	ST. CLAIR	STAG	1	MYRIO. EXALBESC	HIGH	YELLOW PERCH	II+	1	38	151
			2	NO VEGETATION	O	ALEWIFE	O	26	154	74- 97
						ALEWIFE	I	1	6	101
						FRESHWATER DRUM	II+	1	650	375
						RAINBOW TROUT	II+	1	258	320
						YELLOW PERCH	II+	2	40	120-150
			3	ELODEA CANADENS	HIGH	BLACK REDHORSE	I+	2	2040	475-501
						HORNYHEAD CHUB	I+	1	16	117
						ROCKBASS	II+	1	230	219
						PUMPKINSEED	II+	1	24	115
						YELLOW PERCH	II+	20	912	112-240
			4	NO VEGETATION	O	ROCKBASS	II+	1	82	167
		FAWN	1	POT. RICHARDSONI	MED.	ROCKBASS	II+	1	30	117
						BLACK CRAPPIE	II+	1	352	281
			2	NO VEGETATION	O	ROCKBASS	II+	1	314	244
						WALLEYE	II+	1	200	311
			3	POT. PRAELONGIS	HIGH	ALEWIFE	O	2	10	76- 86
						BLACK REDHORSE	I+	1	682	435
						HORNYHEAD CHUB	I+	1	25	140
						ROCKBASS	II+	3	189	143-156
						YELLOW PERCH	I	1	10	103
						YELLOW PERCH	II+	46	1579	115-207
			4	NO VEGETATION	O	ALEWIFE	O	1	4	89
						ROCKBASS	II+	4	413	125-210
						YELLOW PERCH	I	1	12	105
						YELLOW PERCH	II+	30	827	115-164
		RUSSELL	1	POT. PRAELONGIS	HIGH	NORTHERN PIKE	I+	1	1700	775
						SPOTTAIL SHINER	II+	1	8	97
						ROCKBASS	II+	1	92	174
						YELLOW PERCH	II+	1	54	173
			2	NO VEGETATION	O	ROCKBASS	II+	7	898	147-224
						YELLOW PERCH	II+	3	144	154-172
			3	POT. PRAELONGIS	HIGH	YELLOW PERCH	II+	1	44	154
						WALLEYE	II+	1	480	385
			4	NO VEGETATION	O	ROCKBASS	II+	1	262	233
						PUMPKINSEED	II+	1	76	144

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	VEGETATION STA. NO.	VEGETATION DOMINANT TAXA	VEGETATION DENSITY	FISH SPECIES	FISH LIFE STAGE	FISH TOTAL NO.	FISH TOTAL WT. (G)	FISH LENGTH RANGE(MM)
9/10/84	DETROIT	BELLE	1	POT. RICHARDSONI	MED.	ROCKBASS	I	2	30	83-105
						ROCKBASS	II+	1	46	137
			2	NO VEGETATION	0	ROCKBASS	I	1	6	71
						ROCKBASS	II+	1	172	194
						YELLOW PERCH	II+	3	124	147-161
			3	VALLISNERIA AMER	LOW	ROCKBASS	II+	1	162	219
			4	NO VEGETATION	0	ROCKBASS	I	2	30	88-104
						ROCKBASS	II+	3	501	129-225
		HENNEPIN	1	VALLISNERIA AMER	LOW	YELLOW PERCH	0	1	8	52
						YELLOW PERCH	I	1	6	92
			2	NO VEGETATION	0	YELLOW PERCH	II+	1	30	150
			3	VALLISNERIA AMER	MED.	ROCKBASS	I	1	12	95
			4	NO VEGETATION	0	CHANNEL CATFISH	II+	1	610	395
						YELLOW PERCH	II+	7	319	148-192
		STONY	1	MYRIO. SPICATUM	MED.	BROWN BULLHEAD	II+	5	1462	257-298
						WHITE BASS	0	2	20	89-108
						ROCKBASS	II+	1	26	121
			2	NO VEGETATION	0	CHANNEL CATFISH	II+	12	11310	339-635
						HORNYHEAD CHUB	I+	1	24	126
						ROCKBASS	II+	2	350	196-210
						YELLOW PERCH	II+	1	56	165
			3	MYRIO. SPICATUM	LOW	CHANNEL CATFISH	II+	10	9140	357-720
						STONECAT	II+	1	128	243
						BLACK REDHORSE	I+	1	1020	480
						HORNYHEAD CHUB	I+	1	22	122
						ROCKBASS	II+	2	503	225-226
			4	NO VEGETATION	0	CHANNEL CATFISH	II+	6	4424	373-462
						STONECAT	II+	1	122	238
						ROCKBASS	II+	2	408	210-213

APPENDIX
HOOPNET CATCH DATA

DATE	RIVER	LOCATION	STA. NO.	VEGETATION: DOMINANT TAXA	VEGETATION: DENSITY	FISH: SPECIES	FISH: LIFE STAGE	FISH: TOTAL NO.	FISH: TOTAL WT. (G)	FISH: LENGTH RANGE(MM)
10/ 2/84	ST. CLAIR	STAG	1	NO VEGETATION	O	WHITE SUCKER	I+	1	1200	505
			2	POT. RICHARDSONI	MED.	WHITE SUCKER	I+	1	45	170
						STRIPED SHINER	II+	1	10	95
						HORNYHEAD CHUB	I+	9	137	100-122
						ROCKBASS	II+	1	100	169
			3	MYRIO. EXALBESC	HIGH	WHITE SUCKER	I+	1	3000	593
						HORNYHEAD CHUB	I+	6	83	91-119
						ROCKBASS	I	1	20	101
						ROCKBASS	II+	2	252	115-212
						YELLOW PERCH	II+	4	248	152-212
			4	NO VEGETATION	O	HORNYHEAD CHUB	I+	15	226	97-122
						ROCKBASS	II+	4	690	170-250
						YELLOW PERCH	I	1	12	105
						YELLOW PERCH	II+	42	2145	120-251
		FAWN	1	POT. PRAELONGIS	HIGH	WHITE SUCKER	I+	1	204	267
						ROCKBASS	II+	2	282	170-205
			2	NO VEGETATION	O	ROCKBASS	II+	1	97	163
			3	POT. NARROW	HIGH	PUMPKINSEED	II+	1	68	147
						YELLOW PERCH	I	1	12	107
						YELLOW PERCH	II+	2	52	129-134
			4	CHARA SPP.	LOW	ROCKBASS	II+	1	80	161
		RUSSELL	1	POT. RICHARDSONI	HIGH	NO FISH CAUGHT				
			2	NO VEGETATION	O	WHITE SUCKER	I+	2	2098	413-525
						ROCKBASS	II+	1	84	160
						YELLOW PERCH	II+	4	437	127-258
			3	POT. RICHARDSONI	HIGH	YELLOW PERCH	II+	1	54	163
			4	CHARA SPP.	LOW	ROCKBASS	I	1	20	101
						ROCKBASS	II+	2	282	155-214
						YELLOW PERCH	II+	2	80	151-154

APPENDIX
HOOPNET CATCH DATA

			VEGETATION			FISH				
DATE	RIVER	LOCATION	STA. NO.	DOMINANT TAXA	DENSITY	SPECIES	LIFE STAGE	TOTAL NO.	TOTAL WT. (G)	LENGTH RANGE(MM)
10/ 4/84	DETROIT	BELLE	1	POT. RICHARDSONI	HIGH	SPOTTAIL SHINER	II+	1	8	104
						ROCKBASS	I	6	57	70-104
						ROCKBASS	II+	2	75	120-131
						YELLOW PERCH	I	1	8	97
						YELLOW PERCH	II+	2	55	140-151
			2	NO VEGETATION	O	ROCKBASS	I	5	57	77- 88
						ROCKBASS	II+	3	124	120-135
						PUMPKINSEED	II+	1	12	90
						SMALLMOUTH BASS	I	1	10	84
						YELLOW PERCH	II+	1	32	142
			3	MYRIO. EXALBESC	MED.	ROCKBASS	I	2	40	91-108
						ROCKBASS	II+	1	33	118
						YELLOW PERCH	II+	1	42	156
			4	NO VEGETATION	O	ROCKBASS	II+	4	482	160-195
						YELLOW PERCH	II+	1	58	173
		HENNEPIN	1	VALLISNERIA AMER	LOW	ROCKBASS	II+	1	90	160
						YELLOW PERCH	II+	17	807	144-185
			2	VALLISNERIA AMER	MED.	SMALLMOUTH BASS	I	1	28	106
			3	VALLISNERIA AMER	HIGH	ROCKBASS	II+	1	85	162
						YELLOW PERCH	II+	11	564	144-168
			4	NO VEGETATION	O	HORNYHEAD CHUB	I+	1	32	120
						YELLOW PERCH	II+	13	755	134-196
		STONY	1	MYRIO. EXALBESC	HIGH	STONECAT	II+	1	108	232
						ROCKBASS	II+	1	228	230
			2	NO VEGETATION	O	CHANNEL CATFISH	II+	3	2122	328-471
						ROCKBASS	II+	1	242	225
			3	MYRIO. EXALBESC	HIGH	AMERICAN EEL	II+	1	360	602
						WALLEYE	II+	1	1100	472
			4	NO VEGETATION	O	ALEWIFE	O	2	20	84- 86
						STONECAT	II+	8	804	115-248
						ROCKBASS	II+	1	88	156
						BLACK CRAPPIE	II+	1	178	227

APPENDIX R

ANOVA Tables for Fish

ANALYSIS OF VARIANCE TABLES

LOCATION=STAG

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR TOTC SQRT(TOTAL NUMBER OF FISH + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	215.93886978	11.34303525	1.52	0.1792	0.593225	56.5228
ERROR	20	148.01788507	7.45089425			ROOT MSE	SQR TOTC MEAN
CORRECTED TOTAL	35	364.95675482				2.72963262	3.14025972

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	23.29609272	3.13	0.0923	1	23.29609272	3.13	0.0923
PCATH	4	145.09326854	4.87	0.0066	4	145.09326854	4.87	0.0066
YEAR*PCATH	4	30.04427188	1.01	0.4267	4	30.04427188	1.01	0.4267
DENSITY	1	0.06650940	0.01	0.9257	1	0.06650940	0.01	0.9257
YEAR*DENSITY	1	0.95643005	0.13	0.7235	1	0.95643005	0.13	0.7235
PCATH*DENSITY	4	5.82361433	0.20	0.9379	4	5.82361433	0.20	0.9379
YEAR*PCATH*DENSITY	4	10.25268281	0.34	0.8495	4	10.25268281	0.34	0.8495

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	23.29609272	3.13	0.0923	1	23.29609272	3.13	0.0923
PCATH	4	145.09326854	4.87	0.0066	4	145.09326854	4.87	0.0066
YEAR*PCATH	4	30.04427188	1.01	0.4267	4	30.04427188	1.01	0.4267
DENSITY	1	0.06650940	0.01	0.9257	1	0.06650940	0.01	0.9257
YEAR*DENSITY	1	0.95643005	0.13	0.7235	1	0.95643005	0.13	0.7235
PCATH*DENSITY	4	5.82361433	0.20	0.9379	4	5.82361433	0.20	0.9379
YEAR*PCATH*DENSITY	4	10.25268281	0.34	0.8495	4	10.25268281	0.34	0.8495

LOCATION=STAG

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR TOTN SQRT(TOTAL SPECIES + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	4.10625279	0.21612067	1.55	0.1693	0.555532	23.2585
ERROR	20	2.78887427	0.13944371			ROOT MSE	SQR TOTN MEAN
CORRECTED TOTAL	35	6.89512702				0.37342163	1.60545706

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	0.18955805	1.36	0.2574	1	0.18955805	1.36	0.2574
PCATH	4	2.81616487	5.05	0.0056	4	2.81616487	5.05	0.0056
YEAR*PCATH	4	0.21110315	0.38	0.8213	4	0.21110315	0.38	0.8213
DENSITY	1	0.02075243	0.15	0.7037	1	0.02075243	0.15	0.7037
YEAR*DENSITY	1	0.21612206	1.55	0.2275	1	0.21612206	1.55	0.2275
PCATH*DENSITY	4	0.21687542	0.39	0.8141	4	0.21687542	0.39	0.8141
YEAR*PCATH*DENSITY	4	0.43571277	0.78	0.5506	4	0.43571277	0.78	0.5506

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.18955805	1.36	0.2574	1	0.18955805	1.36	0.2574
PCATH	4	2.81616487	5.05	0.0056	4	2.81616487	5.05	0.0056
YEAR*PCATH	4	0.21110315	0.38	0.8213	4	0.21110315	0.38	0.8213
DENSITY	1	0.02075243	0.15	0.7037	1	0.02075243	0.15	0.7037
YEAR*DENSITY	1	0.21612206	1.55	0.2275	1	0.21612206	1.55	0.2275
PCATH*DENSITY	4	0.21687542	0.39	0.8141	4	0.21687542	0.39	0.8141
YEAR*PCATH*DENSITY	4	0.43571277	0.78	0.5506	4	0.43571277	0.78	0.5506

ANALYSIS OF VARIANCE TABLES

LOCATION=STAG

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR PER	SCRIPERCP NUMBERS + .51					
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	174.25632271	5.17138541	1.89	0.0834	0.642233	100.6628
ERROR	20	97.0810E256	4.854C5315		ROOT MSE		SCR PER MEAN
CORRECTED TOTAL	35	271.33338514			2.2C315158		2.CE556656

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	19.98474882	4.12	C.C560	1	19.98474882	4.12	C.C56C
PCATH	4	1C3.72CCE755	5.34	C.CC43	4	103.72008759	5.34	C.CC43
YEAR*PCATH	4	28.7CE26283	1.4E	C.2461	4	28.7CE26283	1.4E	C.2461
CERSITY	1	2.C3112231	C.41	C.5271	1	2.01112231	C.41	C.5271
YEAR*CERSITY	1	3.61457259	C.74	C.3984	1	3.61457259	C.74	C.3984
PCATH*CERSITY	4	7.E7776E48	C.4C	C.8095	4	7.E7776E48	C.4C	C.8095
YEAR*PCATH*CERSITY	4	8.54176C75	C.44	C.7783	4	8.54176C75	C.44	C.7783

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	19.98474882	4.12	C.C56C	1	19.98474882	4.12	C.C56C
PCATH	4	1C3.72CCE755	5.34	C.CC43	4	103.72008759	5.34	C.CC43
YEAR*PCATH	4	28.7CE26283	1.4E	C.2461	4	28.7CE26283	1.4E	C.2461
CERSITY	1	2.C3112231	C.41	C.5271	1	2.01112231	C.41	C.5271
YEAR*CERSITY	1	3.61457259	C.74	C.3984	1	3.61457259	C.74	C.3984
PCATH*CERSITY	4	7.E7776E48	C.4C	C.8095	4	7.E7776E48	C.4C	C.8095
YEAR*PCATH*CERSITY	4	8.54176C75	C.44	C.7783	4	8.54176C75	C.44	C.7783

LOCATION=STAG

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR RB	SCRTROCK BASS NUMBERS + .51					
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	13.3235E116	C.7C126111	1.61	0.1479	C.EC5255	53.7624
ERROR	20	8.66475516	C.43623796		ROOT MSE		SCR RB MEAN
CORRECTED TOTAL	35	22.CCE72C32			0.65896724		1.2346226E3

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	C.CCCC54E3C	C.CC	C.5632	1	0.0CC54E3C	C.CC	C.5632
PCATH	4	6.8C514645	3.52	C.C166	4	6.80514645	3.52	C.C166
YEAR*PCATH	4	4.92243417	2.83	C.C518	4	4.92243417	2.83	C.C518
CERSITY	1	C.12532456	C.29	C.5970	1	C.12532456	C.29	C.5970
YEAR*CERSITY	1	C.C2627577	C.C6	C.8C82	1	0.02627577	C.C6	C.8CE2
PCATH*CERSITY	4	C.64C42126	C.37	C.8281	4	0.64042139	C.37	C.8281
YEAR*PCATH*CERSITY	4	C.8C341C47	C.46	C.7624	4	C.8C341C47	C.46	C.7624

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	C.CCCC54E3C	C.CC	C.5632	1	C.CCCC54E3C	C.CC	C.5632
PCATH	4	C.8C514645	3.52	C.C166	4	6.80514645	3.52	C.C166
YEAR*PCATH	4	4.92243417	2.83	C.C518	4	4.92243417	2.83	C.C518
CERSITY	1	C.12532456	C.29	C.5970	1	C.12532456	C.29	C.5970
YEAR*CERSITY	1	C.C2627577	C.C6	C.8C82	1	C.C2627577	C.C6	C.8CE2
PCATH*CERSITY	4	C.64C42126	C.37	C.8281	4	0.64042139	C.37	C.8281
YEAR*PCATH*CERSITY	4	C.8C341C47	C.46	C.7624	4	C.8C341C47	C.46	C.7624

ANALYSIS OF VARIANCE TABLES

LOCATION*FISH

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR TOTC SCR(TOTAL NUMBER OF FISH + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	97.[illegible]3C57C7	5.73E41512	1.18	0.3512	C.417385	66.8165
ERROR	22	1C6.8C7C646C	4.85400658		ROOT MSE		SCR TOTC MEAN
CORRECTED TOTAL	39	2C4.26C12166			2.20337618		3.33361163

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	5.8831C54C	1.21	C.2827	1	2.81017903	C.58	C.4546
PCATH	4	42.56312562	2.19	C.1C34	4	35.92361567	1.85	C.1553
YEAR*PCATH	4	11.55655614	C.6C	C.6659	4	16.C5528C27	C.82	C.5235
CERSITY	1	23.85C37673	4.92	C.C372	1	23.85C37673	4.92	C.C372
YEAR*CERSITY	1	4.85C84652	C.87	C.3363	1	6.2736C650	1.29	C.2679
PCATH*CERSITY	4	7.46652115	C.35	C.8163	4	7.46652115	C.35	C.8163
YEAR*PCATH*CERSITY	2	1.48841444	C.15	C.8588	2	1.48841444	C.15	C.8588

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	4.81333237	C.99	C.3302	1C	2.62854502	C.54	C.4656
PCATH	4	4C.51424124	2.C9	C.1171	4C	4C.13643520	2.C7	C.1158
YEAR*PCATH	4	9.82CCC23C9	C.51	C.7320	4C	10.06292360	C.52	C.7272
CERSITY	1	14.67999142	3.C5	C.C525	1C	22.64023C18	4.66	C.C42C
YEAR*CERSITY	1	6.28CC82346	1.29	C.2676	1C	6.28082346	1.29	C.2676
PCATH*CERSITY	4	7.9CCC46525	C.39	C.8161	4C	7.12462276	C.37	C.8266
YEAR*PCATH*CERSITY	2	1.48841444	C.15	C.8588	2	1.48841444	C.15	C.8588

LOCATION*FISH

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR TOTN SCR(TOTAL SPECIES + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	2.41[illegible]3489	C.14182558	1.21	0.3296	C.464125	22.3715
ERROR	22	2.56513586	C.11677799		ROOT MSE		SCR TOTN MEAN
CORRECTED TOTAL	39	4.98C135C5			0.34172795		1.54326445

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	C.C351EC64	C.3C	C.5886	1	0.05347185	C.46	C.5057
PCATH	4	1.17EC5545	2.52	C.C705	4	1.03521165	2.22	C.1CC4
YEAR*PCATH	4	C.27621755	C.61	C.5369	4	C.46852456	1.CC	C.4271
CERSITY	1	C.28855236	2.47	C.13C0	1	C.28855236	2.47	C.13CC
YEAR*CERSITY	1	C.C2265E46	C.2E	C.6C2C	1	C.16554639	1.42	C.2465
PCATH*CERSITY	4	C.31717172	C.6B	C.6138	4	0.31717172	C.6B	C.6138
YEAR*PCATH*CERSITY	2	C.1B471465	C.7S	C.4659	2	C.1B471465	C.7S	C.4659

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	C.11511E71E	C.9S	C.3314	1B	C.0522C5C2	C.4S	C.5IC7
PCATH	4	1.12324512	2.43	C.C776	4B	1.07118EC5	2.2S	C.CS17
YEAR*PCATH	4	C.45275754	1.CS	C.4020	4B	C.44258E1B	C.9S	C.4554
CERSITY	1	C.13C23CC2	1.12	C.3C24	1B	C.25C4E22C	2.4S	C.125C
YEAR*CERSITY	1	C.15226E32	1.3C	C.265B	1B	C.15226B32	1.3C	C.265E
PCATH*CERSITY	4	C.21EC1275	C.4E	C.6154	4B	0.12522112	C.27	C.8982
YEAR*PCATH*CERSITY	2	C.1B471465	C.7S	C.4659	2	C.1B471465	C.7S	C.4659

ANALYSIS OF VARIANCE TABLES

LOCATION=PAVA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR PER SQRT(PERCH NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	73.28414556	4.30965586	0.81	0.6683	0.284763	115.3283
ERROR	22	117.14568615	5.32480573			ROOT MSE	SQR PER MEAN
CORRECTED TOTAL	39	190.41383171				2.3075936	1.6331653

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	1.5645C526	C.29	C.5932	1	C.15596635	C.C3	C.8657
PCATH	4	21.28156565	1.CC	C.4256	4	17.55155493	C.82	C.5225
YEAR*PCATH	4	16.41165C62	C.7E	C.55C2	4	14.28944467	C.67	C.6153
CERSITY	1	21.9C542132	4.C4	C.C569	1	21.9C542132	4.C4	C.C565
YEAR*CERSITY	1	3.22533624	C.61	C.4447	1	4.32023C68	C.81	C.3775
PCATH*CERSITY	4	8.54411677	C.4C	C.8C57	4	8.54471877	C.4C	C.8C57
YEAR*PCATH*CERSITY	2	C.52551746	C.C5	C.9516	2	0.52951746	C.C5	C.9516

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	C.78453222	C.15	C.7048	1*	0.12626C66	C.C2	C.8795C
PCATH	4	21.4316C656C	1.C1	C.4256	4*	22.02183357	1.C3	C.4122C
YEAR*PCATH	4	14.23C52649	C.67	C.6210	4*	14.21EC45E4	C.67	C.6214
CERSITY	1	14.12135742	2.65	C.1177	1*	20.70164239	3.83	C.C637
YEAR*CERSITY	1	4.255CE111	C.EC	C.3810	1*	4.255CB111	C.8C	C.3E1C
PCATH*CERSITY	4	8.5131E242	C.4C	C.8C66	4*	8.0626666E3	C.3E	C.8215
YEAR*PCATH*CERSITY	2	C.52551746	C.C5	C.9516	2	0.52951746	C.C5	C.9516

LOCATION=PAVA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR RB SQRT(ROCK BASS NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	17	14.27655557	C.83976468	3.28	0.0049	C.717223	35.C552
ERROR	22	5.62874693	C.25585221			ROOT MSE	SQR RB MEAN
CORRECTED TOTAL	39	19.9C52CE1C				0.5058183S	1.4251326C

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	C.76C27685	2.97	C.C967	1	C.9E416415	3.65	C.C626
PCATH	4	1C.C1512582	9.79	C.COC1	4	9.76704556	9.54	C.CCC1
YEAR*PCATH	4	1.C1212566	C.99	C.4336	4	0.48088E82	C.4E	C.7513
CERSITY	1	C.742CE12E	2.9C	C.1G26	1	C.742C8126	2.9C	C.1C26
YEAR*CERSITY	1	C.3C934C61	1.76	C.111C	1	1.3823C538	5.4C	C.C251
PCATH*CERSITY	4	C.9E7E3763	C.97	C.4462	4	C.9E7E3763	C.97	C.4462
YEAR*PCATH*CERSITY	2	C.C4861353	C.1C	C.9097	2	0.C4861353	C.1C	C.9C97

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	1.4EEE5C7E	5.62	C.C246	1*	C.95186564	3.72	C.C66E
PCATH	4	1C.443C2367	1C.21	C.CCC1	4*	8.8E0C1C46	E.6E	C.CCC2
YEAR*PCATH	4	C.4EEE3146	C.4E	C.7517	4*	C.45027EEC	C.4E	C.75C8
CERSITY	1	C.1E1E4553	C.71	C.4083	1*	0.68242245	2.67	C.1163
YEAR*CERSITY	1	1.37128525	5.3E	C.C3C3	1*	1.37128529	5.3E	C.C3C3
PCATH*CERSITY	4	C.5EECC17C	C.57	C.4461	4*	C.68264558	C.67	C.6213
YEAR*PCATH*CERSITY	2	C.C4861353	C.1C	C.9C97	2	C.C4861353	C.1C	C.9C97

ANALYSIS OF VARIANCE TABLES

LOCATION=RUSSELL

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQRT(TOTAL NUMBER OF FISH + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	19	136.615134C7	7.2C1CC7C6	1.98	0.0696	0.6525C3	23.5255
ERROR	2C	72.86434445	3.64321722				
CORRECTED TOTAL	39	2C9.4834785Z					

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	1C.8C644321	2.87	C.1CC5	1	9.814C2522	2.69	C.1164
PCAT	4	54.6863512	3.75	C.C196	4	54.7577945C	3.76	C.C195
YEAR*PCAT	4	54.72ECE553	3.65	C.C17C	4	55.5324773C4	3.81	C.C1E4
DENSITY	1	2.22541541	C.61	C.4432	1	2.22541541	C.61	C.4432
YEAR*DENSITY	1	C.3547775E4	C.11	C.7454	1	0.50227858	C.14	C.7143
PCAT*DENSITY	4	4.113223C4	C.28	C.8860	4	4.113226EC4	C.28	C.8860
YEAR*PCAT*DENSITY	4	7.85775157	C.54	C.7087	4	7.85775157	C.54	C.7087

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	9.178725E6	2.52	C.1281	1	9.178725E6	2.52	C.1281
PCAT	4	53.79447632	3.69	C.C2C8	4	53.79447632	3.69	C.C2C8
YEAR*PCAT	4	54.81E55157	3.76	C.C194	4	54.81E55157	3.76	C.C194
DENSITY	1	1.81715520	C.5C	C.4881	1	1.81715520	C.5C	C.4881
YEAR*DENSITY	1	C.5E162E52	C.15	C.6987	1	C.5E162E52	C.15	C.6987
PCAT*DENSITY	4	4.32582167	C.3C	C.8765	4	4.32582167	C.3C	C.8765
YEAR*PCAT*DENSITY	4	7.85775157	C.54	C.7087	4	7.85775157	C.54	C.7087

LOCATION=RUSSELL

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQRT(TOTAL SPECIES + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	19	3.92446424	C.18545518	1.94	0.0746	0.648562	18.3295
ERROR	2C	1.9C5E1E3E	C.C9545CE2				
CORRECTED TOTAL	39	5.8343CC66					

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	C.2C615C2E	2.16	C.1573	1	C.15C6426C	1.58	C.2236
PCAT	4	1.35146526	3.64	C.C219	4	1.38845EC5	3.64	C.C221
YEAR*PCAT	4	C.65267721	1.71	C.1868	4	C.46621566	1.22	C.3234
DENSITY	1	C.23145E56	2.42	C.1351	1	C.23149E56	2.42	C.1351
YEAR*DENSITY	1	C.C676C546	C.52	C.3496	1	C.11C66367	1.16	C.2648
PCAT*DENSITY	4	C.65E61C65	1.72	C.1842	4	C.65E61C65	1.72	C.1842
YEAR*PCAT*DENSITY	4	C.29516E24	C.77	C.5557	4	C.29516E24	C.77	C.5557

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	C.1225E163	1.35	C.2518	1	C.1225E163	1.35	C.2518
PCAT	4	1.4844325C	3.65	C.C171	4	1.4844325C	3.65	C.C171
YEAR*PCAT	4	C.417C3552	1.C5	C.3874	4	C.417C3552	1.C5	C.3874
DENSITY	1	C.1E113EC5C	1.5C	C.1829	1	C.18178C9C	1.5C	C.1829
YEAR*DENSITY	1	C.115E79C2	1.21	C.2837	1	C.115E79C2	1.21	C.2837
PCAT*DENSITY	4	C.674C4C3C	1.76	C.1756	4	C.67404C3C	1.76	C.1756
YEAR*PCAT*DENSITY	4	C.29516E24	C.77	C.5557	4	C.29516E24	C.77	C.5557

ANALYSIS OF VARIANCE TABLES

LOCATION=RUSSELL

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR PER SQRT(PERCH NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	35	71.952CCE83	2.05634382	3.31	0.0053	C.755625	52.4448
ERROR	20	23.85525622	1.14276256		ROOT MSE		SQR PER MEAN
CORRECTED TOTAL	55	94.8C7287E2			1.0690CC52		2.C3837714

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	6.4436E5C21	8.26	C.CC54	1	9.54476E5CC	8.35	C.CC51
PCATH	4	3C.78E27331	6.74	C.CC13	4	3C.77339C55	6.73	C.CC13
YEAR*PCATH	4	15.C1E51E55	3.29	C.C318	4	15.C04C6122	3.28	C.C315
DENSITY	1	2.251252C3	2.C1	C.1722	1	2.251392C3	2.C1	C.1722
YEAR*DENSITY	1	C.8E2454E1E	C.1C	C.4119	1	C.82229C21	C.72	C.4C63
PCATH*DENSITY	4	4.C27C3135	C.EE	C.4929	4	4.C2703139	C.EE	C.4925
YEAR*PCATH*DENSITY	4	5.5EC24752	2.1C	C.1163	4	9.58024752	2.1C	C.1153

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	8.26718372	7.23	C.C141	1	8.26718372	7.23	C.C141
PCATH	4	3C.56C16238	6.77	C.CC13	4	3C.56C16238	6.77	C.CC13
YEAR*PCATH	4	14.71367128	3.22	C.C341	4	14.71367128	3.22	C.C341
DENSITY	1	1.55C15584	1.71	C.2C63	1	1.99015564	1.71	C.2C63
YEAR*DENSITY	1	C.56322E51	C.E4	C.3655	1	C.56322E51	C.E4	C.3655
PCATH*DENSITY	4	4.113C7E6E	C.9C	C.4826	4	4.113C7E6E	C.9C	C.4826
YEAR*PCATH*DENSITY	4	5.5EC24752	2.1C	C.1193	4	9.58024752	2.1C	C.1153

LOCATION=RUSSELL

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR RE SQRT(ROCK BASS NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	35	25.18555E4C	1.32557844	3.36	0.0049	C.761EC3	4C.1256
ERROR	20	7.8E37C255	C.3941852C		ROOT MSE		SQR RB MEAN
CORRECTED TOTAL	55	33.CE565435			3.62784170		1.5E465C51

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	2.335C7334	5.C4	C.C233	1	1.946E0E45	4.54	C.C2EC
PCATH	4	14.25334C17	9.C4	C.C0C2	4	14.25345C22	9.C4	C.CCC2
YEAR*PCATH	4	1.91854E54	1.22	C.3349	4	1.75372957	1.11	C.3783
DENSITY	1	2.2564557C	5.83	C.0255	1	2.29649570	5.E3	C.C2**
YEAR*DENSITY	1	C.6625E57C	1.4E	C.2096	1	C.6212C412	1.5E	C.2238
PCATH*DENSITY	4	2.4383552C	1.55	C.2271	4	2.4383552C	1.55	C.2271
YEAR*PCATH*DENSITY	4	1.23321375	C.7E	C.55CC	4	1.23321375	C.7E	C.55CC

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	2.2415CC26	5.65	C.C271	1	2.24150C26	5.65	C.C271
PCATH	4	14.2E36C522	9.C4	C.C0C2	4	14.25290526	9.C4	C.CCC2
YEAR*PCATH	4	1.84555CC9	1.17	C.3535	4	1.845596C9	1.17	C.3535
DENSITY	1	2.19EEE291	5.57	C.C285	1	2.19666291	5.57	C.C285
YEAR*DENSITY	1	C.66523411	1.7C	C.2074	1	C.66923411	1.7C	C.2C74
PCATH*DENSITY	4	2.3857E3E5	1.51	C.2363	4	2.38576389	1.51	C.2363
YEAR*PCATH*DENSITY	4	1.23321375	C.7E	C.55CC	4	1.23321375	C.7E	C.55CC

ANALYSIS OF VARIANCE TABLES

LOCATION=BELLE ISLE

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR TOTC SCRT:TOTAL NUMBER OF FISH + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	24.15667248	1.27362487	1.02	0.4783	0.452579	28.0565
ERROR	20	24.88816216	1.24440811		ROOT MSE		SCR TOTC MEAN
CORRECTED TOTAL	35	49.04483463			1.11553042		3.92753655

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	1.31628674	1.06	0.3160	1	1.48711506	1.20	0.2873
PCATM	4	8.67625562	1.80	0.1678	4	9.08073292	1.82	0.1637
YEAR*PCATM	4	9.47564561	1.90	0.1492	4	9.12300744	1.83	0.1621
DENSITY	1	0.26022417	0.16	0.6926	1	0.26021417	0.14	0.6926
YEAR*DENSITY	1	0.01004235	0.01	0.9253	1	0.00022723	0.01	0.9260
PCATM*DENSITY	4	0.40281778	0.08	0.9873	4	0.40281778	0.08	0.9873
YEAR*PCATM*DENSITY	4	3.81756186	0.77	0.5562	4	3.81756186	0.77	0.5562

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	1.26362773	1.03	0.3219	1	1.26362773	1.03	0.3219
PCATM	4	8.85231472	1.78	0.1712	4	8.85231472	1.78	0.1712
YEAR*PCATM	4	9.18164060	1.84	0.1559	4	9.18164060	1.84	0.1559
DENSITY	1	0.15063674	0.15	0.6995	1	0.15063674	0.15	0.6995
YEAR*DENSITY	1	0.01126765	0.01	0.9251	1	0.01126765	0.01	0.9251
PCATM*DENSITY	4	0.39234784	0.08	0.9879	4	0.39234784	0.08	0.9879
YEAR*PCATM*DENSITY	4	3.81756186	0.77	0.5562	4	3.81756186	0.77	0.5562

LOCATION=BELLE ISLE

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR TOTN SCRT:TOTAL SPECIES + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	2.55665765	0.12413588	0.99	0.5059	0.465037	23.6256
ERROR	20	2.50418815	0.12520526		ROOT MSE		SCR TOTN MEAN
CORRECTED TOTAL	35	4.86284483			0.35384926		1.49232432

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	0.05483743	0.44	0.5157	1	0.06906265	0.55	0.4663
PCATM	4	0.79756565	1.59	0.2149	4	0.79805172	1.59	0.2145
YEAR*PCATM	4	1.62568266	2.04	0.1269	4	1.64176215	2.06	0.1215
DENSITY	1	0.07535554	0.60	0.4470	1	0.07535554	0.60	0.4470
YEAR*DENSITY	1	0.04932766	0.40	0.5353	1	0.04507682	0.36	0.5553
PCATM*DENSITY	4	0.17874765	0.36	0.8362	4	0.17874709	0.36	0.8362
YEAR*PCATM*DENSITY	4	0.17217626	0.34	0.8452	4	0.17217626	0.34	0.8452

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.04485648	0.36	0.5560	1	0.04485648	0.36	0.5560
PCATM	4	0.78465748	1.57	0.2210	4	0.78465748	1.57	0.2236
YEAR*PCATM	4	1.02057614	2.04	0.1275	4	1.02057614	2.04	0.1275
DENSITY	1	0.06625523	0.53	0.4754	1	0.06625523	0.53	0.4754
YEAR*DENSITY	1	0.05412071	0.43	0.5184	1	0.05412071	0.43	0.5184
PCATM*DENSITY	4	0.16452071	0.33	0.8590	4	0.16452071	0.33	0.8550
YEAR*PCATM*DENSITY	4	0.17217626	0.34	0.8452	4	0.17217626	0.34	0.8452

ANALYSIS OF VARIANCE TABLES

LOCATION=BELLE ISLE

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR PER SCRIPERCH NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	39.78276554	2.65382637	2.89	0.0115	0.732728	47.6556
ERROR	20	14.51135037	0.72556252		ROOT MSE		SCR PER MEAN
CORRECTED TOTAL	35	54.29359191			0.85179958		1.77676566

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	5.82645743	8.03	0.0102	1	5.67507107	7.82	0.0111
HABITH	4	13.66415222	4.69	0.0078	4	13.82805729	4.77	0.0073
YEAR*HABITH	4	13.77363341	4.75	0.0074	4	13.61357071	4.69	0.0078
DENSITY	1	0.08800230	0.12	0.7313	1	0.08800230	0.12	0.7313
YEAR*DENSITY	1	1.24321745	1.71	0.2054	1	1.15111320	1.64	0.2148
HABITH*DENSITY	4	0.30572205	0.11	0.9788	4	0.30972205	0.11	0.9788
YEAR*HABITH*DENSITY	4	4.92547800	1.70	0.1902	4	4.92547800	1.70	0.1902

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	5.62927515	7.77	0.0114	1	5.62927515	7.77	0.0114
HABITH	4	13.46343505	4.64	0.0082	4	13.46343505	4.64	0.0082
YEAR*HABITH	4	13.48355152	4.65	0.0081	4	13.48355152	4.65	0.0081
DENSITY	1	0.08365551	0.12	0.7377	1	0.08365551	0.12	0.7377
YEAR*DENSITY	1	1.18582415	1.63	0.2157	1	1.18582415	1.63	0.2157
HABITH*DENSITY	4	0.30804323	0.11	0.9796	4	0.30804323	0.11	0.9796
YEAR*HABITH*DENSITY	4	4.92547800	1.70	0.1902	4	4.92547800	1.70	0.1902

LOCATION=BELLE ISLE

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR RB SCRTEROCK BASS NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	15	14.22321229	0.75177960	1.56	0.1642	0.593775	33.7146
ERROR	20	9.61059027	0.48052951		ROOT MSE		SQR RB MEAN
CORRECTED TOTAL	35	23.83480264			0.69321679		2.05612012

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	3.31726435	6.90	0.0161	1	3.30682772	6.88	0.0163
HABITH	4	2.09022883	1.07	0.3989	4	2.02882513	1.06	0.4041
YEAR*HABITH	4	3.09562353	1.61	0.2114	4	3.04513445	1.62	0.1652
DENSITY	1	0.08033276	0.18	0.6727	1	0.08033276	0.18	0.6727
YEAR*DENSITY	1	0.35092729	0.81	0.3782	1	0.43623554	0.91	0.3521
HABITH*DENSITY	4	1.83300352	0.94	0.4601	4	1.81100352	0.94	0.4601
YEAR*HABITH*DENSITY	4	3.53654817	1.84	0.1607	4	3.53654817	1.84	0.1607

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	3.21767740	6.70	0.0176	1	3.21767740	6.70	0.0176
HABITH	4	1.94598487	1.01	0.4246	4	1.94598487	1.01	0.4246
YEAR*HABITH	4	2.82744427	1.47	0.2483	4	2.82744427	1.47	0.2483
DENSITY	1	0.08272660	0.17	0.6826	1	0.08272660	0.17	0.6826
YEAR*DENSITY	1	0.37840413	0.79	0.3854	1	0.37840413	0.79	0.3854
HABITH*DENSITY	4	1.76013673	0.88	0.4816	4	1.76013673	0.88	0.4816
YEAR*HABITH*DENSITY	4	3.53654817	1.84	0.1607	4	3.53654817	1.84	0.1607

ANALYSIS OF VARIANCE TABLES

LOCATION=PT MENAEFIA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR TOTC SQRT(TOTAL NUMBER OF FISH + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	10	30.07215917	2.11512159	1.26	0.3013	0.515884	56.2652
ERROR	21	35.15565672	1.67427889		ROOT MSE		SQR TOTC MEAN
CORRECTED TOTAL	35	73.22781589			1.29393929		2.29547352

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	2.16CE6563	1.29	C.2687	1	4.72423523	2.82	C.1078
MCATP	4	11.72C53C45	1.75	C.1768	4	11.79064320	1.76	C.1746
YEAR*MCATP	4	6.773CE736	1.21	C.2986	4	8.07122515	1.21	C.3260
CERSITY	1	C.CC334225	C.CC	C.9627	1	0.00374225	C.CC	C.9627
YEAR*CERSITY	1	C.CECC9834	C.C5	C.8286	1	1.09606445	C.65	C.4275
MCATP*CERSITY	4	8.155EC631	1.22	C.3305	4	8.1598EC71	1.22	C.3305
YEAR*MCATP*CERSITY	3	7.13324CC6	1.42	C.2649	3	7.13324CC6	1.42	C.2649

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	4.16EE2727	2.49	C.1256	1*	3.32472408	1.99	C.1734
MCATP	4	13.42222672	2.CC	C.1308	4*	12.02923636	1.80	C.1673
YEAR*MCATP	4	8.571C4462	1.24	C.2883	4*	9.67842880	1.45	C.2542
CERSITY	1	C.31CE1C55	C.19	C.6710	1*	C.01526234	C.C1	C.9246
YEAR*CERSITY	1	1.2656436E2	C.77	C.3905	1*	1.28504382	C.77	C.3905
MCATP*CERSITY	4	8.C55C3C55	1.2C	C.3368	4*	9.47117512	1.45	C.2613
YEAR*MCATP*CERSITY	3	7.13324CC6	1.42	C.2649	3	7.13324CC6	1.42	C.2649

LOCATION=PT MENAEFIA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR TOTA SQRT(TOTAL SPECIES + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	10	2.62442620	C.34580146	1.25	0.3099	C.517C7C	22.2554
ERROR	21	2.45114274	C.11672113		ROOT MSE		SQR TOTA MEAN
CORRECTED TOTAL	35	5.C7556895			0.34164474		1.53235464

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	C.165C5E61	1.41	C.2476	1	0.34762421	2.98	C.0585
MCATP	4	C.6183CE34	1.32	C.2951	4	C.6506151C7	1.39	C.2704
YEAR*MCATP	4	C.3C55EC4E	C.66	C.6246	4	0.3C151ECE	C.65	C.6260
CERSITY	1	C.C1415472	C.12	C.7311	1	0.01415472	C.12	C.7311
YEAR*CERSITY	1	C.C2265264	C.19	C.6640	1	0.10250527	C.EE	C.3564
MCATP*CERSITY	4	C.65778E5C	1.41	C.2655	4	C.65778E5C	1.41	C.2655
YEAR*MCATP*CERSITY	3	C.83EEE152	2.4C	C.C97C	3	C.83EEE152	2.4C	C.C97C

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	C.31656215	2.71	C.1145	1*	0.26067C04	2.23	C.1455
MCATP	4	C.6EEE1655	1.47	C.2466	4*	0.65EE25C3	1.41	C.2645
YEAR*MCATP	4	C.197C3652	C.42	C.7909	4*	C.37810664	C.81	C.5329
CERSITY	1	C.CCC13561	C.CC	C.9727	1*	C.01112462	C.1C	C.7466
YEAR*CERSITY	1	C.1253C517	1.C7	C.3119	1*	0.12530517	1.C7	C.3119
MCATP*CERSITY	4	C.61124E55	1.31	C.2989	4*	0.85365553	1.81	C.1455
YEAR*MCATP*CERSITY	3	C.83EEE152	2.4C	C.C97C	3	C.83EEE152	2.4C	C.C97C

ANALYSIS OF VARIANCE TABLES

LOCATION=PT MEANEFIA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR PER SQRT(PERCH NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	16	34.58743C43	1.5437461J	1.47	0.1982	0.557230	62.6135
ERROR	21	27.8CC75CC1	1.32384528			ROOT MSE	SQR PER MEAN
CORRECTED TOTAL	39	62.76618133				1.15050476	1.83174656

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	C.5C58E3CE3	C.6E	C.4174	1	1.77667253	1.34	C.2557
PCATH	4	11.73275353	2.22	C.1C21	4	12.52573261	2.37	C.CE5E
YEAR*PCATH	4	14.8625CE42	2.81	C.C516	4	12.64044482	2.39	C.CE37
CERSITY	1	C.CECE11256	C.C5	C.E333	1	0.06011256	C.CE	C.E333
YEAR*CERSITY	1	1.93C51332	1.C1	C.3274	1	1.9C795EC7	1.44	C.2422
PCATH*CERSITY	4	1.25E152EE	C.24	C.9139	4	1.25E152EE	C.24	C.9139
YEAR*PCATH*CERSITY	3	4.8CECCC52E	1.21	C.3305	3	4.806C052E	1.21	C.3305

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	1.53247444	1.16	C.2942	1	1.36235565	1.03	C.3215
PCATH	4	13.5315EC4E5	2.56	C.C6B4	4	12.15J67C24	2.29	C.CS21
YEAR*PCATH	4	13.2132EE25	2.5C	C.C739	4	12.8905E191	2.43	C.C752
CERSITY	1	C.CC351EE3	C.C1	C.94C6	1	0.02644E13	C.C2	C.8885
YEAR*CERSITY	1	2.CE335455E	1.5E	C.2256	1	2.CE335455	1.5E	C.2256
PCATH*CERSITY	4	1.291E34C5	C.23	C.5169	4	1.93718C1E	C.37	C.83C2
YEAR*PCATH*CERSITY	3	4.8CECCC52E	1.21	C.3305	3	4.806C052E	1.21	C.3305

LOCATION=PT MEANEFIA

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR RB SCATEROCK BASS NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	16	3.5023E16E	C.21952710	0.64	0.8278	C.354633	55.2651
ERROR	21	7.1523C654	C.34253850			ROOT MSE	SQR RB MEAN
CORRECTED TOTAL	39	11.1456545E				0.58526769	1.C5E54133

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	C.1E3C4331	C.53	C.4725	1	C.487C275E	1.42	C.2464
PCATH	4	C.9568E824	C.41	C.8C19	4	1.74867C28	C.55	C.1C3E
YEAR*PCATH	4	C.224754E3	C.1E	C.5542	4	C.7998E217	C.5E	C.4778
CERSITY	1	C.2553C42E	C.7E	C.3977	1	C.2553C42E	C.7E	C.3977
YEAR*CERSITY	1	C.1962E3C2	C.4E	C.5C28	1	C.0C86E83E	C.C3	C.8725
PCATH*CERSITY	4	2.33C4453CC	1.7C	C.1874	4	2.33C49700	1.7C	C.1874
YEAR*PCATH*CERSITY	3	C.24262348	C.24	C.87C2	3	C.24262348	C.24	C.87C2

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	C.55CE1122	1.62	C.2183	1	C.41683150	1.22	C.2825
PCATH	4	C.72211752	C.24	C.9150	4	C.5794122C	C.42	C.7963
YEAR*PCATH	4	C.8C44E45C	C.5E	C.6755	4	C.5146141C	C.3E	C.8234
CERSITY	1	C.C52C5174	C.2E	C.6C38	1	C.26717CE3	C.7E	C.2866
YEAR*CERSITY	1	C.CCE1C1EE	C.C2	C.8951	1	C.C0610188	C.C2	C.8951
PCATH*CERSITY	4	2.31EE8576	1.6S	C.1897	4	1.44126165	1.C5	C.4C46
YEAR*PCATH*CERSITY	3	C.24262348	C.24	C.87C2	3	C.24262348	C.24	C.87C2

ANALYSIS OF VARIANCE TABLES

LOCATION*STRAT

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR(TOTAL NUMBER OF FISH + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	16	10.56451562	0.66031776	0.26	0.9975	0.175515	53.0221
ERROR	23	48.28935235	2.25932159		ROOT MSE		SQR TOTL MEAN
CORRECTED TOTAL	39	58.85027257			1.51635141		2.85585220

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	0.07374627	0.03	0.8566	1	0.14105746	0.06	0.8066
PORT	4	2.23652462	0.25	0.9019	4	2.14055055	0.23	0.9168
YEAR*PORT	4	2.54665427	0.32	0.8611	4	3.28972304	0.36	0.8356
DENSITY	1	0.27643218	0.12	0.7322	1	0.27643218	0.12	0.7322
YEAR*DENSITY	1	0.26715553	0.12	0.7366	1	0.03148527	0.01	0.9066
PORT*DENSITY	4	1.11536004	0.12	0.9731	4	1.11536004	0.12	0.9731
YEAR*PORT*DENSITY	3	3.66422433	0.52	0.6715	3	3.66422433	0.52	0.6715

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.13622466	0.06	0.8086	1*	0.08453427	0.04	0.8456
PORT	4	2.24264612	0.24	0.9103	4*	2.05154021	0.23	0.9217
YEAR*PORT	4	3.28572304	0.36	0.8358	4*	3.28572304	0.36	0.8358
DENSITY	1	0.16629851	0.07	0.7963	1*	0.27643218	0.12	0.7322
YEAR*DENSITY	1	0.03148527	0.01	0.9080	1*	0.03148527	0.01	0.9080
PORT*DENSITY	4	1.11536004	0.12	0.9731	4*	1.11536004	0.12	0.9731
YEAR*PORT*DENSITY	3	3.66422433	0.52	0.6715	3	3.66422433	0.52	0.6715

LOCATION*STRAT

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SQR(TOTAL SPECIES + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	16	2.70005446	0.16875027	1.10	0.4124	0.485261	15.5725
ERROR	23	2.86458568	0.13645503		ROOT MSE		SQR TOTL MEAN
CORRECTED TOTAL	39	5.56513644			0.36933593		2.38302320

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	0.72622428	5.32	0.0313	1	0.62859024	4.61	0.0427
PORT	4	1.04221585	1.91	0.1459	4	1.00151728	1.84	0.1557
YEAR*PORT	4	0.20567159	0.38	0.8181	4	0.28420235	0.52	0.7214
DENSITY	1	0.01866566	0.13	0.7200	1	0.01866566	0.13	0.7200
YEAR*DENSITY	1	0.00055654	0.01	0.9329	1	0.00339824	0.02	0.8761
PORT*DENSITY	4	0.41269142	0.76	0.5640	4	0.41269142	0.76	0.5640
YEAR*PORT*DENSITY	3	0.28936212	0.71	0.5505	3	0.28936212	0.71	0.5505

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.65132233	4.33	0.0498	1*	0.67904421	4.56	0.0367
PORT	4	0.69566665	1.65	0.1997	4*	1.27172182	2.33	0.0652
YEAR*PORT	4	0.28420235	0.52	0.7214	4*	0.15142685	0.28	0.8852
DENSITY	1	0.02023176	0.22	0.6422	1*	0.01800506	0.12	0.7200
YEAR*DENSITY	1	0.00339824	0.02	0.8761	1*	0.00339824	0.02	0.8761
PORT*DENSITY	4	0.41269142	0.76	0.5640	4*	0.33745874	0.62	0.6542
YEAR*PORT*DENSITY	3	0.28936212	0.71	0.5505	3	0.28936212	0.71	0.5505

ANALYSIS OF VARIANCE TABLES

LOCATION*STORY

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR PER — SCRTOROCK NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	18	4.78418172	0.26578787	1.00	0.4941	0.461882	45.8533
ERROR	21	5.57287675	0.26542270			ROOT MSE	SCR PER MEAN
CORRECTED TOTAL	39	10.35705848				0.51519200	1.12346824

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	1.13515656	4.44	0.0472	1	0.49124630	1.85	0.1881
PCAT	4	0.71456733	0.67	0.6180	4	0.74904168	0.71	0.5971
YEAR*PCAT	4	0.58446168	0.55	0.6994	4	0.33185413	0.31	0.8663
DENSITY	1	0.48576838	1.83	0.1905	1	0.48576838	1.83	0.1905
YEAR*DENSITY	1	0.33615761	1.27	0.2727	1	0.60952231	2.23	0.4376
PCAT*DENSITY	4	1.04125219	0.98	0.4362	4	1.04125219	0.98	0.4362
YEAR*PCAT*DENSITY	3	0.43956824	0.55	0.6524	3	0.43956824	0.55	0.6524

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.51566566	1.96	0.1763	1*	0.51744C22	1.95	0.1772
PCAT	4	1.22C21521	1.16	0.357C	4*	0.72719482	0.69	0.6C42
YEAR*PCAT	4	0.33185413	0.31	0.8663	4*	0.32657407	0.31	0.8696
DENSITY	1	0.62644162	2.37	0.1385	1*	0.48576838	1.83	0.1905
YEAR*DENSITY	1	0.06052231	0.23	0.6379	1*	0.06052231	0.23	0.6376
PCAT*DENSITY	4	1.04125219	0.98	0.4362	4*	0.82445837	0.78	0.5528
YEAR*PCAT*DENSITY	3	0.43956824	0.55	0.6524	3	0.43956824	0.55	0.6524

LOCATION*STORY

GENERAL LINEAR MODELS PROCEDURE

DEPENDENT VARIABLE: SCR RE — SCRTOROCK BASS NUMBERS + .5)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F	R-SQUARE	C.V.
MODEL	18	2.44C49785	0.15113544	0.33	0.9896	0.222C31C	45.0554
ERROR	21	12.37588361	0.5950C358			ROOT MSE	SCR RE MEAN
CORRECTED TOTAL	39	15.63632150				0.76144861	1.55228564

SOURCE	DF	TYPE I SS	F VALUE	PR > F	DF	TYPE II SS	F VALUE	PR > F
YEAR	1	0.02512256	0.03	0.8459	1	0.45041512	0.76	0.3881
PCAT	4	0.3C336581	0.13	0.9664	4	0.37553C27	0.16	0.9553
YEAR*PCAT	4	1.65823153	0.11	0.5916	4	1.62623EC7	0.71	0.5911
DENSITY	1	0.C7E0E387	0.14	0.7161	1	0.07E0D3E7	0.14	0.7161
YEAR*DENSITY	1	0.32255E2E	0.57	0.4572	1	0.21606561	0.37	0.5474
PCAT*DENSITY	4	0.39338665	0.17	0.9515	4	0.39338665	0.17	0.9515
YEAR*PCAT*DENSITY	3	0.13695728	0.CE	0.67C8	3	0.13695728	0.CE	0.67CE

SOURCE	DF	TYPE III SS	F VALUE	PR > F	DF	TYPE IV SS	F VALUE	PR > F
YEAR	1	0.81446546	0.E5	0.3569	1*	0.48917CE1	0.E4	0.3EEE
PCAT	4	0.22ICFECC	0.15	0.9631	4*	0.53486E59	0.22	0.9282
YEAR*PCAT	4	1.62623EC7	0.11	0.5971	4*	1.61510593	0.3C	0.8C25
DENSITY	1	0.C7EC3645	0.14	0.7157	1*	0.07E0C3E7	0.14	0.7161
YEAR*DENSITY	1	0.21E8E561	0.37	0.5474	1*	0.21E8E5E1	0.37	0.5474
PCAT*DENSITY	4	0.39338665	0.17	0.9515	4*	0.32955613	0.14	0.9645
YEAR*PCAT*DENSITY	3	0.13695728	0.CE	0.67C8	3	0.13695728	0.CE	0.67CE

APPENDIX S

Physical Data for Hoop Net Sites

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
5/23/83	ST. CLAIR	STAG	1	3.0	SILT & CLAY	SET	8.8	1.2	3500	497412
						LIFT	8.2	1.0	4699	309041
			2	5.0	SAND	SET	8.8	0.7	5500	497403
						LIFT	8.0	0.9	3600	309035
			3	3.0	SAND	SET	8.9	1.9	4800	497423
						LIFT	9.1	0.4	4500	309068
			4	3.0	SAND	SET	8.9	1.8	4500	497428
						LIFT	8.8	1.1	4300	309075
		FAWN	1	3.0	SAND	SET	8.4	1.5	699	498270
						LIFT	8.8	1.4	100	309581
			2	3.0	SAND	SET	8.4	1.2	199	498272
						LIFT	8.9	0.6	199	309592
			3	4.0	SAND	SET	8.7	1.1	399	498284
						LIFT	9.0	0.5	250	309620
			4	3.8	SAND	SET	8.7	1.2	450	498285
						LIFT	8.9	0.5	150	309620
		RUSSELL	1	4.0	SILT & CLAY	SET	8.4	1.6	350	498666
						LIFT	8.8	1.2	150	309975
			2	4.0	SAND	SET	8.4	1.5	300	498665
						LIFT	8.9	0.7	150	309974
			3	3.0	SAND	SET	8.2	0.5	550	498666
						LIFT	8.9	0.8	230	309958
			4	4.0	SILT & CLAY	SET	8.2	1.4	530	498666
						LIFT	8.9	0.7	250	309955
	DETROIT	BELLE	1	6.0	RUBBLE	SET	11.3	1.2	430	499954
						LIFT	11.0	0.8	1999	312761
			2	3.0	RUBBLE	SET	11.5	1.1	439	499955
						LIFT	11.0	0.8	3000	312760
			3	5.0	SILT & CLAY	SET	12.5	0.2	610	499995
						LIFT	10.8	0.0	3000	312841
			4	5.0	SILT & CLAY	SET	12.3	0.2	630	499994
						LIFT	10.9	0.0	3000	312840
		HENNEPIN	1	6.0	SAND	SET	11.4	0.6	4500	500701
						LIFT	11.6	0.5	3000	314073
			2	6.0	SAND	SET	11.3	0.6	4500	500701
						LIFT	11.6	0.5	3000	314076
			3	6.0	SILT & CLAY	SET	11.8	0.4	1500	500710
						LIFT	11.5	0.4	3500	314081
			4	6.0	SILT & CLAY	SET	11.8	0.5	1500	500710
						LIFT	11.5	0.4	3500	314081

5/23/83	DETROIT	STONY	1	4.0	SILT & CLAY	SET	11.8	0.2	1000	500991
						LIFT	11.7	0.5	3500	314230
			2	4.0	SILT & CLAY	SET	11.9	0.3	1999	500987
						LIFT	11.7	0.5	3500	314227
			3	5.0	RUBBLE	SET	12.0	1.6	1000	501003
						LIFT	12.0	1.6	4500	314253
			4	3.0	RUBBLE	SET	12.0	1.5	1000	501004
						LIFT	12.0	1.6	4500	314252

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
6/20/83	ST. CLAIR	STAG	1	4.5	SAND	SET	14.7	2.1	4000	497398
						LIFT	15.0	2.4	1999	309033
			2	5.0	SAND	SET	14.9	2.0	3999	497401
						LIFT	15.0	2.0	1999	309034
			3	4.0	SAND	SET	15.0	0.5	4500	497414
						LIFT	15.0	0.3	2500	309049
			4	4.5	SAND	SET	14.9	0.8	4000	497413
						LIFT	15.0	0.4	2199	309048
		FAWN	1	3.0	SAND	SET	15.2	1.1	3999	498269
						LIFT	15.5	0.9	3500	309563
			2	3.0	SAND	SET	15.2	1.2	3999	498269
						LIFT	15.3	1.0	3600	309586
			3	4.0	SAND	SET	15.6	1.3	3500	498288
						LIFT	15.3	1.1	3800	309623
			4	4.5	SAND	SET	15.5	1.2	3500	498286
						LIFT	15.3	1.2	4000	309622
		RUSSELL	1	5.0	SAND	SET	15.5	1.2	4500	498668
						LIFT	16.0	1.2	1999	309951
			2	5.0	SAND	SET	15.3	1.2	4300	498666
						LIFT	16.1	1.3	1999	309951
			3	4.0	SAND	SET	16.0	1.7	4399	498667
						LIFT	16.0	1.8	1699	309968
			4	4.5	SAND	SET	16.1	1.5	4300	498667
						LIFT	16.0	1.8	1800	309971
	DETROIT	BELLE	1	3.0	RUBBLE	SET	21.0	0.1	1500	499981
						LIFT	21.0	0.5	450	312804
			2	3.0	RUBBLE	SET	21.0	0.1	1399	499982
						LIFT	21.0	0.5	450	312804
			3	5.0	SILT & CLAY	SET	22.0	0.0	1500	499993
						LIFT	20.7	0.1	160	312847
			4	4.0	SILT & CLAY	SET	20.7	0.0	1399	499993
						LIFT	20.7	0.1	160	312847
		HENNEPIN	1	3.0	SAND	SET	20.0	0.3	3999	500689
						LIFT	20.9	0.3	1999	314069
			2	3.0	SILT & CLAY	SET	20.0	0.3	3999	500693
						LIFT	20.9	0.4	2500	314069
			3	3.0	SILT & CLAY	SET	20.5	0.2	4500	500713
						LIFT	20.8	0.3	1300	314086
			4	3.0	SILT & CLAY	SET	20.5	0.2	4500	500716
						LIFT	20.8	0.2	1199	314088

6/20/83	DETROIT	STONY	1	3.0	RUBBLE	SET	20.1	0.7	4600	500988
						LIFT	21.0	0.6	1800	314229
			2	4.0	RUBBLE	SET	20.1	0.7	4600	500990
						LIFT	21.0	0.7	1500	314231
			3	5.0	RUBBLE	SET	21.0	1.3	4199	500997
						LIFT	21.0	1.2	1999	314241
			4	6.0	RUBBLE	SET	21.0	1.4	4199	500999
						LIFT	21.0	1.5	1999	314247

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
7/25/83	ST. CLAIR	STAG	1	4.5	SAND	SET	20.0	1.7	3500	497394
						LIFT	19.8	2.2	2699	309026
			2	4.2	SAND	SET	20.0	1.7	3500	497390
						LIFT	19.8	2.1	2899	309036
			3	4.0	SAND	SET	20.0	1.5	3800	497388
						LIFT	19.8	1.9	2800	309028
			4	4.0	SAND	SET	20.0	1.5	3600	497399
						LIFT	19.8	2.0	2699	309034
		FAWN	1	3.0	RUBBLE	SET	20.5	0.6	4000	498268
						LIFT	20.0	0.6	3899	309585
			2	3.1	RUBBLE	SET	20.5	0.6	3800	498267
						LIFT	20.0	0.6	3899	309583
			3	3.5	RUBBLE	SET	20.5	0.7	3600	498270
						LIFT	20.5	0.7	4000	309592
			4	3.0	SILT & CLAY	SET	20.5	0.6	3500	498273
						LIFT	20.5	0.7	3899	309594
		RUSSELL	1	4.6	SAND	SET	20.5	1.3	2899	498862
						LIFT	20.2	1.0	3899	310162
			2	4.7	SAND	SET	20.5	1.4	2899	498665
						LIFT	20.2	1.0	3899	310068
			3	5.1	SILT & CLAY	SET	20.5	1.5	2699	498664
						LIFT	20.0	1.1	4000	309964
			4	5.4	SILT & CLAY	SET	20.5	1.4	2600	498664
						LIFT	20.0	1.1	4000	309965
	DETROIT	BELLE	1	4.0	SILT & CLAY	SET	20.5	0.3	2500	499968
						LIFT	20.0	0.2	4000	312783
			2	4.0	SILT & CLAY	SET	20.5	0.3	2500	499970
						LIFT	20.0	0.2	4000	312784
			3	4.0	SILT & CLAY	SET	20.5	0.2	3300	499993
						LIFT	21.0	0.4	4000	312839
			4	4.0	SILT & CLAY	SET	20.5	0.2	3300	499994
						LIFT	21.0	0.4	4000	312842
		HENNEPIN	1	6.0	SILT & CLAY	SET	23.5	0.2	2899	500681
						LIFT	24.0	0.2	350	314067
			2	6.0	SILT & CLAY	SET	23.5	0.2	2800	500678
						LIFT	24.0	0.2	350	414066
			3	5.2	SILT & CLAY	SET	23.5	0.3	3300	500714
						LIFT	24.0	0.1	350	314080
			4	3.7	SILT & CLAY	SET	23.5	0.3	3600	500711
						LIFT	24.0	0.1	350	314086

7/25/83	DETROIT	STONY	1	3.6	RUBBLE	SET	24.0	2.1	4600	500984
						LIFT	24.0	1.7	550	314234
			2	6.0	RUBBLE	SET	24.0	2.0	4600	500988
						LIFT	24.0	1.5	550	314231
			3	5.4	RUBBLE	SET	24.0	1.1	4399	500997
						LIFT	24.0	1.2	600	314249
			4	4.7	RUBBLE	SET	24.0	1.2	4300	501000
						LIFT	24.0	1.2	600	314251

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
9/ 6/83	ST. CLAIR	STAG	1	4.7	SAND	SET	22.1	1.5	2500	497394
						LIFT	21.7	1.9	1800	309025
			2	4.9	SAND	SET	22.1	1.6	2500	497391
						LIFT	21.7	1.8	1800	309036
			3	4.5	SAND	SET	22.6	0.6	3699	497386
						LIFT	21.6	0.3	1899	309027
			4	4.0	SAND	SET	22.6	0.5	3699	497400
						LIFT	21.7	0.3	2000	309033
		FAWN	1	3.2	SILT & CLAY	SET	22.9	0.7	3500	498271
						LIFT	22.2	0.3	3399	309593
			2	3.2	SILT & CLAY	SET	22.9	0.7	3500	498271
						LIFT	22.3	0.3	3399	309593
			3	3.1	SILT & CLAY	SET	23.3	0.6	4399	498279
						LIFT	22.4	0.9	3800	309612
			4	3.4	SILT & CLAY	SET	23.3	0.6	4399	498679
						LIFT	22.4	1.0	3899	309612
		RUSSELL	1	4.2	SAND	SET	22.2	0.3	1899	498662
						LIFT	22.1	0.8	3999	309964
			2	5.1	SAND	SET	22.2	0.3	1899	498666
						LIFT	22.1	0.7	3899	309961
			3	3.8	SILT & CLAY	SET	22.3	0.7	1899	498661
						LIFT	22.4	0.4	4500	309970
			4	3.1	SILT & CLAY	SET	22.3	0.7	1899	498658
						LIFT	22.4	0.5	4500	309974
	DETROIT	BELLE	1	4.6	RUBBLE	SET	22.9	0.5	2500	499968
						LIFT	22.8	0.2	2500	312782
			2	5.2	RUBBLE	SET	22.9	0.5	2500	499971
						LIFT	22.8	0.2	2500	312784
			3	3.6	SILT & CLAY	SET	23.1	0.4	3899	499991
						LIFT	23.0	0.2	2500	312839
			4	3.9	SILT & CLAY	SET	23.1	0.4	3899	499993
						LIFT	23.0	0.3	2500	312840
		HENNEPIN	1	5.0	SILT & CLAY	SET	23.6	0.5	3000	500695
						LIFT	23.4	0.7	3800	314084
			2	5.2	SILT & CLAY	SET	23.6	0.5	3000	500698
						LIFT	23.4	0.7	3800	314086
			3	4.1	SILT & CLAY	SET	23.6	0.2	3800	500713
						LIFT	23.1	0.3	3600	314081
			4	3.8	SILT & CLAY	SET	23.6	0.2	3300	500710
						LIFT	23.2	0.3	3600	314087

9/ 6/83	DETROIT	STONY	1	4.8	RUBBLE	SET	23.6	1.5	3399	500984
						LIFT	23.8	1.5	3300	314235
			2	5.6	RUBBLE	SET	23.6	1.6	3399	500987
						LIFT	23.8	1.5	3300	314232
			3	3.9	RUBBLE	SET	23.7	0.7	4000	500996
						LIFT	23.9	0.7	2500	314249
			4	4.1	RUBBLE	SET	23.7	0.7	4000	501000
						LIFT	23.9	0.7	2500	314250

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
10/ 4/83	ST. CLAIR	STAG	1	5.1	SAND	SET	18.0	1.8	589	497399
						LIFT	18.0	1.4	48	309034
			2	3.8	SAND	SET	18.0	1.7	589	497386
						LIFT	18.0	1.4	48	309027
			3	4.2	SAND	SET	18.0	0.2	330	497400
						LIFT	18.0	0.1	58	309033
			4	4.0	SAND	SET	18.0	0.2	330	497413
						LIFT	18.0	0.1	58	309048
		FAWN	1	5.5	SILT & CLAY	SET	18.5	0.4	680	498267
						LIFT	18.0	0.7	739	309589
			2	5.0	SILT & CLAY	SET	18.5	0.5	680	498269
						LIFT	18.0	0.7	739	309590
			3	3.1	SILT & CLAY	SET	18.5	0.7	230	498288
						LIFT	18.0	0.6	769	309623
			4	3.4	SILT & CLAY	SET	18.5	0.7	230	498286
						LIFT	18.0	0.6	769	309622
		RUSSELL	1	4.6	SILT & CLAY	SET	18.5	0.4	460	499981
						LIFT	18.0	0.3	539	312804
			2	4.3	SILT & CLAY	SET	18.5	0.5	460	498981
						LIFT	18.0	0.3	539	312806
			3	3.5	SAND	SET	18.5	1.2	530	498666
						LIFT	18.0	0.7	719	309965
			4	3.3	SAND	SET	18.5	1.2	530	498664
						LIFT	18.0	0.7	730	309964
	DETROIT	BELLE	1	5.5	RUBBLE	SET	18.5	1.0	2300	499968
						LIFT	18.0	0.4	500	312782
			2	5.5	RUBBLE	SET	18.5	1.0	2300	499971
						LIFT	18.0	0.4	500	312784
			3	4.0	SILT & CLAY	SET	18.0	0.2	2399	499991
						LIFT	18.5	0.6	450	312839
			4	4.0	SILT & CLAY	SET	18.0	0.2	2399	499993
						LIFT	18.5	0.6	450	312840
		HENNEPIN	1	5.0	SILT & CLAY	SET	18.0	0.4	130	500676
						LIFT	18.0	0.3	3000	814066
			2	5.0	SILT & CLAY	SET	18.0	0.4	130	500678
						LIFT	18.0	0.3	3000	814066
			3	5.0	SILT & CLAY	SET	18.0	0.4	350	500710
						LIFT	18.0	0.5	2800	814079
			4	5.0	SILT & CLAY	SET	18.0	0.4	350	500710
						LIFT	18.0	0.5	2800	814081

10/ 4/83	DETROIT	STONY	1	3.6	SILT & CLAY	SET	19.0	0.4	319	500987
						LIFT	18.0	0.3	3500	314232
			2	3.3	SILT & CLAY	SET	19.0	0.4	319	500991
						LIFT	18.0	0.3	3500	314230
			3	5.1	RUBBLE	SET	19.0	1.5	189	500996
						LIFT	18.0	1.6	400	314249
			4	4.6	RUBBLE	SET	19.0	1.5	189	500996
						LIFT	18.0	1.6	400	314249

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
5/21/84	ST. CLAIR	STAG	1	5.0	SAND	SET	9.0	1.9	4000	0
						LIFT	9.0	1.4	1399	0
			2	5.0	SAND	SET	9.0	1.9	4000	0
						LIFT	9.0	1.4	1399	0
			3	5.5	SAND	SET	9.0	0.5	4000	0
						LIFT	9.5	0.4	650	0
			4	5.5	SAND	SET	9.0	0.5	4000	0
						LIFT	9.5	0.4	650	0
		FAWN	1	4.0	SAND	SET	9.0	1.7	4000	0
						LIFT	9.5	0.7	2800	0
			2	4.0	SAND	SET	9.0	1.7	4000	0
						LIFT	9.5	0.7	2800	0
			3	3.0	SAND	SET	9.5	1.2	4000	0
						LIFT	10.0	0.4	1800	0
			4	3.0	SAND	SET	9.5	1.2	4000	0
						LIFT	10.0	0.4	1800	0
		RUSSELL	1	4.0	SAND	SET	9.5	1.9	4899	0
						LIFT	10.0	1.5	3399	0
			2	4.0	SAND	SET	9.5	1.9	4899	0
						LIFT	10.0	1.5	3399	0
			3	6.0	SAND	SET	9.5	1.8	1000	0
						LIFT	10.0	1.8	3399	0
			4	6.0	SAND	SET	9.5	1.8	1000	0
						LIFT	10.0	1.8	3399	0
	DETROIT	BELLE	1	4.0	SILT & CLAY	SET	12.0	0.0	2600	0
						LIFT	12.0	0.4	3300	0
			2	4.0	SILT & CLAY	SET	12.0	0.0	2600	0
						LIFT	12.0	0.4	3300	0
			3	6.0	RUBBLE	SET	11.5	1.1	2800	0
						LIFT	12.0	0.2	3800	0
			4	6.0	RUBBLE	SET	11.5	1.1	2800	0
						LIFT	12.0	0.2	3800	0
		HENNEPIN	1	5.0	RUBBLE	SET	12.0	0.7	3800	0
						LIFT	12.5	0.5	2600	0
			2	5.0	RUBBLE	SET	12.0	0.7	3800	0
						LIFT	12.5	0.5	2600	0
			3	5.0	SILT & CLAY	SET	12.5	0.6	4000	0
						LIFT	12.5	0.8	2800	0
			4	5.0	SILT & CLAY	SET	12.5	0.6	4000	0
						LIFT	12.5	0.8	2800	0

5/21/84	DETROIT	STONY	1	6.0	RUBBLE	SET	12.5	1.7	4000	0
						LIFT	12.0	1.9	4000	0
			2	6.0	RUBBLE	SET	12.5	1.7	4000	0
						LIFT	12.0	1.9	4000	0
			3	4.0	SILT & CLAY	SET	12.5	1.5	4000	0
						LIFT	12.5	2.1	4000	0
			4	4.0	SILT & CLAY	SET	12.5	1.5	4000	0
						LIFT	12.5	2.1	4000	0

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
6/12/84	ST. CLAIR	STAG	1	4.0	SAND	SET	11.5	1.9	3000	0
						LIFT	11.0	1.1	1800	0
			2	4.0	SAND	SET	11.5	1.9	3000	0
						LIFT	11.0	1.1	1800	0
			3	4.0	SAND	SET	12.0	0.4	3399	0
						LIFT	11.0	0.0	1399	0
			4	4.0	SAND	SET	12.0	0.4	3399	0
						LIFT	11.0	0.0	1399	0
		FAWN	1	3.0	SAND	SET	12.0	1.6	4500	0
						LIFT	11.5	1.4	4000	0
			2	3.0	SAND	SET	12.0	1.6	4500	0
						LIFT	11.5	1.4	4000	0
			3	3.0	SAND	SET	12.0	1.1	4500	0
						LIFT	11.5	1.1	3199	0
			4	3.0	SAND	SET	12.0	1.1	4500	0
						LIFT	11.5	1.1	3199	0
		RUSSELL	1	4.0	SAND	SET	12.0	1.5	3600	0
						LIFT	12.0	2.1	4500	0
			2	4.0	SAND	SET	12.0	1.5	3600	0
						LIFT	12.0	2.1	4500	0
			3	3.0	SAND	SET	12.0	1.7	3600	0
						LIFT	12.0	1.8	4000	0
			4	3.0	SAND	SET	12.0	1.7	3600	0
						LIFT	12.0	1.8	4000	0
	DETROIT	BELLE	1	5.0	RUBBLE	SET	18.0	0.3	1000	499968
						LIFT	17.9	0.3	1899	312778
			2	5.0	RUBBLE	SET	18.0	0.3	1000	0
						LIFT	17.9	0.3	1899	0
			3	4.0	SILT & CLAY	SET	18.0	0.3	4399	499992
						LIFT	17.9	0.2	1000	312838
			4	4.0	SILT & CLAY	SET	18.0	0.3	4399	0
						LIFT	17.9	0.2	1000	0
		HENNEPIN	1	5.5	SILT & CLAY	SET	18.8	0.3	4000	0
						LIFT	19.5	0.2	3699	0
			2	5.4	SILT & CLAY	SET	18.8	0.3	4000	0
						LIFT	19.5	0.2	3699	0
			3	5.8	SILT & CLAY	SET	18.9	0.5	4100	0
						LIFT	19.5	0.6	4000	0
			4	5.7	SILT & CLAY	SET	18.9	0.5	4100	0
						LIFT	19.5	0.6	4000	0

6/12/84	DETROIT	STONY	1	4.5	RUBBLE	SET	18.5	1.5	4300	0
						LIFT	19.0	1.5	2899	0
			2	4.8	RUBBLE	SET	18.5	1.5	4300	0
						LIFT	19.0	1.5	2899	0
			3	5.0	RUBBLE	SET	18.8	2.4	3199	0
						LIFT	19.0	2.8	3399	0
			4	5.0	RUBBLE	SET	18.8	2.4	3199	0
						LIFT	19.0	2.8	3399	0

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
7/23/84	ST. CLAIR	STAG	1	4.0	SAND	SET	19.0	2.3	910	0
						LIFT	18.8	2.3	380	0
			2	3.0	SAND	SET	19.0	2.3	910	0
						LIFT	18.8	2.3	380	0
			3	3.0	SAND	SET	19.2	0.3	2699	0
						LIFT	19.7	0.1	619	0
			4	4.0	SAND	SET	19.2	0.3	2699	0
						LIFT	19.7	0.1	619	0
		FAWN	1	3.0	SAND	SET	19.7	0.6	3000	0
						LIFT	20.0	0.6	839	0
			2	3.0	SAND	SET	19.7	0.6	3000	0
						LIFT	20.0	0.6	839	0
			3	4.0	SAND	SET	19.7	1.1	4000	0
						LIFT	20.0	1.1	1000	0
			4	4.0	SAND	SET	19.7	1.1	4000	0
						LIFT	20.0	1.1	1000	0
		RUSSELL	1	4.0	SAND	SET	20.0	0.4	4300	0
						LIFT	20.0	0.6	5100	0
			2	4.0	SAND	SET	20.0	0.4	4300	0
						LIFT	20.0	0.6	5100	0
			3	5.0	SAND	SET	20.0	1.1	4300	0
						LIFT	20.0	0.9	5100	0
			4	4.0	SAND	SET	20.0	1.1	4300	0
						LIFT	20.0	0.9	5100	0
	DETROIT	BELLE	1	5.0	SILT & CLAY	SET	20.0	0.2	4699	0
						LIFT	25.0	0.2	4500	0
			2	5.0	SILT & CLAY	SET	20.0	0.2	4699	0
						LIFT	25.0	0.2	4500	0
			3	6.0	RUBBLE	SET	20.0	0.5	5000	0
						LIFT	24.2	0.3	2699	0
			4	6.0	RUBBLE	SET	20.0	0.5	5000	0
						LIFT	24.2	0.3	2699	0
		HENNEPIN	1	5.0	SILT & CLAY	SET	20.0	0.1	3000	0
						LIFT	25.0	0.0	3500	0
			2	5.0	SILT & CLAY	SET	20.0	0.1	3000	0
						LIFT	25.0	0.0	3500	0
			3	5.0	SILT & CLAY	SET	20.0	0.1	3899	0
						LIFT	25.0	0.1	3300	0
			4	5.0	SILT & CLAY	SET	20.0	0.1	3899	0
						LIFT	25.0	0.1	3300	0

7/23/84	DETROIT	STONY	1	5.0	RUBBLE	SET	20.0	1.6	4500	0
						LIFT	24.0	1.9	3800	0
			2	5.0	RUBBLE	SET	20.0	1.6	4500	0
						LIFT	24.0	1.9	3800	0
			3	4.0	RUBBLE	SET	20.0	2.2	4800	0
						LIFT	24.0	2.2	4399	0
			4	4.0	RUBBLE	SET	20.0	2.2	4800	0
						LIFT	24.0	2.2	4399	0

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
9/ 4/84	ST. CLAIR	STAG	1	3.0	SAND	SET	22.0	1.7	3699	0
						LIFT	22.0	2.1	2500	0
			2	3.0	SAND	SET	22.0	1.7	3699	0
						LIFT	22.0	2.1	2500	0
			3	3.0	SAND	SET	22.0	0.5	8600	0
						LIFT	21.0	0.8	3600	0
			4	3.0	SAND	SET	22.0	0.5	8600	0
						LIFT	21.0	0.8	3600	0
		FAWN	1	3.0	SILT & CLAY	SET	22.0	0.7	2500	0
						LIFT	22.0	0.9	1300	0
			2	3.0	SILT & CLAY	SET	22.0	0.7	2500	0
						LIFT	22.0	0.9	1300	0
			3	3.0	SAND	SET	22.0	0.7	4000	0
						LIFT	22.0	0.9	4500	0
			4	3.0	SAND	SET	22.0	0.7	4000	0
						LIFT	22.0	0.9	4500	0
		RUSSELL	1	3.0	SILT & CLAY	SET	22.0	0.7	3399	0
						LIFT	22.0	0.5	1600	0
			2	4.0	SILT & CLAY	SET	22.0	0.7	3399	0
						LIFT	22.0	0.5	1600	0
			3	3.0	SILT & CLAY	SET	22.0	0.9	3199	0
						LIFT	22.0	0.1	1300	0
			4	3.0	SILT & CLAY	SET	22.0	0.9	3199	0
						LIFT	22.0	0.1	1300	0
	DETROIT	BELLE	1	6.0	RUBBLE	SET	21.0	0.1	700	0
						LIFT	21.0	0.2	4300	0
			2	6.0	RUBBLE	SET	21.0	0.1	700	0
						LIFT	21.0	0.2	4300	0
			3	5.0	SILT & CLAY	SET	21.0	0.0	1899	0
						LIFT	21.0	0.2	3699	0
			4	5.0	SILT & CLAY	SET	21.0	0.0	1899	0
						LIFT	21.0	0.2	3699	0
		HENNEPIN	1	6.0	SILT & CLAY	SET	21.0	0.6	500	0
						LIFT	21.0	0.3	569	0
			2	6.0	SILT & CLAY	SET	21.0	0.6	500	0
						LIFT	21.0	0.3	569	0
			3	6.0	SILT & CLAY	SET	21.0	0.2	130	0
						LIFT	21.0	0.2	460	0
			4	6.0	SILT & CLAY	SET	21.0	0.2	130	0
						LIFT	21.0	0.2	460	0

9/ 4/84	DETROIT	STONY	1	6.0	RUBBLE	SET	21.0	0.8	610	0
						LIFT	21.0	1.7	130	0
			2	6.0	RUBBLE	SET	21.0	0.8	610	0
						LIFT	21.0	1.7	130	0
			3	6.0	RUBBLE	SET	21.0	0.9	450	0
						LIFT	21.0	1.0	150	0
			4	6.0	RUBBLE	SET	21.0	0.9	450	0
						LIFT	21.0	1.0	150	0

APPENDIX
HOOPNET STATION PHYSICAL DA TA

DATE	RIVER	LOCATION	STA. NO.	DEPTH (FT.)	BOTTOM TYPE	NET	TEMP. (C.)	WATER VEL. (FT./SEC)	LIGHT (FT.-CANDLES)	LORAN COORD. (UPPER/ LOWER)
10/ 2/84	ST. CLAIR	STAG	1	4.0	SAND	SET	14.0	1.6	2600	0
						LIFT	14.0	1.0	1199	0
			2	3.0	SAND	SET	14.0	1.6	2600	0
						LIFT	14.0	1.0	1199	0
			3	6.0	SILT & CLAY	SET	15.0	0.3	4199	0
						LIFT	14.0	0.3	1199	0
			4	5.0	SILT & CLAY	SET	15.0	0.3	4199	0
						LIFT	14.0	0.3	1199	0
		FAWN	1	5.0	SAND	SET	15.0	0.8	4699	0
						LIFT	14.0	0.5	3100	0
			2	4.0	SAND	SET	15.0	0.8	4699	0
						LIFT	14.0	0.5	3100	0
			3	4.0	SAND	SET	15.0	0.5	3500	0
						LIFT	14.0	0.5	3100	0
			4	4.0	SAND	SET	15.0	0.5	3500	0
						LIFT	14.0	0.5	3100	0
		RUSSELL	1	5.0	SILT & CLAY	SET	15.0	0.8	4399	0
						LIFT	14.0	0.4	3899	0
			2	5.0	SILT & CLAY	SET	15.0	0.8	4399	0
						LIFT	14.0	0.4	3899	0
			3	5.0	SILT & CLAY	SET	15.0	1.1	4199	0
						LIFT	14.0	1.1	3199	0
			4	5.0	SILT & CLAY	SET	15.0	1.1	4199	0
						LIFT	14.0	1.1	3199	0
	DETROIT	BELLE	1	5.0	RUBBLE	SET	14.0	0.8	3399	0
						LIFT	14.0	0.5	4500	0
			2	5.0	RUBBLE	SET	14.0	0.8	3399	0
						LIFT	14.0	0.5	4500	0
			3	3.0	SILT & CLAY	SET	14.0	0.2	2500	0
						LIFT	15.0	0.2	3199	0
			4	3.0	SILT & CLAY	SET	14.0	0.2	2500	0
						LIFT	15.0	0.2	3199	0
		HENNEPIN	1	5.0	SILT & CLAY	SET	13.0	0.1	1000	0
						LIFT	14.0	0.4	1899	0
			2	4.0	SILT & CLAY	SET	13.0	0.1	1000	0
						LIFT	14.0	0.4	1899	0
			3	3.0	SILT & CLAY	SET	14.0	0.2	1699	0
						LIFT	14.0	0.3	1899	0
			4	4.0	SILT & CLAY	SET	14.0	0.2	1699	0
						LIFT	14.0	0.3	1899	0

10/ 2/84	DETROIT	STONY	1	3.0	RUBBLE	SET	14.0	1.1	2699	0
						LIFT	13.0	1.1	1300	0
			2	4.0	RUBBLE	SET	14.0	1.1	2699	0
						LIFT	13.0	1.1	1300	0
			3	4.0	RUBBLE	SET	14.0	1.5	2600	0
						LIFT	13.0	2.2	1100	0
			4	5.0	RUBBLE	SET	14.0	1.5	2600	0
						LIFT	13.0	2.2	1100	0