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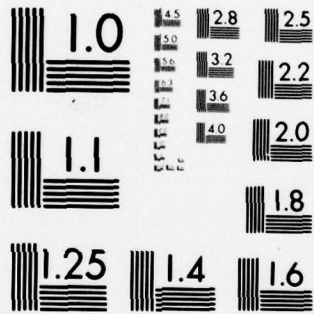
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HAZLETON ENVIRONMENTAL SCIENCES

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ENVIRONMENTAL SCIENCES CORPORATION  
1500 FRONTAGE ROAD, NORTHBROOK, ILLINOIS 60062, U.S.A.

Addendum Report to

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U.S. Army Corps of Engineers  
Rock Island District  
Rock Island, Illinois 61201

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Fish and Wildlife Management Work Group  
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Annotated Bibliography. Addendum.

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Introduction

This bibliography is an addendum to the GREAT II Annotated Bibliography of Fish and Wildlife Resources of the Upper Mississippi River. The citations in this addendum were not included in the Annotated Bibliography because, at the time of submission (22 June 1979) their abstracts were not available.

Several of the citations in this addendum have abstracts included; however, the majority do not have abstracts. With each citation for which there is no abstract, an explanation is provided.

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BIBLIOGRAPHY

AUTHORS

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AMMERMAN, H. A. 1975. A comprehensive age and growth study of the white bass (Morone chrysops) collected in 1974 from Cedar Lake and St. Croix in Wisconsin., M. A. Thesis.

Abstract: Insufficient citation; could not locate.

Keywords: Age and growth, Fish, Wisconsin

ANDERSON, G. E. 1976. Analysis of the scour problem below Locks and Dam 26 at Alton, Illinois for Burlington Northern Railroad. W. RR. Traf. Assoc., Chicago.

Abstract: Insufficient citation; could not locate.

Keywords: Lock and Dam 26, Flow, Hydrology

ANDERSON, H. W., D. F. FARREL, W. L. BROUSSARD and M. F. HUNT. 1975. Water resources of the Zumbro River water shed, Southeast Minnesota. U.S. Geol. Sur. Hydrologic Invest. Atlas HA-543.

Abstract: Insufficient citation; could not locate.

Keywords: Hydrology

ANDING, M. G. 1966. Potamology studies, hydraulic analysis of Mississippi River channels. Tech. Rept. No. 1, U.S. Army, Corps of Eng. Comm. Chan. Stab. Vol. 4, Chap. III.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Hydraulics

APPLETON, J. B. 1930. The declining significance of the Mississippi as a commercial highway in the middle of the nineteenth century. Geog. Soc. Phila. Bull. 28 (October, 1930): 267-284.

Abstract: Insufficient citation; could not locate.

Keywords: Commercial boat traffic

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ARMSTRONG, R. C. 1970. Replacement--Lock and Dam No. 26: Plans Considered. Jour. Waterways and Harbors Div. ASCE, Vol. 96. (WW1): 49-64.

Abstract: Insufficient citation; could not locate.

Keywords: Lock and Dam 26

## HAZLETON ENVIRONMENTAL SCIENCES

BAILEY, R. M. 1951. A check list of the fishes of Iowa, with keys for identification. In: Iowa Fish and Fishing, by J. R. Harlan and E. B. Speaker, Ia. Cons. Comm., pp. 187-238, 9 figs.

**Abstract:** Identification keys which have been revised through repeated use with the many errors having been eliminated. This list comprises 25 families, 61 genera, 133 species and 137 total kinds including subspecies of native fishes.

**Keywords:** Fish, Taxonomy, Iowa, Identification

BAILEY, R. M. 1956. A revised list of the fishes of Iowa with keys for identification. In: Iowa Fish and Fishing, 3rd Ed., by J. R. Harlan and E. B. Speaker, Ia. Cons. Comm., 327-377 pp.

**Abstract:** A revised list of the identification key made in 1951. The list was changed because the common taxonomic practice of dividing geographically variable species into named races, or subspecies, has been subjected to critical scrutiny.

**Keywords:** Fish, Taxonomy, Iowa, Identification

BAILEY, R. M., and E. B. SPEAKER. 1946. Fisheries of Iowa. In: Wildlife Resources of Iowa. St. of Ia., Des Moines, pp. 7-24.

**Abstract:** Non-game food fish are estimated to far exceed the total poundage of total game fish. Carp and buffalofish rank as the most important. Half of the non-game fish of Iowa are members of the sucker family. Among the game and panfish the catfishes are the most important. Eight species of the sunfish family are large enough to be desirable and common enough to be caught in numbers in Iowa. Mussels are a common source of income for Iowa families, with the shells used in the pearl button industry. In addition to fish, there are other wild cold-blooded animals which are excellent to eat, but little used in Iowa. Turtles, frogs and crayfish are found in high enough abundance to be a good food source.

**Keywords:** Fish, Mussels, Sport fishing

HAZLETON ENVIRONMENTAL SCIENCES

BAILEY, V. 1930. Food for Game, Life Zones of Upper Mississippi River Refuge, The Mississippi Wildlife Refuge (Sec. R), and Vegetation of the Upper Mississippi Wildlife Refuge. Mimeo Paps. from files, Winona, MN.

Abstract: Written request sent; no response.

Keywords: Upper Mississippi River Wildlife and Fish Refuge, Vegetation, Food habits

BARCLAY, H. G. 1924. The plant succession of the flood plain of the Mississippi River with special reference to the pioneer stage. M.A. Thesis. Univ. of Minn. 91 pp.

Abstract: A study of plant succession in a given area, even though a similar progression has been worked out in other regions, is sure to disclose new facts and interesting problems. The aim of this paper is to present the data and conclusions of a study of the flood plain succession of the Mississippi River valley between Minneapolis and St. Paul, carried on in the period from 1921 to 1924. The problem was selected because it afforded unusually good opportunities for the study of the early stage, especially the behavior of the cottonwood, various species of which are important pioneers in such places throughout the continent.

Keywords: Succession, Vegetation

BARNEY, R. L. 1924. Notes from the Fairport (Iowa) Station. Fisheries Service Bulletin No. 105, February, 1924, 2 pp. U.S. Bureau of Fisheries. Washington.

Abstract: Reference source located; article not within.

Keywords: Fish

BARNICKOL, P. G. 1958. Pollution and the aquatic life in our streams with special reference to mine pollution. In: Selected papers from the Air and Water Poll. Cont., Univ. of Mo. Eng. Exper. Sta., Eng. Series Bull., 45:17-20.

Abstract: Written request sent; no response.

Keywords: Pollution, Ecology, Mining

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BARON, N. J., E. J. CECIL and P. L. TIDEMAN. 1972. A survey of attitudes towards the Mississippi River as a total resource in Minnesota, Water Resource Research Center. Univ. Minn., Minneapolis, MN. 160 p.

Abstract: Written request sent; no response.

Keywords: Recreation, Commercial boat traffic

BATES, C. G. 1931. Chaining the father waters. Amer. Forests, 36(2).

Abstract: Reference source located; article not within.

Keywords: Impoundment, Hydrology

BATES, C. G. 1932. Farms, Floods and River Navigation in the Mississippi Valley. Commerce, Sept. and Oct.

Abstract: Reference source located; article not within.

Keywords: Agriculture, Flood, Navigation

BENTLEY, B. W. 1973. Radiation doses around nuclear facilities. Presented at IES Conf., Anaheim, Calif., Apr. 2-5, 1973. p. 141.

Abstract: Insufficient citation; could not locate.

Keywords: Nuclear power, Pollution, Toxicant, Missouri River

BERTRAND, B. A. 1974. Fish Population Surveys of Stations in Pools 12, 13, 14, 16, 18 and 19; Grand Tower Chute and Cape Bend Chute. Ill. Dept. Cons., Div. Fish.

Abstract: Series of data sheets; no narrative.

Keywords: Fish, Pools 12, 13, 14, 16, 18, 19

BERTRAND, B. A. 1976. Green Bay Levee-Values for fisheries in Pool 19. Memo to Dick Lutz dated 3-1-76. Ill. Dept. Cons., Div. Fish., Streams Proj. Aledo., unpub. mimeo. 18 tables.

Abstract: Interdepartmental memo not released to public.

Keywords: Pool 19, Fish

## HAZLETON ENVIRONMENTAL SCIENCES

BERTRAND, B. A. and B. DUNN. 1973. Fish population survey of aquatic habitat types in Pool 25 of the Mississippi River. Ill. Dept. Cons., Div. Fish. unpub. mimeo. 12 pp.

**Abstract:** This study was undertaken as part of a larger survey to learn more about habitat preference of the various species of fish in the Mississippi River. With a knowledge of which habitats are most important to the fisheries of the river, we can better protect both sport and commercial fishing by prevention of destruction of these habitats by industrial and navigational interests. We can also promote more productive use of the sport fishery, if we know which habitats have the best sport fish populations.

Five stations in Pool 25 were sampled once each month from April through October with a 230 V AC shocker. Minnow seine samples were collected at each station in July. Each station sampled was a different habitat type: main channel border, side channel, lake, slough, and tailwater. Physical-chemical data was recorded on Mississippi River Investigations forms and maps of the stations drawn on the backs of these forms. Sample data was recorded on population analysis forms attached to the investigations forms.

**Keywords:** Fish, Habitat, Pool 25

BLACKWELDER, B. and J. MARLIN. 1975. Some facts about Locks and Dam 26 and its impact on the Upper Mississippi River Basin. Coun. for a Sound Waterway Policy. Chicago. p. 4

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Lock and Dam 26

BOLSENGA, S. J. 1968. River ice jams (a literature review). Lake Survey District, Corps of Engineers.

**Abstract:** Published information on river ice jams in many areas of the world was collected, examined, and summarized during this investigation. All manuscripts were collected and examined without regard to their apparent pertinence. The result provides a summarization of both current and historical information on the ice jam mechanism and methods of prevention and removal.

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Descriptions of ice jam characteristics range from mathematical to narrative treatments. Methods of prevention and removal range from dusting and thermal pollution to the more widely used blasting. Trends in the use of these techniques are indicated.

The lack of success in applying prevention and removal techniques seems to be due to lack of basic information in ice jam characteristics. The results of this report can be useful in that field since a guideline for future research planning is provided.

Keywords: Climatology, Ice

BREHMER, M. L. 1953. Illinois and Mississippi Canal fisheries investigation report. Ill. Dept. Cons. D-J Proj. No. F-1-R-1. 83 pp.

Abstract: Written request sent; could not locate.

Keywords: Fish, Illinois

BRICELAND, R. C. 1976. Statement to the task force on Locks and Dam 26 of the Midwestern Conference, Coun. of St. Govts., Clayton, Mo.

Abstract: Insufficient citation; could not locate.

Keywords: Lock and Dam 26

BROOK, A. J. 1971. Attached algae studies on the Mississippi River at Monticello - interim report. In Northern States Power Company environmental report, Monticello Nuclear Generating Plant, Northern States Power Company, Minneapolis, MN. 4 p.

Abstract: The attached algae studies in the river determine the periphyton abundance at different sampling locations in the river where there are significant differences in current speed, since it is necessary to know how important this factor is in determining the composition and abundance of the attached algal community.

Presently 12 stations are being observed in a reach of the river about six miles long extending from about 1/2 mile above the plant water intake structure to approximately two miles below the Highway #25 bridge in the

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City of Monticello. The sampler at each station holds two microscope slides upon which the algal flora attach themselves, and these slides are changed every two weeks.

The biological determinations that are made with respect to the algal sampling are these: biomass by weight, chlorophyll content, and direct counts and identifications.

Keywords: Periphyton, Nuclear power, Minnesota

BRUTON, C. 1971. The amphibians on two islands in the Mississippi River at Monticello, Minnesota. Unpublished report, St. Cloud State College.

Abstract: Written request sent; not available.

Keywords: Amphibians, Minnesota

BURWELL, R. W. 1964. Letter to St. Paul district engineer regarding evaluation of culverts installed to aerate sloughs blocked by dikes. May 20, 1964. USDI, 4 pp.

Abstract: Unable to locate in major midwestern libraries. Written request to Washington, D.C.; no response.

Keywords: Slough, Dike

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CARLANDER, H. B. and K. D. CARLANDER. 1951. A piscatorial summer of 1878. by George Barton Berrell. Mo. Hist. Soc. Bull. 7(July, 1951): 413-439 pp.

Abstract: A narrative summary of the fishing diary of George Barton Berrell which gives an accurate account of eighteen fishing trips in the St. Louis area in 1878. The dairy includes places he fished, friends he fished with, fish caught and their weight.

Keywords: History, Fishing

CARLSON, C. A., R. P. MEYER and C. R. FREMLING. 1959. Allocreadiid flukes of mayflies of the Mississippi River. Midwest Wildl. Cons. mimeo 213 p.

Abstract: Insufficient citation; could not locate.

Keywords: Parasites, Mayflies, Invertebrates

CARLSON, H. 1967. Water resources development in the Upper Mississippi River basin. The Minnesota Engineer, 18(1).

Abstract: Written request sent; could not locate.

Keywords: Upper Mississippi River, Hydrology

CHAMBERS, J. 1910. The Mississippi River and its wonderful valley; twenty-seven hundred and seventy-five miles from source to sea. New York & London, xvi. 308 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Recreation

CLAFLIN, T. O., 1973. Environmental assessment - Navigation Pool 8. Mimeographed report to the U.S. Army Corps of Engineers. River Studies Center, University of Wisconsin - LaCrosse, WI.

Abstract: Phone request; no response.

Keywords: Pool 8, Survey

CLAFLIN, T. O. 1977a. Lake Onalaska: how much longer? River Studies Cent. Newsletter, Univ. Wis., LaCrosse. Vol. 5, No. 6, May-June.

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Abstract: Phone request; no response.

Keywords: Lake Onalaska

CLAFLIN, T. O. 1977b. Lake Onalaska Rehabilitation Feasibility Study. River Studies Cent., Univ. Wisconsin - LaCrosse. 43 pp.

Abstract: Phone request; no response.

Keywords: Lake Onalaska, Management

CLEARY, R. E. 1958. A summary of angling statistics on the Mississippi River, March, 1957-February, 1958, with comparisons with 1956 data. Iowa Cons. Comm., Job Compl. Rept. Proj. F-24-R-3. 15 pp.

Abstract: Written request sent; no response.

Keywords: Fish, Distribution, Creel census

CLEARY, R. E. and F. J. PIERCE. 1960. A compendium of fisheries information on the Mississippi River bordering Iowa, 1956-1958. Biol. Sect., Ia. Cons. Comm. Mimeo.

Abstract: Insufficient citation; could not locate.

Keywords: Fish, Iowa

COCHRAN, P. A. 1977. Feeding habits and length-weight relationships in spiny softshell turtles from selected areas in Pool 5, 5A and 6 of the Upper Mississippi River. Pap. Pres. at Miss. River. Res. Consort., Winona, MN., June 8-10, 1977.

Abstract: Written request sent; abstract unavailable.

Keywords: Reptiles, Turtles, Length-weight, Food habits, Pools 5, 5A and 6

COKER, R. E. 1923. Mathuselah of the Mississippi (paddlefish). Scientific Monthly, 16:89-103.

Abstract: Insufficient citation; could not locate.

Keywords: Fish, Paddlefish

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CONNETT, E. V. (Ed.) 1949. Wildfowling in the Mississippi flyway.  
D. Van Nostrand Co., Inc., New York. 387 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Waterfowl

COX, U. O. 1897. A preliminary report on the fishes of Minnesota.  
Geol. Nat. Hist. Surv., Minnesota.

Abstract: Written request sent; no response.

Keywords: Fish, Minnesota

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DAHLQUIST, K. 1970. A study of invertebrate recolonization of artificial substrata. Unpublished graduate "Special Problems Research Project," Department of Biology, St. Cloud State College, St. Cloud, Minnesota.

Abstract: Written request sent; could not locate.

Keywords: Invertebrates, Research, Reproduction, Recolonization

DALEY, S. A. 1961. Notes of sauger and walleye natural reproduction in the Mississippi River. Minn. Cons. Dept., Mimeo., unpublished. 12 pp.

Abstract: Written request sent; no response.

Keywords: Fish, Reproduction, Sauger, Walleye

DECKER, E. R. 1970. Replacement--Lock and Dam 26: history, objectives, and scope. Jour. Waterways, Har. and Coastal Eng. Div., ASCE, Vol. 96. (WW1):1-8.

Abstract: Insufficient citation; could not locate.

Keywords: Lock and Dam 26, History, Management

DECOOK, R. and R. E. CLEARY. 1960. Angler utilization-Mississippi River-1960. Iowa Cons. Comm. Mimeo., unpublished. 5 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Creel census, Sport fishing

DEGENHARDT, E. A. (no date). Application of color infrared photography to the Mississippi River. Pap. pres. 26th Ann. Potom. Conf., U.S. Army Corps of Eng. LMVD, Vicksburg. 12 pp.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Survey, Remote sensing

DIEFFENBACH, W. H. 1969. Evaluation of existing data and its implications on Pool 25. Pap. Pres. at Miss. Riv. Res. Consort., Symp. on proposed 12-foot channel. LaCrosse, WI. July 6, 1969.

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Abstract: Written request sent; no response.

Keywords: Pool 25

DODGE, A. W., W. J. BRECKENRIDGE, A. F. FULLERTON and D. W. WARNER. 1972. The birds of the Minneapolis-St. Paul region. Bell Museum of Natural History. Univ. of Minn., Minneapolis, MN. 29 pp.

Abstract: Written request sent; no response.

Keywords: Birds, Survey, Minnesota

DRAKE, J. and J. N. WILSON. 1948. Pollution of the Mississippi River, Hastings to LaCrosse, Nov. 1947 - Jan 1948. Minn. Dept. Health, Div. Water Poll. Control. Mimeographed Rpt.

Abstract: Written request sent; no response.

Keywords: Pollution, Minnesota

DUNCAN, R. and G. ESSE. 1978. Polychlorinated biphenyls in Pool 9 of the Upper Mississippi River. B.A. Thesis. Luther College, Decorah, IA. 20 p.

Abstract: The purpose of this study was to examine organisms and sediment from Pool 9 of the Upper Mississippi River for the presence of PCB's. There has been insufficient monitoring for PCB's in this section of the river. The organisms were selected because of their great abundance in the river and their significance in the food web. The objective of this study was to compare the PCB levels found in this section of the river with those found in other sections of the Upper Mississippi River.

Keywords: Polychlorinated hydrocarbons, Pool 9

DUNHAM, L. L. 1970. Mississippi River access areas. A guide to public and private access areas along the Illinois portion of the Mississippi River. Ill. Dept. Cons. Memo. 24 pp.

Abstract: A description of boating access areas on the Mississippi River. Included are car parking facilities, fees charged, access use, and location.

Keywords: Recreational boat traffic, Illinois

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ECKBLAD, J. W. 1974. Preliminary studies on the ecology of Big Lake of Pool 9, Upper Mississippi River. Pap. Pres. at Ann. Mtg. Ia. Acad. Sci., Fayette, IA.

Abstract: During the summers of 1973 and 1974 the benthos, morphometry and sedimentation of Big Lake were studied. Sphaerium and Hexagenia comprised 81% of the benthic biomass. From 1896 to 1973 approximately 76 cm of sediment had accumulated.

Keywords: Benthos, Sedimentation, Ecology

ECKBLAD, J. W. 1975. Water quality studies of northeast Iowa: the Upper Iowa River watershed and Pool 9 of the Mississippi River. Pap. Pres. at Conf. on Water Qual. in Iowa streams, Ia. St. Water Res. Inst., Ames, IA. March 4, 1975.

Abstract: Written request sent; could not locate.

Keywords: Water quality, Iowa, Pool 9

ECKBLAD, J. W. 1978. Laboratory manual of aquatic biology. Wm. M. Brown Co., Dubuque, IA. 232 p.

Abstract: Phone request; no response.

Keywords: Ecology, Population, Limnology

ECKBLAD, J. W., T. COON, and P. TRYGSTAD. 1976. Growth and abundance of Unionacea mussels in Pools 8, 9, and 10 of the Upper Mississippi River. Pap. Pres. at 24th Ann. Mtg. N. Am. Benthological Soc., LaCrosse, WI., March 24-26, 1976.

Abstract: Phone request; no response.

Keywords: Mussels, Benthos, Pools 8, 9 and 10, Age and growth, Abundance

EDDY, S. and K. D. CARLANDER. 1942. Growth rate studies of Minnesota fish. Project reports, Works Progress Administration and Univ. Minnesota, 1936-1942.

Abstract: Written request sent; no response.

Keywords: Age and growth, Fish, Minnesota

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EDDY, S., J. B. MOYLE, and J. C. UNDERHILL. 1963. The fish fauna of the Mississippi River above St. Anthony Falls as related to the effectiveness of this falls as a migration barrier. Proc. Minn. Acad. Sci., 32(2):111-115.

Abstract: Written request sent; could not locate.

Keywords: Life history, St. Anthony Falls, Fish, Migration

ELLIS, M. M. 1931. A survey of conditions affecting fisheries in the Upper Mississippi River, U.S. Bur. Fish Circ. 5:1-18.

Abstracts: Unable to locate in major midwestern libraries. Written request to Washington, D.C.; no response.

Keywords: Fish, Survey, Upper Mississippi River, Water quality

ELSTAD, K. 1977. Benthic macroinvertebrate relationships in navigation Pool 8, Upper Mississippi River 1975. Pap. Pres. at Miss. Riv. Res. Consortium Ann. Mtg., June 8-10, 1977, Winona, MN.

Abstract: Written request sent; could not locate.

Keywords: Benthos, Pool 8

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FEAGIN, L. B. 1966. Program of the Mississippi River Commission. Tech. Rept. No. 1, Corps of Eng. Comm. on Chan. Stab. Vol. 4, Chap. V.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Management

FELT, R. 1977. The Pool 2 story-water quality dilemma. Proc. 33rd Ann. UMRCC Mtg. 67-70 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Pool 2, Water quality

FINKE, A. H. 1966. Report of a mussel survey in Pools 4A (Lake Pepin), 5, 6, 7, and 9 of the Mississippi River during 1965. Wis. Cons. Dept. Rept. unpub. mimeo. 5 pp. + maps and tables.

Abstract: Phone request; no response.

Keywords: Mussels, Benthos, Pools 4A, 5, 6, 7 and 9, Lake Pepin, Survey

FISK, H. N. 1947. Fine-grained alluvial deposits and their effects on Mississippi River activity. 2 Vols., U.S. Army Corps of Engr., Waterways Exp. Sta. Vicksburg.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Sedimentation, Commercial boat traffic

FREMLING, C. R. and D. R. MCCONVILLE. 1976. The feasibility and environmental effects of opening side channels in three areas of the Upper Mississippi River (West Newton Chute, Fountain City Bay, and Sam Gordy's Slough). Quart. Prog. Rept., USFWS Contr. No. 14-16-088-949.

Abstract: Unable to locate in major midwestern libraries. Written request to Washington, D.C.; no response.

Keywords: Side channel, Upper Mississippi River

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FRY, J. P. 1962. Harvest of fish from tailwaters of three large impoundments in Missouri. Proc. 16th S.E. Assoc. Game and Fish Comm. pp. 398-404.

Abstract: Insufficient citation; could not locate.

Keywords: Fish, Tailwater, Missouri, Impoundment

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GEIS, A. D. 1971. Breeding and wintering areas of Mallards harvested in various states and provinces. U.S. Fish and Wildl. Serv. Spec. Sci. Rept. Wildl. No. 144.

**Abstract:** Band recoveries from mallards banded in breeding and wintering areas, weighted to reflect the population sizes they represent, were used to estimate the relative contribution of various breeding and wintering areas to the harvest in each State and Province. Sources of population data in addition to conventional waterfowl breeding population surveys were utilized resulting in larger continent-wide population estimates than those previously published. The estimates of the relative importance of various breeding and wintering areas to the kill in each State and Province are presented in a series of tables. Patterns among States in the similarity or the dissimilarity in the source of harvest are mentioned.

**Keywords:** Ducks, Waterfowl, Wintering, Mallard

GEIS, A. D. and S. M. CARNEY. 1961. Results of duck-wing collection in the Mississippi flyway, 1959-1960. Special Scientific Report-Wildlife No. 54. U.S. Dept. of Interior, Washington, D.C.

**Abstract:** Written request sent; could not locate.

**Keywords:** Survey, Ducks, Mississippi River Waterfowl Area

GIBBS, O., JR. 1869. Lake Pepin fish-chowder. In: Letters to General Spinner. H. D. McIntyre and Co., New York. 142 pp.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Lake Pepin, Fish

GREEN, W. E. 1947. Distribution of marsh and aquatic plants on the Upper Mississippi River Wildlife Refuge. U.S.D.I. Bur. Sport Fish. and Wildl. Winona, MN. 132 p.

**Abstract:** Written request sent; could not locate.

**Keywords:** Distribution, Aquatic plants, Upper Mississippi River Wildlife and Fish Refuge, Macrophytes

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GREEN, W. E. 1960. Ecological changes on the Upper Mississippi Wildlife and Fish Refuge since inception of the 9 foot channel. U.S.D.I. Bur. Sport Fish. and Wildl., Winona, MN. 15 p.

**Abstract:** Unable to locate in major midwestern libraries. Written request to Washington, D.C.; no response.

**Keywords:** Upper Mississippi River Wildlife and Fish Refuge, Channelization, Ecology

GREEN, W, E, 1963. Waterfowl utilization and hunting kill 1946-1960. Upper Mississippi River Wildlife & Fish Refuge. USDI Bur. Sport Fish. and Wildl. Spec. Report Wildl. No. 71.

**Abstract:** A 15-year study was made of hunter utilization of waterfowl on the Upper Mississippi River, and of the effects of management practices, open and closed areas, seasons, and bag limits on waterfowl harvest.

This survey covers 251,876 hunter trips, on which 283,763 ducks were taken for a daily average harvest of 1.12 ducks per day of hunting. It is estimated that in an annual average of 135,790 days of waterfowl hunting on the area, hunters bagged 165,190 ducks while losing 38,625 cripples, for an estimated average total annual kill of 203,800 ducks.

A description of hunting conditions, public hunting areas, and closed areas is given, together with hunting pressures since 1953, species composition of the bag, and comparative hunter success on hourly, daily, and annual bases.

Crippling losses have been assessed and related to other hunting factors such as ease of killing ducks, cover, and type of hunting. A table of comparative vulnerability for waterfowl harvested in the area compares other species with mallards.

Apparently, presunrise hunting is twice as effective per unit of time as is hunting at other times of the day; crippling losses are higher per unit of time, but the rate of crippling is actually less.

Distribution of kill among hunters indicates that only 10.44% of the hunters checked succeeded in taking over three ducks per day, while over 45% failed to bag game on the day they were checked. The 10.44% of the hunters

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taking over three ducks accounted for 37.20% of the total harvest, although the harvest was only 9.54% higher than had the limit never exceeded three ducks per day.

Data also show how changing opening dates will have a bearing on the harvest of certain species. Delaying the opening as little as 1 week later than October 1 will greatly reduce the harvest of such species as blue-winged teal and wood ducks.

**Keywords:** Hunting, Waterfowl, Survey, Upper Mississippi River Wildlife and Fish Refuge

GREEN, W. E. 1964. Siltation on the Mississippi River. Rept. to Winona Co. Comm.

**Abstract:** Written request sent; could not locate.

**Keywords:** Siltation

GREENBANK, J. 1950. The length-weight relationships of some Upper Mississippi River fishes. 12 pp. manuscript. Original not available; cited in K. D. Carlander, 1953. Handbook of Freshwater Fishery Biology, with the first supplement. Wm. C. Brown Co., Dubuque, Iowa. pp. 344-348.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Length-weight, Upper Mississippi River, Fish

GREENBANK, J. 1957. Creel census on the Upper Mississippi River, U.S. Fish Wildl. Serv., Spec. Sci. Rpt. Fish No. 202, 59 p.

**Abstract:** Two summer and two winter seasons of creel census on the section of the Upper Mississippi River, between Red Wing, Minnesota, and Dubuque, Iowa, in 1944-46, showed the catch to be about 0.5 fish per hour, with a wide variety of fish represented, crappies, bluegill, walleye, and sauger being predominant. The fishery is important especially to the local fishermen. The fishing success was about the same in the winter as in the summer. Wide fluctuations occurred from one locality to another, and from week to week. Fishing success varied from year to year; it was better in 1948-49 than in 1944-46. The catch per hour was influenced by several factors,

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such as bait, time of day, day of the week, sex of the fisherman, and probably water temperature (in the summer) and depth of snow cover (in the winter). For most practical purposes, and in the interests of economy of data-gathering, the sample size could be reduced; it is suggested that a census conducted on every fifth day would give results reliable enough for practical management purposes.

**Keywords:** Upper Mississippi River, Creel census

GREGORY, W. 1918. Improvement of the Upper Mississippi River: A Bibliography. Bull. Affil. Eng. Socs. of Minn. 3 (December 1918) pp. 218-240.

**Abstract:** Written request sent; could not locate.

**Keywords:** Bibliography

GRIMES, D. J. 1976. The microbiological water quality effects of hydraulically dredging polluted bottom sediments in the Upper Mississippi River, I. Resuspension of indicator bacteria, Salmonellae and Shigellae. GREAT. USACE.

**Abstract:** Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

**Keywords:** Water quality, Dredging, Pollution, Sediment, Upper Mississippi River, Bacteria

GROSS, E. R. 1973. Buried soils of the drainageways in the driftless area of the Upper Mississippi River Valley. Ph.D. Thesis. Univ. Min. 206 p.

**Abstract:** Written request sent; no response.

**Keywords:** Upper Mississippi River, Sediment

GUDMUNDSON, B. J. R., R. J. KRIZEK, and E. F. MOSONYI. 1974. Strategies for monitoring environmental impacts on the Upper Mississippi River. Proceedings of the international seminar and exposition on water resources instrumentation. Water resources instrumentation. Vol. 2.

**Abstract:** Insufficient citation; could not locate.

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Keywords: Upper Mississippi River, Ecology, Survey, Distribution, Effluent, Discharge, Habitat alteration

HALL, R. J., L. BERNER and E. F. COOK. 1975. Observations on the Biology of Tricorythodes atratus McDunnough (Ephemeroptera: Tricorythidae). Proc. Entomol. Soc. Wash. 77(1):34-49.

**Abstract:** As the ecology of the nymphal stages, the behavior of the adults, and the life history of the mayfly genus Tricorythodes are poorly known, an intensive study of T. atratus was undertaken in northern Minnesota during the summers of 1969 and 1971. Analyses were made of populations of nymphs by dividing them into age groups to determine where each occurs in the streams studied. Stomach contents revealed that nymphs feed primarily on plant materials. Drift-net collections for 24-hour periods were made to provide information about growth, emergence, and oviposition. Frequent observations of emergence and swarming were made. Subimagoes were seen emerging from the nymphal stage underwater, swimming to some emergent object, climbing from the water, and expanding their wings. Emergence of subimagoes appears to be correlated with low light intensity. Swarming of adults occurs soon after daybreak and may continue until mid-morning. Eggs begin hatching in early June, nymphs develop in about five weeks and adults emerge in mid-July. A second peak emergence occurs in late August with occasional individuals appearing as adults into November. The species probably overwinters in the egg stage as mid-winter collections from the streams studied have never produced nymphs.

**Keywords:** Mayflies, Minnesota, Age and growth, Life history

HALL, R. J., T. F. WATERS and E. F. COOK. (In press). The Role of Drift Dispersal in Production Ecology of a Stream Mayfly. Ecology.

**Abstract:** The role of drift behavior in the production ecology of the mayfly Tricorythodes atratus McDunnough was investigated in a headwater reach of the Mississippi River in northern Minnesota. Comparison of drift and bottom samples revealed that larger nymphs exhibited a greater propensity to drift; small immatures (1-2 mm) were predominant in a study riffle, whereas larger nymphs (>2 mm) were relatively more abundant in a downstream pool. Annual production was 8.56 g/m<sup>2</sup>/yr (dry weight) and the annual turnover ratio was 26; the species was bivoltine. Errors in production rate estimation resulting from sampling a single habitat were substantial when differential size dispersal of nymphs occurred.

HAZLETON ENVIRONMENTAL SCIENCES

Keywords: Mayflies, Minnesota, Production, Standing crop

HANSON, G. H. 1956. Iowa fish and fishing. Ia. Cons. Comm. 377 pp.

Abstract: Written request sent; no response.

Keywords: Fish, Fishing, Iowa, Identification

HARLAN, J. R., and E. B. SPEAKER. 1969. Iowa fish and fishing. 4th Ed. Iowa. Cons. Comm., Des Moines, IA. 365 pp.

Abstract: Written request sent; no response.

Keywords: Fish, Fishing, Iowa, Identification

HART, C. W. and S. L. H. FULLER. 1974. Pollution Ecology of Freshwater Invertebrates. Academic Press. New York.

Abstract: Insufficient citation; could not locate.

Keywords: Pollution, Invertebrates, Ecology

HAVLIK, M. E. 1977a. Naiad Mollusks of the Minnesota River at Savage, MN. Contr. No. DACW-37-77-M-1127, St. Paul, Dist. U.S. Army Corps of Engr. Unpub. Rept.

Abstract: Maintenance dredging at the head of the 9 ft. navigation channel of the Minnesota River, Savage, Minnesota was temporarily halted in March 1977 until field identifications could be made of numerous naiad mollusk shells on the dredge spoils. Five methods of collection were used: hand picking, hard hat diver, crowfoot bar, and 12-in dredge pipe, and a clam shovel loader. 31 species of naiad mollusks were found on the spoils, including one right valve tentatively identified as Lampsilis higginsii (Lea, 1857), Higgins' Eye Pearly Mussel. This is on the Federal endangered species list as of 14 June 1976. The questionable shell resembled L. higginsii in the general shape, size and inflation of the umbone. The pseudocardinal and lateral teeth resembled those of the same species taken in 1976 from the Mississippi River at Prairie du Chien, Wis., but overall the shell from the Minnesota River was somewhat thinner. Extensive sampling of the 2 dredge sites at Savage by the Corps did not reveal any mussels that appeared to have been taken

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alive during the dredging. No mussel of any kind appeared to be living in the channel, so dredging resumed. A once diverse molluscan fauna appears to have been extirpated from this area of the Minnesota River.

**Keywords:** Minnesota, Clams, Mussels

HAVLIK, M. E. 1977b. Naiad Mollusks collected for bioassay studies from Rosebud Island, Pool 7 of the Mississippi River, above LaCrosse, WI. Contr. No. DACW37-77M-2193. St. Paul Dist. U.S. Army Corps of Engr. Unpub. Rept.

**Abstract:** Naiad mollusks were collected near Rosebud Island, Lake Onalaska, Mississippi River Mile 706 to 706.5, above LaCrosse, Wis, fall 1977 and used for bioassay studies done by the U. S. Army Corps of Engineers. Species sought were Lampsilis ventricosa (Barnes, 1823), L. radiata luteola (Lamarck, 1819), and Fusconaia flava (Rafinesque, 1820). Great quantities of submerged aquatic vegetation hampered collection efforts. A total of 17 live species were hand collected including a single Tritogonia verrucosa (Rafinesque, 1820). Amblema plicata plicata (Say, 1817) outnumbered the second most common species, L. ventricosa, by nearly 3:1. The diversity of naiades in this 40 year old impounded area probably resulted from the variety and abundance of fish species in Lake Onalaska.

**Keywords:** Wisconsin, Clams, Mussels, Mollusks

HAVLIK, M. E. 1977c. A Naiad Mollusk Survey of the Mississippi River Adjacent to Isle Le Plume at LaCrosse, WI. Contr. with City of La Crosse, Wis. Unpubl. Rept.

**Abstract:** A pre-dredging survey was done for the City of LaCrosse, Wisconsin to determine the presence or absence of endangered naiad mollusks from Mississippi River Mile 695.7 to 696.1, adjacent to Isle La Plume at LaCrosse, June 1977. Of the 27 species of naiades collected, only 11 were found alive. Most of the 468 live specimens ranged from 2mm to 15mm in length. Ten species were found in small numbers, but the eleventh, Truncilla donaciformis (Lea, 1827) was represented by 394 specimens at 52 of 65 sites. Live mollusks were found by crowfoot bar exclusively throughout the length and width of the area surveyed. 26 species were found on the nearly barren 47,000 cu. yd. fill site on nearby Green Island in fall 1977. Most of these specimens had been dead for some time indicating species formerly living in

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the area. 7 species were added to the 28 found in the LaCrosse area in 1930-31, for a total of 35 species. The living fauna at the Isle La Plume site appears to have declined by 59% due in part to recent extensive dredging above and below the site. No endangered species were encountered.

Keywords: Clams, Mussels, Mollusks, Wisconsin

HAVLIK, M. E. 1978a. Naiad mollusks of the Black River at the Clinton Street Bridge, LaCrosse, WI. Project I.D. 5429-1-00. Wis. Dept. of Trans. Unpub. Rept.

Abstract: A survey was done to determine the presence or absence of endangered naiad mollusks at three sites for the proposed replacement of the Clinton Street Bridge on the Black River at LaCrosse, Wisconsin, May 1978 under contract with the Wisconsin Department of Transportation.

Methods used were a crowfoot bar survey of the impacted areas followed by diver trudging of the proposed pier sites and the piers of the existing bridge. Seventeen species of naiad mollusks were found alive. Seven additional species of naiad mollusks were represented by dead specimens including one partial, subfossil valve of Lampsilis higginsi (Lea, 1857), Higgins' Eye, an endangered species.

Keywords: Endangered species, Mollusks, Wisconsin

HAVLIK, M. E. 1978b. Naiad Mollusks of the Mississippi River near LaCrosse, Wisconsin. Mississippi River Research Consortium, 11th Annual Meeting, June 8-10, 1978, LaCrosse, Wisconsin.

Abstract: Twenty-one live and 14 dead species of naiad mollusks were found in Pools 7 and 8 near LaCrosse, Wisconsin in 1977-78. Of importance was the discovery of a juvenile Lampsilis higginsi, an endangered species. Two live Anodonta suborbiculata were found during a preconstruction survey for the city of LaCrosse. This species had never been recorded in Wisconsin, nor farther north than Peoria, Illinois.

Juvenile Truncilla donaciformis were found throughout the width of the main channel at R. M. 696 during a pre-dredging survey. Distribution patterns were different from those formerly reported for naiad mollusks.

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Seventeen live species, including Tritogonia verrucosa, were taken near Rosebud Island, Lake Onalaska, above LaCrosse incidental to the collection of Lampsilis ventricosa, L. radiata luteola, and Fusconaia flava used in silt and sand bioassay studies done under a separate contract with the Corps of Engineers. This large collection was made by hand because of the great quantities of aquatic vegetation in the lake in fall.

A survey of a new bridge site on the Black River, LaCrosse, was done for the Wisconsin Department of Transportation by means of a crowfoot survey followed by diver truthing of pier sites. Quadrula quadrula was recorded as fairly common at this site. Toxolasma parvus, a species usually not considered to be a part of the main stem fauna, is being found in an increasing number of main channel and backwater sites, indicating changing substrates. Amblema p. plicata is the most abundant species.

Keywords: Mollusks, Upper Mississippi River, Pools 7 and 8, Distribution

HAVLIK, M. E. 1979a. The northern extension of the range of Anodonta suborbiculata Say, 1831, (Molluska: Bivalvia: Unionidae). In preparation.

Abstract: The naiad mollusk Anodonta suborbiculata Say, 1831, has apparently never been reported from the Mississippi River main stem north of Rock Island, Illinois. During June 1977 two live specimens of A. suborbiculata were collected in Bluff Slough, a Pool 8 side channel (Mississippi River Mile 695) at LaCrosse, Wisconsin during a pre-construction environmental assessment of the Slough for a LaCrosse city sewer project. The size and age indicated reproduction in the area, at least on a limited basis. Three other living naiad species and 4 dead naiad species were also collected from this site.

Keywords: Mollusks, Distribution

HAVLIK, M. E. 1979b. The Importance of Naiad Mollusks: Past, Present and Future. Proc. Upper Mississippi River Cons. Comm. Symp. On Upper Mississippi Bivalve Mollusks, Rock Island, Illinois, 3-4 May 1979.

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**Abstract:** The naiad mollusk fauna of the United States has been heavily impacted by man over the past 200 years, particularly in the last century. Survey work is needed on the Upper Mississippi River naiad mollusks to determine ranges densities, and species distributions. This need is evidenced by the discovery of Lampsilis higginsi (Lea, 1857), Higgins' Eye, populations and Anodonta suborbiculata Say, 1831, Heel Splitter, a species previously unreported in Wisconsin. Many taxonomic and ecological problems remain. There is also need to better understand life histories and further identify host fish so that impacts by pollutants, commercial harvesting and waterway alterations may be mitigated.

**Keywords:** Mollusks, Survey

HAVLIK, M. E. and D. H. STANSBERY. 1977. The naiad mollusks of the Mississippi River in the vicinity of Prairie du Chien, WI, Ann. Rept. Am. Malacological Union.

**Abstract:** Several accounts have been written of the naiad mollusks in the vicinity of Prairie du Chien, WI. Thirty-four species were collected in 1904, 43 species in 1921, 27 species in 1920-22, 31 species in 1930-31, and 33 species in 1976-77. The 1976 collection was made from a large dredge spoils; many specimens were fresh-dead, 2 species were represented by subfossil specimens only. At least 14 specimens of Lampsilis higginsi (Lea, 1857) were found indicating the presence of what may be the largest aggregation known of this endangered species. 8 living specimens of L. higginsi were collected from the area immediately below the dredge site in 1977 indicating that this site is a prime candidate for designation as critical habitat for this species. The fauna had a loss of 27% from 1921 to 1976 making the Mississippi River naiad fauna less damaged than that of any other large river in North America today. Prairie du Chien has the greatest diversity of naiad mollusks known from any site on the Mississippi River, 44 species.

**Keywords:** Mollusks, Endangered species, Distribution

HEARD, W. H. 1968. Mollusca, in F. K. Parrish (Ed.) keys to water quality indicative organisms. Fed. Water Pollution Control Admin., Cincinnati, pp. G1-G26.

**Abstract:** Written request sent; no response.

**Keywords:** Mussels, Water quality, Pollution

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HELD, J. W. 1975. The environmental impact of upland disposal of dredged material at Island 117, Navigation Pool No. 8, Upper Mississippi River. Report to U.S. Army Corps of Engineers, Waterway Experiment Station, Vicksburg, MS.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Dredging, Pool 8, Upper Mississippi River

HELLA, U. W. 1960. A parkway for the mighty Mississippi. Minnesota Cons. Volunteer, March-April, 1960.

Abstract: Written request sent; could not locate.

Keywords: Recreation

HEUSCHELE, A. L. S. 1968. The Phenology of macrobenthos in a Mississippi River floodplain lake. Ph.D. Thesis. Univ. of Minn. 73 pp.

Abstract: Written request sent; no response.

Keywords: River lake, Benthos, Survey

HILL, A. K. 1961. Out with the fleet on the Upper Mississippi, 1898-1917. Minn. Hist. 37:283-297.

Abstract: Written request sent; no response.

Keywords: Commercial boat traffic

HOFFNER, M. 1932. Argonauts of the Mississippi. Palimpsest, 13(1932): 473-486.

Abstract: Reference source located; article not within.

Keywords: Commercial boat traffic, Barges, Recreational boat traffic

HOFFMAN, P. L. 1971. Environmental Engineering Programs. Quarterly Technical Progress Report, January-March 1971. 48 pp.

Abstract: Written request sent; could not locate.

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Keywords: Thermal effluent, Nuclear power

HOLZER, J. A. and S. J. IRONSIDE. 1977. Basic lake inventory of Lake Onalaska LaCrosse, Wisconsin. Wis. Dept. Nat. Res. Mgmt. Rept., Unpub. 42 pp.

Abstract: Lake Onalaska, a shallow 5,400 acre lake adjacent to the main channel of the Mississippi River, was created in 1937 by the completion of Locks and Dam No. 7. The Mississippi River supplies water to Lake Onalaska by several channels meandering through a complex of islands making up the west boundary of the lake.

Lake Onalaska is a well known fishing lake, both during the summer and through the winter. Most anglers fish for bluegills, though largemouth bass, northern pike, bullheads, and catfish are also harvested.

Keywords: Lock and Dam 7, Sport fishing, Lake Onalaska, Pool 7

HOLZINGER, J. M. 1887. Notes on the Mollusca of Winona County. Ann. Rept. Geol. and Nat. Hist. Surv. May 6:485-491.

Abstract: Written request sent; no response.

Keywords: Mollusks, Clams, Minnesota

HORA, M. 1976. Report of the ad hoc PCB committee - Upper Mississippi River Conservation Committee. In: Proc. 33rd Ann. UMRCC Mtg. 1977. pp. 117-124.

Abstract: Insufficient citation; could not locate.

Keywords: Pesticides, Pollution

HORNADAY, W. T. 1931. Thirty years war for wild life. Perm. Wild Life Prot. Fund. Stanford, Conn.

Abstract: Written request sent; could not locate.

Keywords: Wildlife

HUBLEY, R. C., JR. 1960. Incidence of lamprey scarring on fish captured during three years of exploratory fishing in the Upper Mississippi River, 1956-1958. Wisconsin Cons. Dept., Feb., 1960.

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Abstract: Phone request; no response.

Keywords: Parasites, Fish

HUMPHREYS, A. A., and H. L. ABBOT. 1876. Report upon the physics and hydraulics of the Mississippi River. Corps of Engr. Prof. Pap. No. 13, 1861, Reprint 1876.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Hydraulics

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JERGENS, G. D. and W. CHILDERS. 1959. Ages at given lengths for game species taken in U.M.R.C.C. cooperative field survey, 1956, in the Wisconsin-Iowa-Illinois waters of the Mississippi River. (Mimeo.) F.T.S. Supplemental Rpt. U.M.R.C.C., Proceedings 13:113-121.

Abstract: Insufficient citation; could not locate.

Keywords: Age and growth, Fish, Survey, Wisconsin, Iowa, Illinois

JOHANNES, C. A. 1960. Memorandum on the Mississippi River in the Metropolitan Area from the junction with Rum River to the Minneapolis-St. Paul Sanitary District outfall, October 1960. Minn. Dept. Health., Div. Environ. Sanitation, Sect. Water Poll. Control. Mimeo.

Abstract: Written request sent; no response.

Keywords: Urbanization, Minnesota

JOHNSON, R. J. R. 1967. Udall approval seen on plan to clean up major rivers. Minn. Dept. Cons., Out-of-Doors, 12(6):18.

Abstract: Written request sent; no response.

Keywords: Water quality, Urbanization, Pollution

JORDAN, D. S. and B. W. EVERMANN. 1908. American food and game fishes. Doubleday, Page and Co. 571 pp.

Abstract: Unable to locate in major midwestern libraries.

Keywords: Fish, Identification

JORDON, P. R. and R. F. BROWN. 1967. Preliminary survey groundwater distribution and potential in the Upper Mississippi River basin. U. S. Geol. Survey. Mimeograph report.

Abstract: Insufficient citation; could not locate.

Keywords: Survey, Upper Mississippi River, Hydrology, Distribution

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KARAKI, S. and J. VAN HOFTEN. 1974. Resuspension of Bed Material and Wave Effects on the Illinois and Upper Mississippi Rivers caused by Boat Traffic. CERT4-75 SK-JV9, Colorado State Univ., Ft. Collins, Colo.

Abstract: Written request sent; report not available.

Keywords: Sediment, Illinois River, Upper Mississippi River, Recreational boat traffic, Commercial boat traffic

KEATING, B. 1971. The Mighty Mississippi. Nat. Geog. Soc., Wash.

Abstract: Insufficient citation; could not locate.

Keywords: History, Upper Mississippi River

KEENLYNE, K. D. (ed.). 1974. Upper Mississippi River Conservation Committee investigational reports. UMRCC Spec. Publ., Rock Island, Ill. 179 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Management

KENNEDY, J. F. 1976. Testimony before the Iowa Water Quality Commission in the Matter of: Operational permit renewal.

Abstract: Written request sent; no response.

Keywords: Nuclear power, Iowa, Water quality, Pollution

KENNEDY, J. F. 1977. Hydraulic and thermal performance of Diffuser-Pipe System, Quad-Cities Power Station. IIHR, Iowa Institute of Hydraulic Research. University of Iowa. (Precis presented September 6, 1977 at Commonwealth Edison Company, Chicago, Illinois).

Abstract: Written request sent; could not locate.

Keywords: Thermal effluent, Hydrology, Hydraulics

KERNAN, H. 1951. Report of set line operations carried on in the Iowa-Wisconsin and Minnesota-Wisconsin boundary waters of the Mississippi River during the period from May, 1950 through December, 1950. Mimeo, unpublished, 2 pp.

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Abstract: Insufficient citation; could not locate.

Keywords: Iowa, Wisconsin, Minnesota, Fishing, Commercial fishing

KERNAN, H. 1952a. Report of commercial gear operations carried on in the Iowa-Wisconsin and Minnesota-Wisconsin boundary waters of the Mississippi River, during the year 1951. Mimeo., unpublished. 2 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Commercial fishing, Iowa, Wisconsin, Minnesota

KERNAN, H. 1952b. Report of set line operations carried on in the Wisconsin-Iowa and Wisconsin-Minnesota boundary waters of the Mississippi River during the period from May 1, 1951 through December, 1951. Mimeo., unpublished, 2 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Commercial fishing, Iowa, Wisconsin, Minnesota

KING, W., J. E. HEMPHILL., A. H. SWARTZ, and K. F. STUTZMAN. 1961. Sport fishing today and tomorrow. U. S. Dept. Int., Fish and Wildlife Service. Washington.

Abstract: Unable to locate in major midwestern libraries. Written request to Washington, D.C.; no response.

Keywords: Sport fishing

KLANT, R. F., and P. J. VIDAL. 1958. The Mississippi River Sport Fishery Survey, 1956 and 1957, Illinois Section: Vol II Final Report of the 1956-1957 Survey. Ill. Dept. Cons., Div of Fish. Mimeo, 290 pp.

Abstract: Written request sent; could not locate.

Keywords: Survey, Sport fishing, Illinois

KLINE, D. and D. B. MCDONALD. 1973. A summary of Creel Survey Studies Mississippi River - Pool 14, June 1972-Feb 73. Iowa State.

Abstract: Insufficient citation; could not locate.

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Keywords: Creel census, Survey, Pool 14, Fish

KROSCH, H. F. 1969. Winter water temperature and ice cover on Lake St. Croix in the vicinity of the Allen S. King Power Plant. Minn. Dept. of Nat. Res. Spec. Publ. No. 77.

Abstract: A study was conducted on the effects of the heated discharge from the Allen S. King Power Plant on ice cover on Lake St. Croix. In order to determine if the discharge from the plant was producing the open water areas, ice thickness and vertical water temperatures were recorded at 13 stations.

Keywords: Temperature, Minnesota, Ice

KUDO, R. R. 1929. Histozoic Myxosporidia found in fresh-water fishes of Illinois, U. S. A. Arch. Protistenk. 65(3): 364-378.

Abstract: Insufficient citation; could not locate.

Keywords: Parasites, Fish, Illinois

KUHL, G. M. (undated). Primary production in the Mississippi River near Becker, Minnesota. Masters thesis. St. Cloud State University.

Abstract: Written request sent; not available.

Keywords: Minnesota, Primary production, Phytoplankton

KYRE, R. E. 1966. A survey of Mississippi river duck hunter pressure. Wis. Dept. Nat. Res., LaCrosse, Wis.

Abstract: Phone request; no response.

Keywords: Survey, Ducks, Hunting

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LANE, E. W. 1938. Report on investigation of sediment carried by rivers of the St. Paul District. Corps of Eng.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Sediment

LARSEN, T. R. 1977. A Winter Study of Dissolved Oxygen Levels in Lake Onalaska, the Trempealeau Lakes, and Shady Maple. Wis. Dept. Nat. Res. Unpub. Sum. Rept. 11 pp.

Abstract: Phone request; no response.

Keywords: Chemistry, Lake Onalaska

LARSEN, T. R. and J. A. HOLZER. 1978. Survey of Mussels in the Upper Mississippi River, Pools 3 through 8. Interim Prog. Rep. Wis. Dept. Nat. Res., LaCrosse, Wis. Unpubl.

Abstract: Phone request; no response.

Keywords: Survey, Mussels, Pools 3, 4, 5, 6, 7 and 8

LARSON, O. 1961. Larval trematodes of fresh-water snails of Lake Itasca, Minnesota. Minn. Acad. Sci. 29:252-254.

Abstract: Written request sent; could not locate.

Keywords: Parasites, Snails, Mollusks, Minnesota

LEWIS, W. M. 1977. Observations on the Ecological Impact of the Quad-Cities Generating Station. Southern Illinois University.

Abstract: Written request sent; could not locate.

Keywords: Ecology, Habitat alteration, Nuclear power

LIMPERT, R. and R. VOSE. 1976. Fall feeding habits of migrating whistling swans on the Upper Mississippi River. Submitted to J. Wildl. Mgt. Jan 1976.

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Abstract: Insufficient citation; could not locate.

Keywords: Food habits, Waterfowl, Upper Mississippi River, Whistling swan

LITTLEJOHN, J. 1972. Mississippi River response to stabilization works. ASCE Natl. Rsrcs. Engr. Meeting, Alanta.

Abstract: Insufficient citation; could not locate.

Keywords: Channel maintenance

LOPINOT, A. C., and P. W. SMITH. 1973. Rare and endangered fish of Illinois. Ill. Dept. Cons., Div. Fish. 53 pp.

Abstract: In Illinois 25 species of fish are threatened with expiration. Two of these species (lake sturgeon and blackfin cisco) are also listed as endangered in the United States by the U. S. Bureau of Sport Fisheries and Wildlife.

Each species considered rare or endangered is illustrated and the distinguishing characteristics marked by lines. In addition, the common name, scientific name, order and family of the species is given. The distinguishing characteristics are discussed along with the maximum size for the species. The present and former distribution is listed. Former distribution means within historic times but prior to 1905. Present distribution means since 1950. A map on the back side depicts old records with a hollow symbol, present records with a solid dot. The status of the species is listed as rare or endangered. These terms are defined as follows:

Rare: Not under immediate threat of extinction in the state, but occurring in such small numbers and/or in such a restricted habitat that it could quickly disappear.

Endangered: Actively threatened with extinction in the state. Continued survival unlikely without special protective measures.

Range status in Illinois is self-explanatory. Fecundity lists information about the number of eggs produced when this is available. Reasons for decline indicates what is making the species rare or endangered.

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Protective measures already taken or proposed gives the status as to the law which prohibit the taking or possessing of the species concerned.

Management recommendations gives general information as to what might be done to enhance the species and keep it from being extinct.

All streams and lakes where rare and endangered fish species occur should be protected from dredging, channeling, damming, pollution, and any other encroachment by man that would help destroy the few remaining species present. Illinois fishery biologists should be aware of the waters with rare and endangered fish so they can be watched carefully in our fast changing environment.

Keywords: Endangered species, Rare species, Fish, Illinois, Distribution

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MACK, F. J. 1970. Sediment yields in the Upper Mississippi River basin. Proc. Sem. on sediment transport in rivers and reservoirs, Pap. No. 4, Corps of Engr. Hydrol. Engr. Cen., Davis, Calif.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Sediment

MAHER, T. F. 1965. Degradation study of the Middle Mississippi River, vicinity of St. Louis, Missouri. In: Proc. Fed. Inter-Agency Sed. Conf., Jackson, Miss. 1963. pp. 424-430.

Abstract: Insufficient citation; could not locate.

Keywords: Pollution

MALTBY, F. B. 1905. Hydraulic dredging on the Mississippi River. Trans. ASCE. Vol. LIV, Part C, pp. 391-478.

Abstract: Insufficient citation; could not locate.

Keywords: Hydraulics, Dredging

MARKING, L. L. and T. D. BILLS. 1977. Acute Effects of Silt and Sand Sedimentation of Freshwater Mussels. U.S. Fish and Wildlife Service, Fish Control Laboratory. LaCrosse, WI. Completion Report-Support Agreement No. NCS-SA-77-104-CO.

Abstract: Environmentalists are seeking means to protect aquatic species from adverse effects of the ever growing commercial and recreational interest on the Mississippi River. Dredging to maintain the navigational channel has affected freshwater mussel populations, and research is needed to demonstrate what impact the movement of dredge sediments has on these animals.

Freshwater mussels of the following species -- pig-toe (Fusconaia flava), fat mucket (Lampsilis radiata luteola), and pocketbook (Lampsilis ventricosa), were exposed to sediment overlays to determine the clams' ability to emerge from depths of 2 to 10 inches. Clams emerged within a few hours or did not emerge at all. Those that did not emerge eventually died. Four inches of silt prevented the emergence of 50% of the pig-toe,

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but 7 inches or more of sand or silt was required to prevent the emergence of fat mucket and pocketbook clams. This study demonstrates the acute effects of single dredge spoil overlays on clams, but it does not address the effects of rates of deposit, adaptation to new substrates, migration to new substrates, or long term effects on the survival of clam populations.

**Keywords:** Sedimentation, Mussels, Dredging, Clams

MARMER, G. J., I. P. MURARKA, and F. VASLOW. 1976. An evaluation of environmental data relating to selected nuclear power plant sites. The Quad-Cities Nuclear Power Station site. Div. of Environ. Impact Studies, Argonne Nat. Lab., Argonne, Ill. 54 pp.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Nuclear power, Limnology

MATHIAK, H. A. 1978. I collect clams. Wisconsin Natural Resources. 2 (4):9-10.

**Abstract:** An article describing the author's experiences with clamming. Reproduction, life history, morphology, and collection of clams are discussed. An illustration is given of the general structure of a fresh-water mussel.

**Keywords:** Clams, Life history

MATTEI, P. F. 1970. Mississippi River Pollution Abatement. Metropolitan St. Louis Sewer District, MO. 11 pp.

**Abstract:** Written request sent; could not locate.

**Keywords:** Pollution, Missouri

MCCONVILLE, D. R. 1972. Population Dynamics of the Macroinvertebrates in the Mississippi River near Monticello, Minnesota. Ph.D. Thesis. University of Minnesota. 197 p.

**Abstract:** The natural river benthic fauna components from the Mississippi River near Monticello, Minnesota were affected by temperature and current and by river bottom to a lesser extent. Temperature caused benthic pop-

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ulations components to exhibit definite seasonal trends. Current velocity was the most important factor in determining the bottom substrate composition.

**Keywords:** Minnesota, Invertebrates, Benthos, Population

MCDONALD, D. B. 1977a. Literature review of the spawning patterns of several species of fish occurring in the Mississippi River. Response to Reg. V, USEPA. Pub. Notice No. 71I-0350, NPDES No. 1L000 5037, Att. H.

**Abstract:** Written request sent; no response.

**Keywords:** Bibliography, Fish

MCDONALD D. B. 1977b. A "worst case" analysis of the effects of operation of the Quad-Cities station on the thermal regime and fishery of the Mississippi River in Pool 14. Rept. to Comm. Ed. Co., Chicago. 25 pp.

**Abstract:** Written request sent; no response.

**Keywords:** Thermal effluent, Fish, Pool 14, Nuclear power

MCDONALD, D. B., H. F. BERNHARD, V. KOWALSKI and H. O. EILER. 1972. Biological effects of open and closed cycle cooling on Pool 14. Mississippi River Thermal Effects Symposium, Oak Brook, Illinois.

**Abstract:** Phone request; no response.

**Keywords:** Thermal effluent, Nuclear power, Pool 14

MCHENRY, J. R., J. C. RITCHIE and C. M. COOPER. 1977. Recent sedimentation rates in Lake Pepin. Pap. Pres. at Miss. Riv. Res. Consortium Ann. Mtg. Winona, Minn.

**Abstract:** Sedimentation rates since 1954 in Lake Pepin, as determined from the content of fallout cesium-137 in the sediment profile, have exceeded 2.5 cm/yr in the upper lake. The rates decreased downstream in Lake Pepin to less than 0.5 cm/yr. These rates, although somewhat less than those of the previous half century (1895-1954), are sufficiently large that the uppermost portion of Lake Pepin is threatened with conversion to a marsh in a century. The density of the sediments measured increased with depth in the sampled profile

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from 1.1-1.2 g/ml in the surface to 1.4-1.5 g/ml at 2 or 3 m. There was little or no change in the patterns of textural composition or density of the sediment profile with depth and age over the past 80 to 150 years.

Keywords: Lake Pepin, Sedimentation

MEHTA, S. C. 1969. The limnological factors affecting pesticide residues in the Iowa River and Coralville Reservoir. Unpublished Master's Thesis, Univ. of Iowa.

Abstract: Written request sent; long term loan.

Keywords: Limnology, Pesticides, Iowa River, Iowa, Water quality

MEYER, M. P. 1975. Remote sensing applications in agriculture and forestry: Upper Mississippi River Habitat Inventory Quarterly Progress Report. Remote sensing laboratory. Univ. Minn., St. Paul. 5 p.

Abstract: Written request sent; no response.

Keywords: Upper Mississippi River, Habitat, Vegetation, Remote sensing

MEYER, M. P., J. MINOR and R. HAGEN. 1977. Upper Mississippi River habitat inventory. Quart. Prog. Rept. Remote Sensing Lab., USDI Contr. No. 14-16-0003-686.

Abstract: Written request sent; no response.

Keywords: Habitat

MILLER, E. F., K. KRUM, W. L. K. SCHWARZ and W. RUDELIUS. 1973. Environmental impact assessment study. Pool 3. St. Mary's College. Winona, Mn. 192 p.

Abstract: Written request sent; could not locate.

Keywords: Pool 3, Ecology

MOLAMPHY, T. J. 1960. Winter fishing on the Mississippi River in Iowa, 1956 through 1960. Iowa. Cons. Comm., Admin. Summary. Mimeo., Unpublished. 2 pp.

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Abstract: Insufficient citation; could not locate.

Keywords: Iowa, Fishing, Ice

MOLAMPHY, T. J. and R. E. CLEARY 1959. Miscellaneous angling information - Mississippi River. Iowa Cons. Comm., Admin. Summary. Mimeo., Unpublished. 5 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Fishing, Sport fishing

MOORE, J. P. 1912. Classification of the leeches of Minnesota. In: The leeches of Minnesota. Geol. and Nat. Hist. Survey Minnesota. Zool. Ser. No. 5.

Abstract: Written request sent; no response.

Keywords: Minnesota, Taxonomy, Invertebrates

MOYLE, J. B. 1940. A biological survey of the Upper Mississippi River system. Minn. Dept. Cons., Fish. Res. Unit, Invest. Rept. No. 10

Abstract: At the suggestion of Dr. Samuel Eddy of the Department of Zoology, University of Minnesota, biological surveys of the river systems of Minnesota were begun in the summer of 1939, by the Minnesota Department of Conservation. During the months of July, August and September, 1939, work was completed on most of that portion of the Upper Mississippi River system between Minneapolis, Hennepin County, and Crosby, Crow Wing County. A map of this drainage area showing the location of the major field stations is included. Biological, chemical and physical data were taken twice at most of these stations; about a month elapsing between the first and second series of collections. Many of the smaller streams were investigated less completely at stations not indicated on the map. In the two and one-half months in the field it was impossible to survey all of the smaller streams and headwaters. Emphasis was placed on those streams that showed greatest possibilities for angling.

Keywords: Survey, Upper Mississippi River, Fish, Vegetation, Birds, Plankton

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MOYLE, J. B. 1961. Aquatic invertebrates as related to larger water plants and waterfowl. Investigative Report 233. Minn. Dept. Cons. 24 p.

**Abstract:** Relationships between production of waterfowl, bottom fauna, and aquatic plants are considered in the light of data in the literature and Minnesota data. In general, waterfowl production and bottom fauna production show similar geographic patterns, and considering the high protein requirements of wild birds, this relationship may well be one of cause and effect. It appears that production of benthic animals is related both to the quantity of aquatic plant material produced and the kinds of plants--those with finely divided

leaves or much branched stems usually being the best benthic producers. Aquatic plant materials themselves are low in protein and it appears that at least for young ducks and laying hens the green parts of plants cannot provide an adequate diet. It is concluded that waterfowl workers could advantageously use the methods for studying of benthos production developed by fisheries workers. There is a scarcity of detailed information on the feeding habits and nutrition of waterfowl and very little work has been done on the relationships between aquatic plants and production of animal foods of value in raising waterfowl. It seems likely that in management of waterfowl production areas more attention should be given to the production of high protein animal foods and to the plants that promote the production of such invertebrate animals.

**Keywords:** Invertebrates, Aquatic plants, Waterfowl,

MOYLE, J. B. and J. L. SKRYPEK. 1969. Levels of DDT, DDE and Aldrin in muscle and brain tissue of some Minnesota fishes, 1962-1967. Minn. Dept. Nat. Res. Spec. Publ. No. 59

**Abstract:** In 1962 a program for determining concentration levels of DDT and DDE in Minnesota fishes was set up jointly by the Minnesota Department of Conservation and Minnesota Department of Health. Since then, fish of game and non-game (rough) species have been collected each year at locations representative of forested and agricultural areas of the State. This report summarizes analyses of fish collected during the 6 year period 1962-1967. The fish were collected by Division of Game and Fish field personnel, often from the fish at the Biology Laboratory of the Division of Game and

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Fish and then submitted to the Department of Health for analysis.

**Keywords:** Pesticides, Fish, Toxicant, Minnesota

MOYLE, J. B. and J. L. SKRYPEK. 1972. Concentrations of some organochlorine insecticides and the PCB, Arochlor 1254 in flesh and brain tissue of Minnesota fish collected in 1969. Minn. Dept. Nat. Res. Spec. Publ. No. 95. 24 pp.

**Abstract:** In general the concentrations of chlorinated hydrocarbon insecticides and the PCB, Arochlor 1254, found in flesh of Minnesota fish in 1969 were low and at levels regarded as acceptable in human food. Concentrations of DDT and DDE found in 1969 samples tended to be lower than those found in 1962-67 samples. However, some DDT was detected in more than 90 percent of the fish tested--although usually at quite low levels--indicating persistence of this insecticide in the environment, despite decline in use. Dieldrin was detected in 44 percent of the samples. Occasional samples were found to contain endrin, heptachlor, heptachlor epoxide, methoxychlor and the polychlorinated biphenyl, Arochlor 1254.

**Keywords:** Chlorinated hydrocarbons, Fish, Minnesota, Toxicant

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NICKLAUS, R. A. and E. M. MERZ. 1976. An assessment of Diving Duck Food Resources in the Mississippi River Navigation Pool 7 and Selected Areas in Pools 8 and 9. (Mississippi River Work Unit). Wis. Dept. Nat. Res. LaCrosse.

Abstract: Phone request; no response.

Keywords: Diving ducks, Pools 7, 8 and 9

NICOLLET, J. N. 1965. Hydrographical Basin of the Upper Mississippi River from astronomical and barometrical observations survey and information. Minn. Historical Society.

Abstract: A reprint of the "mother map" of Minnesota cartography, originally published in 1843, on which all subsequent maps of the state were based until the era of modern surveys. An accompanying text sketches Nicollet's career.

Keywords: Hydrology, History, Climatology

NIEMUTH, W., W. CHURCHILL and T. WIRTH. 1962. The walleye: life history, ecology and management. Wis. Cons. Dept. Publication No. 227.

Abstract: Written request sent; could not locate.

Keywords: Fish, Management, Life history, Walleye, Ecology

NORD, R. C. 1958. Fishery investigation on the Upper Mississippi River. Minutes Reg. Conf., Bur. Sport Fish. and Wildl., Minneapolis, Minn.

Abstract: Written request sent; no response.

Keywords: Fish, Survey

NORWITCH, R. F., T. G. ROSS and A. BRIETKRIETZ. 1973. Water resources outlook for the Minneapolis-St. Paul metropolitan area. Metropol. Council. 219 pp.

Abstract: Written request sent; could not locate.

Keywords: Water diversion, Impoundment

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OAKES, E. L. (undated). Water resources of the Mississippi headwaters watershed, Minnesota (in review). U. S. Geol. Survey in cooperation with the Minn. Dept. Cons., Div. of Waters.

Abstract: Written request sent; no response.

Keywords: Hydrology, Minnesota

OCKERSON, J. A. 1898. Dredges and dredging on the Mississippi River. Trans. ASCE. Vol. XL:215-310.

Abstract: Insufficient citation; could not locate.

Keywords: Dredging

OLSON, K. N. and M. P. MEYER. 1976a. Vegetation, land and water surface changes in the upper navigable portion of the Mississippi River basin over the period 1929-1973. U.S. Army, Corps of Eng. Phase IV, Contr. No. DACW-37-74-C-0043. 19 pp. + App. A-G.

Abstract: This study is in response to an expressed need of the U.S. Army Corps of Engineers, St. Paul District, to identify the impact of its operation and maintenance activities on the navigable portion of the Upper Mississippi, lower Minnesota and St. Croix River to Guttenberg, Iowa. This study assignment consists of four phases:

Phase One: Preparation of a 1973 base line vegetation, land and water surface map from the heads of navigation of the Minnesota, Mississippi, and St. Croix Rivers to Guttenberg, Iowa. Special emphasis was placed on:

- (1) Location and area determination of dredge spoil banks at high and low pool stage.
- (2) Location and area determination of emergent vegetation at low pool stage.
- (3) Location and area determination of open water at low pool stage.
- (4) Location, classification, and area determination of flood plain vegetation cover types.

Phase Two: Chart the post-1939 vegetation land and water surface changes in the floodplain of pools 5, 5A, 6, 7, 8, 9, 10 and the Minnesota River from the head of navigation downstream and assess their relationship to man-caused changes in the drainage basin during the period 1939-1973.

Phase Three: Assessment of the pre-1941 to 1973

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vegetation, land and water surface changes in Pools 5, 5A, 6, 7, 8, 9, 10 and the Minnesota River. By utilizing data collected and developed in Phase I and II, the post-1941 changes in vegetation, land and water surfaces in the above pools and river were charted. The relationships of these changes to the influence of man in this area during the study period were assessed. Also the application of aerial photography in monitoring river basin features was analyzed.

Phase Four: Delineation of water and land use types as conditions existed prior to the construction of the 9-foot channel project on the Mississippi, Minnesota and St. Croix Rivers from their respective heads of navigation downstream to Guttenberg, Iowa. These data will be compared to the information generated during phase 1 to determine the changes which have taken place in these land use types through 1973.

**Keywords:** Dredging, Vegetation, Pools 5, 5A, 6, 7, 8, 9 and 10

OLSON, K. N., and M. P. MEYER. 1976b. Vegetation, land and water surface changes in the upper navigable portion of the Mississippi River basin over the period 1939-1973. U.S. Army, Corps of Eng. Phase III, Contr. No. DACW-37-74-C-0043. 150 pp. + App. A-M.

**Abstract:** Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

**Keywords:** Vegetation, Hydrology

OWEN, R. 1952. Memorandum on a survey of the Mississippi River from above Minneapolis at the Minneapolis water works intake to below Minneapolis at the Ford Dam, Dec 17, 1951 to Jan 17, 1952. Minn. Dept. Health., Div. Water Poll. Control. Mimeo.

**Abstract:** Written request sent; no response.

**Keywords:** Fish, Survey, Minnesota

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PAHL, G. 1969. Radioactive and stable strontium analysis of Upper Mississippi River clam shells. Contr. Rept. No. AT(11-1)-1178 for U.S. Atomic Energy Comm. Pres. at Symp. on Radioecology. March, 1969. 5 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Clams, Shells

PEARSE, A. S. 1922. Fishing in the Mississippi. Scientific Monthly Vol. XIV, pp. 185-199.

Abstract: Insufficient citation; could not locate.

Keywords: Fishing

PETERSEN, W. J. 1968a. The northwest passage to Iowa. Palimpsest. 49(1968):401-405.

Abstract: Reference source located; article not within.

Keywords: History, Iowa

PETERSEN, W. J. 1968b. Pikes Mississippi expedition. Palimpsest. 49(1968):47-80.

Abstract: Reference source located; article not within.

Keywords: History

PETERSEN, W. J. 1968c. The Joliet-Marquette expedition. Palimpsest. 49(1968):416-446.

Abstract: Reference source located; article not within.

Keywords: History

POTTER, C. L. 1925. How the Mississippi River is regulated. Eng. News 94 (26 March 1925): pp. 503-514.

Abstract: Insufficient citation; could not locate.

Keywords: Regulations

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POTTER, G. E. and D. T. JONES. 1928. Compilation and revision of the fish records published for Iowa. Proc. Iowa Acad. Sci., 34(1927):339-366.

Abstract: Written request sent; journal in use.

Keywords: Iowa, Fish

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REIS, L. and C. WHEATLEY. 1978. Predicting benthic macroinvertebrate production in backwaters of Pool 9, Mississippi River. B. A. Thesis, Luther College, Decorah, Iowa. 32 p.

**Abstract:** The flora and fauna of backwater lakes in Pool 9, Mississippi River, are dependent on the interactions of environmental factors. Macroinvertebrates, with an emphasis on Hexagenia numbers, were studied in selected backwater lakes during 1976 and 1977. A step-wise multiple regression analysis model was used to analyze the data and obtain a regression equation, which was used to account for changes in Hexagenia populations with the aid of a simulation model. Predicted increased water conductivity, secchi depth, and silt percentage of the substrate resulted in increased Hexagenia populations. Hexagenia populations decreased throughout the summer months as naiads matured and emerged as adults. Changes in the aquatic environment due to increased silt leads and dredging operations affect Hexagenia populations and productivity in backwater lakes.

**Keywords:** Benthos, Production, Backwater, Pool 9

REPLINGER, J. S. 1974. Minnesotians and Their Mississippi River: A Citizen's Review of Minnesota's Mississippi River Environments. St. of Minnesota Esthetic Environ. Task Force, Minneapolis.

**Abstract:** Written request sent; no response.

**Keywords:** Minnesota, Recreation, Fishing

RICHMAN, I. B. 1911. History of Muscatine County. S. J. Clarke Publ. Co., Chicago.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** History, Iowa

RITCHIE, J. C., and J. R. MCHENRY. 1977. Recent sedimentation rates in Pool 9 of the Upper Mississippi River. Pap. pres. at Upper Mississippi Riv. Res. Consortium Ann. Mtg., June 8-10.

**Abstract:** In June 1976 a survey was made of sediment accumulation on 11 cross sections in Pool 9 from the Lock and Dam

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to Lansing, Iowa. Two types of surveys were made. One was a fathometer measurement of the bottom contours of the 11 cross sections. These were compared with topographic surveys made in 1937 before the closure of the Lock and Dam. Also on each cross section samples from profiles were collected for analysis for Cesium-137 concentrations. The  $^{137}\text{Cs}$  measurements were used to determine the rate of sediment accumulation since the beginning of major nuclear testing in 1954, the maximum nuclear testing in 1964, and the sampling data (1976). These surveys showed areas of both accumulation and degradation in Pool 9 with more areas of accumulation than degradation. Also there appeared to be a greater accumulation of sediment in the area of the Pool 9 near the Lock and Dam than in the pool area just south of Lansing. On many ranges over 60 cm of sediment accumulation since 1937 was measured. Data from the fathometer and the  $^{137}\text{Cs}$  survey were similar.

Keywords: Sedimentation, Pool 9

ROBINSON, J. W. 1972. Some results of channelization and their implications to the Mississippi River. In: U.S. Army, Corps of Engr. Miss. River - Ill. Waterway 12-foot channel Phase I report. Sept. 1972, pp. 4-1 to 4-8.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Channelization

ROGERS, H. G., J. DRAKE, L. L. KEMPE, T. A. OLSON and J. N. WILSON. 1940. Pollution of the Mississippi River, from Minneapolis to Brainerd including the Rum River and portions of the Crow River, 1937-40. Minn. State Bd. Health, Div. Sanitation.

Abstract: Written request sent; no response.

Keywords: Pollution

RUSSELL, C. E. 1928. A-Rafting on the Mississippi. Century Co., New York.

Abstract: Insufficient citation; could not locate.

Keywords: Recreation, History

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SAYRE, W.W. and PARR, A. D. 1972. Water temperatures in the Mississippi River Downstream from Quad-Cities Nuclear Power Station During Operation of Side Jet Condenser Cooling Water Discharge System, June-July 1972. IIHR Limited Distribution Report No. 13, Iowa Institute of Hydraulic Research, the University of Iowa.

Abstract: Written request sent; report unavailable.

Keywords: Hydrology, Temperature, Thermal effluent

SHATFORD, J. III. 1978. Annual Narrative Report. Upper Mississippi Wildlife Management Area. January 1, 1977 to December 31, 1977. Missouri Dept. Cons. 15 p.

Abstract: A report on the Upper Mississippi River Wildlife Management Area located north of St. Louis. It includes 12,500 acres lying between Alton Lock and Dam and La Grange, Missouri. Tables and charts are given on waterfowl migration, populations, food conditions and behavior. Fisheries, big game species, and furbearing animal statistics are also provided.

Keywords: Habitat, Habitat management, Waterfowl, Wildlife, Fish, Migration

SHODEEN, D. 1965. A special fisheries survey of a portion of the Mississippi River below Coon Rapids Dam. Minn. Dept. Cons., Div. Game Fish, Sect. Research and Planning. St. Paul, MN.

Abstract: A survey of a portion of the Mississippi River was conducted during the period of July 26 through July 1965. The portion of the river investigated is located in the northwestern metropolitan area.

The purpose of the survey was to determine the status of the present fish population and fish habitat. This information was used in part to evaluate the proposed removal of river bed gravel deposits from a portion of the surveyed area.

The river area surveyed is 7 1/2 miles in length and is that portion of the river which flows from the Coon Rapids Dam to the Minneapolis waterworks. The Minneapolis waterworks is located approximately 1 1/2 mile south of the Highway 100 bridge. The 7 1/2 miles of river surveyed was divided into 4 stations which

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varied from 1 1/2 miles to 2 miles in length.

Keywords: Survey, Fish, Habitat, Dredging

SIMONS, D. B. 1973. Possible effects of dredging gravel from the Mississippi River. Communication dated 19 Feb. 1973. App. A to Winkley and Harris, 1973.

Abstract: Insufficient citation; could not locate.

Keywords: Dredging

SIMONS, D. B., S. A. SCHUMM, Y. H. CHEN, and R. M. BEATHARD. 1976. A geomorphic study of Pool 4 and tributaries of the Upper Mississippi River. CER76-77DBS-SAS-YHC-RMB11. Colo. St. Univ., Ft. Collins.

Abstract: This report is a geomorphic study of both Pool 4 in the Upper Mississippi River and the Upper Mississippi tributaries. The Pool 4 analysis documents change in the Upper Mississippi River through historic time. Change is noted in river position, river surface area, island surface area, number of islands, riverbed surface area, riverbed elevation, river width, side channels, discharge, and stage. Prior to the construction of Lock and Dam 4, the surface area and width of the river decreased, as did the riverbed elevation and surface area. The surface area and number of islands increased. No change is noted in the stages and slight decreases are noted in the discharges.

After the construction of the lock and dam, the surface areas of the river, islands, and riverbed increased. The number of islands, the width, and the riverbed elevation also increased. The discharges and the minimum stage increased. The river position has not changed through historic time.

The tributary study is centered around two representative rivers, the Chippewa River in Wisconsin and the Wapsipinicon River in Iowa. The Chippewa River is unstable and its sediment influx necessitates considerable dredging in the Mississippi. It is concluded, however, that the Chippewa can be controlled. Evidence indicates that until recently a meandering pattern existed on the lower Chippewa. The sediment output of the Chippewa can possibly be controlled by reestablishing a meandering pattern in the lower river. The Wapsipinicon is a stable river which carries a

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high suspended sediment load. This river has little influence on the Mississippi.

**Keywords:** Pool 4, Geology

SIMPSON, C. T. 1914. A descriptive catalogue of the naiades, or pearly fresh water mussels. pp. 1-1540, Bryant Walker, Detroit, Mich.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Benthos, Invertebrates, Mussels

SKRYPEK, J. 1966. Analysis of physical and biological changes at selected sampling stations in the Mississippi River. Minn. Dept. Cons., Div. of Game and Fish. St. Paul.

**Abstracts:** Environmental changes in rivers usually occur at a much faster rate than in lakes. During the period prior to the installation of navigational dams on the Mississippi River, physical changes occurred quite rapidly. The dams have had a stabilizing affect on river habitats but physical changes still occur. In order to determine the effect and rate of environmental change, ten locations in Pools 4, 5 and 5A were set up as study areas and certain biological characteristics were studied over a period of seven years.

**Keywords:** Survey, Pools 4, 5 and 5A, Dam

SKRYPEK, J. and R. STERNBERG. 1978. Evaluation of proposed striped bass introduction in Lake Pepin. Minn. Dept. Nat. Res. Staff Rept. 8 p.

**Abstract:** Introduction of any exotic fish is a drastic step that must be seriously considered before action is taken. The planting of striped bass in waters of the Upper Mississippi River raises a number of relevant questions.

These include: (1) Is Lake Pepin and the Upper Mississippi River suitable for survival and growth of striped bass? (2) Will the striped bass reproduce naturally and spread to other waters? (3) What effects will the striped bass have on other species of fish? (4) What type of fishery will result from successful plants? (5) If the planting program is successful and

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so natural reproduction results, how will the program be maintained? (6) Do environmental contaminants in the Upper Mississippi River pose a threat to the development of a striped bass fishery? (7) Will anglers accept the striped bass?

Keywords: Striped bass, Lake Pepin

SMITH, A. B. 1963. Channel sedimentation and dredging problems, Mississippi River and Louisiana Gulf Coast access channels. Proc. Fed. Inter-Agency Sed. Conf., Jackson, Miss. pp. 618-625.

Abstract: Insufficient citation; could not locate.

Keywords: Sedimentation, Dredging

SMITH, P. W. 1973. A classification of the aquatic environments of Illinois and a list of potential international aquatic scientific areas. Submitted for inclusion in the over-all report of the U.S. Internat. Biol. Prog. Cons. of Aquatic Ecosystems, FW Task Force (Jan. 17, 1973).

Abstract: Insufficient citation; could not locate.

Keywords: Limnology, Illinois

SMITH, S. G. 1969. Natural Hybridization in the Scirpus lacustris complex in N. Central U.S. Current topics in Plant Science, pp. 175-200. Academic Press, New York.

Abstract: Insufficient citation; could not locate.

Keywords: Vegetation

SMYSER, R. E., JR. 1947. The Mississippi River - Chain of Rocks project. U.S. Army, Corps of Engr., St. Louis Dist. 12 pp.

Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate. Written request sent; no response.

Keywords: Hydrology

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SPARKS, R. E. 1977. Evaluation of environmental data pertaining to the Green Bay levee. Ill. Nat. Hist. Surv. Rept. to Rock Island Dist. U.S. Army, Corps of Eng. 59 pp.

**Abstract:** Corps offices in St. Paul, St. Louis, and Rock Island visited; could not locate. Written response sent; no response.

**Keywords:** Limnology, Levees

STERNBERG, R. B., ed., 1967. "Upper Mississippi River Habitat Classification Survey." Upper Mississippi River Conservation Committee, Fish Technical Section.

**Abstract:** This report is to be used to define river habitat areas such as sloughs, side channels, river lakes or backwaters. It is hoped that this report will provide a standard for fisheries workers in preparing river literature. In addition, the habitat maps should prove useful to persons desiring knowledge of a certain section of the river for scientific or recreational purposes.

**Keywords:** Upper Mississippi River, Habitat, Survey, Slough, Side channel, Backwater

STERNBERG, R. B. 1970. Investigations on the suitability of striped bass (*Morone saxatilis*) for introduction in Lake Pepin. Unpublished typewritten report to Fish Tech. Section of the U.M.R.C.C. 2 pp.

**Abstract:** The concern of primary importance is the effect a successful introduction of striped bass will have on native high value fish species. It cannot be stated with complete certainty what the impact will be but the history of successful introductions in other states indicates that native high value predator species have not been noticeably affected. It is expected that the abundance of individual species and composition of the fish population would not be excessively altered because of the high productivity of the water in question and the high abundance of a large number of species. If the introduction is successful, it should convert large amounts of abundant forage into a high value sport fish without excessive competition or suppression of other high value predator species.

**Keywords:** Fish, Lake Pepin, Striped bass

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STERNBERG, R. 1974. Angler Creel census of Pools 4 and 5 of the Mississippi River, 1972-1973. Minn. Dept. Nat. Res, Div. Fish Wildl. Sect. Fish, Invest. Rpt. No. 331. Unpubl.

**Abstract:** A quantitative creel census conducted in Pool 4 (38,820 acres) and Pool 5 (12,580 acres) of the Mississippi River from April 1, 1972 to March 31, 1973 showed that 39 percent of the anglers resided in Minnesota or Wisconsin counties bordering these pools.

Annual fishing pressure was estimated at 477,694 man hours (12.3 m.h./acre) in Pool 4 and 249,324 man hours (19.8 m.h./acre) in Pool 5.

In both pools, most of the fishing was done from boats (66.1 percent in Pool 4 and 35.7 percent in Pool 5). In Pool 5 much fishing was also done from a privately owned fishing barge (32.5 percent).

Still fishing with natural bait was the most popular method in both pools. The average catch rate for all seasons was .65 fish per man hour in Pool 4 and .68 fish per man hour in Pool 5.

Sauger, walleye, bluegill, crappie and white bass were the predominant species in both pools.

The estimated total harvest was 312,072 fish weighing 301,730 pounds in Pool 4 (7.8 pounds per acre) and 168,937 fish weighing 171,195 pounds (13.6 pounds per acre) in Pool 5.

Direct expenditures by fishermen were estimated at \$861,972 in Pool 4 and \$393,120 in Pool 5.

**Keywords:** Creel census, Pools 4 and 5, Sport fishing

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**Abstract:** Written request sent; unable to locate.

**Keywords:** Phytoplankton

SURBER, T. 1913. Manuscript report of the Director of the Biological Station at Fairport, Iowa, dated July 17, 1913, and describing observations at Keokuk, Iowa.

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**Abstract:** Insufficient citation; could not locate.

**Keywords:** Iowa, Survey, Fishing

SWANSON, S. D., and S. H. SOHMER. 1977. The vascular flora of a typical portion of the present Upper Mississippi River. Pap. pres. at Upper Mississippi River. Res. Consortium., June 8-10, Winona, MN.

**Abstract:** Written request sent; abstract unavailable.

**Keywords:** Vegetation, Aquatic plants, Macrophytes

HAZLETON ENVIRONMENTAL SCIENCES

TADEMA, J. 1971. The Shell Oil-Sinker Method. Symp. on Ocean Exploitation Bordeaux France, March 1971.

Abstract: Insufficient citation; could not locate.

Keywords: Pollution, Petroleum

TATINCLAUX, J. C. 1974. Bathymetric survey of the Mississippi River in the vicinity of the proposed location of the blow-down discharge structure of the Carroll County Power Station. Iowa Inst. of Hydraulic Research. Iowa City, 30 p. Prepared for Commonwealth Ed. Co., Chicago, Ill.

Abstract: IIHR visited; report unavailable.

Keywords: Discharge, Thermal effluent, Iowa, Survey, Hydrology

THIEL, P. 1977. Age, growth and food habits of 4 selected minnows from navigation Pool 8 of the Upper Mississippi River. M.S. Thesis, Univ. Wis., LaCrosse, WI.

Abstract: Written request sent; could not locate.

Keywords: Age and growth, Food habits, Minnows, Pool 8

THIMSEN, D. J. and C. F. SAMUELSON. 1949. Report on the follow-up investigation of the Upper Mississippi River, Jan 1-18, 1949. Minn. Dept. Health., Div. Water Poll. Control. Mimeo.

Abstract: Written request sent; no response.

Keywords: Research, Upper Mississippi River

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Abstract: Written request sent; could not locate.

Keywords: Waterfowl, Hunting, Ducks, Geese

THOMPSON, J. D. and W. F. GALE (undated). Feeding ecology of diving ducks on Keokuk Pool, Mississippi River. (Manuscript for J. Wildl. Mgmt.).

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Abstract: Insufficient citation; could not locate.

Keywords: Food habits, Ducks, Waterfowl, Diving ducks

TIFFANY, L. H. 1921. The gizzard shad in relation to plants and game fishes. Trans. Amer. Fish. Soc. 50, pp. 381-386.

Abstract: Written request sent; could not locate.

Keywords: Fish, Vegetation, Aquatic plants, Gizzard shad

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Abstract: Corps offices visited in St. Paul, St. Louis and Rock Island; could not locate.

Keywords: Lock and Dam 26, Sedimentation

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Abstract: Written request sent; no response.

Keywords: History, Dam, Closing structure

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Abstract: Corps offices in St. Paul, St. Louis and Rock Island visited; could not locate.

Keywords: Sediment

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Abstract: Written request sent; no response.

Keywords: Waterfowl, Food habits, Upper Mississippi River Wildlife and Fish Refuge

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Abstract: Insufficient citation; could not locate.

Keywords: Commercial fishing, Pool 9, Fish

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Keywords: Sport fishing

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Keywords: Hydrology, Minnesota

WILSON, C. S. 1950. Water use problems and wildlife values. Minn. Dept. Cons., Div. of Waters, Bull. 3.

Abstract: Written request sent; no response.

Keywords: Wildlife

WINTER, T. C. and R. F. NORWITCH. 1972. Field trip guidebook for the hydrology of the Twin Cities artesian basin. Guidebook series No. 8. Mn. Geol. Surv. 35 pp.

Abstract: This field trip focuses on several of the more significant aspects of the hydrogeology of the Minneapolis-St. Paul (Twin Cities) area. Emphasis is placed on the principal bedrock aquifer and the role of glacial drift in the hydrology. Stops include field examination of the Jordan-Prairie du Chien aquifer, a well-screen manufacturing plant and its research well field, views of surface expression of partly buried bedrock valleys, an artificial-recharge site where experiments were run on deep-well water injection into the Prairie du Chien Group (Carbonate Rock), and a site where ground water discharges as a large spring from the Prairie du Chien Group. Although much glacial geology is seen along the trip route, emphasis is placed on the drift-filled bedrock valleys.

Keywords: Hydrology, Minnesota, Geology

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Abstract: Insufficient citation; could not locate.

Keywords: Iowa, Wisconsin, Fishing

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Abstract: Insufficient citation; could not locate.

Keywords: Pollution

WU, C. K. 1968. An Economic Investigation of the Problem of Water Quality Management in the Twin Cities - Upper Mississippi River Area. Ph.D. Thesis, Univ. Minn. 241 pp.

Abstract: Written request sent; no response.

Keywords: Upper Mississippi River, Water quality, Minnesota

HAZLETON ENVIRONMENTAL SCIENCES

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Abstract: Written request sent; could not locate.

Keywords: Illinois, Flood, River bottom

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Abstract: An article on the history, industry, and recreation of the Missouri River from its source in Montana to where it empties into the Mississippi.

Keywords: Missouri River, History, Recreation

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Keywords: Flooding

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Keywords: Walleye, Sauger, Survey

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Abstract: Insufficient citation; could not locate.

Keywords: Survey, Upper Mississippi River, Flooding

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Keywords: Thermal effluent, Pollution, Water quality, Nuclear power

○ BOARD OF ENGINEERS FOR RIVERS AND HARBORS. 1976. Locks and Dam No. 26 (Replacement), Mississippi River, Alton, Illinois. 24 February 1976.

Abstract: Insufficient citation; could not locate.

Keywords: Lock and Dam 26, Illinois

COMMONWEALTH EDISON COMPANY. 1973. Quad-Cities Station, Units 1 and 2. Hypochlorination Test Program. Chicago, Ill. 33 p.

Abstract: Phone request; no response.

Keywords: Water quality, Nuclear power

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Abstract: Phone request; no response.

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Keywords: Survey, Water quality, Nuclear power

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION. 1965. Summary and pollution abatement, recommendations for the Upper Mississippi River and major tributaries. USDI, FWPCA, Twin Cities-Upper Miss. River Proj. 41 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Pollution, Upper Mississippi River, Water quality

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION. 1966. Upper Mississippi River basin project study plan for the comprehensive water pollution control program.

Abstract: Insufficient citation; could not locate.

Keywords: Upper Mississippi River, Pollution, Water quality, Survey

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION. 1967. A report on the immediate water pollution control needs of the Upper Mississippi River main stem - Minnesota, Wisconsin and Iowa.

Abstract: Insufficient citation; could not locate.

Keywords: Upper Mississippi River, Pollution, Water quality, Minnesota, Wisconsin, Iowa

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION. 1969. Mississippi River study - report of sampling from Dubuque to Bellevue, Iowa: September 15 to 26, 1969. Lake Michigan Basin Office, U.S. Dept. of the Interior, Chicago, Illinois. 18 pp.

Abstract: During the period from July 22 to August 1, 1969 the Federal Water Pollution Control Administration conducted a two-week reconnaissance and sampling survey of the Mississippi River from Dubuque, Iowa to below Keokuk, Iowa.

On the basis of this initial study, it was recommended that additional, more intensive studies be conducted at a number of areas where evidence of water pollution was found.

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The stretch of the Mississippi River from Dubuque to Bellevue, Iowa was selected as the site of one of these intensive studies for two major reasons.

The first was that of Iowa Water Pollution Control Commission had itself schedule studies for a number of the areas pointed at by the initial survey and it was felt that there was no need to duplicate the proposed state effort. The second reason was that Dubuque was already in the process of installing secondary treatment so that a study conducted before the secondary plant went on line would provide valuable baseline data for assessing improvements in water quality.

The study consisted of chemical, biological and microbiological sampling at seven river transects for the period September 15 to September 26, 1969.

The Iowa Water Pollution Control Commission has designated the Mississippi River for recreation and warm water aquatic life uses and, therefore, it must meet the water quality standards established to protect those uses. In the following discussion of the study's findings sampling data is related to those standards.

**Keywords:** Survey, Iowa, Water quality

FEDERAL WATER QUALITY ADMINISTRATION. 1964. Proceedings of the conference in the matter of pollution of the interstate and intrastate waters of the Upper Mississippi River and its tributaries - Minnesota-Wisconsin.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Minnesota, Wisconsin, Upper Mississippi River, Pollution, Water quality

FEDERAL WATER QUALITY ADMINISTRATION. 1965. Report on existing and potential conditions of the interstate waters of the St. Croix River from Prescott, Wisconsin to Stillwater, Minnesota. February, 1965.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Wisconsin, Minnesota, Water quality

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FEDERAL WATER QUALITY ADMINISTRATION. 1969. Water supply and water quality control study, Minnesota River basin reservoirs, Minnesota-South Dakota-Iowa. July, 1969.

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Keywords: Minnesota, Iowa, Water quality

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Keywords: Fish

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Abstract: Written request sent; could not locate.

Keywords: Illinois, Fish, Sport fishing

ILLINOIS DEPARTMENT OF CONSERVATION. 1958a. Review of Proposed Access Areas for the Mississippi River.

Abstract: Written request sent; could not locate

Keywords: Survey

ILLINOIS DEPARTMENT OF CONSERVATION. 1958b. Management Plan. General Plan and Cooperative Agreement Lands Mississippi River.

Abstract: Written request sent; could not locate

Keywords: Habitat management, Survey

ILLINOIS DEPARTMENT OF CONSERVATION. 1962. 1962 Mississippi River sport fishing creel census procedures. Div. Fish., Springfield. 17 pp + App.

Abstract: The Upper Mississippi River Conservation Committee consisting of the conservation agencies from the State of Minnesota, Wisconsin, Iowa, Missouri and Illinois will conduct a co-ordinated sport fishing creel census during 1962. This creek is being concentrated on a few pools of the Mississippi River in order to obtain more reliable data. The pools that will be worked in 1962 are:

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Illinois	Pools 13 and 26
Iowa	Pools 11 and 18
Wisconsin	Pool 7
Minnesota	Pools 4 and 5

The creel is being co-ordinated so the procedure for data collection by each individual state is the same. This study is being planned for the same pools and sections within the pools every 5 years. The schedule for the creel census, and procedure for the fishermen count, creel census, catch study and aerial counts is outlined.

**Keywords:** Sport fishing, Creel census, Pools 4, 5, 7, 11, 13, 18 and 26

ILLINOIS DEPARTMENT OF CONSERVATION. 1964. Illinois fishing guide. Div. of Fish., Springfield, 44 pp.

**Abstract:** Written request sent; could not locate.

**Keywords:** Fishing, Sport fishing, Illinois

ILLINOIS DEPARTMENT OF CONSERVATION. 1972. Recommended fishermen access sites and potential surface water reservoirs. Spec. Fish. Rept. 34. 21 pp.

**Abstract:** Written request sent; could not locate.

**Keywords:** Fishing, Sport fishing, Reservoir

ILLINOIS DEPARTMENT OF CONSERVATION. 1973a. 1972 Mississippi River - Pool 13 Sport Fishing Creel Census. Special Report No. 38. Div. of Fisheries.

**Abstract:** Written request sent; could not locate.

**Keywords:** Survey, Creel census, Sport fishing, Illinois, Pool 13

ILLINOIS DEPARTMENT OF CONSERVATION. 1973b. Rare and Endangered fish of Illinois.

**Abstract:** Written request sent; could not locate.

**Keywords:** Rare species, Endangered species, Fish, Illinois

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ILLINOIS DEPARTMENT OF CONSERVATION. 1977. Replacement of Alton Locks and Dam 26: An interim report of the DOT to the Subcommittee on water resources of the Senate Public Works Committee. March.

Abstract: Written request sent; could not locate.

Keywords: Lock and Dam 26

ILLINOIS DEPARTMENT OF TRANSPORTATION. 1975. The replacement of Alton Locks and Dam 26: An advisory report of the DOT to the Senate Commerce Committee September.

Abstract: Insufficient citation; could not locate.

Keywords: Lock and Dam 26

IOWA CONSERVATION COMMISSION. 1960. Comparison between Iowa's quantitative and qualitative creel census, Mississippi River - 1960 (ana) Age class analyses, Mississippi trap - netting survey - 1960. Mimeo, unpublished. 5 pp.

Abstract: Office visited; could not locate

Keywords: Iowa, Fish, Creel census, Age and growth, Survey

IOWA CONSERVATION COMMISSION. 1971. Iowa canoe trips. 14 pp.

Abstract: A discussion of canoeing areas in Iowa. Sections of streams and rivers are described as to the history, habitat, access to stream and any dam or rapids. Maps of the sections are given.

Keywords: Iowa, Recreation

IOWA STATE HYGIENIC LABORATORY. 1969a. Mississippi River water quality survey report - Davenport, Iowa - river miles 464.0 - 493.0 Report No. 70-7. Iowa City, Ia. 48 pp.

Abstract: The river reach encompassed by this survey is surrounded by the most heavily populated area existing on the Iowa reach of the Mississippi River. On the Iowa side of the river are the cities of Davenport and Bettendorf and on the Illinois side are East Moline, Moline and Rock Island. There are two Mississippi River pools most intimately involved in this area. Pool 15 is 10

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miles long and is bordered upstream by Lock and Dam 14 at Le Claire and downstream by Lock and Dam 15 at Davenport. Pool 16 extends from Davenport for 26 miles to Lock and Dam 16 at Muscatine, Iowa.

Davenport lies approximately in the center of a 56 mile reach of river which receives the most intensive waste loading of the entire Iowa reach. Clinton, which is approximately 30 river miles upstream from Davenport discharges 302,000 population equivalents. Davenport - Bettendorf discharges approximately 210,000 population equivalents and 26 miles downstream, Muscatine discharges 300,000 population equivalents. This represents a total of 812,000 population equivalents from Iowa industries and municipalities in a 56 mile long reach of the river or 52% of the total waste loading into 18% of the total Iowa reach of 312 miles. This does not include the quantities of waste discharged by the three Illinois cities across the river from Davenport.

This is not the first study which has been made in the Davenport area. In September, 1968, samples were taken primarily to determine channel water quality and to evaluate the heat contribution of the Riverside Power Plant. In February, 1969, the area was surveyed again with more emphasis placed on evaluating the chemical and bacteriological effects of the Davenport Sewage Treatment Plant discharge on the river while it was largely ice-covered. The results of both these studies were reported to the Iowa Water Pollution Control Commission shortly after their completion and also appear in Appendix A and B to this report.

Flow in the river at the time of chemical and bacteriological sampling was relatively low. Information from the U.S. Corps of Engineers indicated that the discharge rates at Lock and Dam 14 were 34,700 cfs and 33,800 cfs on September 2 and 3 respectively. This is a flow comparable to that which existed during the February study.

**Keywords:** Water quality, Iowa, Survey, Pools 15 and 16, Flow

**IOWA STATE HYGIENIC LABORATORY.** 1969b. Mississippi River water quality survey report - Muscatine, Iowa area - river miles 439.5 - 456.3. Submitted to the Iowa Water Pollution Control Commission. Iowa City, Iowa. Mimeo. 27 pp.

**Abstract:** Lab visited; could not locate.

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Keywords: Iowa, Water quality, Survey

IOWA STATE HYGIENIC LABORATORY. 1969c. Mississippi River water quality survey report - Clinton, Iowa area - river miles 501.2 - 517.6. Submitted to the Iowa Water Pollution Control Commission. 32 pp.

Abstract: Lab visited; could not locate.

Keywords: Survey, Iowa, Water quality

IOWA STATE HYGIENIC LABORATORY. 1969d. Mississippi River water quality survey report - Fort Madison, Iowa area - river miles 377.3 - 383.3. Submitted to the Iowa Water Pollution Control Commission. Iowa City, Iowa. Mimeo. 29 pp.

Abstract: Ft. Madison and its associated industries are located on the largest pool of the upper Mississippi River. Pool 19 is 47 miles in length bounded by lock and dam 18 to the north near Gladstone, Illinois, and lock and dam 19 to the south of Keokuk. Insofar as commercial fishing is concerned, pool 19 is one of the three top producing pools for total species and heads the list for commercial catch in catfish, based on a twelve year average.

Ft. Madison is located about 16 river miles upstream from Keokuk or, in other words, two-thirds of the way down pool 19. The river in the Ft. Madison area is geographically quite different than the areas previously studied at Clinton and Muscatine. It spreads out immediately downstream from Ft. Madison, reaching a width of more than 2 miles in the study area, and begins to take on the characteristics of a lake, rather than a river. This situation plus location of the Crandon Paper Mill and Ft. Madison Treatment Plant provided a unique set of circumstances which will be discussed later in this report.

Other than casual observation, the first studies made by the Limnology Division were last February, when the river was primarily ice-covered and ice conditions were such that it was impossible to collect samples from more than a few locations. This was done and analytical results indicated that the Crandon Paper Mill and the Ft. Madison sewage treatment plant wastes were causing elevated fecal coliform bacterial counts in the area plus increases in the biochemical oxygen demand and

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significant depressions in dissolved oxygen concentrations although the Iowa Water Quality Standards for ammonia and dissolved oxygen were not being violated.

In early June, 1969, a biological investigation was made in the Ft. Madison area and a follow-up chemical and bacteriological water quality investigation was made in early August. The findings of these studies are reported here.

**Keywords:** Water quality, Survey, Iowa, Pool 19

IOWA STATE HYGIENIC LABORATORY. 1970. Report on Schricker Slough fish-taint episode. Rept. No. 70-30. Clinton, Iowa. 6 p.

**Abstract:** After reports from fishermen that their cooked fish had a foul odor, investigations were conducted on Schricker Slough and Rock Creek. On-site tests revealed a "slug" of contaminated water moving slowly through the ice-covered slough. Because the odor of the tainted samples was similar to that in the vicinity of the Chemplex Company they were contacted to discuss the possibility of a spill from their firm. Limnologists conducted investigations on the effluents and drainage from the plant and found no breaks, leaks or spills. It was later discovered that tank trucks hauling compounds from Chemplex were flushed and steamcleaned, with the drainage and runoff flowing directly into Rock Creek.

**Keywords:** Slough, Fish, Pesticides

IOWA STATE HYGIENIC LABORATORY. 1971a. Pesticide residues in the eggs of some Iowa fish. Report No. 72-6. Iowa City, Iowa, 5 p.

**Abstract:** Lab visited; could not locate.

**Keywords:** Pesticides, Fish, Iowa

IOWA STATE HYGIENIC LABORATORY. 1971b. Report of the Quad-Cities Nuclear Plant hearing regarding effects of thermal wastes on the Mississippi River. Submitted to the Iowa Water Pollution Control Commission.

**Abstract:** Lab visited; could not locate.

**Keywords:** Pool 14, Illinois, Iowa, Lock and Dam 13 and 14, Slough, Nuclear power

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IOWA WATER POLLUTION CONTROL COMMISSION. 1966. Iowa water pollution control law-Code of Iowa 1966. (Printing of chapters 455B, water pollution control referred to in 455.22 - pesticides, 206.3, subsection 2d and miscellaneous provisions.) State Dept. of Health, Des Moines, Iowa. 15 pp.

Abstract: Written request sent; could not locate.

Keywords: Iowa, Water quality

IOWA WATER POLLUTION CONTROL COMMISSION. 1967. Water quality criteria and plan for implementation and enforcement for the surface waters of Iowa. Adopted by the Iowa Water Pollution Control Commission, State Dept. of Health, May 1967. Des Moines, Iowa. 90 pp.

Abstract: Written request sent; could not locate.

Keywords: Iowa, Water quality

IOWA WATER POLLUTION CONTROL COMMISSION. 1968. Water quality criteria and plan for implementation and enforcement for the surface waters of Iowa. Adopted by the Iowa Water Pollution Control Commission, State Dept. of Health, May 1967. Des Moines, Iowa. (Revised June 1, 1968.) 89 pp.

Abstract: Written request sent; could not locate.

Keywords: Iowa, Water quality

IOWA WATER POLLUTION CONTROL COMMISSION. 1969. Statement - In support of the Iowa water quality standards and plan for implementation and enforcement - Mississippi River basin. Iowa Water Pollution Control Commission, State Dept. of Health., Des Moines, Iowa. April 1969. 20 pp.

Abstract: Written request sent; could not locate.

Keywords: Iowa, Water quality

METROPOLITAN COUNCIL. 1969. Major river corridor study. An inventory of physical features and facilities within the major river corridors in the Twin Cities Metropolitan Area (Appendix A). Metro. Council. 46 pp.

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Abstract: Insufficient citation; could not locate.

Keywords: Minnesota, Geology, Channelization

METROPOLITAN COUNCIL. 1975. Study of solid waste management and resources recovery in the Twin-Cities Metropolitan Area. Summary, Conclusions, and Recommendations. Metro. Council. 24 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Minnesota, Survey

METROPOLITAN DRAINAGE COMMISSION OF MINNEAPOLIS AND ST. PAUL. 1928. Second Annual Report Sewage Disposal of Minneapolis, St. Paul and Contiguous Areas. 12 pp.

Abstract: Insufficient citation; could not locate.

Keywords: Minnesota, Water quality, Pollution

METROPOLITAN PLANNING COMMISSION. 1960. Metropolitan water study, part I. Report 3, Twin-Cities, Minnesota.

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Keywords: Minnesota, Survey, Water quality

MINNEAPOLIS-ST. PAUL SANITARY DISTRICT. 1964. Summary report on a comprehensive sewage works plan for the Minneapolis-St. Paul metropolitan area.

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Keywords: Minnesota, Urbanization, Water quality

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Abstract: Written request sent; no response.

Keywords: Pollution, Water quality

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Abstract: Office visited; could not locate.

Keywords: Limnology, Survey, Minnesota

MINNESOTA DEPARTMENT OF CONSERVATION. 1963. Waterfowl mortality caused by oil pollution of the Minnesota and Mississippi Rivers in 1963. Minn. Dept. Cons. Div. Game Fish. Mimeo. report.

Abstract: Written request sent; no response.

Keywords: Waterfowl, Pollution, Minnesota River, Minnesota, Mortality

MINNESOTA DEPARTMENT OF CONSERVATION. 1964. Game and fish values of the Mississippi River between the Rum River at Anoka and the Chippewa River below Lake Pepin. State of Minnesota, Dept. Cons., Div. Game Fish, Mimeo.

Abstract: Written request sent; no response.

Keywords: Game, Fish, Survey, Lake Pepin, Wisconsin, Minnesota

MINNESOTA DEPARTMENT OF HEALTH. 1928. Report of the investigations of pollution of the Mississippi River, Minneapolis-St. Paul to LaCrosse.

Abstract: Written request sent; no response.

Keywords: Survey, Pollution, Water quality

MINNESOTA DEPARTMENT OF HEALTH. 1933. Bacteria and water quality data. Unpublished.

Abstract: Written request sent; no response.

Keywords: Bacteria, Water quality, Survey

MINNESOTA DEPARTMENT OF HEALTH. 1940. Biological examination of sediments, St. Cloud to Fridley. Unpublished.

Abstract: Written request sent; no response.

Keywords: Survey, Limnology, Minnesota, Sediment

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MINNESOTA DEPARTMENT OF HEALTH. 1947. Phytoplankton data from Lock and Dam nos. 2, 3, 4, 5 and 6. Unpublished.

Abstract: Written request sent; no response.

Keywords: Phytoplankton, Survey, Lock and Dam Nos. 2-6, Minnesota

MINNESOTA DEPARTMENT OF HEALTH. 1948a. Phytoplankton data, Hastings to Lock and Dam 4. Unpublished.

Abstract: Written request sent; no response

Keywords: Phytoplankton, Survey, Lock and Dam 4, Minnesota

MINNESOTA DEPARTMENT OF HEALTH. 1948b. Mississippi River survey, Hastings to LaCrosse. Mimeo.

Abstract: Written request sent; no response.

Keywords: Survey

MINNESOTA DEPARTMENT OF HEALTH. 1953. Water pollution in the Upper Mississippi River Basin. U.S.H.E.W. Public Health Service Appendices.

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Keywords: Pollution, Water quality, Upper Mississippi River

MINNESOTA DEPARTMENT OF HEALTH. 1958. Memorandum on investigation of radioactivity in the Mississippi River from Elk River to Hastings, July 22 - August 1, 1957 and July 22 - August 14, 1958. Minn. Dept. Health, Div. Environ. Sanitation, Sect. Water Poll. Control. Mimeo.

Abstract: Written request sent; no response.

Keywords: Minnesota, Water quality

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Abstract: Written request sent; no response.

Keywords: Minnesota, Water quality

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Abstract: Written request sent; no response.

Keywords: Minnesota, Survey, Water quality

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Abstract: Written request sent; no response.

Keywords: Survey, Minnesota

MINNESOTA DEPARTMENT OF NATURAL RESOURCES. 1973. Interstate operations of commercial fishing. Unpublished.

Abstract: Written request sent; no response.

Keywords: Minnesota, Commercial fishing

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Keywords: Survey, Management, Navigation

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Keywords: Fish, Wildlife, Creel census, Pools 7, 8 and 9

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Keywords: Fish, Wildlife, Creel census, Pools 7, 8 and 9

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Keywords: Water quality

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Keywords: Flooding, Water quality, Pollution

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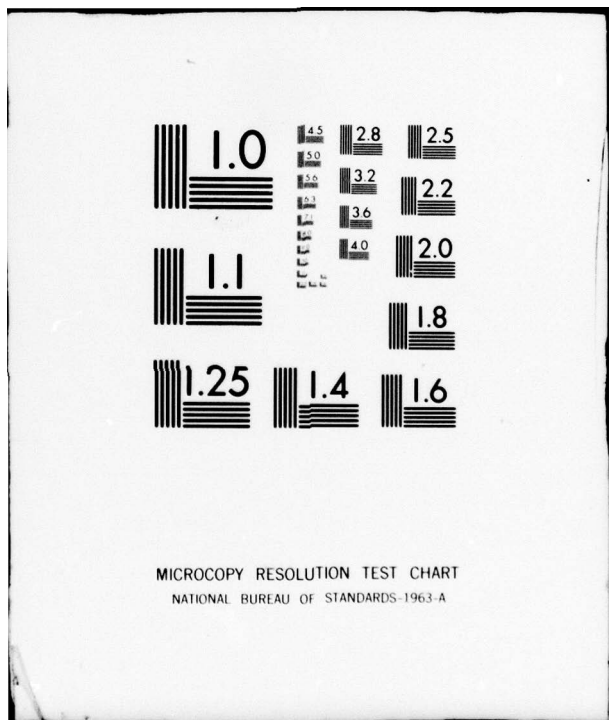
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Keywords: Survey, Navigation, Commercial boat traffic

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Keywords: Dredging, Pools 11-22, Channelization

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Keywords: Survey, Limnology, Thermal effluent, Plankton

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**Keywords:** Pools 24, 25, 26, Illinois River

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**Keywords:** Ohio River, Missouri River

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**Abstract:** This report provides a broad comparative analysis of the quantitative and qualitative changes in fish and wildlife habitat resulting from construction, operation, and maintenance of the Nine-Foot Channel Navigation project on the Upper Mississippi River. This particular report was designed to develop an assessment of the extent and condition of various terrestrial and aquatic habits prior to channel construction (1927) and to equate condition 48 years (1975) later. The specific objectives of the study are:

1. To determine changes in the area of aquatic terrestrial habitat types resulting from creation of the navigation pools.

2. To determine terrestrial habitat classes that were present prior to pool formation and were submerged by the pool as well as broad terrestrial habitat conditions that would eventually be above pool elevation within project boundaries and adjacent flood plain.

3. The determination of the broad aquatic habitat conditions existing prior to pool formation and the extent and condition of these habitats after pool formation.

**Keywords:** Habitat alteration, Navigation, Channelization, Upper Mississippi River, Pools 11-22, Survey

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Keywords: Lock and Dam 26, Upper Mississippi River, Missouri River, Illinois

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Keywords: Illinois, Lock and Dam 26, Survey

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Keywords: Navigation, Hydrology

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Keywords: Navigation

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Keywords: Navigation, Power, Survey, Flooding

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Keywords: Development

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Keywords: Navigation, Development

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Keywords: Upper Mississippi River, Survey, Illinois, Iowa, Min-  
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Keywords: Upper Mississippi River, Survey

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Keywords: Water quality, Chemistry

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Keywords: Water quality

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Keywords: Water quality

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Keywords: Fish

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Keywords: Commerical fishing

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Keywords: Chippewa River, Hydrology

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Abstract: Written request sent; no response.

Keywords: Upper Mississippi River, Flooding

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Abstract: Written request sent; no response.

Keywords: Hydrology

U.S. GEOLOGICAL SURVEY 1973. Water Resources Review for April 1973. 14 p.

Abstract: Written request sent; no response.

Keywords: Water quality, Hydrology

U.S. PUBLIC HEALTH SERVICE. Undated. National water quality network, annual compilation of data. Public Health Service Publication No. 663. Washington, D.C.

Abstract: Written request sent; no response.

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Keywords: Water quality, Survey

U.S. PUBLIC HEALTH SERVICE. 1963. Pollution - caused fish kills in 1963. Public Health Service Publication No. 847. Washington, D.C. 26 pp.

Abstract: Written request sent; no response.

Keywords: Pollution, Fish, Mortality, Toxicant

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Abstract: Insufficient citation; could not locate.

Keywords: Upper Mississippi River, Survey, Fish, Climatology, Hydrology, Recreation, Navigation, Geology

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Abstract: Insufficient citation; could not locate.

Keywords: Upper Mississippi River

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Abstract: Insufficient citation; could not locate.

Keywords: Upper Mississippi River

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE. 1948. Test netting in the northern section. Fifth Progress Rept. of Tech. Comm. for Fish, Dec 17, 1948.

Abstract: Insufficient citation; could not locate.

Keywords: Upper Mississippi River, Fish, Commercial fishing

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE. 1950a. Seasonal variations in the catch of experimental net. Sixth Prog. Rept. Tech. Comm. for Fish., Jan 20, 1950.

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**Abstract:** Insufficient citation; could not locate.

**Keywords:** Fish, Commercial fishing, Survey

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE. 1950b. Catfish tagging experiment.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Fish, Commercial fishing, Survey

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE. 1950c. Proceedings of the sixth annual meeting of the Upper Mississippi River Conservation Committee. Sixth Progress Rept. of the Tech. Comm. for Fish. Jan., 1950. Mimeo., pp 1-36.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Upper Mississippi River

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE. 1957. Supplemental report Fish Technical Sub-Committee. Supplement to the Proc. 13th Ann. UMRCC Mtg. (Jan. 4, 1957). 147 pp.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Fish, Upper Mississippi River

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE. 1967. AS compendium of fishery information on the Upper Mississippi River Conservation Committee. Iowa Conservation Commission, Des Moines. 225 p.

**Abstract:** Insufficient citation; could not locate.

**Keywords:** Upper Mississippi River, Fish

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE. 1969. 25 years of conservation through cooperation. Upper Mississippi River Conservation Committee, Davenport, IA. (Leaflet). 16 pp.

**Abstract:** Insufficient citation; could not locate.

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Keywords: Upper Mississippi River

UPPER MISSISSIPPI VALLEY WATER USE COUNCIL. 1945. Proceedings of the organizational meeting.

Abstract: Insufficient citation; could not locate.

Keywords: Upper Mississippi River, Regulations

WISCONSIN DEPARTMENT OF NATURAL RESOURCES. 1891-92, 1907-18, 1934, 1937, 1947. Biennial reports (was Commissioner of Fisheries of Wisconsin, then Wisconsin State Conservation Department).

Abstract: Office visited; could not locate.

Keywords: Wisconsin, Commercial fishing

WISCONSIN DEPARTMENT OF NATURAL RESOURCES. 1971. Bibliography of Freshwater Wetlands Ecology and Management. Dept. of Nat. Res. Preliminary Draft. 230 pp.

Abstract: Office visited; could not locate.

Keywords: Wisconsin, Ecology, Vegetation, Management

WISCONSIN-LACROSSE, UNIVERSITY OF, 1975. Simulation model study navigation pool no. 8. Interim Rept, Dec. 63 pp.

Abstract: Written request sent; no response.

Keywords: Models, Navigation, Pool 8

KEYWORD THESAURUS

I. BIOLOGICAL KEYWORDS

I. BIOLOGICAL KEYWORDS

ABUNDANCE

Individual Authors

Eckblad et al. 1976

BIOLOGICAL KEYWORDS

AGE AND GROWTH

Individual Authors

Ammerman 1975  
Eckblad et al. 1976  
Eddy & Carlander 1971  
Hall et al. 1975  
Jorgens & Childers 1989  
Total 1977

Species

Is. Core. Data. 1989

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

AGE AND GROWTH

Individual Authors

Ammerman 1975  
Eckblad et al. 1976  
Eddy & Carlander 1942  
Hall et al. 1975  
Jergens & Childers 1959  
Thiel 1977

Agencies

Ia. Cons. Comm. 1960

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

AMPHIBIANS

Individual Authors

Bruton 1971

Agencies

U.S. Dept. Int. 1970

BIOLOGICAL KEYWORDS

AQUATIC PLANTS

INDIVIDUAL AUTHORS

Green 1971

Moyle 1981

Swanson & Swanson 1977

Tilley 1971

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

AQUATIC PLANTS

Individual Authors

Green 1947  
Moyle 1961  
Swanson & Sohmer 1977  
Tiffany 1921

BIOLOGICAL KEYWORDS

I. BIOLOGICAL KEYWORDS

BACTERIA

Individual Authors

Grimes 1976

Agencies

Minn. Dept. Health 1933

Individual Authors

Excerpt 1976  
Excerpt et al. 1976  
Elstad 1977  
Eink 1980  
Huschke 1988  
McConville 1972  
Kels & Westley 1972  
Simpson 1974

I. BIOLOGICAL KEYWORDS

BENTHOS

Individual Authors

Eckblad 1974  
Eckblad et al. 1976  
Elstad 1977  
Finke 1966  
Heuschele 1968  
McConville 1972  
Reis & Wheatley 1978  
Simpson 1914

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

BIBLIOGRAPHY

Individual Authors

Gregory 1918  
McDonald 1977a

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

BIRDS

Individual Authors

Dodge et al. 1972  
Moyle 1940

Agencies

U.S. Dept. Commerce 1973

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

CLAMS

Individual Authors

Havlik 1977a  
Havlik 1977b  
Havlik 1977c  
Holzinger 1887  
Marking & Bills 1977  
Mathiak 1978  
Pahl 1969

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

COMMERCIAL FISHING

Individual Authors

Kernan 1951  
Kernan 1952a  
Kernan 1952b  
Verdon 1974

Agencies

Minn. Dept. Nat. Res. 1973  
U.S. Army Corps. Eng. Undated  
U.S. Comm. Fish. 1894  
U.S. Comm. Fish. 1910  
U.S. Comm. Fish. 1912  
U.S. Comm. Fish. 1916  
U.S. Fish & Wildl. Serv. 1952  
Upper Miss. Riv. Cons. Comm. 1948  
Upper Miss. Riv. Cons. Comm. 1950a  
Upper Miss. Riv. Cons. Comm. 1950b  
Wis. Dept. Nat. Res. 1891-1947

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

CREEL CENSUS

Individual Authors

Cleary 1958  
DeCook & Cleary 1960  
Greenbank 1957  
Line & McDonald 1973  
Sternberg 1974

Agencies

Ill. Dept. Cons. 1962  
Ill. Dept. Cons. 1973a  
Ia. Cons. Comm. 1960  
Miss. Riv. Work Unit 1976  
Miss. Riv. Work Unit 1977  
Miss. Riv. Work Unit 1978

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

DISTRIBUTION

Individual Authors

Cleary 1958  
Green 1947  
Gudmundson et al. 1974  
Havlik 1978b  
Havlik 1979a  
Havlik & Stansbery 1977  
Jordan & Brown 1967  
Lopinot & Smith 1973

Agencies

Miss. Fly. Coun. 1958

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

DIVING DUCKS

Individual Authors

Nicklaus & Merz 1976

Thompson & Gale (Undated)

**HAZLETON ENVIRONMENTAL SCIENCES**

I. BIOLOGICAL KEYWORDS

- DUCKS

Individual Authors

Geis 1971  
Geis & Carney 1961  
Kyre 1966  
Thompson & Jedlicka 1948  
Thompson & Gale (Undated)

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

ECOLOGY

Individual Authors

Barnickol 1958  
Eckblad 1974  
Eckblad 1978  
Green 1960  
Gudmundson et al. 1974  
Hart & Fuller 1974  
Lewis 1977  
Miller et al. 1973  
Niemuth et al. 1962

Agencies

U.S. Congress, Senate. 1948  
Wis. Dept. Nat. Res. 1971

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

ENDANGERED SPECIES

Individual Authors

Havlik 1978a  
Havlik & Stansbery 1977  
Lopinot & Smith 1973

Agencies

Ill. Dept. Cons. 1973b

## HAZLETON ENVIRONMENTAL SCIENCES

### I. BIOLOGICAL KEYWORDS

#### FISH

##### Individual Authors

Ammerman 1975  
Bailey, R.M. 1951  
Bailey, R.M. 1956  
Bailey, R.M. & Speaker 1946  
Barney 1924  
Bertrand 1974  
Bertrand 1976  
Bertrand & Dunn 1973  
Brehmer 1953  
Cleary 1958  
Cleary & Pierce 1960  
Coker 1923  
Cox 1897  
Daley 1961  
Eddy & Carlander 1942  
Eddy et al. 1963  
Ellis 1931  
Fry 1962  
Gibbs 1869  
Greenband 1950  
Hanson 1956  
Harlan & Speaker 1969  
Hubley 1960  
Jergens & Childers 1959  
Jordan & Evermann 1908  
Kline & McDonald 1973  
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Lopinot & Smith 1973  
McDonald 1977a  
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Moyle 1940  
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Sternberg 1970  
Tiffany 1921  
Verdon 1974

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Fish. Comm. Ill. 1884-1908  
Ill. Dept. Cons. 1942  
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Ia. Cons. Comm. 1960  
Ia. St. Hyg. Lab. 1970  
Ia. St. Hyg. Lab. 1971a  
Minn. Dept. Cons. 1964  
Miss. Riv. Work Unit 1976  
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Mo. Fish Comm. 1879-1931  
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U.S. Comm. Fish. 1910  
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U.S. Dept. Int. 1973a  
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Upper Miss. Riv. Cong.  
Basin Study 1970  
Upper Miss. Riv. Cons. Comm.  
1948  
Upper Miss. Riv. Cons. Comm.  
1950a  
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1950b  
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1957  
Upper Miss. Riv. Cons. Comm.  
1967

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

FISHING

Individual Authors

Carlander & Carlander 1951  
Hanson 1956  
Harlan & Speaker 1969  
Kernan 1951  
Molamphy 1960  
Molamphy & Cleary 1959  
Pearse 1922  
Replinger 1974  
Surber 1913  
Woods 1951

Agencies

Ill. Dept. Cons. 1964  
Ill. Dept. Cons. 1972

I. BIOLOGICAL KEYWORDS

FOOD HABITS

Individual Authors

Bailey, V. 1930  
Cochran 1977  
Limpert & Vose 1976  
Thiel 1977  
Thompson & Gale (Undated)  
Uhler (circa 1929)

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

GAME

Agencies

Minn. Dept. Cons. 1964

BIOLOGICAL KEYWORDS  
FOOD HABITS  
Individual Agencies  
Buller, V. 1930  
Cooper 1977  
Linscott & Voss 1978  
Tilley 1977  
Thompson & Galt (undated)  
Wiley (1930)

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

GEESE

Individual Authors

Thompson & Jedlicka 1948

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

GIZZARD SHAD

Individual Authors

Tiffany 1921

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

HABITAT

Individual Authors

Bertrand & Dunn 1973  
Meyer 1975  
Meyer et al. 1977  
Shatford 1978  
Shodeen 1965  
Sternberg 1967

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

HABITAT MANAGEMENT

Individual Authors

Shatford 1978

Agencies

Ill. Dept. Cons. 1958b  
U.S. Congress, Senate 1948

I. BIOLOGICAL KEYWORDS

HUNTING

Individual Authors

Green 1963

Kyre 1966

Thompson & Jedlicka 1948

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

IDENTIFICATION

Individual Authors

Baily, R.M. 1951  
Bailey, R.M. 1951  
Hanson 1956  
Harlan & Speaker 1969  
Jordan & Evermann 1908

I. BIOLOGICAL KEYWORDS

INVERTEBRATES

Individual Authors

Carlson et al. 1959  
Dahlquist 1970  
Hart & Fuller 1974  
McConville 1972  
Moore 1912  
Moyle 1961  
Simpson 1914

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

LENGTH - WEIGHT

Individual Authors

Cochran 1977  
Greenbank 1950

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

LIFE HISTORY

Individual Authors

Eddy et al. 1963  
Hall et al. 1975  
Mathiak 1978  
Niemuth et al. 1962

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

LIMNOLOGY

Individual Authors

Eckblad 1978  
Marmer et al. 1976  
Mehta 1969  
Smith, P.W. 1973  
Sparks 1977

Agencies

Minn. Dept. Cons. 1959  
Minn. Dept. Health 1940  
U.S. Army Corps Eng. 1972b  
U.S. Dept. Commerce 1973

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I. BIOLOGICAL KEYWORDS

MACROPHYTES

Individual Authors

Green 1947

Swanson & Sohmer 1977

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

MALLARD

Individual Authors

Geis 1971

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I. BIOLOGICAL KEYWORDS

MAMMALS

Agencies

U.S. Dept. Int. 1968

BIOLOGICAL KEYWORDS

MANAGEMENT

Individual Authors

Clarke 1970

Decker 1970

Feagin 1968

Kennedy 1974

Niemuth et al. 1961

Agencies

Alaska State Dept. 1968-1984

U.S. Dept. Int. 1968

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HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

MANAGEMENT

Individual Authors

Clafin 1977b  
Decker 1970  
Feagin 1966  
Keenlyne 1974  
Niemuth et al. 1962

Agencies

Minn. Hist. Soc. 1866-1884  
Mo. Dept. Cons. 1977  
Wis. Dept. Nat. Res. 1971

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

MAYFLIES

Individual Authors

Carlson et al. 1959  
Hall et al. 1975  
Hall et al. (In press)

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I. BIOLOGICAL KEYWORDS

MIGRATION

Individual Authors

Eddy et al. 1963  
Shatford 1978

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Miss. Fly. Coun. 1958

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

MINNOWS

Individual Authors

Thiel 1977

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

MOLLUSKS

Individual Authors

Havlik 1977b  
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Havlik 1978a  
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Havlik 1979b  
Havlik & Stansbery 1977  
Holzinger 1887  
Larson 1961

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

MORTALITY

Agencies

Minn. Dept. Cons. 1963

U.S. Pub. Health Serv. 1963

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

MUSSELS

Individual Authors

Bailey, R.M. & Speaker 1946  
Eckblad et al. 1976  
Finke 1966  
Havlik 1977a  
Havlik 1977b  
Havlik 1977c  
Heard 1968  
Larsen & Holzer 1978  
Marking & Bills 1977  
Simpson 1914

Agencies

U.S. Dept. Int. 1913

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

PADDLEFISH

Individual Authors

Coker 1923

BIOLOGICAL KEYWORDS

PADDLEFISH

Individual Authors

Carlson & Al. 1923  
Hobley 1928  
Yaco 1928  
Larson 1931

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

PARASITES

Individual Authors

Carlson et al. 1959  
Hubley 1960  
Kudo 1929  
Larson 1961

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

PERIPHYTON

Individual Authors

Brook 1971

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

PHYTOPLANKTON

Individual Authors

Kuhl (Undated)  
Strenski (Undated)

Agencies

Minn. Dept. Health 1947  
Minn. Dept. Health 1948a

**HAZLETON ENVIRONMENTAL SCIENCES**

I. BIOLOGICAL KEYWORDS

PLANKTON

Individual Authors

Moyle 1940

Agencies

U.S. Army Corps. Eng. 1972b  
U.S. Dept. Commerce 1973

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

POPULATION

Individual Authors

Eckblad 1978  
McConville 1972

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

PRIMARY PRODUCTION

Individual Authors

Kuhl (Undated)

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

PRODUCTION

Individual Authors

Hall et al. (In press)  
Reis & Wheatley 1978

I. BIOLOGICAL KEYWORDS

RARE SPECIES

Individual Authors

Lopinot & Smith 1973

Agencies

Ill. Dept. Cons. 1973b

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I. BIOLOGICAL KEYWORDS

RECOLONIZATION

Individual Authors

Dahlquist 1970

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I. BIOLOGICAL KEYWORDS

REPRODUCTION

Individual Authors

Dahlquist 1970

Daley 1961

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

REPTILES

Individual Authors

Cochran 1977

Agencies

U.S. Dept. Int. 1970

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

RESEARCH

Individual Authors

Dahlquist 1970  
Thimsen & Samuelson 1949

Agencies

Nat. Wat. Qual. Lab. Undated-b

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

SAUGER

Individual Authors

Daley 1961

Agencies

Anonymous 1960

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

SHELLS

Individual Authors

Pahl 1969

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

SNAILS

Individual Authors

Carson 1961

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

SPECIES LIST

Agencies

U.S. Dept. Int. 1970

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

SPORT FISHING

Individual Authors

Bailey, R.M. & Speaker 1946  
DeCook & Cleary 1960  
Holzer & Ironside 1977  
King et al. 1961  
Klant & Vidal 1958  
Molamphy & Cleary 1959  
Sternberg 1974  
Von Shriltz 1950

Agencies

Ill. Dept. Cons. 1942  
Ill. Dept. Cons. 1962  
Ill. Dept. Cons. 1964  
Ill. Dept. Cons. 1972  
Ill. Dept. Cons. 1973a

I. BIOLOGICAL KEYWORDS

STANDING CROP

Individual Authors

Hall et al. (In press)

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

STRIPED BASS

Individual Authors

Skrypek & Sternberg 1978  
Sternberg 1970

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL - KEYWORDS

SUCCESSION

Individual Authors

Barclay 1924

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# HAZLETON ENVIRONMENTAL SCIENCES

## I. BIOLOGICAL KEYWORDS

### SURVEY

#### Individual Authors

Claflin 1973  
Degenhardt (no date)  
Dodge et al. 1972  
Ellis 1931  
Finke 1966  
Geis & Carney 1961  
Green 1963  
Gudmundson et al. 1974  
Havlik 1979b  
Heuschele 1968  
Jergens & Childers 1959  
Jordan & Brown 1967  
Klant & Vidal 1958  
Kline & McDonald 1973  
Kyre 1966  
Larsen & Holzer 1978  
Moyle 1940  
Nord 1958  
Owen 1952  
Shodeen 1965  
Skrypek 1966  
Sternberg 1967  
Surber 1913  
Tatinclaux 1974

#### Agencies

Anonymous 1960  
Anonymous 1965  
Com. Ed. Co. 1974  
Fed. Wat. Poll. Cont. Adm.  
1966  
Fed. Wat. Poll. Cont. Adm.  
1969  
Ill. Dept. Cons. 1958a  
Ill. Dept. Cons. 1958b  
Ill. Dept. Cons. 1973a  
Ia. Cons. Comm. 1960  
Ia. St. Hyg. Lab. 1969a  
Ia. St. Hyg. Lab. 1969b  
Ia. St. Hyg. Lab. 1969c  
Ia. St. Hyg. Lab. 1969d  
Metro. Coun. 1975  
Metro. Plan. Comm. 1960  
Minn. Dept. Cons. 1959  
Minn. Dept. Cons. 1964  
Minn. Dept. Health 1928  
Minn. Dept. Health 1933  
Minn. Dept. Health 1940  
Minn. Dept. Health 1947  
Minn. Dept. Health 1948a  
Minn. Dept. Health 1948b  
Minn. Dept. Health 1963  
Minn. Dept. Nat. Res. (Undated)  
Minn. Hist. Soc. 1866-1884  
Minn. Out. Rec. Res. Comm. 1964  
Minn. Poll. Cont. Agen. 1968a  
Minn. Poll. Cont. Agen. 1969  
Minn. Poll. Cont. Agen. 1970  
Minn. Poll. Cont. Agen. 1972b  
Mo. Bot. Gar. 1975  
Mo. Fish Comm. 1879-1931  
NOAA 1974  
No. St. Power Co. 1968-1969  
Sed. Lab. 1978  
U.S. Army Corps. Eng. 1970  
U.S. Army Corps. Eng. 1972a  
U.S. Army Corps. Eng. 1972b  
U.S. Army Corps. Eng. 1976b  
U.S. Army Corps. Eng. 1976d  
U.S. Comm. Fish. 1894  
U.S. Comm. Fish. 1910  
U.S. Comm. Fish. 1912  
U.S. Comm. Fish. 1916  
U.S. Congress, House,  
Commerce Comm. 1967a  
U.S. Congress, House,  
Commerce Comm. 1967b  
U.S. Congress, House, Riv.  
Harb. Comm. 1926  
U.S. Dept. Int. 1968  
U.S. Dept. Int. 1973b  
U.S. Dept. Int. 1977  
U.S. Pub. Health Serv.  
(Undated)  
Upper Miss. Riv. Comp.  
Basin Study 1970  
Upper Miss. Riv. Cons.  
Comm. 1950a  
Upper Miss. Riv. Cons.  
Comm. 1950b

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

TAXONOMY

Individual Authors

Bailey, R.M. 1951  
Bailey, R.M. 1956  
Moore 1912

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

TURTLES

Individual Authors

Cochran 1977

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

VEGETATION

Individual Authors

Bailey, V. 1930  
Barclay 1924  
Meyer 1975  
Moyle 1940  
Olson & Meyer 1976a  
Olson & Meyer 1976b  
Smith, S.G. 1969  
Swanson & Sohmer 1977  
Tiffany 1921

Agencies

Mo. Bot. Gar. 1975  
U.S. Army Corps Eng. 1964  
Wis. Dept. Nat. Res. 1971

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

WALLEYE

Individual Authors

Daley 1961  
Niemuth et al. 1962

Agencies

Anonymous 1960

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

WATERFOWL

Individual Authors

Connett 1949  
Geis 1971  
Green 1963  
Limpert & Vose 1976  
Moyle 1961  
Shatford 1978  
Thompson & Jedlicka 1948  
Thompson & Gale (undated)  
Uhler (circa 1929)

Agencies

Minn. Dept. Cons. 1963  
Miss. Fly. Coun. 1958

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

WHISTLING SWAN

Individual Authors

Limpert & Vose 1976

BIOLOGICAL KEYWORDS  
WATERFOWL  
Individual Authors  
Conner 1943  
Gelt 1971  
Green 1963  
Limpert & Vose 1976  
Moyls 1961  
Rosenfeld 1974  
Thompson & Jellison 1968  
Thompson & Jellison 1968  
Waterfowl 1974  
Appendix  
Miss. Rip. 1976

HAZLETON ENVIRONMENTAL SCIENCES

I. BIOLOGICAL KEYWORDS

WILDLIFE

Individual Authors

Hornaday 1931  
Shatford 1978  
Wilson 1950

Agencies

Miss. Riv. Work Unit 1976  
Miss. Riv. Work Unit 1977  
Miss. Riv. Work Unit 1978  
Mo. Dept. Cons. 1973  
Mo. Dept. Cons. 1977  
U.S. Congress, House. Comm. Int. Ins. Aff. 1972  
U.S. Congress, Senate. 1948  
U.S. Dept. Commerce 1973  
U.S. Dept. Int. 1973a  
U.S. Fish & Wildl. Serv. 1963

I. BIOLOGICAL KEYWORDS

WINTERING

Individual Authors

Geis 1971

II. PHYSICAL-CHEMICAL KEYWORDS

II. PHYSICAL - CHEMICAL KEYWORDS

AGRICULTURE

Individual Authors

Bates 1932

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

BACKWATER

Individual Authors

Reis & Wheatley 1978  
Sternberg 1967

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

BARGES

Individual Authors

Hoffner 1932

**HAZLETON ENVIRONMENTAL SCIENCES**

**II. PHYSICAL - CHEMICAL KEYWORDS**

**CHANNELIZATION**

**Individual Authors**

Green 1960  
Robinson 1972

**Agencies**

Metro. Coun. 1969  
U.S. Army Corps. Eng. 1938  
U.S. Army Corps. Eng. 1971  
U.S. Army Corps. Eng. 1972a  
U.S. Army Corps. Eng. 1976b  
U.S. Congress, House. 1971  
U.S. Congress, House. Riv. Harb. Comm. 1932a

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

CHANNEL MAINTENANCE

Individual Authors

Littlejohn 1972

PHYSICAL - CHEMICAL KEYWORDS

CHEMISTRY

Individual Authors

Larsen 1977

Agencies

U.S.E.P.A. 1971

**HAZLETON ENVIRONMENTAL SCIENCES**

**II. PHYSICAL - CHEMICAL KEYWORDS**

**CHEMISTRY**

**Individual Authors**

Larsen 1977

**Agencies**

U.S.E.P.A. 1971

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

CHLORINATED HYDROCARBONS

Individual Authors

Moyle & Skrypek 1972

Agencies

Minn. Poll. Cont. Agen. 1972b

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

CLIMATOLOGY

Individual Authors

Bolsenga 1968  
Nicollet 1965

Agencies

Upper Miss. Riv. Comp. Basin Study 1970

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

CLOSING STRUCTURE

Individual Authors

Turner 1969

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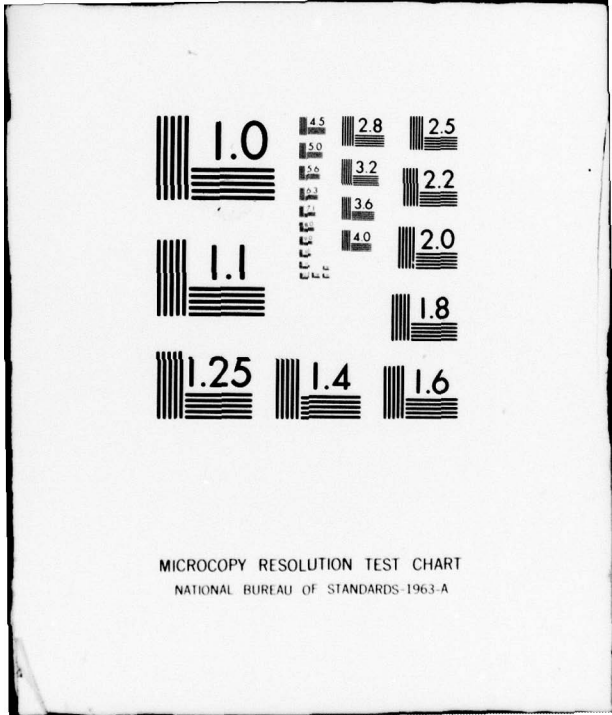
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NATIONAL BUREAU OF STANDARDS-1963-A

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

COMMERCIAL BOAT TRAFFIC

Individual Authors

Appleton 1930  
Baron et al. 1972  
Fisk 1947  
Hill 1961  
Hoffner 1932  
Karaki & Van Hoften 1974

Agencies

U.S. Army Corps Eng. 1970

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

DAM

Individual Authors

Skyrpek 1966

Turner 1969

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

DEVELOPMENT

Agencies

U.S. Congress, House. Riv. Harb. Comm. 1930

U.S. Congress, House. Riv. Harb. Comm. 1932b

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

DIKE

Individual Authors

Burwell 1964

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

DISCHARGE

Individual Authors

Gudmundson et al. 1974  
Tatinclaux 1974

Agencies

Minn. Poll. Cont. Agen. 1972a

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

DREDGING

Individual Authors

Grimes 1976  
Held 1975  
Maltby 1905  
Marking & Bills 1977  
Ockerson 1898  
Olson & Meyer 1976a  
Shodeen 1965  
Simons 1973  
Smith, A.B. 1963

Agencies

U.S. Army Corps Eng. 1971  
U.S. Fish & Wildl. Serv. 1963

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

EFFLUENT

Individual Authors

Gudmundson et al. 1974

II. PHYSICAL - CHEMICAL KEYWORDS

FLOOD

Individual Authors

Bates 1932  
Yeager 1949

Agencies

U.S. Dept. Commerce 1973

PHYSICAL - CHEMICAL KEYWORDS  
FLOODING  
Individual Authors  
1932  
Agencies  
Anonymous 1982  
Miss. Wat. Res. Com.  
U.S. Congress, House 1971  
U.S. Congress, House 1971  
U.S. Dept. 1973  
U.S. Geol. Surv. (Updated)

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

FLOODING

Individual Authors

Zon 1929

Agencies

Anonymous 1965

Miss. Wat. Res. Conf. 1970

U.S. Congress, House 1971

U.S. Congress, House. Riv. Harb. Comm. 1926

U.S. Dept. Agr. 1924

U.S. Geol. Surv. (Undated)

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

FLOW

Individual Authors

Anderson, G.E. 1976

Agencies

Ia. St. Hyg. Lab. 1969a

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

GEOLOGY

Individual Authors

Simons 976  
Winter & Norwitch 1972

Agencies

Metro. Coun. 1969  
Sed. Lab. 1978  
Upper Miss. Riv. Comp. Basin Study 1970

# HAZLETON ENVIRONMENTAL SCIENCES

## II. PHYSICAL - CHEMICAL KEYWORDS

### HABITAT ALTERATION

#### Individual Authors

Gudmundson et al. 1974  
Lewis 1977

#### Agencies

Mo. Dept. Cons. 1973  
U.S. Army Corps Eng. (Undated)  
U.S. Army Corps Eng. 1976b  
U. S. Dept. Commerce 1973

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

HISTORY

Individual Authors

Carlander & Carlander 1951  
Decker 1970  
Keating 1971  
Nicollet 1965  
Petersen 1968a  
Petersen 1968b  
Petersen 1968c  
Richman 1911  
Russell 1928  
Turner 1969  
Young 1971

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

HYDRAULICS

Individual Authors

Anding 1966  
Humphreys & Abbot 1876  
Kennedy 1977  
Maltby 1905

11. PHYSICAL - CHEMICAL KEYWORDS

HYDROLOGY

Individual Authors

Anderson, G.E. 1976  
Anderson, N.W. et al. 1975  
Bates 1931  
Carlson 1957  
Jordan & Brown 1957  
Kennedy 1977  
Nicholas 1987  
Oakes (undated)  
Olson & Meyer 1976  
Ryfe & Post 1991  
Snyder 1947  
Tatnell 1974  
Waller 1956  
Wicker & Norwiche 1973

Agencies

U.S. Army Corps Eng. (undated)  
U.S. Congress, House, Commerce Comm. 1955  
U.S. Congress, House, Works Comm. 1979  
U.S. Fish & Wildl. Serv. 1973  
U.S. Geol. Surv. 1982  
U.S. Geol. Surv. 1973  
Upper Miss. Riv. Com. Basin Study 1970

## HAZLETON ENVIRONMENTAL SCIENCES

### II. PHYSICAL - CHEMICAL KEYWORDS

#### HYDROLOGY

##### Individual Authors

Anderson, G.E. 1976  
Anderson, H.W. et al. 1975  
Bates 1931  
Carlson 1967  
Jordan & Brown 1967  
Kennedy 1977  
Nicollet 1965  
Oakes (Undated)  
Olson & Meyer 1976b  
Sayre & Parr 1972  
Smyser 1947  
Tatinclaux 1974  
Walton 1968  
Winter & Norwitch 1972

##### Agencies

U.S. Army Corps Eng. (Undated)  
U.S. Congress, House. Commerce Comm. 1856  
U.S. Congress, House. Pub. Works Comm. 1949  
U.S. Fish & Wildl. Serv. 1975  
U.S. Geol. Surv. 1965  
U.S. Geol. Surv. 1973  
Upper Miss. Riv. Comp. Basin Study 1970

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

ICE

Individual Authors

Bolsenga 1968  
Krosch 1969  
Molamphy 1960

**HAZLETON ENVIRONMENTAL SCIENCES**

**II. PHYSICAL - CHEMICAL KEYWORDS**

**IMPOUNDMENT**

**Individual Authors**

Bates 1931

Fry 1962

Norwitch et al. 1973

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

LEVEES

Individual Authors

Sparks 1977

Agencies

U.S. Congress, House, Lev. Imp. Comm. 1878

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

MINING

Individual Authors

Barnickol 1958

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

MODELS

Agencies

Wis. U. of 1975

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

NAVIGATION

Individual Authors

Bates 1932

Agencies

Minn. Hist. Soc. 1866-1884  
U.S. Army Corps Eng. 1938  
U.S. Army Corps Eng. 1940a  
U.S. Army Corps Eng. 1941  
U.S. Army Corps Eng. 1947  
U.S. Army Corps Eng. 1965-1967  
U.S. Army Corps Eng. 1970  
U.S. Army Corps Eng. 1976b  
U.S. Congress, House. Commerce Comm. 1856  
U.S. Congress, House. Lev. Imp. Comm. 1878  
U.S. Congress, House. Riv. Harb. Comm. 1904  
U.S. Congress, House. Riv. Harb. Comm. 1919a  
U.S. Congress, House. Riv. Harb. Comm. 1919b  
U.S. Congress, House. Riv. Harb. Comm. 1926  
U.S. Congress, House. Riv. Harb. Comm. 1932a  
U.S. Congress, House. Riv. Harb. Comm. 1932b  
Upper Miss. Riv. Comp. Basin Study 1970  
Wis, U. of 1975

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

NINE-FOOT CHANNEL

Agenices

U.S. Congress, House. Riv. Harb. Comm. 1932a

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

NUCLEAR POWER

Individual Authors

Bentley 1973  
Brook 1971  
Hoffman 1971  
Kennedy 1976  
Lewis 1977  
Marmer et al. 1976  
McDonald 1977b  
McDonald et al. 1972

Agencies

Anonymous 1971  
Com. Ed. Co. 1973  
Com. Ed. Co. 1974  
Ia. St. Hyg. Lab. 1971b  
U.S. Dept. Commerce 1973  
U.S. Dept. Int. 1973a

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

PESTICIDES

Individual Authors

Hora 1976  
Mehta 1969  
Moyle & Skrypek 1969

Agencies

Ia. St. Hyg. Lab. 1970  
Ia. St. Hyg. Lab. 1971a

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

PETROLEUM

Individual Authors

Tadema 1971

Agencies

U.S. Dept. H.E.W. 1963

II. PHYSICAL - CHEMICAL KEYWORDS

POLLUTION

Individual Authors

Barnickol 1958  
Bentley 1973  
Drake & Wilson 1948  
Grimes 1976  
Hart & Fuller 1974  
Heard 1968  
Hora 1976  
Johnson 1967  
Kennedy 1976  
Maher 1965  
Mattei 1970  
Rogers et al. 1940  
Tadema 1971  
Woodward 1930

Agencies

Anonymous 1971  
Fed. Wat. Poll. Cont. Adm. 1965  
Fed. Wat. Poll. Cont. Adm. 1966  
Fed. Wat. Poll. Cont. Adm. 1967  
Fed. Wat. Qual. Adm. 1964  
Metro. Drain. Comm. 1928  
Minn.-St. Paul San. Dist. & UM. 1961  
Minn. Dept. Cons. 1963  
Minn. Dept. Health 1928  
Minn. Dept. Health 1953  
Minn. Mun. 1964  
Minn. St. Bd. Health 1928  
Minn. Wat. Poll. Cont. Comm. 1963  
Minn. Wat. Poll. Cont. Comm. 1964  
Miss. Wat. Res. Conf. 1970  
No. St. Power Co. 1967  
U.S. Dept. H.E.W. 1953  
U.S. Dept. H.E.W. 1955  
U.S. Dept. H.E.W. 1962  
U.S. Dept. H.E.W. 1963  
U.S. Dept. Int. 1973a  
U.S. Pub. Health Serv. 1963



HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

POWER

Agencies

No. St. Power Co. 1968-1969

U.S. Congress, House. Riv. Harb. Comm 1926

U.S. Dept. Int. 1913

**HAZLETON ENVIRONMENTAL SCIENCES**

**II. PHYSICAL - CHEMICAL KEYWORDS**

**RECREATION**

**Individual Authors**

Baron et al. 1972  
Chambers 1910  
Hella 1960  
Replinger 1974  
Russell 1928  
Young 1971

**Agencies**

Ia. Cons. Comm. 1971  
Minn. Out. Rec. Res. Comm. 1964  
Upper Miss. Riv. Comp. Basin Study 1970

**HAZLETON ENVIRONMENTAL SCIENCES**

II. PHYSICAL - CHEMICAL KEYWORDS

RECREATIONAL BOAT TRAFFIC

Individual Authors

Dunham 1970  
Hoffner 1932  
Karakı & Van Hoften 1974

Agencies

U.S. Congress, House. Comm. Int. Ins. Aff. 1972

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

REGULATIONS

Individual Authors

Potter 1925

Agencies

U.S. Army Corps Eng. 1965-67

Upper Miss. Val. Wat. Use Coun. 1945

II. PHYSICAL - CHEMICAL KEYWORDS

REMOTE SENSING

Individual Authors

Degenhardt (no date)  
Meyer 1975

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

RESERVOIR

Agencies

Ill. Dept. Cons. 1972

**HAZLETON ENVIRONMENTAL SCIENCES**

II. PHYSICAL - CHEMICAL KEYWORDS

RIVER BOTTOM

Individual Authors

Yeager 1949

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

RIVER LAKE

Individual Authors

Heuschele 1968

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

SEDIMENT

Individual Authors

Grimes 1976  
Gross 1973  
Karaki & Van Hoften 1974  
Lane 1938  
Mack 1970  
Tuttle 1970

Agencies

Minn. Dept. Health 1940

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

SEDIMENTATION

Individual Authors

Eckblad 1974  
Fisk 1947  
Marking & Bills 1977  
McHenry et al. 1977  
Ritchie & McHenry 1977  
Smith, A.B. 1963  
Toffaleti 1970

Agencies

U.S. Army Corps Eng. 1935b

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

SIDE CHANNEL

Individual Authors

Fremling & McConville 1976  
Sternberg 1967

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

SILTATION

Individual Authors

Green 1964

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

SLOUGH

Individual Authors

Burwell 1964  
Sternberg 1967

Agencies

Ia. St. Hyg. Lab. 1970  
Ia. St. Hyg. Lab. 1971b

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

TAILWATER

Individual Authors

Fry 1962

II. PHYSICAL - CHEMICAL KEYWORDS

TEMPERATURE

Individual Authors

Krosch 1969  
Sayre & Parr 1972

II. PHYSICAL - CHEMICAL KEYWORDS

THERMAL EFFLUENT

Individual Authors

Hoffman 1971  
Kennedy 1977  
McDonald 1977b  
McDonald et al. 1972  
Sayre & Parr 1972  
Tatinclaux 1974

Agencies

Anonymous 1971  
U.S. Army Corps Eng. 1972b  
U.S. Dept. Int. 1973a

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

TOXICANT

Individual Authors

Bentley 1973  
Moyle & Skrypek 1969  
Moyle & Skrypek 1972

Agencies

U.S. Pub. Health Serv. 1963

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

URBANIZATION

Individual Authors

Johannes 1960  
Johnson 1967

Agencies

Minn.-St. Paul San. Dist. 1964

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

WATER DIVERSION

Individual Authors

Norwitch et al. 1973

## HAZLETON ENVIRONMENTAL SCIENCES

### II. PHYSICAL - CHEMICAL KEYWORDS

#### WATER QUALITY

##### Individual Authors

Eckblad 1975  
Ellis 1931  
Felt 1977  
Grimes 1976  
Heard 1968  
Johnson 1967  
Kennedy 1976  
Mehta 1969  
Wu 1968

##### Agencies

Anonymous 1971  
Com. Ed. Co. 1973  
Com. Ed. Co. 1974  
Fed. Wat. Poll. Cont. Adm. 1965  
Fed. Wat. Poll. Cont. Adm. 1966  
Fed. Wat. Poll. Cont. Adm. 1967  
Fed. Wat. Poll. Cont. Adm. 1969  
Fed. Wat. Qual. Adm. 1964  
Fed. Wat. Qual. Adm. 1965  
Fed. Wat. Qual. Adm. 1969  
Ia. St. Hyg. Lab. 1969a  
Ia. St. Hyg. Lab. 1969b  
Ia. St. Hyg. Lab. 1969c  
Ia. St. Hyg. Lab. 1969d  
Ia. Wat. Poll. Cont. Comm. 1966  
Ia. Wat. Poll. Cont. Comm. 1967  
Ia. Wat. Poll. Cont. Comm. 1968  
Ia. Wat. Poll. Cont. Comm. 1969  
Metro. Drain. Comm. 1928  
Metro. Plan. Comm. 1960  
Minn.-St. Paul San. Dist. 1964  
Minn.-St. Paul San. Dist. & UM. 1961  
Minn. Dept. Health 1928  
Minn. Dept. Health 1933  
Minn. Dept. Health 1953  
Minn. Dept. Health 1958  
Minn. Dept. Health 1960  
Minn. Dept. Health 1963  
Minn. Mun. 1964

HAZLETON ENVIRONMENTAL SCIENCES

II. PHYSICAL - CHEMICAL KEYWORDS

WATER QUALITY

Agencies (continued)

Minn. Poll. Cont. Agen. 1968a  
Minn. Poll. Cont. Agen. 1968b  
Minn. Poll. Cont. Agen. 1969  
Minn. Poll. Cont. Agen. 1970  
Minn. Poll. Cont. Agen. 1972a  
Minn. Poll. Cont. Agen. 1972b  
Minn. Poll. Cont. Agen. 1973  
Minn. St. Bd. Health 1928  
Minn. Wat. Poll. Cont. Comm. 1963  
Minn. Wat. Poll. Cont. Comm. 1964  
Minn. Wat. Poll. Cont. Comm. 1967  
Miss. Wat. Res. Conf. 1969  
Miss. Wat. Res. Conf. 1970  
Nat. Wat. Qual. Lab. (Undated-a)  
Nat. Wat. Qual. Lab. (Undated-b)  
No. St. Power Co. 1967  
S.D. Fed. Power Comm. 1964  
U.S. Army Corps Eng. 1964  
U.S. Dept. H.E.W. 1953  
U.S. Dept. H.E.W. 1955  
U.S. Dept. H.E.W. 1962  
U.S. Dept. H.E.W. 1963  
U.S. Dept. Int. 1973a  
U.S.E.P.A. 1971  
U.S.E.P.A. 1973  
U.S.E.P.A. 1974  
U.S. Geol. Surv. 1973  
U.S. Pub. Health Serv. (Undated)

III. GEOGRAPHICAL KEYWORDS

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

CHIPPEWA RIVER

Agencies

U.S. Fish & Wildl. Serv. 1975

III. GEOGRAPHICAL KEYWORDS  
TITLES  
Individual Authors  
Brenner 1973  
Dunham 1970  
Jorgens & Childers 1973  
Kant & Vidal 1978  
Kudo 1973  
Lorenz & Smith 1973  
Smith, E.W. 1973  
Tanger 1973  
Agencies  
U.S. Dept. of the Interior 1973  
U.S. Dept. of the Interior 1974  
U.S. Dept. of the Interior 1975  
U.S. Dept. of the Interior 1976  
U.S. Army Corps of Engineers 1973  
U.S. Army Corps of Engineers 1974  
U.S. Dept. of the Interior 1975

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III. GEOGRAPHICAL KEYWORDS

ILLINOIS

Individual Authors

Brehmer 1953  
Dunham 1970  
Jergens & Childers 1959  
Klant & Vidal 1958  
Kudo 1929  
Lopinot & Smith 1973  
Smith, P.W. 1973  
Yeager 1949

Agencies

Bd. Eng. Riv. Harb. 1976  
Ill. Dept. Cons. 1942  
Ill. Dept. Cons. 1964  
Ill. Dept. Cons. 1973a  
Ill. Dept. Cons. 1973b  
Ia. St. Hyg. Lab. 1971b  
U.S. Army Corps Eng. 1976c  
U.S. Army Corps Eng. 1976d  
U.S. Dept. Int. 1973b

III. GEOGRAPHICAL KEYWORDS

ILLINOIS RIVER

Individual Authors

Karaki & Van Hoften 1974

Agencies

U.S. Army Corps Eng. 1975

III. GEOGRAPHICAL KEYWORDS

IOWA

Individual Authors

Barley, R.W., 1971  
Barley, R.W., 1972  
Clardy & Eicher, 1960  
Ecklund, 1975  
Hanson, 1972  
Hartman & Spitzer, 1972  
Jagers & Childers, 1972  
Jennings, 1972  
Kerrin, 1972  
Kerrin, 1973  
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Kerrin, 2020  
Kerrin, 2021  
Kerrin, 2022  
Kerrin, 2023  
Kerrin, 2024  
Kerrin, 2025

Agencies

U.S. Army Corps Eng. 1975  
U.S. Army Corps Eng. 1976  
U.S. Army Corps Eng. 1977  
U.S. Army Corps Eng. 1978  
U.S. Army Corps Eng. 1979  
U.S. Army Corps Eng. 1980  
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U.S. Army Corps Eng. 1994  
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U.S. Army Corps Eng. 2009  
U.S. Army Corps Eng. 2010  
U.S. Army Corps Eng. 2011  
U.S. Army Corps Eng. 2012  
U.S. Army Corps Eng. 2013  
U.S. Army Corps Eng. 2014  
U.S. Army Corps Eng. 2015  
U.S. Army Corps Eng. 2016  
U.S. Army Corps Eng. 2017  
U.S. Army Corps Eng. 2018  
U.S. Army Corps Eng. 2019  
U.S. Army Corps Eng. 2020  
U.S. Army Corps Eng. 2021  
U.S. Army Corps Eng. 2022  
U.S. Army Corps Eng. 2023  
U.S. Army Corps Eng. 2024  
U.S. Army Corps Eng. 2025

III. GEOGRAPHICAL KEYWORDS

IOWA

Individual Authors

Bailey, R.M. 1951  
 Bailey, R.M. 1956  
 Cleary & Pierce 1960  
 Eckblad 1975  
 Hanson 1956  
 Harlan & Speaker 1969  
 Jergens & Childers 1959  
 Kennedy 1976  
 Kernan 1951  
 Kernan 1952a  
 Kernan 1952b  
 Mehta 1969  
 Molamphy 1960  
 Petersen 1968a  
 Potter & Jones 1928  
 Richman 1911  
 Surber 1913  
 Tatinclaux 1974  
 Woods 1951

Agencies

Fed. Wat. Poll. Cont. Adm. 1967  
 Fed. Wat. Poll. Cont. Adm. 1969  
 Fed. Wat. Qual. Adm. 1969  
 Ia. Cons. Comm. 1960  
 Ia. Cons. Comm. 1971  
 Ia. St. Hyg. Lab. 1969a  
 Ia. St. Hyg. Lab. 1969b  
 Ia. St. Hyg. Lab. 1969c  
 Ia. St. Hyg. Lab. 1969d  
 Ia. St. Hyg. Lab. 1971a  
 Ia. St. Hyg. Lab. 1971b  
 Ia. Wat. Poll. Cont. Comm. 1966  
 Ia. Wat. Poll. Cont. Comm. 1967  
 Ia. Wat. Poll. Cont. Comm. 1968  
 Ia. Wat. Poll. Cont. Comm. 1969  
 U.S. Army Corps Eng. (Undated)  
 U.S. Congress, House 1971  
 U.S. Dept. Int. 1973b

III. GEOGRAPHICAL KEYWORDS

IOWA RIVER

Individual Authors

Mehta 1969

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

LAKE ONALASKA

Individual Authors

Claflin 1977a  
Claflin 1977b  
Holzer & Ironside 1977  
Larsen 1977

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

LAKE PEPIN

Individual Authors

Finke 1966  
Gibbs 1869  
McHenry et al. 1977  
Skrypek & Sternberg 1978  
Sternberg 1970

Agencies

Minn. Dept. Cons. 1964  
U.S. Dept. War 1926

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

LOCK AND DAM 2

Agencies

Minn. Dept. Health 1947

LOCK AND DAM 3

Agencies

Minn. Dept. Health 1947

LOCK AND DAM 4

Agencies

Minn. Dept. Health 1947  
Minn. Dept. Health 1948a

LOCK AND DAM 5

Agencies

Minn. Dept. Health 1947

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

LOCK AND DAM 6

Agencies

Minn. Dept. Health 1947

LOCK AND DAM 7

Individual Authors

Holzer & Ironside 1977

LOCK AND DAM 13

Agencies

Ia. St. Hyg. Lab. 1971b

LOCK AND DAM 14

Agencies

Ia. St. Hyg. Lab. 1971b

III. GEOGRAPHICAL KEYWORDS

LOCK AND DAM 26

Individual Authors

Anderson, G.E. 1976  
Armstrong 1970  
Blackwelder & Marlin 1975  
Briceland 1976  
Decker 1970  
Toffaletti 1970

Agencies

Bd. Eng. Riv. Harb. 1976  
Ill. Dept. Cons. 1977  
Ill. Dept. Transp. 1975  
Peat, Marwick, Mitchell, Co. 1975  
Sverdrup, Parcel & Assoc. 1976  
U.S. Army Corps Eng. 1968  
U.S. Army Corps Eng. 1976c  
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HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

MINNESOTA

Individual Authors

Brook 1971  
 Bruton 1971  
 Cox 1897  
 Dodge et al. 1972  
 Drake & Wilson 1948  
 Eddy & Carlander 1942  
 Hall et al. 1975  
 Hall et al. (In press)  
 Havlik 1977a  
 Holzinger 1887  
 Johannes 1960  
 Kernan 1951  
 Kernan 1952a  
 Kernan 1952b  
 Krosch 1969  
 Kuhl (Undated)  
 Larson 1961  
 McConville 1972  
 Moore 1912  
 Moyle & Skrypek 1969  
 Moyle & Skrypek 1972  
 Oakes (Undated)  
 Owen 1952  
 Replinger 1974  
 Walton 1968  
 Winter & Norwitch 1972  
 Wu 1968

Agencies

Fed. Wat. Poll. Cont. Adm. 1967  
 Fed. Wat. Qual. Adm. 1964  
 Fed. Wat. Qual. Adm. 1965  
 Fed. Wat. Qual. Adm. 1969  
 Metro. Coun. 1969  
 Metro. Coun. 1975  
 Metro. Drain Comm. 1928  
 Metro. Plan. Comm. 1960  
 Minn.-St. Paul San. Dist. 1964  
 Minn. Dept. Cons. 1959  
 Minn. Dept. Cons. 1963  
 Minn. Dept. Cons. 1964  
 Minn. Dept. Health 1940  
 Minn. Dept. Health 1947  
 Minn. Dept. Health 1948a

Agencies cont.

Minn. Dept. Health 1953  
 Minn. Dept. Health 1960  
 Minn. Dept. Health 1963  
 Minn. Dept. Nat. Res.  
 (Undated)  
 Minn. Dept. Nat. Res.  
 1973  
 Minn. Out. Rec. Res.  
 Comm. 1964  
 Minn. Mun. 1964  
 Minn. Poll. Cont. Agen.  
 1968a  
 Minn. Poll. Cont. Agen.  
 1968b  
 Minn. Poll. Cont. Agen.  
 1968c  
 Minn. Poll. Cont. Agen.  
 1969  
 Minn. Poll. Cont. Agen.  
 1970  
 Minn. Poll. Cont. Agen.  
 1972a  
 Minn. Poll. Cont. Agen.  
 1972b  
 Minn. Poll. Cont. Agen.  
 1973  
 Minn St. Bd. Health 1928  
 Minn. Wat. Poll. Cont.  
 Comm. 1963  
 Minn. Wat. Poll. Cont.  
 Comm. 1964  
 Minn. Wat. Poll. Cont.  
 Comm. 1967  
 Nat. Wat. Qual. Lab.  
 (Undated-a)  
 Nat. Wat. Qual. Lab.  
 (Undated-b)  
 No. St. Power Co. 1967  
 No. St. Power co. 1968-  
 1969  
 S.D. Fed. Power Comm.  
 1964  
 U.S. Army Corps Eng.  
 (Undated)  
 U.S. Army Corps Eng. 1938

III. GEOGRAPHICAL KEYWORDS

MINNESOTA (continued)

Agencies

U.S. Congress, House 1957  
U.S. Congress, House 1971  
U.S. Dept. Int. 1973b  
U.S. Dept. War. 1926

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

MINNESOTA RIVER

Agencies

Minn. Dept. Cons. 1963  
Minn. Poll. Cont. Agen. 1968b

III. GEOGRAPHICAL KEYWORDS  
MINNESOTA RIVER  
Agencies  
U.S. Congress, House  
U.S. Congress, House  
U.S. Dept. Int.  
U.S. Dept. War

III. GEOGRAPHICAL KEYWORDS

MISSISSIPPI RIVER WATERFOWL AREA

Individual Authors

Geis & Carney 1961

III. GEOGRAPHICAL KEYWORDS

MISSOURI

Individual Authors

Fry 1962  
Mattei 1970

Agencies

Mo. Dept. Cons. 1973  
Mo. Dept. Cons. 1977  
Mo. Fish Comm. 1879-1931

**HAZLETON ENVIRONMENTAL SCIENCES**

**III. GEOGRAPHICAL KEYWORDS**

**MISSOURI RIVER**

**Individual Authors**

Bentley 1973

Young 1971

**Agencies**

U.S. Army Corps Eng. (Undated)

U.S. Army Corps Eng. 1976a

U.S. Army Corps Eng. 1976c

U.S. Congress, House 1971

U.S. Congress, House. Riv. Harb. Comm. 1919b

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

OHIO RIVER

Agencies

U.S. Army Corps Eng. 1976a

U.S. Congress, House. Riv. Harb. Comm. 1919b

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

POOL 2

Individual Authors

Felt 1977

POOL 4

Individual Authors

Larsen & Holzer 1978  
Simons et al. 1976  
Skrypek 1966  
Sternberg 1974

Agencies

Ill. Dept. Cons. 1962

POOL 3

Individual Authors

Larsen & Holzer 1978  
Miller et al. 1973

POOL 4A

Individual Authors

Finke 1966

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

POOL 5

Individual Authors

Cochran 1977  
Finke 1966  
Larsen & Holzer 1978  
Olson & Meyer 1976a  
Skrypek 1966  
Sternberg 1974

Agencies

Ill. Dept. Cons. 1962

POOL 5A

Individual Authors

Cochran 1977  
Olson & Meyer 1976a  
Skrypek 1966

POOL 6

Individual Authors

Cochran 1977  
Finke 1966  
Larsen & Holzer 1978  
Olson & Meyer 1976a

POOL 7

Individual Authors

Finke 1966  
Havlik 1978b  
Holzer & Ironside 1977  
Larsen & Holzer 1978  
Nicklaus & Merz 1976  
Olson & Meyer 1976a

Agencies

Ill. Dept. Cons. 1962  
Miss. Riv. Work Unit  
1976  
Miss. Riv. Work Unit  
1977  
Miss. Riv. Work Unit  
1978

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

POOL 8

Individual Authors

Claflin 1973  
Eckblad et al. 1976  
Elstad 1977  
Havlik 1978b  
Held 1975  
Larsen & Holzer 1978  
Nicklaus & Merz 1976  
Olson & Meyer 1976a  
Theil 1977

Agencies

Miss. Riv. Work Unit 1976  
Miss. Riv. Work Unit 1977  
Miss. Riv. Work Unit 1978  
Sed. Lab. 1978  
Wis. U. of 1975

POOL 9

Individual Authors

Duncan & Esse 1978  
Eckblad 1975  
Eckblad et al. 1976  
Finke 1966  
Nicklaus & Merz 1976  
Olson & Meyer 1976a  
Reis & Wheatley 1978  
Ritchie & McHenry 1977  
Verdon 1974

Agencies

Miss. Riv. Work Unit  
1976  
Miss. Riv. Work Unit  
1977  
Miss. Riv. Work Unit  
1978

POOL 10

Individual Authors

Eckblad et al. 1976  
Olson & Meyer 1976a

POOL 11

Agencies

Ill. Dept. Cons.  
1962  
U.S. Army Corps. Eng.  
1971  
U.S. Army Corps Eng.  
1976b

## HAZLETON ENVIRONMENTAL SCIENCES

### III. GEOGRAPHICAL KEYWORDS

#### POOL 12

##### Individual Authors

Bertrand 1974

##### Agencies

U.S. Army Corps Eng. 1971  
U.S. Army Corps Eng. 1976a

#### POOL 13

##### Individual Authors

Bertrand 1974

##### Agencies

Ill. Dept. Cons. 1962  
Ill. Dept. Cons. 1973a  
U.S. Army Corps Eng. 1971  
U.S. Army Corps Eng. 1976b

#### POOL 14

##### Individual Authors

Bertrand 1974  
Kline & McDonald 1973  
McDonald 1977b  
McDonald et al. 1972

##### Agencies

Ia. St. Hyg. Lab. 1971b  
U.S. Army Corps Eng. 1971  
U.S. Army Corps Eng. 1976b

#### POOL 15

##### Agencies

Ia. St. Hyg. Lab.  
1969a  
U.S. Army Corps Eng.  
1971  
U.S. Army Corps Eng.  
1976b

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

POOL 16

Individual Authors

Bertrand 1974

Agencies

Ia. St. Hyg. Lab.  
1969a

U.S. Army Corps Eng.  
1971

U.S. Army Corps Eng.  
1976b

POOL 17

Agencies

U.S. Army Corps Eng. 1971

U.S. Army Corps Eng. 1976b

POOL 18

Individual Authors

Bertrand 1974

Agencies

Ill. Dept. Cons. 1962

U.S. Army Corps Eng.  
1971

U.S. Army Corps Eng.  
1976b

POOL 19

Individual Authors

Bertrand 1974

Bertrand 1976

Agencies

Ia. St. Hyg. Lab. 1969d

U.S. Army Corps Eng.  
1971

U.S. Army Corps Eng.  
1976b

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

POOL 20

Agencies

U.S. Army Corps Eng.  
1971  
U.S. Army Corps Eng.  
1976b

POOL 21

Agencies

U.S. Army Corps Eng. 1971  
U.S. Army Corps Eng. 1976b

POOL 22

Agencies

U.S. Army Corps Eng.  
1971  
U.S. Army Corps Eng.  
1976b

POOL 24

Agencies

Mo. Bot. Gar. 1975  
U.S. Army Corps Eng.  
1975

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

POOL 25

Individual Authors

Bertrand & Dunn 1973  
Dieffenbach 1969

Agencies

Mo. Bot. Gar. 1975  
U.S. Army Corps Eng. 1975

POOL 26

Agencies

Ill. Dept. Cons. 1962  
Mo. Bot. Gar 1975  
U.S. Army Corps Eng. 1975

III. GEOGRAPHICAL KEYWORDS

ST. ANTHONY FALLS

Individual Authors

Eddy et al. 1963

II. GEOGRAPHICAL KEYWORDS  
FOOT 22  
Individual Authors  
Berrand & Gane 1971  
Dietrich 1963  
Agencies  
No. 501, Gae. 1971  
U.S. Army Corps Eng. 1971

FOOT 18  
Agencies  
U.S. Army Corps Eng. 1971  
No. 501, Gae. 1971  
U.S. Army Corps Eng. 1971

# HAZLETON ENVIRONMENTAL SCIENCES

## III. GEOGRAPHICAL KEYWORDS

### UPPER MISSISSIPPI RIVER

#### Individual Authors

Carlson 1967  
Ellis 1931  
Fremling & McConville 1976  
Greenbank 1950  
Greenbank 1957  
Grimes 1976  
Gross 1973  
Gudmundson et al. 1974  
Havlik 1978b  
Held 1975  
Jordan & Brown 1967  
Karaki & Van Hoften 1974  
Keating 1971  
Limpert & Vose 1976  
Meyer 1975  
Moyle 1940  
Sternberg 1967  
Thimsen & Samuelson 1949  
Wu 1968

#### Agencies

Anonymous 1965  
Fed. Wat. Poll. Cont. Adm. 1965  
Fed. Wat. Poll. Cont. Adm. 1966  
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Minn. Dept. Health 1953  
Mo. Bot. Gar. 1975  
Mo. Dept. Cons. 1977  
Sed. Lab. 1978  
U.S. Army Corps Eng. 1935a  
U.S. Army Corps Eng. 1935b  
U.S. Army Corps Eng. 1940a  
U.S. Army Corps Eng. 1940b  
U.S. Army Corps Eng. 1941  
U.S. Army Corps Eng. 1947  
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U.S. Army Corps Eng. 1964  
U.S. Army Corps Eng. 1976b  
U.S. Army Corps Eng. 1976c  
U.S. Congress, House, Commerce  
Comm. 1867a  
U.S. Congress, House, Commerce  
Comm. 1867b

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U.S. Congress, House,  
Comm. Int. Ins. Aff.  
1972  
U.S. Dept. Int. 1973b  
U.S. Dept. Int. 1977  
U.S. Geol. Surv.  
(Undated)  
Upper Miss. Riv. Comp.  
Basin Study 1970  
Upper Miss. Riv. Cons.  
Comm. 1943  
Upper Miss. Riv. Cons.  
Comm. 1945-1968  
Upper Miss. Riv. Cons.  
Comm. 1948  
Upper Miss. Riv. Cons.  
Comm. 1950c  
Upper Miss. Riv. Cons.  
Comm. 1957  
Upper Miss. Riv. Cons.  
Comm. 1967  
Upper Miss. Riv. Cons.  
Comm. 1969  
Upper Miss. Val. Wat.  
Use Coun. 1945

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE

Individual Authors

Bailey, V. 1930  
Green 1947  
Green 1960  
Green 1963  
Uhler (circa 1929)

Agencies

U.S. Dept. Int. 1968  
U.S. Dept. Int. 1970  
U.S. Dept. Int. 1973b

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

WAPSIPINICON RIVER

Agencies

U.S. Dept. H.E.W. 1953

HAZLETON ENVIRONMENTAL SCIENCES

III. GEOGRAPHICAL KEYWORDS

WISCONSIN

Individual Authors

Ammerman 1975  
Havlik 1977b  
Havlik 1977c  
Havlik 1978a  
Jergens & Childers 1959  
Kernan 1951  
Kernan 1952a  
Kernan 1952b  
Woods 1951

Agencies

Fed. Wat. Poll. Cont. Adm. 1967  
Fed. Wat. Qual. Adm. 1964  
Fed. Wat. Qual. Adm. 1965  
Minn. Dept. Cons. 1964  
Minn. St. Bd. Health 1928  
U.S. Army Corps Eng. (Undated)  
U.S. Congress, House. Pub. Works Comm. 1949  
U.S. Dept. Int. 1973b  
Wis. Dept. Nat. Res. 1891-1947  
Wis. Dept. Nat. Res. 1971