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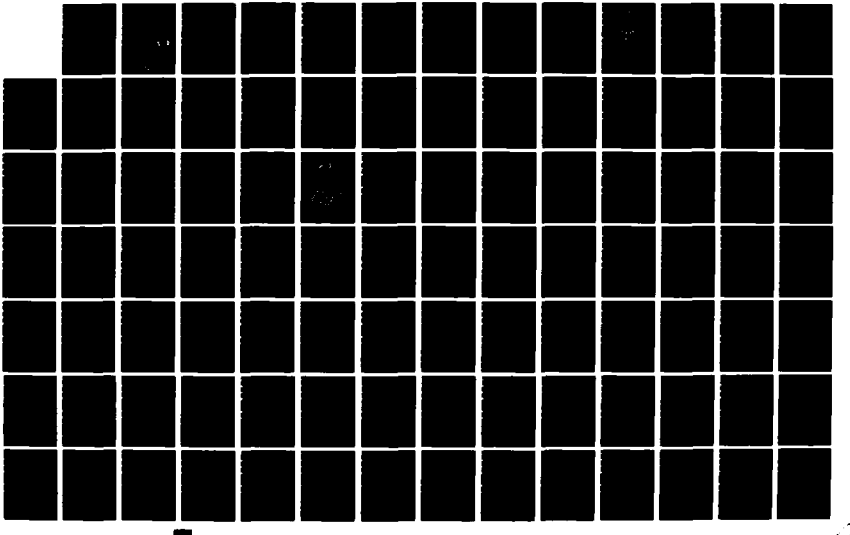

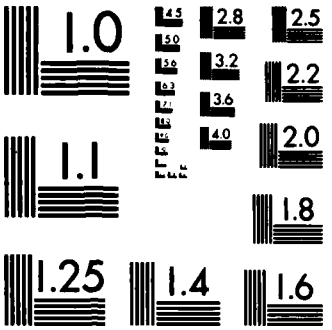

A PHASE I CULTURAL RESOURCES SURVEY OF THE NISSWA LAKES, A PART OF THE GULL LAKE RESERVOIR IN CASS AND CROW WING COUNTIES, MINNESOTA

(FINAL REPORT)

Submitted to:

United States Army Corps of Engineers
St. Paul District

by

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A cultural resources survey was made of the four, small, interconnected, and highly-developed reservoir lakes which form the northerly extension of the Gull Lake Reservoir in Cass and Crow Wing counties, Minnesota. These lake- Bass, Spider, Roy and Nisswa- are a part of the Gull River branch of the Upper Mississippi River.

Twenty-three previously unrecorded prehistoric sites were located, ranging from isolated "find spots" to multiple activity areas, and including one prehistoric mound group. Results and recommendations are presented.

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ABSTRACT

In 1982, Northland Archaeological Services (NAS) was contracted by the St. Paul District, Corps of Engineers, to conduct a cultural resource survey along the shorelines of four, small, interconnected, and highly-developed reservoir lakes in north-central Minnesota. These lakes--Bass, Spider, Roy, and Nisswa--form a northerly extension of the Gull Lake Reservoir in Cass and Crow Wing Counties and are a part of the Gull River branch of the Upper Mississippi Valley watershed.

Drawing upon literary sources, informant interviews, surface inspections, and shovel tests, NAS archaeologists in 1983-84 located 23 previously unrecorded prehistoric sites in the survey area. These sites range from isolated "find spots" to multiple activity areas exceeding 4000 square meters in size and include one prehistoric mound group. Site 21CA116, a transitional Middle to Late Woodland site complex reported by an earlier Corps survey at the outlet of Bass Lake, was revisited. A wide variety of modern historic features, such as road cuts, a logging railroad grade, trash dumps, and an old logging-era cook shanty, were also found.

This report describes the survey area, details the 1983-84 field work, discusses the survey results, and presents some final assessments and recommendations.

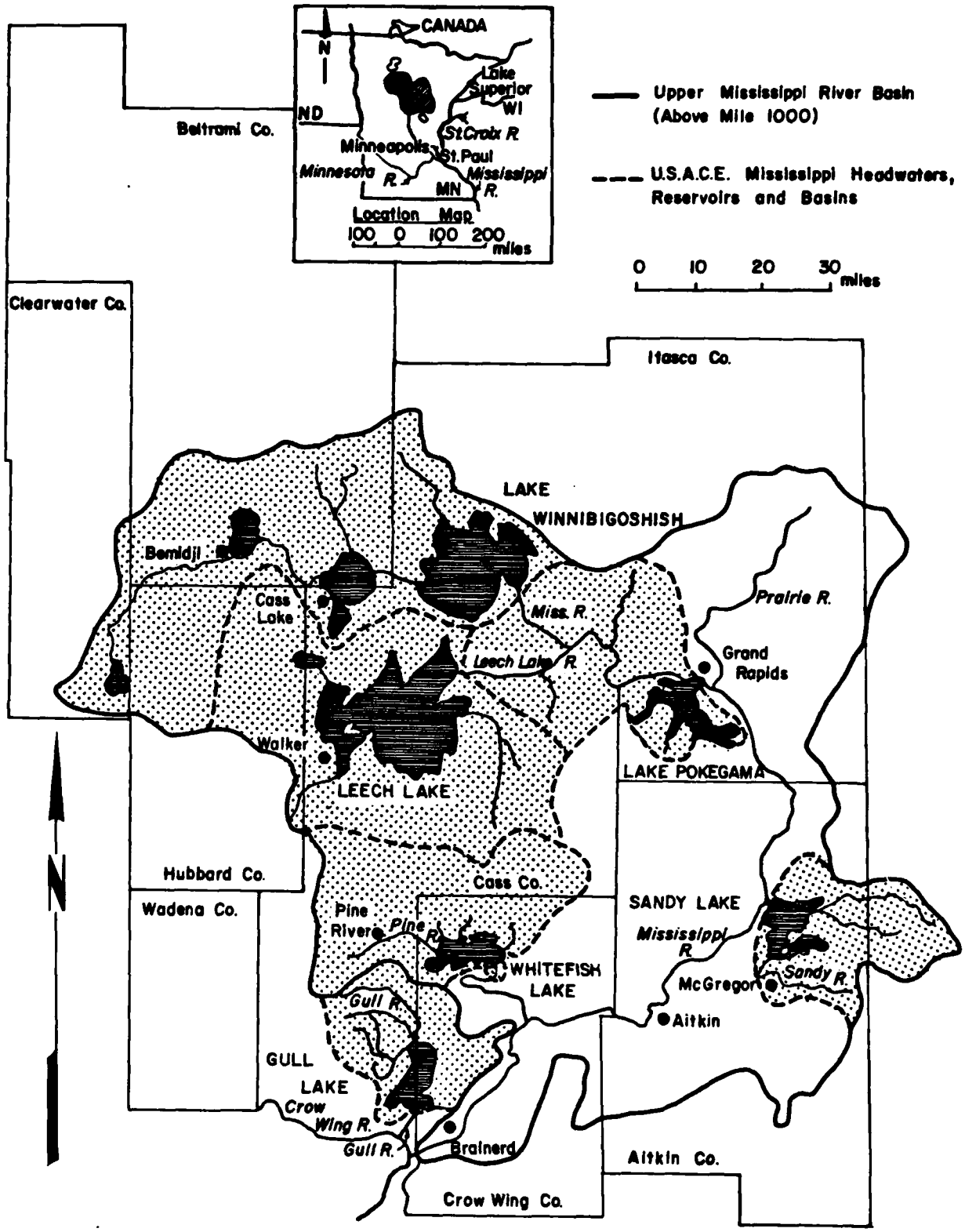

Figure 1. Upper Mississippi River Basin and Reservoirs (Johnson et al. 1979,I:9, Figure 1).

1. INTRODUCTION

Since 1913, the St. Paul District, Corps of Engineers (Corps), has operated and maintained six reservoir dams in the Mississippi Headwaters Region of north-central Minnesota. The Gull Lake Reservoir is the southern-most of these impoundments. It is part of the Gull River branch of the Mississippi watershed and lies northwest of the city of Brainerd in Cass and Crow Wing Counties (Fig. 1).

The headwaters reservoirs were initially intended to control the water flow and to improve downstream navigation. Increases and fluctuations in water level resulting from these impoundments, and from earlier logging dams often built at the same locations, have had an uneven impact on associated cultural, land, and water resources. In some cases, wild rice beds have been flooded, fish spawning areas altered, streams backed up, shorelines eroded, and archaeological sites inundated. In most cases, the Corps dams were built adjacent to significant prehistoric mound-habitation complexes.

In recent years, the Corps has been increasingly obligated by federal regulations to account for cultural resources in project areas under its control. To fulfill the federal requirements, the Corps must locate, inventory, protect, and preserve these resources. All structures, sites, and other features that have historical, architectural, archaeological, or cultural merit and that are located on lands adjacent to Corps reservoirs must be evaluated for potential eligibility for the National Register of Historic Places. The inventory-evaluation process insures that important cultural properties within the reservoir area will not be inadvertently altered or destroyed using public funds.

Previous Investigations

The concern of the Corps for archaeological sites on Gull Lake became evident in 1968-69 when they asked University of Minnesota archaeologists to excavate a prehistoric mound-habitation complex at the Gull Lake Dam (site 21CA37). Part of this site was on Corps property in an area being considered for development as a public campground. Interpretive and planning information furnished by the University prompted the Corps to protect the site and open it to controlled public visitation. The results of the field work, now published (Johnson 1971), have inspired or

guided much of the more recent Middle-to-Late Prehistoric archaeological research in central Minnesota.

Field investigations on Corps property at Gull Lake continued in 1974 when a University of Minnesota crew tested the Langer Site near the dam at the outlet of the lake and found a range of materials dating from the Late Archaic period (ca. 3000-800 B.C.) through the Late Prehistoric. The oldest artifacts, including Middle Woodland ceramics, were recovered from the upper terrace. The lower lakeside terrace produced only Late Prehistoric materials (Neumann 1975).

In 1978, the Corps contracted the University of Minnesota to do a broader study of cultural resources at Gull Lake. The specified study area included a 50-meter wide corridor around the shores of Gull and Upper Gull Lakes and was to extend to other lakes in the reservoir--namely Margaret, Bass, Spider, Roy, and Nisswa Lakes--if time and funds permitted. The contract called for a literature search and shoreline reconnaissance survey and also required the examination of an approximately 19-acre parcel of Corps property on the north shore of Nisswa lake. All survey work was to be of "sufficient intensity to determine the number and extent of cultural resources." Because of the University's simultaneous involvement with other surveys, the Gull Lake project was subcontracted to Hamline University in St. Paul (Johnson et al. 1979,I:2-5).

In 1979, the University of Minnesota presented the results of the Gull Lake survey as part of a three-volume report summarizing their work at several Corps reservoirs in the Mississippi Headwaters Region. In reporting the coverage of the pedestrian shoreline surveys, they stated:

> it is important to note that this reconnaissance survey differs from those frequently employed in federal lands cultural resources inventories. Our survey is a 100% shoreline survey of each reservoir and is not one of sampling to produce a predictive model. In these reservoirs, our surveys omitted only those shoreline areas where the raised water levels have produced extensive wet marshes (Johnson et al.1979,I:5).

The Gull Lake survey produced several interesting results, including the discovery or verification of 18 Middle and Late Prehistoric sites dating to the period 500 B.C.-A.D.1650. Nine (fifty percent) of the sites involved prehistoric burial mounds or human remains. Because time did not allow for the shoreline survey of Margaret, Spider,

Bass, Roy, and Nisswa Lakes, the report recommended that the Corps give future consideration of these surveys a high priority (Johnson et al. 1979,I:276).

Other recent archaeological work on the Gull Lake Reservoir includes excavations by University and Minnesota Department of Transportation archaeologists at the Ebert Site (21CA6) and the Hendrickson-Schlief Site on the extreme north end of Upper Gull Lake (Caine 1974; Anfinson 1983:52-56; 1985:62-74), projected county highway surveys on the south end of Lake Margaret (Anfinson 1981:67-70), Institute for Minnesota Archaeology and private contract surveys on the east side of the Upper Gull Lake narrows (Birk 1983; 1985a), and the discovery of prehistoric materials at a Department of Natural Resources boat access in the Deauville Straits near Bar Harbor (Leslie D. Peterson, personal communication). The results of this work, coupled with information from the 1978 survey and other central Minnesota locations, gives a fair idea of the chronology and material expressions of prehistoric cultures once present in the Gull Lake area.

The Nisswa Lakes Survey (1982-84)

In 1982, the Corps contracted with the consulting firm of Northland Archaeological Services (NAS) to conduct a Phase I cultural resource survey of the shorelines of Bass, Spider, Roy, and Nisswa Lakes. The Scope of Work for this contract is in Appendix A. The goals of this on-the-ground reconnaissance level survey were to:

1. Locate, define and evaluate cultural resources (including standing structures and historic and prehistoric archaeological sites that might relate to the history, architecture, archaeology or culture of the Gull Lake area).

2. Determine the number, size, condition, and, if possible (within the scope of performance obligations), the function and cultural affiliation of any archaeological properties.

3. Provide recommendations and cost estimates for future work on archaeological sites that may have potential for scientific study or public use development.

4. Address the possible eligibility of sites for the National Register.

An interim report, briefly detailing the work accomplished and the preliminary results of the field study,

was submitted to the Corps on January 25, 1985 (Birk 1985b). This final technical report fulfills the 1982 contract by providing information pertinent to the methods, analyses, results, and recommendations of the NAS Nisswa lakes Phase I survey.

The Principal Investigator for the NAS survey and author of this report was Douglas Birk, who began the field work in May and June, 1983. NAS subcontracted most of the 1984 survey season (June-September, 1984) to Michael Justin. Justin was responsible for surveying most of the more-developed shoreline areas, especially around Roy and Nisswa Lakes. Both Birk and Justin, who have had wide experience in conducting site surveys in Minnesota's northern lake-forest region (Appendix B), concluded the field survey in October, 1984. The survey was assisted in 1984 by the volunteer efforts of field apprentice Diana Mitchell.

The NAS survey was conducted along the shorelines of Bass, Spider, Roy, and Nisswa Lakes and their connecting thoroughfares. These "Nisswa lakes" form a natural northeasterly extension of the Gull-Upper Gull chain near the communities of Lakeshore and Nisswa in central Minnesota. The interconnected basins drain southward via the Gull River to join with the Crow Wing about 3 miles northwest of its confluence with the Mississippi.

The NAS survey covered all lands from the water's edge to 50 meters beyond the 1200-foot contour measured on a horizontal plane. The survey corridor thus measured about 14.3 miles long. Areas that were considered too disturbed, or that were otherwise deemed unlikely to contain cultural resources because of slope or other factors, were excluded.

The USGS topographic sheet for this region is the 7.5' Nisswa, Minnesota, quadrangle that was published in 1959 from aerial photographs taken in 1957. Because the Gull Lake area is one of the fastest growing recreational development locales in the state, the extent of lakeshore development shown on the 1959 Nisswa quad is significantly outdated. Whole tracts of lakeshore property that were undisturbed in the late 1950's are now groomed residential lots. Approximately 220 landowners control property on the shores of the Nisswa lakes. They range from multiple owners of single lots to individuals holding larger entitlements and from investors, weekenders, and resorters to farmers and marina operators. In contrast to earlier summer cabin construction, the trend now is to build year-round homes with large garages, boathouses, and landscaped yards.

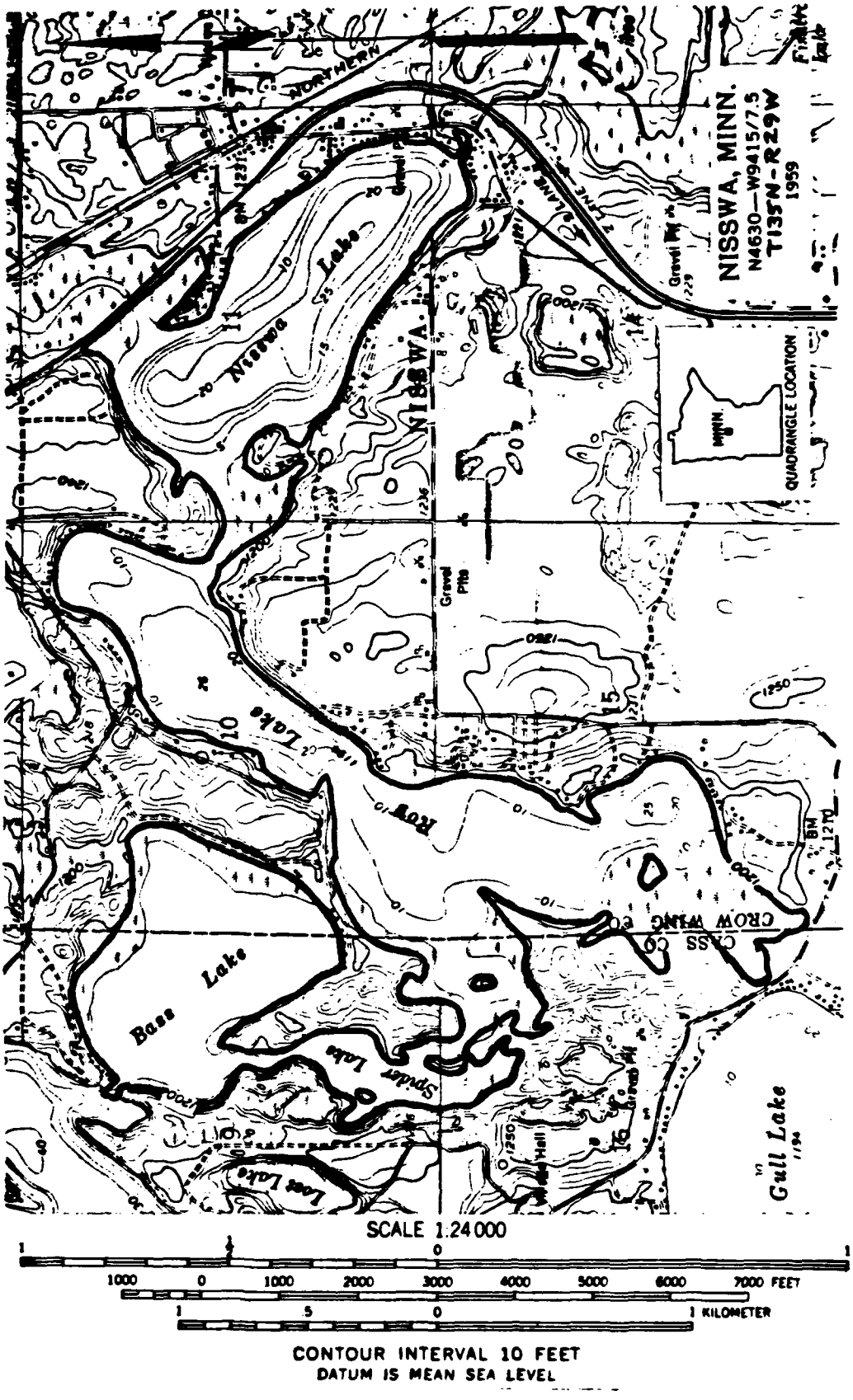

Figure 2. The Nisswa Lakes Survey Area (7.5' Nisswa, MN, USGS Quad).

Landscaping, bank grooming, and road construction often involve the use of fill materials and introduces the possibility of site contamination. Even areas with steep banks or marshy shorelines that were once considered undesirable are now being subdivided and developed.

Despite the flurry of recent survey activities on the Gull Lake Reservoir, very little archaeological work had actually been done on the Nisswa lakes prior to 1983. A boat access survey conducted by archaeologists from St. Cloud State University on the east shore of Spider Lake in 1982 proved negative (Quilty 1982). The 1978 University of Minnesota survey of a 19-acre parcel of Corps property on the north shore of Nisswa Lake revealed that the land was "entirely marshy and shows no evidence of the presence of cultural resources." (Johnson et al. 1979,I:35) The 1978 survey did locate 21CA116, a Middle to Late Woodland transition site on the grounds of the Point Narrows Resort on the point of land on the north side of the outlet of Bass Lake (Johnson et al. 1979,I:55). Theoretically, since the parameters of the 1978 survey included all lands within 50 meters of the water's edge, the 1978 reconnaissance along the northeast shore of Gull Lake should overlap with the corridor surveyed around Roy Lake by NAS archaeologists in 1984.

The NAS survey was preceded by an extensive literature search even though only a minimal records check was specifically required by the Corps contract. Archival sources revealed that the only prehistoric site previously reported in the survey area was 21CA116. The limited historical records were found to relate primarily to 19th century exploration, the old Crow Wing to Leech Lake road along the southeast end of Nisswa Lake, various pre-WWI lumbering activities and sites, the establishment of the city of Nisswa, and the beginnings of summer resorting and tourism. Other information on historic sites was obtained through personal interviews. All leads were checked during the field survey.

2. THE NATURAL ENVIRONMENT

The basic surface features of the Gull Lake Reservoir area are the products of glacial ice movements that occurred during the Wisconsin stage of glaciation ca. 60,000 to 12,000 years ago. The subsequent effects of climate, erosion, vegetation, and human intervention have altered the landscape into its present form. This chapter briefly describes the local environment and suggests various ways in which it has changed through time.

Physiography and Soils

Minnesota geologists divide the Wisconsin period of glaciation into several major episodes or phases. These phases, in turn, help explain recurring movements of glacial ice and the moraine and meltwater features shaped by these forces. This review is only concerned with a chronological consideration of those glacial events that played a part in the recent physical development of the Gull Lake Region. This discussion draws heavily on Wright (1972).

The first glacial phase of the Wisconsin glaciation is called the Hewitt Phase. During this early episode, about 30,000 to 60,000 years ago, a massive sheet of ice called the "Wadena lobe" crossed northern Minnesota from the area of Manitoba. The origin and direction of this ice movement is suggested by the character and contours of a broad field of hilly till deposits (drumlins) located in Todd and Wadena counties west of Gull Lake (Fig. 3-1). The linear orientation of the drumlins, which generally parallels the direction of the ice flow, radiates in a fan-like pattern from the northeast. Though parts of the Wadena drumlin field were obscured by later ice movements and outwash, much of this physiographic area has gone unglaciated for the past 30,000 to 40,000 years.

In the St. Croix Phase, about 20,000 years ago, the retreating Wadena lobe re-advanced from the north to form the expansive Itasca moraine-outwash complex in the area between Leech Lake and Itasca State Park. At the same time, the Brainerd and Pierz sublobes advanced from the northeast. The limits of the latter ice flows are marked by the western St. Croix moraine complex, which intersects with the Itasca moraine near Walker, Minnesota, and which extends as a belt of rugged terrain as far south as Albany in Stearns County.

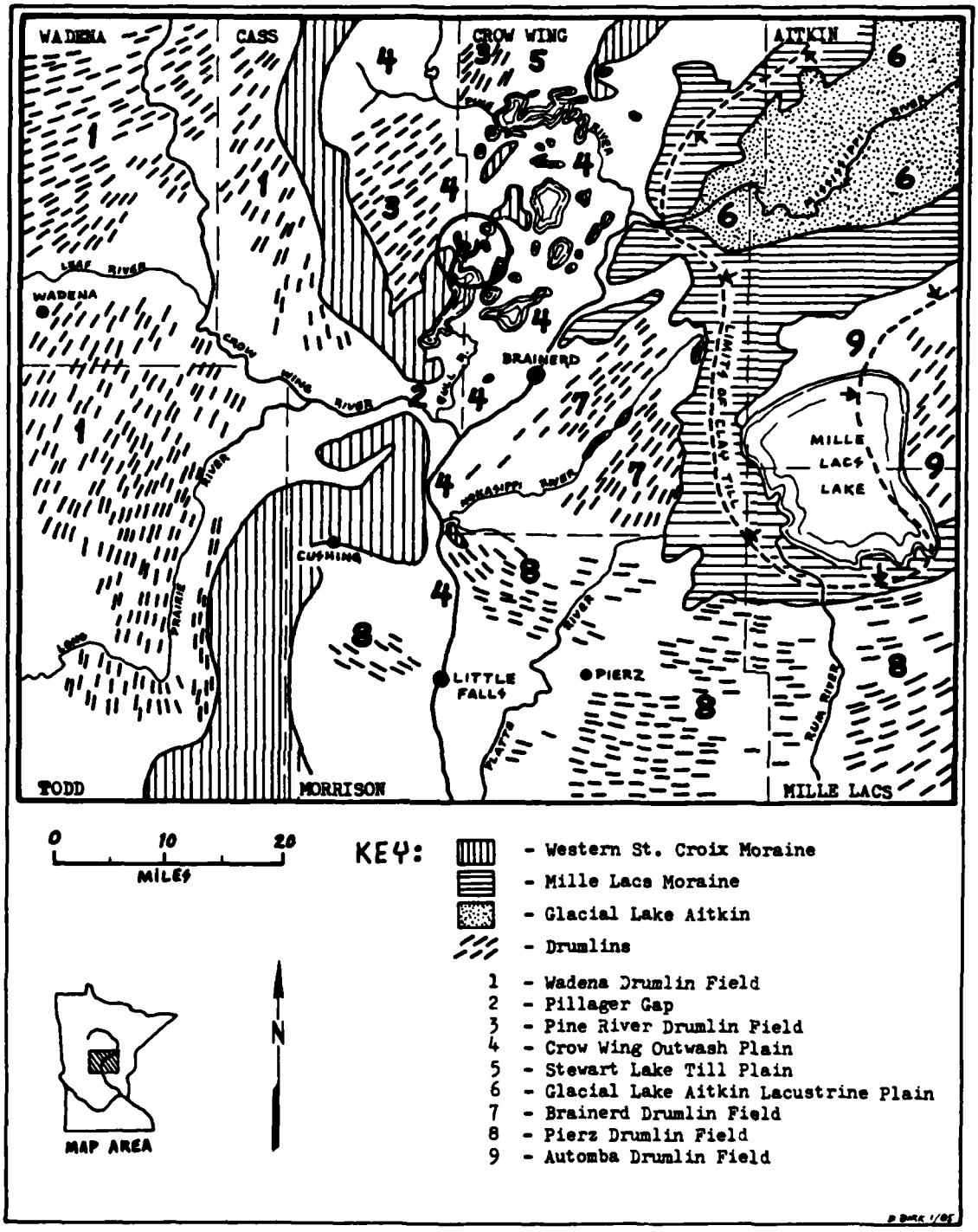

Figure 3. Selected Natural Features in the Gull Lake Region of Central Minnesota. The Nisswa lakes area is circled (Adapted from Birk 1979:8).

This imposing terminal moraine is interrupted only by the Pillager Gap (Fig. 3-2), an erosional valley that accommodates the Crow Wing River's southeasterly flow to the Mississippi River.

The direction of movement of the Brainerd and Pierz sublobes is known from the orientation of the drumlins left in their wakes. The Pierz sublobe first swept around through Mille Lacs and Morrison counties (Fig. 3-8) and pushed up the St. Croix moraine west of Little Falls. The Brainerd sublobe later entered from the northeast and formed the foothills that range from the Pillager Gap up the west side of Gull Lake to Walker. It advanced southward to the mouth of the Nokasippi River and left extensive drumlin fields southeast of Brainerd (Fig. 3-7). Other drumlins were formed north of Gull Lake on either side of the town of Pine River (Fig. 3-3).

Following the St. Croix Phase was an extended interval unfavorable to glaciation. The ice sheets became inactive and thinned, leaving behind countless blocks of dead ice. Many of these stagnant blocks were of sufficient size to survive through to the next glacial phase--the Automba Phase--which occurred about 17,000 years ago. During the Automba Phase, the Superior lobe of ice again advanced from the head of the Superior basin to push up an arcuate moraine on the west side of present-day Mille Lacs Lake (Fig. 3). The northern edge of this moraine sweeps to the northeast to join the Highland moraine along the North Shore of Lake Superior. The southern edge is represented only poorly in the area east of Mille Lacs. Meltwater from the Mille Lacs-Highland ice front was trapped along the northern flank of the Superior lobe to form glacial lakes Aitkin I and Upham I.

During the last glacial phase (the Alborn Phase) about 12,000 years ago, the St. Louis sublobe of ice moved out of northwestern Minnesota, skirted the Itasca and St. Croix moraine near Leech Lake, and ended in several smaller sublobes farther east and southeast. One sub-sublobe pushed down through northern Aitkin county and transported lake sediments from the basin of Glacial Lake Aitkin I (Fig.3-6) up onto the inner face of the Mille Lacs moraine. The resulting combination of Automba and Alborn phase till deposits form the morainic dam that borders Mille Lacs lake on the south and west.

A dominant feature of the St. Croix Phase glaciation is an area of 480,000 acres in Cass, Crow Wing, and Morrison Counties known as the Crow Wing Outwash Plain (Fig.3-4). This amorphic plain is mostly level, but in places ranges to

strongly rolling. A major portion of the plain extends from the Mississippi trench near Brainerd northward to Pine River and the Whitefish chain of lakes. Around Brainerd, the outwash is mostly sand. Northward in the vicinity of Pequot Lakes, it becomes more gravelly, and, in places, cobbly. A few till "islands" are found on the outwash flats. One of the most distinguishing characteristics of this plain is the great number of lakes: 115, each greater than 160 acres (Minnesota Soil Atlas 1969:27). These lakes result from the huge blocks of dead ice that were buried in the moraine and outwash of the Brainerd sublobe. As the ice melted, it formed basins in the plain that filled with water to become lakes. Post-glacial winds and water fluctuations further sculpted the shorelines by carving away points of land or exposing steep sandy banks. Longshore currents built up sand spits and bars to form narrows, close off small projecting bays, or otherwise smooth the edges of the shorelines. Gull Lake and its connecting basins are classic examples of ice block lakes (Schwartz and Thiel 1954:170).

Gull and Upper Gull lakes are nestled between the rugged St. Croix moraine complex on the west and the more hospitable Crow Wing Outwash Plain on the east. Much of the area immediately west of the Gull Lake chain is dominated by a hilly landscape dotted with poorly drained swamps and ponds. One large hill less than one-half mile from the west shore of Gull Lake, in the south half of Section 6, T134N-R29W (the Ski Gull Winter Sports Area), rises over 225 feet above the lake and over 300 feet above the low point of the lake bottom. The soils of this moraine are a mixture of sand, sandy loam, gravel, and cobbles. In contrast, the area east of the chain is typically lake-studded plain. The soils range from sand to gravel, but contain less clay and fewer stones than the moraine. These finer soils are also better drained. In some areas, excessive drainage has promoted drought and wind erosion. The results of the 1978-79 University of Minnseota-Hamline University survey suggest that the greatest number (and hence variety) of prehistoric sites occur on the eastern or outwash plain side of the Gull Lake chain (Johnson et al. 1979).

The Nisswa lakes, the focus of the present survey, are technically on the outwash plain. Nonetheless the land surface surrounding these basins is quite uneven, with the more rugged aspects abutting Bass, Spider, and Roy Lakes in the western parts of the survey area. One interesting feature of this landscape is what appears as an "island" nearly surrounded by the waters of Gull, Upper Gull, Bass, Spider, and Roy Lakes (Fig. 2). This island--which might be called "Lost Lake Island"--is connected to other high ground only by a 200-foot wide causeway at the south end of Roy

Lake, where site 21CA147 is located. On the eastern half of this island the terrain is very irregular, with sharp hills projecting 50 to 70 feet above the adjacent lake surfaces. A large gravel pit has been cut into the near-mountainous slopes south of Spider Lake. Some of the nearby areas were too rocky to permit shovel testing. Areas of wet, clayish soil were also encountered (see, for example, Appendix D, Shovel Tests 86-100, 116-132, etc.). Less rugged and better drained parts of this island, south of Lost Lake, were favored by certain prehistoric Indian groups for both seasonal habitation and interment purposes (Birk 1983:4).

Climate and Vegetation

The last active glacial ice formations in Minnesota disappeared about 12,000 years ago. Newly deglaciated areas and barren till deposits covering stagnant ice were attractive environments for the invasion of new plant life. Because regional climates affected the nature and rate of plant migrations, it is believed that early climatic conditions can be inferred from the post-glacial vegetal sequence. Towards that end, pollen and plant macrofossils (e.g., seeds, leaves, etc.) found in layered bog and lake sediments are studied to discern local changes in plant communitities through time. Regional plant migration patterns and climatic episodes are then reconstructed through a comparison of local vegetal sequences. The inherent problems in using pollen diagrams for these purposes are well known and need no further elaboration here (e.g., Hills 1972).

From such recent studies as Cleland (1966), Wright (1972; 1974), Johnson, et al. (1979,I:12-18), and Birk (1979:18-29), it is possible to approximate post-glacial climatic trends in the central Minnesota region surrounding the Nisswa lakes.

Following the withdrawal of the Brainerd sublobe, the Gull Lake area was an unstable environment subject to fluctuating temperatures, arid chinook-like winds, and heavy erosion. Pollen and macro-fossil evidence suggests that the earliest invasion consisted of herbaceous heliophytes common in treeless and subarctic regions today. This tundra-like vegetation, spread in mosaic plant communities, punctuated with meltwater ponds, shifting drainage ways, and developing ice block lakes, was predominant ca. 20,500 to 14,700 years ago.

Beginning about 14,000 years ago, the climate entered a warming-drying phase. With the appearance of dwarf birch,

willow, larch, and prairie grass, the vegetation took on aspects of a forest-tundra ecotone. As the warming-drying continued, there was probably an invasion of a spruce-dominated boreal forest with scattered park-like openings. It is possible that much of the forest growth mantled large areas of dead, till-covered ice.

About the time of the Alborn Phase maximum about 12,000 years ago, the climate became markedly warmer and drier. There was an increase in the number of deciduous trees such as birch, aspen, and elm. A decrease in ragweed pollen may indicate a reduction of open, disturbed soil areas as the landscape continued to stabilize. It was probably during this period that the wasting of ice blocks on the Crow Wing Outwash Plain was completed and that the lake basins of the Gull Lake reservoir were formed. With the collapse of till-covered ice surfaces, plant remains were flushed into these basins. The lakes became more productive, inviting the rise of marginal sedge swamps and aquatic plants. Large animals such as hairy elephants, woodland musk ox, and barren land caribou may have been present.

About 10,000 years ago conditions became unfavorable for continued spruce forest domination in upland areas. Forest fires and windfalls accomodated an invasion of jack pine, a shade-tolerant and rapidly self-propagating species. The upland jack pine forests were rather open and occasionally interspersed with areas of prairie-like vegetation.

The post-glacial warming-drying trend peaked about 7,000 years ago. The arid conditions then leveled out for a few thousand years during what is known as the Prairie Period. This aridity, in combination with changes in the chemical and physical composition of the soil and ground water, favored the rapid invasion of deciduous species (such as oak and maple) into areas earlier dominated by pine. The developing oak savanna also gave way to further prairie expansion. The climatic conditions of this mid-postglacial thermal maximum have frequently been compared to the drought of the 1930's. Lake levels dropped, smaller streams stagnated or dried up, forest and grass fires went unchecked, and the prairie-forest border migrated as much as 75 miles to the northeast. The Crow Wing Outwash Plain was probably an open savanna with scattered stands of oak in areas of natural firebreaks, such as in rugged terrain or along protected shorelines. In the conifer forest farther to the east and northeast, a westward migration of white pine was just beginning to enter east-central Minnesota. The shift to a drier-warmer climate probably also spurred a gradual replacement of boreal animal species in the

northeast with those that preferred a deciduous environment. It is likely too that the large, elephant-like mastodon and certain varieties of extinct bison disappeared sometime early in this period. The dramatic effects of the Prairie Period profoundly influence the way archaeologists envision the environment as it existed during much of the corresponding Archaic cultural period (ca. 6,000-800 B.C.).

When the warming trend reversed about 3,500 years ago, the prairie and oak savanna extended farther to the southwest where it was eventually recorded during the land surveys of the late 1800's. The white pine migration reached the Itasca State Park area well northwest of Gull Lake by 2,700 years ago, but did not enter the Gull Lake area until 760 years ago. The white pine was followed by norway (or red) and jack pine sometime later.

During the past 3,000 years, the climate has been generally cooler and moister. Throughout the Midwest, this period has been beset with erratic moisture-temperature fluctuations. While the ecological consequences of these minor climatic episodes are largely unknown on a regional basis, each climatic shift likely precipitated some measurable change in the local plant and animal resource base. The well-drained Crow Wing Outwash Plain, for example, probably invited frequent fires that could spread quite rapidly across the level, sandy terrain. These fires might have opened parts of this plain to a grassland invasion or might have kept it as a sparse or checkered forest in various stages of regeneration. In the latter 1800's, the presettlement vegetation on the plain was characterized as being "Jack Pine Barrens and Openings" (Marschner 1930). At the same time, the moister, hilly moraine west of Gull Lake supported large stands of white and red pine that served as a magnet to early loggers (ca. 1870-1900). Because it was during the last 2,000 years that the Gull Lake area was most intensively exploited by human groups, the ecological changes during this period are of particular interest when reconstructing local cultural adjustments to what are perceived as steadily shifting (seasonal or long term) environmental opportunities.

Presently, the Nisswa lakes area enjoys a continental climate with mean annual temperatures of 38-40 degrees Fahrenheit and about 130 frost-free days (Cleland 1966:9). The average annual precipitation is about 27 inches with 45 percent of the moisture occurring between June and August. Estimated annual evapotranspiration is about 21 inches. Annual snowfall ranges from 40 to 50 inches, with snow staying on the ground for 110 to 120 days each winter. The prevailing drought cycle is for recurring dry periods every

40 years (e.g., late 1880's-early 1890's, 1930's, 1976) (Borchert and Yaeger 1968:13-19).

Hydrography and Water Resources

The Gull Lake reservoir covers 287 square miles in Cass and Crow Wing Counties in north-central Minnesota. Gull Lake, the largest of the 11 interconnected lakes in the reservoir system, is about 9 miles long by up to 3 miles wide and covers 9,541 acres (Table 1). Bass, Spider, Roy, and Nisswa Lakes are among the smallest of these basins, with a combined surface area of 723 acres.

A series of late 19th century logging dams, and finally the Corps dam built at the outlet of Gull Lake in 1911, have raised the waters of Gull Lake 4 to 6 feet. The level of the Nisswa lakes, like the rest of the Gull Lake Reservoir is now maintained at 1194 feet above mean sea level (plus or minus one foot). This increase has had little apparent effect on the survey basins except to dilate the channel now

Table 1. Acreage of Lakes that are Part of the Gull Lake Federal Reservoir System (adapted from Mn-DNR 1968:80-82, 132-133).

Lake	Area in Acres	% of Total Acres
Gull	9541	69
Round	1706	12
Lower Cullen	469	3
Upper Cullen	459	3
Middle Cullen	405	3
Upper Gull	345	2
*Roy	306	2
Margaret (Kilpatrick)	230	2
*Nisswa	213	2
*Bass (Ray)	183	1
*Spider	21	<1
Totals:	13,878 Acres	100%

*The combined acreage of the lakes in the 1983-84 Nisswa lakes survey area is 723 acres or 5 percent of the total acreage of the Gull Lake Reservoir system.

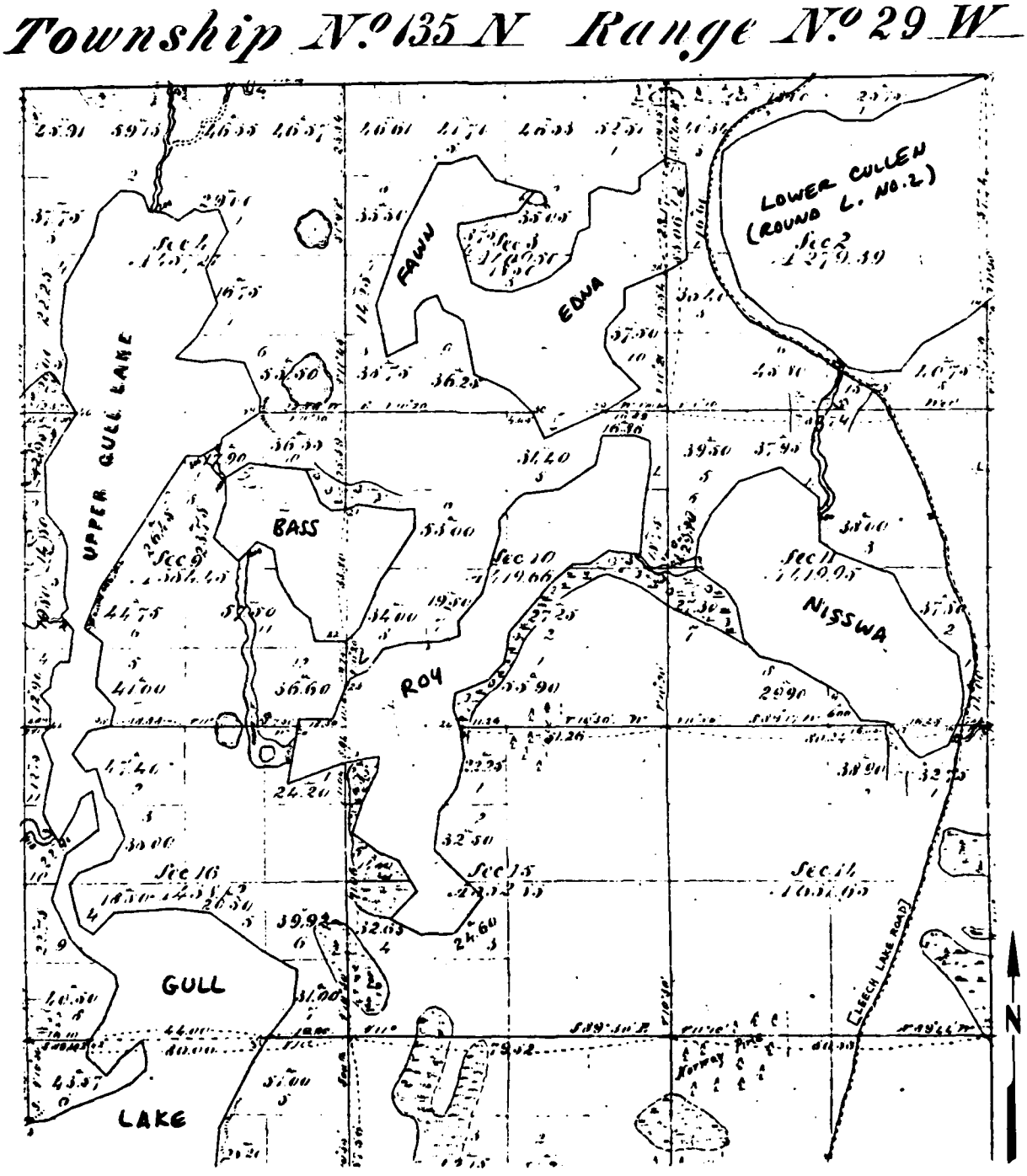

Figure 4. A Portion of the Original Subdivision Map of T135N-R29W. Note the stream-like configuration of Spider Lake, and the detached marsh on the south end of Roy Lake. Surveyed in June, 1865 (From original in Minnesota Secretary of State's Office, St. Paul).

called Spider Lake, flood marginal lowland areas on the south end of Roy Lake, and increase the depths of the connecting thoroughfares (see Figs. 4 and 5).

The amount of shoreline development on each of the lake basins is directly proportionate to the amount of marshy shoreline and emphasizes some of the major natural differences between the eastern and western lakes of the Nisswa chain. Bass and Spider are primarily shallow, weedy, mud-bottomed lakes surrounded by rugged terrain. Both have supported extensive stands of wild rice. Approximations suggest that 80 percent of the shoreline of these lakes is marshy and that only 25 percent of the shoreline is developed. Roy and Nisswa Lakes, on the other hand, are larger and deeper impoundments with more varied and less rugged margins. While almost 45 percent of their shorelines is marshy, 80 percent is presently developed. Clearly the areas of swampy shoreline have been the last to attract modern development.

These natural conditions probably also effected the way earlier peoples perceived and used these waters. Old timers will tell you that Cullen, Nisswa, and Roy Lakes were once known as Upper, Middle, and Lower Fishtrap Lakes, hinting that weirs or other devices were used on these waters to take advantage of seasonal fish-spawning runs. Shallow water fish traps would probably be most efficient and easiest to construct and maintain at the inlet, outlet, and thoroughfare locations that are plentiful in the survey area. Wild rice harvesting-processing sites might be expected on Bass and Spider Lakes. The proximity of the south end of Roy Lake to the north end of Gull Lake suggests that the slight 200-foot wide ridge separating these two basins would be a natural portage or winter road. The position and axis of Roy Lake makes it an ideal starting point for travel to the northeast via the Cullen lakes and Pelican to reach Cross Lake (part of the Whitefish Lake or Pine River Reservoir). The presence of similar water routes is suggested on an early map of this region (Nicollet 1843).

Beyond the fur trade, the earliest intensified land use by white populations is this area was the logging of the pine forests. Promiscuous cutting on the Gull Lake chain began in the early 1870's shortly after the Civil War and the removal of the Ojibway Indians. To assist the movement of logs from Sibley and Mayo Lakes into Upper Gull, loggers built two dams across the Gull River (e.g., Fig. 4). Another was installed at the outlet of Lower Cullen Lake to float logs into Nisswa Lake. The Gull River Lumber Company built a summer camp on the southeast corner of Nisswa Lake

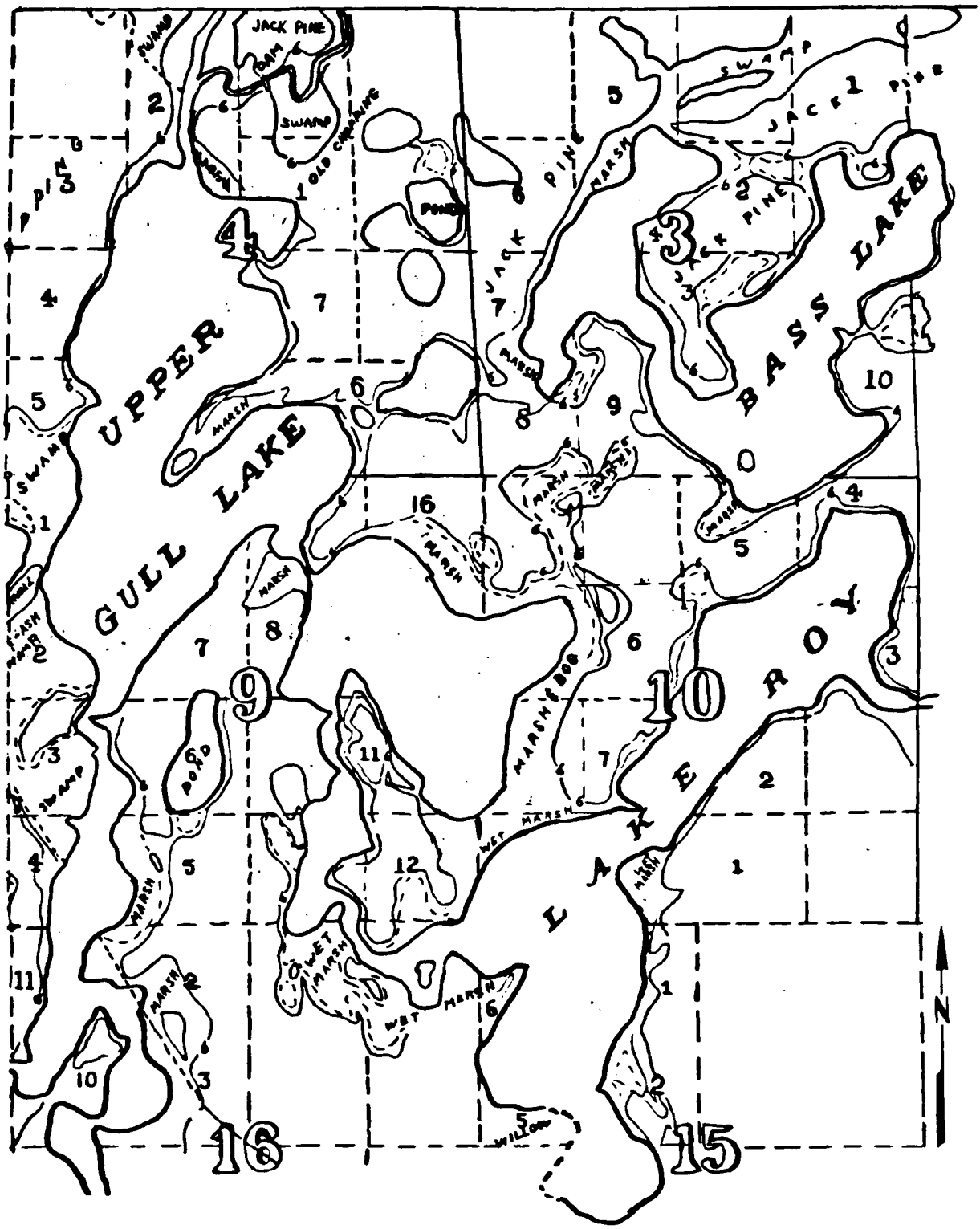

Figure 5. Part of an 1894 Gull Lake Reservoir Map (From a tracing in the author's possession).

to control its timbering interests in that area. Early in the 1880's Webb Hill, a pioneering logger, and his wife took over the use of this camp as a farm and "halfway" house on the old Crow Wing to Leech Lake trail (Murphy 1964:2). The Hill's were still in operation in 1901 when the last log drive was taken across Nisswa Lake. This camp, in conjunction with other businesses, formed the nucleus of the city of Nisswa on the northeast side of Nisswa Lake.

In 1892, the Brainerd & Northern Minnesota Railroad Company constructed a logging railroad line from the town of Lake Hubert westward into the St. Croix moraine. This line passed over the narrow land bridge between Gull and Roy Lakes and crossed the Upper Gull Lake Narrows by the Causeway Resort. It then extended northwestward through "Fritz Loven Park." This spur was used to haul millions of feet of saw logs to the mills at Brainerd in 1893. In 1894, the line was abandoned and the rails were removed. Construction of this grade was one of the first major catastrophes to befall the prehistoric mound-habitation complex 21CA147.

Resorting became popular on the Gull Lake chain after 1900. Beginning in 1901, Webb Hill began selling lots on Nisswa Lake for summer cabins. With resorting came a new wave of shoreline development, boating, fishing, and winter ice harvesting. Today, just 100 years after the first intensive logging began, the Gull Lake chain has become one of Minnesota's most popular and developed summer vacation areas.

Despite the increased water levels caused by the Gull Lake dam, shoreline erosion is not a significant problem on the Nisswa lakes. The worst known example is at Site 21CA116 on the north side of the outlet of Bass Lake (Fig. 8). Bank slumpage here is exasperated by pedestrian traffic and by the wash of boats passing through the channel. A far greater cause of shoreline alteration is the landscaping incidental to residential development.

3. FIELD AND LABORATORY METHODS

This chapter reviews the methods and strategies NAS used to complete the Nisswa lakes survey project. Emphasis is on the specific activities undertaken to fulfill the survey goals in both the field and laboratory. Information is also provided on the accessioning and curation of the material collections.

Survey Research

The goal of locating and assessing cultural resources on the Nisswa lakes was facilitated by a host of ancillary activities that either preceded or were done in conjunction with the field survey. Prior to entering the field, NAS conducted a records check to learn about known archaeological and National Register properties in and around the survey area. The results of the 1978 Headwaters Survey and other archaeological studies on the Gull Lake Reservoir were consulted to develop some expectations about the kinds of sites and materials that might be found and about where they might be located. The Nisswa Centennial Committee was queried, and several area residents were interviewed. The survey also prompted a review of published histories on the Gull Lake-Nisswa area. The literature search included early (pre-1900) Brainerd newspapers, manuscript materials in the collections of the State archives and in the Cass and Crow Wing county historical societies, and W.P.A. records and county files at the University of Minnesota and Minnesota Historical Society. Some early maps were also consulted. The principal investigator had a knowledge of past and present natural conditions in the survey area from earlier research he conducted in Cass and Crow Wing counties (e.g., Birk 1977, 1979, 1983).

All leads to possible archaeological, architectural, and historical sites in the survey area were checked in the field, or were evaluated by comparison with other sources.

Site Discovery in Woodland Environments

The Mississippi Headwaters Region, like most of northeastern Minnesota, is covered with a dense pine-hardwood forest. Prehistoric archaeological sites in this environment are commonly hidden from view by foliage, fallen trees, and overlying plant matter and soils. Inhibited by

these conditions, past archaeologists focused their attention on only known site areas and the recovery of a narrow range of data. Those who worked in the Gull Lake area prior to the late 1960's were mostly interested in prehistoric burial mounds and complete or highly decorated artifacts. From such selective observations, little could be said about settlement-subsistence systems or other important aspects of prehistory.

In the early 1960's, the goals and approach to archaeological research changed. Archaeologists realized they could not fully explain the sequence and diversity of earlier human groups by documenting only large sites, obvious sites, or burial manifestations. The desire to more completely sample the universe of sites, artifacts, and ecofacts led archaeologists to seek improved discovery and recovery techniques.

Archaeologists working in the forested Great Lakes region became increasingly aware that the need to find sites and site boundaries presented them with a special set of problems. Traditional, formal methods of testing for subsurface archaeological deposits were time-consuming and unrealistic. "Negative evidence" could only be produced at great financial and energy costs. What was needed was some systematic, efficient, and reliable means of site discovery that in itself would not have a significant adverse effect upon the cultural or natural environment. Quietly and independently, several archaeologists in Minnesota, Wisconsin, and Michigan began, in the early 1970's, to experiment with informal testing methods. Some employed shovels while others used probes and trowels. The idea was to conduct subsurface tests in areas where a knowledge of the presence or absence of site materials was important but where the first step of gaining this knowledge could be done without rigid horizontal or vertical controls or large investments of time and money. When archaeologists finally "came out of the closet" and began sharing notes about the utility of informal testing techniques, the process gained wider approval and application. The process also became more formal as "standards" developed (Lovis 1976; Birk and George 1976).

Disregarding remote sensing and chemical and resistivity methods, the archaeological discovery technique now most widely used in surveying woodland environments is tansect shovel testing (also known as "interval sampling"). Transect shovel testing involves examining soil plugs at preset (usually regular) intervals along radiating or parallel transects. Recording the location of individual tests allows one to return to any given area to make

additional observations. It is also a prerequisite to plotting the placement of both positive and negative tests on a map. Ideally a cluster of positive (artifact-producing) tests--especially when surrounded by sloping terrain, marshland, open water, or negative tests--will signify a distinct site or site area. Other information commonly gained from shovel testing involves artifact variability and density, cultural stratigraphy and affiliation, feature location, site disturbance, and soil sequence.

Field application has shown that finding sites through shovel testing depends on the size of the site population, the size and configuration of individual sites, the kinds and density of materials within sites, the shovel test interval, the size and volume of shovel tests, the use or non-use and mesh size of screens, and the experience of the field personnel. In short, shovel testing does not guarantee results. Sites 35 square meters in size will be missed about 60 percent of the time using even a 10m interval between tests. The chances of missing the same site jump to 90 percent when using a 20m interval. Obviously, the use of any standardized sampling interval and size will favor the discovery of sites of a certain minimum size and density (Birk 1979:71-74).

Nisswa Lakes Survey Methods

The NAS survey varied in scope and intensity, depending on the character and access of the lakeshore parcels under consideration. Basically four levels of inquiry were involved:

1. The survey areas were first observed from the landward side by driving roads and from the water by cruising the shorelines in a boat. Through remote observation, with the Nisswa USGS quadrangle in hand, it was early determined which parcels would require testing, which might minimally be surface checked, and which--because of gross alteration or steep, sloping terrain--could possibly be "written off." Impressions formed during the period of remote inspection were never considered iron-clad, and were often ignored during later phases of the survey if they proved to be inaccurate. In many cases, it was interesting to see how incredibly landscaped the lakeside portions of some lots were, when from the road the same parcel might seem largely unaltered. Because of such conditions, however, the combination of land and water reconnaissance proved most useful in forming meaningful notions about how to proceed. The boat also served as a good vehicle for

obtaining uncluttered, wide-angle photographs of heavily developed or vegetated site areas.

2. With few exceptions, all investigations were preceded by a landowner interview to request permission to enter and examine properties and ask about any sites or artifacts they might have found. As expected, landowner absenteeism caused a problem in gaining entry to many summer vacation properties. Several persons eventually had to be contacted by telephone, and others were only caught by chance after NAS made repeated visits to their property.

Most landowners around the Nisswa lakes are seasonal or week-end residents with little knowledge of local history or sites. They typically purchased their lake lots through a realtor so little in the way of local tradition is passed from one landowner to the next. The very act of subdivision has confined people to smaller parcels and discouraged them from exploring nearby shoreline areas. Only a couple of landowners actually possess artifacts found on their land, and in each case they have only a few items. Often informants would indicate that most of the real old-timers had passed on. Indeed, few persons are left in the Nisswa lakes area who have any significant first-hand knowledge of local history before the 1920's.

3. Where rights of ingress were obtained, the survey included a surface inspection (pedestrian reconnaissance). In each case the grounds and beach and other areas with exposed soils, such as paths, driveways, rodent burrows, gardens and horseshoe pits, were examined. Because of differences in lot developments, physiographic features, and surface visibility, the validity of using just surface inspections to determine the presence or absence of archaeological materials must be considered suspect. Without question, surface reconnaissance surveys favor the discovery of larger, denser, and more recent site deposits and surface manifestations such as mounds and cellar depressions (Peterson 1982).

Most areas adjacent to known or suspected prehistoric sites, including terraces and ridges behind the sites, were examined for possible mounds and other features. These walkovers often far exceeded the 50m shoreline limits specified in the Corps contract. In one case, an old sawmill site reported by landowners on the west site of Roy Lake was examined to verify its location and assess its archaeological potentials. The site turned out to be more than a half mile from the lake.

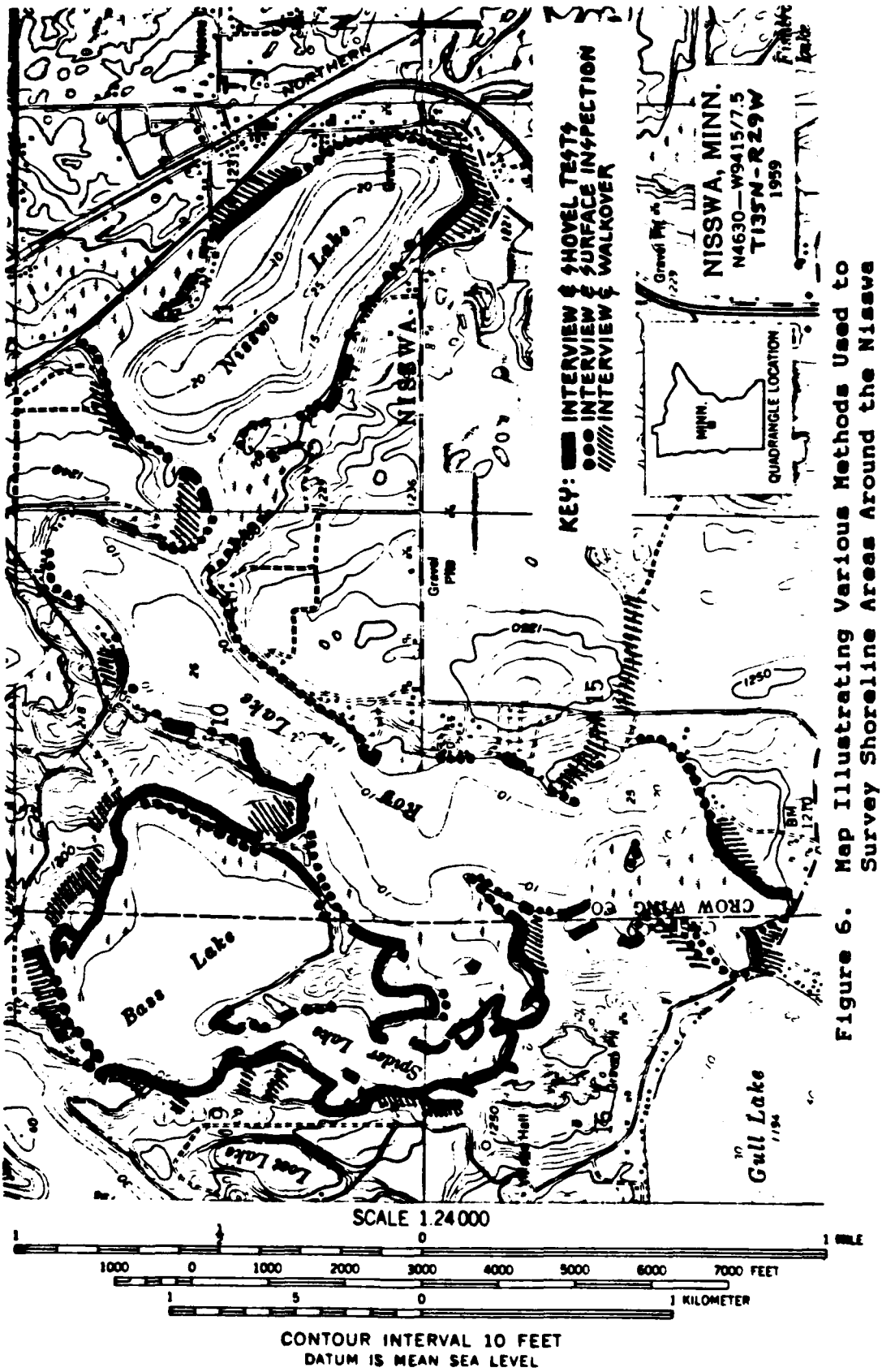

Figure 6. Map Illustrating Various Methods Used to Survey Shoreline Areas Around the Nisswa lakes.

4. Subsurface testing was done in conjunction with surface reconnaissance in areas where undisturbed soils were present and where landowners would allow digging. All excavation consisted of shovel tests 30-45cm in diameter, generally spaced at 10 to 15m intervals. When seeking the boundaries of site deposits, NAS surveyors sometimes used a 3 to 5m interval. In developed areas, the tests were placed wherever an opportunity was presented (between buildings, etc.), often causing a wide and less-controlled interval. The depth of each shovel test varied with the soil conditions, the depth of potential artifact-bearing strata, and the presence of large roots, dense gravel, or rocks. All displaced soils were passed through a 1/4-inch mesh screen to assist the recovery of cultural materials. All shovel tests were backfilled and the sod, if any, was replaced.

Each shovel test was given a temporary field number at the time of excavation. The locations of tests and other field observations were recorded in running narrative fashion as the survey progressed. In addition to logging basic test information about soils, soil stratigraphy, and cultural materials, the narrative style allowed surveyors to relate when they crossed lot lines or roads, went up or down hills, or when they paused to examine windfalls, road cuts, or rodent burrows. The narrative style reduces the bulk of necessary field records and has been found to be useful in areas with simple soil sequences where adequate maps are not available to allow the accurate plotting of individual tests.

The placement of individual tests was determined by parcel condition, vegetation, soils, surface contours, and access. A large number of landowners have landscaped their lake lots or developed them in such a way that little archaeological evidence could survive intact. Many have dredged peat and muck from their lakeshore and spread it on their lawns. Others have hauled in fill or redistributed the soils excavated at the time of building construction. Invariably, persons who have worked hard to establish a luxuriant lawn with planted trees and shrubs were not interested in having shovel tests dug in their yards.

Where shovel tests could be used without landowner restriction, the test and transect interval required by the Corps contract was 15m (50 feet). In the field, this ideal format was not always practical or possible. Lake bottoms, swamps, and other inaccessible areas were not tested because they were too wet to enter and considered unlikely to yield cultural materials. Pronounced slopes also received only limited attention. Random shovel tests used on slopes were

more spread out and commonly placed on small level steps or sub-terraces. Conversely, ridgetops, level lakeside benches, and other inviting areas were often tested at tighter intervals. Beyond topographic and development considerations, dense vegetation also adversely influenced any attempts to maintain an evenly spaced (systematic) grid of shovel tests. Tree falls, hanging branches and brush thickets commonly thwarted the surveyors' ability to accurately pace distances while still maintaining proper "grid" interval and orientation. More importantly, such conditions dictated where they could actually dig. In practice then, the placement of individual tests--somewhat unlike the rigid standardized sampling procedure envisioned and striven for--more closely resembled an intuitive process shaped by local conditions.

Once archaeological deposits were located, the investigations were adjusted to find the spatial parameters of the cultural materials through visual reconnaissance and more shovel testing. In some cases, the terrain suggested the limits of sites or site areas. Site 21CA153, for example, is situated on two adjacent and confined terrace levels. Similarly, sites 21CA145, 21CA148, 21CA150, 21CW87, 21CW88, and 21CW90 were found in basins or on benches and terraces surrounded by sloping ground or wetlands that also suggested the "natural extent" of each site. Throughout the survey, all positive shovel tests were mapped by the pace and compass method. A buffer of outlying negative tests was also mapped to show the extent of testing disturbance, to demonstrate the probable horizontal limits of subsurface site materials, and to aid others in finding the sites at a later date.

Appraisal of Prehistoric Archaeological Deposits

The archaeological properties or *sites* found during the NAS survey can be grouped into three categories based on the attributes of perceived size and density. These categories reflect the nature of recoveries made in the field and are useful for assessment and planning purposes. In part, they help determine the quality or potential of sites for future consideration of field studies, nomination for the National Register, and treatment by the Minnesota State Archaeologist's Office.

1. Isolated artifact discoveries, whether found on the surface or in a shovel test in an area apparently devoid of other cultural materials, were considered *find spots*. Find spots are usually viewed as "chance" discoveries and are not considered sites or given site numbers by the State

Archaeologist's Office in Minnesota. In selected counties, however, the State Archaeologist's Office has been giving formal "FS" numbers to individual find spots, so that the ninth find spot registered in Cass County, Minnesota, is listed as "21CA-FS9," etc. Find spots in Crow Wing County are not presently being assigned formal "FS" numbers. Find spots are not eligible for the National Register.

2. Individual shovel tests that produced two or more artifacts in an area where other tests were devoid of cultural materials were treated as limited find areas. Limited find areas appear to represent small, unstratified, single component, special activity sites or site loci probably not exceeding 10 square meters in size. The age, function, or cultural affiliation of these areas can seldom be determined from the results of Phase I surveys. As deposits containing artifacts in association, limited find areas are usually given formal site numbers by the State Archaeologist's Office in Minnesota. Limited find areas may qualify for the National Register if they meet the criteria of non-disturbance and suspected research potential. The compactness of these deposits dictates that, once discovered, further attempts to determine site boundaries (or other subsurface attributes) should involve formal, controlled excavations rather than shovel testing.

3. Locales that produced two or more positive shovel tests or a number of surface-collected artifacts were considered multiple find areas. In the survey area, these deposits exceed 200 square meters in size. They tend to produce larger and more diverse artifact collections than limited find areas and, for that reason, are more likely to be assigned tentative dates, functions, or cultural affiliations. These deposits may represent single or multicomponent sites. The largest site in this category (21CA147) also has visible surface features. Multiple find areas almost always qualify for formal site numbers in Minnesota, and, depending on their significance and condition, may be eligible for the National Register.

All sites discovered during the NAS survey were given temporary field numbers reflecting the year and order in which they were found. Observations made on the terrain, vegetation, proximity to water, etc., were recorded, and the location of all surface collections and shovel tests made around each site or "find spot" were mapped. Dense foliage made photography a difficult, if not meaningless, process in many areas. Nonetheless, as already indicated, photographs were taken of selected natural features and archaeological areas from a boat while cruising the shorelines of the Nisswa lakes.

Laboratory Procedures

All legitimate sites found in the survey area were recorded on standard state site forms. A copy of each form was later filed with the State Archaeologist's Office at Hamline University where the sites were assigned permanent numbers. Copies of these forms are included in Appendix E of this report.

All shovel tests were organized in a one-up numerical series in the lab to produce a streamlined list and avoid confusion. The final shovel test list (Appendix D) is partitioned into eight "sectors" to correspond to tested sections of shoreline (see map, Appendix C). Shovel Tests 1 through 253, for example, were placed along the west side of Bass and Spider Lakes and around the south side to near Roy Lake. This segment of the survey area has been labelled "Sector A." Sector A begins with Shovel Test 1 on the south side of the outlet of Bass Lake. The approximate location of subsequent tests in this series is recorded in the narrative remarks in the shovel test list. The precise locations of shovel tests defining the limits of sites appear on the site maps in Chapter 4. Sector B, comprising Shovel Tests 254 through 398, begins on the north side of Bass Lake and follows the shoreline to the east and south. Sectors C, D, and E follow from east to west along the north sides of Nisswa, Roy, and Spider Lakes. Sector F includes all shovel tests placed around the south half of Nisswa Lake. Sectors G and H are on the south half of Roy Lake.

All artifacts recovered during the NAS survey were washed, identified, and accessioned into the Hamline University system (distinguished by the prefix "H"). The artifacts will be curated at Hamline along with the other Gull Lake Reservoir materials recovered by the 1978 Headwaters survey. All cultural materials recovered by NAS are listed as part of the site discussions in Chapter 4.

A preliminary attribute analysis of the archaeological deposits found by NAS was also done in the lab. Each deposit was considered by size, location, and disturbance; the presence or absence of ceramics, stone tools, fire-cracked rock (FCR), and animal bone; and the number and variety of stone types represented. Though based on a limited collection of materials, this analytical exercise did produce some interesting results. These results are discussed in Chapter 5 as part of the concluding remarks.

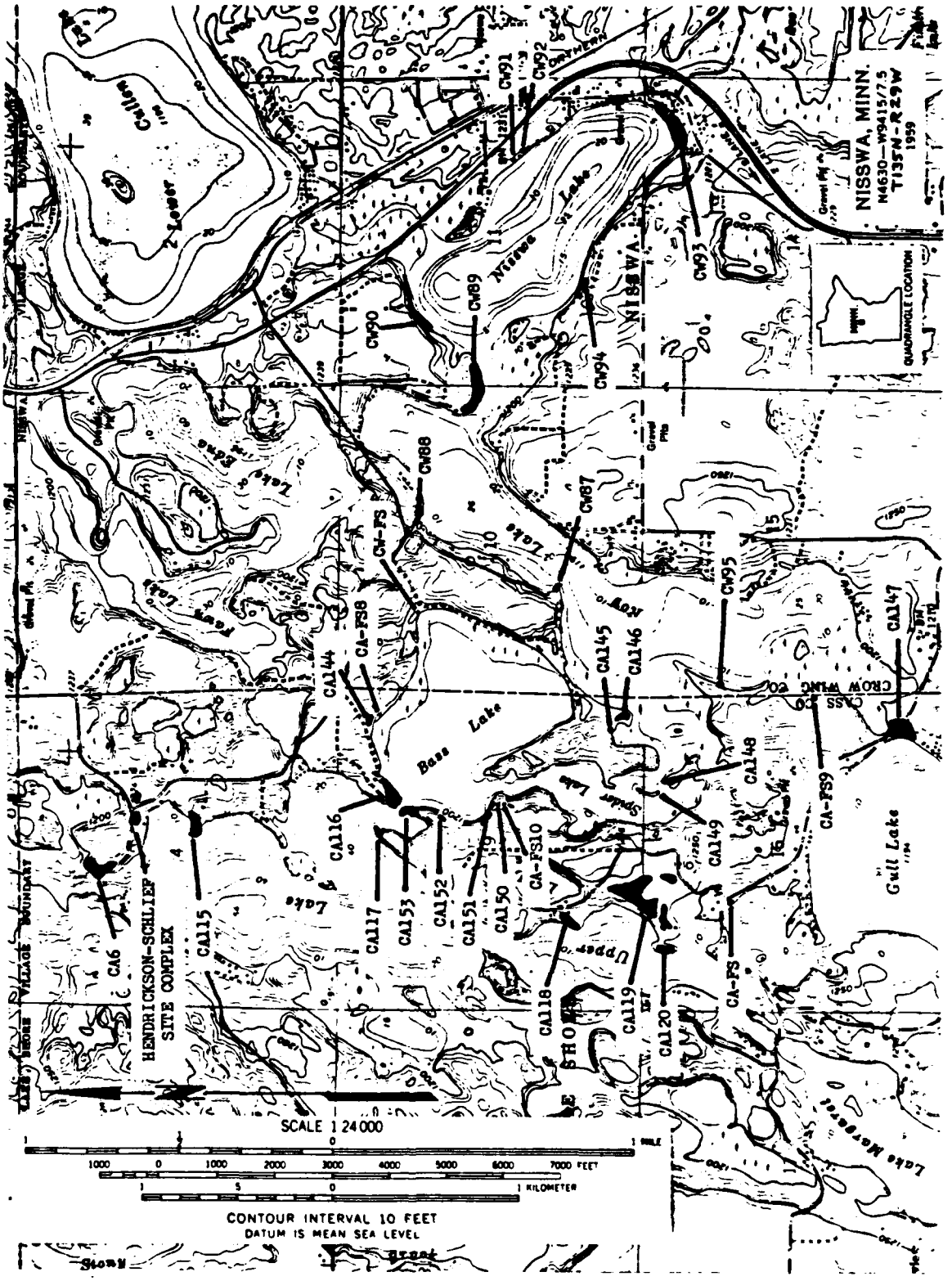

Figure 7. Known Prehistoric Sites in the Nisswa lakes Area.

4. INVESTIGATIVE RESULTS

The 1983-84 NAS survey recovered information on 24 prehistoric sites in the Nisswa lakes survey area. Among these sites are four "find spots" (that is, places where only isolated artifact recoveries were made) that are not eligible for listing on the National Register. The locations of these cultural properties and others on Upper Gull Lake are shown in Fig. 7. Further information on selected sites is presented in Appendices E and F. The survey also found evidence for several historic sites or properties that have little potential for inclusion on the National Register because of their recent origin, altered condition, or only rumored existence. The locations of the historic sites are shown on Fig.31, near the end of this chapter.

Chapter 4 has two parts. The first part discusses the numbered prehistoric sites and "find spots." These are generally arranged in numerical order by county and follow the shorelines in a clockwise fashion. Each site is described in a formatted style. The accompanying field maps show the arrangement of natural and manmade features, surface collections, and shovel tests. Positive shovel tests appear as large black dots, negative tests appear as open circles with small central dots. Artifacts found during the survey are listed by their provenience. In describing the artifacts, the following abbreviations are used: GT = grit-tempered, ST = shell-tempered, CWP = cord-wrapped paddle, CWS = cord-wrapped stick, FCR = fire-cracked rock, pc. = piece. A ceramic "crumb" is a piece of prehistoric pottery too small to classify.

The "site types" described in this section are approximations based on known site attributes and investigator experience. Unfortunately, given the restricted range of artifact recoveries, these "types" generally reflect only the perceived intensity and duration of site use. Statements regarding the specific nature of site use (that is, site function) are seldom possible with Phase I survey results. "Find spots" are simply categorized as either isolated ceramic or lithic recovery points.

The second part of this chapter is devoted to a brief discussion of various unnumbered historic properties noted in and around the Nisswa lakes survey area.

Site: 21CA116

Name: Point Narrows Site

Type of Site: Prehistoric Multiple Use Area

Size of Site: About 7800 square meters

Cultural Affiliation: Middle to Late Prehistoric Transition

Description: Site is on the north side of the channel connecting Bass and Upper Gull lakes on the grounds of the Point Narrows Resort. Site occupies entire peninsula area around lodge and cabins and extends northeast along the lower shoreline terrace skirting Bass Lake. Majority of cultural materials were found eroding from bank on extreme south end of peninsula in area of boat landing. Site is heavily developed and used as a summer resort. Deciduous forest with some mixed pine. Dark sandy soil with light to heavy gravel.

Nature of Recovery: Multiple find area. All materials surface collected.

Collections: Hamline University H21-1 (1978 Headwaters Survey); H73 (1983-84 Nisswa Lakes Survey)

Materials/Source:

Surface Collection:
- 5-GT net-impressed body sherds
- 2-GT CWP-impressed body sherds
- 1-GT fine CWP-impressed body sherd
- 1-GT stab-and-drag decorated neck
- 1-GT smoothed body sherd
- 1-GT ceramic "crumb"
- 6-red/tan quartzite debitage
- 6-white quartz debitage
- 1-white quartz, poss. utilized flake
- 1-gray chert debitage
- 1-red agate debitage
- FCR (observed)

Remarks: 21CA116 was first located and reported by the 1978 Hamline University survey (Johnson et al. 1979,I:55, 269).

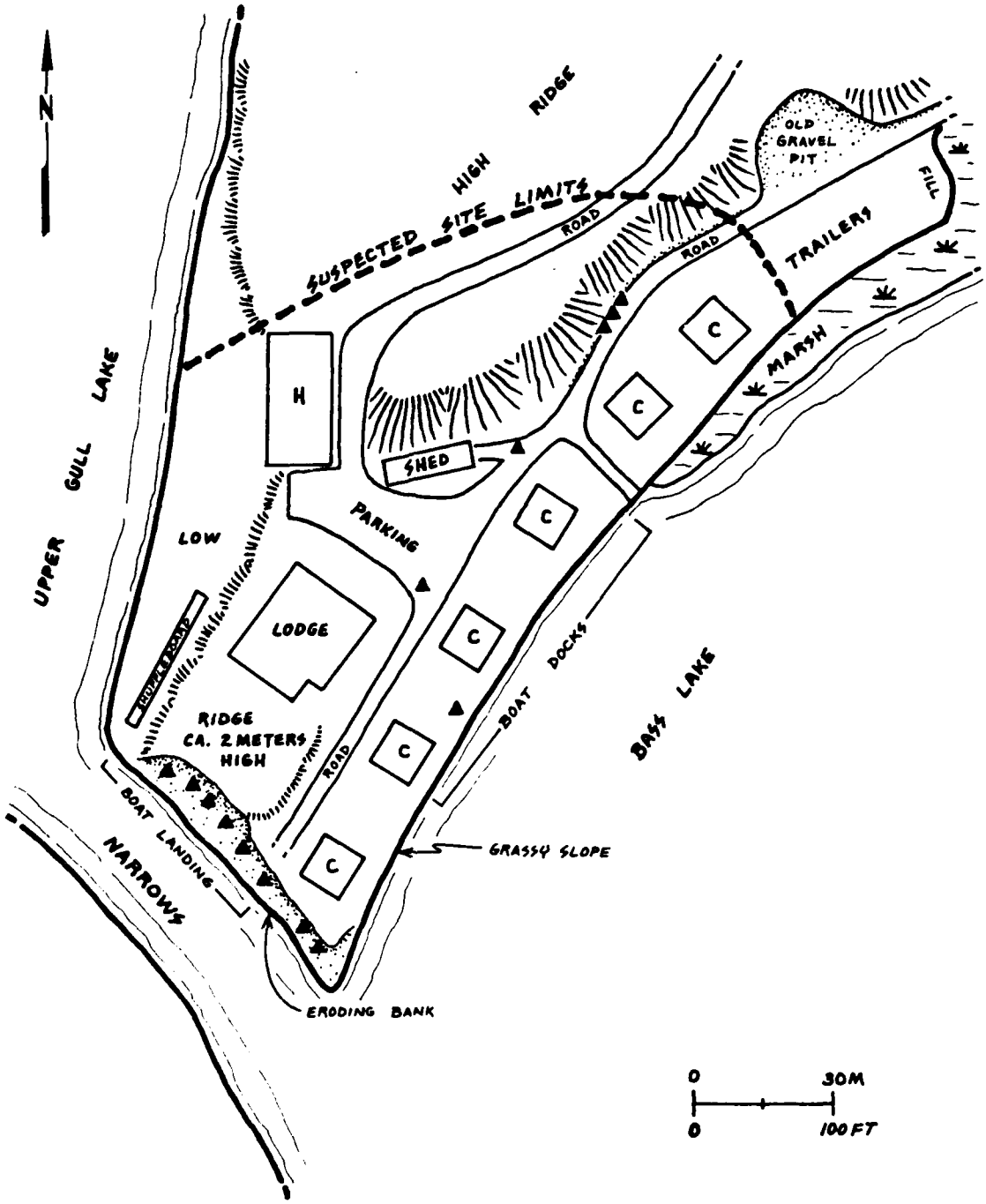

Figure 8. Field Map of Site 21CA116. Black triangles show areas of 1983 surface collection.

Site: 21CA144

Field_Number/Name: #83-7 (Schmidt Site)

Type_of_Site: Prehistoric Multiple Use Area

Size_of_Site: About 900 square meters

Cultural_Affiliation: Unknown

Description: Site is on lakeside terrace on the north shore of Bass Lake southeast of the exit road for Point Narrows Resort. The site area is at the foot of a high hill and slopes slightly to the southwest. Forest cover of oak, birch, and poplar with understory of hazel brush. Scattered poison ivy throughout. Shoreline is tagalder marsh and swamp. Sandy soil with light gravel. Though area on the opposite (north) side of exit road has been used extensively for dumping, the site area appears undisturbed. It is rumored that this lakeshore area may soon be developed.

Nature_of_Recovery: Multiple find area. All materials found shovel testing at 5 to 20cm level.

Collections: Hamline University H74

Materials/Source:

ST259	5-20cm	2-pcs. gray chert debitage 1-pc. red quartzite debitage
ST260	5-15	1-pc. orange quartz debitage
ST262	5-15	1-pc. basalt debitage 1-FCR
ST265	5-20	2-FCR

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Site: 21CA-Find Spot 8

Field_Number: #83-8

Type_of_Site: Ceramic Find Spot

Size_of_Site: Find Spot

Cultural_Affiliation: Late Middle Woodland

Description: Find spot is about 50m southeast of site 21CA144 on low lakeside terrace between high hill (to north) and swampy margin of Bass Lake (to south). Find spot is at the northwest end of an old beach ridge. Forest cover of poplar, oak, and birch with some brush. Numerous wind-falls. Site area is undeveloped.

Nature of Recovery: Find spot. Single potsherd found shovel testing.

Collections: Hamline University H75

Materials/Source:

ST282 0-15cm 1-GT net-impressed body sherd

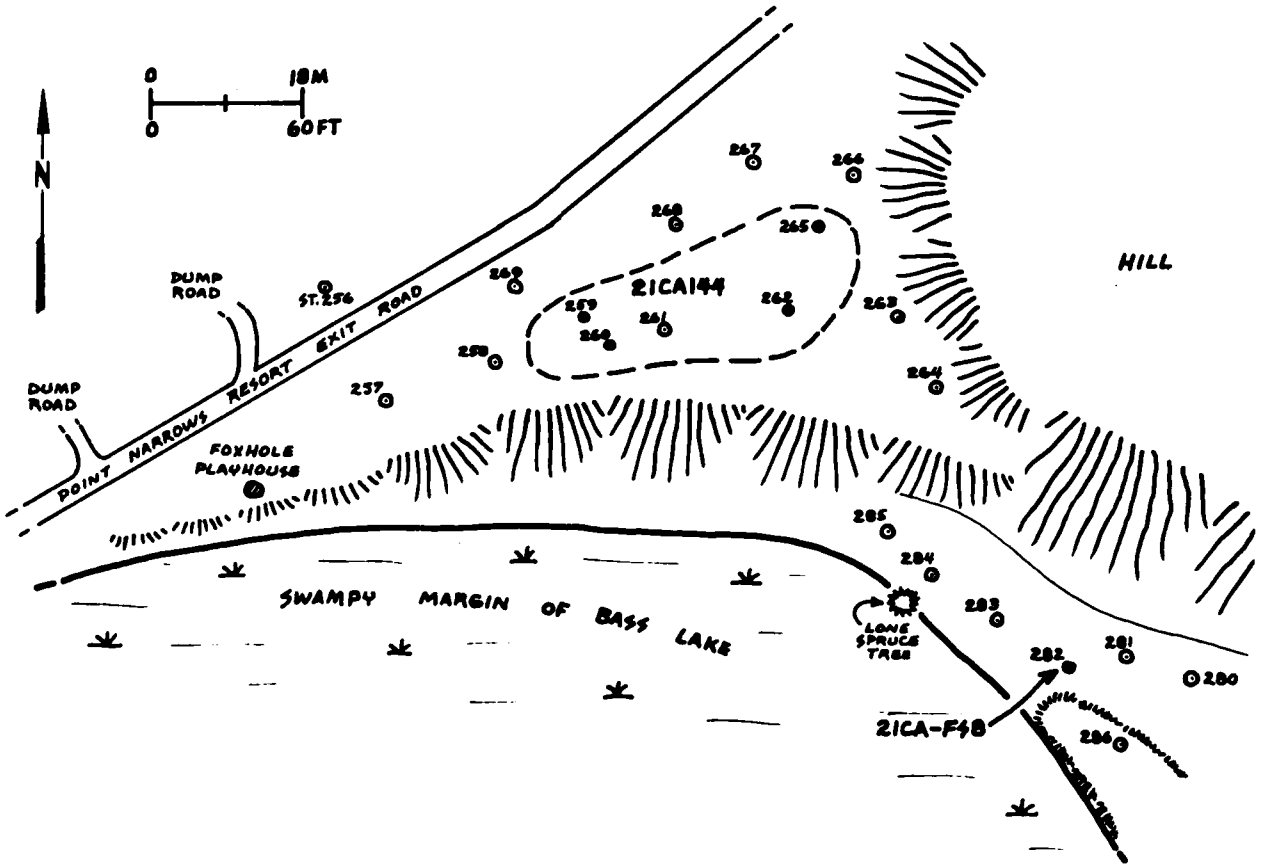

Figure 9. Field Map of 21CA144 and 21CA-Find Spot 8, site areas located on the extreme north end Bass Lake.

Site: 21CW-Find Spot

Field Number: #83-9

Type of Site: Lithic Find Spot

Size of Site: Find Spot

Cultural Affiliation: Unknown

Description: Find spot is on a broad beach ridge on the extreme northeast corner of Bass Lake, west of the most pronounced curve in Bass Lake Road. Ridge is covered with forest of oak and poplar mixed with red and jack pine. Shoreline is marshy. High point of ridge is about 1m above marsh. Soil is sand with light gravel. Site area is undeveloped.

Nature of Recovery: Find Spot. Lone flake found shovel testing.

Collections: Hamline University H76

Materials/Source:

ST328	0-28cm	1 red quartzite flake

Remarks: Shovel test 328 (Fig. 10) is located 10 to 11m south of a large fire-scarred red pine (A), about 12m west of an immature twin red pine (B), and about 12 to 13m north-northwest of a large double-topped jack pine (C). Area where trail forks is a jack pine clump. To assist in its future relocation with a metal detector, a flattened aluminum soft drink can was placed in the backfilled shovel test about 8cm below grade.

For discussion on the numbering of find spots by the State Archaeologist's Office, see Chapter 3.

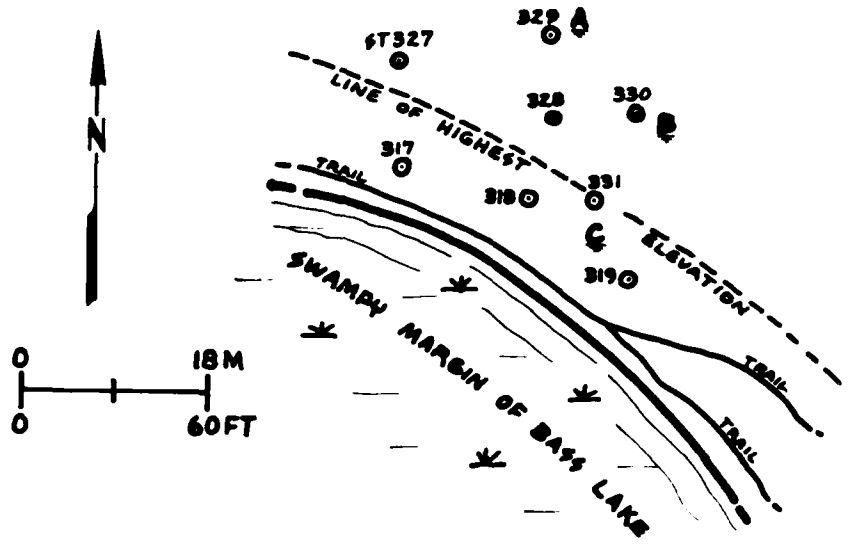

Figure 10. Field Map of Unnumbered Find Spot (21CW-FS), Located on Northeast Corner of Bass Lake. Shovel test 328 is positive. Letters indicate landmark trees (see text).

Site: 21CA145

Field_Number: #84-15

Type_of_Site: Prehistoric Limited Use Area

Size_of_Site: Less than 10 square meters

Cultural_Affiliation: Unknown

Description: Site is on north side of the Spider Lake-Roy Lake narrows on the north side of a marsh-covered bay. Site occupies a small basin-like step on otherwise southward sloping ground. Site is south of Bass Lake Road (Spider Ridge Drive) and west of private drive leading to the Spider Ridge Point Site (21CA146). An old woods road crosses the hill north of the site. Dense forest cover of birch, aspen, maple, and oak. Alder along marsh. Soil is sand mixed with gravel. Site area is undeveloped.

Nature_of_Recovery: Limited find area. All materials found in one shovel test.

Collections: Hamline University H77

Materials/Source:

ST504	5-30cm	4-pcs. white quartz debitage 1-red quartzite flake 1-basalt flake 1-pc.calcined bone

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Site: 21CA146

Field_Number/Name: #84-14 (Spider Ridge Point Site)

Type_of_Site: Prehistoric Multiple Use Area

Size_of_Site: 600 square meters

Cultural_Affiliation: Woodland

Description: Site is on north side of the outlet of Roy Lake on an elevated peninsula surrounded by marsh. Site area has been partially developed by present owners who plan to build a house here in the near future. Much of the site has been bulldozed for installation of driveway, water pump, and electric lines, exposing ground surface to erosion. Marshy shoreline areas northeast and south of the site have been

modified by dredging or filling. Forest cover of birch, oak, and aspen. Soil is sand mixed with gravel.

Nature of Recovery: Multiple find area. All materials found shovel testing at 0-35cm level.

Collections: Hamline University H78

Materials/Source:

ST493	0-20cm	1-GT fabric-impressed body sherd with CWS decorations 1-FCR
ST496	12-30	2-white chert flakes
ST497	8-25	1-white chert flake
ST498	11-25	1-possible FCR
ST499	20-35	6-possible FCR

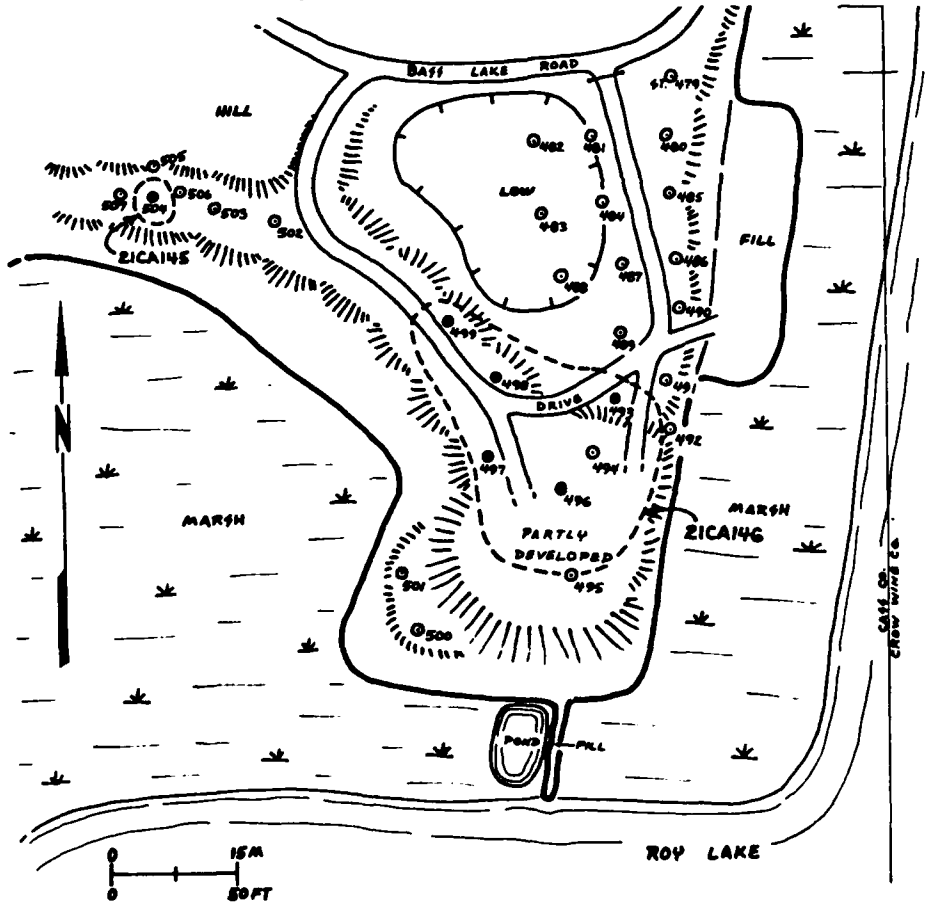

Figure 11. Field Map of Sites 21CA145 and 21CA146, located on north side of the outlet of Roy Lake.

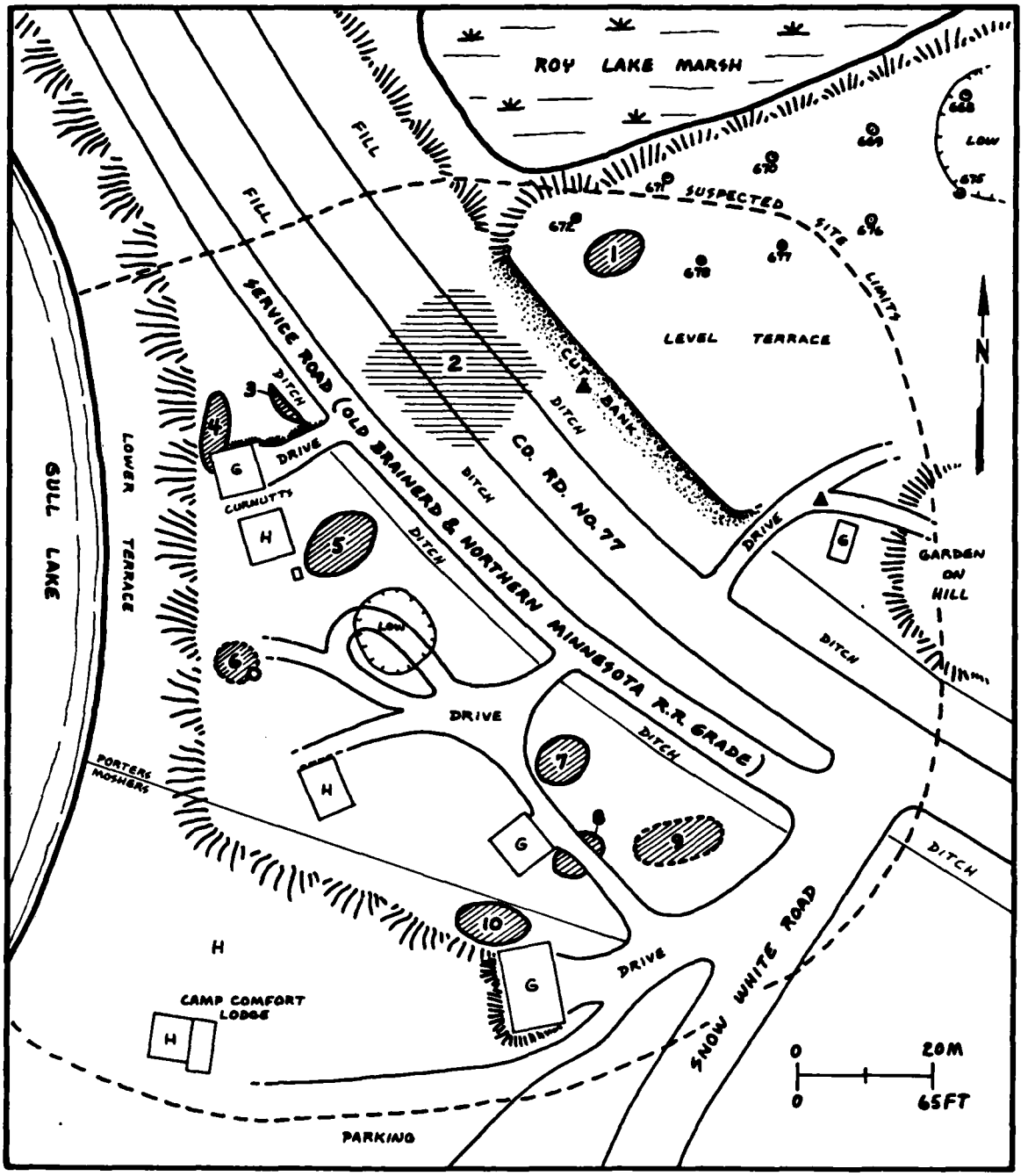

Figure 12. Field Map of Site 21CA147, on the causeway separating Gull and Roy Lakes. Surface collections appear as black triangles. Prehistoric mounds are shown with hatched lines. The location of Mound 2, excavated in the late 1940s, is uncertain, but is said by the former landowner to have been "opposite Mound 1." Numerous other cabins exist in this area that are not shown on this map, particularly on the lower terrace and northwest of Mounds 3 and 4.

Site: 21CA147

Field Number/Name: #84-1 (Camp Comfort Site)

Type of Site: Prehistoric mound-habitation-portage complex with historic logging-era features.

Size of Site: About 14,500 square meters

Cultural Affiliation: Middle to Late Prehistoric Transition and Late Prehistoric, with 1890-1910 logging-era features.

Description: 21CA147 is the largest site encountered during the 1983-84 survey, and it is the only one in the survey area known to include prehistoric mounds. This site is on both sides of County Road 77 where the highway crosses the narrow causeway separating Gull and Roy lakes. It is primarily on the grounds of the old Camp Comfort Resort and adjacent lakeshore properties to the northwest. The site occupies an elevated parcel overlooking Booming-Out Bay of Gull Lake and the marsh on the southwest corner of Roy Lake. Its location suggests that 21CA147 may have served in part as a portage between these two lake basins.

This site may have once included ten or more circular conical and oblate earthen mounds. In 1892, the Brainerd & Northern Minnesota Railroad built a logging spur line across the site that possibly destroyed mounds and associated habitation areas. Part of this old spur line is still used as a service road in the site area. According to the present owners of Camp Comfort (the Moshers), in the late 1940's Dr. Albert Mann, a sociologist-lecturer from Hamline University, excavated a mound on the north side of the service road in an area since destroyed by the realignment and widening of County Road 77. Mann is said to have found some pottery and lithic artifacts that he was able to identify with specific "tribal" origins. The nature and whereabouts of these materials is unknown. Re-routing of County Road 77 removed a significant portion of the suspected site area and may have destroyed several mounds in addition to the one investigated by Mann. Over the years, other mounds have also been modified or removed by the local landowners.

Sometime after WWI a shanty, which the owners claim was once used as a cook shack for the old Gull River Lumber Company, was moved onto the south end of the site. This shack was incorporated into the Camp Comfort Lodge as the kitchen. Because of this movement and modification, the shanty is not eligible for the National Register of Historic Places.

Today the only undisturbed area of 21CA147 (including Mound 1) lies on a level terrace on the northeast side of

County Road 77. Landowners have occasionally picked up "arrowheads" and other artifacts in this area but most have been lost or misplaced. Tree cover includes mixed pine and deciduous species. There are dense patches of hazel brush on the level terrace by Mound 1. Soil is sand with light to heavy gravel.

Nature of Recovery: Multiple find area. All materials found surface collecting or shovel testing in vicinity of Mound 1

Collections: Hamline University H79

Materials/Source:

Surface Collection: 1-basalt flake

ST672	9-32cm	1-GT ceramic "crumb" 1-white quartz, possible utilized flake 1-basalt debitage
ST677	0-20	1-jasper flake
ST678	11-24	1-GT near-rim with CWS impressions & punctates 1-white quartz debitage 2-pc.charcoal FCR

Mound Dimensions:

Mound	Dimensions (m)	Comments
1	9.3 x 6 x 7.5 high	Intact.
2	--- -- ---	Explored by Mann. Removed when Co Rd 77 was realigned.
3	About 0.6 high	Possible mound remnant cut by ditch.
4	11 x 7 x 0.9 high	On edge of high terrace. Cut by garage on S end.
5	12.5 x 8.5 x 1 high	Largest remaining mound. Center cut on NW-SE axis by buried pipe or cable (?).
6	--- -- ---	Mound removed by former landowner. Approx. SE edge marked by cement cesspool cap.
7	8 x 6.5 x 0.3 high	Appears cut down. Original height unknown.
8	8.5 x 5.5	Center removed by driveway. Original height unknown.
9	13 x 6 x 0.1 high	Possible mound remnant.
10	11 x 6.5 x 0.75 high	On terrace edge near garage.

Site: 21CA-Find Spot 9

Field Number: #84-13

Type of Site: Lithic Find Spot

Size of Site: Find Spot

Cultural Affiliation: Unknown

Description: Find spot is on north end of level cultivated terrace that forms a peninsula-like projection overlooking the marshy south end of Roy Lake. This field area was planted in corn in 1984. The corn was shoulder-high at the time of the survey, and the stalks were still left standing at the time of attempted later visits in the fall.

Nature of Recovery: Find spot. Artifact found surface collecting.

Material/Source:

Surface Collection: 1-white quartz biface

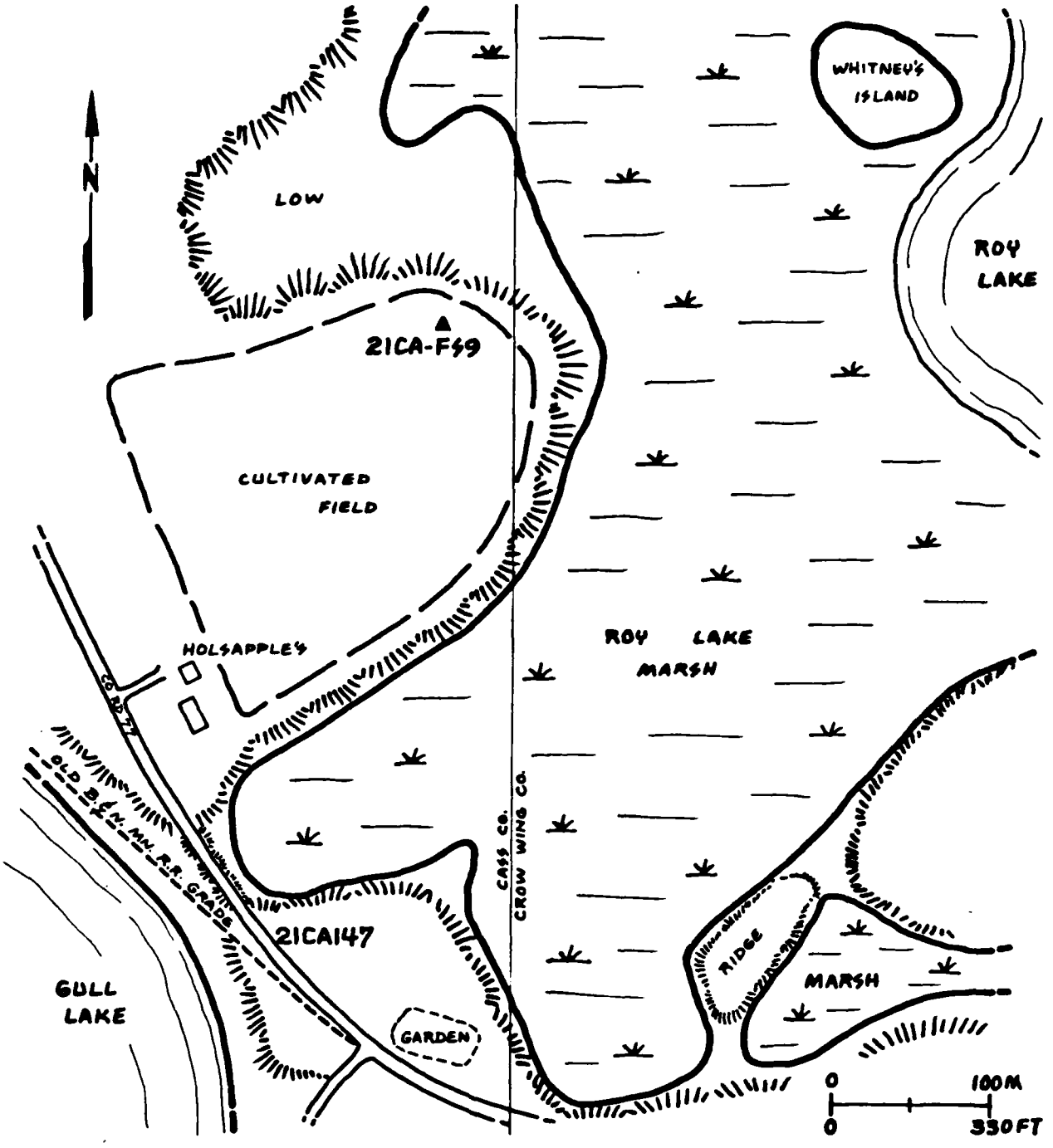

Figure 13. Field Map Showing Location of 21CA-Find Spot 9. FS-9 is in cultivated field on southwest corner of Roy Lake, north of Site 21CA147.

Site: 21CA148

Field Number/Name: #84-6 (Fawn Point Site)

Type of Site: Prehistoric Multiple Use Area

Size of Site: About 250 square meters

Cultural Affiliation: late Middle Woodland

Description: Site is on the northern-most point of an irregular T-shaped peninsula on the south side of the Spider Lake-Roy Lake narrows. Site area occupies a low, sloping terrace at the base of the high ridge that forms the north half of peninsula. The east line of Lot 1, Fawn Forest, probably cuts through site. Forest cover of birch and oak with a lone white pine on low ground to northwest. Understory of dogwood and hazel brush with areas of marsh supporting tagalder. Soil is sand or mottled lake sand. Site location suggests possible use as a seasonal fishing station. Site area is subdivided, but undeveloped.

Nature of Recovery: Multiple find area. All materials found shovel testing at 10 to 40cm level.

Collections: Hamline University H82

Materials/Source:

ST186	15-35cm	1-corner removed proj pt of gray chert 1-gray chert debitage 1-white quartz debitage FCR
ST187	10-40	3-GT ceramic "crumbs"
ST190	10-35	1-GT net-impressed body sherd 1-FCR

Site: 21CA149

Field Number: #84-16

Type of Site: Prehistoric Limited Use Area

Size of Site: About 10 square meters

Cultural Affiliation: Unknown

Description: Site is near the south end of an esker-like ridge that forms an island on the south end of Spider Lake. Two positive shovel tests were placed near the crest of this narrow undulating ridge just north of where the ridge fans out into a broader, lower terrace northwest of Site 21CA148. Area south of this island is marshy. Shoreline of the Spider-Roy Lake Narrows in this area is also marshy with tagalder. Ridge is covered with deciduous forest mixed with pine. Abundant brush. Soil is tan sand with heavy gravel and rock. Site area is subdivided, but undeveloped.

Nature of Recovery: Multiple find area. All materials found shovel testing at 0-40cm level.

Collections: Hamline Univeraity H83

Materials/Source:

ST195	0-40cm	2-pcs. cracked mammal bone
ST196	15	1-pot-lidded basalt cobble 1-basalt spall from above cobble

Remarks: Shovel tests 195 and 196 were placed 3m apart on the narrow ridge either on or near a beaver/pedestrian trail. The latter test was located about 5m northwest of a large birch clump and 14m southeast of a red pine, two distinctive local landmarks.

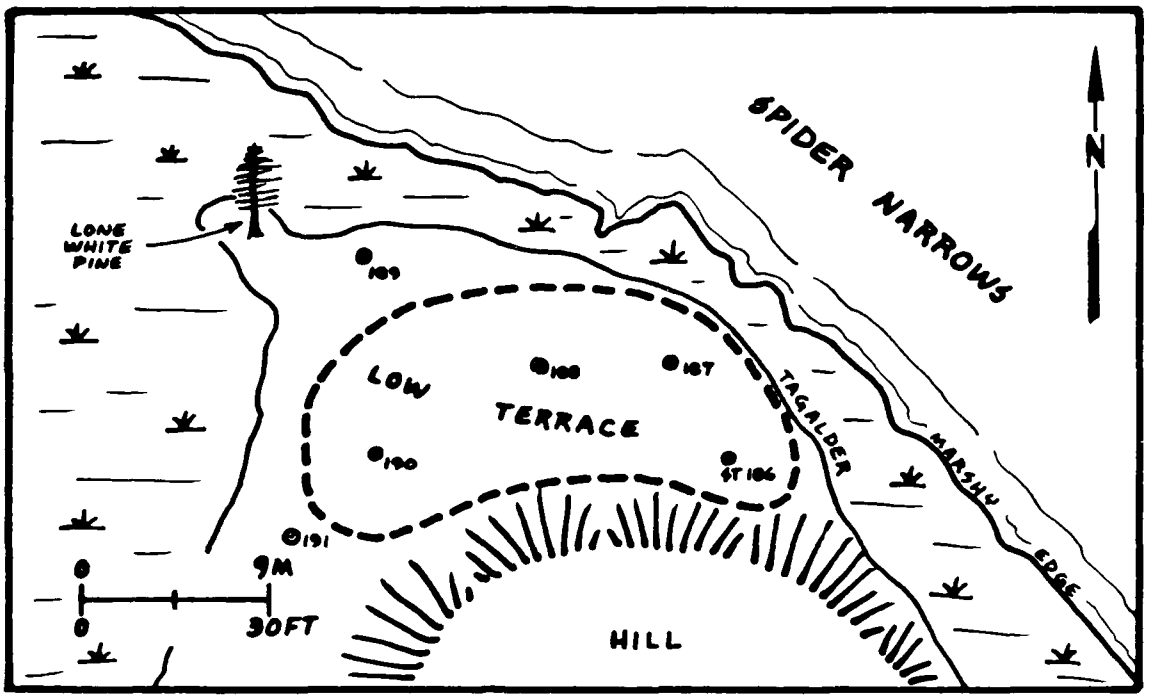

Figure 14. Field Map of Site 21CA148.

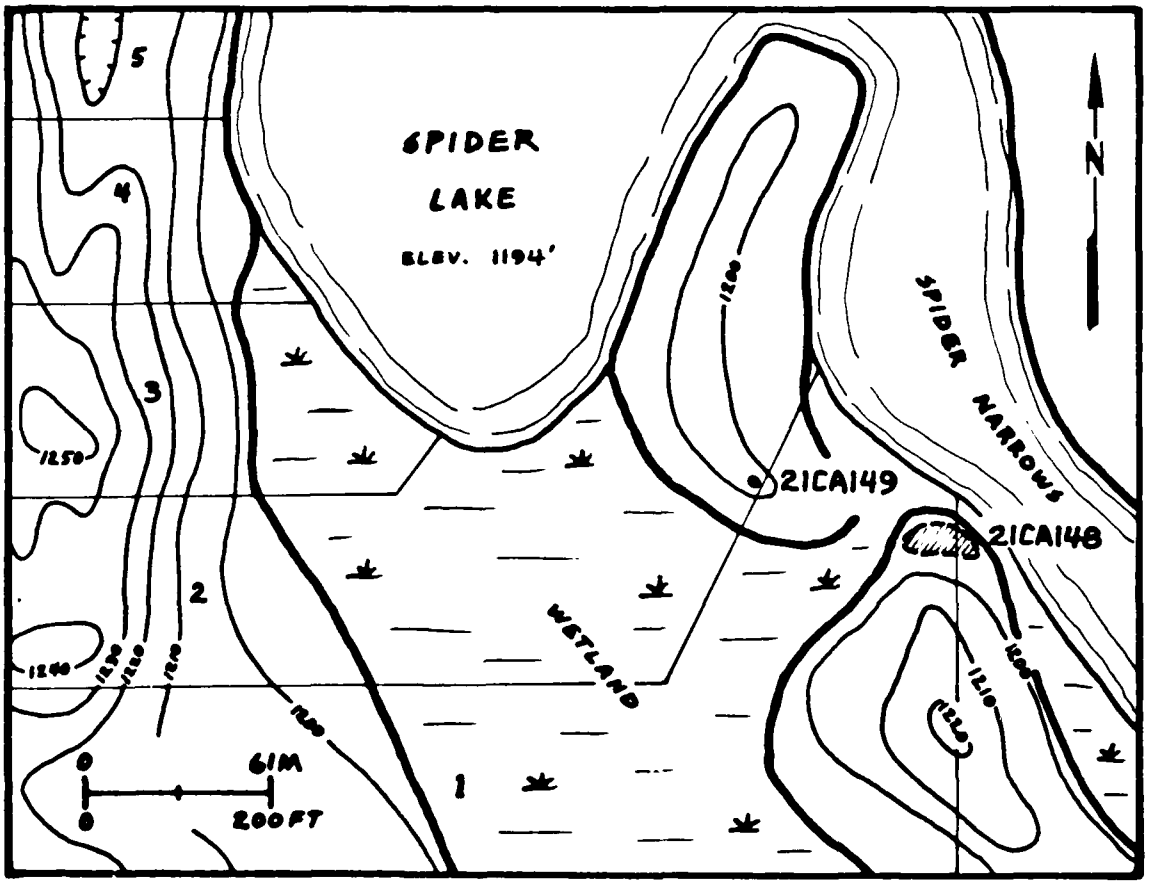

Figure 15. Field Map Showing Location of Sites 21CA148 and 21CA149.

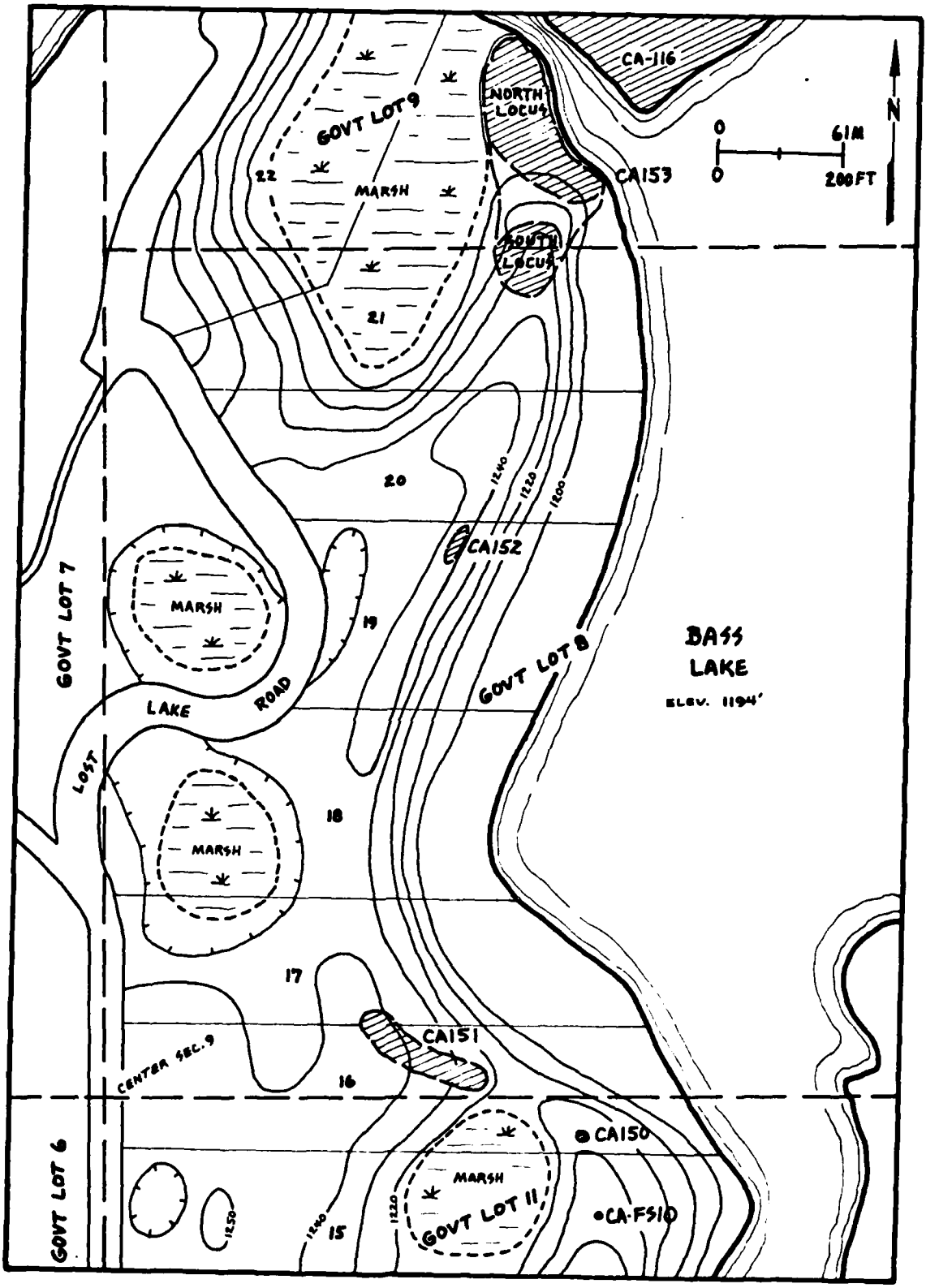

Figure 16. Known Prehistoric Sites on West Shore of Bass Lake.

Site: 21CA150

Field Number: #83-4

Type of Site: Prehistoric Limited Use Area

Size of Site: 10 square meters or less

Cultural Affiliation: Unknown

Description: Single positive shovel test placed on a small level step on a narrow ascending rattail ridge on the west side of Bass Lake at its entrance into Spider Lake. Site area has good view of Bass Lake northeast of ridge and upland marsh to west. Site may represent a single, short-term episode of lithic tool manufacture or modification. Mixed pine and deciduous forest with understory of brush. Soil is sand with light gravel. Site area is subdivided, but undeveloped.

Nature of Recovery: Limited find area. All materials found in one shovel test.

Collections: Hamline University H80

Materials/Source:

ST49	25-40cm	2-brown chalcedony flakes 1-red quartzite flake

Site: 21CA-Find Spot 10

Field Number: #83-5

Type of Site: Lithic Find Spot

Size of Site: Find Spot

Cultural Affiliation: Unknown

Description: Positive shovel test placed at northern-most end of high ridge on west side of Bass Lake-Spider Lake narrows. Test is located on level ridge top at head of driveway near a modern campfire circle. Site offers good viewing potential of surrounding water and upland marsh features. Forest of pine and deciduous trees. Brushy where not cleared. Soil is sand with light gravel. Area is subdivided, but only partially developed.

Nature of Recovery: Find spot. Lone biface found shovel testing.

Collections: Hamline University H84

Materials/Source:

ST55	30-40cm	1-red quartzite (or siltstone?) biface

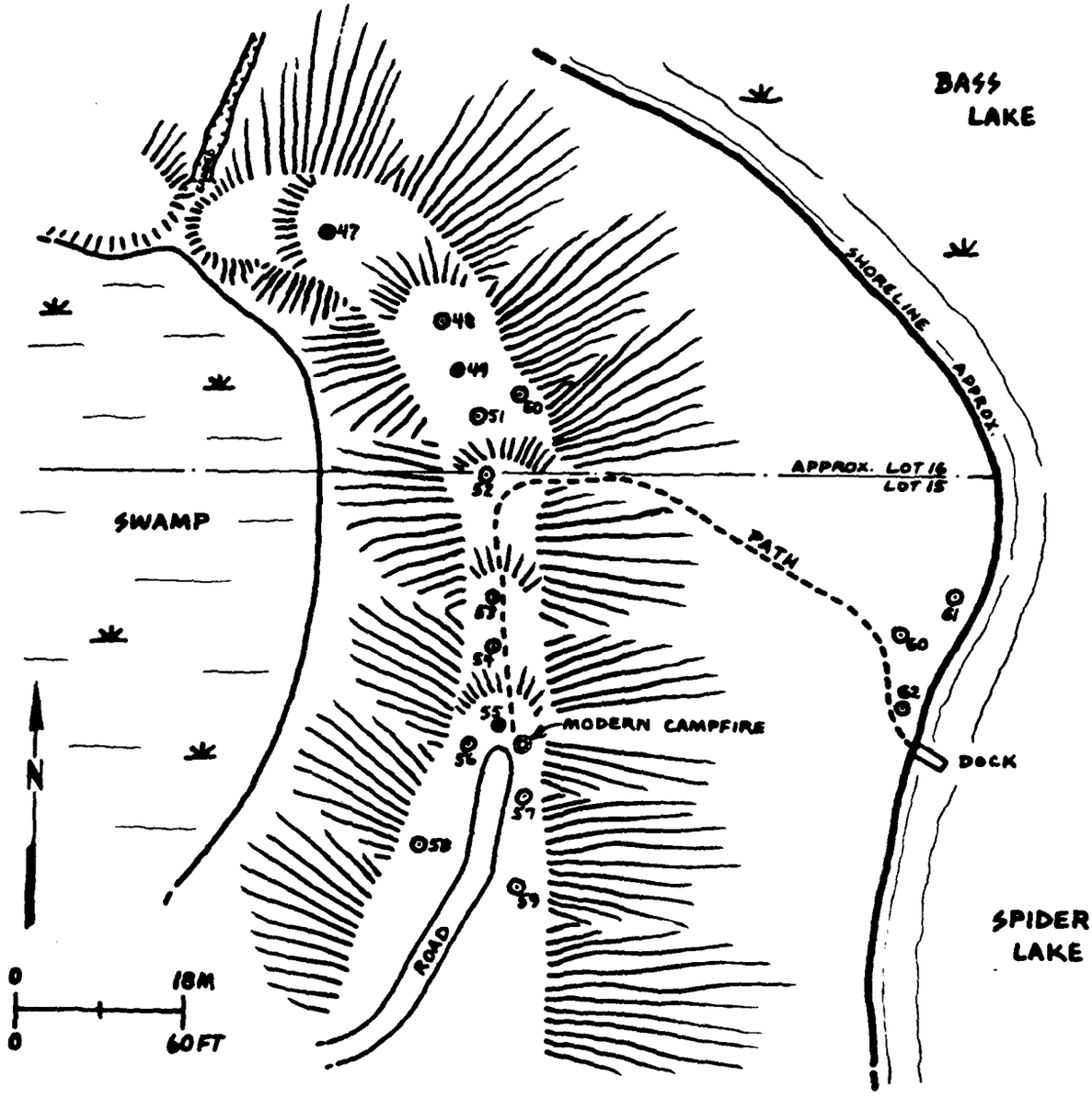

Figure 17. Field Map of 21CA-FS10 and 21CA150. Positive shovel test 55, located on edge of flat upper terrace, is find spot 21CA-FS10. Positive shovel test 49, placed on a step of the descending rattail ridge, is Site 21CA150.

Site: 21CA151

Field Number: #83-3

Type of Site: Prehistoric Multiple Use Area (?)

Size of Site: About 400 square meters

Cultural Affiliation: Woodland(?)

Description: Site is on ascending rattail ridge and adjacent level upper terrace on the southwest corner of Bass Lake at the entrance into Spider Lake. The sparsity of materials and their apparent uneven distribution suggests that 21CA151 may represent a series of chronologically and spatially discontinuous activity loci. Elevated location of site area affords good viewing potential of adjacent water and upland marsh features. Deciduous forest of birch and aspen with mixed pine. Understory of dense brush. Sandy soil. Area is subdivided, but undeveloped.

Nature of Recovery: Multiple find area. All materials found shovel testing at 10-25cm level.

Collections: Hamline University H86

Materials/Source:

ST37	20cm	1-black chert flake
ST41	20	1-GT ceramic "crumb"
ST44	10-25	2-gray chert flakes 1-red quartzite debitage
ST45	25	1-white quartz flake

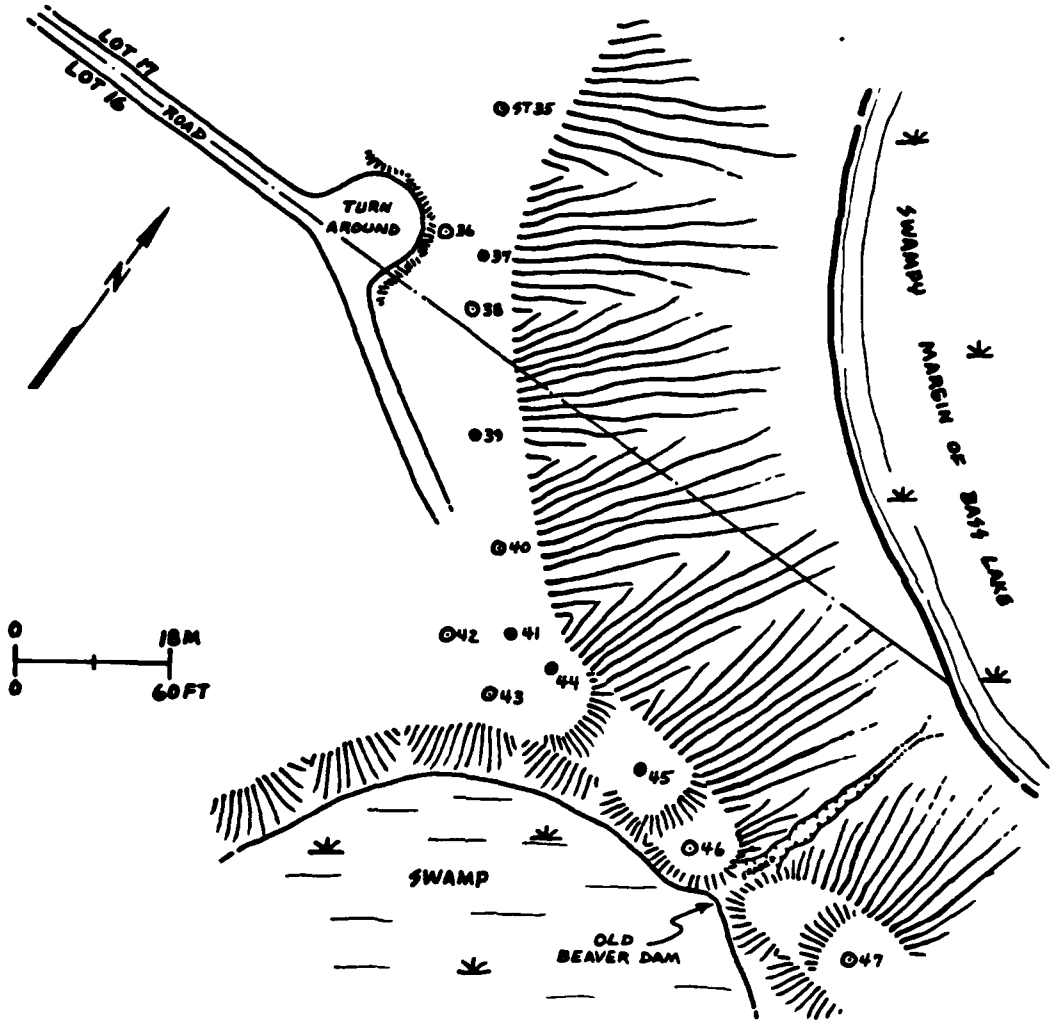

Figure 18. Field Map of Site 21CA151. Site comprises four positive shovel tests on the southwest corner of Bass Lake.

Site: 21CA152

Field Number/Name: #83-2 (Cul-de-Sac Site)

Type of Site: Prehistoric Multiple Use Area (?)

Size of Site: About 200 square meters

Cultural Affiliation: Middle Woodland (Malmo?)

Description: Site is on crest of high ridge on the west shore of Bass Lake, northeast of the cul-de-sac drive for Lot 19, Fawn Forest Addition, Lakeshore Township. Site's elevated position provides good viewing potential of Bass Lake and the adjacent Spider Lake Narrows. Predominantly deciduous forest with hazel brush understory. Scattered poison ivy. Sandy soil. Area is subdivided, but undeveloped.

Nature of Recovery: Multiple find area. All materials found shovel testing at 20-50cm level.

Collections: Hamline University H87

Materials/Source:

ST16	30-50cm	1-brown chalcedony flake 1-gray chert flake
ST17	20-30	1-GT plain body sherd
ST20	30	1-GT rim sherd w/exterior punctates

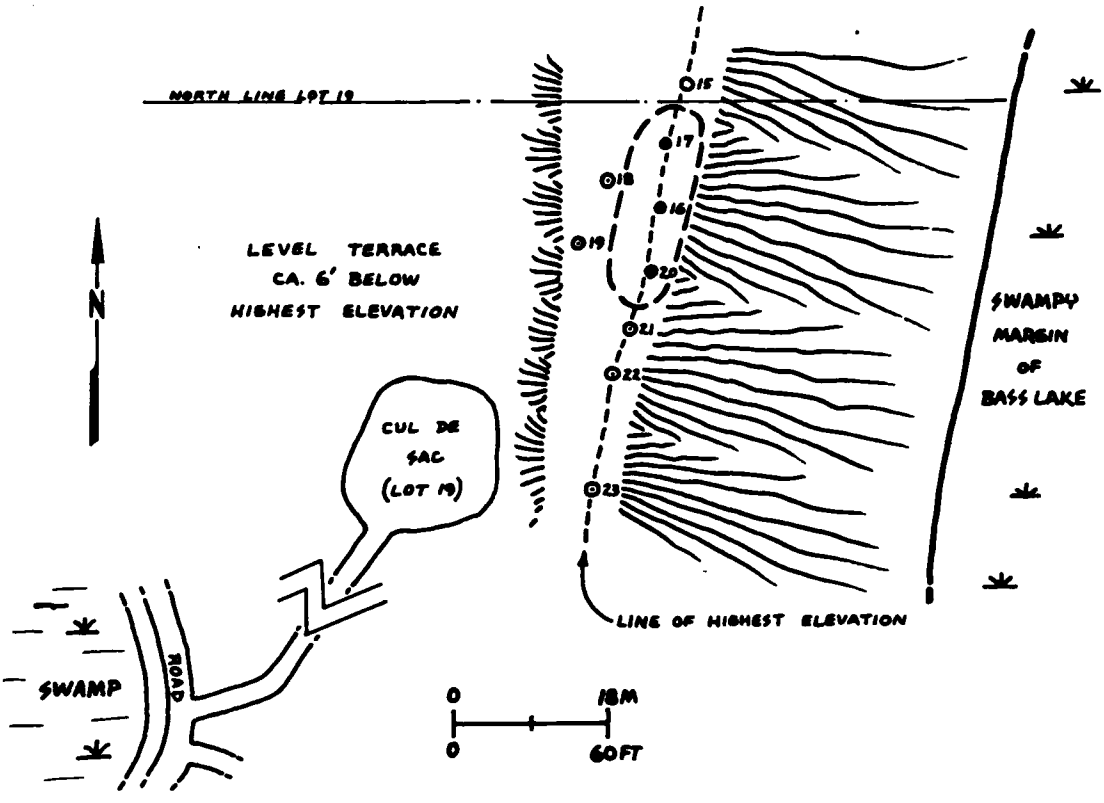

Figure 19. Field Map of Site 21CA152. Positive shovel tests define site area.

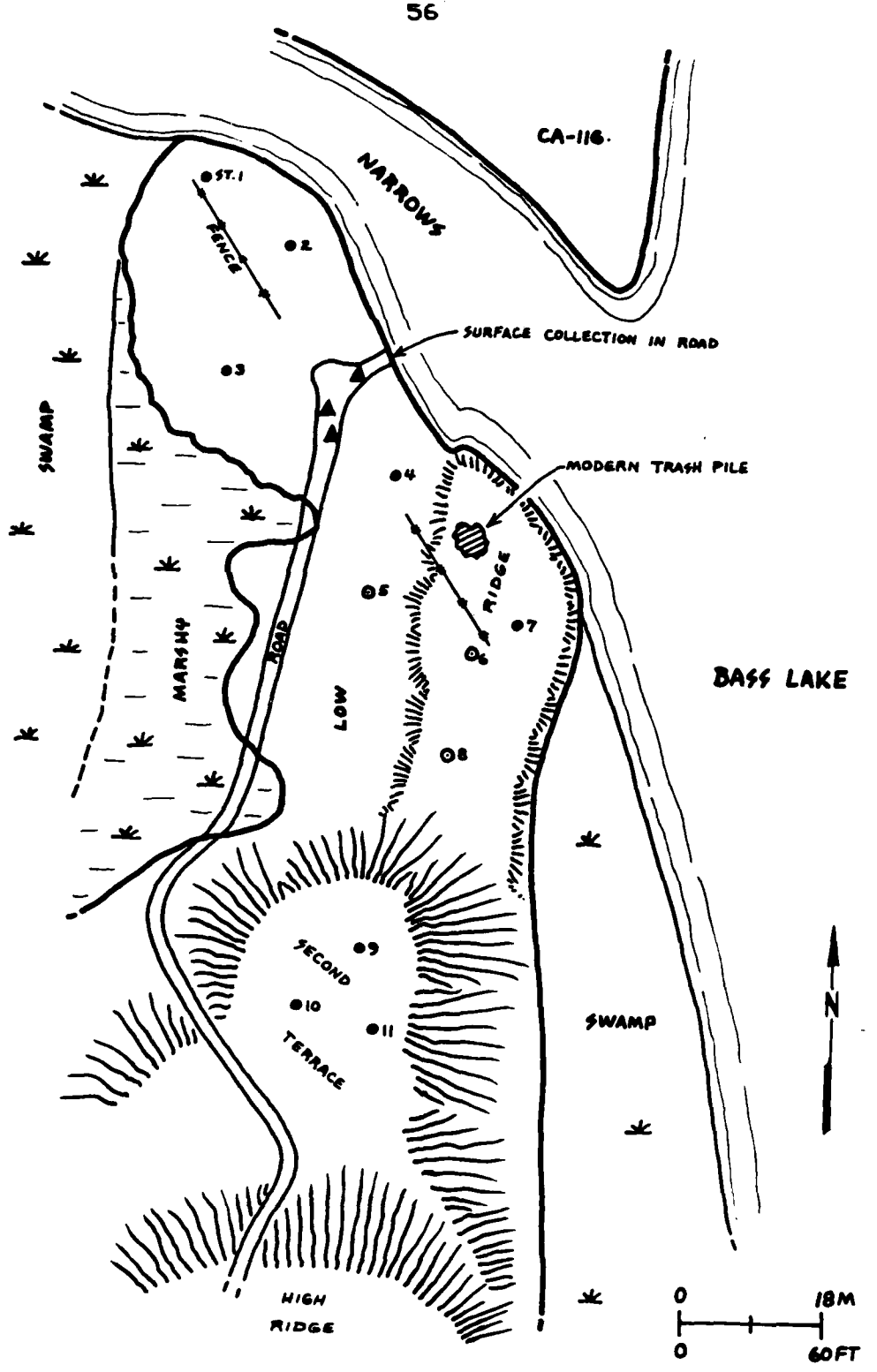

Figure 20. Field Map of Site 21CA153. North and south site loci are defined by positive shovel tests. Black triangles indicate area of surface collection.

Site: 21CA153

Field Number/Name: #83-1 (Oen Site)

Type of Site: Prehistoric Multiple Use Area

Size of Site: About 4000 square meters (1 acre)

Cultural Affiliation: Middle Woodland (Malmo?)

Description: Site is on the point of land on the south side of the Bass Lake-Upper Gull Lake Narrows, opposite Site 21CA116. Site consists of two loci. One occupies low ground and ridge at water's edge. The other is on second terrace on ascending ridge to south. Modern garbage is scattered about the lower elevations of the site. The access road was recently bulldozed as part of the subdivision process. Predominantly birch-elm forest with understory of basswood, dogwood, and hazel brush. Tagalder along swamp edge. Some pine on high ridge. Abundant poison ivy. Soil on low ground by narrows and on second terrace is sand with light gravel. Soil on low ridge of north locus is sand with heavy gravel. Ground surface undulations may result from uprooted trees. Area is subdivided, but disturbance appears limited to road construction and earlier dumping and water-related activities on low ground.

Nature of Recovery: Multiple find area. Materials found surface collecting and shovel testing.

Collections: Hamline University H88

Materials/Source:

Surface Collection (north locus): 1-GT ceramic "crumb"
2-red quartzite debitage
2-FCR

Lower elevation shovel tests (north locus):

ST1	0-25cm	1-GT plain CWS-impressed sherd 1-GT ceramic "crumb" 2-white quartz debitage 1-white quartz debitage 1-FCR
ST2	5-25	1-tan quartzite biface fragment 1-red banded agate debitage
ST3	10-30	1-GT plain body sherd 1-GT ceramic "crumb"

		4-red quartzite debitage
ST4	0-15	2-GT ceramic "crumbs" 2-FCR
ST7	5-25	2-white quartz debitage 1-white quartzite debitage 1-brown chalcedondy flake

Second terrace shovel tests (south locus):

ST9	10-35	1-basalt debitage 1-gray chert debitage 1-white quartz debitage
ST10	10-60	4-GT plain body sherds 1-crude tan quartzite biface 2-red quartzite debitage 2-white quartz debitage 1-basalt debitage 1-chert flake
ST11	15	1-FCR

Remarks: Materials appear to be in deeper deposits on the second terrace (up to 60cm below grade).

Site: 21CW87

Field Number/Name: #84-10 (Dullum Point Site)

Type of Site: Prehistoric Limited Use Area

Size of Site: 10 square meters or less (?)

Cultural Affiliation: Unknown

Description: Site is on low point on middle of west side of Roy Lake. This point is highly disturbed by road and cabin construction, worm digging, fish-cleaning burials, scattered garbage dumping, and picnic-party activities. Site defined by a single positive shovel test. Pine and deciduous forest cover. Shoreline north of site is marshy. Soil is sand with moderate gravel.

Nature of Recovery: Limited find area. All materials found in single shovel test.

Collections: Hamline University H89

Materials/Source:

ST463 9-40cm 1-red quartzite flake
1-white quartz debitage
3-FCR

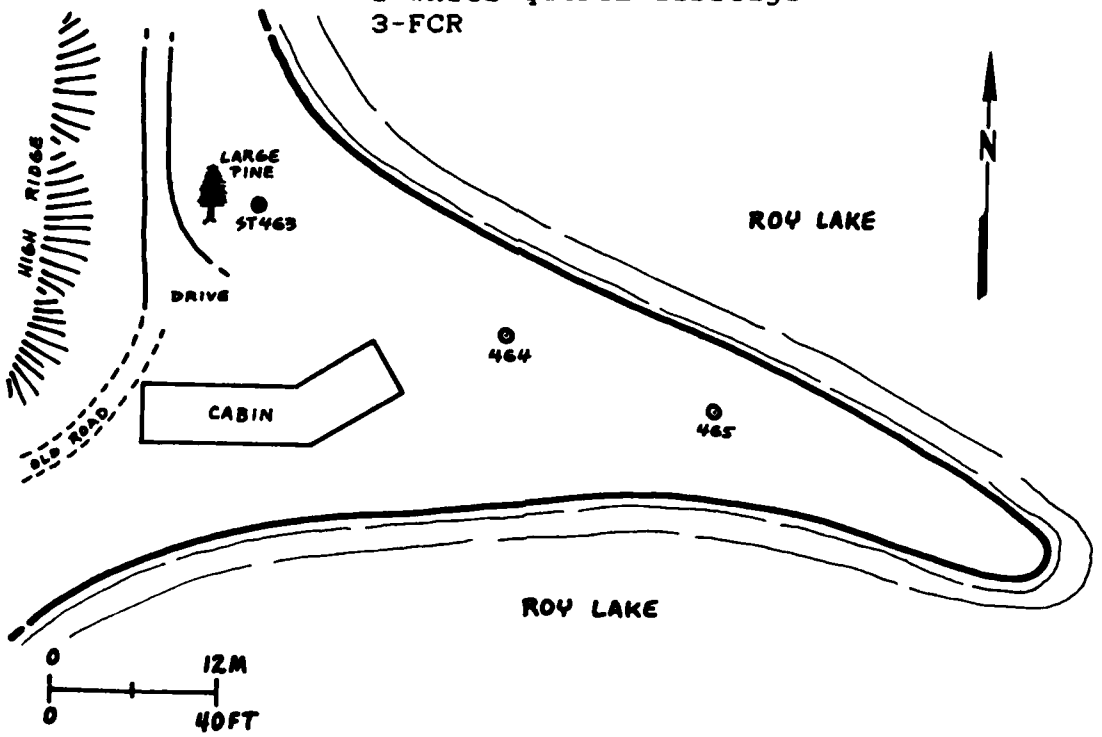

Figure 21. Field Map of Site 21CW87. Site is defined by positive shovel test 463.

Site: 21CW88

Field Number #84-8

Type of Site: Prehistoric Portage Terminus (?)

Size of Site: 1500 square meters

Cultural Affiliation: Woodland

Description: Site is on the north shore of the upper part of Roy Lake. Site occupies a swale between two ridges. Highest elevation is to the east. Site area is generally flat and just a few feet above present lake level. Northwest of site is a break in the hills that appears to form a natural passage to Lake Edna. Landowner who grew up in the first house east of site remembers finding "arrowheads" in the driveway and on the old roadbed that runs along the shoreline (Jackie Anderson, personal communication). Jack pine, oak and birch predominate on site. Aspen is more numerous on adjacent ridges. Soil is sand with light to moderate gravel. Site is cut by several old roads.

Nature of Recovery: Multiple find area. All materials found shovel testing at 0-40cm level.

Collections: Hamline University H90

Materials/Source:

ST439	25-35cm	1-white quartz debitage 2-FCR
ST440	0-25	6-GT exfoliated sherds or "crumbs" 1-pc. charcoal
ST446	12-20	charcoal
ST447	15-40	1-jasper flake 1-white quartz debitage 3-FCR 1-pc. charcoal
ST448	16-28	1-white quartz debitage 1-pc. calcined bone 3-FCR

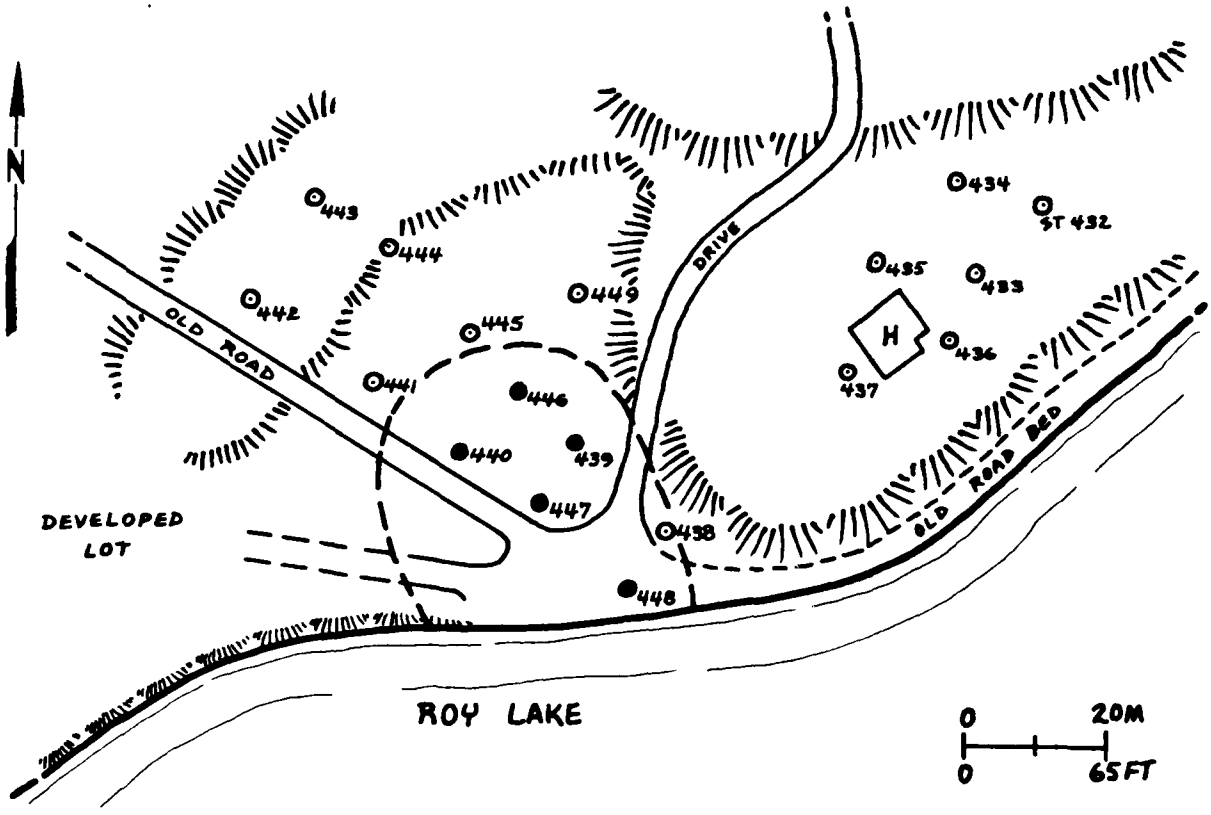

Figure 22. Field Map of Site 21CW88. Positive shovel tests define site area.

Site: 21CW89

Field Number/Name: #84-9 (Nisswa Lake Narrows Site)

Type of Site: Prehistoric Multiple Use Area

Size of Site: 9000 square meters

Cultural Affiliation: Unknown

Description: Site is on high ground on the north side of the Roy Lake-Nisswa Lake Narrows. Site materials are thinly and unevenly scattered about the undulating lake lots adjacent to channel. Site area is heavily developed with roads, driveways, houses, and cabins. An old roadbed passes down the east shore of Roy Lake north of the channel and apparently crossed the channel on an old bridge that has long since been removed. Some landowners guess that this bed is an old railroad grade, though there is no known historical evidence to support this notion. It should be noted that, although the Brainerd & Northern Minnesota Railroad did once plan to extend their northern line across these narrows, the actual grade was later built northward from Lake Hubert through Nisswa and onwards to Pequot Lakes. As part of shoreline development, it is expected that some landowners have landscaped and introduced fill materials to their lots. Deciduous forest. Soil is sand with light to heavy gravel.

Nature of Recovery: Multiple find area. Materials found surface collecting and shovel testing.

Collections: Hamline University H91

Materials/Source:

Surface Collection, Hemmerich Lot: 1-jasper flake
Surface Collection, Davis Lot: 1-white quartz debitage
Surface Collection, Horman Lot: 1-red quartzite util. flake

ST422	7-25cm	1-basalt flake 1-jasper flake 1-white quartz flake
ST424	7-15	1-gray chert flake 1-white quartz debitage 1-pc. animal bone
ST425	8-40	1-FCR

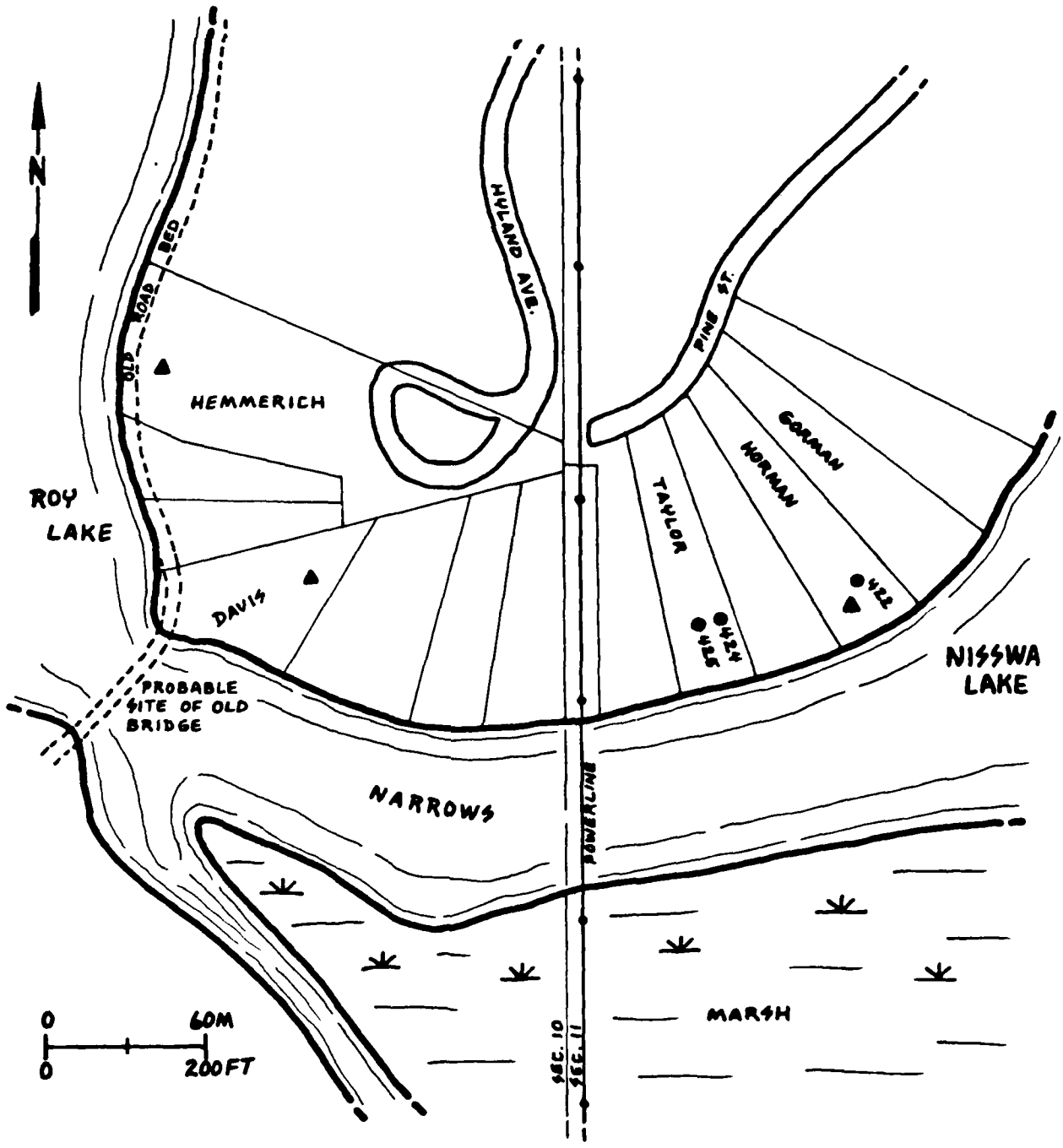

Figure 23. Field Map of Site 21CW89. Suspected site area is defined by surface collection (black triangles) and positive shovel tests on the uneven terrain on the north side of the Roy-Nisswa lake narrows.

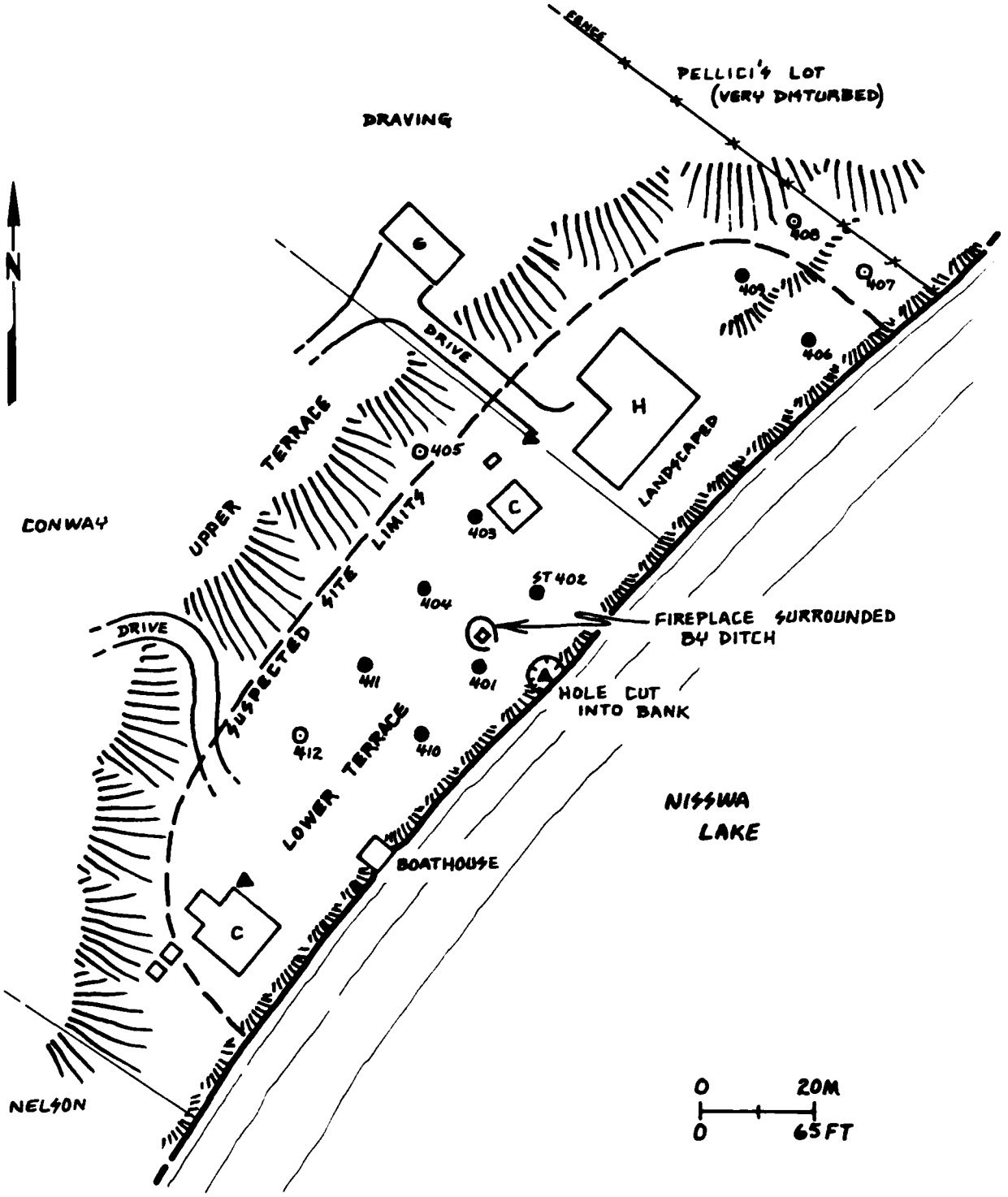

Figure 24. Field Map of Site 21CW90. Surface collections are indicated by black triangle.

Site: 21CW90

Field Number/Name: #84-7 (Conway Site)

Type of Site: Prehistoric Multiple Use Area

Size of Site: 5500 square meters

Cultural Affiliation: Woodland

Description: Site is on lakeside terrace on the middle of the northwest end of Nisswa Lake. Site area is hemmed in by high ground on north. Location is protected from northwest winds and would catch winter sun. Shovel tests suggest site deposits may be stratified. Site is partially developed by modern roads, cabins, boathouses, and gardens. Some areas are obviously landscaped. Undisturbed areas support a forest of jack pine, oak, and aspen. Soil is sand with moderate to heavy gravel.

Nature of Recovery: Multiple find area. Materials found surface collecting and shovel testing.

Collections: Hamline University H92

Materials/Source:

Surface Collection (from hole cut in bank):		1-worked black chert flake 1-tan quartzite debitage 2-chert debitage
Surface Collection (general):		1-ST plain body sherd 1-possible biface, white quartz 2-white quartz debitage
ST401	7-38cm	3-white quartz debitage
ST402	0-12	2-GT body sherds 2-quartz debitage 1-orange quartzite debitage 2-gray chert flakes 1-black chert debitage 1-FCR 2-pcs. charcoal
	12-19	1-pc. decomposed granite
	19-30	1-GT net-impressed body sherd 2-gray chert debitage

		1-red quartzite flake 1-granite chip 1-unidentified red stone chip 3-pcs. decomposing granite 2-FCR 1-pc. calcined bone
	30-41	1-black chert flake 1-pc. calcined bone 1-FCR
ST403	10-25	1-possible biface frag, red quartzite 1-pc. decomposing granite
ST404	20-30	2-FCR
ST406	14-36	5-chert debitage 1-white quartz debitage 1-pc. banded quartzite 9-FCR
ST409	8-15	9-large FCR
ST410	8-17	1-oolitic chert debitage 1-white quartz flake
ST411	25-35	5-FCR
ST412	0-40	modern garbage: old cans, bottles, etc

Site: 21CW91

Field Number/Name: #84-2 (Thurlow Site I)

Type of Site: Prehistoric Limited Use Area

Size of Site: 10 square meters or less

Cultural Affiliation: Unknown

Description: Site is on northeast shore of Nisswa Lake on crest of low, narrow ridge that parallels the shoreline. Shoreline is marshy. Site area is about 20m from open water. An old road cuts up the lake bank about 30m to the southeast. Predominantly deciduous forest with mixed pine. Understory of dense brush. Soil is sand with moderate to heavy gravel. Area is subdivided, but undeveloped.

Nature of Recovery: Limited find area. All materials found in one shovel test.

Collections: Hamline University H93

Materials/Source:

ST556	10-45cm	1-white chert debitage FCR

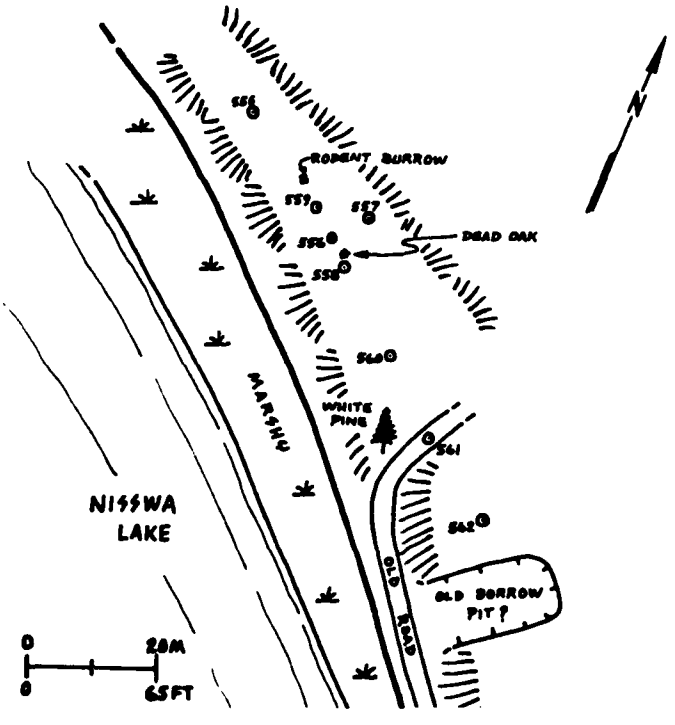

Figure 25. Field Map of Site 21CW91. Site is defined by positive shovel test 556.

Site: 21CW92

Field Number/Name: #84-3 (Thurlow Site II)

Type of Site: Prehistoric Multiple Use Area

Size of Site: About 200 square meters

Cultural Affiliation: Unknown

Description: Site is on northeast shore of Nisswa lake on sloping terrace about 3m above lake. Site is midway between an old borrow pit (?) and a cabin at the intersection of two old roads. One road cuts down the lake bank at this point and has disturbed the site. One artifact was found exposed in this roadcut. Shoreline below site appears to be pushed-up ice rampart. Deciduous forest with dense understory of hazel brush. Soil is sand or sandy loam with moderate to heavy gravel. Area is subdivided. No recent development. Some buildings shown in this area on the 1959 Nisswa USGS quadrangle (7.5 minute series) are gone and their former sites are not readily ascertained.

Nature of Recovery: Multiple find area. Materials found surface collecting and shovel testing.

Collections: Hamline University H94

Materials/Source:

Surface Collection (road cut):		1-basalt flake
ST565	0-10cm	1-gray chert flake 1-white chert flake
ST569	9-15	1-white quartz debitage 3-FCR
ST571	0-9	1-chert debitage

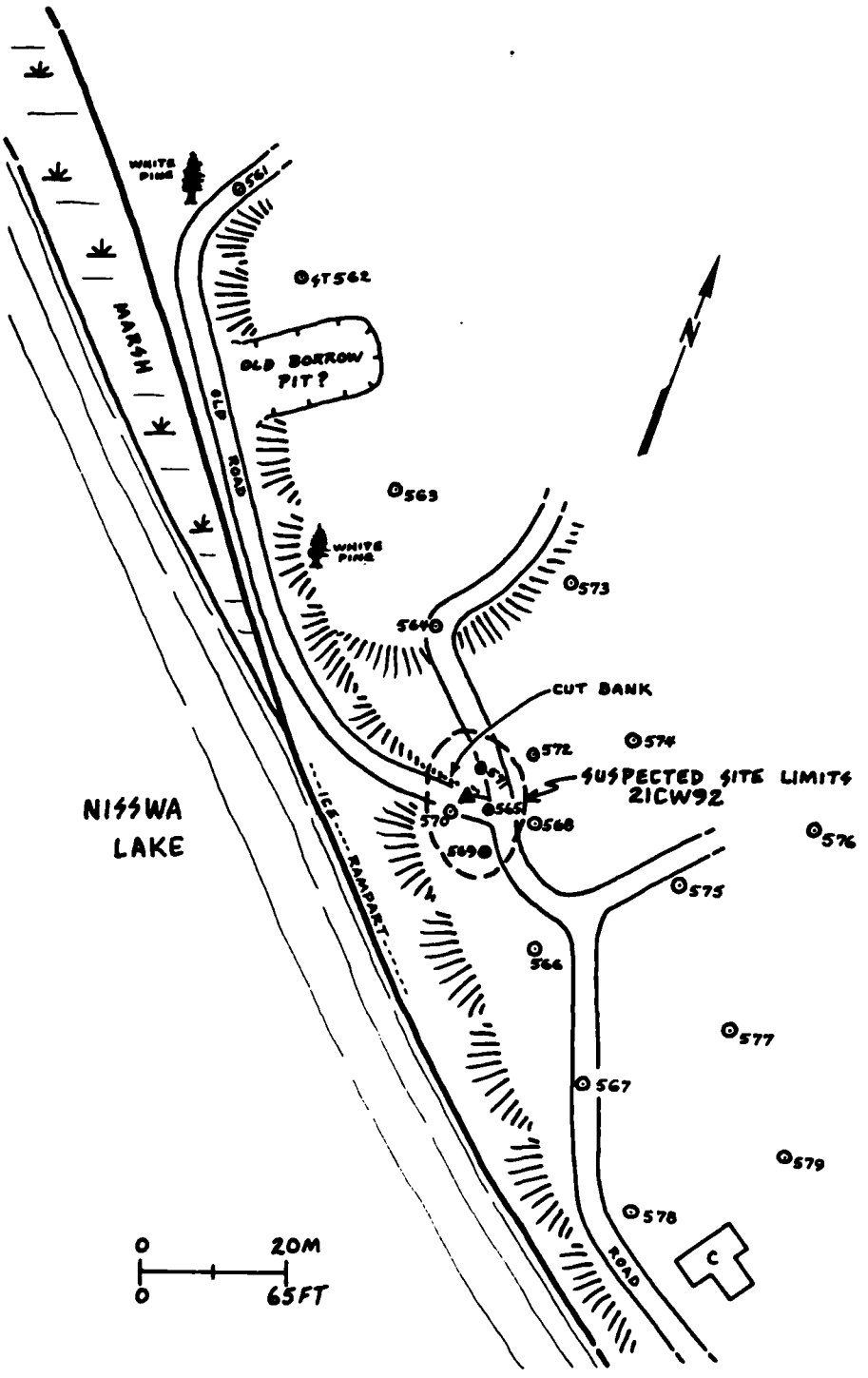

Figure 26. Field Map of Site 21CW92. Surface collections (black triangles) and positive shovel tests suggest site limits.

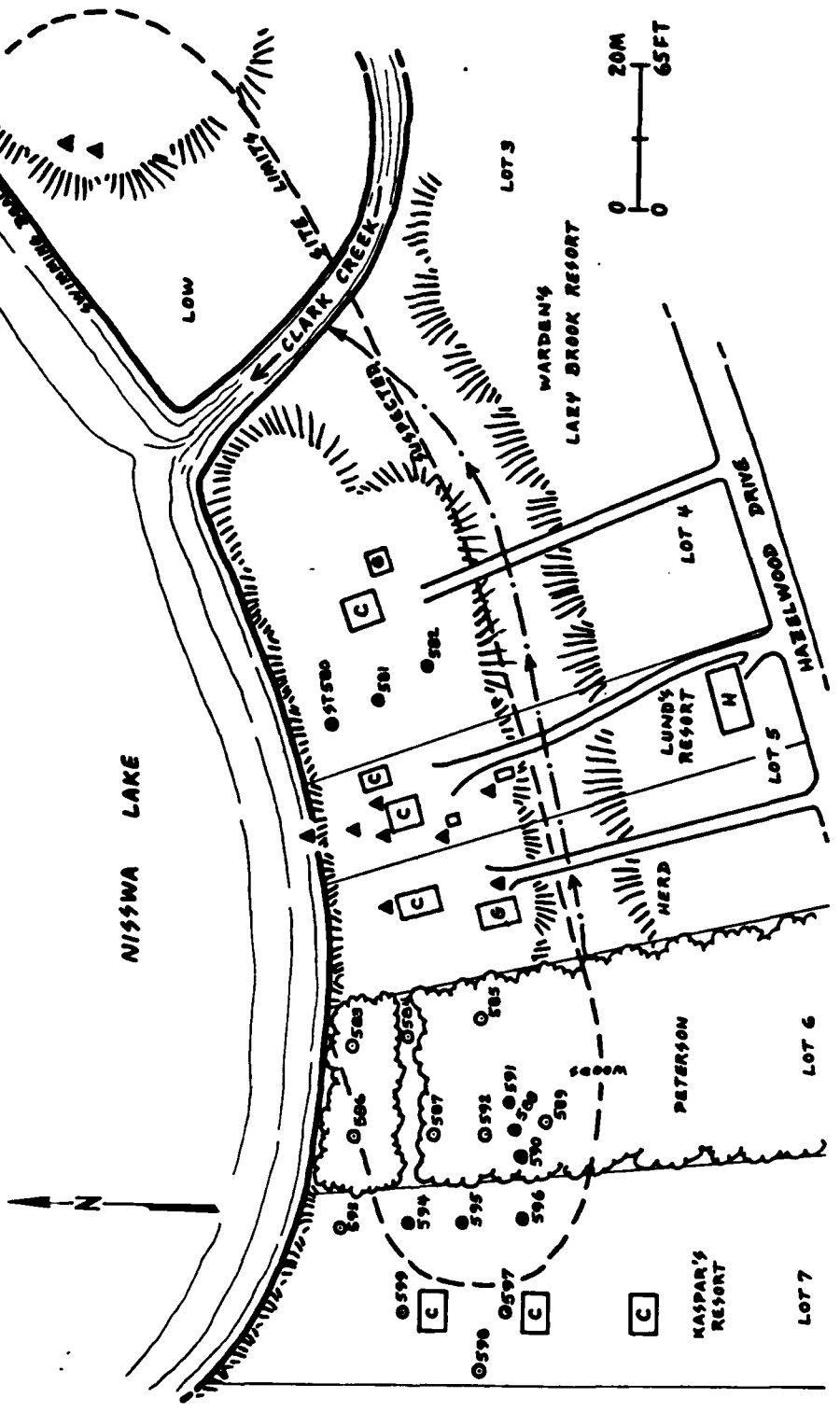

Figure 27. Field Map of 21CW93. Surface collections (black triangles) and positive shovel tests suggest limits.

Site: 21CW93

Field Number/Name: #84-4 (Clark Creek Site)

Type of Site: Prehistoric Multiple Use Area

Size of Site: 5000 square meters

Cultural Affiliation: Woodland

Description: Site is on the south end of Nisswa Lake on either site of the mouth of Clark Creek. Site occupies lakeside grounds now heavily developed as resort and summer cabin, residential and recreation area. Only one lot (Lot 6, Peterson's) is undeveloped. Use of introduced fill materials and some landscaping probable. High development limited the number of shovel tests. Continuity and density of site materials is uncertain. Mixed deciduous-pine forest. Lot 4 has been planted with pine. Soil is sand with light to moderate gravel.

Nature of Recovery: Multiple find area. Materials found surface collecting and shovel testing.

Collections: Hamline University H95

Materials/Source:

Surface Collection (east of Clark Creek):
1-GT ceramic "crumb"
1-gray chert flake
1-white quartz debitage
1-pc. calcined bone

Surface Collection (Lund's-Herd's, Lot 5):
1-GT rim sherd w/oblique notched tool impressions on interior
4-white quartz debitage
2-white chert debitage
2-red/tan quartzite flakes
1-orange quartzite flake
1-jasper flake

Surface Collection (Kaspar's Resort):
1-white quartz debitage
1-white quartzite debitage

ST580 8-60cm
1-smoky quartz debitage
6-red/tan quartzite debitage
2-chert debitage
1-white quartz debitage

		1-pc. calcined bone
ST581	0-20	1-red quartzite flake 1-white quartz debitage 1-pc.calcined bone
ST582	0-25	2-pcs. red & cream-colored quartzite 1-chert flake 29-pcs. calcined bone (recent?) plus much modern garbage
ST588	8-17	1-white chert debitage
ST590	10-20	1-FCR
ST591	0-50	2-chalcedony flakes 1-white quartzite flake 1-white quartz debitage 5-FCR
ST594	7-15	1-white quartz flake
ST595	30-45	1-basalt flake 1-white quartz flake
ST596	0-10	1-red chert debitage

Site: 21CW94

Field Number/Name: #84-6 (Burgin Site)

Type of Site: Prehistoric Limited Use Area

Size of Site: 10 square meters or less (?)

Cultural Affiliation: Woodland

Description: Single positive shovel test placed on ridge on the southwest shore of Nisswa Lake between the Burgin and Burke homes. Test was located at midpoint of ridge which is about 20 to 25m wide on top. Site area is heavily developed with houses, garages, roads, gardens, etc. Mature forest of oak, birch, and jack pine. Soil is sand with light to heavy gravel.

Nature of Recovery: Limited find area. All materials found in one shovel test.

Collections: Hamline University H96

Materials/Source:

ST617	0-10cm	1-GT ceramic "crumb"
	10-30	1-tan quartzite debitage 1-FCR

Remarks: Shovel Test 620, placed about 6m WNW of Shovel Test 617, contained one piece of possible FCR.

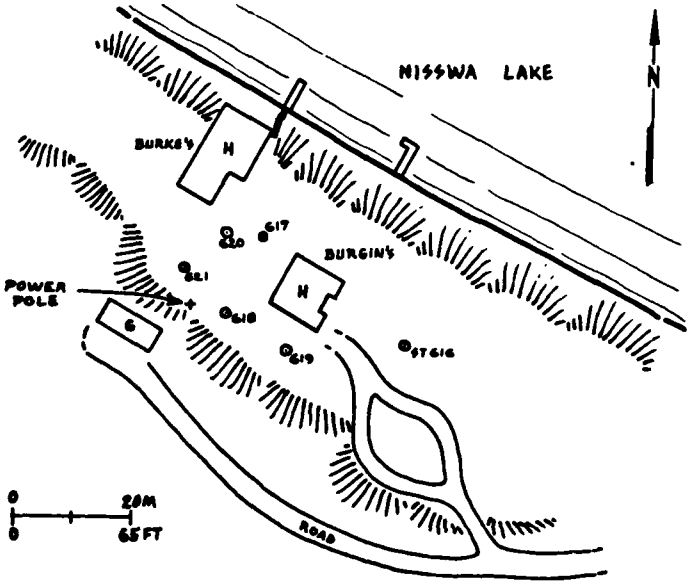

Figure 28. Field Map of Site 21CW94. Site is defined by positive shovel test 617.

Site: 21CW95

Field Number: #84-11

Type of Site: Prehistoric Limited Use Area

Size of Site: 250 square meters

Cultural Affiliation: Unknown (Archaic?)

Description: Site is on the west side of the south half of Roy Lake just east of the Cass-Crow Wing county line. Before the lakeshore in this area was developed the shoreline was marshy with sections of floating bog. As part of local development, the shoreline was dredged and much of the peat piled on shore or spread across lawns. In 1969 and 1977, following these dredging operations, one landowner (Mrs. Arnold Voigt) found two large teeth that were later identified by some unknown authority as being from an extinct Giant Bison (6000 B.C. was the date mentioned). These teeth are believed to be in the collections of the Crow Wing County Historical Society in Brainerd, Minnesota. They are temporarily unavailable for viewing because the historical society museum has just moved into new facilities.

A few years ago, Robert Apelt (the neighbor south of Mrs. Voigt) found a large ivory-colored quartzite biface (Archaic?) in the shallow water by his boat dock (Figs. 29 & 30). Additional materials were found during the NAS survey (see listing below).

Nature of Recovery: Multiple find area. Materials found surface collecting.

Collections: Hamline University H81

Materials/Source:

Surface Collection (Voigt's Lot 8):
1-pc. white chert debitage
1-tooth, white-tailed deer (recent?)

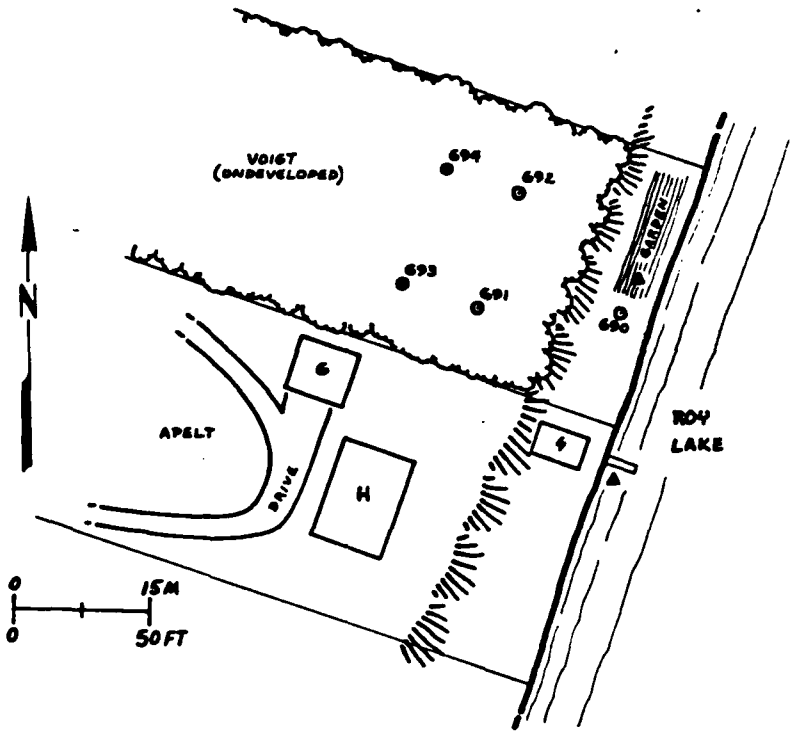

Figure 29. Field Map of Site 21CW95. Giant Bison (?) teeth, deer tooth and pc. of chert debitage were found on shoreline in garden. Chert biface (below) was found by Apelt near his boat dock.

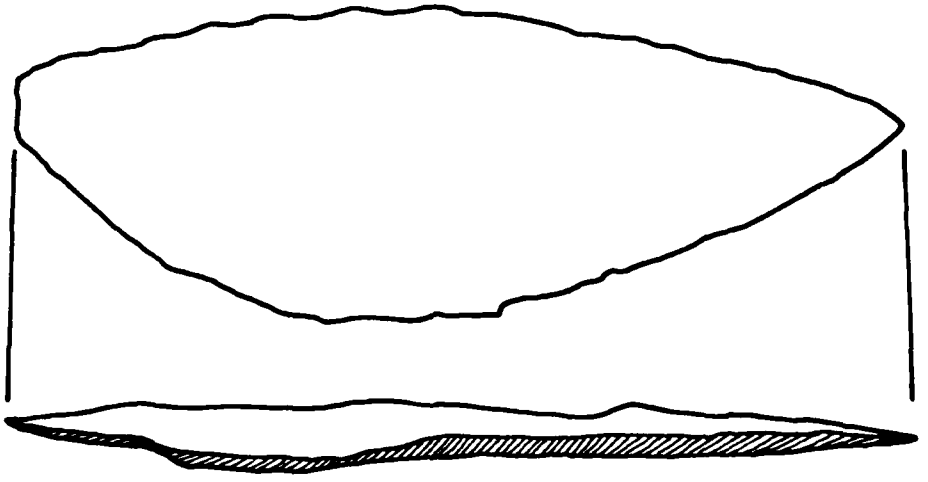

Figure 30. Apelt Biface. A large ivory-colored quartzite biface found on the southwest shore of Roy Lake by landowner Robert Apelt. Scale 1:1

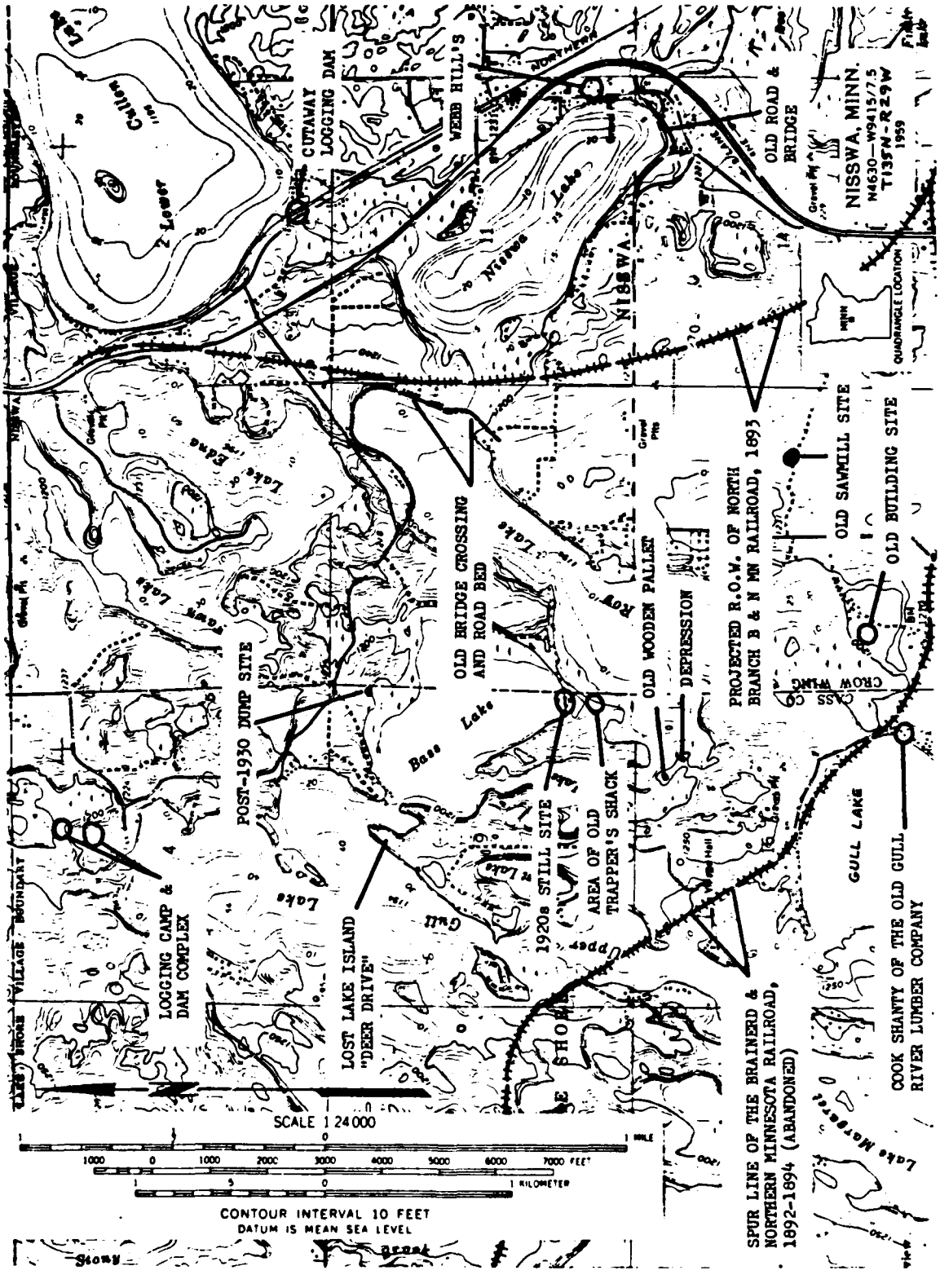

Figure 31. Known Historic Sites in the Nisswa Lakes Area.

Most of the sites discussed in the remainder of this chapter are shown on Fig. 31.

Lost Lake Island "Deer Drive." It is rumored locally that "the Indians" once used to drive deer on Lost Lake Island (the area between Bass-Spider and Upper Gull Lakes) to the northern-most point on the island (Lot 23, Fawn Forest Addition) where they would kill the deer as they jumped into the lake and began swimming (Lucille Oen, personal communication). The area of the alleged deer kill was reported as site 21CA117 by the 1978 Headwaters Survey.

Logging-era Structures and Sites. Webb Hill's former logging camp-halfway house-farm property is located on the east side of Hazelwood Drive due south of downtown Nisswa, in the N1/2 SE1/4 SE1/4 S.11. The events that occured at this once thriving pioneer outpost are of considerable importance to the early history of Nisswa. The area of this old camp is now heavily developed. It lies outside of the 50m Nisswa Lake survey corridor.

A reputed cook shanty of the old Gull River Lumber Company was built into the guest lodge of the Camp Comfort Resort (Fig. 12) on the north end of Gull Lake sometime after WWI. The relocation and changes made to this structure have rendered it ineligible for the National Register. The lodge is now closed, and much of the resort has been sold as residential property. The lodge and several of the nearby mounds of Site 21CA147 fall within 50m of the shore of Gull Lake.

Logging dams located on the north end of Upper Gull Lake and at the exit of Lower Cullen Lake (Fig. 31) in the late-1800's are outside the Nisswa lakes survey area.

For discussions of the old Brainerd & Northern Minnesota Railroad spur line that skirted the north end of Gull Lake and crossed Upper Gull Lake, see the end of Chapter 2 and discussion of Site 21CA147, above. When this standard gauge spur was abandoned in 1894, one plan called for extending the mainline northward from the present "Sportland Corner" across the Roy-Nisswa Lakes Narrows. This plan was never implemented, and the line was actually built from the town of Lake Hubert up the east side of Nisswa Lake where it is today (see discussion for Site 21CW89, above).

The last log drive on the Nisswa lakes was in the Spring 1901. To control the drive into Upper Gull Lake, probably a number of retaining booms were stretched across Nisswa, Roy, Spider, and Bass Lakes. Boom logs, held

together with short chains, were likely placed from point-to-point across these lakes to form artificial containments through which the logs could be moved. Some pilings said to have been located in the narrows at the outlet of Bass Lake (Lucille Oen, personal communication), and some similar features once reported on the end of the long, narrow point on the south side of the outlet of Roy Lake (W1/2 NW1/4 S.15) may relate to early log-booming activities.

A 20th-century sawmill site is located in a forest in the middle of the E1/2 S.15, about one-third mile east of the south end of Roy Lake. The site is marked by several possible cellar depressions scattered on the north and east edge of a clearing. Site access is by a DNR-maintained snowmobile/horseback riding trail from the west. This site is well outside the Nisswa lakes survey area.

Old Roads. Numerous old roads were encountered on the shores of the Nisswa lakes that probably post-date 1880. The most obvious roadbed crossed the Roy-Nisswa Lakes Narrows and skirted the upper end of Roy Lake. The origin of this roadbed is unknown but may be associated with early logging activities (see discussion for Site 21CW89, above). Other roads were found on the northeast and south shores of Nisswa Lake, along the south side of Spider Lake, and on the peninsula on the east side of Spider Lake.

Trash Dumps. Modern garbage dumps were frequently found in and around the survey area. Considerable dumping activity is evident on the north locus of Site 21CA147. Large dumps probably associated with summer resorts are located on the north side of Bass Lake (Fig. 31) and in the SW1/4 SW1/4 S.15, near a possible old building site southwest of Roy Lake Lodge. Both of the latter dumps are outside the Nisswa lakes survey area.

Unidentified Depression. An artificial-looking depression was found on the south end of the irregular, T-shaped peninsula on the south side of the Spider-Roy Lake Narrows (in the SW1/4 NE1/4 NE1/4 S.16). The depression measures 5.5m in diameter by 0.8m deep and is situated on a level ridgetop overlooking the narrows. It has every appearance of being old. Shovel tests placed in and around this feature proved negative (Appendix D, ST172-174). The origin of this depression is unknown.

Modern Wooden Pallet. A rotting wooden pallet made of milled lumber was found on the crown of the hill on the north end of the above-mentioned T-shaped peninsula (in the E1/2 NW1/4 NE1/4 S.16). The identity or purpose of this

modern device at this location is unknown. It is presently boxed in by thick hazel brush on all sides.

Possible Shack & Still. A former landowner recalls that a hillside dugout or hole--the remains of a trapper's shack (?)--and a 1920's still were once located on the narrow spit of land that separates Bass and Roy Lakes (in the NE1/4 SE1/4 SE1/4 S.9). The hole where the alleged shack was said to have been could not be found by either the informant or the survey team. The still was said to have been a metal contraption located on the south side of Bass Lake in an area long since developed (Lucille Oen, personal communication).

Miscellaneous Tools. The island located in the marsh on the south end of Roy Lake (in the N1/2 NW1/4 SW1/4 S.15) has been almost completely landscaped and is now accessible by road. The owner-developer of the island once found an old hand-forged adze in a garden bed on the lower part of the island. As he has hauled in considerable quantities of black dirt he is uncertain if the adze is from the island or was introduced with the fill (Frank Whitney, personal communication). The adze was not available for study.

A landowner on the southeast shore of Roy Lake (in the NW1/4 SE1/4 S.10) reported that his son has found several winter ice-harvesting tools on the lake bottom near his cabin while SCUBA diving. He claims that the "railroad companies" used to harvest ice on Roy Lake as late as the early 1950's (Mr. Ebert, personal communication).

5. CONCLUSIONS AND RECOMMENDATIONS

The 1983-84 NAS survey produced interesting and important new information about the prehistory of the Mississippi Headwaters Region. The addition of almost two dozen prehistoric sites to the inventory of archaeological properties on the Gull Lake Reservoir significantly increases our knowledge of local site density, diversity, and pattern. This concluding chapter considers the results of the Nisswa lakes shoreline survey, recommends steps for the future preservation or Phase II analysis of sites, and addresses some research questions posed by earlier investigators.

The Survey in Perspective

Topically and methodologically, the Nisswa lakes survey belongs to a third generation of archaeological inquiry at Gull Lake. The first field efforts in the Gull Lake area involved only burial mounds. As early as 1836, explorer Joseph Nicollet mentioned seeing a possible mound on the Gull River (Bray 1970:56), and at the turn of the century archaeologist Jacob Brower explored several groups of mounds in the Brainerd Lakes Area (e.g., Winchell 1911:354). In the late 1940's, a sociologist-lecturer from Hamline University dug into one or more mounds on the north end of Gull Lake and like many others failed to record his findings. In the 1950's, University of Minnesota archaeologist Lloyd Wilford left a detailed account of his work when he examined mounds on the nearby Pine River Reservoir (Fig. 1) (Wilford, et.al. 1969:20-21).

Not until the late 1960's did professional archaeologists working at Gull Lake show more than a casual interest in the living areas frequented by prehistoric peoples. University of Minnesota crews tested habitation deposits at the Gull Lake Dam Site between 1968-70 and at the Langer and Ebert sites in 1974. During this "second generation" of study, the field work centered on formal testing or excavation of known sites. The focus, however, shifted away from mound excavations. The turning point came at Gull Lake Dam when former State Archaeologist Elden Johnson recognized the greater need for studying multi-component habitation deposits in defining local prehistoric cultural complexes. Gull Lake Dam became the "type site" for the Brainerd net-impressed ceramic series and the example that directed later excavations towards a broader

consideration of the material record. This divergence coincided with a growing public sensitivity towards American Indians and a new awareness in cultural resource preservation and management.

What might be considered a "third generation" of archaeological interests at the Gull Lake Reservoir began in the mid-1970s with the shoreline survey of Gull and Upper Gull lakes. The reconnaissance of a 50-meter wide corridor around these lakes was intended to develop a more complete knowledge of the local universe of prehistoric sites. Where were the sites? What were they? How did they inter-relate in time, space and content? What steps should be taken to preserve or protect these remains?

It was during the "third generation" that archaeol gists developed new, more efficient methods for locating sites in forested areas. Prior to 1976, the point when most Minnesota archaeologists finally accepted shovel testing as a legitimate procedure, subsurface sites were most often found by chance in areas disturbed by erosion or development. The Nisswa lakes survey was among the first to use wholesale shovel testing to examine an extensive shoreline area of the Gull Lake Reservoir. The survey provided a rare opportunity for archaeologists to inventory and assess the material aspects of a broad range of past human activity in a confined lake-forest zone. The methods and goals of this Phase I survey are reflective of current, "third generation" interests and approaches in Minnesota archaeology.

A Consideration of the Survey Results

The NAS survey discovered 23 previously unrecorded prehistoric archaeological properties and re-examined 21CA116, a known site at the outlet of Bass Lake. The historic properties found on the shores of the Nisswa lakes are late 19th and early 20th century features deemed ineligible for the National Register.

The first step in analyzing and comparing the prehistoric properties was to categorize them by size and artifact density (see pp.27-28, above). Each of these properties was then further defined and compared on the basis of location and disturbance, the presence or absence of certain artifacts (e.g., ceramics, stone tools, fire-cracked rock and bone), and, where lithic materials were found, the number and variety of stone types represented. The results of this analysis indicate the following:

1. The 24 prehistoric properties include four find spots, six limited find areas (<10 square meters in size), and 14 multiple find areas (>200 square meters in size) (Table 2 & 3). Three of the four find spots and all of the limited find areas were found through shovel testing. Of the 14 multiple find areas, eight range in size from 200 to 1500 square meters and 6 encompass between 4000 and 14,500 square meters. Ten of the 14 multiple find areas were found or verified through shovel testing.

Thus, of the 23 newly recorded prehistoric sites, 19 (82 percent) were discovered or verified through shovel testing. Nine of the 10 sites smaller than 10 square meters (or 90 percent), and 8 of the 13 sites larger than 200 square meters (or 61 percent), probably would not have been found without subsurface testing. These figures illustrate the importance of shovel testing as a discovery technique. They also support the observation that "small" sites are more likely to escape detection than "large" sites in shoreline areas where shovel testing methods are not applied. The 15M (50 foot) shovel test interval specified in the Corps contract theoretically "insures" the discovery of all subsurface sites larger than 230 square meters in areas shovel tested. Any increase in the shovel test or transect interval would automatically decrease the number of smaller sites discovered and further skew our knowledge of sites and site distributions in the survey area. Any decrease in the test interval could raise the cost of large-scale archaeological surveys to almost prohibitive levels (Birk 1979:72-74).

2. The varied shorelines and terrain forming the margins of Bass, Spider, Roy, and Nisswa Lakes make it difficult to ascribe any pattern to the location of sites that would allow the development of meaningful predictive models regarding prehistoric settlement or land use. However, sites are generally located at the narrows or thoroughfares connecting the lakes (21CA116, 21CA148, 21CA149, 21CA150, 21CA151, 21CA153, 21CW89)and are also located on certain points of land (21CA146, 21CW95), possible portage landings (21CA147, 21CW88), and the mouth of a stream (21CW93). Some sites, positioned on low shoreline terraces backed by higher elevations on the north shores of the lakes, could have been placed to take advantage of the winter sun while offering protection from northwest winds (21CA144, 21CA145, 21CW88, 21CW90).

3. An expected correlation between site size and site disturbance is that all sites larger than 1500 square meters in size have been disturbed by modern development activities while only 38 percent of the sites smaller than 1500 square

Table 2. Summary of the Prehistoric Sites Located on the Nisswa Lakes.

Site	Site Area (sq. meters)	Nature of Recovery	Site Disturbed?	Intensive Survey Needed?
*21CA116	7800	MFA	yes	yes(P1)
*21CA144	900	MFA	no	yes(P1)
21CA-FS8	--	FS	--	no
21CW-FS	--	FS	--	no
*21CA145	<10	LFA	no	yes(P2)
21CA146	600	MFA	yes	yes(P1)
*21CA147	14500	MFA	yes	yes(P2)
21CA-FS9	--	FS	--	no
*21CA148	250	MFA	no	yes(P2)
*21CA149	<10	LFA	no	yes(P2)
21CA-FS10	--	FS	--	no
*21CA150	<10	LFA	no	yes(P2)
*21CA151	400	MFA	no	yes(P2)
*21CA152	200	MFA	no	yes(P1)
*21CA153	4000	MFA	yes	yes(P1)
21CW87	<10	LFA	yes	yes(P3)
*21CW88	1500	MFA	yes	yes(P2)
21CW89	9000	MFA	yes	yes(P3)
*21CW90	5500	MFA	yes	yes(P1)
21CW91	<10	LFA	no	yes(P2)
*21CW92	200	MFA	yes	yes(P1)
21CW93	5000	MFA	yes	yes(P3)
21CW94	<10	LFA	yes	yes(P3)
21CW95	250	MFA	yes	no

KEY: FS = Find Spot
LFA = Limited Find Area
MFA = Multiple Find Area

P1 = Top Priority, Phase II ASAP
P2 = Second Priority, Phase II when feasible
P3 = Lowest Priority, Phase II someday

* = May qualify for National Register

meters (not counting find spots) have been disturbed (Table 2).

4. The largest site found in the survey area (21CA147) encompasses about 14,500 square meters (1.45 hectares) on the narrow ridge of land separating Roy Lake from Gull Lake. This is also the only site on the shores of the Nisswa lakes known to include prehistoric burial mounds. Of the 10 or more mounds once present on this site, only one remains wholly undisturbed (Mound 1, Fig. 12).

5. Like the 1978 Corps survey on Gull Lake (Johnson et al. 1979,I:4), the Phase I Nisswa lakes reconnaissance produced only a limited quantity of cultural materials that in most cases is not sufficient to draw firm conclusions regarding the age, function, or cultural affiliation of sites. What was gained was a broader knowledge of the presence and distribution of archaeological materials, some notions concerning the formation of the local archaeological record, and some specific recommendations for the preservation or future investigation of sites. The number and kinds of archaeological materials recovered or observed during the Nisswa lakes survey are listed as part of the site discussions in Chapter 4.

Most of the lithic artifacts found during the survey are quartz, quartzite, and chert debitage representing the wasted byproduct of stone tool manufacture. Some basalt, oolitic chert, agate, jasper, chalcedony ("Knife River Flint"), and granite debitage were also recovered. The red/tan quartzite found so abundantly on sites in the Brainerd Lakes/Pine River area has fossil plant inclusions that identify it with the class of Tongue River Silicas found in the western Dakotas. The presence of numerous decortication flakes of this fine-grained quartzite suggest that it is locally available as glacial cobbles that may be associated with St. Croix tills (Birk 1981). The wide color variation is a result of heat treatment, the range of reds, maroons, and grays resulting from the aboriginal practice of subjecting the raw stone to intense heat to enhance its flaking qualities. The natural color is light olive-brown to yellowish-brown (tan). In some areas, this material is most commonly found in Archaic and Woodland assemblages, and it appears with less frequency on Late Prehistoric sites, except in areas with few workable stone types (Anderson 1978). The lithic assemblages from some sites in the Pine River area north of Gull Lake consist of more than 50 percent red quartzite. The coarseness of this material generally limited its local use to crude bifaces and scrapers and bulky, often asymmetrical, projectile points.

Table 3. Selected Artifact Recoveries by Site Size Category.

Site Area (sq. meters)	No. Sites	No. Sites w/Ceramics	No. Sites w/FCR	No. Sites w/Stone Tools	No. Sites/No. Stone Types 0-3 Stone Types	No. Sites/No. Stone Types 4-7 Stone Types
FS	4	1	---	2	4	---
<10	6	1	3	---	6	---
200-250	4	2	2	2	3	1
400-600	2	2	1	---	2	---
900-1500	2	1	2	1	1	1
4000-5500	3	3	3	2	---	3
7800-9000	2	1	2	2	---	2
14500	1	1	1	1	1	---
TOTALS:	24	12	14	10*	17	7

*Note: 3 of the 10 sites in this category were reported by landowners to have produced stone tools.

There is an apparent correlation between site size and the variety of lithic debitage recovered (Table 3). That is, the larger sites generally produce a greater number of stone types in the assemblages of waste flakes and shatter.

Seven of the 24 sites produced recognizable stone tools. These items include utilized flakes of white quartz (1), red quartzite (1), and black chert (1); bifaces of white quartz (2) and red/tan quartzite (4); and a corner-removed gray chert projectile point. Landowners reported finding "arrowheads" or bifaces on three sites where stone tools were not found during the NAS survey (Sites 21CA147, 21CW88, and 21CW95). When these data are combined, it is interesting to note that 75 percent of the sites greater than 600 square meters in extent produced stone tools, while only 25 percent of those under that size yielded such recoveries (Table 3).

Fire-cracked rock (FCR), consisting of various types of heat-fractured stone and decomposing granites, was found on 14 of the 24 sites examined on the Nisswa lakes. Only 3 of the 10 archaeological properties under 10 square meters in size produced FCR, suggesting these small sites might have served as special, short-term, limited-use areas (Table 3).

Twelve (or 50 percent) of the 24 sites studied in the survey area produced ceramics (Table 3). Of the total of 44 ceramic sherds or "crumbs" recovered, 43 were grit-tempered. One shell-tempered sherd was found at Site 21CW90 on the north shore of Nisswa Lake. Among this disappointing sample of sherds the only identifiable "types" are Brainerd net-impressed and Blackduck wares that both date to a transitional Middle to Late Prehistoric period.

6. There was a disappointing lack of local archaeological collections available in the survey area. Several persons reported finding possible artifacts or unusual stones on their property but most had subsequently lost or misplaced them. At Site 21CW95 on the southwest side of Roy Lake landowner Mrs. Arnold Voigt found two teeth that have been identified by "someone at the University" as belonging to an extinct Giant Bison dating to 6000 B.C. The teeth are currently in storage at the new Crow Wing County Historical Society Museum in Brainerd and are unavailable for viewing.

Near where the teeth were discovered, a neighboring landowner (Mr. Robert Apelt) found a complete, white-to-ivory colored quartzite biface 12CM (4 3/4 inches) in length. This handsome artifact, still in the landowner's

possession, is one of the few privately collected items seen during the survey (Fig. 30).

Other than the alleged Giant Bison teeth, the Crow Wing County Historical Society Museum has no artifacts or direct information pertaining to prehistoric sites on the Nisswa lakes.

7. Part of the Camp Comfort Resort lodge is claimed by the present landowner to have once been a cook shanty for the old Gull River Lumber Company (Fig. 12). The shanty forms the kitchen of the now defunct lodge and has been modified in such a way that it lacks the integrity to be nominated to the National Register. It is important, however, as the only standing structure found during the 1983-84 survey that dates to, and is alleged to be associated with, the early logging era. The Camp Comfort lodge is on the shore of Gull Lake; and, though technically outside the 50-meter corridor surrounding Roy Lake, the lodge is within the suspected parameters of Site 21CA147 discussed above.

Phase II Assessments

The next step in the management and preservation of the prehistoric sites on the Nisswa lakes could involve a Phase II survey program. As defined by the Corps Scope of Work for the Nisswa Lakes Survey (Appendix A), a Phase II survey would involve further excavation or exploration of those sites that may provide important cultural and scientific information, may have potential for public-use development, or may simply require additional work. This section includes recommendations and time and cost estimates for Phase II testing. To facilitate this process, many of the sites are lumped in groups of comparable size and attributes that elicit similar research strategies and investments. Table 2 summarizes the suggested need for and urgency of Phase II surveys on each site.

1. The four archaeological properties in the survey area identified as "find spots" (Table 2) should require no further investigation. The scientific-cultural information that might be gained by re-examining these discovery points is probably negligible.

2. The six "limited find areas" discovered during the Phase I survey are believed to be small, special activity loci not exceeding 10 square meters in size (Tables 2 & 3). Two of the six sites in this category (21CW87 and 21CW94) are in disturbed areas that make them of limited interest

for further work. The remaining four sites are on undeveloped terrain and might be of considerable interest and value as limited use sites (21CA145, 21CA149, 21CA150, 21CW91). Two competent field investigators could probably relocate, map, and formally test each of these sites in one field day, plus travel time. Complete mitigation of each site might only require 5-7 field days, plus travel time.

3. Four sites fall into the 200-250 square meter size range (Tables 2 and 3). Two of the sites are undisturbed (21CA148 and 21CA152), one is partially disturbed (21CW92), and one appears vastly disturbed (21CW95). The first three sites are situated on subdivided, but undeveloped parcels and warrant further consideration. Each of these three sites could be relocated, mapped, and tested for a 5-percent sample (about 10 1x1 meter pits) by two investigators in 6-8 field days, plus travel time. The greatest priority should be given sites 21CA152 and 21CW92 because these are in areas likely to be developed first.

4. Two sites fall into the 400-600 square meter size range (Tables 2 and 3). Site 21CA146 has been partially developed and will likely experience more intensive construction in the near future. Site 21CA151 is in a subdivided, but undeveloped area. The sparsity of these sites, their uneven terrain, and, in the case of 21CA146, the disturbance, suggests that each could be adequately sampled with 6-8 1x1 meter pits. Relocating, mapping, and testing of each site could likely be done by 2 investigators in 5-7 days, plus travel time.

5. Two sites fall into the 900-1500 square meter size range (Table 2 and 3). Because of alterations to the larger of these sites (21CW88), its potentially salvable area has been reduced to much the same size as the smaller site (21CA144). The area of Site 21CA144 may soon be developed and should be given first priority. Each site could likely be relocated, mapped, and sufficiently tested with 10 1x1 meter pits by two investigators in 6-8 field days, plus travel time.

6. The six remaining sites are from 4000-14,500 square meter in extent (Tables 2 and 3). Because of their large size and "desireable" locations, all have suffered some disturbance from recent development activities. Two of the sites (21CW89, 21CW93) consist of poorly defined, uneven scatterings of materials in heavily developed areas. Sites 21CA116 and 21CW90 represent denser and more closely delineated deposits in developed areas that should be given first priority. Phase II analysis of each of these four sites could probably be accomplished by two investigators

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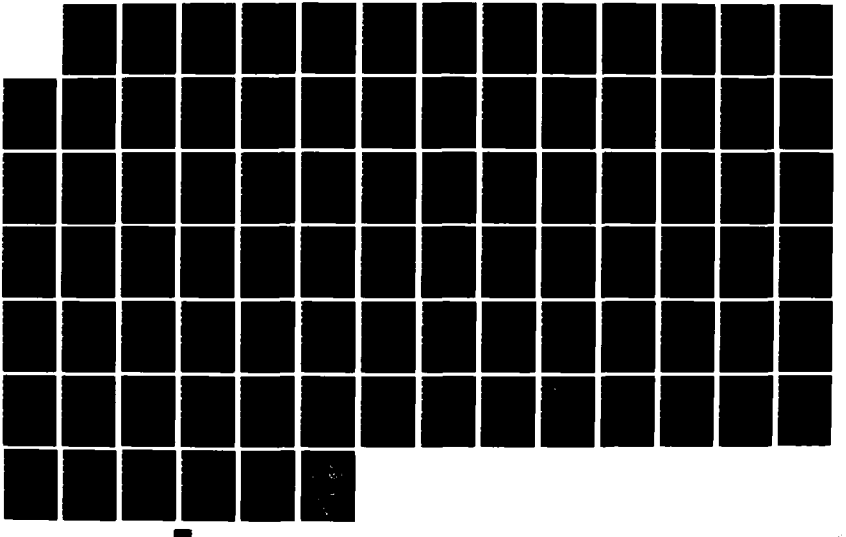
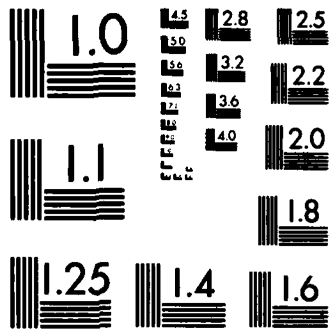




MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

within 10-12 field days, plus travel time. The high number of landowners involved at 21CW89 and 21CW93 could cause delays or limit the number of tests.

Site 21CA153 consists of two prehistoric loci on two adjacent terrace levels. Though probably the smallest site in this category, 21CA153 has experienced minimal alteration and therefore has a large salvable area. Testing of the two loci might be considered as two separate projects. The north, lakeside locus might require a minimum of eight 1x1 meter pits and could be tested by two investigators in 6-8 field days, plus travel time. The south locus, located on the second terrace, could be sampled with six 1x1 meter pits by two investigators in 5-7 field days, plus travel time.

Site 21CA147 is a sprawling habitation-mound complex that, at 14,500 square meters, is the largest site recorded by the NAS survey. Unfortunately, time has not been kind to 21CA147. The site has been vastly altered by railroad, highway, resort, residential, and utility construction. The only portion of the site that seems to have escaped modern use is an approximately 1500 square meter tract on the north side of County Roadd 77 (Fig. 12). Phase II testing of this tract and the rest of the suspected habitation areas might require the excavation of 18-20 1x1 meter pits. Work conducted on the south side of Co Rd 77 would involve several landowners and, because of all the houses, garages, driveways, trees, and mounds, would challenge the patience and expertise of any surveyor attempting to produce a detailed map. Two investigators could easily spend 15 field days on this site doing Phase II investigations.

Phase II Costs and Recommendations

Any cost estimates for future work at the Nisswa lakes should consider that the tourist season lasts from mid-June to late-August. Housing during the tourist season in this area is limited and more expensive. June is probably the worst mosquito and wood tick month. July and August mark the driest and hottest period. Poison ivy and other vegetation would cause a problem on several of the sites, as would absentee landowners and those who would not approve of excavations in their manicured lawns. All projected Phase II surveys should probably be prefaced by a visit from a Corps archaeologist. An advance reconnaissance would alert the Corps to specific landowner problems or any possible development changes that have befallen the site areas since the 1983-84 survey. In this fast growing vacation area, parcels that were undisturbed last year might be wholly developed next year.

The cost of a two-person crew would probably vary from $120-$160 per field day. Local motels run $35-$60 per night. Resort cabins range from $180-$200 a week or $250-$600 a month. Again "off season" rates are lower, and during the tourist season it is difficult to rent cabins by the week. Obviously, reservations are helpful. Travel to the Nisswa lakes area from the Twin Cities requires one-half day (3 1/2 to 4 hours).

To assist in the preservation and protection of the prehistoric sites listed in this report, it is recommended that the Corps notify the individual landowners about archaeological resources on their property. The local municipalities of Nisswa and the Village of Lakeshore should also be informed.

Novel Conclusions: A Critical Review

Archaeological survey is more a process of assembling than gathering information about the past. The methods used and the countless decisions made about where to look, how to look, what to save, and what to record all color the data base from which future interpretations are drawn. There is great danger in not keeping tabs on the reality of it all, understanding the processes by which the archaeological record was formed, and the manner in which parts of it are retrieved.

The survey process begins in the lab where theories are fabricated and tried on like hats. The archaeologist takes the most comfortable and stylish hats to the field where they and the archaeologist suffer the customary abuse of hectic schedules and adverse conditions. Driven by mosquitoes, raked by poison ivy, and drenched by rain, the hats and the archaeologists often get tattered. On afternoons when the temperature peaks at 95 degrees F, there is even the danger that the hats and the archaeologist's sense of objectivity will be discarded as excess baggage. Following this burst of physical activity, most archaeologists return to the lab where they regain their intellectual composure and rummage through their hatboxes for explanatory models. The controlled environment of the lab is the sanctuary where last summer's methodological quirks and deficiencies mysteriously evaporate, leaving theories to crystallize over shimmering pools of fresh factual evidence.

In a discipline that prides itself on methodological precision and technical accuracy, unconscious sleight of

hand maneuvers can become a serious problem. Uncritical acceptance of field data can lead to questionable conclusions about the archaeological record and the people who created it.

Mark Leone and others have urged that excavators should be as rigorous in linking data with conclusions as they are in assembling data in the field (Leone 1972:xii-xiii). Obviously, in the case of surveys, archaeologists should be as mindful of their methods as they are of the data they collect. There seems an unfortunate proclivity to inflate the thoroughness and results of reconnaissance surveys, in spite of the universal recognition that all forms of field investigations favor the discovery of only certain levels of information. Whether surveying with a 15-meter shovel test interval or using a 1/4-inch mesh screen to excavate a site, some forms of archaeological information will slip through the grid. With these thoughts in mind, some conclusions generated by earlier work at Gull Lake beg comment:

The 1978 Gull Lake Survey. The 1978 survey of Gull and Upper Gull lakes was the first attempt to systematically inventory archaeological resources within this reservoir system. As described by the field investigators, this reconnaissance "consisted of walking the entire shoreline area checking for visible evidence of sites." Subsurface testing was used only occasionally and sparingly to verify suspected site locations (Johnson et al. 1979,I:34). Here then is the reality: teams of two surveyors---often students--scanning the beaches and eroding banks of Gull Lake and traversing the 50-meter wide inland survey corridor in haphazard "zig-zag" transects looking for surface features and artifacts. The survey procedures placed little emphasis on landowner interviews.

The results of this endeavor are published in Volume One of the University of Minnesota's report on the Headwaters Reservoir surveys (Johnson et al. 1979,I:34-60, 268-269, 276-277). Typical of Phase I reconnaissance investigations, the 1978 survey recovered only a limited quantity of cultural materials that was considered inadequate to address the numerous research questions posed by the principal investigator. Five of the 18 reported sites (or 28 percent) produced no artifacts. Another six sites each produced 1 to 3 items. Overall, two-thirds of the sites are only known from surface features and/or a sample of six or fewer artifacts. Only three of the 18 sites produced more than a dozen artifacts. Nine or half of the sites involve human remains, mostly burial mounds.

Not counting finds reported by landowners, the Gull Lake survey recovered 300 reported artifacts of stone, bone, and clay. Most of the lithics were shatter or debitage composed of white quartz, quartzite, chert, chalcedony, basalt, and agate. Two projectile points, two granitic grinding stones, and three scrapers or blades were reported. The ceramics collection included one unidentified "historic pottery" fragment and 132 prehistoric sherds or "crumbs." Most of the prehistoric ceramics were grit-tempered.

Based on this evidence, it was concluded that two of the 18 sites were Middle Prehistoric, five were Late Prehistoric, and nine exhibited both Middle and Late Prehistoric cultural characteristics. The affiliation of the remaining two sites could not be determined.

At this point, the methods and results of the Gull Lake survey were lumped with similar surveys and evidence from other reservoir systems in the Mississippi Headwaters. As quoted in Chapter I (see page 4, above), the collective investigation of all the reservoirs was then depicted as a "100% shoreline survey and not one of sampling to produce a predictive model." This claim compares unfavorably with the specific methodological statements used to individually describe the Gull Lake survey, and the other surveys at the Leech Lake, Pine River, and Lake Pokegama reservoirs.

The collective survey conclusions offered few insights regarding site locations or possible site distribution relationships. Although at Gull Lake only one of the 18 reported sites was located on the western, morainic side of the reservoir, the only observation about the spatial distribution of prehistoric sites was to note how many of the overall total of 155 sites were found on each of the four reservoirs (Johnson et al. 1979,I:268)..

The 1978 survey did offer one important observation regarding population dynamics. A summary statement, referring to the collective results of all the Headwaters surveys, indicates that the greatest number of recorded sites on the Corps reservoirs date to the Late Prehistoric period. Recalling that the "reality" of the methods used to locate these sites consisted principally of surface collection, might lead one to question whether possible earlier materials could be more deeply buried and, therefore, would have a lesser chance of being found during surface investigations. Or, whether the most recent prehistoric deposits might be larger or denser than earlier ones, and whether the size, density, and accessibility of these components would favor their discovery. Or, as suggested in the survey report (Johnson et al. 1979,I:276),

whether Middle Prehistoric and earlier materials might be somewhat removed from the shorelines, while Late Prehistoric materials might more often be located on lesser elevations adjacent to water. That is, in the zone of greatest potential visibility to shoreline surveys. Regardless of these nagging uncertainties, the analysis of the 1978 survey data was carried one step further. Accepting that the proposed numerical superiority of Late Prehistoric sites actually reflects a greater number of people it was suggested that the Headwaters evidence (including that from Gull Lake) demonstrates "a significant population increase in the late Prehistoric Period."

This final observation of the 1978 survey may well be correct despite the uncritical use of the evidence cited. But how different might the evidence (and conclusions) be if wholesale shovel testing had been used during the Headwaters surveys? Since 1981, limited pre-development surveys on the shores of Margaret and Upper Gull lakes, that used shovel testing as a discovery technique, revealed the location of 14 previously unrecorded prehistoric site areas (Anfinson 1981:67-70; Birk 1983:11; Leslie D. Peterson, personal communication). Most of these site areas fall within 50-meters of the shoreline, and many have strong Archaic and Middle Prehistoric components. The 1983-84 Nisswa lakes survey located 23 previously unrecorded archaeological sites, of which 19 (or 82 percent) were discovered or verified through shovel testing.

In comparison, the 1978 survey of the shorelines of Gull and Upper Gull lakes, which did not involve intensive shovel testing as a site discovery technique, located 12 previously unrecorded sites. Because the acreage of Gull and Upper Gull Lakes is over 10 times the combined acreage of Margaret, Bass, Spider, Roy, and Nisswa Lakes (Table 1), it might logically be assumed that the actual number of archaeological sites on these lakes should be much larger than the total of 18 reported. Far from instilling confidence in the suggested "100%" recovery, these figures hint that our present knowledge of prehistoric sites on Gull and Upper Gull is unnecessarily biased and incomplete. They offer strong endorsement of the idea that the Corps, local landowners, local municipalities, and the archaeological community would all benefit from an intensified resurvey of these basins that would make greater use of shovel tests. Realizing that 82 percent of the sites now recorded on the Nisswa lakes would have gone undiscovered or unsubstantiated without shovel testing, one might suspect that an equal number of undiscovered/unverified sites may lay in waiting on the shores of Gull and Upper Gull lakes. One obvious example is 21CA147, the 14,500 square meter prehistoric

mound-habitation complex with attendant logging-era features found on the north end of Gull Lake by NAS archaeologists in 1984. Paying closer attention to what we find and how we find it should ultimately produce the exacting kinds of field data needed to strengthen our understanding and explanations of the past.

"Prehistoric Lake Gayashi." In summarizing the prehistory of the Headwaters Region, Elden Johnson noted that Late Prehistoric Blackduck and Wanikan (Sandy Lake) materials are often found in association on sites that "normally...do not exhibit any [evidence of] preceding Middle Prehistoric culture." This difference in settlement or land-use was attributed to contemporary shifts in exploitation and subsistence (Johnson et al. 1979,I:24-26).

Work conducted by the author in the Pine River area north of Gull Lake supports the observation that Middle and Late Prehistoric shoreline sites in the Mississippi Headwaters Region do not always share the same terrain. The developing Pine River Pattern suggests a greater chance on multi-component habitation sites for Middle Prehistoric Malmo and Brainerd materials and activity loci to appear in isolation on the higher site elevations overlooking adjacent bodies of water. Late Prehistoric Blackduck and Wanikan materials are usually densest on lower site elevations more closely bordering the lake or stream banks. This configuration was first noted at 21CA136 on the upper Pine River, and at the Arboleda Site at the outlet of Norway Lake (Birk 1982:2-3). At the Arboleda and adjacent Shady Point sites, the distribution of prehistoric ceramics suggests that Late Prehistoric Wanikan occupations occured more frequently along the river just below the outlet, than on lakeshore areas around the outlet. The reason for these horizontal distributions is unclear, but may have to do with shifting economic interests, changes in the function or seasonality of site use, different population groups, or other factors (Birk 1981:5).

In 1974, University of Minnesota student-archaeologist Thomas Neumann excavated parts of the Langer Site (21CA58) near the outlet of Gull Lake. His analysis of the recovered materials indicated that the site consisted of two loci confined to two adjacent lakeside terrace levels. The upper terrace, defined as a shelf about 1204.5 to 1217.6 feet above mean sea level, contained a large range of Late Archaic and Woodland materials dating to the period ca.3000 B.C.-1300 A.D. Stratigraphically, these materials extended from near the ground surface to 65-centimeters below grade. The lower terrace, defined as a shelf extending from the

water's edge to the 1204.48-foot contour, is said to contain only Late Prehistoric materials post-dating 1300 A.D. (Neumann 1975:3, 9, 82-84).

The Langer materials and site structure are of considerable importance to recent studies of Gull Lake prehistory. First, because the site fits within the developing Pine River Pattern of site configurations in this area. Second, because the stratigraphy and configuration of the Langer Site reinforces earlier observations of the need for more intensive shovel test surveys on Gull Lake. A pedestrian shoreline survey of such a site, where raised reservoir levels may be eroding the face of the lower terrace, would likely favor the discovery of Late Prehistoric materials. A surface inspection of the upper terrace would also favor the discovery of more recent archaeological materials, and, therefore, could conceivably overlook the presence of subsurface Archaic and Middle Prehistoric deposits. Keep in mind that Phase I pedestrian surveys in this lake-forest region typically recover few diagnostic materials and that two-thirds of the sites reported during the 1978 Gull Lake survey yielded only six or fewer artifacts to investigators. Misreading such sites as being only Late Prehistoric will obviously skew later interpretations.

Considering the evidence for a Middle to Late Prehistoric shift in man-land relations in central Minnesota, one might logically expect an archaeologist (student or otherwise) to first seek a cultural explanation for the polarized occupation zones at the Langer Site. It is somewhat of a surprise then, to be "inundated" with speculations about the water level of Gull Lake being the principal determining factor in the use of its lesser elevated shoreline areas during the Woodland Period.

The Langer Site report goes on to conclude that prior to 1300 A.D., when only the upper terrace of the site was occupied, "there was no Gull Lake as we would recognize it today." Instead, "the Lake level was around 2.5 to 3.0 meters above its present level" (Neumann 1975:92), a phenomenon which would have undoubtedly flooded the lower terrace---and a considerable portion of central Minnesota as well. The supposed flooding is offered as the most likely explanation for why the lower terrace escaped use by pre-1300 A.D. populations. After 1300 A.D., when the higher water levels are said to have finally subsided, the lower terrace was thought to be exposed to regular use (Neumann 1975:84).

This supposed Woodland period sea was even given a name. Following the lead of explorer Joseph Nicollet, who canoed through the Gull Lake chain in one day in 1836, the new lake was christened "Lake Gayashi." According to Neumann, "Gayashi" was the name that Nicollet gave to Gull Lake when he mapped it (Neumann 1975:82, 92). This name was suggested because one of Nicollet's maps of the Gull Lake system seemed to anticipate the imagined pre-1300 A.D. outline of "Lake Gayashi" proposed in the Langer Site report (Neumann 1975:83).

In fairness to Nicollet, it should be pointed out that he drew another, more detailed map of Gull Lake that closely approximates the outline of the present lake area (Bray 1970:58). The second, smaller-scale map refutes the alleged support Nicollet's observations are said to lend the "Lake Gayashi" impoundment. It should also be pointed out that Nicollet referred to Gull Lake as "Gayashk" and not "Gayashi" as the Langer report suggests (Nicollet 1843; Bray 1970:231). "Gayashk" is not a name Nicollet invented, but a derivation of the Ojibway "Ga-gaiashkonzikag-sag" meaning "The-place-of-young-gulls lake," a reference to Gull Lake (Gilfillan 1887:470).

The conjectured "Lake Gayashi" impoundment did lead to the formulation of an interesting hypothesis regarding local pre-1300 A.D. site locations in the reservoir area. The Nisswa lakes survey results provide an adequate test of the "Lake Gayashi hypothesis:"

> That no site pre-dating 1300 A.D. will be found below the 1204.48 foot contour anywhere along the present shorelines of Gull Lake, Round Lake, Sylvan Lake, or Long Lake (adapted from Neumann 1975:91).

The maintained level of the Gull Lake Reservoir is 1194 feet, which means that if the stated hypothesis is correct no Archaic, Middle Woodland or early Late Woodland sites should occur within 10.48 vertical feet of the present surface of Bass, Spider, Roy and Nisswa lakes. Not surprisingly, several sites on the shores of the Nisswa lakes, with Middle Woodland and Middle-to-Late Woodland Transition deposits, occupy this zone. In the final analysis, the alleged Woodland Period "Lake Gayashi" impoundment and its attendant hypothesis don't hold water. Leone was right.

APPENDICES.

SCOPE OF WORK
CULTURAL RESOURCES INVESTIGATION
OF THE SHORELINES OF
BASS, SPIDER, ROY AND NISSWA LAKES
OF THE GULL LAKE RESERVOIR
APPENDIX A

1.00 INTRODUCTION

1.01 The Contractor will undertake a cultural resources investigation of the shorelines of Spider, Roy, Bass, and Nisswa Lakes as ancillary lakes of Gull Lake Reservoir in Cass and Crow Wing Counties, Minnesota.

1.02 This cultural resources inventory partially fulfills the obligations of the Corps of Engineers (Corps) regarding cultural resources, as set forth in the National Historic Preservation Act of 1966 (Public Law (P.L.) 89-665), as amended; the National Environmental Policy Act of 1969 (P.L. 91-190); Executive Order (E.O.) 11593 for the "Protection and Enhancement of the Cultural Environment" (Federal Register, 13 May 1971); the Archaeological and Historical Preservation Act of 1974 (P.L. 93-291); the Advisory Council on Historic Preservation "Regulations for the Protection of Historic and Cultural Properties (36 CFR Part 800); the Department of the Interior guidelines concerning cultural resources (36 CFR Part 60); and the applicable Corps of Engineers regulations (ER 1105-2-50).

1.03 The laws listed above establish the importance of Federal leadership, through the various responsible agencies, in locating and preserving cultural resources within project areas. Specific steps to comply with these laws, particularly as directed in P.L. 93-291 and E.O. 11593, are being taken by the Corps ". . . to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance." A part of that responsibility is to locate, inventory, and nominate to the Secretary of the Interior all such sites in the project area that appear to qualify for listing on the National Register of Historic Places.

1.04 Executive Orders 11593 and the 1980 amendments to the National Historic Preservation Act further direct Federal agencies ". . . to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished or substantially altered." In addition, the Corps is directed to administer its policies, plans, and programs so that federally and non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved and maintained for the inspiration and benefit of the people.

1.05 This cultural resources investigation will serve several functions. The report will be a planning tool to aid the Corps in meeting its obligations to preserve and protect our cultural heritage. It will be a comprehensive, scholarly document that not only fulfills federally mandated legal requirements but also serves as a scientific reference for future professional studies. It will identify sites which may require additional investigations and which may have potential for public-use development. Thus, the report must be analytical, not just descriptive.

2.00 PROJECT DESCRIPTION

2.01 The Gull Lake Reservoir is located near Brainerd, Minnesota. It is about 100 miles northwest of the Twin Cities and about the same distance southwest of Duluth. The southernmost of the six headwaters reservoirs, Gull controls the runoff from a 287-mile drainage area, including six natural lakes.

2.02 In 1978-1979, Gull and Upper Gull Lakes were surveyed for cultural resources. The results of this survey are reported in the report entitled "Cultural Resources Investigation of the Reservoir Shorelines: Gull Lake, Leech Lake, Pine River and Lake Pokegama, Volumes 1 and 2." This report was prepared under contract with the St. Paul District, Corps of Engineers.

2.03 In addition to the main reservoir lakes, Gull and Upper Gull, a number of ancillary lakes are affected by the reservoir. For the purposes of this investigation, the ancillary lakes to be surveyed are Bass, Spider, Roy and Nisswa.

3.00 DEFINITIONS

3.01 For the purpose of this study, the cultural resources investigation will include a Phase I on-the-ground reconnaissance level survey.

3.02 "Cultural resources" are defined to include any building, site, district, structure, object, data, or other material relating to the history, architecture, archaeology, or culture of an area.

3.03 "Phase I cultural resources survey" is defined as an intensive, on-the-ground survey and testing of an area sufficient to determine the number and extent of the resources present and their relationship to project features. A Phase I cultural resources survey will result in data adequate to assess the general nature of the sites present; a recommendation for additional testing of those resources which, in the professional opinion of the Contractor, may provide important cultural and scientific information; and detailed time and cost estimates for Phase II testing.

4.00 STUDY AREA

4.01 The Phase I survey will include the shorelines of Bass, Spider, Roy and Nisswa Lakes in Cass and Crow Wing Counties, Minnesota (see inclosed map).

4.02 The lands to be examined will include all lands from the water's edge to 50 meters beyond the 1200-foot contour. This distance will be measured on a horizontal plane.

5.00 PERFORMANCE SPECIFICATIONS

5.01 The Contractor will use a systematic, interdisciplinary approach in conducting the study. The Contractor will provide specialized knowledge and skills during the course of the study to include expertise in archaeology and in other social and natural sciences as required.

5.02 The extent and character of the work that the Contractor will accomplish is subject to the general supervision, direction, control, and approval of the Contracting Officer.

5.03 Techniques and methodologies used during the investigation will be representative of the current state of knowledge for their respective disciplines.

5.04 The Contractor must keep standard field records that will include, but not be limited to, field notebooks, site survey forms, field maps, and photographs. The original and one copy of these records will be made available to the Contracting Officer upon request.

5.05 The surveyed areas will be returned as closely as practical to presurvey conditions by the Contractor.

5.06 The recommended professional treatment of recovered materials is curation and storage of the artifacts at an institution that can properly insure their preservation and that will make them available for research and public view. If such materials are not in Federal ownership, the Contractor must obtain the consent of the owner, in accordance with applicable law, concerning the disposition of the materials after completion of the report. The Contractor will be responsible for making curatorial arrangements for any collections obtained. Such arrangements must be coordinated with the appropriate officials of Minnesota and approved by the Contracting Officer.

5.07 If it becomes necessary in the performance of the work and services, the Contractor, at no cost to the Government, will secure the rights of ingress and egress on properties not owned or controlled by the Government. The Contractor will secure the consent of the owner, his representative, or agent, in writing prior to effecting entry on such property. If requested, a letter of introduction signed by the District Engineer, can be provided to explain the project purposes and request the cooperation of landowners. Where a landowner denies permission for survey, the Contractor must immediately notify the Contracting Officer and describe the extent of the property to be excluded from the survey.

5.08 When sites are not wholly contained within the survey area, as defined in paragraph 4.02, the Contractor will survey an area outside the limits of the survey area large enough to include the entire site within the survey area. This procedure will be done in an effort to delineate site boundaries and to determine the degree to which the site will be impacted.

5.09 The Contractor shall provide all materials and equipment as may be necessary to expeditiously perform those services required of the study.

Phase I Survey

5.10 The on-the-ground examination will involve an intensive survey and shovel testing of the area to determine the number and extent of cultural resources present. This examination will include standing structures as well as historical and prehistorical archaeological sites.

5.11 The Contractor's survey will include surface inspection in areas where surface visibility permits adequate recovery of cultural materials and subsurface testing in all areas where surface visibility is limited or obscured. Subsurface investigation will include shovel testing, coring, soil borings, cut bank profiling or some other appropriate testing method. If field methods vary from those required, they must be described and justified in the Contractor's report.

5.12 The required transect interval for the Contractor's survey is 15 meters (50 feet) and the testing interval is 15 meters (50 feet). However, these intervals may vary, depending upon field or site density/size conditions. If the recommended intervals are not used, the Contractor must present written justification in the technical report for selection of an alternate interval. The Contractor will screen all subsurface tests through 1/4-inch mesh hardware cloth and record the tests on appropriate testing forms. All subsurface testing forms will be included in the appendix to the Contractor's report. The Contractor will also indicate the locations of all subsurface tests on USGS and/or project maps and key these with the testing forms in the appendix.

5.13 The Contractor will shovel-test any located sites sufficiently to determine the existence of cultural materials and/or features, their condition (in situ or disturbed), the horizontal and vertical distribution of the remains, and, if possible, the cultural affiliation of the site(s).

5.14 As a reconnaissance survey, the investigation of the shorelines is primarily intended to locate and define sites, to assess their present condition, and to recommend appropriate future consideration for the preservation and protection of the sites. Therefore, it is not specifically intended that this work will produce data about sites sufficient to make nominations to or Determinations of Eligibility for inclusion in the National Register of Historic Places. When circumstances are such that a recommendation concerning Register eligibility can be made, the Contractor will do so, however.

5.15 The Contractor will attempt to locate all resources previously recorded in the study area, as described in Section 4.00, and to report their condition.

6.00 GENERAL REPORT REQUIREMENTS

6.01 The Contractor will submit three types of reports: a field report, draft technical report, and a final technical report.

6.02 The technical report must include, but will not be limited to, the following sections. These sections do not necessarily need to be discrete sections; however, they must be readily discernable to the reader.

a. Title page: The title page must provide the following information: the type of survey undertaken (reconnaissance, intensive); the cultural resources assessed (archaeological, historical, architectural); the project name and location (county and State); the date of the report; the Contractor's name; the contract number; the name of the author(s) and/or Principal Investigator; the signature of the Principal Investigator; and the agency for which the report is being prepared.

b. Abstract.

c. Table of Contents.

d. Introduction: This section will include the purpose of the report; a description of the proposed project; the location of the proposed project, including a map of the general area; and a project map (a list of USGS quadrangle maps that cover the project area should also be included); and it will identify who conducted the study, the number of people involved in the study, and the dates during which the field survey was conducted. The introduction will also contain the name of the institution where recovered materials will be curated.

e. Environmental Setting: This section should contain a brief description of the environment of the study area, including both present and past conditions.

f. Field Methods: Describe specific archaeological, historical, and architectural activities undertaken to achieve the stated theoretical and methodological goals. Include all field methods, techniques, strategies, and a rationale or justification for specific methods or decisions. The description of the field methods must minimally include: a description of the areas surveyed, survey conditions, topographic/physiographic features, vegetation conditions, soil types, informal testing, stratigraphy results, survey limitations, survey testing results with all appropriate testing forms to be included as an appendix (e.g., shovel tests, coring, cut bank profiles, etc.), degree of surface visibility, whether or not the survey resulted in the location of any cultural resources, the methods used to survey the area (pedestrian reconnaissance, subsurface test, etc.), the justification and rationale for eliminating uninvestigated areas, and the grid or transect interval used. Testing methods will include descriptions of test units (size, intervals, stratigraphy, depth) and the rationale behind their placement.

g. Laboratory Methods: This section will explain in detail the laboratory methods employed and the rationale behind the method selected. This section will also contain references to accession numbers used for all collections, photographs and field notes obtained during the study, and it will note the location where these items are permanently housed.

h. Investigation Results: This section should describe the prehistoric and historic resources encountered in the survey, with each site discussed as a separate unit. Each site description will include the size of the site, type of site (i.e., prehistoric village, mound group etc.), the cultural component(s) of the site (if discernable), and the general nature of the site as it existed at the time of the survey. An inventory of cultural material recovered from sites may be included in this section or added to the site survey forms. Accession numbers for collected cultural material will be included as a part of the inventory. Inventoried sites will include a site number. Official site designations assigned by an appropriate State agency are preferred. However, if temporary site numbers will be used in either the draft or final reports, they must be substantially different from the official site designations to avoid confusion or duplication of site number.

i. Recommendations: For those sites encountered, the Contractor will make recommendations for the adequate assessments of those sites considered to have potential for eligibility to the National Register of Historic Places. These recommendations will include a time and cost estimate for Phase II testing. If it is the Contractor's assessment that no significant resources exist in the area, this section will present the methods of investigation and reasoning that support this conclusion. If certain areas are not accessible, the Contractor will make recommendations for future consideration. If the Contractor finds that significant resources exist in the area, the report will describe the information recovered and where the resources were located, and it will assess the extent and potential of the recovered information. Any evidence of cultural resources or materials that have been previously disturbed or destroyed will be presented and explained. Specific recommendations for the preservation and protection of any potentially significant sites located during the survey will be made.

j. References: All references must follow American Antiquity format.

k. Appendixes: This section will contain the Scope of Work and the resumes of the Principal Investigator and crew. State site forms will also be included as an appendix.

l. All sites identified in the course of the study, including find spots and known sites, will be presented on State site forms as an appendix to the report. Data will also be provided about the present condition of the sites (disturbance by natural or manmade processes) and the content of any collections from the sites Known sites will have their State site forms updated as necessary. All State site forms will be submitted to the State Archaeologist.

m. The location of all sites and other features discussed in the text will be shown on 8½ by 11-inch legibly photocopied USGS map sections and will be bound into the report. Project maps will also be included as part of contract correspondence showing the relationship of sites to the project areas as well as areas surveyed. In addition, the project map will show those areas that have been eliminated from survey due to lake levels or swampy conditions. Maps will also show the type of survey method employed for each area surveyed (example, pedestrian walkover, shovel tests) and formal test pits, if applicable. All maps will be labeled with a description, a north arrow, a scale bar, township and range (on USGS maps only), and the map source (e.g., the USGS quad name or published source).

n. Failure to fulfill these report requirements will result in the rejection of the Contractor's report by the Contracting Officer.

7.00 FORMAT SPECIFICATIONS

7.01 Text materials must be typed (single-spaced or space-and-a-half) on good quality bond paper, 8.5 inches by 11.0 inches, with 1.5-inch binding and bottom margins, and 1-inch margins on the top and other margins, and printed on both sides of the page.

7.02 All figures and maps must be clear, legible, self-explanatory, and of sufficiently high quality to be readily reproducible by standard xerographic equipment, and must have margins as defined above.

7.03 All figures must be readily reproducible by standard xerographic equipment.

7.04 Negatives of all black and white photographs contained in the final report must be included so that copies for distribution can be made.

8.00 SUBMITTALS

8.01 The Contractor must submit reports to the Contracting Officer according to the following schedules:

a. Field Report: Upon completion of field work, the Contractor will submit a brief report detailing the work accomplished and the preliminary results of the study.

b. Project Field Notes: One legible copy of all the project field notes will be submitted with the draft contract report.

c. Draft Contract Report: Ten copies of the draft contract report will be submitted on or before days after contract award. The draft contract report will be reviewed by the Corps of Engineers, the State Historic Preservation Officer, the State Archaeologist, and the National Park Service. The draft contract report will be submitted according to the report and contract specifications outlined in this Scope of Work.

d. Final Contract Report: The original and 15 copies of the final contract report will be submitted 60 days after the Corps of Engineers comments on the draft contract report are received by the Contractor. The final contract report will incorporate all the comments made on the draft contract report.

8.02 Neither the Contractor nor his representative will release any sketch, photograph, report, or other material of any nature obtained or prepared under the contract without specific written approval of the Contracting Officer prior to the acceptance of the final report by the Government. After the Contracting Officer accepts the final report, distribution will not be restricted by either party except that data relating to the specific location of extant sites will be deleted in distributions to the public.

9.00 METHOD OF PAYMENT

9.01 Requests for partial payment under this fixed price contract may be requested monthly on ENG Form 93. A 10-percent retained percentage will be withheld from each partial payment. Upon approval of the final contract report by the Contracting Officer, final payment, including previously retained percentage, will be made to the Contractor.

APPENDIX B. Resumes of Field Personnel.

Douglas A. Birk, President
Northland Archaeological Services
4522 Nokomis Avenue South
Minneapolis, MN, 55406

Position: Principal Investigator

Education:

1977-78 Post graduate studies, University of Minnesota
1966 B.A. Anthropology, University of Minnesota

Professional Experience:

1982-85 Chair, Institute for Minnesota Archaeology
1982-83 Vice President, Council for Minnesota Archaeology
1981-85 Editorial Board, Minnesota Archaeological Society
1970-81 Archaeologist, Minnesota Historical Society

Awards:

1979 Theodore Blegen Award for outstanding historical research, Minnesota Historical Society
1976 National Geographical Society Research Grant for underwater investigations at Grand Portage National Monument (co-principal investigator)

Publications:

Have written numerous papers and publications on the colonial, fur trade, logging, and prehistoric aspects of western Lake Superior history. Some of most recent archaeological survey reports are listed in the References Cited section of this report.

Professional Organizations:

Society for American Archaeology, Society for Historical Archaeology, Plains Anthropological Association, Council for Minnesota Archaeology, Wisconsin Archaeological Society, and The Champlain Society.

Michael A. Justin
6417 22nd Avenue South
Richfield, MN 55423

Position: Field Assistant

Education:

1983 M.S.Anthropology, University of Wisconsin
1979 B.A.Anthropology, College of St. Thomas, St. Paul

Professional Experience:

1983 Field Assistant, Berg-Zimmer & Associates, West Allis, WI. Salvage of multicomponent Woodland site (11JD126), East Dubuque, IL.

1983 Work/Study Aide. Milwaukee Public Museum. Assisted curators of History and Anthropology Departments.

1982 Field School Supervisor, University of Wisconsin

1979-81 Archaeological Technician, USDA Forest Service, Duluth, MN. Compiled and maintained cultural resource files, revised the Cultural Overview for the Superior National Forest, supervised cultural resource surveys, catalogued artifacts.

1980-81 Archaeological Surveys, Science Museum of Minnesota, Blue Earth River Valley Survey.

1980 Volunteer, Science Museum of Minnesota, Archaeology Lab and Ethnographic Hall

1979 Interpretive Analyst, Minnesota Historical Society Historical research and exhibits design.

Diana J. Mitchell
4522 Nokomis Avenue South
Minneapolis, MN 55406

Position: Volunteer Shovel Test Recorder

Education:

1967 B.A.History, Augustana College, Rock Island, IL

Professional Experience:

1984 Crew/Volunteer, Institute for Minnesota Archaeology MO-20 and Pike's Fort Projects, Little Falls, MN

1984 Field Assistant,Institute for Minnesota Archaeology Lost Lake Mounds Survey, Upper Gull Lake, MN

1983 Field Assistant, Northland Archaeological Services Causeway Survey, Upper Gull Lake, MN

1983 Field Assistant,Institute for Minnesota Archaeology Prairie Island Survey, Goodhue County, MN

1982 Field Assistant,Institute for Minnesota Archaeology William Aitkin Post Survey, Aitkin County, MN

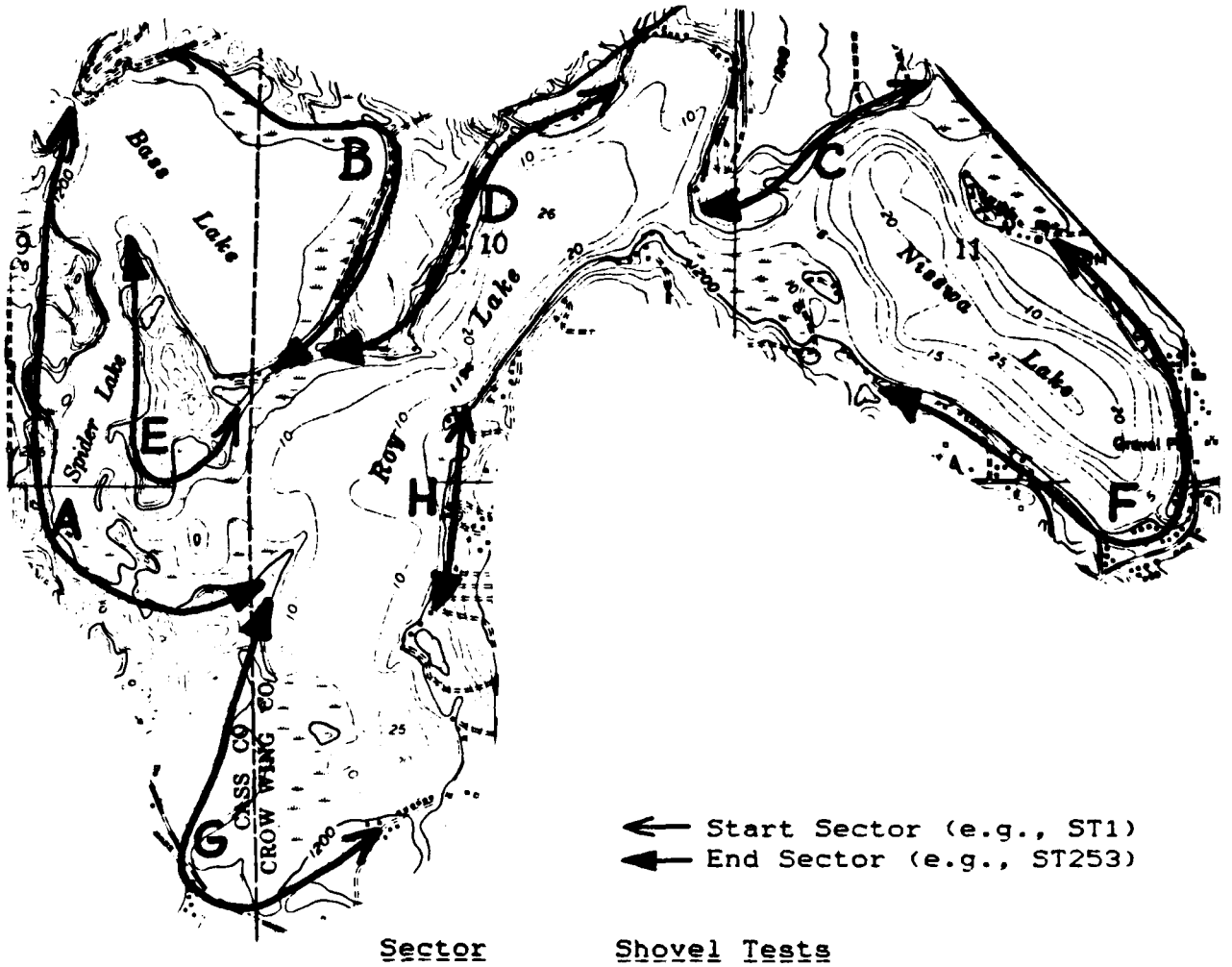
1981-82 Field Assistant, Northland Archaeological Services Surveys at Norway Lake, Cass County, MN, and Owen-Withee & Galesville, WI

1977-80 Field Assistant, Archaeological surveys on Upper Pine River, Little Pine River, Leech Lake, Rabbit Lake, and Nokasippi Valleys in central MN.

1974-76 Crew, Fort Charlotte Underwater Archaeological Project. Grand Portage National Monument.

1970-74 Research Analyst, Historic Sites Department, Minnesota Historical Society.

Appendix C. Map Key to Shovel Test Sectors Listed in Appendix D.



← Start Sector (e.g., ST1)
← End Sector (e.g., ST253)

Sector	Shovel Tests
A	1-253
B	254-398
C	399-428
D	429-478
E	479-545
F	546-621
G	622-694
H	695-701

Appendix D. Nisswa Lakes Survey Shovel Test List. List is organized by "sectors" (see Appendix C). Positive shovel tests are marked with an asterisk.

Shovel Test	Depth of A-Horz	Depth of Test	Comments
BEGIN SECTOR A on S side Bass-Upper Gull Lake narrows, proceed SE.			
*1	10cm	35cm	sand, light gravel (21CA153)
*2	10	38	sand, light gravel (21CA153)
*3	10	40	sand, light gravel (21CA153)
Here collect artifacts from roadway disturbance, proceed SE.			
*4	10	30	sand, light gravel (21CA153)
5	10	20	dark sand over boggy gray sand
6	10	25	sand, dense gravel
*7	15	30	sand, dense gravel (21CA153)
8	10	30	sand, dense gravel
Here climb to second terrace, heading S.			
*9	8	45	sand (21CA153)
*10	9	70	sand (21CA153)
*11	10	50	sand (21CA153)
Here climb to high ridge, heading S. Dense brush.			
12	8	45	sand
13	10	45	sand, on level ridgetop
14	6	45	sand, hit roots
15	8	40	sand, hit roots
*16	7	55	sand (21CA152)
*17	8	50	sand (21CA152)
18	8	40	sand
19	8	55	sand
*20	6	70	sand, burrow at 60cm (21CA152)
21	6	50	sand
22	8	50	sand
23	10	40	sand, here E of cul-de-sac
24	10	45	sand
25	10	45	sand, 11m N26E of iron stake
26	8	40	sand, 5m S of iron stake

27	9	45	sand
28--Here checked large animal burrow, negative--			
29	8	45	sand
30	7	35	sand, oppos N end of marsh
31	7	45	sand, ridge btwn marsh and lake
32	7	40	ditto
33	9	50	ditto
34	8	30	ditto
35	10	50	sand, oppos S end of marsh
36	6	45	sand, E of cul-de-sac
*37	10	50	sand (21CA151)
38	10	40	sand
39	8	55	sand
40	10	55	sand
*41	10	55	sand (21CA151)
42	8	50	sand
43	8	45	sand

Here ridge narrows to S.

*44	10	40	sand (21CA151) E of hummock

Here descend ridge between lake and swamp.

*45	10	45	sand, dense gravel (21CA151)
46	10	46	sand, dense gravel

Here ascending ridge to S in Lot 16, Fawn Forest.

47	10	40	sand, light gravel
48	10	50	sand, light gravel
*49	6	50	snad, light gravel (21CA150)
50	8	40	sand, light gravel
51	8	50	sand, light gravel
52	6	55	sand, light gravel

Here meet with path to lower terrace, cross S into Lot 15.

53	8	45	sand, light gravel
54	8	45	sand, light gravel

Here on level ridgetop at head of driveway, Lot 15.

*55	10	60	ditto (21CA-FIND SPOT 10)
56	9	60	sand, light gravel
57	8	50	sand, light gravel
58	10	40	sand, light gravel
59	8	50	sand, light gravel

Here on small, level lakeside terrace near dock, Lot 15.

60	10	40	dark mottled sand
61	8	40	dark mottled sand
62	10	45	dark mottled sand

Here resume testing on high ridge, N line Lot 14, heading S.

63	8	30	tan sand
64	9	40	tan sand
65	9	40	tan sand
66	8	45	tan sand
67	8	45	tan sand
68	8	45	tan sand
69	8	60	tan sand
70	10	40	tan sand
71	9	40	tan sand

Here check three scattered animal burrrows.

72	10	50	tan sand
73	8	40	tan sand
74	8	50	tan sand
75	10	45	tan sand

Here check wind fall, negative.

76	10	50	tan sand
77	10	45	ditto, ridge narrows to S
78	9	50	ditto, on slope to S
79	10	50	tan sand
80	10	50	tan sand
81	10	40	tan sand
82	9	50	ditto, lowest pt. of ridge btwn marsh & lake

Here at N line Lot 10, Fawn Forest.

83	3	30	sandy clay
84	5	25	clay

Here on high point of ridge between marsh & Spider Lake.

85	6	25	sandy clay
86	8	25	clay
87	5	35	clay
88	7	25	clay

Here on ridge heading W between two marshes.

89	7	30	clay
90	7	30	sand, dense gravel
91	8	30	sand, dense gravel

Here on top of long slope on narrow crest, heading W.

92	6	25	clay
93	8	25	clay

Here check cul-de-sac road disturbance, Lot 10. Proceed S on level terrace W of swamp or marsh.

94	5	35	sandy clay
95	7	35	sand

Here cross into Lot 9, on level terrace heading S.

96	8	35	sand, gravel
97	6	35	sand, gravel
98	7	35	sand, gravel
99	8	25	more clayish sands
100	8	20	sandy clay
101	7	25	sandy clay

Here check driveway cut between Lots 8-9. Proceed S into Lot 8.

102	6	25	sandy clay
103	none	25	ditto, A-horz removed
104	15	35	sandy clay
105	none	25	ditto, A-horz removed
106	10	30	sandy clay

Here proceed N to lower level.

107	9	40	sand, gravel

Here following N edge Lot 7 on ridge on N edge of marsh, heading E.

108	5	30	sandy clay
109	9	40	ditto, E of ST 108
110	7	45	sandy clay, pivot pt. of ridge

Here proceed S on ridge between marsh & Spider Lake.

111	6	25	sandy clay
112	9	30	dark sand; on narrow ridge
113	9	40	sand, gravel; low pt. of ridge

Here back on high ridge btwn marsh and lake.

114	5	25	sandy clay
115	7	30	sandy clay
116	7	40	sandy clay, dense gravel
117	9	25	ditto; slope to S
118	9	35	ditto; low pt. btwn ridges
119	9	15	almost straight gravel; on ridgetop
120	9	25	very gravelly
121	20	35	very gravelly
122	--	--	straight gravel

Here cross into Lot 4, numerous rocks exposed on surface.

123	--	--	straight gravel
124	--	--	straight gravel
125	5	20	straight gravel

Here cross into Lot 3, ascending high rocky ridge.

126	8	40	sand, gravel
127	5	35	sand, gravel
128	6	35	sand, gravel, rocks
129	6	35	sand, rocks
130	8	28	sand, rocks
131	6	20	sand, rocks

Here ridge becomes too rocky to probe with shovel, proceed to foot of ridge qat SW corner Spider Lake, resume testing on narrow strip of near-level ground along edge of tagalder marsh.

132	10	30	sand, dense gravel
133	10	35	sand, light gravel
134	10	30	sand, light gravel

Proceed about 100m S. to where slope runs into swamp.

135	8	40	sand, light gravel

Follow low gravel ridge trending N135E along W. edge of swamp.

136	8	40	dense gravel
137	6	25	dense gravel

Here ridge elevation increases, some Red Pine.

138	6	25	dense gravel

On high point of ridge.

139	8	30	sand, dense gravel

Here test along ridge proceeding due S.

140	8	30	sand, dense gravel
141	8	50	ditto; pseudo shatter
142	6	35	ditto; 1m W of ST141
143	--	--	almost straight gravel; 2.5m S of ST141
144	6	30	sand, dense gravel; 5m S of ST143

Here hit woods road skirting S end of Spider Lake, place test on ridge btwn road & swampy margin of lake.

145	8	30	sand, light gravel

Check road cuts as proceed S along crest of esker-like ridge.

146	8	40	sand; W of road, ca.100m S of ST145
147	9	40	sand, dense gravel; on top of esker on S side of road

On low slope btwn road & the W side of the extreme S end of Spider Lake.

148	6	30	clay, light gravel

On elevation at extreme S end of Spider Lake.

149	5	45	sand

Here test along ridge paralleling road on S.

150	5	30	sand, light gravel
151	6	30	sand

Here woods road intersects with another more traveled road. Leave ridgetop, proceed to lower elevation on E (in W1/2 SW1/4 Govt. Lot 1).

152	8	30	sand

Proceed N towards narrow causeway.

153	7	35	sand
154	8	30	sand
155	6	40	sand, light gravel

Here on crest of ridge oppos. causeway, heading NW.

156	9	45	sand, light gravel
157	9	35	sand, light gravel
158	6	25	sand, light gravel
159	6	25	sand, dense gravel
160	8	25	sand, dense gravel

Here at end of pt, W of causeway, at base of ridge.

161	5	25	mottled lake sediments with light gravel

Proceed S from ST158 on E side extreme S end Spider Lake.

162	9	40	sand, light gravel
163	8	35	sand, light gravel
164	7	30	sand

On causeway proceeding NE.

165	6	30	sand
166	6	35	sand

On peninsula ridge heading SE, along S edge.

167	6	45	sand
168	6	40	sand
169	7	35	sand

On descending slope, E end of peninsula, flushed a very young and wobbly spotted fawn.

170	7	30	sand
171	6	30	sandy clay

On peninsula ridge, N edge, heading NW. On ridge top on otherwise level terrace find an unnatural-looking circular depression 5.5m in diameter x 80cm deep. Place 2 shovel tests (ST172, 174) on E & W sides and ST173 in bottom of depression, all negative.

172	6	35	dark sand, light gravel
173	7	60	7-25cm: tan sand 25-60cm: sand, gravel
174	7	55	sand, light gravel, rock

Check 2 burrows, proceed NW.

175	6	40	sand, light gravel
176	10	35	sand, light gravel
177	6	35	sand, light gravel
178	9	40	sand, light gravel
179	9	35	sand, light gravel
180	8	30	sand, light gravel

Here ridge elevates to NW.

181	8	35	ditto; on beaver trail
182	6	40	ditto; charcoal 17-32cm
183	8	35	sand, light gravel

On crest of W elevation, next to rotting board pallet.

184	7	25	sand, light gravel, rocks
185	6	28	sand, light gravel

Drop to low terrace at extreme N end of peninsula.

*186	5	40	sand (21CA148)
*187	7	50	sand (21CA148)
188	6	45	sand
189	5	30	mottled lake sand
*190	8	30	ditto (21CA148)
191	10	30	mottled lake sand

Cross wetland to S end of esker-like island follow N.

192	9	40	sand, light gravel
193	7	40	sand, light gravel
194	8	40	sand, light gravel

Elevation of ridge increases.

*195	8	40	sand, dense gravel(21CA149)
*196	7	25	sand, gravel, rock; 3m N of ST195 (21CA149)
197	7	30	sand, dense gravel; on high pt. of ridge
198	7	15	sand, rocks
199	7	30	sand, dense gravel, rocks
200	6	35	sand, gravel; burrow at 20cm
201	7	35	sand, gravel; rodent diggings

Check large rodent burrow, proceed N.

202	6	43	sand, gravel
203	7	30	sand, gravel
204	10	--	hit large rocks
205	22	35	sand, gravel, rocks
206	10	25	sand, gravel, rocks

Here return to ST191, proceed SW skirting NW edge of hill.

207	8	30	sand, dense gravel

Follow rocky ridge along S edge of hill, heading SE.

208	--	--	straight gravel
209	6	20	gravel, rock
210	7	40	sand; on beaver trail

Here ascending sloping ridge to N.

211	7	45	sand
212	6	40	sand
213	8	40	sand, light gravel

Begin middle NE1/4 S.16, proceed E along S shore Spider Lake.

214	13	35	sand, gravel
215	6	40	sand, gravel
216	7	44	sand, gravel
217	6	28	sand, dense gravel

Here on low narrow point.

218	7	36	silty sand & clay
219	8	40	silty sand
220	10	50	silty sand

Here on road leading to Whitney's gravel pit.

221	11	65	sand; on ridge
222	8	50	sand
223	12	50	sand; near deer stand
224	7	53	sand, light gravel

Here cross trail, proceed to small low terrace below hill.

225	6	23	silty sand
226	10	35	silty sand

Here back on high ground, proceeding ENE.

227	9	35	sand, gravel
228	8	20	sand, heavy gravel
229	7	30	sand, heavy gravel
230	10	43	sand, gravel
231	9	40	sand, heavy gravel
232	9	49	sand, heavy gravel
233	8	50	sand, cobbles
234	8	56	sand, gravel
235	9	30	sand, gravel
236	10	47	sand, gravel
237	6	42	sand, gravel
238	9	50	sand, gravel
239	9	50	sand, gravel
240	10	49	sand, gravel
241	9	50	sand, gravel

Here on trail again, check wind fall.

242	10	50	sand, gravel

Here ridge begins to descend.

243	10	60	sand
244	9	64	sand
245	10	62	sand
246	8	56	sand, light gravel
247	10	61	sand, light gravel
248	10	54	sand, light gravel
249	8	65	sand, light gravel
250	10	58	sand, light gravel

Here hit road on SW edge of Roy Lake. Proceed to island in Spider-Roy Narrows, find all to be low and spongy except for small elevated area on SW corner.

251	--	--	very rocky

Here test small, marsh-bound island on the W side of Spider Lake (N1/2 SW1/4 SE1/4 S.9).

252	10	40	sandy loam
253	10	40	sandy loam

END SECTOR A

Make surface collection and inspection of site 21CA116 on grounds of Point Narrows Resort, including exit road cuts and high ridge skirting the N shore of Bass Lake NE of the resort. Lots of poison ivy! Begin SECTOR B shovel testing on N side of road on level area by old trash dump.

254	13	40	sand, light gravel
255	12	25	sand, light gravel

Here cross second dump road, heading NE.

256	12	35	sand, light gravel

Cross road to south, check old foxhole playhouse.

257	10	45	sand, light gravel
258	8	40	sand, light gravel
*259	6	30	ditto (21CA144)
*260	7	40	ditto (21CA144)
261	6	35	sand, light gravel
*262	10	35	ditto (21CA144)
263	10	40	sand, light gravel
264	5	40	sand, light gravel
*265	3	40	ditto (21CA144)
266	5	40	sand, light gravel
267	5	40	sand, light gravel
268	5	40	sand, light gravel
269	8	40	sand, light gravel

Ascending slope E of ST263 & 264.

270	6	40	sand, light gravel
271	10	40	sand, light gravel

Here on crest of hill in NE NE NE S.9.

272	9	45	sand, light gravel

Descending slope to SE.

273	14	50	sand, light gravel
274	10	45	sand, light gravel
275	10	40	sand, light gravel
276	10	50	sand, light gravel

Here on level lakeside terrace proceeding W.

277	10	40	sand, light gravel
278	9	40	sand, light gravel
279	10	40	sand, light gravel
280	10	40	sand, light gravel
281	15	40	sand, light gravel

Here lower terrace narrows to W.

*282	12	40	ditto (21CA-FIND SPOT 8)
283	10	40	sand, light gravel
284	9	40	sand, light gravel
285	9	45	sand, light gravel

Here proceed SE along old beach ridge, skirting Bass Lake, paralleling transect formed by ST277-282.

286	10	40	sand, light gravel

Here examine exposed soil around several uprooted trees.

287	14	45	sand, light gravel
288	10	35	sand, light gravel
289	8	35	sand, light gravel

Proceed SE along beach ridge btwn swamp and Bass Lake.

290	12	45	sand, light gravel
291	7	30	sand, light gravel
292	13	45	sand, light gravel
293	12	50	sand, light gravel
294	14	55	sand, light gravel
295	8	40	sand, light gravel
296	11	45	sand, light gravel
297	14	50	sand, light gravel

Here cross into S.10 and ascend slope to SE.

298	8	40	sand, light gravel
299	14	45	sand, light gravel
300	8	45	sand, light gravel

On crest of high ridge in SW NW NW S.10.

301	12	45	sand, light gravel
302	9	35	sand, light gravel

Here descend slope to SE.

303	8	35	sand, light gravel
304	9	40	sand, light gravel
305	13	50	sand, light gravel

Here on level spur at E end of ridge btwn swamp and lake.

306	8	35	sand, light gravel

Here dogleg W to narrow, low bench at foot of slope.

307	10	40	sand, dense gravel
308	10	15	rocks, gravel
309	10	25	rocks, gravel, roots
310	8	25	rocks, gravel, roots

Here cross narrow wetland onto low point on E side, resume testing E along point in transect paralleling N edge of lake.

311	12	35	sand, dense gravel
312	10	50	sand, light gravel
313	10	40	sand, dense gravel
314	14	35	sand, light gravel

Here check animal burrow S of ST324.

315	10	35	dark sand, wet at bottom
316	10	30	sand, light gravel
317	10	45	sand, light gravel
318	9	50	sand, light gravel
319	8	40	sand, dense gravel
320	12	45	sand, dense gravel
321	9	45	sand, dense gravel

Here at short woods road-lake access at NE corner Bass lake.

322	15	35	sand, dense gravel

Here btwn Bass Lake Road & lake S of access.

323	7	35	sand, dense gravel

Here N of burrows, begin second transect on point paralleling the first.

324	9	40	sand, dense gravel
325	6	50	sand, dense gravel
326	8	50	sand, dense gravel
327	8	55	sand, light gravel
*328	8	40	ditto (21CW-FIND SPOT)
329	10	45	sand, light gravel
330	6	50	sand, light gravel
331	10	50	sand, light gravel
332	10	50	sand, light gravel
333	7	45	sand, light gravel
334	7	40	sand, light gravel
335	9	35	sand, light gravel

Cross Bass Lake Road to high terrace on E side, proceed S paralleling road.

336	8	40	sand, light gravel
337	8	40	sand, light gravel
338	7	45	sand, light gravel
339	6	45	sand, light gravel

Check animal burrows.

340	9	40	sand, light gravel

Descend slope, enter swale with large pine trees.

341	8	35	sand, light gravel
342	9	40	sand, light gravel
343	6	35	sand, light gravel

Ascend slope to high terrace above Bass Lake Rd., proceed S.

344	9	43	sand, light gravel
345	8	45	sand, light gravel
346	9	55	sand, light gravel
347	9	55	sand, light gravel
348	10	58	sand, light gravel
349	7	45	sand, light gravel
350	9	45	sand, light gravel

Here descend to level terrace just above road, inspect wind fall.

351	8	50	sand, light gravel
352	9	42	sand, light gravel
353	11	40	sand, light gravel
354	8	40	sand, light gravel
355	8	44	sand, light gravel
356	9	62	sand, light gravel
357	8	42	sand, light gravel
358	8	57	sand, light gravel

Slope increases to higher terrace elevation.

359	11	65	sand, light gravel
360	10	62	sand, light gravel

Slope to lake here very steep and high, proceed S into area of higher elevation.

361	10	59	sand, light gravel
362	9	45	sand, light gravel
363	8	52	sand, dense gravel
364	10	47	sand, moderate gravel

365	8	50	sand, moderate gravel
366	8	44	sand, moderate gravel

Here in area of highest elevation overlooking Bass Lake.

367	9	51	sand, gravel
368	9	50	sand, gravel

Check animal burrow.

369	10	40	sand, gravel
370	8	30	sand, gravel
371	9	33	sand, gravel
372	8	43	sand, gravel
373	9	42	sand, gravel

Descending on small semi-level area above bend in Bass Lake Road.

374	7	44	sand, gravel

Here slope becomes too steep to continue, examine wind falls & road cuts along N-S segment of Bass Lake Road. Proceed to SW on broad ridge close to Bass Lake.

375	7	35	sand, gravel
376	7	41	sand, gravel
377	6	36	sand, gravel

Here ridge narrows, check windfall, proceed SW.

378	7	45	sand, gravel
379	7	28	sand, rocks
380	10	36	sand, dense gravel
381	7	38	sand, dense gravel
382	9	40	sand, dense gravel
383	7	45	sand, dense gravel
384	9	40	sand, dense gravel
385	9	50	sand, gravel
386	10	39	sand, gravel
387	10	47	sand, gravel
388	16	36	sand, gravel
389	13	48	sand, gravel
390	10	50	sand, gravel

Ridge sort of bisects, becomes narrower on Bass Lake side.

391	18	--	sand, dense gravel
392	11	29	sand, dense gravel

Here continue testing on Roy Lake side of causeway.

393	11	44	sand, light gravel
394	9	50	sand, light gravel
395	10	46	sand, light gravel
396	10	52	sand, light gravel
397	12	50	sand, light gravel

Here btwn octagonal cabin & Bass Lake Road.

398	13	53	sand, heavy gravel

Check exposed soils around out buildings, END SECTOR B.

BEGIN SECTOR C on Totall Lot on N shore Nisswa Lake, trending SW.

399	9	25	sand, gravel
400	8	45	sand, light gravel

Here test Draving & Conway Lots.

*401	7	38	sand, gravel (21CW90)
*402	12	55	sand, gravel (21CW90)
*403	10	60	sand, gravel (21CW90)
*404	11	70	sand (21CW90)
405	10	35	sand
*406	5	36	sandy loam, gravel (21CW90)
407	7	27	sand, dense gravel
408	12	60	sand
*409	8	50	sand, dense gravel (21CW90)
*410	8	17	sand, dense gravel (21CW90)
*411	11	65	sand (21CW90)
412	18	67	garden. 0-40cm: modern debris

Made surface collection around Conway house & hole along shore. Test Gorman Lot, N side outlet Nisswa Lake.

413	7	20	sand, dense gravel
414	8	35	sand, dense gravel
415	9	38	sand, dense gravel
416	8	30	sand, dense gravel

Here test Horman Lot (Lot 4, Conway Shores) on low terrace on N side outlet Nisswa Lake.

417	7	17	sand, dense gravel
418	8	35	sand, gravel, charcoal, FCR?
419	5	12	silt, dense gravel
420	8	31	silt, dense gravel, FCR?
421	13	36	sand, dense gravel
*422	7	25	sand, gravel (21CW89)

423	10	33	sand, dense gravel
*424	7	31	sand, gravel (21CW89)
*425	8	51	sand, gravel (21CW89)
426	7	48	sand
427	5	44	sand
428	7	45	sand

Here make surface collection on Davis and Hemmerich lots, END SECTOR C.

BEGIN SECTOR D on sloping ridgetop on NW shore of upper Roy Lake (NW NE S.10).

429	7	38	silty sand, gravel
430	8	60	sand, gravel
431	5	50	ditto, 5m NE of caboose
432	13	57	sand, gravel

Here on level part of terrace near lake.

433	13	46	sand, gravel
434	13	60	ditto, up slope from ST432
435	9	60	sand, gravel
436	9	61	sand, gravel
437	12	60	sand

Here at foot of hill at intersection of road.

438	16	66	sand
*439	12	60	sand (21CW88)
*440	12	65	sand, gravel (21CW88)
441	10	62	sand, gravel; on slope
442	9	47	sand, gravel; on ridgetop
443	8	51	sand, gravel
444	10	52	sand, gravel
445	9	56	sand, gravel
*446	12	42	sand, charcoal bits
*447	15	71	sand (21CW88)
*448	7	60	sand, dense gravel (21CW88)
449	10	50	sand, gravel

Here trending S on undeveloped terrace btwn Dayton & Johnson houses on W shore upper half of Roy Lake.

450	10	31	sand, dense gravel
451	6	37	sand, gravel
452	9	30	sand, gravel

Here proceeding S of Johnson house.

453	8	33	silty sand
454	5	50	sand, gravel
455	10	52	sand, gravel
456	9	30	sand, gravel
457	12	34	sand, gravel

Here check road cuts of roadway paralleling shoreline S to Dullum Point. Then return N to Livermore driveway, test in area btwn roadway and lake, heading S paralleling roadway.

458	9	47	sand
459	8	39	sand
460	8	45	sand, gravel

Cross roadway to W side, test low area, 20-25m from edge of marsh.

461	8	38	silty sand, gravel
462	10	31	silty sand, gravel

Here marsh becomes very wide, slope increasingly steep. Resume testing on low area around Dullum's cabin on point.

*463	9	50	sand (21CW87)
464	10	59	sand, gravel
465	14	53	sand, gravel

Here on slope above road, next to Dullum's cabin.

466	11	45	sand, gravel
467	10	32	sand, gravel
468	11	29	sand, dense gravel
469	10	30	sand, dense gravel
470	12	45	sand, gravel

Proceeding W on high ground, steep slope to marshy shoreline.

471	9	40	sand, gravel

Here on highest point of high ground, terrain is level and appears to have been cleared and leveled in the past. Slope to lake is very steep.

472	3	25	sand, gravel

Here at base of slope proceeding NW (NW SW S.10).

473	9	32	sand, dense gravel
474	6	29	sand, gravel

475	11	33	sand, gravel
476	8	46	sand, gravel
477	9	40	sand, gravel
478	10	53	sand, gravel

Here hit Bass Lake Road. END SECTOR D.

Proceed SW to point on N side outlet Roy Lake,
BEGIN SECTOR E.

479	10	60	sand
480	10	35	sand
481	12	47	sand
482	7	26	wet clayey sand
483	10	26	silty sand
484	11	60	sand, gravel
485	10	30	sand, gravel
486	6	15	sand, gravel
487	8	37	sand, gravel
488	10	51	sand, gravel
489	10	45	sand, gravel
490	10	52	sand, gravel

Here moving onto high ground at S end of point.

491	12	64	sand, gravel
492	9	64	sand, gravel
*493	13	69	sand, gravel (21CA146)
494	12	70	sand
495	10	56	sand, gravel
*496	12	54	sand, gravel (21CA146)
*497	8	72	sand, gravel (21CA146)
*498	11	65	sand (21CA146)
*499	15	75	sand (21CA146)

Here drop to low terrace on W side of hill on end of point.

500	14	63	sand
501	12	51	sand

Here proceed NW, check road cuts, re-enter woods at turn of driveway on N end of marshy bay, N side outlet Roy Lake.

502	10	60	sand, gravel
503	10	48	sand
*504	12	60	sand (21CA145)
505	12	50	sand; 5m N of ST504
506	12	50	sand; 5m E of ST504
507	14	60	sand; 5m W of ST504

Proceed W. Slope increases. Old road with deep cut to immediate N.

508	12	56	silty sand, gravel
509	10	54	silty sand, gravel
510	7	62	silty sand, gravel
511	10	34	silty sand, gravel
512	11	60	silty sand, gravel
513	8	55	silty sand, gravel
514	9	35	silty sand, gravel
515	10	56	silty sand, gravel
516	9	48	silty sand, gravel

Here on W side marshy bay on high ground.

517	9	58	silty sand, gravel
518	8	43	silty sand, gravel
519	9	55	silty sand, gravel
520	9	42	silty sand, gravel
521	8	58	silty sand, gravel

Here descend ridge to small low terrace.

522	8	34	silty sand, gravel
523	8	36	silty sand, gravel
524	7	22	silty sand, gravel
525	6	29	silty sand, gravel
526	8	43	silty sand, gravel

Here at tip of point on Spider Narrows, slope increases, cross onto narrow ridge W of boat landing.

527	9	30	sand, dense gravel
528	6	50	sand, dense gravel
529	7	49	sand, dense gravel
530	14	40	sand, dense gravel
531	10	52	sand, dense gravel

Here on high ground above ridge.

532	8	40	silty sand
533	10	60	silty sand
534	9	50	silty sand

Here on terrace btwn point and boat landing.

535	9	55	sand, gravel
536	10	40	sand, gravel
537	9	60	sand, gravel
538	9	40	sand, gravel

Here on low terrace near end of point, Bernstein Lot, E side of Spider Lake (NW SE S.9).

539	0-30cm: compact organics (roots, leaves, etc.)		
540	10	65	silty sand
541	0-35cm: mixture of humusy materials & gray sand		
542	9	59	sand; disturbed to 24cm

Here check recent exposures on high ground above terrace.

Proceed to N end Smith's Point (middle E1/2 S.9), resume testing.

543	9	25	sand, dense gravel
544	12	47	sand, dense gravel
545	15	60	sand, gravel

Terrain very irregular, little level ground. END SECTOR E.

BEGIN SECTOR F on ridge SE of Martin's Nisswa Marina on NE shore of Nisswa Lake. Proceed SE. About 30m of tagalder marsh exists btwn ridge and open water of lake.

546	10	35	sand, gravel
547	--	--	0-20cm: coarse gravel
548	10	25	sand, dense gravel
549	10	25	sand, dense gravel
550	10	25	sand, dense gravel
551	10	40	sand, gravel

Here lakeside marsh narrows to about 10-15m wide.

552	8	--	Not recorded
553	9	25	sand, gravel

Here ridge broadens with higher ground to the E.

554	12	25	sand, dense gravel
555	12	25	sand, dense gravel

Ridge higher & steeper on lakeside, more level on E. Here checked rodent burrow. Much poison ivy.

*556	10	60	sand, gravel (21CW91)
557	10	50	sand, gravel; 5m NE of ST556
558	10	60	sand, gravel; 5m SE of ST556
559	15	35	sand, dense gravel; 5m NW of ST557

Here again proceed to SE paralleling shoreline.

560	10	50	sand, light gravel

Here on old road.

561	10	55	sand, gravel, large rocks

Here on ridge NW of what might be an old borrow pit cut into the bank, opening onto old lakeside roadway.

562	8	55	sand, gravel

Here inspect the possible borrow pit, proceed SE on ridge. Slope to lake is more abrupt, old road passes at base paralleling shore of lake. Lakeside marsh now 5-10m wide.

563	8	50	sand, gravel

Here on bend of old road.

564	11	35	sand, gravel

Here slope descends to SE, proceed SE along old road. Shoreline marsh ends.

*565	10	50	sandy loam (21CW92)

Here surface collect flake on road cut 2m west of ST565

566	12	42	sand, gravel
567	10	35	sand, dense gravel
568	12	45	sandy clay; 5m E of ST565
*569	9	35	sand (21CW92)
570	9	30	sand, gravel
*571	9	42	sand, gravel (21CW92)
572	12	35	sand, gravel; 5m NE of ST571
573	10	38	sand
574	9	38	sand
575	8	48	sand, dense gravel
576	10	25	sand, dense gravel
577	10	50	sand
578	14	33	sand, gravel
579	12	30	sand, gravel

Here surface collect on Lots 1-3 Hazelwood, at Lazy Brook Resort on S end of Nisswa Lake, E side Clark Creek.

*580	8	60	sand (21CW93)
*581	--	60	sand (21CW93)
*582	--	67	sand (21CW93)

Here surface collect on Lot 5 Hazelwood, proceed W to Lot 6, Peterson's undeveloped lot, resume shovel testing.

583	8	35	sand
584	7	40	sand, gravel
585	9	17	sand, gravel
586	10	40	sand
587	9	35	sand, gravel
*588	8	30	sand, gravel (21CW93)
589	10	40	sand; 3m S of ST588
*590	10	40	sand, gravel (21CW93)
*591	12	50	sand (21CW93)
592	8	30	sand, gravel; 5m N of ST588

Here on Lot 7 Hazelwood, Kaspar's Resort. Surface collect.

593	5	54	sand
*594	7	15	sand, gravel (21CW93)
*595	9	62	sand, gravel (21CW93)
*596	10	50	sand, gravel (21CW93)
597	8	30	sand, gravel
598	6	38	sand, gravel
599	5	45	sand, cobbles, gravel, charcoal

Here proceed NW into NW NE S.14, Dan Madison's Lot.

600	9	55	sand, gravel
601	10	55	sandy loam
602	8	50	sand, gravel

Here on widening ridge above old road.

603	6	30	sand, gravel
604	9	40	sand, gravel
605	8	40	sand, gravel; 15-25cm: pc. glass
606	10	40	sand
607	10	42	sand

On edge of higher terrace, Pellegrini's (Lot 1, Carlisle). ST608-609 placed in vicinity of garbage burning barrel and crushed rock driveway, both tests contaminated.

608	14	33	sand, burned bone, charcoal
609	10	55	sand, gravel, crushed rock
610	24	55	sand, gravel (disturbed)
611	4	45	sand, gravel (on old roadbed?)

Here test Rice's Lot in SE SW S.11 (Govt. Lot 8) about halfway up SW shore of Nisswa Lake (developed terrace).

612	9	45	sand, gravel
613	10	37	sand, gravel
614	8	37	sand, gravel
615	16	39	sand, gravel; 0-12cm: modern fill

Here test Burgin's developed lot, second lot NW of Rice's Lot in SE SW S.11.

616	4	9	dense gravel
*617	10	36	sandy loam, gravel (21CW94)
618	11	36	sand, gravel
619	11	30	sand, gravel, modern debris
620	14	37	sand, FCR?
621	13	27	sand, gravel

END SECTOR F.

BEGIN SECTOR G in W1/2 SW1/4 S.15, on S end of Roy Lake, W of Roy Lake Lodge, in undeveloped forest.

622	4	30	sand
623	12	63	sand, gravel
624	13	56	sand, gravel
625	15	53	sandy loam
626	10	32	sandy loam
627	12	49	sandy loam
628	11	50	sandy loam
629	10	35	sandy loam
630	9	45	sandy loam
631	12	32	sandy loam
632	11	57	sandy loam

Here encounter metal pipe stuck in ground.

633	10	50	sandy loam

Here on recreational vehicle trail.

634	13	53	sand
635	12	49	sand, gravel
636	11	44	sand, gravel

Here shoreline ridge dwindles and swale btwn ridge & high ground to the SE becomes broader. Discontinue one transect, shift other two: one along ridge, the other closer to high ground.

637	10	44	sandy loam
638	10	47	sandy loam
639	12	42	sandy loam, clay

640	10	35	silty sand
641	11	48	silty sand
642	11	33	silty sand
643	11	28	silty sand
644	10	46	silty sand
645	10	20	silty sand
646	9	40	silty sand

Here check rodent burrow.

647	10	40	silty sand
648	9	30	silty sand
649	10	37	silty sand, gravel
650	10	36	silty sand, gravel
651	12	52	silty sand, gravel
652	10	50	silty sand, gravel
653	18	50	sand
654	13	56	sand

Here proceed S cross low ground onto higher "island" surrounded by marsh, N of Co Rd 77.

655	11	38	sand
656	12	40	sand, gravel
657	13	60	sand, gravel
658	12	64	sand, gravel
659	11	54	sand
660	10	60	sand
661	15	60	sand
662	14	61	sand, charcoal bits

5m from ST662 are three old burrows ca. 1m in diameter.

663	13	40	sand
664	15	70	sand, charcoal bits

Here cross low area to S, climb steep bank to Co Rd 77, move NW to triangular piece of land on N side Co Rd 77 in SE SE S.16, on S end Roy Lake.

665	13	44	sand, gravel
666	14	55	sand, gravel
667	12	50	sand, gravel
668	13	50	sand, gravel
669	12	53	sand, gravel
670	13	54	sand, gravel
671	9	50	sand, gravel
*672	9	57	sand, gravel (21CA147)
673	10	50	sand, gravel
674	9	50	sand, gravel
675	10	50	sand, gravel

676	10	51	sand, gravel
*677	14	49	sand, gravel (21CA147)
*678	11	50	sand, gravel (21CA147)

Here on low (almost bog-level) area N of Holsapple's field on SW corner of Roy Lake, NE NE SE S.16.

679	10	53	silty sand, gravel
680	8	47	silty sand, gravel
681	9	37	silty sand, gravel

Here proceed N along small level terrace on W side of marshy bay in SE SE NE S.16.

682	8	50	sand, dense gravel
683	8	42	sand, dense gravel
684	9	54	sand, dense gravel
685	9	40	sand, dense gravel
686	9	65	sand, dense gravel

Here on narrow lakeside ridge on E side of marshy bay in W1/2 SW1/4 NW1/4 S.15.

687	9	52	sand, gravel
688	7	55	sand, gravel
689	6	50	sand, dense gravel

Here test Lot 8, Whitstrom Addition (Voigt's undeveloped lot), W side lower Roy Lake, in middle W1/2 NW1/4 S.15.

690	0-50cm: disturbed; 50-60cm: original bog zone		
691	12	40	sand
692	10	60	sand, gravel
693	14	45	sand
694	13	50	sand

END SECTOR G.

BEGIN SECTOR H on low, level point of land on E side Roy Lake Narrows, middle SE SW S.10, Murphy's Lot, S of Murphy's house.

695	0-25cm: sand;	25-41: wet, peat-like organic soil	
696	9	36	sand
697	9	56	sand

Here on Buckman Lot, E shore lower Roy Lake, S edge of NE NW S.15. Sloping terrace above lake.

698	9	57	sand, gravel
699	9	46	sand, dense gravel

700	12	50	sand, gravel
701	12	58	sand, gravel

END SECTOR H.

END OF SHOVEL TEST LIST

Appendix E. State Site Forms for Sites and Find Spots Found During the 1983-84 Nisswa Lakes Survey.

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS	POINT NARROWS RESORT	—	21-CA-116

OWNER: JIM WNUK (see "COMMENTS" BELOW)

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON PENINSULA ON NORTH SIDE OF CHANNEL CONNECTING BASS AND UPPER GULL LAKES. SITE MATERIALS

LEGAL DESCRIPTION: GOVT. LOT 9 NW 1/4 NE 1/4 SEC. 9 T 135 N R 29 W twnsp: LAKESHORE

SITE TYPE: PREHISTORIC

PROBABLE CULTURAL COMPONENTS: MID-LATE PREHISTORIC TRANSITION

SITE DESCRIPTION / ENVIRONMENTAL SETTING: SITE MATERIALS FOUND ON LOWER TERRACE ALONG SOUTH AND SOUTHEAST MARGINS OF PENINSULA. MATERIALS APPEAR DENSEST AT SOUTH END OF POINT ON ERODING FACE OF BANK. PREDOMINANT DECIDUOUS FOREST COVER W/ SOME MIXED PINE.

SITE CONDITION	CURRENT LAND USE	SITE AREA
HIGHLY DEVELOPED.	RESORT, TRAILER PARK, BOAT LAUNCH	CA. 7800 M² OR 1.9 ACRES

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	ADJACENT	NORTH/NORTHWEST

ELEVATION OF SITE: 1194'-1209' **ELEVATION OF NEAREST WATER:** 1194' ASL

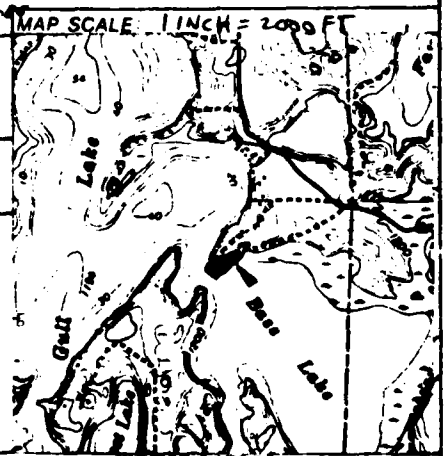
NATURE, EXTENT OF INVESTIGATION: SURFACE COLLECTION FROM ERODING SHORELINE, ROAD CUTS.

ARTIFACTS OBSERVED, RECOVERED:
15 pc. LITHIC DEBITAGE OF RED QUARTZITE, WHITE QUARTZ, GRAY CHERT, RED AGATE
11 GRIT TEMPERED CERAMIC SHERDS INCLUDING 4 NET IMPRESSED, 1 HORZ. CORDED, 2 CWP IMPRESSED, 1 REPETITIVE STAMP NECK, 2 CRUMB

LOCAL COLLECTIONS, INFORMANTS: .

WRITTEN REFERENCES:
ELDEN JOHNSON, 1979. HEADWATERS CORPS REPORT.
VOL 1:55; VOL 2: 298

COMMENTS:
LAND HAS CHANGED HANDS SINCE 1978 CORPS SURVEY.
NEW OWNER IS: JIM WNUK
SUMMER: BOX 626, NISSWA, MN, 56468
(218)-568-5552
WINTER: 209 9TH ST. WEST, CANBY, MN, 56220
(507)-223-5264 or 223-7704



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H21 H73		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	D. BIRK DATE: 24 MAY 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS	SCHMIDT SITE	83-7	21 CA 144

OWNER: RUSS SCHMIDT

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON TRIANGULAR TERRACE SOUTH OF PT. NARROWS RESORT EXIT ROAD AND WEST OF HIGH HILL AT NORTHERNMOST PART OF BASS LAKE BASIN

LEGAL DESCRIPTION: GOVT LOT 10 NE 1/4 NE 1/4 SEC. 9 T. 135N R. 29W twnsp: LAKESHORE

SITE TYPE: PREHISTORIC (HABITATION)

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING: SITE IS ON NEAR-LOWER TERRACE WITH SLIGHT SLOPE TO SOUTHWEST. FOREST COVER OF OAK-BIRCH-POPLAR, UNDERSTORY OF HAZEL BRUSH WITH SCATTERED POISON IVY. SHORELINE IS BOULDER MARSH AND SWAMP.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	FOREST	CA. 900 m^2

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	400' TO OPEN WATER	NORTH

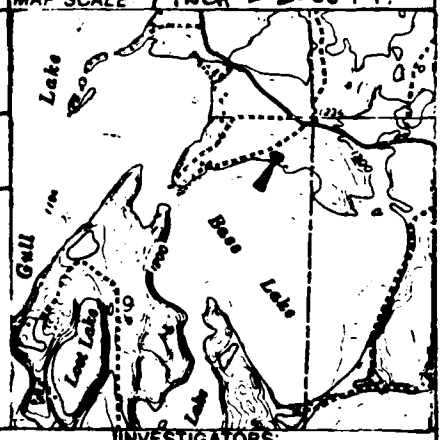
ELEVATION OF SITE: 1205' – 1210'

ELEVATION OF NEAREST WATER: 1194'

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS

ARTIFACTS OBSERVED, RECOVERED:
5 - LITHIC DEBITAGE OF GRAY CHERT, BASALT, RED QUARTZITE & PINK QUARTZ
3 - FIRE-CRACKED ROCK

MAP SCALE: 1 INCH = 2000 FT.



LOCAL COLLECTIONS, INFORMANTS: NONE

WRITTEN REFERENCES: NONE

COMMENTS: ARTIFACTS RECOVERED FROM DEPTH OF 5-20 CMS. NO ceramics FOUND IN 4 positive shovel TESTS.

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
#74		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	B. BIRK DATE: 9 JUNE 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS		83-8	Find Spot FS-8

OWNER RUSS SCHMIDT

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: FIND SPOT IS LOCATED ON LOW TERRACE BETWEEN HIGH HILL IN NORTH AND SWAMPY MARGIN OF BASS LAKE TO THE SOUTH AND ADJACENT TO THE NORTHWEST END OF AN old ELEVATED BEACH RIDGE.

LEGAL DESCRIPTION: GOVT LOT 10 E½ NE¼ NE¼ SEC. 9 T 135N R. 29W twnsp: LAKE-HUBBARD

SITE TYPE: CERAMIC FIND SPOT

PROBABLE CULTURAL COMPONENTS: LATE MIDDLE WOODLAND

SITE DESCRIPTION / ENVIRONMENTAL SETTING: FIND SPOT IS LOCATED ON LOW TERRACE ONLY SLIGHTLY ELEVATED ABOVE the level OF the ADJACENT MARSH AND CA. 50M SOUTHEAST OF SITE 83-7 (21-CA-144). FOREST COVER OF POPLAR-OAK-BIRCH WITH NUMEROUS TREE falls. SOME BRUSH.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	FOREST	FIND SPOT

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	CA. 260' TO OPEN WATER	NORTH

ELEVATION OF SITE: 1198' ELEVATION OF NEAREST WATER: 1194'

NATURE, EXTENT OF INVESTIGATION: SHOVEL TEST

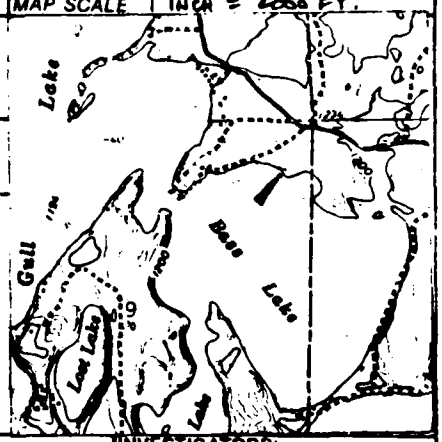
ARTIFACTS OBSERVED, RECOVERED: 1-(BRAINERD WARE) NET IMPRESSED SHERD

LOCAL COLLECTIONS, INFORMANTS: NONE

WRITTEN REFERENCES: NONE

COMMENTS: SINGLE SHERD RECOVERED FROM DEPTH OF 0-15 CM.

MAP SCALE 1 INCH = 2000 FT.



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H75		HAMLINE UNIVERSITY	D. BIRK
		PROJECT: NISSWA LAKES SURVEY	DATE: 9 JUNE 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING		83-9	Find Spot

OWNER: MRS. LUCILLE S. OEN, INTERLACHEN ROAD, ROUTE 6, BOX 277, BRAINERD, MN, 56401

U.S.G.S. QUAD: NISSWA 25'

SITE LOCATION: ON A FORESTED BEACH RIDGE ON THE EXTREME NE CORNER OF BASS LAKE, WEST OF THE MOST PRONOUNCED CURVE IN BASS LAKE ROAD.

LEGAL DESCRIPTION: CENTER NW¼ SEC. 10 T 135 N R. 29 W twnsp: NISSWA

SITE TYPE: LITHIC FIND SPOT

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING: ON LOW FORESTED RIDGE. OAK-POPLAR MIXED W/ JACK & RED PINE. MARSHY SHORELINE.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	FOREST	FIND SPOT

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	CA. 270' TO OPEN WATER	NORTHEAST

ELEVATION OF SITE: ca 1203' ELEVATION OF NEAREST WATER: 1194'

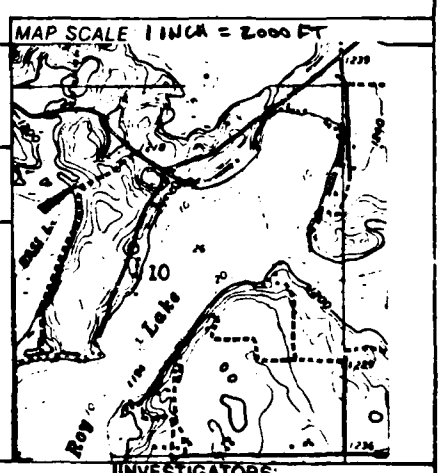
NATURE, EXTENT OF INVESTIGATION: SHOVEL TEST

ARTIFACTS OBSERVED, RECOVERED: 1- RED QUARTZITE FLAKE

LOCAL COLLECTIONS, INFORMANTS: NONE

WRITTEN REFERENCES: NONE

COMMENTS: A FLATTENED ALUMINUM SODA CAN WAS PLACED IN THE SHOVEL TEST HOLE CA. 8 CM BELOW GRADE. FLAKE WAS RECOVERED FROM A DEPTH OF 0-20 CM.



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H76		HAMLINE UNIVERSITY	D. BIRK
		PROJECT: NISSWA LAKES SURVEY	DATE: 10 JUNE 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
Cass		84-15	21 CA 145

OWNER DANIEL SCHULIST
14319 UNDERCLIFT ST. NW
ANOKA, MN, 55303

U.S.G.S. QUAD
NISSWA 7.5'

SITE LOCATION
NORTH END OF MARSHY BAY ON NORTH SIDE
SPIDER LAKE - RICE LAKE NARROWS

LEGAL DESCRIPTION
CENTER SE¼ SE¼ SEC. 9
T 135N R. 29W twnsp: LAKES HOME

SITE TYPE
PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING
SITE OCCUPIES SMALL BASIN-LIKE STEP OR TERRACE ON OTHERWISE SLOPING GROUND ON NORTH END OF MARSHY BAY SOUTH OF BASS LAKE ROAD, ON SPIDER RIDGE. FOREST COVER OF BIRCH, ASPEN, MAPLE, OAK & ALDER

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	< 10M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
Spider Lake	25 METERS	NORTH

ELEVATION OF SITE: 1215' ASL
ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS

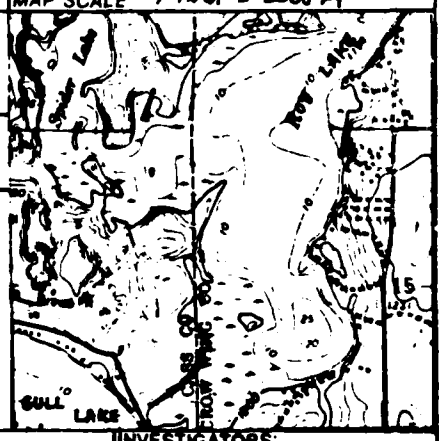
ARTIFACTS OBSERVED, RECOVERED:
6-LITHIC DEBITAGE (BASALT, RED QUARTZITE, WHITE QUARTZ)
1-PC. CALCINED BONE

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
ALL MATERIALS WERE RECOVERED FROM A SINGLE SHOVEL TEST AT 5-30 LEVEL

MAP SCALE 1 INCH = 2000 FT



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H77		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN & BIRK DATE: 30 AUGUST 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
Cass	Spider Ridge Point	84-14	21CA146

OWNER Daniel Schulist
14319 Undercliff St. NW
Anoka, MN 55303
(612) 427-8908

U.S.G.S. QUAD
Nisswa 7.5'

SITE LOCATION
Point on north side outlet Roy Lake

LEGAL DESCRIPTION
SE¼ SE¼ SE¼ Sec. 9
T 135N R. 29W twnsp: Lakeshore

SITE TYPE
Prehistoric

PROBABLE CULTURAL COMPONENTS:
Woodland

SITE DESCRIPTION / ENVIRONMENTAL SETTING
Site is located on elevated, partly developed peninsula surrounded by marsh. Bulldozing and installation of driveway, water pump and electric lines has disturbed an exposed ground surface to erosion. Deciduous forest cover of birch, oak and aspen.

SITE CONDITION	CURRENT LAND USE	SITE AREA
Partially developed	Seasonal Camping - Recreation	600 m²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
Roy Lake	—	North

ELEVATION OF SITE: 1210'
ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: Shovel tests, surface inspection

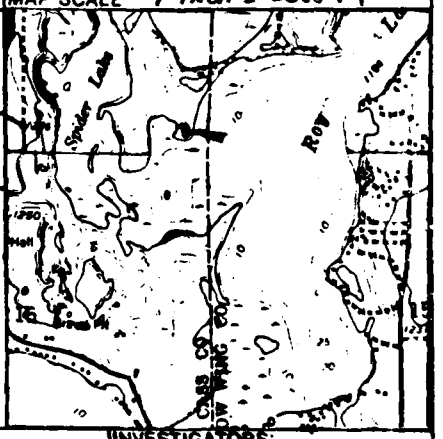
ARTIFACTS OBSERVED, RECOVERED:
3 chert flakes, FCR; 1 grit-tempered possible net-impressed sherd

LOCAL COLLECTIONS, INFORMANTS:
None

WRITTEN REFERENCES
None

COMMENTS:
Artifacts found in shovel tests at 10-30 cm level. Area of point conducive to habitation is small and much of ground surface has been disturbed by recent development activities.

MAP SCALE 1 INCH = 2000 FT



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H78		Hamline University PROJECT: Nisswa Lakes Survey	Mike Justin - D. Birk DATE: 23 August 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS	CAMP COMFORT	84-1	21 CA 147

OWNER MULTIPLE
MOSHER, PORTER, CURNUTT, ET. AL.

U.S.G.S. QUAD
NISSWA 7.5'

SITE LOCATION
AT CAMP COMFORT RESORT ON EITHER SIDE OF CO RD. 77 WHERE HWY PASSES OVER NARROW CAUSEWAY SEPARATING SOUTH END OF ROY LAKE FROM GULL LAKE.

LEGAL DESCRIPTION
CENTER SE¼ SE¼ SEC. 16
T 135 N R. 29 W twnsp: LAKESHORE

SITE TYPE HISTORIC LOGGING AND PREHISTORIC MOUND-HABITATION-PORTAGE

PROBABLE CULTURAL COMPONENTS:
WOODLAND AND HISTORIC

SITE DESCRIPTION / ENVIRONMENTAL SETTING
A GROUP OF POSSIBLY 10 MOUNDS, CIRCULAR OR OBLATE IN SHAPE, OCCUPIED A LEVEL ELEVATED TERRACE ON EXTREME SOUTHWEST CORNER OF ROY LAKE MARSH. IN 1892 THE BRAINERD & N. MINN. RR BUILT A GRADE THROUGH THE SITE. LATER CONSTRUCTION OF CO RD 77 OBLITERATED MORE OF SITE AREA. TODAY ONLY UNDISTURBED PART OF SITE LIES IN MIXED PINE-DECIDUOUS FOREST ON N. SIDE OF CO RD 77. OLD "LOGGING HEADQUARTERS" BUILDING IS NOW PART OF CAMP COMFORT LODGE

SITE CONDITION	CURRENT LAND USE	SITE AREA
HEAVILY DEVELOPED	PUBLIC ROAD - RESIDENTIAL	14,500 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
GULL & ROY LAKES	ADJACENT	SOUTH OF ROY LAKE EAST OF GULL LAKE

ELEVATION OF SITE: 1210'

ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SURFACE INSPECTION, SHOVEL TEST

ARTIFACTS OBSERVED, RECOVERED:
LITHIC DEBITAGE (BASALT, QUARTZ, JASPER), FCR
2 - GRIT TEMPERED SHERDS (ONE BLACKDUCK ?)
CHARCOAL

MAP SCALE 1 INCH = 2000 FT

LOCAL COLLECTIONS, INFORMANTS:
GEORGE MOSHER

WRITTEN REFERENCES
NONE

COMMENTS: ACCORDING TO THE MOSHER'S AT LEAST ONE MOUND WAS REMOVED WHEN CO RD 77 WAS CONSTRUCTED. A "DR. MANN" FROM HAMLINE UNIVERSITY SUPPOSEDLY EXCAVATED ONE OF THE MOUNDS IN ADVANCE OF ROAD CONSTRUCTION. BOTH MR. MOSHER AND OTHER VISITORS HAVE FOUND "ARROWHEADS" AND OTHER STONE TOOLS ON THIS SITE. NONE OF THESE ITEMS WERE AVAILABLE FOR VIEWING.

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H79		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	D. BARR - M. JOSTIN DATE: 12 AUGUST 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
Cass		84-13	Find Spot FS-9

OWNER Robert Holsapple
RTE 6 Box 78
Brainerd, MN

U.S.G.S. QUAD: Nisswa 25'

SITE LOCATION: In cultivated field on southwest corner of Roy Lake marsh.

LEGAL DESCRIPTION: NE¼ NE¼ SE¼ Sec. 16 T 135N R. 29W twnsp: Lakeshore

SITE TYPE: Lithic Find Spot

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING
Find spot is located on north end of high, level, cultivated terrace that forms a peninsula-like projection overlooking the boggy south end of Roy Lake. Field was planted in corn in 1984.

SITE CONDITION	CURRENT LAND USE	SITE AREA
cultivated	agriculture	Find Spot

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
Bog at S. end Roy Lake		West

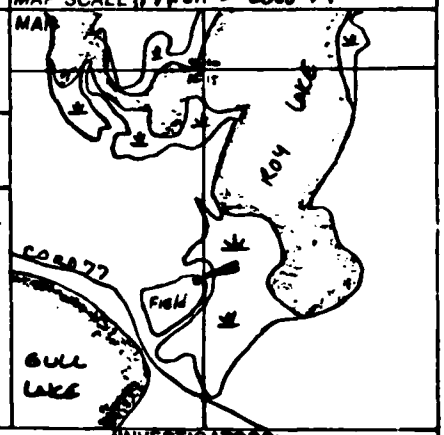
ELEVATION OF SITE: 1220'

ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: walkover at 15m transect intervals

ARTIFACTS OBSERVED, RECOVERED:
1- broken white quartz biface

MAP SCALE 1 INCH = 2000 FT



LOCAL COLLECTIONS, INFORMANTS:
None

WRITTEN REFERENCES
None

COMMENTS:
Field was surveyed when corn was shoulder-high so that visibility was limited. Site area should probably be re-examined when conditions are better.

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
HBO		Hamline University PROJECT: Nisswa Lakes Survey	Mike Justin - O. Birk DATE: 9 August 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS	FAWN POINT	83-6	21 CA 148

OWNER Mrs Lucille S. Ogn
INTERLACHEN ROAD
ROUTE 6, BOX 277
BRAINERD, MN, 56401

U.S.G.S. QUAD NISSWA 7.5'

SITE LOCATION
ON THE NORTHEAST-MOST POINT OF A T-SHAPED PENINSULA ON THE SOUTH SIDE OF THE SPIDER-ROY LAKE CHANNEL. SITE AREA PROBABLY BISECTED BY EAST LINE, LOT 1 FAWN FOREST

LEGAL DESCRIPTION
E½ NE¼ NW¼ NE¼ SEC. 16
T. 135 N R. 29W twnsp: LAKESHORE

SITE TYPE PREHISTORIC (HABITATION)

PROBABLE CULTURAL COMPONENTS: LATE MIDDLE WOODLAND

SITE DESCRIPTION / ENVIRONMENTAL SETTING
SITE IS ON LOW SLOPING TERRACE FORMING NARROW BASE OF HIGH RIDGE AT NORTH END OF PENINSULA. BIRCH-OAK FOREST W/UNDERSTORY OF DOGWOOD & HAZEL BRUSH. SHORELINE IS LOW & MARSHY WITH BOULDERS. ACTIVE BEAVER CUTS & TRAILS.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	CA. 250 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
SPIDER-ROY LAKE CHANNEL	ADJACENT	SOUTH

ELEVATION OF SITE: 1196'-1200' **ELEVATION OF NEAREST WATER:** 1194'

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS.

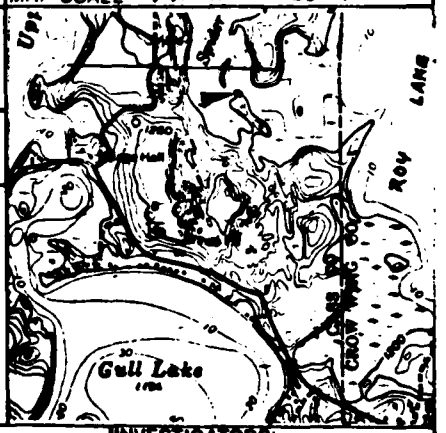
ARTIFACTS OBSERVED, RECOVERED:
1- GRAY CHERT, CORNER-REMOVED PROJECTILE POINT;
DEBITAGE OF BASALT & WHITE QUARTZ; FIRE-CRACKED ROCK
GRIT TEMPERED, NET-IMPRESSED (BRAINERD WARE) SHERD

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
CULTURAL MATERIALS RECOVERED FROM A DEPTH OF 10-40 CM.

MAP SCALE 1 INCH = 2000 FT



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
HBL		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	D. BIRK DATE: 6 JUNE 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS		84-16	21CA149

OWNER MRS. LUCILLE OEN
INTERLACHEN ROAD
ROUTE 6, BOX 277
BRAINERD, MN 56401

U.S.G.S. QUAD NISSWA 7.5'

SITE LOCATION
ON SOUTH END OF ISLAND-LIKE ESKER CLOSE TO THE LINE SEPARATING LOTS 1 & 2 OF OEN'S FAWN FOREST ADDITION, ON SOUTH SIDE OF THOROUGHFARE BETWEEN Spider and Roy Lakes

LEGAL DESCRIPTION
LOT 2 FAWN FOREST ADDITION
NE¼ NW¼ NE¼ SEC. 16
T135N R.29W twnsp: LAKESHORE

SITE TYPE PREHISTORIC

PROBABLE CULTURAL COMPONENTS: UNKNOWN

SITE DESCRIPTION / ENVIRONMENTAL SETTING
2 - TWO - POSITIVE SHOVEL TESTS. placed on A NARROW ELEVATED ridge THAT FORMS AN ISLAND on the SOUTH END OF Spider LAKE. AREA SOUTH OF RIDGE IS MARSH. AREA BETWEEN RIDGE AND CHANNEL TO EAST IS MARSHY WITH ALDERS. RIDGE IS COVERED WITH DECIDUOUS FOREST WITH MIXED PINE AND ABUNDANT BRUSH.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	± 10 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
Spider Lake	50 FEET	SOUTH

ELEVATION OF SITE: 1200' **ELEVATION OF NEAREST WATER:** 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SHOVEL TEST

ARTIFACTS OBSERVED, RECOVERED:
2 pcs. OF RAW, CRACKED MAMMAL BONE
1 POT-LIDDED BASALT COBBLE + 1 SPALL OF SAME

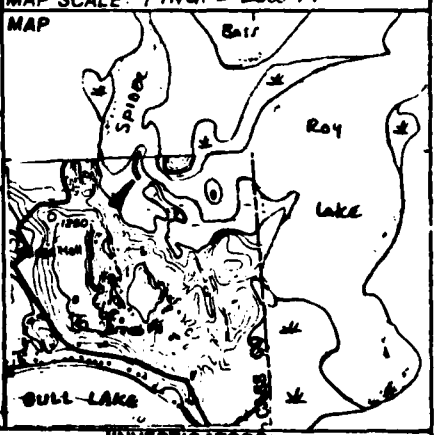
LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
RIDGE IS SO NARROW AND UNDULATING IT IS DIFFICULT TO IMAGINE A SITE OF ANY SIZE OR PERMANENCY OCCUPYING THIS SPACE. SITE #83-6 IS LOCATED ABOUT 450 METERS TO EAST. (THAT IS, 21CA148)

MAP SCALE: 1 INCH = 2000 FT

MAP



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H83		Hamline University	B. BICK
		PROJECT: Missing Lakes Survey	DATE: 2 JUNE 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS		83-4	21 CA 150

OWNER MRS. LUCILLE OEN
WIERLACHEN ROAD
ROUTE 6, BOX 277
BRAINERD, MN, 56401

U.S.G.S. QUAD
NISSWA 7.5'

SITE LOCATION
ON RIDGE ON WEST SIDE OF BASS LAKE, LOT 16, FANN FOREST ADDITION. AT EXTREME NORTH END OF HIGH RIDGE DEPICTED ON USGS NISSWA QUAD IN E½ NW¼ SE¼ SEC. 9

LEGAL DESCRIPTION
GOVT LOT 11
NW¼ NE¼ NW¼ SE¼ SEC 9
T 135N R. 29W twnsp: LAKESHORE

SITE TYPE
PREHISTORIC (TOOL MANUFACTURE SITE?)

PROBABLE CULTURAL COMPONENTS:
—

SITE DESCRIPTION / ENVIRONMENTAL SETTING
ON SMALL LEVEL STEP OF ASCENDING RATTAIL RIDGE ON WEST SIDE BASS LAKE AT ENTRANCE TO SPIDER LAKE. MIXED PINE-DECIDUOUS FOREST, WITH UNDERSTORY OF BRUSH. SITE OFFERS GOOD VIEW POTENTIAL OF UPLAND MARSH TO WEST AND BASS LAKE TO NORTHEAST.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	< 10 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	CA. 200' TO OPEN WATER	SOUTHWEST

ELEVATION OF SITE:	ELEVATION OF NEAREST WATER:
CA. 1230'	1194'

NATURE, EXTENT OF INVESTIGATION: SHOVEL TEST

ARTIFACTS OBSERVED, RECOVERED:
2-CHALCEDONY (KNIFE RIVER) FLAKES
1-RED QUARTZITE DEBITAGE

MAP SCALE: 1 INCH = 2000 FT.

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
SITE MAY REPRESENT SMALL LITHIC TOOL MANUFACTURE OR MODIFICATION AREA DEPOSITED IN SINGLE, SHORT TERM EPISODE OF SITE USE. LITHIC MATERIALS FOUND AT DEPTH OF 25-40 CM.

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
HBS		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	D. BIRK DATE: 4 JUNE 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
Cass		83-5	Find Spot FS-10

OWNER Bruce & Sally Cameron
547 - 19th Ave NW
New Brighton, MN, 55112

U.S.G.S. QUAD Nisswa 7.5'

SITE LOCATION
On level top of northernmost end of high ridge depicted on USGS Nisswa quad in E½ NW¼ SE¼ Sec. 9. Lot 15 Fawn Forest Addition.

LEGAL DESCRIPTION
NW¼ NE¼ NW¼ SE¼ Sec. 9
T 135N R. 29W twnsp: Lakeshore

SITE TYPE
Prehistoric Lithic Find Spot

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING
On level ridge top on west side Bass Lake at entrance to Spider Lake. At head of driveway near modern campfire circle. Mixed pine-deciduous forest, brushy where not cleared. Ridge top location offers good view potential of surrounding marsh and water features.

SITE CONDITION	CURRENT LAND USE	SITE AREA
Undeveloped	Seasonal unimproved campsite in subdivided forest	Find Spot

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
Bass Lake	ca. 200' to open water	Southwest

ELEVATION OF SITE: ca. 1245' **ELEVATION OF NEAREST WATER:** 1194'

NATURE, EXTENT OF INVESTIGATION: Shovel Test

ARTIFACTS OBSERVED, RECOVERED:
1 - crude, fine grain, dull-red quartzite biface.

MAP SCALE: 1 INCH = 2000 FT.

LOCAL COLLECTIONS, INFORMANTS:
None

WRITTEN REFERENCES
None

COMMENTS:
Biface found at depth of 30-40 cms.

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H84		Hamline University PROJECT: Nisswa Lakes Survey	D. Birk DATE: 4 June 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS		83-3	21 CA 151

OWNER: MRS. LUCILLE OEN
INTERLACHEN ROAD
ROUTE 6, BOX 279
BRAINERD, MN, 56401

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON HIGH RIDGE ON WEST SIDE OF BASS LAKE ON LOTS 16-17 FAWN FOREST ADDITION, LAKESHORE TWP.

LEGAL DESCRIPTION: GOVT LOT 8
S1/2 SW1/4 NE1/4 SEC. 9
T. 135N R. 29W twnsp: LAKESHORE

SITE TYPE: PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING: ON LEVEL TERRACE & HOGBACK SPUR ON WEST SIDE BASS LAKE AT ENTRANCE TO SPIDER LAKE. PREDOMINANT DECIDUOUS (BIRCH, ASPEN) W/ MIXED PINE & UNDERSTORY OF BRUSH.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	CA. 400 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	CA. 240' TO OPEN WATER	WEST

ELEVATION OF SITE: 1320'-1240' ASL

ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS

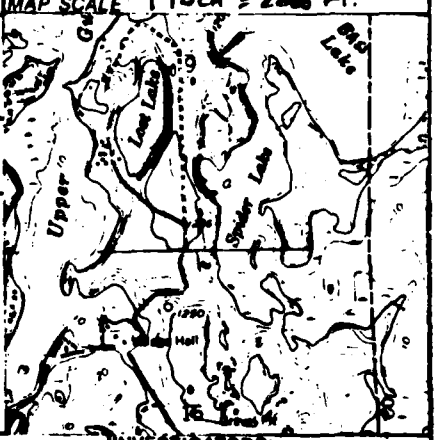
ARTIFACTS OBSERVED, RECOVERED:
5- LITHIC DEBITAGE OF QUARTZ, QUARTZITE & GRAY CHERT
1- GRIT TEMPERED CERAMIC CRUMB

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
SITE MATERIALS APPEAR CONFINED TO DEPTH OF 10-25 CM

MAP SCALE 1 INCH = 2000 FT.



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H86		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	O. BIRK DATE: 26 MAY 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS	CUL DE SAC	83-2	21 CA 152

OWNER MRS. LUCILLE OBEN
INTERLACHEN ROAD
ROUTE 6, BOX 277
BRAINERD, MN, 56401

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON HIGH RIDGE ON WEST SHORE OF BASS LAKE, ON LOT 19 OF FAWN FOREST ADDITION, LAKESHORE TWP.

LEGAL DESCRIPTION: GOVT. LOT 8, SW1/4 NE1/4 SEC. 9, T. 135N R. 29W twnsp: LAKESHORE

SITE TYPE: PREHISTORIC (HABITATION)

PROBABLE CULTURAL COMPONENTS: MIDDLE WOODLAND (MALMO?)

SITE DESCRIPTION / ENVIRONMENTAL SETTING: ON RIDGE BETWEEN BASS LAKE & SMALL SWAMP. PREDOMINANT DECIDUOUS FOREST W/ HAZEL BRUSH UNDERSTORY + SCATTERED POISON IVY. SHORELINE OF BASS LAKE N SWAMPY.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	CA. 200 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	CA. 230' TO OPEN WATER	WEST

ELEVATION OF SITE: 1240' ASL

ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS

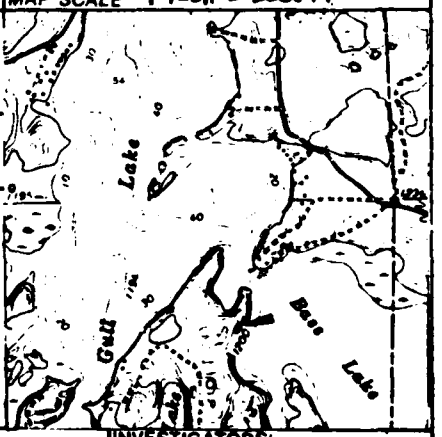
ARTIFACTS OBSERVED, RECOVERED:
2 - FLAKES, ONE OF BASALT AND ONE OF RED AGATE
2 - GRIT TEMPERED, PLAIN SHERDS. ONE, A RIMSHERD, WITH SERIES OF PUNCTATES ON EXT.

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
UNDISTURBED. SITE MATERIALS RECOVERED AT DEPTH OF 20-50 CM.

MAP SCALE 1 INCH = 2000 FT



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H87		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	D. BIRK DATE: 26 MAY 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CASS	OEN SITE	83-1	21 CA 153

OWNER MRS. LUCILLE OEN, INTERLACHEN ROAD, ROUTE 6, BOX 299, BRAINERD, MN, 56401

U.S.G.S. QUAD NISSWA 7.5'

SITE LOCATION
ON LOW TERRACE AND RIDGE ON SOUTH SIDE OF OL BASS-UPPER GULL LAKE NARROWS ON POINT ON WEST SHORE OF BASS LAKE

LEGAL DESCRIPTION
LOT 21 FAWN FOREST ADDITION
S½ NW¼ NE¼, N½ SW¼ NE¼ } SEC. 9
T. 135N R. 29W twnsp: LAKESHORE

SITE TYPE PREHISTORIC (HABITATION)

PROBABLE CULTURAL COMPONENTS: MIDDLE WOODLAND (MALMO ?)

SITE DESCRIPTION / ENVIRONMENTAL SETTING
SITE MATERIALS FOUND IN SUBSURFACE TESTS ON LOW TERRACE + RIDGE BY NARROWS, AND ON LEVEL AREA OF 2ND TERRACE TO SOUTH. PREDOMINANT DECIDUOUS FOREST (BIRCH-ELM) W/ UNDERSTORY OF BASSWOOD, DOGWOOD, HAZEL, BEECH, TAMARACK. SOME PINE ON HIGH RIDGE. SOME GENTLE SURFACE UNDULATION POSSIBLY DUE TO TREE FALLS. LOTS OF POISON IVY.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	ca 4000 m² or 1 ACRE

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
BASS LAKE	ADJACENT	SOUTH + WEST

ELEVATION OF SITE:	ELEVATION OF NEAREST WATER:
	1194' ASL

NATURE, EXTENT OF INVESTIGATION: SURFACE CHECK, SHOVEL TESTING

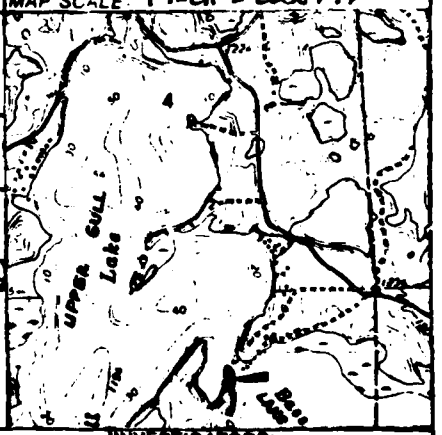
ARTIFACTS OBSERVED, RECOVERED:
2 QUARTZITE BIFACES, SCATTERED LITHIC DEBITAGE OF QUARTZ, QUARTZITE, CHERT, AGATE, BASALT, CHALCEDONY (KNIFE RIVER FLINT). FIRE-CRACKED ROCK
PLAIN, GRIT TEMPERED CERAMICS; 1 SHERD W/ CWS IMPRESSION

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
SITE IS ONLY SLIGHTLY DISTURBED BY NEW ROAD AND PRESENCE OF SOME MODERN DEBRIS (CANS, JARS, ETC.) AT N. END OF RIDGE. MRS. OEN REPORTED PILINGS IN CHANNEL WHEN SHE WAS A YOUTH — PROBABLY LOGGING ERA-RELATED, NOW NO LONGER PRESENT. ARTIFACTS ON LOWER TERRACE FOUND AT DEPTHS 0-30cm; THOSE ON SECOND TERRACE TO SOUTH FOUND AT 10-60 cm.

MAP SCALE: 1 INCH = 2000 FT.



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H88		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	D. BIRK DATE: 25 MAY 1983

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING	DULLUM POINT	84-10	CW-87

OWNER: DULLUM

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON POINT ON WEST SIDE ROY LAKE

LEGAL DESCRIPTION: S½ NE¼ SW¼ SEC. 10 T 135N R. 29W twnsp: NISSWA

SITE TYPE: PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING: SITE IS SITUATED ON A LOW, FORESTED AND HIGHLY DISTURBED POINT THAT FORMS THE "NARROWS" OF ROY LAKE.

SITE CONDITION	CURRENT LAND USE	SITE AREA
DISTURBED / DEVELOPED	RESIDENTIAL	< 10 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
ROY LAKE	10 M	WEST

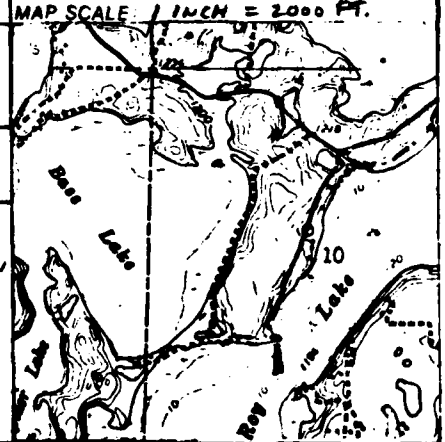
ELEVATION OF SITE: 1200'

ELEVATION OF NEAREST WATER: 1194 ASL

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS

ARTIFACTS OBSERVED, RECOVERED: 2 FLAKES (RED QUARTZITE + WHITE QUARTZ), FCR

MAP SCALE: 1 INCH = 2000 FT.



LOCAL COLLECTIONS, INFORMANTS: NONE

WRITTEN REFERENCES: NONE

COMMENTS: THIS POINT IS DISTURBED BY ROAD + CABIN CONSTRUCTION, WORM-DIGGINGS, FISH GUT BURIALS, SCATTERED GARBAGE, AND PICNIC-PARTY ACTIVITIES. SITE DEFINED BY A SINGLE POSITIVE SHOVEL TEST

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H89		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN + A. BIRK DATE: 30 AUG 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING		84-8	CW-88

OWNER Jackie Anderson
5254 Ewing Ave. North
Mpls, MN

U.S.G.S. QUAD Nisswa 7.5'

SITE LOCATION On N. shore of upper half of Roy Lake.

LEGAL DESCRIPTION N½ SW¼ NE¼ Sec. 10
T 135N R. 29W twnsp: Nisswa

SITE TYPE Prehistoric

PROBABLE CULTURAL COMPONENTS: Middle Woodland ?

SITE DESCRIPTION / ENVIRONMENTAL SETTING
Site is situated in a swale between two ridges opening southward to the lake. The area occupied by the site is basically level and just a few feet above present lake level. Jack pine, oak and birch predominate on the site with aspen becoming more numerous on the ridges.

SITE CONDITION	CURRENT LAND USE	SITE AREA
Partially developed	Forest / recreation	1500 m²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
Roy Lake	0-40 m	North

ELEVATION OF SITE: 1200' **ELEVATION OF NEAREST WATER:** 1194' ASL

NATURE, EXTENT OF INVESTIGATION: Shovel testing

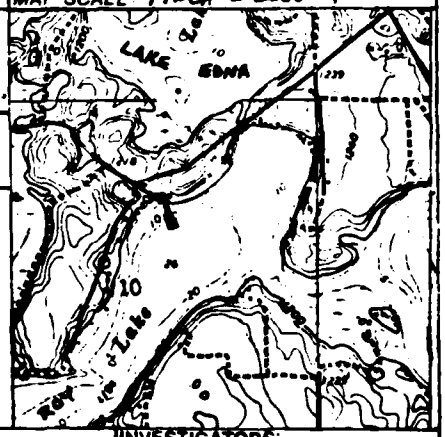
ARTIFACTS OBSERVED, RECOVERED:
4 pcs. Lithic debitage (quartz & jasper), FCR, calcined bone, grit-tempered ceramic fragments.

LOCAL COLLECTIONS, INFORMANTS:
Mrs. Jackie Anderson, landowner

WRITTEN REFERENCES
None

COMMENTS: Site could represent terminus of portage to Lake Edna less than ¼-mile northward.
Mrs. Anderson grew up in the house on the lot and remembers finding "arrowheads" in the driveway and on the old road bed that runs along the shoreline. She is unable to locate any of these artifacts now.

MAP SCALE 1 INCH = 2000 FT



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H90		Hamline University PROJECT: Nisswa Lakes Survey	Mike Justin / D. Birk DATE: 17 July 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING	NISSWA LAKE NARROWS	84-9	CW-89

OWNER MULTIPLE

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: HIGH GROUND ON NORTH SIDE OF THE ROY LAKE – NISSWA LAKE NARROWS

LEGAL DESCRIPTION: S6 W½ SE¼ NE¼ SEC. 10 SW¼ SW¼, NW¼ SEC. 11 T. 135 N R. 29 W twnsp: NISSWA

SITE TYPE: PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING: SITE MATERIALS THINLY SCATTERED ON UNDULATING, HIGHLY DEVELOPED GROUNDS ON POINT OF FORESTED PENINSULA BETWEEN ROY AND NISSWA LAKES.

SITE CONDITION	CURRENT LAND USE	SITE AREA
DEVELOPED	RESIDENTIAL	9000 M²

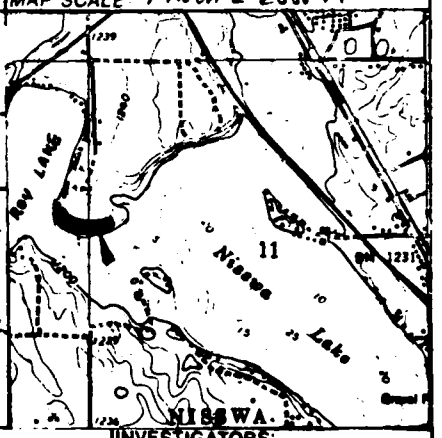
NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
ROY-NISSWA LAKES NARROWS	0-35 M	NORTH

ELEVATION OF SITE: 1210' ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SURFACE COLLECTION, SHOVEL TESTS

ARTIFACTS OBSERVED, RECOVERED: LITHIC DEBITAGE (BASALT, JASPER, CHERT, QUARTZ), PECKED ANVIL STONE, UTILIZED RED QUARTZITE FLAKE, FCR, CALCINED BONE

MAP SCALE 1 INCH = 2000 FT



LOCAL COLLECTIONS, INFORMANTS:
PATRICK HORMAN
BOX 106
NISSWA, MN, 56468 963-4655

WRITTEN REFERENCES: NONE

COMMENTS: NO DENSE CONCENTRATIONS OF CULTURAL MATERIAL WERE OBSERVED. AT PRESENT THE SITE AREA IS HEAVILY DEVELOPED WITH ROADS, DRIVEWAYS, HOUSES AND CABINS CONSTRUCTED ON ALL 13 LOTS ZONED RESIDENTIAL. OUTLOT "A" IS USED AS A HIGHLINE CORRIDOR.

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H91		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN – D. BIRK DATE: JULY 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING	CONWAY SITE	84-7	CW-90

OWNER: JOHN CONWAY, ROBERT DRAVING

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON LAKESIDE BENCH ON NORTHWEST END OF NISSWA LAKE, ABOUT MIDWAY BETWEEN CONNECTING CHANNELS TO ROY AND LOWER CULLEN LAKES

LEGAL DESCRIPTION: NE¼ SW¼ NW¼ SEC. 11 BLOCK ONE OF CONWAY SHORES

T 135N R. 29W twnsp: NISSWA

SITE TYPE: PREHISTORIC (HABITATION)

PROBABLE CULTURAL COMPONENTS: WOODLAND

SITE DESCRIPTION / ENVIRONMENTAL SETTING: ON NEAR-LEVEL BENCH HEMMED IN BY HIGH GROUND TO NORTH. UNDISTURBED AREAS SUPPORT A FOREST OF JACKPINE, OAK AND ASPEN.

SITE CONDITION	CURRENT LAND USE	SITE AREA
PARTLY DEVELOPED	RESIDENTIAL	5500 m²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
NISSWA LAKE	0-35 M	NORTHWEST

ELEVATION OF SITE: 1200-1210' ELEVATION OF NEAREST WATER: 1194 'ASL

NATURE, EXTENT OF INVESTIGATION: SURFACE COLLECTION, SHOVEL TESTING

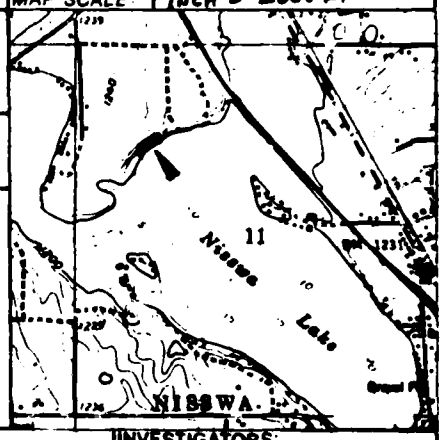
ARTIFACTS OBSERVED, RECOVERED: ASSORTED LITHIC DEBITAGE, FCR, CERAMIC SHERDS

LOCAL COLLECTIONS, INFORMANTS: NONE

WRITTEN REFERENCES: NONE

COMMENTS: STRATEGIC CAMPING LOCATION PROTECTED FROM NW WINDS. THE DENSITY OF ARTIFACTS AND AREAS OF NON-DISTURBANCE GIVE SITE GOOD FUTURE POTENTIAL

MAP SCALE: 1 INCH = 2000 FT



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H92		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN - D. BIRK DATE: 6 JULY 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING	THURLOW SITE I	84-2	CW-91

OWNER MRS. THURLOW
OUR OWN HARDWARE STORE
NISSWA, MN

U.S.G.S. QUAD NISSWA 7.5'

SITE LOCATION
ON THE EAST SHORE OF NISSWA LAKE, ON RIDGE TOP CA. 20 METERS FROM OPEN WATER AND 7-8' ABOVE LAKE.

LEGAL DESCRIPTION
NE¼ NW¼ SE¼ SEC. 11
T 135N R. 29W twnsp: NISSWA

SITE TYPE
UNKNOWN PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING
SITE IS ON CREST OF LOW, NARROW RIDGE THAT PARALLELS THE SHORELINE OF NISSWA LAKE. PREDOMINANTLY DECIDUOUS FOREST WITH MIXED PINE AND UNDERSTORY OF DENSE BRUSH.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED	SUBDIVIDED FOREST	< 10M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
NISSWA LAKE	CA. 20 METERS	NORTHEAST

ELEVATION OF SITE: CA. 1202' **ELEVATION OF NEAREST WATER:** 1194' ASL

NATURE, EXTENT OF INVESTIGATION: ONE POSITIVE SHOVEL TEST

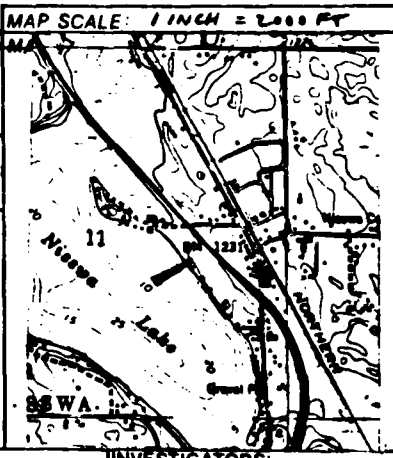
ARTIFACTS OBSERVED, RECOVERED:
5- FIRE-CRACKED ROCK (DISCARD)
1- WHITE CHERT DEBITAGE

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
FCR FOUND AT 40-45 CM LEVEL

MAP SCALE: 1 INCH = 2000 FT



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H93		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN - D. BIRK DATE: 26 JUNE 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING	THURLOW SITE II	84-3	CW-92

OWNER MR'S. THURLOW
OUR OWN HARDWARE STORE
NISSWA, MN

U.S.G.S. QUAD NISSWA 7.5'

SITE LOCATION ON EAST SHORE OF NISSWA LAKE.

LEGAL DESCRIPTION W1/2 NE1/4 SE1/4 SEC. 11
T 135N R. 29W twnsp: NISSWA

SITE TYPE PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING
SITE IS ON SLOPING TERRACE CA. 10' ABOVE LAKE. SITE AREA IS CROSSED AND PARTLY DISTURBED BY AN OLD ROADWAY THAT CUTS DOWN THE BANK AT THIS POINT TO LOWER LAKESIDE TERRACE. SHORELINE S. OF SITE IS PUSHED-UP ICE RAMPART. SEARCH FOR MOUND ON ADJACENT HIGH GROUND (TO NORTH) PROVED NEGATIVE.

SITE CONDITION	CURRENT LAND USE	SITE AREA
UNDEVELOPED. PARTLY DISTURBED BY OLD ROAD CUT.	SUBDIVIDED FOREST	CA. 200 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
NISSWA LAKE	20 METERS	NORTHEAST

ELEVATION OF SITE: 1205' **ELEVATION OF NEAREST WATER:** 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS, SURFACE COLLECTION

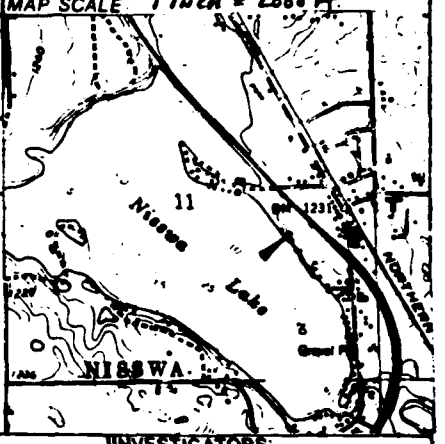
ARTIFACTS OBSERVED, RECOVERED: 1 BASALT FLAKE FOUND ON SURFACE ALONG ROAD CUT. 4 PCS. LITHIC DEBITAGE RECOVERED FROM SHOVEL TESTS ALONG WITH 3 FCR

LOCAL COLLECTIONS, INFORMANTS:
NONE

WRITTEN REFERENCES
NONE

COMMENTS:
MATERIALS FOUND AT ONLY 0-15cm LEVEL

MAP SCALE 1 INCH = 2000 FT.



ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H94		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN - D. BIRK DATE: 27 JUNE 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING	CLARK CREEK SITE	84-4	CW-93

OWNER MULTIPLE. JACK WARDEN, JOE KASPAR, JOHN LUND, & DAN MADISON OF NISSWA, MN. AND THYRA PETERSON OF PEQUOT LAKES, MN.

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON SOUTH END OF NISSWA LAKE AT MOUTH OF CLARK CREEK

LEGAL DESCRIPTION: NE¼ NE¼ SEC. 14 T. 135 N R. 29 W twnsp: NISSWA

SITE TYPE: PREHISTORIC (HABITATION)

PROBABLE CULTURAL COMPONENTS: WOODLAND

SITE DESCRIPTION / ENVIRONMENTAL SETTING: SITE IS SITUATED ON TERRACE NOW HEAVILY DEVELOPED AS RESORT AND SUMMER HOME LIVING AND RECREATION AREA. PARTS OF SITE HAVE BEEN PLANTED WITH PINE.

SITE CONDITION	CURRENT LAND USE	SITE AREA
ALL IS DEVELOPED EXCEPT FOR THYRA PETERSON'S LAKE LOT	PRIMARILY SUMMER RESORT	5000 M^2

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
NISSWA LAKE	0-50 METERS	SOUTH

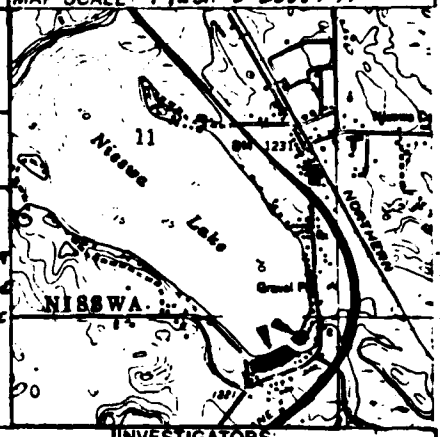
ELEVATION OF SITE: 1200-1220' ASL

ELEVATION OF NEAREST WATER: 1196' ASL

NATURE, EXTENT OF INVESTIGATION: SURFACE COLLECTION, SHOVEL TESTS

ARTIFACTS OBSERVED, RECOVERED: LITHIC DEBITAGE, ECR, CALCINED BONE. 1-GRIT TEMPERED RIM SHERD W/OBLIQUE NOTCHED TOOL IMPRESSION ON LIP INTERIOR

MAP SCALE: 1 INCH = 2000 FT.



LOCAL COLLECTIONS, INFORMANTS: NONE

WRITTEN REFERENCES: NONE

COMMENTS: DENSEST AREA OF SITE APPEARS TO LIE ON TERRACE WEST OF THE MOUTH OF CLARK CREEK. HIGH DEVELOPMENT PRECLUDED POSSIBILITY OF SHOVEL TESTING ENTIRE TERRACE. DENSITY AND CONTINUITY OF SITE DEPOSITS ARE THEREFORE UNCERTAIN

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H95		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN - D. BIRK DATE: 2 July 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING	BURGIN SITE	84-6	CW-94

OWNER: MR BURGIN

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: ON A RIDGE ON THE SW SHORE OF NISSWA LAKE, BETWEEN THE BURGIN'S AND BURKE'S HOUSES

LEGAL DESCRIPTION: NW1/4 SE1/4 SW1/4 SEC. 11 T 135 N R. 29 W twnsp: NISSWA

SITE TYPE: PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING: POSITIVE SHOVEL TEST IN BURGIN'S LAWN, ON LAKESIDE RIDGE 20-25M WIDE AT TOP. MATURE OAK-BIRCH-JACK PINE FOREST. MARSHY SHORELINE AREA BEGINS WITHIN 200' (60 M) TO THE NW.

SITE CONDITION	CURRENT LAND USE	SITE AREA
DEVELOPED	LAWN (RESIDENTIAL)	< 10M²

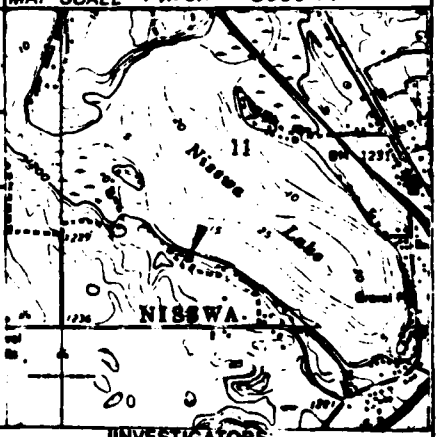
NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
NISSWA LAKE	20M	SOUTHWEST

ELEVATION OF SITE: 1210' ELEVATION OF NEAREST WATER: 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SHOVEL TESTS, SURFACE EXAMINATION, LANDOWNER INTERVIEW

ARTIFACTS OBSERVED, RECOVERED:
1- GRIT-TEMPERED CERAMIC SHERD
1- CHERT DEBITAGE
1- FCR

MAP SCALE 1 INCH = 2000 FT



LOCAL COLLECTIONS, INFORMANTS: NONE

WRITTEN REFERENCES: NONE

COMMENTS: SITE AREA IS LIMITED AND HIGHLY DEVELOPED. FUTURE POTENTIAL PROBABLY LOW

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
H96		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN - D. BIRK DATE: 14 JULY 1984

MINNESOTA ARCHAEOLOGICAL SITE FORM

COUNTY	SITE NAME	FIELD NUMBER	STATE NUMBER
CROW WING		84-11	CW-95

OWNER MRS Arnold VOIGT, RTE 6 Box 84, Brainerd, MN, 56401 — Robert APELT, 6230 WHITEFISH ROAD, Brainerd, MN, 56401

U.S.G.S. QUAD: NISSWA 7.5'

SITE LOCATION: SOUTHWEST SHORE OF ROY LAKE

LEGAL DESCRIPTION: NW¼ SW¼ NW¼ SEC. 15 T. 135N R. 29W twnsp: NISSWA

SITE TYPE: PREHISTORIC

PROBABLE CULTURAL COMPONENTS:

SITE DESCRIPTION / ENVIRONMENTAL SETTING:
BISON TEETH and BIFACE WERE SURFACE COLLECTED by RESIDENTS FROM THE BEACH AREA ADJACENT TO THEIR HOMES. SITE materials CONFINED TO LOWEST SHORELINE ELEVATION. IN WHAT WAS PREVIOUSLY MARSH.

SITE CONDITION	CURRENT LAND USE	SITE AREA
Partially INUNDATED	RESIDENTIAL – RECREATIONAL	250 M²

NATURE OF NEAREST WATER	DISTANCE TO WATER	DIRECTION OF SITE FROM WATER
ROY LAKE	0-10'	WEST

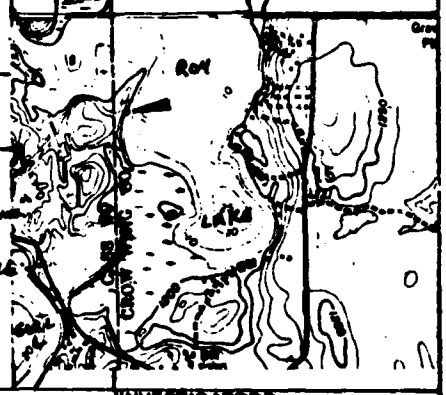
ELEVATION OF SITE: 1194' **ELEVATION OF NEAREST WATER:** 1194' ASL

NATURE, EXTENT OF INVESTIGATION: SURFACE OBSERVATION, SHOVEL TESTS

ARTIFACTS OBSERVED, RECOVERED:
TWO TEETH IDENTIFIED by UNKNOWN SOURCE AS BEING FROM EXTINCT GIANT BISON WERE FOUND ALONG DREDGED UP SHORELINE by MRS VOIGT IN 1969 + 1977. MR APELT FOUND A LARGE IVORY-COLORED QUARTZITE BIFACE OFFSHORE by HIS DOCK.

MAP SCALE 1 INCH = 2000 FT.

MAP



LOCAL COLLECTIONS, INFORMANTS:
APELT + VOIGT (Landowners)
CROW WING Co. HISTORICAL SOCIETY.

WRITTEN REFERENCES:
NONE

COMMENTS:
THE "Bison Teeth" ARE said to BE IN the collections of THE CROW WING Co. HISTORICAL SOCIETY IN BRAINERD, THOUGH A CHECK WITH THAT INSTITUTION IT WAS determined THAT THESE ITEMS WERE LOST IN STORAGE AND TEMPORARILY UNAVAILABLE FOR study.

ACCESSION NOS.	PHOTO NOS.	REPOSITORY:	INVESTIGATORS:
HBI		HAMLINE UNIVERSITY PROJECT: NISSWA LAKES SURVEY	MIKE JUSTIN – B. BIRK DATE: 31 AUG 1984

Appendix F. Draft Report Review Comments and Responses.

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1135 U. S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101-1479

June 24, 1985

REPLY TO
ATTENTION OF:

Environmental Resources Branch
Planning Division

Mr. Douglas A. Birk
Northland Archaeological Services
4522 Nokomis Avenue South
Minneapolis, Minnesota 55406

Dear Mr. Birk:

Enclosed are the comments of the National Park Service, the Minnesota Historical Society, and the St. Paul District, Corps of Engineers, on the draft report entitled A Phase I Cultural Resources Survey of the Nisswa Lakes, A Part of the Gull Lake Reservoir in Cass and Crow Wing Counties, Minnesota, that you prepared under contract number DACW37-82-M-2155.

Also enclosed is a copy of the draft report that was reviewed by a member of the St. Paul District editorial staff. The draft is generally well written. This copy, however, contains some stylistic, grammatical, and other editorial changes and comments. I am providing it as a guide for improving the final report. I trust you will find it most helpful.

Although the scope of work for this contract specifies that the final report must be submitted 60 days after receipt of comments, an additional 30 days will be allowed because of prior field commitments. Therefore, section 8.01.d. of the scope of work will be changed to read "... final contract report will be submitted 90 days after the Corps of Engineers comments on the draft contract report are received by the contractor."

If you have any questions, please contact Ms. Terry Pfutzenreuter at 725-7854 up until July 26, 1985. After that, Ms. Pfutzenreuter will be on long-term training for a period of one year, and Mr. David Berwick will handle the administration of this contract. His telephone number is 725-7854.

We look forward to receipt of your final report.

Sincerely,

Wayne A. Knott
Chief, Environmental Resources Branch
Planning Division

Enclosures

St. Paul District, Corps of Engineers,
Comments on the Report Entitled
A Phase I Cultural Resources Survey
of the Nisswa Lakes, A Part of the
Gull Lake Reservoir in Cass and
Crow Wing Counties, Minnesota

1. Page 27, Appraisal of Site Disposal: The information in this section is very interesting, but how does it tie into the identification of "sites" as used in the text?

2. Page 28, paragraphs 1 and 2: It does not appear appropriate to state that "... limited find areas qualify for inclusion to the National Register ..." and that multiple find areas "... may be considered eligible to the National Register." Specific criteria must be met for sites to qualify for inclusion on the NRHP. Please add qualifiers to each of these paragraphs that stress this point.

3. Page 31, paragraph 1: Pages 27-28 discuss find spots, limited find areas, and multiple find areas while this paragraph mentions prehistoric sites and find spots. How does this all fit together?

4. Pages 32 through 75: Please provide an explanation in the text (perhaps in conjunction with pages 27 and 28 above) of how you define each of the site types included within this section.

5. Page 32: Please note that this site was first located by the Hamline 1978 survey. Just saying that it was only reported could mean that they merely heard about it and noted it but that no site number was assigned.

6. Page 33, figure 8: Please show site limits.

7. Page 36: Why does this find spot have no number?

8. What determines if a site is a "Prehistoric Limited Activity Area," a "Prehistoric Habitation," or simply typed as "prehistoric"?

9. Pages 49 and 50: Do you feel it is appropriate to say that site 21CA150 is a "possible stone tool manufacture area" on the basis of three flakes while the location of one biface is considered just a "find spot"? Are site type decisions made on the basis of quantity rather than quality?

10. Page 74: Because the shoreline was dredged and the material spread over the lawns, do you think it is appropriate to label this a "site" complete with a site number or would a "find spot" designation be more accurate?

11. Page 143: Please include the State site form filed in 1978 for this site along with your "update."

MINNESOTA HISTORICAL SOCIETY
FOUNDED IN 1849
690 Cedar Street, St. Paul, Minnesota 55101 • (612) 296-6126

16 May 1985

Mr. Wayne A. Knott
Chief, Environmental Resources
Corps of Engineers
1135 U.S. Post Office & Custom House
St. Paul, Minnesota 55101

Dear Mr. Knott:

RE: Draft report entitled A Phase I Cultural Resources Survey of the Nisswa Lakes, A Part of the Gull Lake Reservoir in Cass and Crow Wing Counties, Minnesota.

MHS Referral File Number: X-475
(PLEASE REFER TO THIS NUMBER IN ALL FUTURE CORRESPONDENCE)

It was a distinct pleasure to read the draft copy of the above-referenced report. Birk is a competent field and a thoughtful archaeologist, and it shows in this report. His comments on the importance of shovel-testing and the implications that his survey results have for the interpretation of the several Headwaters Surveys are noteworthy (pp.92-95).

The report would benefit from some editing for minor typos and occasional odd word uses ("ideality", p.92). Otherwise it is well-written and well-organized.

Sincerely,

for Dawn Coddington

Russell W. Fridley
State Historic Preservation Officer

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO:

H2415 (RMR-PR)

MAY 22 1985

Mr. Wayne A. Knott
Chief, Environmental and Resources Branch
Planning Division
Attention: Ms. Terry Pfutzenreuter
Department of the Army
St. Paul District, Corps of Engineers
1135 U.S. Post Office & Custom House
St. Paul, Minnesota 55101

Dear Mr. Knott:

In response to your request of April 19, 1985, we have reviewed the draft report entitled "A Phase I Cultural Resources Survey of the Nisswa Lakes, A Part of the Gull Lake Reservoir in Cass and Crow Wing Counties, Minnesota." Enclosed please find a copy of the review comments.

We are pleased to note the thorough descriptive accounts of the report; the information is useful for continued survey. However, we believe it premature to develop a testing program for identified sites without providing focused research for making National Register evaluations.

Thank you for allowing us to review this report; we trust that our comments prove useful.

Sincerely,

Jack R Rudy, Chief
Branch of Interagency Archeological Services

Enclosure

UNITED STATES GOVERNMENT

memorandum

DATE: May 16, 1985

[redacted] Agency Archeological Services

SUBJECT: Review of "A Phase I Cultural Resources Survey of the Nisswa Lakes, A Part of the Gull Lake Reservoir in Cass and Crow Wing Counties, Minnesota"

TO: Review Coordinator FJH

Subject report is a draft reviewed at the request of St. Paul District, Corps of Engineers. There are manifold purposes for this study, despite its Phase I status. Location, definition, and evaluation of all resources in the study area are required. The latter effort includes determinations of physical integrity, functions, cultural affiliations, National Register eligibilities (where possible), and a gross mitigation plan. Not suprisingly, these purposes are unevenly addressed by the limited results of a limited survey.

The data base for this report consists of 24 prehistoric sites, only one of which was previously recorded. Much of the evidence was discovered or verified by extensive shovel testing in conjunction with surface examinations. Site areas are inferred from the areal context of 14 multiple find areas; six limited find areas, and four find spots. Some of the loci are also described as habitations areas due to the areal spread of subsurface materials. Other functional interpretations are less clear. Culture/historical affiliations are largely restricted to ceramic sites. Historic sites or areas are briefly discussed and found wanting in National Register potential. These sites either lack sufficient age or physical integrity, or they are of uncertain existence.

Field and laboratory techniques are fully described, along with rationales for systematic shovel testing and definition of a "site." The author reviews the pertinent literature for the Gull Lake area, but overlooks Barbara Withrow's 1983 monitoring at the Henry Langer site. General impacts to prehistoric sites are noted, along with prioritized recommendations for intensive survey. Thirteen sites are noted as possible eligibles for National Register listing, but the suggestion is not explained or supported. Presumably, this will be clarified by results of additional survey. Gross estimates of time, effort, and costs are provided for sampling of multiple find area sites. Similar estimates for analysis and reporting are not addressed. Moreover, these estimates do not concern a data recovery program as alluded to in page 5 of the report; they are strictly testing estimates. This testing program could be bettered supported by providing rationales of site selection in terms of research potential needed for National Register eligibility. Presently, one gets the impression that sites are selected for testing simply because of presence and inferred size.

The Nisswa Lakes report is a mixed bag. The actual goals of a Phase I survey are realized, but attempts to go beyond these goals are hampered by the limited operations and results.

OPTIONAL FORM NO 10
(REV. 1-80)
GSA FPMR (41 CFR) 101-11.6
5010-114

* U.S. GOVERNMENT PRINTING OFFICE : 1981 0 - 361-526 (8153)

Responses by Northland Archaeological Services to the Review Comments made on the Nisswa Lakes Survey Draft Report.

St. Paul District, Corps of Engineers.

1. Corrections and additions made on pages 27, 28, and 31.

2. Qualifiers added on page 27-28.

3. Corrections and additions made on pages 27, 28, and 31.

4. The site types have been changed. See explanation on page 31.

5. Addition included, see page 32.

6. Suspected site limits have been added, see page 33.

7. See explanation on pages 27-28.

8. Site type definitions have been changed (see page 31). Generally speaking, information gathered in Phase I shovel test surveys in forested environments is not adequate to determine site functions or cultural affiliations. In many cases, little can be said other than that a particular site is "prehistoric." "Habitation" is an admittedly loaded term often used to indicate that a site once served as a place where people lived. Without additional testing, it is difficult to determine whether the occupation was permanent, short-term, seasonal, intermittent, etc., or related to a broad or narrow range of activities. To suggest that someone once "lived at" or occupied a site does not preclude the possibility that the site was also the scene of numerous other activities or events.

9. Site-type determinations reflect known site attributes and the principal investigator's knowledge of and experience with prehistoric cultural manifestations and site-formation processes in north central Minnesota. Archaeological deposits in forested areas, that are known only through limited Phase I shovel testing, can best be explained on the basis of where they are, how large they are, what they contain, and in what numbers (or ratios) various materials, objects, or features are present. Site size, configuration, content, and density (aspects of material output) are important when discussing the nature, intensity, and duration of site use. Because of its hillside location, limited area, apparent density, and the homogeniety of materials, I

have suggested that site 21CA150 might represent a stone tool manufacture or modification area that witnessed only short-term use. This does not preclude other possiblities, but does offer one possible explanation that seems wholly consistent with the data recovered. By current definition, as used by the State Archaeologist's Office in Minnesota, a "find spot" is a location where a single artifact is found in apparent isolation. As far as could be determined, with the survey methods used, the single biface found on the ridge south of site 21CA150 fits this definition perfectly.

10. The area in question (21CW95) has produced several artifacts (deer and possible bison teeth, a piece of chert debitage, and a biface are objects known to the present investigator). Rather than giving this area several different "find spot" numbers, it was felt best to call it a site.

11. The requested form is included at the end of Appendix F.

State Historic Preservation Office, Mn Historical Society.

While the MnSHPO response requires no comment (other than occasional odd word uses of their own), I would like to say that I am pleased that the MnSHPO finds noteworthy my discussion on the use of shovel testing and the interpretation of shovel test results.

U.S. Department of the Interior, National Park Service.

I have attempted to address some of the short-falls noted by the NPS review in this final report. Most of the problems they cite appear to stem from a frustration with the limited cultural resource evidence obtained from shovel testing. This frustration is shared by the field investigators, who would relish nailing down the prehistory of the Gull Lake Region (complete with attendant and thorough research and preservation plans), and is consistent with the unfulfilled research ambitions of those who earlier conducted the Gull Lake shoreline survey (Johnson et al. 1979,I:4). Like the NPS referees, however, we soon learned that any attempts to "go beyond" the goals of the Phase I survey with just simple shovel test results, would be difficult. To offset this frustration, I have purposely expanded the discussion of shovel testing in Chapter 5. In part, I attempted to explore the role and effectiveness of interval sampling and show how its use or none-use in forested lakeshore surveys

might color our interpretations of regional cultural history. My conclusions, I believe, should be of considerable value to those who wish to locate, manage, compare, or explain prehistoric cultural resources in the Mississippi Headwaters Region.

SITE SURVEY CARD FILE
ARCHAEOLOGY LABORATORY
UNIVERSITY OF MINNESOTA

County CASS

Site Number 21 CA 116

Site Name Point Narrow Resort Reference

Type of Site habitation Map reference Nisswa Quad

Cultural affiliation Woodland (transition from Mid to Late)

Location SE¼ NW¼ NE¼ Sec 9 Twp 135 R 29 Verbal Upper Gull + Bass lake narrows on north side. (channel)

Address/: Point Narrows Resort. Nisswa Pequot Lakes ~~Kim Erickson Rt 2 Box 70~~

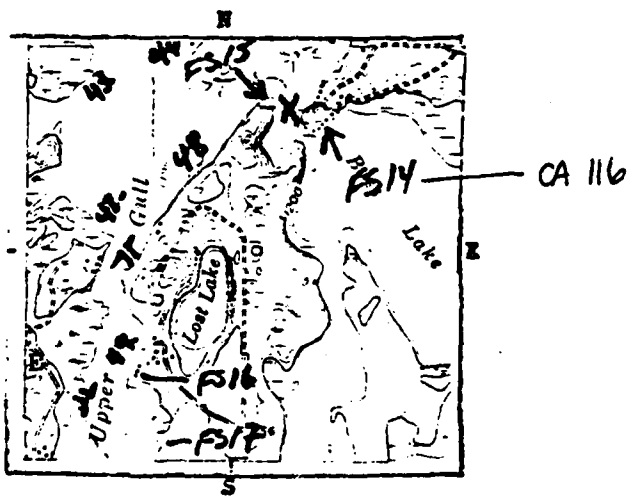
Informants Collections/Owners [redacted]

Site description on point between upper Gull & Bass Lake on north side. excellent square-hi ridge. view to both lakes much material

Photo Numbers Accession Nos H 21-1

Excavations/tests/potting

present condition erosion slight - owner unconcerned



Reports Heldwdtrs Rpt - 1979 Streiff

Recorded by M. Howard 11/78 Date

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