SURFACE WATER RESOURCES

OF

CLARK COUNTY



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DEPARTMENT

MADISON I 1965

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SURFACE WATER RESOURCES OF CLARK COUNTY

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Lake and Stream Classification Project

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SOURCES OF DATA

Aerial photographs (Agricultural Stabilization and Conservation)

Census, population, and economic reports

Clark County Forest and Parks Committee

Climatological reports

Committee on Water Pollution

Field surveys and personal contacts

Forest inventory survey report

Geological survey reports

Public Service Commission reports

Soil surveys

U. S. G. S. maps

Wisconsin Conservation Department waters files and bulletins

INTRODUCTION

Wisconsin's population in 1960 was 3,952,000. According to an estimate, it could be as high as 6,100,000 in another twenty years. There seems little doubt that the trend toward shorter work weeks and longer vacations will continue. Much of the new leisure is being spent outdoors in swimming, motorboating, water-skiing, fishing, hunting, skin diving, and other water sports and activities. The expansion of these activities in addition to increased agricultural, industrial, and domestic demands on water has resulted in conflicts. Often one interest may control water to the exclusion of others. To assure that the resource is equitably utilized, a method of apportioning water use must be found.

In 1959, the State Legislature requested the Conservation Department to develop a program for classification of lakes by use and in 1961 this responsibility was enlarged to include streams. Before an actual classification system can be devised, it is necessary to first prepare a water resources inventory consisting of basic data such as number, size, physical and chemical characteristics of lakes and streams as well as present and potential uses of our water resources. Inventories are being prepared on a county by county basis. Collection of data for this summary of the surface water resources of Clark County was completed in November, 1964.

This inventory is intended to provide a summary of the quantity, quality, and character of the surface waters (lakes and streams) of Clark County. Use potential will be described and methods of protection discussed. The inventory will have served its purpose if it can be used as a guide in planning for the wise use and good management of the waters.

Data for this inventory came from a number of origins. The principal sources were aerial photographs, U. S. G. S. maps, files of the Conservation Department, and field investigations.

The maps reproduced in this publication were not intended for legal and regulatory use. They should, therefore, not be considered or used as factual or final authority because of natural or man-made changes which may have occurred.

Table 1. Mean climatological and runoff data for stations in or near Clark County for period 1930-1959.

Temperature and Precipitation Data*

	Mean Annual Precipitation	Percent Annual Precipitation	Dec. t	ipitation through nches)		Length Growing Season	Avg. Dates of 32-Degree Freeze		
Station	(Inches)	(May through Sept.)		Jan.	Feb.	(Days)	Last	First	
Hatfield	30.03	65	.94	.90	.78	116	May 23	Sept. 17	
Marshfield	31.33	60	1.06	1.17	1.06	133	M ay 17	Sept. 27	
Medford	32.92	60	1.33	1.21	1.12	126	May 19	Sept. 23	
Neillsville	30.79	65	1.02	1.01	.98	138	M ay 14	Sept. 28	
Stanley	31.13	65	1.12	.90	1.00	130	May 16	Sept. 23	
Averages	31.24	63	1.09	1.04	.99	128.6	May 22	Sept. 24	

River Discharge Data - Black River at Neillsville**

Discharge in cfs	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Average or Total
High water (1942)	2,090	1, 162	156	117	62.5	1,792	895	2,536	2,202	800	93.7	2,605	1,213
Low water (1931)	171	149	61.5	65.2	41.3	131	454	148	530	71.3	14.3	92.3	160
Runoff in inches High water (1942)	3.18	1.72	.24	.18	.09	2.73	1.32	3.86	3.25	1.22	.14	3. 85	21.78
Low water (1931)	.26	.22	.09	.10	.06	.20	.67	•23	.78	.11	.02	.14	2.88

^{*} Data taken from Wisconsin Climatological Data, 1961, Wisconsin Crop Reporting Service.

^{**} Includes only selected years. Source: U.S. Geological Survey Water Supply Paper No. 1308

DESCRIPTION OF THE WATERS OF CLARK COUNTY

Lakes

Lakes with a description of each are presented herein in alphabetical order. Data included in the description are location, area, degree of irregularity (S. D. F.), and known maximum depth. The latter may, or may not, be the actual maximum depth because of changing water levels, but is the maximum depth found during investigations. Characteristics of the waters presented include color, hardness, and transparency. Among resources, significant fish species present are listed and waterfowl and furbearer use noted. The circumstances contributing to use of the waters are presented in terms of the degree of public access and the amount of private development. If problems affecting use of these waters were encountered, they are cited. Due to extremely dry conditions, water levels of all lakes and impoundments were below normal in 1964 and levels of one to two feet or more below normal were not uncommon. Physical and chemical data for all lakes are provided in Appendix I.

Lakes and impoundments have been defined for inventory purposes. Lakes are all waters navigable, meandered or public that are wet nine out of ten years. Impoundments are those bodies which owe one-half or more of their maximum depth to an artificial impounding structure.

Named Lakes

Arbutus Lake T23N,R3W, S36. Surface Acres = 821, S. D. F. = 3.24, Known Maximum Depth = 56 feet

A soft water, drainage impoundment on the Black River in Clark and Jackson Counties. The dam has a 92-foot head and is owned by the Northern States Power Company. The water is slightly acid, has a medium brown color, and a low transparency. Muskellunge, northern pike, walleye, largemouth bass, smallmouth bass, channel catfish, bluegill, pumpkinseed, rock bass, black crappie, white crappie, yellow perch, sucker, and redhorse make up the fishery. Although present, carp are not a management problem. Recreational areas, including picnicking, camping, swimming, and boat launching sites, are provided by Clark and Jackson Counties who have leased lands from the Northern States Power Company. Clark County owns frontage along the Arnold Creek arm of the flowage. There are seven resorts, about 95 private dwellings, and a Boy Scout Camp located on the shores. During the migratory seasons, swans, geese, ducks (dabblers and divers), and coot may be found on the impoundment and hunters take advantage of this during the fall season.

Emerson Lake T24N, R4W, S29 Surface Acres = 35, S. D. F. = 1.71, Known Maximum Depth = 9 feet

A soft water, drainage impoundment on the east fork of Halls Creek. The dam has a 14-foot head and is owned by Mentor Township. The water is slightly acid, appears turbid much of the time, and has a low transparency. Largemouth bass, bluegill, pumpkinseed, black crappie, white crappie, perch, bullhead, white sucker, and carp are present. The latter species present a management problem. There is one county-owned boat launching site and parking area. The flowage is located within the Humbird village limits. No waterfowl or furbearers were observed during sampling, but the former may visit the water during their migration periods.

Hay Creek Lake (Rock Dam Lake) T26N, R4W, S15 Surface Acres = 105, S. D. F. = 2.76, Known Maximum Depth = 16 feet

This is a soft water, drainage impoundment located on Hay Creek. The dam has a 12-foot head and it is owned by Clark County. It was constructed in 1938 by the W.P.A. for the purpose of creating a recreational area. The light brown colored water is slightly acid and has a low transparency. Largemouth bass, bluegill, black crappie, rock bass, perch, bullhead, and white sucker comprise the fishery. There are two county-owned park areas, including a swimming beach and a boat launching site. Around the flowage, there are 76 dwellings. Aquatic vegetation poses a problem to anglers and boaters during the summer months. During the migratory seasons, ducks may be found.

Mead Lake T27N, R3W, S29 Surface Acres = 324, S. D. F. = 3.05, Known Maximum Depth = 20 feet

This is a soft water, drainage impoundment located on the south fork of the Eau Claire River. The dam has a 16-foot head and the flowage was created in 1951 by Clark County for recreational purposes. The dam and all the land around the impoundment are owned by the county, but lots have been leased to individuals. The slightly acid water has a light brown color and low transparency. Muskellunge, yellow walleye, largemouth bass, smallmouth bass, bluegill, pumpkinseed, white sucker, and northern redhorse make up the fishery. Within a few years after the flowage was created, carp became a problem and in 1961 a chemical eradication project was conducted within the flowage area and in the 46 miles of streams entering the flowage. While the project was successful, a 100 percent kill of carp was not accomplished. The flowage now provides excellent fishing. In the past, the impoundment has been subject to periodic winterkill conditions. There is a public swimming beach, one public boat landing, and a park area including campgrounds. There are also 112 dwellings and a Boy Scout camp on the flowage. Migrating waterfowl visit the flowage in the fall and provide hunting.

Sherwood Lake T23N, R1E, S34 Surface Acres = 128, S. D. F. = 2.05, Known Maximum Depth = 8 feet

This is a very soft water, drainage impoundment located on Hay Creek. The dam has a head of 11 feet and is owned by Clark County, as is all the land surrounding the flowage. The medium brown colored water is acid, and it has a low transparency. The water is managed for northern pike and largemouth bass. White sucker, pumpkinseed, and bullhead are also present. This impoundment is subject to periodic winterkills of fish, but in the past has usually provided two or three years of fishing between winterkills. There is a park area, including a boat launching site. No dwellings are present. Waterfowl hunting is provided during the fall migration. Muskrat are present.

Snyder Lake T24N, R3W, S11
Surface Acres = 21, S. D. F. = 2.53, Known Maximum Depth = 10 feet

This is a soft water, drainage impoundment located on Wedges Creek. The dam has a 10-foot head and is owned by Clark County. The slightly acid water has a medium brown color and a low transparency. Largemouth bass, bluegill, pumpkinseed, crappie, bullhead, white sucker, and silver redhorse make up the fishery. A small county-owned picnic and swimming area is present. An enlarged public use area, including a boat launching site, is planned by the county. There are 12 dwellings. No waterfowl were observed during past investigations, but they may use it when migrating. Muskrat are present.

Unnamed Lakes

Unnamed lakes, impoundments and ponds are described by Town, Range and Section with a further breakdown into 40-acre parcels as described on the resource maps. They are listed according to political township beginning with the southernmost tier and working from east to west.

Pine Valley Township
T24N, R2W, S14 (14-7)
Surface Acres = 0.3, S. D. F. = 1.30, Known Maximum Depth = 4 feet

This is a very soft water, drainage impoundment located within Neillsville on O'Neil Creek. The dam has a 4-foot head and is owned by the Neillsville Milk Products Company. This very small impoundment has slightly acid water and it was turbid at the time of sampling. The milk products plant pumps water from the impoundment and uses it for cooling. Before the water reenters the impoundment from the plant, it passes through an aeration system. There is no particular fishery value and there is no public access except by stream and road right-of-way. The upper end of the flowage abuts another dam owned by the City of Neillsville.

T24N, R2W, S14 (14-8)
Surface Acres = 5, S. D. F. = 3.41, Known Maximum Depth = 7 feet

This very soft water, drainage impoundment is located within the City of Neillsville on O'Neil Creek. The dam has a 6-foot head and is owned by the city. The water is slightly acid and was turbid at the time of sampling. It is not managed for fish and the likely fish species present are panfish and suckers. There are no public developments or dwellings.

Mentor Township
T24N, R4W, S10 (10-7)
Surface Acres = 14, S. D. F. = 1.36, Known Maximum Depth = 6 feet

This is a very soft water, drainage impoundment located on Fivemile Creek. It is surrounded by county-owned land. The dam has a 4-foot head and is included in the Clark County drainage district. The very acid water has a dark brown color and a low transparency. Because of its shallow depth, winterkill occurs frequently and there is no sport fishery value. A marsh edge surrounds 65 percent of the flowage. Waterfowl and furbearers are the principal resource. Migrating waterfowl use the flowage, but hunting and trapping pressure is probably held at a minimum as there is only wilderness public access from U. S. Highway 10.

T24N, R4W, S13 (13-2) Surface Acres = 3, S. D. F. = 1.93, Known Maximum Depth = 7 feet

This is a very soft water, drainage impoundment located on Creek 24-5 (Mentor Township). The dam has a 7.5-foot head and is included in the Clark County drainage district. The dark brown colored water is acid and has a low transparency. Because of its shallow depth, no sport fishery value is attached. About 25 percent of the shoreline has a marsh edge. The principal assets come from waterfowl and furbearers. Migrating waterfowl use the flowage. The entire flowage is surrounded by county forest land and there is access by a trail from U. S. Highway 10.

T24N, R4W, S24 (24-6)
Surface Acres = 13, S. D. F. = 2.18, Known Maximum Depth = 7 feet

This very soft water, drainage impoundment has acid water and a medium brown color with a low transparency. The dam has a 9.5-foot head, is located on Fivemile Creek, and is included in the Clark County drainage district. Because of its shallow depth and since it is subject to periodic winterkill conditions, there is little sport fishery value. Reportedly, occasional pumpkinseed and bullhead are taken by anglers. Migrating waterfowl use the flowage. There are 0.35 miles of public frontage and public access via a town road, but no parking area or boat launching facility is available. Water is pumped from this flowage for cranberry production.

South Foster Township
T25N, R4W, S1 (1-9)
Surface Acres = 5, S. D. F. = 1.33, Known Maximum Depth = 6 feet

This very soft water drainage, impoundment is located on Thompson Creek and is known locally as Beaver Flowage. It was constructed by the Wisconsin Conservation Department in 1963. At the time of sampling, the outlet had a 6-foot head. The water has a medium brown color, is slightly acid, and has a low transparency. Because of its shallow depth, no sport fishery value is attached. The flowage is surrounded by county forest cropland and it is being managed for waterfowl and furbearers. As the trail leading to the flowage is gated and locked, there is only wilderness public access.

T25N, R4W, S22 (22-13)
Surface Acres = 17, S. D. F. = 3.64, Known Maximum Depth = 6 feet

This very soft water, drainage impoundment is located on Creek 14-12 (South Foster Township). It is locally known as Abbot Ranch Flowage. The slightly acid water has a medium brown color and a low transparency. At the time of sampling, the dam had a 5.4-foot head and the flowage is surrounded by county forest cropland. No sport fishery value is attached and the flowage is being managed for waterfowl and furbearers. Marsh meadow surrounds 95 percent of the impoundment. Public access is by a trail.

 $\underline{\text{T25N, R4W, S34 (34-5)}}$ Surface Acres = 4, S. D. F. = 1.53, Known Maximum Depth = 2 feet

This is a very soft water, drainage impoundment located on Creek 14-12 (South Foster Township) and is known locally as Carter Pool. The water is slightly acid, has a medium brown color, and a low transparency. At the time of sampling, the dam had a 3.5-foot head. Approximately 75 percent of the flowage has a marsh shoreline. No sport fishery value is present but the flowage is managed for waterfowl and furbearers. Public access is by trail through county forest cropland which surrounds the flowage. There is no parking facility, but there is an unimproved boat launching site.

North Foster Township
T26N, R4W, S20 (20-14)
Surface Acres = 6, S. D. F. = 2.41, Known Maximum Depth = 4 feet

This is a soft water, drainage impoundment located on Iron Run Creek and logically it is known locally as Iron Run Flowage. At the time of sampling, the dam had a 3.5-foot head and the flowage is surrounded by county forest cropland. The water has a medium brown color, is slightly acid, and has a low transparency. The flowage is managed for waterfowl and furbearers and is of no value in the sport fishery. Of the total shoreline, 13 percent has a marsh edge. Public access is by trail. There is no designated parking area.

T26N, R4W, S29 (29-4)
Surface Acres = 7, S. D. F. = 2.14, Known Maximum Depth = 6 feet

This very soft water, drainage impoundment is located on Iron Run Creek upstream from Iron Run Flowage and is known locally as Spruce Flowage. At the time of sampling, the dam had a 5.5-foot head, and is surrounded by county forest cropland. The slightly acid water has a medium brown color and low transparency. No sport fishery value is attached and the flowage is managed for waterfowl and furbearers. A marsh edge surrounds all but 10 percent of the impoundment. Public access is by trail. There is no designated parking area.

Butler Township
T27N, R4W, S30 (30-1)
Surface Acres = 11, S. D. F. = 2.20, Known Maximum Depth = 5 feet

This pond known as Willow Flowage contains very soft water which is supplied by surface runoff and seepage. At the time of sampling, the water level was 79 inches below the top of the outlet structure. A marsh surrounds the flowage. The water is slightly acid, has a light brown color, and a low transparency. No sport fishery value is present but the flowage is managed for waterfowl and furbearers. Public access is by trail through county forest cropland which surrounds the impoundment. There is no designated parking area.

Reseburg Township
T28N, R3W, S30 (30-16)
Surface Acres = 0.1, S. D. F. = 1.13, Known Maximum Depth = 1 foot

A medium hard water, seepage lake that is hardly more than a shallow depression. It receives seepage and runoff from a small drainage area. There is no sport fishery. Aquatic vegetation is abundant and consists mainly of floating and submergent plants. It has no public frontage or private development. It is used for stock watering.

Hixon Township
T29N, R2W, S36 (36-8)
Surface Acres = 18, S. D. F. = 1.68, Known Maximum Depth = 8 feet

This is a slightly acid, soft water, drainage impoundment having light brown colored water and low transparency. It is located on Brick Creek within the City of Owen and is spoken of locally as the Owen Pond. The dam has a 10-foot head and is owned by the city. Pumpkinseed, bullhead, white sucker, and carp comprise the fishery. A milk products plant pumps water from the flowage for cooling purposes and this water is not aerated before it returns to the impoundment. Submergent aquatic vegetation is abundant. Winterkill of fish probably occurs each year. At present, this flowage has little potential for fish management. Two factories are located adjacent to the water. There are no dwellings. A small park area is located on the east side at the lower end of the flowage, but it has no boat launching facility.

T29N, R2W, S36 (36-16)
Surface Acres = 5, S. D. F. = 2.88, Known Maximum Depth = 5 feet

This is a slightly alkaline, medium hard water, drainage impoundment located on the Poplar River within the City of Owen. At the time of sampling, the water was turbid and had a low transparency. The dam has a 3-foot head and is owned by the city. Panfish and suckers comprise the fishery; however, other species normally found in the Poplar River may be caught here on occasion. Also, during periods of high water, fish have access to the flowage from the stream below. A city park provides public access along the north side of the impoundment. There are no boat launching sites and no dwellings.

Withee Township
T29N, R3W, S5 (5-10)
Surface Acres = 0.1, S. D. F. = 1.43, Known Maximum Depth = 1 foot

A soft water, seepage lake that is hardly more than a shallow depression in a pasture. It receives runoff and seepage from a small watershed. The water has a medium brown color. There is no sport fishery value. Aquatic vegetation is abundant and consists primarily of cattail and rushes. There is no public frontage or private development. Dabbler ducks are reportedly present when migrating. The pond is used for stock watering.

T29N, R3W, S5 (5-11) Surface Acres = 0.1, S. D. F. = 1.69, Known Maximum Depth = 1 foot

A soft water, seepage lake receiving water from runoff and seepage from a small watershed. It is actually a shallow depression in a pasture. The water has a medium brown color. There is no sport fishery value. Submergent, emergent, and floating aquatic vegetation are abundant. There is no public frontage or private development. Dabbler ducks reportedly use the pond during their migration seasons. It is used for stock watering.

T29N, R3W, S7 (7-16)
Surface Acres = 0.2, S. D. F. = 1.52, Known Maximum Depth = 2 feet

This is a small, soft water, seepage lake located in open pasture that receives runoff and seepage from a small watershed. The water has a light brown color. A marsh edge is found around 5 percent of the shoreline. Aquatic vegetation is common and consists primarily of floating and emergent species. There is no sport fishery. A pair of teal were nesting at the time of the investigation. There is no public frontage or private development. The pond is used for stock watering.

Thorp Township
T29N, R4W, S15 (15-11)
Surface Acres = 0.2, S. D. F. = 1.86, Known Maximum Depth = 2 feet

This small, soft water, seepage lake has dark brown colored water and receives seepage and runoff from a small watershed. A bog, extending 10 feet back from the water, surrounds the pond. Beyond the bog, is pasture. There is no sport fishery. Submergent, emergent, and floating aquatic plants are abundant and are present in about equal amounts. Migrating dabbler ducks may use the pond. There is no public frontage or private development. It is used for stock watering.

T29N, R4W, S17 (17-14) Surface Acres = 0.2, S. D. F. = 2.23, Known Maximum Depth = 1 foot

A small, soft water, seepage lake that has light brown colored water. It is hardly more than a shallow depression in a pasture and it receives water from a small watershed. There is no sport fishery. Aquatic vegetation is abundant and consists primarily of emergent and submergent plants. About 7 percent of the pond edge is bog. Teal may nest here and migrating waterfowl use the pond. There is no public frontage or private development. It is used for stock watering.

T29N, R4W, S19 (19-2) Surface Acres = 0.4, S. D. F. = 1.13, Known Maximum Depth = 0.5 foot

This small, soft water lake has light brown colored water. It is hardly more than a shallow depression and it receives water from a small watershed. Approximately 65 percent of the surrounding land is cultivated, 33 percent is pasture, and the remainder is bog. Aquatic vegetation is abundant and consists primarily of emergent and submergent species. There is no sport fishery. It is likely used by dabbler ducks when migrating. There is no public frontage or private development. The pond is used for stock watering.

Streams

Named streams are listed in alphabetical order and unnamed streams according to township. They are described by the location of their confluence with another stream, or flowage, or by the point they exit the county, by surface acres, length, and gradient where it is known. The general direction of flow, basic fishery, amount of bank cover, and impoundments, if any, are given. Furbearer and waterfowl information is given, if known. Public lands bordering the stream are recorded. Access from road crossings is also indicated. Data for unnamed streams have been presented in tabular form using geographical location for quick reference. The physical and chemical characteristics of all streams are given in Appendix II. The term forage fish as used in this discussion refers to small species of fish such as minnows, darters and sticklebacks. A forage fish fishery would mean bait harvest was possible.

The water levels of all streams were below normal during 1964. Most streams were intermittent at least a portion of their length and a few were intermittent their entire length. The description of each stream is based on only that part of the stream that was not dry, or had intermittent flow. Some streams such as Mounds Creek, Panther Creek, the north branch of O'Neil Creek and the middle branch of O'Neil Creek, for example, were intermittent their entire lengths and are not listed.

Named Streams

Arnold Creek T23N, R3W, S34 Surface Acres = 11.2, Miles = 5.8, Gradient = 18.2 feet per mile

A medium brown colored and very soft water stream that flows southward into Arbutus Lake. More than one-half of the creek passes through wetlands and the remainder flows through wooded land. Approximately 99 percent of its watershed consists of wooded or wild land. It provides habitat for furbearers, including beaver, and nesting ducks. Forage fishes and panfish inhabit the stream and northern pike may be found there seasonally. The entire stream passes through county forest cropland and there are two road crossings.

Bear Creek T27N, R1W, S31 Surface Acres = 7.2, Miles = 5.4

A clear, hard water stream that flows northwest into Rock Creek. The stream flows through cleared land about one-half of its course and 90 percent of the watershed is cleared land. It has primarily a forage species fishery. There are no public lands adjoining the stream. Access is possible from five road crossings.

Black Creek T25N, R4W, S30 Surface Acres = 0.3, Miles = 2.4, Gradient = 16.7 feet per mile

A medium brown colored, very soft water **stream** that flows westward into Eau Claire County and is a tributary of the Eau Claire River. It has marsh drainage, is ditched, and in spite of a high gradient it has a sluggish flow due to numerous beaver dams. The stream is considered trout water, but is not stocked and natural reproduction is apparently low. The entire stream in Clark County passes through county forest cropland and there is one road crossing.

Black Creek T27N, R3W, S31 Surface Acres = 5.6, Miles = 6.6, Gradient = 13.8 feet per mile

A light brown colored, soft water stream that flows southward into the south fork of the Eau Claire River. Brook trout, rock bass, pumpkinseed, and bullhead constitute the fishery. Natural trout reproduction is found in the upper portion of the stream. Furbearers, including beaver, are present. About 99 percent of the watershed is wooded or wild land. Four miles of stream pass through county forest cropland. There are three road crossings.

Black River T23N, R3W, S24 Surface Acres = 1,561, Miles = 54.1, Gradient = 8.6 feet per mile

The major stream system in Clark County. It enters from the north and flows southward into Arbutus Lake. It is a soft water stream having a medium brown color. The river is characterized by long sluggish pools followed by swift riffle areas. Boulder is one of the dominant bottom types in the lower one-half of its length in Clark County. Some of the stream passes through steep-sided, gorge-like areas that enhance its beauty. About 75 percent of the watershed has been cleared for agricultural uses. Muskellunge, northern pike, walleye, largemouth bass, smallmouth bass, catfish, and panfish constitute the sport fishery. It is one of the better smallmouth bass streams in west central Wisconsin. Carp are present. Furbearers and waterfowl are present and the latter provide some jump shooting in autumn. Light boat traffic is possible on the entire river in Clark County, but even during normal water level periods it is necessary to portage around some of the riffle areas. Inadequately treated waste water from gravel washing operations has been discharged into the river resulting in turbid water in the areas of discharge near Withee and Greenwood. There is one picnic site and one park area. The latter has an unimproved boat landing. About 2.1 miles of shoreline are in public ownership. Several roads cross the stream and access is also possible by boat from Arbutus Lake.

Brick Creek T29N, R2W, S36 Surface Acres = 6.9, Miles = 6.0

A medium hard water stream having a light brown color that flows south into the Poplar River. It appeared to have a medium gradient. One dam impounds the stream at Owen. Cleared agricultural land constitutes about 70 percent of the watershed. Forage species constitute the fish population. There are 1.2 miles of public frontage. Access is also possible from six bridge crossings and by boat from the impoundment at Owen.

Cameron Creek T26N, R4W, S24 Surface Acres = 5.5, Miles = 6.0, Gradient = 11.7 feet per mile

A clear, soft water stream that flows westward into Hay Creek. Though natural reproduction appears lacking, the stream is managed as trout water. About 60 percent of the watershed is wooded or wild, while the remainder is cleared agricultural land. The lower 2.5 miles of it pass through county forest cropland. Beaver are active. Three road bridges cross the stream.

Cawley Creek T24N, R2W, S2 Surface Acres = 10.6, Miles = 6.7

A light brown colored, medium hard water stream that flows in a general southerly direction into the Black River. It appeared to have a high gradient. During the 1964 investigation, approximately one-half of the stream was intermittent. The mileage given above is for that part of the stream having continuous flow. About 87 percent of the watershed has been cleared for agricultural purposes. Largemouth bass, smallmouth bass, northern pike, and panfish comprise the fishery. The northern pike are primarily seasonal inhabitants and are found in the lower portion of the creek. There are nesting areas for teal and wood duck, and furbearers are present. There are no adjoining public lands. Access is possible from seven road crossings.

Crooked Creek T24N, R3W, S22 Surface Acres = 4.5, Miles = 5, Gradient = 30.4 feet per mile

A clear, very soft water stream that flows south into Wedges Creek. Most of the stream is ditched. Though classified as trout water, it is not stocked and natural reproduction is apparently lacking. Forage species are the principal fishes present. Waterfowl and furbearers, including beaver, are present. The stream passes through county forest cropland and the entire watershed consists of wooded or wild land. There are two road crossings.

Cunningham Creek T24N, R2W, S27
Surface Acres = 48.2, Miles = 18.5, Gradient = 10.8 feet per mile

A clear, medium hard water stream that flows west into the Black River. About 90 percent of its watershed consists of cleared agricultural land. Muskellunge, smallmouth bass, northern pike, and panfish comprise the sport fishery. Waterfowl and furbearers are present. There are no public lands adjoining the stream. Access is possible from 15 road crossings.

Davis Creek T23N, R3W, S34 Surface Acres = 0.5, Miles = 1.0

A light brown, very soft water stream that flows south into the Arbutus Canal in Jackson County. It appears to have a medium gradient. That part of the stream in Clark County passes through county forest cropland. Nearly 35 percent of the watershed is marsh and only 1 percent is cleared for agricultural use. Forage species are the principal fishes. Access is possible from two road crossings.

Dickison Creek T27N, R4W, S34
Surface Acres = 2.1, Miles = 3.1, Gradient = 31.9 feet per mile

A medium hard water stream having a light brown color that flows in a general southwardly direction into the south fork of the Eau Claire River. Approximately 65 percent of its watershed area consists of wild or wooded land. It is brook trout water and is considered the best trout stream in the county. Beaver are present. The lower 1.9 miles of stream pass through county forest cropland. Access is possible from two road crossings.

Dill Creek T28N, R1E, S24 Surface Acres = 12.0, Miles = 5.6

A hard water stream having a light brown color that flows east into the Big Eau Pleine River in Marathon County. About 90 percent of the watershed area is cleared while 10 percent consists of wooded or wild land. Forage fish species predominate. No public land adjoins the stream. There is access from five road crossings.

East Branch of Wedges Creek T25N, R3W, S15 Surface Acres = 7.9, Miles = 6.5, Gradient = 9.2 feet per mile

A medium hard water, light brown colored stream that flows south into Wedges Creek. Of its watershed area, about 59 percent has been cleared while 41 percent is wooded or wild. Waterfowl and furbearers are present. Rock bass and forage species make up the fishery. The lower one and one-half miles of stream pass through county forest cropland. There is access from three road crossings.

East Fork of Black River T23N, R3W, S36 Surface Acres = 4.8, Miles = 0.8, Gradient = 17.1 feet per mile

This stream heads in Clark County, flows southeast into Wood County, reenters Clark County, flows back east into Wood County, thence west into Jackson County where it flows in a northwestward direction and reenters Clark County again a short distance east of where it flows into Arbutus Lake. Except for the less than one mile of stream immediately east of the lake, all of the stream in Clark County was intermittent during 1964. The water is very soft and has a light brown color. Muskellunge, walleye, smallmouth bass, northern pike, channel catfish, and panfish constitute the sport fishery. The alternating pool-riffle combination that is characteristic of the Black River also applies to the east fork. Boulders make up about one-third of the bottom. Wooded or wild lands make up 56 percent of the watershed and 44 percent is cleared. There is no public land adjacent to the stream and no road crossings in the lower 0.8 mile in Clark County. Four road crossings are located in the intermittent portion of the river. Several road crossings in Jackson and Wood Counties and by boat from Arbutus Lake provide additional access.

East Fork of Halls Creek T24N, R4W, S33 Surface Acres = 2.0, Miles = 2.8, Gradient = 20 feet per mile

A clear, very soft water stream that flows south into Jackson County where it joins Halls Creek. A dam forming Emerson Lake at Humbird impounds the stream. The watershed area is primarily cleared, agricultural land. Panfish make up the sport fishery. Carp have been reported and since this species is present in Emerson Lake and in a flowage further downstream in Jackson County, such reports appear reliable. There is no public land adjoining the stream. Access is possible from six road crossings.

Fivemile Creek T24N, R3W, S35 Surface Acres = 22.9, Miles = 13.5, Gradient = 8.4 feet per mile

A light brown colored, very soft water stream that flows in a generally southeastwardly direction into Wedges Creek. There are two flowages on this stream. One dam has a 4-foot head and the other a 9.5-foot head. Panfish and forage species constitute the fishery. Of the total watershed area, about 60 percent is comprised of wooded or wild land and 40 percent has been cleared. Waterfowl and furbearers, including beaver, are present. There are 11 miles of public frontage (county forest cropland). Access is possible from eight road crossings.

Gile Creek T27N, R2W, S22 Surface Acres = 0.9, Miles = 1.8

A clear, medium hard water stream that flows west into the Black River. Forage fish species are present. About 80 percent of the watershed area has been cleared. There is no public land adjacent to the stream. Access is possible from one road crossing.

Goggle-eye Creek T29N, R4W, S22 Surface Acres = 5.5, Miles = 4.5, Gradient = 18 feet per mile

A light brown colored, medium hard water stream that flows southwest into the north fork of the Eau Claire River. Forage fish are present. About 86 percent of the watershed area has been cleared. There are no public lands adjacent to the stream. Access is possible from four road crossings.

Hay Creek T23N, R1E, S34 Surface Acres = 3.9, Miles = 3.2

A very soft water, medium brown colored stream that flows southeast into the east fork of the Black River in Jackson County. It appears to have a low gradient. Sherwood Lake, an impoundment, is located on the stream. Panfish from Sherwood Lake and forage species comprise the fishery. It is expected that northern pike are seasonally found in the stream above the flowage. Bank border consists of wetlands. About 84 percent of the watershed area is wooded or wild. Waterfowl and furbearers, including beaver, are present. Three miles of the stream in Clark County pass through county forest cropland. Access is possible from one road crossing.

Hay Creek T26N, R4W, S16 Surface Acres = 32.7, Miles = 12.0, Gradient = 8.3 feet per mile

A medium brown colored, soft water stream that flows northward into the south fork of the Eau Claire River. Hay Creek Lake, better known as Rock Dam Flowage, is located on the stream. Of the total watershed area, about 96 percent of the land is wooded or wild. That portion of stream above County Highway "I" is ditched. The creek drains a large marsh area and several lateral ditches join the stream above "I". Though that part of the stream above a natural dam located below Hay Creek Lake is considered trout water and is stocked regularly, trout natural reproduction is apparently lacking. Other fish species inhabiting the stream include largemouth bass, bullhead, and forage species. Muskellunge have occasionally been reported in the stream below the natural dam. Beaver and other furbearers are present. All but 0.6 miles of stream passes through county forest cropland. Access is possible from two road crossings and by boat from the flowage.

Helling Creek T24N, R3W, S35 Surface Acres = 0.4, Miles = 1.5, Gradient = 13.3 feet per mile

A light brown colored, very soft water stream that flows southwest into Wedges Creek. The rather small watershed area is 80 percent wooded or wild. It has a forage species fishery. About 60 percent of the bank cover is natural. There is one mile of public frontage (county forest cropland). Access is possible from one road crossing.

Horse Creek T26N, R4W, S31 Surface Acres = 3.3, Miles = 2.3, Gradient = 8.7 feet per mile

A light brown colored, very soft water stream that flows northwest into the south fork of the Eau Claire River in Eau Claire County. The entire watershed area is comprised of wooded or wild land. The stream has been ditched and much of it flows through marsh. It has a forage species fishery. All of the stream in Clark County passes through county forest cropland. Access is possible from two trail crossings.

Iron Run T26N, R4W, S19
Surface Acres = 3.1, Miles = 2.3, Gradient = 26.7 feet per mile

A very soft water, medium brown colored stream that flows northwest into the south fork of the Eau Claire River. Much of the stream is ditched and about 60 percent of it flows through wetland. The entire watershed area is wooded or wild land. Two shallow impoundments are located on the stream. It has a forage species fishery. Beaver are present. All of the stream passes through county forest cropland. Access is possible from one road crossing and by boat from the two flowages.

<u>Jack Creek T24N</u>, R2W, S26 Surface Acres = 15.0, Miles = 9.5, Gradient = 14.4 feet per mile

A clear, hard water stream that flows west to join Cunningham Creek. Northern pike, smallmouth bass, and panfish constitute the fishery. About 87 percent of the watershed area has been cleared for agricultural purposes. There are no public lands adjoining the creek. Access is possible from nine road crossings.

Little Otter Creek T29N, R4W, S18 Surface Acres = 0.3, Miles = 1.0

A clear, hard water stream that flows southward into Chippewa County and joins the Wolf River. It has a forage species fishery. In Clark County, about 99 percent of the watershed area has been cleared for agricultural uses. Marsh bank border is found along 40 percent of the stream. There is no public land adjacent to the stream and there are no road crossings in Clark County.

Meadows Creek T24N, R3W, S11
Surface Acres = 4.4, Miles = 4.3, Gradient = 14.5 feet per mile

A clear, very soft water stream that flows south and then west into Snyder Lake where it joins Wedges Creek. It has a primarily forage species fishery. About 65 percent of the watershed area is cleared and 35 percent is wooded or wild. There is no public land adjacent to the stream. Access is possible from three road crossings.

North Fork of Eau Claire River T27N, R4W, S18 Surface Acres = 75.6, Miles = 24.0, Gradient = 7.5 feet per mile

A medium hard water, light brown colored stream that flows south and then west into Eau Claire County where it joins the south fork to form the main Eau Claire River. Muskellunge and smallmouth bass are the primary sport fish. About 75 percent of the watershed area in Clark County has been cleared and 25 percent is wooded or wild. Waterfowl and furbearers are present. There are 15 miles of public frontage (forest cropland). Access is possible from nine road crossings. Light boat traffic is possible, especially in the lower portion of the stream, but except during high water conditions, portages are frequent.

North Fork of Poplar River T28N, R1W, S8 Surface Acres = 54.4, Miles = 20.4

A clear, medium hard water stream that flows southward to join the south fork and form the main river. It appears to have a high gradient. Smallmouth bass and panfish constitute the fishery. About 70 percent of the watershed area is cleared for agricultural purposes. Waterfowl and furbearers are present. There are 2.4 miles of public frontage including a small park area. There is an unimproved boat landing at the park. Light boat traffic is possible, but portages are necessary except during high water conditions. Access is available at thirteen road crossings.

Norwegian Creek T27N, R3W, S15 Surface Acres = 2.0, Miles = 2.8

A medium hard water, clear stream that flows westward to join the south fork of the Eau Claire River. It appears to have a high gradient. Smallmouth bass and forage fish species are present. About one-half of the watershed area is wooded or wild. There is no public frontage. Access is possible from three road crossings.

O'Neil Creek T24N, R2W, S15 Surface Acres = 10.7, Miles = 2.6, Gradient = 11.4 feet per mile

A clear, hard water stream that flows west into the Black River. There are two dams on the stream and both are located at Neillsville. It has primarily a forage species fishery. Bullhead are present. Approximately 1.5 miles east of Neillsville, the north and south branches of the stream join to form the main creek. During the 1964 investigation, only the south branch had continuous flow. The north branch and the middle branch, a tributary of the north branch, were intermittent. About 82 percent of the watershed area is cleared for agricultural purposes. There are no public lands adjacent to the stream. Access is possible from one road crossing.

Poney Creek T25N, R3W, S22 Surface Acres = 1.1, Miles = 3.1, Gradient = 10 feet per mile

A medium brown colored, soft water stream that flows east into Wedges Creek. It is considered trout water, but is not stocked and natural reproduction is apparently lacking. During the 1964 investigation, it was nearly intermittent. Beaver and other furbearers are present. The entire stream flows through county forest cropland and 96 percent of the watershed area is wooded or wild land. There is considerable marsh drainage. Access is possible from one road crossing.

Poplar River T27N, R2W, S10 Surface Acres = 67.3, Miles = 7.4

A clear, medium hard water stream that is formed by the junction of the north and south forks and flows south into the Black River. There is a small impoundment at Owen. Fish species present are walleye, smallmouth bass, northern pike, rock bass, pumpkinseed, crappie, bullhead, carp and forage fishes. About 75 percent of the watershed area is cleared land. In 1962, a fish kill occurred as a result of improper sewage treatment at Owen. Light boat traffic is possible, but portaging is necessary along some areas. Waterfowl and furbearers are present. There is one picnic site, a wayside, and an unimproved boat landing is also located there. Access is possible from four road crossings.

Rock Creek T23N, R2W, S34 Surface Acres = 16.7, Miles = 12.5, Gradient = 11.2 feet per mile

A very soft water, light brown colored stream that flows west and then south into Jackson County where it joins the east fork of the Black River. The principal fishes are forage species. Beaver and other furbearers are present. Woodcock hunting is exceptionally good along the stream. About 77 percent of the watershed area is wooded or wild land and 20 percent of the bank border is wetland. There are 11.2 miles of public frontage (forest cropland). Access is possible from six road crossings.

Rock Creek T26N, R2W, S3 Surface Acres = 24.5, Miles = 15.4

A light brown colored, medium hard water stream that flows westwardly and joins the Black River at Greenwood. It appears to have a high gradient. Smallmouth bass and panfish are the principal sport species, but northern pike may be found seasonally. About 90 percent of the watershed area is cleared land while 7 percent of the bank border is wetland. Waterfowl are present. There is no public land adjacent to the stream. Access is possible from eight road crossings.

Rocky Run T27N, R3W, S26 Surface Acres = 9.0, Miles = 6.2

A clear, medium hard water stream that flows south and then west into the south fork of the Eau Claire River. It appears to have a high gradient. Smallmouth bass and panfish comprise the sport fishery. Of the total watershed area, about 73 percent of the land has been cleared. There are no public lands adjoining the creek. Access is possible from five road crossings.

Roger Creek T28N, R4W, S6 Surface Acres = 3.2, Miles = 3.5, Gradient = 17.8 feet per mile

A clear, hard water stream that flows in a southwesterly direction into Chippewa County where it joins the Wolf River. Primarily a forage species habitat. About 94 percent of the land in the watershed area is cleared. There are no public lands adjacent to the stream. Access is possible from six road crossings.

Ryan Creek T26N, R4W, S17
Surface Acres = 2.8, Miles = 3.8, Gradient = 3.5 feet per mile

A light brown, soft water stream that flows south into the south fork of the Eau Claire River. A brook trout stream. There is some wetland drainage and the entire watershed area is wooded or wild land. Beaver are present. The stream flows through county forest cropland. Two drivable trails cross the stream.

Scott Creek T26N, R4W, S25 Surface Acres = 1.8, Miles = 3.0, Gradient = 23.3 feet per mile

A soft water, medium brown colored stream that flows westward and joins Hay Creek. Classified as a brown trout stream. Stocking has been discontinued because of poor water quality. Natural trout reproduction is poor. About 60 percent of the land in the watershed is wooded or wild and 40 percent of the bank border is wetland. The aerial groundwater survey conducted during the winter of 1963 found a small area of open water near the north edge of Section 32. There are two miles of public frontage through county forest cropland. Beaver are present. Access is possible from one road crossing.

Simes Creek T27N, R4W, S18 Surface Acres = 0.6, Miles = 1.2, Gradient = 11.8 feet per mile

A medium brown, soft water stream that flows northward into the north fork of the Eau Claire River. Habitat favors forage fishes. The stream flows through county forest cropland and has marsh drainage. About 30 percent of the sream passes through wetland while 70 percent has wooded bank cover. The entire watershed area consists of wooded or wild land. There is only wilderness access.

South Branch of O'Neil Creek T24N, R1W, S18 Surface Acres = 17.0, Miles = 11.7, Gradient = 10.3 feet per mile

A clear, hard water stream that flows west to form the main O'Neil Creek at the junction with the north branch. It is primarily a panfish-forage fish stream. About 84 percent of the watershed area is cleared land. There is no public frontage. Access is possible from twelve road crossings.

South Branch of Yellow River T25N, R1E, S24 Surface Acres = 3.5, Miles = 3.8, Gradient = 4.7 feet per mile

A light brown colored, medium hard water stream that flows southeast into Wood County where it joins the Yellow River. During the 1964 investigation, over one-half of its length had intermittent flow in Clark County. One landowner stated that the water level was the lowest he has seen it since the drought in the 1930's. Primarily a panfish-forage fish habitat. It is likely that carp are present. Furbearers are found and there is trapping for muskrat and mink. Waterfowl are present. About 89 percent of land in the watershed has been cleared. There is no public frontage along the stream. Access is possible from several road crossings. During the investigation, there was continuous stream flow at the lower four crossings.

South Fork of Eau Claire River T26N, R4W, S19
Surface Acres = 72.0, Miles = 37.0, Gradient = 12.3 feet per mile

A soft water, light brown colored stream that flows southwest into Eau Claire County where it joins the north fork to form the main river. Muskellunge, walleye, largemouth bass, smallmouth bass, and panfish comprise the fishery. Carp are also present. About 60 percent of the watershed area is wooded or wild land. Furbearers, including beaver, and waterfowl are present. Light boat traffic is possible, but portaging around riffle areas is necessary. There are 23 miles of public frontage through county forest cropland. Access is possible from 16 road crossings.

South Fork of Poplar River T28N, R1W, S8 Surface Acres = 114.2, Miles = 37.7

A clear, hard water stream that flows northwest and joins the north fork to form the main river. It appears to have a high gradient. Largemouth bass, smallmouth bass, northern pike, and panfish comprise the fishery. It is likely that carp are also present. Furbearers and waterfowl are present. About 71 percent of the watershed area is cleared land. Along the stream, 40 percent of the bank border is wetland. Light boat traffic is possible although portaging is necessary except during high water periods. There is 0.2 miles of public frontage. Access is possible from seven road crossings.

Spooner Creek T24N, R2W, S15 Surface Acres = 1.0, Miles = 2.1, Gradient = 38.1 feet per mile

A light brown colored, medium hard water stream that flows southeast into the Black River. It is primarily a forage fish species stream. About 55 percent of the watershed area is wooded or wild land. Furbearers, including beaver, are present. There is no public frontage adjacent to the stream. Access is possible from three road crossings.

Sterling Creek T28N, R4W, S27
Surface Acres = 2.5, Miles = 3.5, Gradient = 24.3 feet per mile

A clear, medium hard water stream that flows southwest into the north fork of the Eau Claire River. It is primarily a forage fish stream. About 81 percent of the watershed area is cleared land. A wetland bank border is found along 15 percent of the stream. There is no public frontage. Access is possible from two road crossings.

Surveyor Creek T26N, R4W, S19
Surface Acres = 1.5, Miles = 1.5, Gradient = 26.7 feet per mile

A medium brown colored, very soft water stream that flows northward into the south fork of the Eau Claire River. It is classified and managed as a brook trout stream, but apparently lacks natural reproduction. All of the bank has natural vegetation cover. Furbearers are present. The entire stream flows through county forest cropland and the watershed area is wooded or wild land. Access is possible from one bridge crossing.

Thompson Creek T26N, R4W, S35 Surface Acres = 0.8, Miles = 1.0, Gradient = 15.5 feet per mile

A clear, very soft water stream that flows northwest into Hay Creek. During the 1964 investigation, over one-half of its length, all that portion above Lake 1-9 in South Foster Township, had intermittent flow, and that part of the stream below the lake had standing water. It supports forage fish species. All the bank has natural vegetation cover, including 25 percent wetlands. Furbearers, including beaver, are present. The entire stream, including the intermittent portion, passes through county forest cropland. The watershed area is wooded or wild land. Access is possible from two road crossings, including one that crosses a portion of intermittent stream.

Tomas Creek T23N, R1E, S13 Surface Acres = 9.7, Miles = 2.5, Gradient = 10 feet per mile

A very soft water, medium brown colored stream that flows south and joins the east fork of the Black River. During the 1964 investigation, only the lower 2.5 miles were not intermittent. Its primary fishery is forage species. Furbearers, including beaver, are present. About 86 percent of the watershed area is wooded or wild land and 33 percent of the bank border is wetland. There are no adjacent public lands. Access is possible from one road crossing.

Wedges Creek T23N, R2W, S7
Surface Acres = 63, Miles = 20.0, Gradient = 6 feet per mile

A soft water, light brown colored stream that flows southward into the Black River. The one dam on the stream forms Snyder Lake. That portion of stream above the dam is classified as trout water. A few trout are reportedly caught, but none are stocked. Other species present in this portion of stream include panfish and forage fishes. From the dam downstream, the creek is classified as smallmouth bass water. Panfish and forage species are also present. About 65 percent of the watershed area is wild or wooded land. During the aerial groundwater survey conducted in the winter of 1963, a small area of open water was found in Section 10 of Seif Township. Waterfowl and furbearers, including beaver, are present. There are 24.6 miles of public frontage (county forest cropland). Access is possible from five road crossings.

Windy Run T26N, R4W, S15 Surface Acres = 1.1, Miles = 2.2, Gradient = 9.1 feet per mile

A soft water, light brown colored stream that flows northward into Hay Creek Lake. Its fishery consists of forage species. It drains marshland and about 60 percent of its length has wetland cover. The entire watershed area consists of wooded or wild land. There are 4.4 miles of public frontage, county forest cropland. There is no access from road crossings.

Wolf River T28N, R4W, S30 Surface Acres = 8.7, Miles = 6.0, Gradient = 8.6 feet per mile

A clear, medium hard water stream that flows southwest into the north fork of the Eau Claire River in Eau Claire County. The stream meanders through portions of Clark, Taylor, Chippewa, and Eau Claire Counties. It enters Clark County first from Taylor County and then again from Chippewa County. Its fishery consists primarily of panfish and forage species, but there may be bass and carp present as these two species have been reported in Chippewa County. About 67 percent of the land adjacent to the stream has been cleared as has 94 percent of the land included in the watershed area. There is no public land adjoining the stream. Access is possible from six road crossings.

Yellow River T25N, R1E, S1 Surface Acres = 5.5, Miles = 3.0, Gradient = 5.3 feet per mile

A light brown colored, medium hard water stream that flows southeast into Wood County and then into Juneau County where it joins the Wisconsin River in Castle Rock Flowage. Except for the lower three miles, the river was intermittent in Clark County during 1964. Its fishery is primarily panfish and forage species. Carp are present. About 85 percent of the watershed area is cleared land. Furbearers are present. There is no public land adjoining the river. Access is possible from several road crossings, but during 1964 only one passed over the flowing portion of the stream.

Unnamed Streams

Sherwood Township T23N, R1E 28-10

Light brown colored, very soft water.

Surface Acres = 0.5.

Miles = 1.0.

Direction of flow: East.

Tributary of: Hay Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Waterfowl and furbearers, including beaver.

Bank border is 100 percent wetland.

Public frontage: 2.0 miles, Co. FCL.

Access: No road crossings.

33-5

Light brown, very soft water.

Surface Acres = 1.1

Miles = 2.6.

Direction of flow: South.

Tributary of: Hay Creek.

Fishery: Forage species.

Watershed area: 93 percent wooded

or wild land.

Miscellaneous observations: Furbearers.
Bank border is 99 percent wetland

Public frontage: 5.2 miles, Co. FCL.

Access: One road crossing.

Washburn Township T23N, R1W 22-11

Light brown colored, very soft water.

Surface Acres = 0.7.

Miles = 2.0.

Direction of flow: South.

Tributary of: Rock Creek.

Fishery: Forage species.

Watershed area: 55 percent wooded

or wild land.

Miscellaneous observations: Furbearers.

Bank border 40 percent wetland.

Public frontage: 0.8 mile, Co. FCL.

Access: One road crossing.

36-11

Clear, very soft water.

Surface Acres = 0.4.

Miles = 0.9.

Direction of flow: Southeast.

Tributary of: East Fork Black River.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observation: Waterfowl and furbearers, including beaver.

Bank border is 100 percent wetland.

Public frontage: 1.8 miles, Co. FCL.

Access: No road crossings.

Levis Township T23N, R2W

Light brown colored, soft water.

Surface Acres = 1.2.

Miles = 1.3.

Direction of flow: West.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 50 percent wooded

or wild land.

Public frontage: None.

Access: One road crossing.

10-1

Light brown colored, very soft water.

Surface Acres = 0.1.

Miles = 0.4.

Direction of flow: East.

Tributary of: Creek 12-6 (Dewhurst Tp.).

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Ditch.

Public frontage: 0.8 mile, Co. FCL.

Access: No road crossings.

Dewhurst Township T23N, R3W 8-14

Medium brown colored, very soft water.

Surface Acres = 0.3.

Miles = 0.6.

Gradient = 40 feet per mile.

Direction of flow: South.

Tributary of: Creek 17-14 (Dewhurst Tp.).

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Bank border

100 percent wetland.

Public frontage: 1.2 miles, Co. FCL.

Access: No road crossing.

12-6

Medium brown colored, very soft water.

Surface Acres = 2.8.

Miles = 2.3.

Direction of flow: East.

Tributary of: Wedges Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Furbearers.

Bank border 90 percent wetland.

Public frontage: 4.0 miles, Co. FCL.

Access: One road crossing.

17-14

Clear, very soft water.

Surface Acres = 0.4.

Miles = 1.8.

Gradient = 40 feet per mile.

Direction of flow: South.

Tributary of: Arnold Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Public frontage: 3.6 miles, Co. FCL.

Access: No road crossings.

<u>18-4a</u>

Medium brown colored, very soft water.

Surface Acres = 0.9.

Miles = 1.3.

Gradient = 33.3 feet per mile.

Direction of flow: Southeast.

Tributary of: Arnold Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Furbearers, beaver; stream is a ditch; bank

border 100 percent wetland.

Public frontage: 2.6 miles, Co. FCL.

Access: No road crossings.

18-4c

Medium brown colored, very soft water.

Surface Acres = 1.5.

Miles = 0.7.

Direction of flow: North.

Tributary of: Arnold Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Furbearers;

stream is a ditch; bank border

100 percent wetland.

Public frontage: 1.4 miles, Co. FCL.

Access: No road crossings.

21-12

Clear, very soft water.

Surface Acres = 0.6.

Miles = 0.9.

Gradient = 28.6 feet per mile.

Direction of flow: Southeast.

Tributary of: Arnold Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Furbearers, including beaver; stream is a ditch;

bank border is 33 percent wetland.

Public frontage: 1.8 miles, Co. FCL.

Access: No road crossings.

25-2

Light brown colored, very soft water.

Surface Acres = 0.5.

Miles = 0.4.

Direction of flow: East.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 80 percent wooded

or wild land.

Public frontage: None.

Access: One road crossing.

25-7

Light brown colored, very soft water.

Surface Acres = 0.02.

Miles = 0.2.

Direction of flow: East.

Tributary of: Arbutus Lake.

Fishery: Forage species.

Watershed area: 90 percent wooded

or wild land.

Public frontage: None.

Access: One road crossing.

25-8

Light brown color, very soft water.

Surface Acres = 0.1.

Miles = 0.6.

Direction of flow: Northwest.

Tributary of: Arbutus Lake.

Fishery: Forage species.

Watershed area: 80 percent wooded

or wild land.

Public frontage: None.

Access: One road crossing.

<u>25-11</u>

Light brown colored, very soft water.

Surface Acres = 0.02.

Miles = 0.2.

Direction of flow: East.

Tributary of: Arbutus Lake.

Fishery: Forage species.

Watershed area: 88 percent wooded

or wild land.

Public frontage: None.

Access: One road crossing.

27-10

Clear, very soft water.

Surface Acres = 0.7.

Miles - 1.4.

Direction of flow: South.

Tributary of: Arnold Creek.

Fishery: Forage species.

Watershed area: 97 percent wooded or wild land.

Miscellaneous observations: Bank border 33 percent wetland.

Access: One road crossing.

<u>27-12</u>

Clear, very soft water.

Surface Acres = 0.3.

Miles = 0.5.

Direction of flow: South.

Tributary of: Arnold Creek.

Fishery: Forage species.

Watershed area: 90 percent wooded

or wild land.

Public frontage: 1.0 mile, Co. FCL.

Access: One road crossing.

34-2

Light brown colored, very soft water.

Surface Acres = 0.2.

Miles = 0.5.

Direction of flow: Southwest.

Tributary of: Arnold Creek.

Fishery: Forage species.

Watershed area: 93 percent wooded

or wild land.

Public frontage: 1.0 mile, Co. FCL.

Access: No road crossings.

Lynn Township T24N, R1E 13-14

Clear, medium hard water.

Surface Acres = 0.3.

Miles = 0.6.

Gradient = 20 feet per mile.

Direction of flow: Southwest.

Tributary of: East Fork Black River.

Fishery: Forage species.

Watershed area: 30 percent wooded

or wild land.

Public frontage: None.

Access: No road crossings.

<u>17-5</u>

Clear, hard water.

Surface Acres = 1.3.

Miles = 2.7.

Gradient = 7.4 feet per mile.

Direction of flow: West.

Tributary of: Cunningham Creek.

Fishery: Classed as trout water. Some natural reproduction. Not stocked.

Watershed area: 89 percent cleared land.

Miscellaneous observations: Aerial groundwater survey conducted during winter of 1963 found 3 small open areas ~ 1 in Section 8 and 2 in Section 16.

Public frontage: None.

Access: Six road crossings.

Grant Township T24N, R1W 36-14

Light brown colored, very soft water.

Surface Acres = 1.0.

Miles = 2.0.

Gradient = 20 feet per mile.

Direction of flow: Southwest.

Tributary of: An intermittent stream that joins Cunningham Creek.

Fishery: Forage species.

Watershed area: 91 percent wooded or wild land.

Grant Township - Con't.

Miscellaneous observations: Furbearers. Stream disappears in marsh except during high water periods.

Public frontage: None.

Access: Two road crossings.

Hewett Township T24N, R3W 20-7

Light brown colored, very soft water.

Surface Acres = 0.7.

Miles = 2.0.

Gradient = 25 feet per mile.

Direction of flow: South.

Tributary of: Fivemile Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded or wild land.

Miscellaneous observations: Stream is a ditch that drains marshland.

Bank border is 40 percent wetland.

Public frontage: 4.0 miles, Co. FCL.

Access: One road crossing.

Mentor Township T24N, R4W 12-11

Dark brown colored, very soft water.

Surface Acres = 2.4.

Miles = 1.5.

Direction of flow: South.

Tributary of: Creek 24-5 (Mentor Tp.).

Fishery: Forage species.

Watershed area: 100 percent wooded or wild.

Miscellaneous observations: Stream is a ditch that drains wetland. Bank border is 100 percent wetland.

Public frontage: 3.0 miles, Co. FCL.

Access: No road crossings.

15-12

Light brown colored, soft water.

Surface Acres = 0.4.

Miles = 1.1.

Gradient = 12.5 feet per mile.

Direction of flow: East.

Tributary of: Fivemile Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded or wild land.

Public frontage: None.

Access: Two road crossings.

22-16

Clear, very soft water.

Surface Acres = 0.4.

Miles = 1.5.

Direction of flow: Northwest.

Tributary of: Fivemile Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: Stream

is a ditch draining wetland. Bank border is 67 percent wetland.

Public frontage: 2.1 miles, Co. FCL.

Access: None.

24-5

Dark brown colored, very soft water.

Surface Acres = 7.8.

Miles = 3.2.

Gradient - 10 feet per mile.

Direction of flow: South.

Tributary of: Lake 24-6 (Mentor Tp.),

located on Fivemile Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded or

wild.

Miscellaneous observations: Waterfowl and furbearers, including beaver. One dam, Lake 13-2, on stream. Upper portion of stream ditched and drains wetland. Bank border

75 percent wetland.

24-5 - Con't.

Public frontage: 11.0 miles, Co. FCL.

Access: No road crossings.

24-14

Medium brown, very soft water.

Surface Acres = 3.2.

Miles = 1.8.

Direction of flow: North.

Tributary of: Lake 24-13 (Mentor Tp.),

a cranberry reservoir.

Fishery: Panfish and forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: A ditch that drains marsh and receives water pumped from Lake 24-6 for cranberry culture. Bank border

is 100 percent wetland.

Public frontage: 3.6 miles, Co. FCL.

Access: No road crossings.

30-14

Clear, very soft water.

Surface Acres = 0.4.

Miles = 1.7.

Gradient = 2.4 feet per mile.

Direction of flow: South.

Tributary of: East Fork Halls Creek.

Fishery: Trout and forage species.

Watershed area: 85 percent cleared land.

Miscellaneous observations: Anglers reportedly catch trout. Aerial groundwater survey conducted during winter of 1963 found open water in Sections 19 and 30.

Public frontage: None.

Access: One road crossing.

33-8

Clear, very soft water.

Surface Acres = 0.4.

Miles = 1.7.

Gradient = 40 feet per mile.

Direction of flow: South.

Tributary of: East Fork Halls Creek.

33-8 - Con't.

Fishery: Forage species.

Watershed area: 65 percent wooded

or wild land.

Public frontage: None.

Access: Two road crossings.

Fremont Township T25N, R1E 33-7

Light brown, soft water.

Surface Acres = 0.5.

Miles = 0.8.

Direction of flow: South.

Tributary of: S. Branch O'Neil Creek.

Fishery: Forage species.

Watershed area: 50 percent wooded

or wild land.

Public frontage: None.

Access: One road crossing.

York Township T25N, R1W 10-2

Light brown colored, medium hard water.

Surface Acres = 1.2.

Miles = 2.0.

Gradient = 26.7 feet per mile.

Direction of flow: Southward.

Tributary of: N. Branch O'Neil Creek.

Fishery: Forage species.

Watershed area: 80 percent cleared land.

Public frontage: None.

Access: Two road crossings.

<u>15-16</u>

Clear, hard water.

Surface Acres = 0.6.

Miles = 1.2.

Gradient = 33.3 feet per mile.

Direction of flow: Southwest.

Tributary of: N. Branch O'Neil Creek.

Fishery: Forage species.

Watershed area: 67 percent cleared land.

Public frontage: None.

Access: No road crossings.

Seif Township T25N, R3W 34-16

Clear, very soft water.

Surface Acres = 0.7.

Miles = 1.3.

Gradient = 48 feet per mile.

Direction of flow: West.

Tributary of: Wedges Creek.

Fishery: Brook trout.

Watershed area: 99 percent wooded or wild land.

Miscellaneous observations: Stream not stocked, has small native trout population. Known locally as Seif Creek.

Public frontage: 2.6 miles, Co. FCL.

Access: One road crossing.

31-6

Medium brown colored, very soft water.

Surface Acres = 0.3.

Miles = 0.6.

Direction of flow: Northwest.

Tributary of: Creek 31-7 (S. Foster Tp.).

Fishery: Forage species.

Watershed area: 60 percent cleared land.

Miscellaneous observations: Drains marsh; more than one-half of length intermittent in 1964.

Public frontage: None.

Access: One road crossing (2 including intermittent portion).

South Foster Township T25N, R4W 11-8

Light brown colored, soft water.

Surface Acres = 0.4.

Miles = 1.7.

Direction of flow: East.

Tributary of: Hay Creek.

Fishery: Forage species.

Watershed area: 100 percent wooded

or wild land.

Miscellaneous observations: This is a ditch that drains wetland. Bank border 67 percent wetland.

Public frontage: 2.6 miles, Co. F.C.L.

Access: One road crossing.

31-7

Light brown colored, very soft water.

Surface Acres = 0.1.

Miles = 0.6.

Direction of flow: Northwest.

Tributary of: Black Creek in Eau Claire Co.

Fishery: Forage species.

Watershed area: 70 percent cleared land.

Public frontage: None.

Loyal Township T26N, R1W

2-6

Clear, hard water.

Surface Acres = 1.1.

Miles = 2.2.

Direction of flow: West.

Tributary of: Rock Creek.

Fishery: Forage species.

Watershed area: 99 percent cleared

land.

Miscellaneous observations: One dam

(farm pond) on stream.

Public frontage: None.

Access: Four road crossings.

Eaton Township T26N, R2W 2-16

Clear, medium hard water.

Surface Acres = 0.8.

Miles = 1.4.

Direction of flow: North.

Tributary of: Rock Creek.

Fishery: Forage species.

Watershed area: 80 percent cleared land.

Public frontage: None.

Access: One road crossing.

3-11

Clear, hard water.

Surface Acres = 0.6.

Miles = 1.6.

Direction of flow: Southeast.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 75 percent cleared land.

Miscellaneous observations: Bank border

12 percent wetlands.

Public frontage: None.

Access: Two road crossings.

9-1

Clear, medium hard water.

Surface Acres = 0.8.

Miles = 1.3.

Direction of flow: East.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 55 percent cleared land.

Public frontage: None.

Hendren Township T26N, R3W 2-16

Light brown colored, soft water.

Surface Acres = 0.5.

Miles = 1.6.

Direction of flow: North.

Tributary of: Rocky Run.

Fishery: Smallmouth, bass, panfish.

Watershed area: 80 percent cleared land.

Public frontage: None.

Access: Two road crossings.

7-1

Clear, soft water.

Surface Acres = 0.8.

Miles = 1.8.

Gradient = 11.1 feet per mile.

Direction of flow: Southwest.

Tributary of: Probably Cameron Creek.

Fishery: Forage species.

Watershed area: 85 percent wooded or wild land.

Miscellaneous observations: Stream disappears in marsh. During high water periods, probably drains into Cameron Creek, possibly into the S. Fork of Eau Claire River, or perhaps both. Bank border is 47 percent wetland.

Public frontage: None.

Access: Three road crossings.

North Foster Township T26N, R4W 16-2

Clear, soft water.

Surface Acres = 0.2.

Miles • 0.7.

Gradient = 28.6 feet per mile.

Direction of flow: Northwest.

Tributary of: S. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 100 percent wooded or wild land.

Public frontage: 1.4 miles, Co. FCL.

Access: One road crossing.

Beaver Township T27N, R1W 4-1

Clear, hard water.

Surface Acres = 1.0.

Miles = 2.0.

Direction of flow: Northwest.

Tributary of: Creek 28-12 (Beaver Tp.).

Fishery: Forage species.

Watershed area: 75 percent cleared land.

Miscellaneous observations: Bank border is 50 percent wetland.

Public frontage: None.

<u>4-5</u>

Clear, hard water.

Surface Acres = 0.2.

Miles = 0.4.

Direction of flow: South.

Tributary of: Creek 28-12 (Beaver Tp.).

Fishery: Forage species.

Watershed area: 55 percent is wooded

or wild land.

Miscellaneous observations: Bank border

is 15 percent wetland.

Public frontage: None.

Access: One road crossing.

<u>5-11</u>

Clear, hard water.

Surface Acres = 1.7.

Miles = 2.4.

Direction of flow: South.

Tributary of: Creek 28-12 (Beaver Tp.).

Fishery: Forage species.

Watershed area: 65 percent is wooded

or wild land.

Miscellaneous observations: Bank border

is 43 percent wetland.

Public frontage: None.

Access: One road crossing.

16-12

Clear, medium hard water.

Surface Acres = 1.2.

Miles = 2.4.

Direction of flow: Northwest.

Tributary of: Creek 17-15 (Beaver Tp.).

Fishery: Panfish, forage species.

Watershed area: 65 percent is cleared

land.

Public frontage: None.

Access: Three road crossings.

17-15

Clear, hard water.

Surface Acres = 2.2.

Miles = 4.6.

Direction of flow: West.

Tributary of: Creek 28-12 (Beaver Tp.).

Fishery: Panfish and forage species.

Watershed area: 86 percent is cleared

land.

Public frontage: None.

Access: Three road crossings not including two where stream

was intermittent.

Clear, medium hard water.

Surface Acres = 14.6.

Miles = 8.6.

Direction of flow: South.

Tributary of: Rock Creek.

Fishery: Panfish and forage species.

Watershed area: 89 percent is cleared land.

Miscellaneous observations: Bank border

is 44 percent wetland.

Public frontage: None.

Access: Seven road crossings.

31-13c

Clear, medium hard water.

Surface Acres = 0.3.

Miles = 1.2.

Direction of flow: Southeast.

Tributary of: Rock Creek.

Fishery: Forage species.

Watershed area: 60 percent is cleared land.

Public frontage: None.

Access: One road crossing.

31**-**13b

Clear, medium hard water.

Surface Acres = 0.9.

Miles = 1.8.

Direction of flow: South.

Tributary of: Rock Creek.

Fishery: Forage species.

Watershed area: 79 percent is cleared land.

Public frontage: None.

Access: One road crossing.

34-8

Clear, hard water.

Surface Acres = 0.6.

Miles = 1.6.

Direction of flow: West.

Tributary of: Rock Creek.

Fishery: Forage species.

Watershed area: 80 percent is cleared land.

Public frontage: None.

Access: Two road crossings.

Warner Township T27N, R2W 11-2

Clear, medium hard water.

Surface Acres = 0.8.

Miles = 1.8.

Direction of flow: West.

Tributary of: Poplar River.

Fishery: Forage species.

Watershed area: 65 percent wooded

or wild land.

Public frontage: None.

Access: Three road crossings.

17-6

Clear, medium hard water.

Surface Acres = 0.1.

Miles = 0.8.

Direction of flow: Northwest.

Tributary of: Norwegian Creek.

Fishery: Forage species.

Watershed area: 55 percent is cleared

land.

Public frontage: None.

Access: No road crossings.

18-5

Clear, medium hard water.

Surface Acres = 0.6.

Miles = 1.2.

Direction of flow: North.

Tributary of: Norwegian Creek.

Fishery: Forage species.

Watershed area: 66 percent is wooded

or wild land.

Public frontage: None.

Access: One road crossing.

<u>23 -5aa</u>

Clear, medium hard water.

Surface Acres = 0.1.

Miles = 0.4.

Direction of flow: South.

Tributary of: 23-5ad (Warner Tp.).

Fishery: Forage species.

Watershed area: 60 percent is wooded

or wild land.

Public frontage: None.

23 **-**5ad

Clear, medium hard water.

Surface Acres = 0.5.

Miles = 1.0.

Direction of flow: West.

Tributary of: Gile Creek.

Fishery: Forage species.

Watershed area: 50 percent is wooded

or wild land.

Public frontage: None.

Access: One road crossing.

24-6

Clear, soft water.

Surface Acres = 0.1.

Miles = 0.6.

Direction of flow: South.

Tributary of: 23-5ad (Warner Tp.).

Fishery: Forage species.

Watershed area: 70 percent is wooded

or wild land.

Public frontage: None.

Access: One road crossing.

34-3

Clear, medium hard water.

Surface Acres = 0.3.

Miles = 0.8.

Direction of flow: West.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 95 percent is wooded

or wild land.

Public frontage: None.

Access: One road crossing.

<u>34-14</u>

Clear, medium hard water.

Surface Acres = 0.5.

Miles = 1.0.

Direction of flow: East.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 75 percent is cleared

land.

Miscellaneous observations: Nearly

intermittent.

Public frontage: None.

Mead Township T27N, R3W 12-12

Clear, medium hard water.

Surface Acres = 1.5.

Miles = 2.4.

Direction of flow: South.

Tributary of: Norwegian Creek.

Fishery: Forage species.

Watershed area: 55 percent is cleared land.

Miscellaneous observations: Nearly intermittent.

Public frontage: None.

Access: Two road crossings.

<u>18-16</u>

Clear, soft water.

Surface Acres = 1.3.

Miles = 2.5.

Gradient = 16 feet per mile.

Direction of flow: West.

Tributary of: Black Creek.

Fishery: Brook trout, forage species.

Watershed area: 98 percent is wooded or wild land.

Miscellaneous observations: Furbearers, including beaver. Small native trout population.

Public frontage: 4 miles, Co. FCL.

Access: One road crossing.

28-16

Clear, soft water.

Surface Acres = 0.3.

Miles = 0.8.

Direction of flow: Northwest.

Tributary of: S. Fork Eau Claire River

via Mead Lake.

Fishery: Panfish, forage species.

Watershed area: 67 percent is cleared land.

Public frontage: None.

Access: One road crossing.

29-13

Clear, hard water.

Surface Acres = 0.3.

Miles = 1.4.

Gradient = 3.2 feet per mile.

Direction of flow: South.

Tributary of: S. Fork Eau Claire River

via Mead Lake.

Fishery: Panfish, forage species.

Watershed area: 99 percent is wooded

or wild land.

Public frontage: 1 mile, Co. FCL.

Access: Two road crossings.

Clear, medium hard water.

Surface Acres = 0.7.

Miles = 1.5.

Direction of flow: Northwest.

Tributary of: Rocky Run.

Fishery: Forage species.

Watershed area: 55 percent is cleared land.

Public frontage: None.

Access: One road crossing.

Butler Township T27N, R4W 16-10

Medium brown colored, soft water.

Surface Acres = 0.3.

Miles = 1.7.

Gradient = 11.8 feet per mile.

Direction of flow: Northwest.

Tributary of: N. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 100 percent is wooded

or wild land.

Miscellaneous observations: Bank border

is 33 percent wetland.

Public frontage: 2 miles, Co. FCL.

Access: No road crossings.

34-9

Medium brown colored, soft water.

Surface Acres = 0.8.

Miles = 1.6.

Gradient = 12.5 feet per mile.

Direction of flow: Southeast.

Tributary of: S. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 100 percent is wooded

or wild land.

Miscellaneous observations: Furbearers,

including beaver.

Public frontage: 1.6 miles, Co. FCL.

Access: One road crossing.

Colby Township T28N, R1E

14-1

Clear, hard water.

Surface Acres = 0.5.

Miles = 0.9.

Direction of flow: Southwest.

Tributary of: Dill Creek.

Fishery: Forage species.

Watershed area: 75 percent is cleared

land.

Public frontage: None.

Clear, hard water.

Surface Acres = 0.04.

Miles = 0.7.

Direction of flow: North,

Tributary of: Dill Creek.

Fishery: Forage species.

Watershed area: 99 percent is cleared land.

Public frontage: None.

Access: No road crossings.

19**-**3

Clear, hard water.

Surface Acres = 2.2.

Miles = 4.0.

Direction of flow: West.

Tributary of: Creek 26-16 (Green Grove Tp.).

Fishery: Forage species.

Watershed area: 60 percent is cleared land.

Miscellaneous observations: Has partial marsh drainage. Bank border is 17 percent wetland.

Public frontage: None.

Access: Two road crossings.

Green Grove Township T28N, R1W

9-6

Clear, hard water.

Surface Acres = 1.8.

Miles = 3.0.

Direction of flow: Southwest.

Tributary of: N. Fork Poplar River.

Fishery: Forage species.

Watershed area: 80 percent is cleared land.

Public frontage: None.

Access: Three road crossings.

15-6

Clear, hard water.

Surface Acres = 0.4.

Miles = 1.0.

Direction of flow: Southwest.

Tributary of: S. Fork Poplar River.

Fishery: Forage species.

Watershed area: 66 percent is cleared land.

Miscellaneous observations: Farm pond near headwaters.

Public frontage: None.

Access: No road crossings.

Clear, soft water.

Surface Acres = 0.2.

Miles = 0.7.

Direction of flow: North.

Tributary of: S. Fork Poplar River.

Fishery: Forage species.

Watershed area: 75 percent is cleared land.

Miscellaneous observations: Bank border is 20 percent wetland.

Public frontage: None.

Access: One road crossing.

25-2

Clear, very hard water.

Surface Acres = 0.1.

Miles = 0.3.

Direction of flow: West.

Tributary of: Creek 26-16 (Green Grove Tp.).

Fishery: Forage species.

Watershed area: 65 percent is wooded

or wild land.

Public frontage: None.

Access: One road crossing.

22-4

Clear, medium hard water.

Surface Acres = 0.04.

Miles = 0.3.

Direction of flow: Northeast.

Tributary of: S. Fork Poplar River.

Fishery: Forage species.

Watershed area: 66 percent is cleared land.

Public frontage: None.

Access: No road crossings.

26-16

Clear, hard water.

Surface Acres = 14.5.

Miles = 9.2.

Direction of flow: Southwest.

Tributary of: S. Fork Poplar River.

Fishery: Panfish, forage species.

Watershed area: 91 percent is cleared land.

Miscellaneous observations: Furbearers

present.

Public frontage: None.

Access: Four road crossings.

Longwood Township T28N, R2W

33-7

Clear, hard water.

Surface Acres = 0.5.

Miles = 1.4.

Direction of flow: South.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 75 percent is cleared land.

Public frontage: None.

Access: Two road crossings.

34-7

Clear, soft water.

Surface Acres = 0.7.

Miles = 1.5.

Gradient = 32 feet per mile.

Direction of flow: East.

Tributary of: S. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 67 percent is cleared land.

Public frontage: None.

Access: Two road crossings.

Reseburg Township T28N, R3W

Clear, medium hard water.

Surface Acres = 4.0.

Miles = 4.1.

Gradient = 16 feet per mile.

Direction of flow: Southeast.

Tributary of: S. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 94 percent is cleared land.

Miscellaneous observations: Furbearers

present.

Public frontage: None.

Access: Four road crossings.

Worden Township T28N, R4W

Clear, medium hard water.

Surface Acres = 1.8.

Miles = 2.5.

Gradient = 48 feet per mile.

Direction of flow: Southwest.

Tributary of: N. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 98 percent is cleared land.

Public frontage: None.

Access: Three road crossings.

Clear, hard water.

Surface Acres = 3.7.

Miles = 3.5.

Gradient = 28.6 feet per mile.

Direction of flow: Southwest.

Tributary of: N. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 93 percent is cleared land.

Public frontage: None.

Access: Three road crossings.

30-5

Clear, medium hard water.

Surface Acres = 1.1.

Miles = 1.5.

Gradient = 13.3 feet per mile.

Direction of flow: West.

Tributary of: Wolf River.

Fishery: Forage species.

Watershed area: 80 percent is cleared land.

Public frontage: None.

Access: One road crossing.

34-1

Clear, soft water.

Surface Acres = 0.1.

Miles = 0.2.

Gradient = 80 feet per mile.

Direction of flow: West.

Tributary of: N. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 75 percent is wooded

or wild land.

Public frontage: None.

Access: One road crossing.

34-3

Medium brown colored, soft water.

Surface Acres = 2.1.

Miles = 2.7.

Gradient = 13.3 feet per mile.

Direction of flow: Northwest.

Tributary of: N. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 84 percent is wooded

or wild land.

Miscellaneous observations: Waterfowl and

furbearers including beaver. Bank

border is 40 percent wetland.

Public frontage: 2.2 miles, Co. FCL.

Mayville Township T29N, R1E 14-10

Clear, medium hard water.

Surface Acres = 0.5.

Miles = 1.3.

Direction of flow: West.

Tributary of: N. Fork Poplar River.

Fishery: Forage species.

Watershed area: 95 percent is cleared land.

Miscellaneous observations: Dorchester Children's Fishing Pond on stream.

Public frontage: None.

Access: One road crossing.

<u>17-1</u>

Clear, medium hard water.

Surface Acres = 0.9.

Miles = 2.5.

Direction of flow: South.

Tributary of: N. Fork Poplar River.

Fishery: Forage species.

Watershed area: 97 percent is cleared land.

Miscellaneous observations: May be intermittent during dry periods.

Bank border is 56 percent wetland.

Public frontage: None.

Access: Three road crossings.

18-2

Clear, soft water.

Surface Acres = 0.7.

Miles = 2.0.

Direction of flow: Northwest.

Tributary of: N. Fork Poplar River.

Fishery: Forage species.

Watershed area: 85 percent is cleared land.

Miscellaneous observations: Farm pond on stream. Bank border is

25 percent wetland.

Public frontage: None.

Access: Two road crossings.

Hoard Township T29N, R1W 6-5

Clear, soft water.

Surface Acres = 0.8.

Miles = 2.3.

Direction of flow: Northwest.

Tributary of: Trapper's Creek.

Fishery: Forage species.

Watershed area: 80 percent is wooded

or wild land.

Miscellaneous observations: Wetland drainage. Portion of stream

ditched. Bank border is 70 percent wetland.

Public frontage: 0.5 miles, Co. FCL.

Access: Three road crossings.

Medium brown colored, medium hard water.

Surface Acres = 0.6.

Miles = 0.7.

Direction of flow: Southwest.

Tributary of: N. Fork Poplar River.

Fishery: Forage species.

Watershed area: 55 percent is cleared land.

Miscellaneous observations: Occasional pollution from creamery in SW corner S6, T29N, R1E. Bank border is 25 percent wetland.

Public frontage: None.

Access: Two road crossings.

18-14

Clear, medium hard water.

Surface Acres = 1.4.

Miles = 2.3.

Direction of flow: Southwest.

Tributary of: Brick Creek.

Fishery: Forage species.

Watershed area: 98 percent is wooded

or wild land.

Miscellaneous observations: Bank border

is 5 percent wetland.

Public frontage: 0.9 miles, Co. FCL.

Access: One road crossing.

22-3

Medium brown colored, soft water.

Surface Acres = 2.8.

Miles = 3.9.

Direction of flow: South.

Tributary of: N. Fork Poplar River.

Fishery: Forage species.

Watershed area: 55 percent is wooded or wild land.

Miscellaneous observations: Bank border is 45 percent wetland.

Public frontage: None.

Access: Four road crossings.

23-2

Clear, hard water.

Surface Acres = 1.8.

Miles = 3.0.

Direction of flow: Northwest.

Tributary of: N. Fork Eau Claire River.

Fishery: Forage species.

Watershed area: 75 percent is cleared land.

Public frontage: None.

Access: Four road crossings.

Clear, hard water.

Surface Acres = 0.4.

Miles = 0.7.

Direction of flow: West.

Tributary of: N. Fork Poplar River.

Fishery: Forage species.

Watershed area: 60 percent is cleared land.

Miscellaneous observations: Farm pond license as Private Fish Hatchery in Section 34.

Public frontage: None.

Access: One road crossing.

Hixon Township T29N, R2W 5-14

Medium brown colored, medium hard water.

Surface Acres = 0.7.

Miles = 1.0.

Direction of flow: Southwest.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 80 percent is cleared land.

Miscellaneous observations: Marsh drainage with 50 percent of bank border wetland. Furbearers present.

Public frontage: None.

Access: No road crossings.

5-15

Clear, medium hard water.

Surface Acres = 0.9.

Miles = 1.8.

Direction of flow: Northwest.

Tributary of: Black River.

Fishery: Forage species.

Watershed area: 75 percent is cleared land.

Miscellaneous observations: Drains marsh and 70 percent of bank border is wetland.

Public frontage: None.

Access: One road crossing.

24-10

Clear, soft water.

Surface Acres = 0.3.

Miles = 0.8.

Direction of flow: Southeast.

Tributary of: Brick Creek.

Fishery: Forage species.

Watershed area: 90 percent is cleared land.

Miscellaneous observations: May be intermittent during dry periods. Bank border is 33 percent wetland.

Public frontage: None.

ANALYSIS OF INVENTORY DATA

The following information, comments, tables, and maps have been compiled from all data presently available for the waters, including the field inventory of 1964. Supplemental information was obtained from publications listed in the bibliography.

In order to provide a tabular summary of the physical and chemical characteristics of each body of water, two appendices are included. They contain specific information gathered in the inventory. The comments that follow have reference to some of the items and data presented in the appendices.

Quantitative Aspects

The total surface area of water in the county is 4,090.22 acres. Of this total, 1,614.6 acres are included in 30 lakes and 2,475.62 acres are found in 150 streams.

Total stream length amounts to 592.6 linear miles of which 74.7 miles are considered trout water. Frontage on both sides of streams amounts to 1,185.2 miles while the lake frontage total is 46.3 miles. Although stream frontage is considerably greater than lake frontage, 112 streams, or nearly 75 percent of the total number, have average widths of less than 10 feet. These small streams have nearly 34 percent of the total frontage yet include only 4.9 percent of the total surface water acreage. Table 2 illustrates stream length, acreage, and public frontage according to average width classes. Streams with average widths of 10 feet or greater are usually more desirable for most recreational purposes. There are 38 such streams, or about 25 percent of the total number, in the county. The largest stream in the county, the Black River, has only 9 percent of the total miles of streams, but it has 63 percent of the total surface acres.

Information concerning lakes by size classes is given in Table 3. Of the 30 lakes in Clark County, 33 percent have areas of less than 5 surface acres and 22, or 73 percent, have less than 20 surface acres. There are none ranging between 50 and 100 acres in size. Only four have 100 or more surface acres. The majority of lakes are subject to winterkill conditions due to their shallow depth, and in many instances have no water source other than runoff waters. There are only four that have maximum depths exceeding nine feet and two that have depths greater than 19 feet (Table 4). One of the latter is subject to periodic partial winterkill. As shown in Table 5, sand and muck are the principal bottom types in the littoral zone of the lakes with muck predominant in lakes of less than 20 acres and sand in those ranging between 100 and 500 acres in size. Since the majority of the lakes are impoundments with irregular shorelines, the average shoreline development factor (S.D.F.) is high. It ranges from 1.13 to 3.64 and averages 2.00. Seventy percent have S.D.F's that exceed 1.50 and those that exceed 2.00 amount to 43 percent of the total number of lakes.

Water Quality

During the gathering of information for the inventory, water color, pH, total alkalinity, specific conductance, and transparency data were collected for each lake and stream so that interpretations of water quality could be made. In addition, detailed chemical analysis of water samples from four of the six named lakes in the county was made to determine the relative quantities of dissolved nutrients, (Table 6).

Total alkalinity is generally used as an index of fertility. Based on Moyle's classification values, 53 percent of the lakes and 27 percent of the streams are classed as having low fertility, 40 percent of the lakes and 23 percent of the streams as low to medium, and 7 percent of the lakes and 30 percent of the streams as having medium to high fertility. In addition, about 20 percent of the streams were classed as having high fertility. The classification, fertility, and productivity of Clark County lakes and streams according to size classes are illustrated in Tables 7 and 8 respectively. In general, the streams have an index of higher fertility than do the lakes. Figure 3 shows the water fertility in the county.

The pH (hydrogen ion concentration) ranges from 4.9 to 8.8 for lakes and from 4.2 to 9.3 for streams. Twenty-two of the lakes were acid (a pH of less than 7.0) and of these, 15 had a pH of less than 6.5. Of the alkaline lakes (those having a pH greater than 7.0), four of them had a pH exceeding 8.5. There were 11 streams with a pH of less than 6.5 and 20 with a pH exceeding 8.5.

Specific conductance measures the total concentration of dissolved electrolytes in water and the higher the conductance, the greater the fertility and productivity of the water. The average specific conductance for lakes, measured in micromhos at 77 degrees Fahrenheit, was 81.3 and ranged from 25 to 167. The average specific conductance for streams was somewhat greater than it was for lakes and it amounted to 142.4. The range was also greater (25 to 487).

Water color varied considerably within the county and ranged from clear to dark brown. The color was usually dependent upon the type and extent of wetlands that drained into the stream or lake. Water color of lakes and streams by size classes is shown in Table 9. For lakes, the color ranged from light brown to dark brown. Nearly half of them had a medium brown color and five were turbid. As suspected, the transparency of lake water was low. It ranged from 0.6 to 3.6 feet. Water color in streams ranged from clear to dark brown. About 57 percent, 85 streams, were clear. Only two had a dark brown color.

Fishery Resource

The fishery resource has been classified on the basis of predominant species and present management. In Figure 4, a color code has been used to indicate the classification of individual waters.

Although there is a lacework of streams through the county, only 15 are classified as trout water. Of these, only one, Dickison Creek, has been found to have a substantial native population. The remaining streams are limited in their ability to sustain native trout populations and fishermen are dependent upon stocked trout for their angling pleasure. Brook and brown trout are the species generally found, although in the past rainbow trout have occasionally been planted in one or two of the larger streams. Forage fish species are found in all the trout streams; panfish (primarily pumpkinseed and bullhead) are in three; and there is one that has a trout, largemouth bass, panfish population in the portion of stream designated as trout water.

A large variety of sport fish are found in the warm-water streams. The Black River probably has the greatest assortment as muskellunge, northern pike, walleye, largemouth bass, smallmouth bass, bluegill, pumpkinseed, rock bass, bullhead, and catfish may be creeled by anglers. Fourteen streams are classified as smallmouth bass water. However, like the Black River, the smallmouth are present in combination with other species such as northern pike, largemouth bass, walleye, muskellunge, and/or panfish.

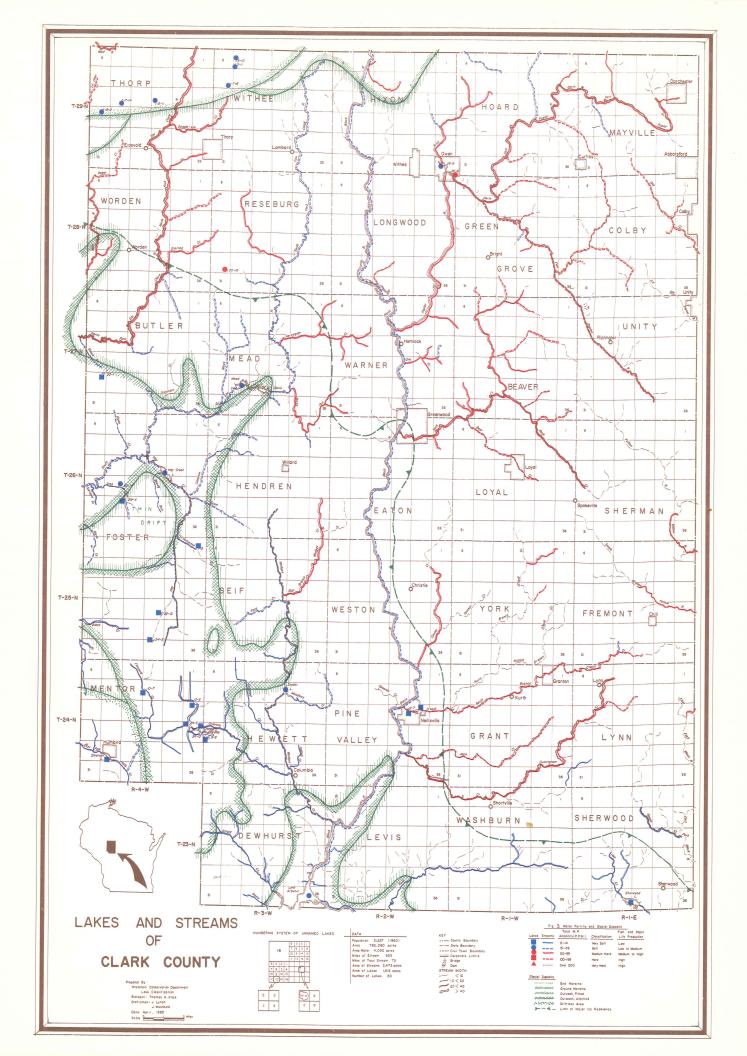
Table 2. Size classes of Clark County streams.

Avg. Width (Feet)	No.	Percent of Total No.	Length (Miles)	Percent of Total Length	Area (Acres)	Percent of Total Area	Public Frontage* (Miles)	Total Public Frontage
Less than 10	112	74.7	199.8	33.7	121.42	4.9	106.1	38.3
10 to 20	25	16.7	174.2	29.4	277.7	11.2	93.0	33.5
20 to 40	10	6.6	156.3	26.4	440.8	17.8	76.0	27.4
40 and wider	3	2.0	62.3	10.5	1,633.1	66.0	2.1	0.8
Totals	150		592.6		2,473.02		277.2	

^{*}Does not include road crossings

Table 3. Size classes of Clark County lakes.

Size Class (Acres)		Percent of Total No.	Area (Acres)	Percent of Total Area	Shoreline (Miles)	Percent of Total Shoreline	Public Frontage (Miles)	Percent of Total Public Frontage	With Boat Access	With Unimproved Access	With Wilderness Access	With Multiple Use Access	Without Public Access	± 50
Less than 5	10	33.3	8.6	0.5	1.67	3.6	0.93	3.8	0	3	O	0	7	- 1
5 to 10	6	20.0	34.0	2.1	4.54	9.8	2.4	9.9	0	4	1	0	1	
10 to 20	5	20.0	85.0	5.3	6.58	14.2	4.23	17.9	0	4	1	0	1	
20 to 50	4	13.3	109.0	6.8	5.56	12.0	0.97	4.0	1	1	0	0	2	
50 to 100	0	0 -	0	0	0	0	0	0	0	0	0	0	0	
100 to 200	2	6.7	233.0	14.4	7.25	15.7	7.25	30.1	0	0	0	2	0	
200 to 500	1	3,3	324.0	20.1	7.7	16.6	7.7	31.9	0	0	0	1	0	
500 to 1,000	1	3.3	821.0	50.8	13.0	28.1	0.6	2.4	0	0	0	1	0	
Totals	30		1,614.6		46.3		24.08		1	12	2	4	11	



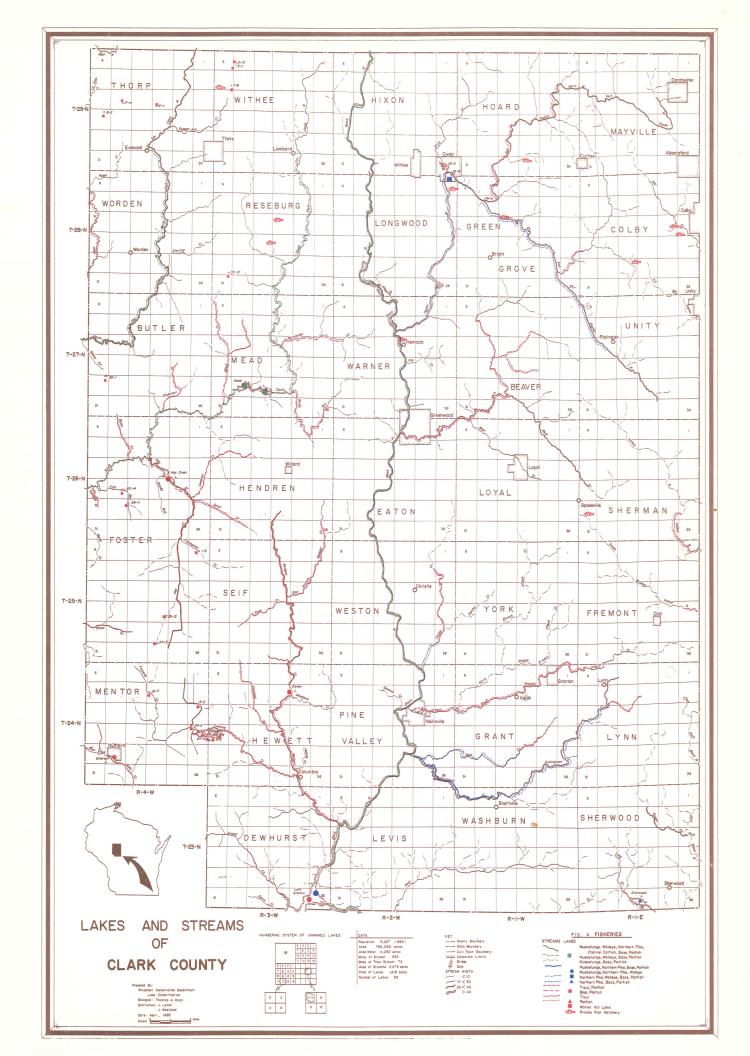


Table 4. Depth classes of Clark County lakes.

Depth Class (Feet)	No. Lakes	Percent of Total	Area (Acres)	Percent of Total	Shoreline (Miles)	Percent of Total
Less than 5	10	33.3	11.6	0.7	1.98	4.3
5 to 10	16	53.3	332	20.6	17.42	37.6
10 to 15	1	3.3	21	1.3	2.2	4.8
15 to 20	1	3.3	105	6.5	4.0	8.6
20 to 25	1	3.3	324	20.0	7.7	16.6
25 and deeper	1	3.3	821	50.8	13.0	28.1
					and the reliable space and the least the least transport to the least transport tr	
Totals	30	1	,614.6		46.3	

Table 5. Bottom types around the littoral zone of Clark County lakes according to size class.

Size Class (Acres)	No. Lakes	Area (Acres)	Shoreline (Miles)	Percent Boo	tom Types in Gravel	Littoral Z	Zone* Muck
Less than 5	10	8.6	1.67		3	5	92
5 to 10	6	34.0	4.54	22.5	15		62.5
10 to 20	6	85.0	6.58	10	3.3		86.7
20 to 50	4	109.0	5.56	52.5			47.5
50 to 100	0						
100 to 200	2	233.0	7.25	42.5			57.5
200 to 500	1	324.0	7.7	45	5		50
500 to 1,000	1	821.0	13.0	47	30	13	10
			Mark to 2 min and the same and	American American Company of the Com			
Averages				31.4	8.0	2.6	58.0

 $[\]ensuremath{^*}$ Percent of littoral zone bottom soil types based on field observations and estimates rather than actual measurement.

Table 6. Detailed chemical analysis of four Clark County lakes (sampled April 24, 1964).

Lake	pН	Total Alkalinity (ppm)	Specific Conductance (mmhos at 77ºF)	C1 (ppm)	SO4 (ppm)	Fe(T) (ppm)	NH3-N (ppm)
Arbutus	6.6	19	92	5.0	17.5	0.02	0.059
Emerson	6.3	9	52	3.25	15	0.06	0.050
Mead	6.2	20	110	5.5	20	0.06	0.079
Sherwood	5.5	2	41	1.75	10	0.41	0.092
Averages	6.2	12.5	73.8	3.88	15.6	0.14	0.07

Lake	K-N* (ppm)	NO 3 -N (ppm)	(T)PO ₄ ** (ppm)	(D)PO4** (ppm)	** Ca (ppm)	Mg (ppm)	Na (ppm)	K (ppm)	
Arbutus	1.05	0.25	0.23	0.04	8.9	2.2	2.9	2.4	
Emerson	0.95	0.30	0.42	0.25	3.9	1.0	2.1	1.6	
Mead	1.00	0.24	0.13	0.12	10.25	2.7	3.0	2.7	
Sherwood	0.88	0.21	0.04	0.03	2.4	0.7	1.1	2.1	
Averages	0.97	0.25	0.21	0.11	6.39	1.7	2.3	2.2	

^{*}Kjeldahl nitrogen **Total phosphate ***Dissolved phosphate

Table 7. Classification, fertility, and productivity of Clark County lakes according to size classes.

Size Class	No	Methyl Alkalinity	y (ppm)	pI Domas		Spec. (mmhos a	t 77°F)	Classific		Product		Gene		
(Acres)	No.	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	_
Less than 5	10	3 - 77	25.9	4.9-8.8	7.7	25-193	105.2	V.SM.H	. S.	LMH.	LM.	InfF.F.	Inf.	
5 to 10	6	3 - 65	16.5	5.8-7.8	6.6	36 - 167	83.0	V.SM.H.	. s.	LMH.	LM.	InfF.F.	Inf.	
10 to 20	6	3 - 35	9.0	5.3-6.4	5.8	34 - 115	64.1	V.SS.	V.S.	LLM.	L.	Inf.	Inf.	
20 to 50	4	3- 28	11.0	5.5-6.8	6.2	31- 94	53.5	v.ss.	v.s.	LLM.	L.	Inf.	Inf.	
50 to 100	0													
100 to 200	2	3-15	9.0	5.5-6.5	6.0	37- 52	44.5	V.SS.	V.S.	LLM.	L.	Inf.	Inf.	
200 to 500	1		20.0		6.2		110.0		S.		LM.		Inf.	1 04
500 to 1,000	1		19,0		6.6		92.0		S.		LM.		Inf.	1
Averages			17.1		6.7		81.3		s.		LM.		Inf.	

NOTE: Classification - V.S. = very soft, S. = soft, M.H. = medium hard, H. = hard, V.H. = very hard. Productivity - L. = low, LM. = low to medium, MH. = medium to high, H. = high. General - Inf. = infertile, F.F. = fairly fertile, M.F. = moderately fertile, V.F. = very fertile.

Table 8. Classification, fertility, and productivity of Clark County streams according to size classes.

Avg. Width (Feet)	No.	Methyl I Alkalinity Range		pH Range		Spec. C (mmhos a Range		Classific Range	ation Mean	Product Range	ivity Mean	Gene Range	eral Mean
Less than 10	112	0-202	56.6	4.2-9.3	7.5	25-487	144.7	V.SV.H.	M.H.	LH.	MH.	InfV.F.	InfF.F.
10 to 20	25	1-144	51.0	5.0-8.6	7.2	29-386	135.4	V.SH.	M.H.	LH.	MH.	InfM.F.	InfF.F.
20 to 40	10	9-112	54.0	7.1-8.6	7.6	38-247	139.6	V.SH.	$M_{\bullet}H_{\bullet}$	LH.	MH.	InfM.F.	InfF.F.
40 & wider	3	10- 81	44.3	5.8-8.4	7.2	42-206	120.7	V.SM.H	. S.	LMH.	LM.	InfF.F.	Inf.
Averages			55.2		7.4		142.4		М.Н.		MH.		InfF.F.

NOTE: Classification - V.S. = very soft, S. = soft, M.H. = medium hard, H. = hard, V.H. = very hard. Productivity - L. = low, LM. = low to medium, MH. = medium to high, H. = high. General - Inf. = infertile, F.F. = fairly fertile, M.F. = moderately fertile, V.F. = very fertile.

Table 9. Water color of Clark County lakes and streams by size classes.

Water	No.	Clear	L i ght Brown	Medium Brown	Dark Brown	Turbid
Lakes (size class - acres	s)					
Less than 5	10		4	2	2	2
5 to 10	6			4		2
10 to 20	6		2	. 3	1	
20 to 50	4			3		1
50 to 100	0					
100 to 200	2		1	1		
200 to 500	1		1			
500 to 1,000	1			1		
Totals	30	Carilliana good in human Vint Co 1777-1474 on	8	14	3	5
Streams (size class - av	g. width in f	eet)				
Less than 10	112	73	24	15		
10 to 20	25	7	10	7	1	
20 to 40	10	4	3	2	1	
40 and wider	3	1	1	1		
Totals	150	85	38	25	2	

The latter are predominantly pumpkinseed and bullhead and wherever panfish are found in Clark County streams either one or both of these species are found. The smallmouth bass-northern pike combination appears to be the most common. Northern pike are residents of some of the larger tributaries of the Black River, but in most of the streams they are either usually in the lower end or are seasonal inhabitants. Other than the Black River, muskellunge are found in the East Fork of the Black River and in the two forks of the Eau Claire River. They are occasional inhabitants of some of the tributaries to these waters. All of the streams have a forage fish population and in many, especially the smaller creeks, these fishes are the only species.

The majority of the lakes and flowages are subject to winterkill. The seven, small, landlocked, seepage lakes have known maximum depths that did not exceed 1.5 feet. These no doubt freeze solid during the winter months. The majority of the flowages are not only shallow and frequently have little flow passing through them, but also have a considerable amount of organic matter that uses oxygen and gives off toxic gases during the decaying process. Table 6 shows the depth classes of Clark County lakes. As many winterkill annually, no attempt is made to manage them for fish and species found in them are those most tolerant to winterkill conditions, such as bullhead, pumpkinseed, mudminnow and golden shiner. Certain other flowages are subject to periodic winterkills and it is feasible to manage them for the sport fishes best suited to the water. Usually anglers can get two or three years of fishing between winterkills. In Sherwood Lake, for example, largemouth bass and northern pike fingerlings planted in the spring following a winterkill will attain average lengths of 9 and 14 inches, respectively, their first year. Since the more tolerant, but usually the less desirable, fish species survive all but the most severe winterkills, their populations continue to grow and it is necessary to carry on chemical eradication programs from time to time before stocking more desirable game fish following a winterkill. Mead Lake, though subject to periodic, partial winterkills, is managed for muskellunge, walleye, largemouth bass, and bluegill. Pumpkinseed and bullhead, as well as carp, are also present. Four of the named lakes have no history of winterkills. Three of these are managed for largemouth bass and panfish (bluegill, crappie, pumpkinseed, and bullhead) while the fourth, Arbutus Lake, contains all the fish species, plus yellow perch, found in the Black River above the flowage.

Commercial fishing in the county is limited to the taking and selling of bait minnows by licensed minnow dealers.

Aquatic Game Resource

The large amount of county forest land (Figure 5) and the streams and flowages located within its boundary provide suitable environment for waterfowl and game, including furbearers. Most of these flowages are being managed for this resource.

Beaver, muskrat, and mink are the principal furbearers. Otter are relatively common. Furbearers are also present along lakes and streams lying outside the county forest area and provide trapping opportunities for local trappers.

According to Jahn and Hunt (1964), and based on the total of important inland acreages for wetlands and waters within the state (a total of 1,127,246 acres), Clark County has 0.6 percent of the inland aquatic habitat of importance to ducks and coot. Based on a total of 579,883 acres commonly used by waterfowl, Clark County has 0.1 percent of the state's acreage of inland lakes, streams, and flowages of importance to ducks and coot. Based on 1952-54 data, the county also has 4.2 percent of the state's most important duck and coot breeding habitat. Although waterfowl generally do not make major use of the waters in the county for nesting, mallard, black duck, wood duck, and blue-winged teal do nest on the lakes and along streams, especially where there is adjoining wetland. During the migration seasons, Canada geese, various species of dabbler and diving ducks, and coot rest on waters within the county. Hunters take advantage of this during the fall migration. According to 1957 figures, 386 migratory waterfowl stamps were sold in Clark County which ranked it 57th among the counties of the state (Jahn and Hunt, 1964).

Farm Ponds and Private Fish Hatcheries

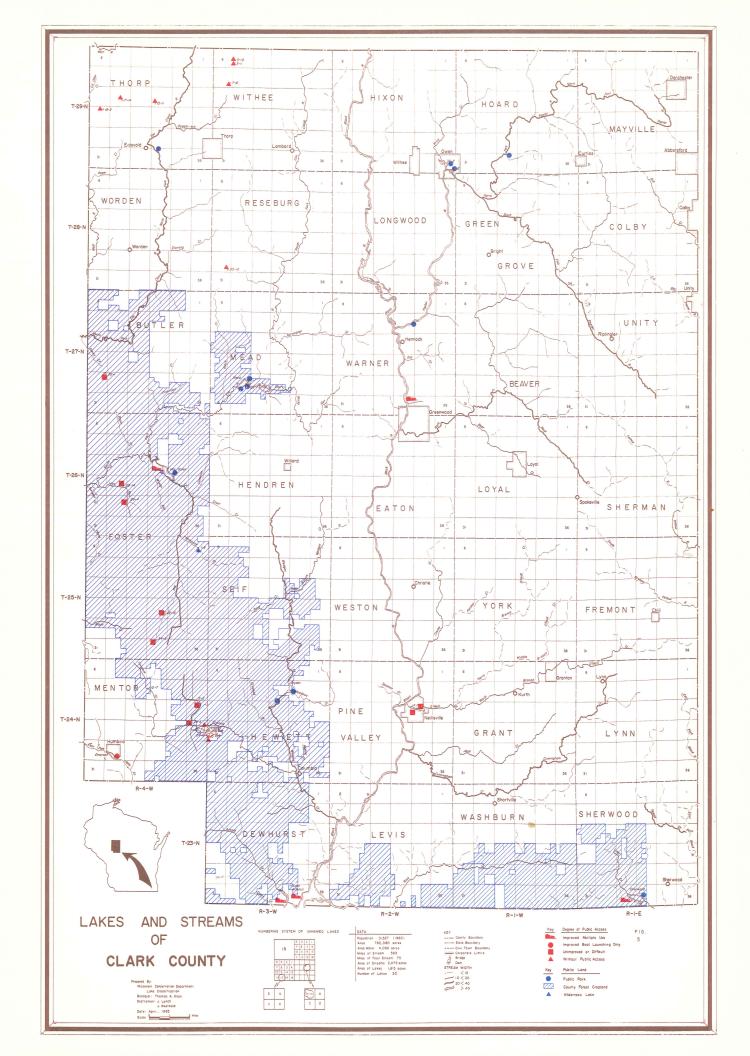
Information from the Soil Conservation Service office in Neillsville and observations made during the 1964 inventory survey indicate there are approximately 120 constructed, farm ponds in the county. They range from about 1/16 to 15 acres in size and, exclusive of ponds licensed as private fish hatcheries, cover a total area of approximately 95 acres. The majority are used for watering livestock and most are too shallow to carry fish through the winter months; however, they are used by waterfowl.

As of January 1, 1965, there were 12 licensed private fish hatcheries in the county and their surface area totaled about 17 acres. Their locations are shown in Figure 4. It is interesting to note that 6, or one-half of the total, were licensed for the first time during 1964. Although there appears to have been increases in similar licenses for most counties, at least in the West Central Area, probably the major reason for the Clark County increase was that it wasn't until 1964 that the Agricultural Stabilization and Conservation County Committee, a federal government agency, included the practice on the county docket.

Boating

According to Wisconsin Conservation Department figures as of March 31, 1965, there were 952 boats registered in Clark County. This total included 938 outboard motor, 2 inboard motor, 1 sail and 11 fleet boats. Since there are only four lakes in the county that exceed 100 acres in size, their use in the county is quite restricted. Arbutus Lake (821 acres) is the most ideally suited to various boating activities. At Mead Lake (324 acres), stumps and aquatic plant growth restricts activities where speed is required to the larger west portion of the lake. No water-skiing is permitted at Sherwood Lake (128 acres) and stumps, aquatic plant growth, and shallow flat areas limit the speed of boat traffic. Hay Creek Lake with its 105 acres has physical characteristics similar to Sherwood Lake. Public access and parking facilities are adequate at each of these four lakes.

Light boat traffic is possible on the larger streams such as the Black River, the east fork of the Black River, the two forks of the Eau Claire River, and on the Poplar River and its two forks; however, frequent portaging is necessary except during high water periods.



Swimming

Arbutus, Hay Creek, and Mead Lakes are the best suited for swimming. No life-guards are on duty, but the parking and bathhouse facilities provided by the county adequately serve present needs. The brown colored water and the algae "blooms" present during midsummer may discourage some potential swimmers, but thousands of youngsters and oldsters alike from Clark and the surrounding counties make use of the sand beaches and public facilities each year. Swimming is not limited to the above mentioned waters, but they are the lakes that receive the most attention.

Aesthetics

Aesthetics, as referred to in this report, is the appreciation of the beauties of nature. Clark County offers several areas worthy of reproduction by an artist and his brush. The panoramic view of the far-reaching countryside as observed from the castle-like hill (Moraine Tower) near Neillsville reminds one of similar views as seen from mountainous areas of the country. The deep gorges along portions of the Black River reminds one of the Dells area and as a canoeist travels the river he passes through areas of quiet pools followed by swift rapids having granite boulders and bedrock that frequently obstructs his progress. In the western portion of the county, and more especially in the southwestern part, there are flat marsh areas with occasional sandstone hills that break the monotony. Streams wind their way through the marshes and several small flowages are present. These marsh areas, especially around flowages, provide opportunities to observe wildlife.

AVAILABILITY OF THE WATER RESOURCE

Area and Population

Clark County covers an area of approximately 1,221 square miles, or 782,080 acres, and it represents 2.18 percent of the area of Wisconsin. With the exception of Neillsville, which had 2,728 inhabitants in 1960, the county has a rural population. Its total population of 31,527 (1960 census) represents about 0.8 percent of the state's population. There are 25.8 people per square mile as compared to the state average of 72.2

While the 1960 census indicated that Neillsville had increased its population 2.4 percent over the past 10 years, the census also showed a decline of 2.9 percent for the county. During the same period, the state average indicated an increase of 15.1 percent (Fuguitt, 1961). Based on the Hamilton-Perry method for population estimation, the population for Clark County has declined 2.3 percent between April 1, 1960, and July 1, 1963 (Brenneke and Marshall, 1963).

In recent years there have been about 6,000 fishing licenses sold in the county each year. Four hundred to 500 of these were nonresident licenses. Resident fishing licenses sold within this county were the equivalent of 19 percent of the population. Small game license sales were about 4,000, a fraction of which hunted waterfowl. Only 17 trapping licenses were issued in 1963. Since this is not an important resort region with many from outside the county buying licenses, the figures quoted are probably representative of fishing and hunting interest for those who are required to buy licenses.

Public Access and Use

Lakes were classified by degree of access during the 1964 field investigations. Information obtained appears on Figure 5, an access map of Clark County. Data concerning access on lakes and streams according to size classes are provided in Tables 2 and 3. Multiple-use accesses are those that have park areas in connection with the boat accesses; boat access indicates there are only launching sites with parking; and unimproved or difficult access indicates there are no boat launching sites, but that a public picnic area or other public land adjoins the water from a nearby public road. A wilderness access is one where public land adjoins the water from a public road that is over 200 feet from the water.

Of the 30 lakes investigated, 11 had no public access. Most of these are either small waters less than five acres in size that are natural ponds located in farm pastures, or are reservoirs connected with cranberry operations. There were 12 lakes with unimproved or difficult access, one that had only a boat launching site, and two that had wilderness access. The remaining four lakes had multiple-use areas.

The Wisconsin Conservation Department has a 30-year easement from the county, beginning April 16, 1963, on 19.6 acres of land on which Beaver Flowage is located in S1, T25N, R4W. As of April, 1964, there were 132,792.4 acres of county forest cropland. Several streams and flowages of various sizes are located within the forest, and trails lead to many of the waters. There are 277.2 miles of public frontage along streams and nearly 24.1 miles around lakes (Tables 2 and 3). Park areas, some of which include picnic facilities located on forest croplands are: Rock Dam Park at Hay Creek Lake, Sherwood Park at Sherwood Lake, Snyder Park at Snyder Lake, Mead Park at Mead Lake, Wildcat Park at Wildcat Mound, and Bruce Mound.

Listed below are picnic and park areas located in the county according to the Wisconsin Department of Resource Development (1962 or 1963).

- Clark County Forestry Park 1/4 acre, on Wedges Creek, picnic area and shelter.
- Duncan Memorial Park (County) 15 acres, on North Fork of Poplar River, bathhouse and picnic area.
- Greenwood Park (County) 10 acres, on Black River, swimming beach, shelter and cook house, children's playground.
- Mead Lake County Park 5 acres, boats, swimming beach, fishing, tent camp area, playground, boat landing.
- Moraine Tower (County) 1/2 acre, lookout tower, shelter, picnic area.
- Rock Dam County Park 3 acres, on Hay Creek Lake, boat landing, swimming beach, bathhouse, playground.
- Russell Memorial Park (County) 20 acres, on Arbutus Lake, boat landing, swimming beach, tent camp area.
- Sherwood Park (County) 10 acres, on Sherwood Lake, boat landing, shelter, picnic area.
- Snyder Park (County) 5 acres, on Snyder Lake, swimming, shelter, and picnic area.
- Thorp Park (County) 1 acre, on North Fork of Eau Claire River, playground.
- Wildcat Mound (County) 15 acres, in Mentor Township, lookout mound, tent camp area, hiking trails.

Since the above list was published, the county purchased 1.75 acres of land at Emerson Lake where it has developed a boat landing and picnic area. The county has also made plans for further park development at Snyder Lake where it has purchased 54.89 acres of land. The Bruce Mound winter sports area covers 125 acres. It has six ski slopes, a toboggan slide, skating rink, and a lodge where sports equipment can be rented and meals purchased. The city park areas at Owen cover about 13.5 acres. Of this total, approximately 2.5 acres are adjacent to the flowage on Brick Creek and about 11 acres are adjacent to the impoundment on the North Fork of the Poplar River.

In addition to the 20 acres of park area on Arbutus Lake in Clark County, information from the Forest Management Division of the Wisconsin Conservation Department indicates that Jackson County has leased a total of 312 acres from the Northern States Power Company. Of this total, 10 acres have been developed as a picnic area and 16 acres as a camp area on the west side of the lake. A portion of the remaining 286 acres has been developed thus far for camping, picnicking, and a boat launching site on the east side of the lake.

Private Development

There are now 297 dwellings on the named lakes including Arbutus, Hay Creek, Mead, Emerson, and Snyder. In addition, there are seven resorts and one boat livery. Sherwood Lake has no private development and none of the unnamed lakes have dwellings, resorts, or boat liveries fronting on them.

People having dwellings on Arbutus Lake have either leased lots from the Northern States Power Company or from Clark County. The land surrounding Hay Creek and Mead Lakes is owned by the county and it has subdivided areas around these two lakes and the Arnold Creek portion of Arbutus Lake into lots. Leases are granted on a one-year basis and are automatically renewed yearly when the lease rental of \$15 per year has been paid. One individual, or head of a family, may lease only one lot from the county. The person leasing the lot must complete the outside of the cottage within two years following the granting of the lease. There are no minimum requirements or specifications concerning the dwellings except that modern indoor plumbing must be installed and that a plan for a cottage must accompany an application for a lease submitted to a county committee, composed of the Forest and Parks Administrator and several members of the county board. They decide whether or not a lease is to be granted.

SURFACE WATER PROBLEMS

Resource Based Problems

Like most of the counties in the West Central Fisheries Area, Clark County lacks natural lakes of any significance. With the exception of a few small, shallow ponds used primarily for livestock watering, there are no natural lakes.

Several flowages are present, but most are shallow and subject to winterkill. Unstable water supply volumes aggravate the winterkill problem. Also, in the areas where most of the flowages are located, the water is soft and infertile.

Springs are relatively scarce and streams are primarily dependent upon runoff and drainage for their water supply volume. Hence stream levels are also unstable with too much sometimes and not enough other times.

Fishery Problems

Winterkill limits the number of flowages suitable for game fish. Intensive management is needed to keep a good population balance in waters where periodic, or partial, winterkills occur.

Soft, infertile waters are low in basic fertility and produce relatively low fish crops naturally. Sand bottoms combined with the low fertility result in low food production in most of the trout streams.

Use Conflicts

Recreational demands upon most of the lakes and streams are not intensive at this time. Seasonal inhabitation at some of the larger flowages can be expected to cause use conflicts; however, since towns and counties have the authority to regulate uses, it is expected that use of this authority will be made. Water-skiing has already been prohibited at one flowage.

Public Access

Most of the waters in Clark County have suitable public access, but a few flowages and some of the larger streams need development of access areas. To date, the county has been progressive in the acquisition and development of public accesses.

Pollution

Possible sources of pollution are listed in Table 10. Equipment failures and over-loading of sewage treatment facilities often cause pollution. The overloading may be caused by excessive rainfall or by abnormally large amounts of industrial wastes. In some instances, present treatment facilities are no longer adequate, resulting in the discharge of inadequately treated sewage. However, the state Committee on water pollution makes periodic detailed investigations of pollution in the major drainage basins of the state and orders have been issued in recent years to specific communities, industries, and individuals in the Eau Pleine and Black River drainage basins to install or improve upon sewage treatment facilities. Public health biologists continually check water quality at stream sites suspected of pollution and inform responsible agencies of their inadequacy.

Table 10. Clark County pollution sources.*

Source	Public Sewage Treatment Facility Wisconsin River Basin	Waters Receiving Effluent
Abbotsford, Village of	Trickling Filter	Br. Dill Creek (Marathon County)
Colby, City of	Trickling Filter	Dill Creek
Dill Creek Cheese Factory	Marsh	Dill Creek
Unity, Village of	Stabilization Pond	Little Eau Pleine River
Unity Dairy Products	Irrigation	Trib. of Dill Creek (Marathon County)
	Black River Basin	
Barr Mink Ranch	Lagoon	E. Br. Wedges Creek
Clark County Hospital	Septic Tank	N. Fork Poplar River
Curtiss, Village of	None	None
Dorchester, Village of	Trickling Filter	N. Fork Poplar River
Granton, Village of	Trickling Filter	S. Br. O'Neil Creek
Greenwood, City of	Trickling Filter	Rock Creek
Humbird	None	E. Fork Halls Creek
John Wuethrich Crmy. Co.	Irrigation and Lagoon	Cawley Creek
Laabs Dairy Co. (Willard)	Septic Tank	Wedges Creek
Loyal Canning Co.	Irrigation	Bear Creek
Loyal, City of	Activated Sludge	Bear Creek
Lynn Dairy	Septic Tank	Cunningham Creek
Lynn, Village of	None	Cunningham Creek
Mandell Cheese Factory	None	Trib. S. Fork Poplar River
Marg Fur Farm	Lagoon	Spooner Creek
Neillsville, City of	Activated Sludge	Black River
Owen, City of	Trickling Filter	Poplar River

^{*} Source of information was personal communication with Mr. F. H. Schraufnagel, Public Health Engineer, Committee on Water Pollution, January 12 and 18, and February 8, 1965.

Table 10. Clark County pollution sources (continued).

Source	Public Sewage Treatment Facility	Waters Receiving Effluent
Plautz Bros. (Withee- Gravel washing)	Lagoon	Black River
Plautz Bros. (Greenwood- Gravel washing)	Lagoon	Black River
Riplinger Cheese Factory	Irrigation and Lagoon	S. Fork Poplar River
So. Grant Cheese Factory	Septic Tank	Jack Creek
Willard, Village of	None	Wedges Creek
Withee, Village of	To Owen Sewage Treatment Plant	Poplar River
	Chippewa River Basin	
Cloverleaf Cheese Factory	Ditches and Hauling	Trib. of N. Fork Eau Claire River
Elmdale Cheese Factory	Irrigation and Hauling	Rocky Run Creek
Lombard Cheese Factory	Septic Tank	Trib. S. Fork Eau Claire River
Lone Pine Cheese Factory	None	Trib. S. Fork Eau Claire River
North Hendren Cheese Factory	Irrigation	Trib. S. Fork Eau Claire River
Reseburg Cheese Factory	Septic Tank and Hauling	Trib. S. Fork Eau Claire River
Thorp, City of	Trickling Filter	Trib. N. Fork Eau Claire River
Wild Cherry Cheese Factory	None	N. Fork Eau Claire River

NOTE: Villages of Humbird, Lynn, and Willard are not served by public sewage facilities. The Committee on Water Pollution has noted no significant problems from domestic sewage of these three communities.

THE FUTURE

Lacking natural lakes of any significance, Clark County is dependent upon a few trout streams, warm-water rivers and streams, and impoundments for its aquatic recreational opportunities. Any further increase in recreational waters will be dependent upon construction of impoundments. Sites worthy of future flowage development are available on some of the larger streams, including the Black River.

Most of the present flowages are shallow and are subject to periodic, if not annual, winterkill conditions; therefore, intensive management will be needed to provide continued fishing opportunities for desirable game fish species. As the need increases, improved access and parking facilities will be required at many of the flowages and larger streams to meet the demands of fishermen, canoeists, hunters, trappers, and other wildlife enthusiasts. Accommodation seems assured because the county has been doing an excellent job in providing recreational opportunities by acquisition and construction of recreational impoundments, public access and park areas.

Good land use and management, and continued efforts to curb pollution are necessary in order to maintain recreational opportunities along the streams and rivers. Growth in the numbers of fish and wildlife farm ponds will help to meet the recreational needs of this area.

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Appendix I. Physical and chemical data of Clark County lakes and impoundments

Named Waters	Location Tn. Rg. Sec.	Drainage System	Surface Acres	Max. Known Depth (Ft.)	% Surface Acres Under 3 Feet	% Surface Acres Over 20 Feet	Length (Miles)	Width (Miles)	Shore- line (Miles)	Shoreline Development Factor	Methyl Purple Alkalinity (ppm)	рН	Specific Conductance (mmhos-77°F)	Water Color	Date of Sampling
Arbutus	23 3W 36	Black River	821	56	1	30	2.2	.85	13.00	3.24	19	6.6	92	Med. Brn.	. 10-12-64
Emerson	24 4W 29	E. F. Halls Cr	. 35	9	25	0	.47	.17	1.42	1.71	9	6.3	52	Turbid	4-24-64
Hay Creek (Rock Dam)	26 4W 15	Hay Creek	105	16	5	0	.86	.38	4.00	2.78	15	6.5	52	Lt. Brn.	9-25-64
M ead	27 3W 29	S. F. Eau Claire River	e 324	20	5	0	.84	.43	7 .7 0	3.05	20	6.2	110	Lt. Brn.	4-24-64
Sherwood	23 1E 34	Hay Creek	128	8	27	0	.91	.28	3.25	2.05	3	5.5	37	Med. Brn.	10-2 -64
Snyder	24 3W 11	Wedges Creek	21	10	20	0	.26	.08	2.20	2.53	28	6.8	94	Med. Brn.	9-29-64
Unnamed Wate	rs														
Lake 14-7	24 2W 14	O'Neil Creek	0.3	4	10	0	.04	.01	.10	1.30	5	6.9	167	Turbid	10-2 -64
Lake 14-8	24 2W 14	O'Neil Creek	5	7	18	0	.26	.03	1.07	3.41	5	6.9	167	Turbid	10-2 -64
Lake 19-9*	24 3W 19	Lake 19-10 T24N, R3W	33	8	95	0	.38	.27	1.03	1.30	4	5.5	31	Med. Brn.	. 10-7 -64
Lake 19-10*	24 3W 19	Lake 24-13 T24N, R4W	20	8	29	0	.27	.17	.91	1.46	3	6.0	37	Med Brn.	10-7 -64
Lake 10-7	24 4W 10	Fivemile Creel	c 14	6	50	0	.24	.15	.73	1.36	5	5.4	48	Drk. Brn.	10-6 -64
Lake 13-2	24 4W 13	Cr. 24-5 T24N, R4W	3	7	64	0	.18	.05	.50	1.93	3	4.9	51	Drk. Brn.	10-5 -64
Lake 24-4*	24 4W 24	Lake 24-13 T24N, R4W	6	5	85	0	.21	.08	.53	1.57	3	5.8	42	Med. Brn.	. 10-7 -64
Lake 24-6	24 4W 24	Fivemile Creel and Cr. 24-5	k 13	7	16	0	.27	.10	1.10	2.18	5	5.3	50	Med.Brn.	. 10-6 -64

Appendix I. Physical and chemical data of Clark County lakes and impoundments (continued).

Named Water	Location s Tn. Rg. Sec.	Drainage System	Surface Acres	Max. Known Depth (Ft.)	% Surface Acres Under 3 Feet	% Surface Acres Over 20 Feet	Length (Miles)	Width (Miles)	Shore- line (Miles)	Shoreline Development Factor	Methyl Purple Alkalinity (ppm)	pН	Specific Conductance (mmhos-77° F)	Water Color	Date of Sampling
Lake 24-13*	24 4W 24	Lake 24-6 Creek 24-14	12	7	18	0	.21	.15	.63	1.30	3	5.4	49	Med. Brn.	10- 7-64
Lake 1-9	25 4W 1	Thompson Cre	eek 5	6	69	0	.14	.10	.40	1.33	5	6.4	44	Med. Bra.	9-28-64
Lake 22-13**	25 4W 22	Creek 14-12 T25N, R4W	17	6	62	0	.50	.01	2.12	3.64	3	6.4	34	Med. Brn.	9-30-64
Lake 34-5**	25 4W 34	Creek 14-12 T25N, R4W	4	2	100	0 .	.20	.05	.43	1.53	3	6.2	25	Med. Brn.	9-30-64
Lake 20-14	26 4W 20	Iron Run	6	4	45	0	.20	.04	.81	2.41	15	6.6	43	Med. Brn.	9-25-64
Lake 29-4	26 4W 29	Iron Run	7	6	70	0	.25	.08	.81	2.14	6	6.2	36	Med. Brn.	9-28-64
Lake 30-1	27 4W 30	Drain	11	5	40	0	.35	.13	1.00	2.20	3	6.0	89	Lt. Brn.	9~16-64
Lake 30-16	28 3W 30	Landlocked	0.1	1	100	0	.02	.01	.05	1.13	77	8.0	193	Turbid	6-25-64
Lake 36-8	29 2W 36	Brick Creek	18	8	100	0	.28	.08	1.00	1.68	3 5	6.4	115	Lt. Brn.	9-16-64
Lake 36-16	29 2W 36	Poplar River	5	5	35	0	.42	.06	.92	2.88	65	7.8	166	Turbid	11-12-64
Lake 5-10	29 3W 5	Landlocked	0.1	1	100	0	.02	.01	.05	1.43	27	8.6	87	Med. Brn.	5-25-64
Lake 5-11	29 3W 5	Landlocked	0.1	1	100	0	.02	.01	.07	1.69	20	8.6	71	Lt. Brn.	5-25-64
Lake 7-16	29 3W 7	Landlocked	0.2	2	100	0	.03	.01	.09	1.52	36	8.6	105	Lt. Brn.	5-26-64
Lake 15-11	29 4W 15	Landlocked	0.2	2	100	0	.04	.01	.13	1.86	24	8.8	81	Drk. Brn.	6-15-64
Lake 17-14	29 4W 17	Landlocked	0.2	1	100	0	.04	.01	.15	2,23	24	8.3	102	Lt. Brn.	6-15-64
Lake 19-2	29 4W 19	Landlocked	0.4	0.5	100	0	.04	.03	.10	1.13	40	8.3	170	Lt. Brn.	6-15-64
Totals and Av	erages - 6 Name	d Lakes	1,434	19.8					31.57	2.56	15.7	6.3	72.8		
	24 Unnar	ned Lakes	180.6	4.6					14.73	1.86	17.5	6.8	83.5		
Grand Totals a Averages	and 30 Lakes	5	1,614.6	7.6					46.30	2.00	17.1	6.7	81.3		

^{*} Cranberry reservoir.
** Drainage stream has intermittent flow.

Appendix IA

Named Waters	Watershed Area (Sq. Miles)	% Muck Shore	Acres	Adjoining % Woody	Wetlands $\frac{1}{2}$ / % Nonwoody	Miles of Public Frontage	No. of Dwe lli ngs
Arbutus	1,290	10	0	0	0	$0.6^{\frac{2}{2}}$	95
Emerson	10	80	3.2	85	15	0.19	2
Hay Creek (Rock Dam)	59	40	0	0	0	4.0 <u>3</u> /	76
Mead	95	50	3.3	0	100	7.7 <u>4</u> /	112
Sherwood	15	75	40.3	35	65	3.25	0
Snyder	46	40	0.6	100	0	0.78	12
Unnamed Waters							
Lake 14-7 (T24N, R2W)	65.0	50	0	0	0	0	0
Lake 14-8 (T24N, R2W)	65.0	25	0	0	0	0	0
Lake 19-9 (T24N, R3W)		35	128.0	0	100	0	0
Lake 19-10 (T24N, R3W)		35	46.7	0	100	0	0
Lake 10-7 (T24N, R4W)	3.5	100	39.0	0	100	0.73	0
Lake 13-2 (T24N, R4W)	6.6	100	147.2	0	100	0.5	0.
Lake 24-4 (T24N, R4W)		80	12.8	1	99	0	0
Lake 24-6 (T24N, R4W)	17.4	100	5.9	0	100	0.35	0
Lake 24-13 (T24N, R4W)		60	0	0	100	0	0
Lake 1-9 (T25N, R4W)	5.8	40	0	100	0	0.4	0
Lake 22-13 (T25N, R4W)	3.0	100	1.3	0	100	2.12	0
Lake 34-5 (T25N, R4W)	0.8	70	137.0	0	100	0.43	0 .

Appendix IA (Continued).

	Watershed Area	%		Adjoining	Wetlands $\frac{1}{2}$	Miles of Public	No. of
Unnamed Waters	(Sq. Miles)	Muck Shore	Acres	% Woody	% Nonwoody	Frontage	Dwellings
Lake 20-14 (T26N, R4W)	5.1	95	19.8	0	100	0.81	0
Lake 29-4 (T26N, R4W)	3.9	45	3.2	10	90	0.81	0
Lake 30-1 (T27N, R4W)	0.2	100	19.8	0	100	1.0	0
Lake 30-16 (T28N, R3W)	0.1	100	0	0	0	0	0
Lake 36-8 (T29N, R2W)	20.8	60	0	0	. 0	0.03	0
Lake 36-16 (T29N, R2W)	120.0	90	0	0	0	0.38	0
Lake 5-10 (T29N, R3W)	0.1	100	0	0 -	0	0	0
Lake 5-11 (T29N, R3W)	0.1	100	0	0	0	0	0
Lake 7-16 (T29N, R3W)	0.1	100	0.2	0	100	0	0
Lake 15-11 (T29N, R4W)	0.1	100	0.1	0	100	0	0
Lake 17-14 (T29N, R4W)	0.1	100	0.4	0	100	0	0
Lake 19-2 (T29N, R4W)	0.3	100	0.1	0	100	0	0
Totals and Averages - Nan		49.2	47.4			16.52	297
Unn	amed Lakes	78.5	561.5			7.56	0
Grand Totals and Averages		72.7	608.9			24.08	297

^{1/} Includes only the wetlands surrounding lake or impoundment. Does not include wetlands along stream or ditch that flows into lake or impoundment.

²/ Does not include 2.5 miles leased by Clark and Jackson Counties from the Northern States Power Company for public use purposes.

^{3/} Entire shoreline is county-owned and listed here, but lots have been leased by individuals. Approximately 2.1 miles of shoreline have either been developed by the county for park and recreation purposes, or do not appear suitable for subdividing into lots.

^{4/} Entire shoreline is county-owned; however, lots have been leased by individuals. Approximately 0.9 mile of shoreline has been developed by the county for park and recreation purposes.

Appendix II. Physical and chemical data of Clark County streams.

Named Streams	Outlet Location Tn. Rg. Sec	. Watershed	Surface Acres	Length (Miles)	Avg. Width (Feet)	Approx. Flow (cfs)	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ <u>Mile)</u>	Miles of Public Frontage	Fishery (See _Code)	Methyl Purple Alkalinity (ppm)	pН	Specific Conductance (mmhos-77°F)	Water Color	Date of Sampling
Arnold Creek	23 3W 34	Black River	11.2	5.8	16	7.21	12.2	18.2	11.6	5-7	10	7.0	40		. 9- 4-64
Bear Creek	27 1W 31	Rock Creek	7.2	5.4	11	1.17	10.3		0	5	113	7.5	286	Clear	7-23-64
Black Creek	25 4W 30	Eau Claire River	2.9	2.4	10	.01	9.2	16.7	4.8	1-5	11	7.2	36	Med. Brn	8-11-64
Black Creek	27 3W 31	S.F. Eau Claire F	₹. 5.6	6.6	7	.21	15.1	13.8	8.0	1-5-7	34	6.6	86	Lt. Brn.	7-17-64
Black River	23 3W 24	Mississippi River	1,561.0	54.1	142	568.0	792.2	8.6	2.1	2-3-4-5 6-7-8-9	42	5.8	114	Med. Brn	
Brick Creek	29 2W 36	Poplar River	6.9	6.0	10	.63	20.8		1.2	5	62	8.6	148	Lt. Brn.	5-21-64
Cameron Creek	26 4W 24	Hay Creek	5.5	6.0	8	.18	12.2	11.7	5.0	1-5	39	7.7	89	Clear	7-28-64
Cawley Creek	24 2W 2	Black River	10.6	6.7	13	.10	41.4	15.9	0	4-5-6-7-8	51	7.2	152	Lt. Brn.	8- 6-64
Crooked Creek	24 3W 22	Wedges Creek	4.5	5.0	8	.01	5.0	30.4	10.0	1-5	14	7.1	40	Clear	8-18-64
Cunningham Creek	24 2W 27	Black River	48.2	18.5	22	.10	59.9	10.8	0	2-5-6-7-8	54	7.2	179	Clear	8-13-64
Davis Creek	23 3W 34	Black River	.5	1.0	4	.05	1.5		1.0	5	5	7.0	30	Lt. Brn.	9- 2-64
Dickison Creek	27 4W 34	S.F. Eau Claire R	. 2.1	3.1	6	.49	5.1	31.9	3.8	1-5	56	6.8	128	Lt. Brn.	7-20-64
Dill Creek	28 1E 24	Big Eau Pleine R.	12.0	5.6	17	.65	14.5		0	5	121	8.0	386	Lt. Brn.	6-16-64
East Branch Wedges Cr.	25 3W 15	Wedges Creek	7.9	6.5	10	.83	21.9	9.2	3.0	5-7	52	7.3	128	Lt. Brn.	8- 7-64
East Fork Black River	23 3W 36	Black River	4.8	.8	50	7.07	90.0	17.1	0	2-3-5-6-7 8-9	10	7.4	42	Lt. Brn.	8-31-64
East Fork Halls Creek	24 4W 33	Halls Creek	2.0	2.8	6	5.27	7.4	20.0	0	5-7	13	7.3	. 57	Clear	8-24-64
Fivemile Creek	24 3W 35	Wedges Creek	22.9	13.5	14	.09	35.5	8.4	11.0	5-7	9	7.3	40	Lt. Brn.	8-19-64
Gile Creek	27 2W 22	Black River	.9	1.8	4	.02	5.0		0	5	59	6.8	153	Clear	7-10-64
Goggle-eye Creek	29 4W 22	N.F. Eau Claire F	S. 5.5	4.5	10	.41	7.5	18.0	0	5	51	8.6	133	Lt. Brn.	5-27-64

Appendix Π . Physical and chemical data of Clark County streams (continued).

Named Streams	Outlet Location Tn. Rg. Sec.	Watershed	Surface Acres	Length (Miles)	Avg. Width (Feet)	Approx. Flow (cfs)	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ Mile)	Miles of Public Frontage	Fishery (See Code)	Methyl Purple Alkalinity (ppm)	pH_	Specific Conductance (mmhos-77° F)	Water Color	Date of Sampling
Hay Creek	23 1E 34	E.F. Black River	3,9	3, 2	10	.07	13		6.0	5-7	8	7.0	39	Med. 3rn.	8-25-64
Hay Creek	26 4W 16	S.F. Eau Claire R	. 32.7	12.0	23	1.09	60.1	8.3	22.8	1-2-4-5-7	7 15	7.4	49	Med. Brn.	7-28-64
He lli ng Creek	24 3W 35	Wedges Creek	.4	1.5	2	.02	1.	13,3	1.0	5	5	7.5	34	Lt. Brn.	8-17-64
Horse Creek	26 4W 31	S.F. Eau Claire R	. 3.3	2.3	12	.42	12.	8.7	4.6	5	24	7.6	55	Lt. Brn.	7-29-64
Iron Run	26 4W 19	S.F. Eau Claire R	. 3.1	2.3	11	.12	5.8	26.7	4.6	5	22	7.6	57	Med. Brn.	7-30-64
Jack Creek	24 2W 26	Cunningham Creek	15.0	9.5	13	.37	15.7	14.4	0	5-6-7-8	100	7.4	233	Clear	8-17-64
Little Otter Creek	29 4W 18	Wolf River	.3	1.0	3	.65	4.8		0	5	126	8.6	236	Clear	5-26-64
Meadows Creek	24 3W 11	Wedges Creek	4.4	4.3	9	.17	11.	14.5	0	5	29	7.3	85	Clear	8-18-64
No. Fork Eau Claire R.	27 4W 18	Eau Claire River	75.6	24.0	26	2.60	109.5	7.5	15.0	2-5-6-7	52	8.0	139	Lt. Brn.	6-26-64
No. Fork Poplar River	28 1W 8	Poplar River	54.4	20.4	22	4.45	54.3		2.4	5-6-7	76	8.6	197	Clear	5-19-64
Norwegian Creek	27 3W 15	S.F. Eau Claire R	. 2.0	2.8	6	0.2	13.7		0	5-6	50	7.2	118	Clear	7-14-64
O'Neil Creek	24 2W 15	Black River	10.7	2.6	34	.29	65.	11.4	0	5-7	102	7.2	244	Clear	8-17-64
Poney Creek	25 3W 22	Wedges Creek	1.1	3.1	3	.04	6.6	10	6.2	1-5	28	7.2	63	Med. Brn.	8- 7 - 64
Poplar River	27 2W 10	Black River	67.3	7.4	75	76.9	161.		0	3-5-6-7-8	81	8.4	206	Clear	6-22-64
Rock Creek	23 2W 34	E.F. Black River	16.7	12.5	11	.05	33.		11.2	5	12	7.1	60	Lt. Brn.	8-28-64
Rock Creek	26 2W 3	Black River	24.5	15.4	21	.61	75.3		0	5-6-7	87	7.6	206	Lt. Brn.	7-23-64
Rocky Run	27 3W 26	S.F. Eau Claire R	9.0	6.2	12	.06	15.6		0	4-5-7	55	6.9	135	Clear	7-15-64
Roger Creek	28 4W 6	Wolf River	3.2	3.5	8	.28	9.4	17.8	0	5	103	9.3	212	Clear	5-27-64
Ryan Creek	26 4W 17	S.F. Eau Claire R	2.8	3.8	6	.2	5.7	3.5	7.6	1-5	16	8.0	43	Lt. Brn.	7-28-64

Appendix II. Physical and chemical data of Clark County streams (continued).

Named Streams	Outlet Location Tn. Rg. Sec	• Watershed	Surface Acres	Length (Miles)	Avg. Width (Feet)	Approx. Flow <u>(cfs)</u>	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ <u>Mile)</u>	Miles of Public Frontage	Fishery (See Code)	Methyl Purple Alkalinity (ppm)	_pH	Specific Conductance (mmhos-77° F)	Water Color	Date of Sampling
Scott Creek	26 4W 25	Hay Creek	1.8	3.0	5	.16	5.3	23.3	2.0	1-5-7	33	7.4		Med. Brn.	
Simes Creek	27 4W 18	N.F. Eau Claire R	6	1.2	4	.09	1.3	11.8	2.4	5	39	6.8	93	Med. Brn.	
So. Br. O'Neil Creek	24 1W 18	O'Neil Creek	17.0	11.7	12	.14	23.8	10.3	0	5-7	144	7.3	303	Clear	8-13-64
So. Br. Yellow River	25 1E 24	Yellow River	3.5	3.8	7	.04	26.8	4.7	0	5 - 7	94	7.6	260	Lt. Brn.	8- 4-64
So. Fork Eau Claire R.	26 4W 19	Eau Claire River	72.0	37.0	16	5.87	215.4	12.3	23,0	2-3-4 5-6-7	38	7.0	98	Lt. Brn.	7-20-64
So. Fork Poplar River	28 1W 8	Poplar River	114.2	37.7	25	3.98	57.8		.2	4-5-6-7-8	3 112	8.2	247	Clear	6-18-64
Spooner Creek	24 2W 15	Black River	1.0	2.1	4	.00	4.0	38.1	0	5	70	6.9		Lt. Brn.	8-17-64
Sterling Creek	28 4W 27	N.F. Eau Claire R	. 2.5	3.5	6	.6	7.8	24.3	0	5	62	8.2		Clear	6-26-64
Surveyor Creek	26 4W 19	S.F. Eau Claire R	1.5	1.5	4	.05	1.5	26.7	3	1-5	11	7.5		Med. Brn.	
Thompson Creek	26 4W 35	Hay Creek	.8	1.0	7		6.6	15.5	2	5	14	7.5		Clear	8- 7-64
Tomas Creek	23 1E 13	E.F. Black River	9.7	2.5	32		14.2	10.0	0	5	9	7.1		Med. Brn.	
Wedges Creek	23 2W 7	Black River	63.0	20.0	26	4.24	118.4	6.0	24.6	1-5-6-7	15	7.2		Lt. Brn.	8-18-64
Windy Run	26 4W 15	Hay Creek	1.1	2.2	4	.1	2.9	9.1	4.4	5	20	7.4		Med. Brn.	
Wolf River	28 4W 30	N.F. Eau Claire R	. 8.7	6.0	12	1.2	33.3	8.6	0	5-7	92	8.2		Clear	6-29-64
Yellow River	25 1E 1	Wisconsin River	5.5	3.0	15	.10	26.5	5.3	0	5-7	76	7.2		Lt. Brn.	7-21-64
Unnamed Streams											, ,	, •=	100	Lt. bin.	7-21-04
Creek 28-10	23 1E 28	Hay Creek	.5	1.0	4	.11	1.2		2.0	5	8	7.2	73	Lt. Brn.	8-25-64
Creek 33-5	23 1E 33	Hay Creek	1.1	2.6	4	.02	5.0		5.2	5	13	7.0		Lt. Brn.	8-25-64 8-25-64
Creek 22-11	23 1W 22	Rock Creek	.7	2.0	3	.03	. 5		.8	5	14	7.2		Lt. Brn.	8-25-64 8-26-64

Appendix II. Physical and chemical data of Clark County streams (continued).

Unnamed Streams	Out Loca <u>Tn.</u> Rg	tion	Watershed	Surface Acres	Length (Miles)	Avg. Width (Feet)	Approx. Flow (cfs)	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ <u>Mile)</u>	Miles of Public Frontage	Fishery (See Code)	Methyl Purple Alkalinity (ppm)	<u>p</u> H	Specific Conductance (mmhos-77° F)	Water Color	Date of Sampling
Creek 36-11	23 1W	36	E.F. Black River	.4	.9	4	.01	.9		1.8	5	9	7.3	49	Clear	8-26-64
Creek 19-7	23 2W	19	Black River	1.2	1.3	8	.10	2.3		0	5	24	7.1	85	Lt.Brn.	8-28-64
Creek 8-14	23 3W	8	Arnold Creek	.3	.6	4	.82	.3	40	1.2	5	1	4.2	65	Med. Brn.	9-11-64
Creek 10-1	23 3 W	10	Wedges Creek	.1	.4	3		.4		.8	5	5	7.1	31	Lt. Brn.	9- 2-64
Creek 12-6	23 3W	12	Wedges Creek	2.8	2.3	10	.01	2.8		4.0	5	8	7.0	29	Med. Brn.	8-31-64
Creek 17-14	23 3W	17	Arnold Creek	.4	1.8	2	.09	.9	40	3.6	5	1	4.6	81	Clear	9- 4-64
Creek 18-4a	23 3W	18	Arnold Creek	.9	1.3	6	27.20	1.0	33.3	2.6	5	0	4.2	58	Med. Brn.	9-11-64
Creek 18-4c	23 3 V	18	Arnold Creek	1.5	.7	18		.4		1.4	5	1	5.0	55	Med. Brn.	. 9-11-64
Creek 21-12	23 3 V	18	Arnold Creek	.6	.9	6	.10	.9	28.6	1.8	5	14	6.1	50	Clear	9- 4-64
Creek 25-2	23 3W	25	Black River	.5	.4	1	.02	.8		0	5	8	7.2	26	Lt. Brn.	9- 2-64
Creek 25-7	-23 3V	25	Black River	.02	.2	1	.01	.1		0	5	8	7.2	36	Lt. Brn.	9- 2-64
Creek 25-8	23 3V	25	Black River	.1	.6	2	.04	1.1		0	5	10	7.4	31	Lt. Brn.	8-28-64
Creek 25-11	23 3V	25	Black River	.02	.2	1	.02	.6		0	5	4	7.2	31	Lt. Brn.	9- 2-64
Creek 27-10	23 3V	27	Arnold Creek	.7	1.4	4	.17	2,2		2.2	5	13	6.9	38	Clear	9- 4-64
Creek 27-12	23 3V	27	Arnold Creek	3	.5	5	.07	.6		1.0	5	5	6.9	52	Clear	9- 4-64
Creek 34-2	23 3V	34	Arnold Creek	.2	.5	3	.23	.9		1.0	5	5	5.7	46	Lt. Brn.	9- 4-64
Creek 13-14	24 1E	13	E.F. Black Rive	r .3	.6	4	.01	.3	20	0	5	60	7.2	135	Clear	8-11-64
Creek 17-5	24 1E	17	Cunningham Creel	1.3	2.7	.4	.02	4.7	7.4	0	1-5	112	7.1	244	Clear	8-12-64
Creek 36-14	24 1V	1	Cunningham Creel	c 1.0	2.0	4	.02	2.8	20	0	5	9	7.4	44	Lt. Brn.	8-12-64

Appendix II. Physical and chemical data of Clark County streams (continued).

Unnamed Streams	Outlet Location Tn. Rg. Sec.			Length (Miles)	Avg. Width (Feet)	Approx. Flow (cfs)	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ Mile)	Miles of Public Frontage	Fishery (See Code)	Methyl Purple Alkalinity (ppm)	pН	Specific Conductance (mmhos-77° F)	Water Color	Date of Sampling
Creek 20-7	24 3W 20	Fivemile Creek	.7	2.0	3	0	1.1	25	4.0	5	7	7.3	25	Lt. Brn.	8-19-64
Creek 12-11	24 4W 12	Fivemile Creek	2.4	1.5	13	2.22	1.		3.0	5	2	5.2	47	Drk. Brn.	. 10- 5-64
Creek 15-12	24 4W 15	Fivemile Creek	.4	1.1	3	.01	2.7	12.5	0	5	16	7.2	49	Lt. Brn.	8-19-64
Creek 22-16	24 4W 22	Fivemile Creek	.4	1.5	2	.03	1.0		2.1	5	6	7.2	63	Clear	8-20-64
Creek 24-5	24 4W 24	Fivemile Creek	7.8	3.2	20		5.5	10	11.0	5	18	7.2	48	Drk. Brn.	. 8-20-64
Creek 24-14	24 4W 24	Fivemile Creek	3.2	1.8	15		1.4		3.6	5-7	3	5.4	49	Med. Brn	.10- 7-64
Creek 30-14	24 4W 30	E. F. Halls Creek	.4	1.7	2	.14	2.1	2.4	0	1-5	11	7.1	. 66	Clear	8-20-64
Creek 33-8	24 4W 8	E. F. Halls Creek	.4	1.7	2	.15	1	40	0	5	11	7.1	58	Clear	8-19-64
Creek 33-7	25 1E 33	S. Br. O'Neil Creek	.5	.8	6	.01	5		0	5	44	7.3	233	Lt. Brn.	8- 4-64
Creck 10-2	25 1W 10	N. Br. O'Neil Creek	1.2	2.0	5	.01	2	26.7	0	5	71	7.4	167	Lt. Brn.	8- 4-64
Creek 15-16	25 1W 15	N. Br. O'Neil Creek	.6	1.2	4	.01	1.3	33.3	0	5	124	7.5	263	Clear	8- 5-64
Creek 34-16	25 3W 34	Wedges Creek	.7	1.3	5	.03	2.1	48	2.6	1-5	8	7.6	28	Clear	8- 7-64
Creek II-8	25 4W 11	Hay Creek	.4	1.7	2	.04	1.9		3.4	5	17	7.6	50	Lt. Brn.	8-10-64
Creek 31-6	25 4W 31	Black Creek	.3	.6	4	.12	1		0	5	13	7.6	41	Med. Brn	
Creek 31-7	25 4W 31	Black Creek	.1	-6	2	.70	1.5	·	0	5	13	7.6	56	Lt. Brn.	8~1()-64
Creek 2-6	26 1W 2	Rock Creek 1	1.1	2.2	4	.04	2.1		0	5	129	7.9	279	Clear	7- 8-64
Creek 2-16	26 2W 2	Rock Creek	.8	1.4	5	.14	1.7		0	5	66	7.2	177	Clear	7-24-64
Creek 3-11	26 2W 3	Black River	.6	1.6	3	.10	1.9		0	5	114	7.4	246	Clear	7-24-64
Creek 9-1	26 2W 9	Black River	.8	1.3	5	.19	. 1.9	~ ~	0	5	68	7.6	181	Clear	7-24-64
Creek 2-16	26 3W 2	Rocky Run	.5	1.6	3	.05	2.8		0	5-6-7	41	7.8	239	Lt. Brn.	7-27-64

Appendix Π . Physical and chemical data of Clark County streams (continued).

Unnamed Streams	Outlet Location Tn. Rg. Sec.	Watershed	Surface Acres	Length (Miles)	Avg. Width (Feet)	Approx. Flow (cfs)	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ Mile)	Miles of Public Frontage	Fishery (See Code)	Methyl Purple Alkalinity (ppm)	y pH	Specific Conductance (mmhos-77°F)	Water Color	Date of Sampling
Creek 7-1	26 3W 7	Cameron Creek	.8	1.8	4	.04	3.1	11.1	0	5	32	7.6	81	Clear	7-27-64
Creek 16-2	26 4W 16	S. F. Eau Claire	e R2	.7	2	.50	.2	28.6	1.4	5	23	7.8	62	Clear	7-29-64
Creek 4-1	27 1W 4	Rock Creek	1.0	2.0	4	1.65	2.2		0	5	130	7.1	279	Clear	7- 9-64
Creek 4-5	27 1W 4	Rock Creek	.2	.4	4	.33	2.0		0	5	122	7.5	257	Clear	7- 9-64
Creek 5-11	27 1W 5	Rock Creek	1.7	2.4	6	.02	2.0		0	5	139	7.8	279	Clear	7- 9-64
Creek 16-12	27 1W 16	Rock Creek	1.2	2.4	4	.43	2.9		0	5-7	96	7.7	212	Clear	7- 8-64
Creek 17-15	27 1W 17	Rock Creek	2.2	4.6	4	.31	14.6		0	5-7	103	7.7	227	Clear	7- 8-64
Creek 28-12	27 1W 28	Rock Creek	14.6	8.6	14	2.20	25.8		0	5-7	86	7.1	188	Clear	7- 3-64
Creek 31-13b	27 1W 31	Rock Creek	.9	1.8	4	.36	2.3		0	5	76	7.5	188	Clear	7- 3-64
Creek 31-13c	27 1W 31	Rock Creek	.3	1.2	2	.10	.7	~-	0	5	51	6.8	122	Clear	7- 3-64
Creek 34-8	27 1W 34	Rock Creek	.6	1.6	3	.16	2.2		0	5	176	7.2	362	Clear	7- 8-64
Creek 11-2	27 2W 11	Poplar River	.8	1.8	4	.56	2.3		0	5	59	6.8	140	Clear	7- 9-64
Creek 17-6	27 2W 17	Norwegian Creek	.1	.8	2	.13	1.8		0	5	96	6.8	220	Clear	7-14-64
Creek 18-5	27 2W 18	Norwegian Creek	.6	1.2	4	.06	1.1		0	5	82	7.0	185	Clear	7-14-64
Creek 23-5aa	27 2W 23	Gile Creek	.1	.4	2	.01	.7		0	5	70	6.8	163	Clear	7- 9-64
Creek 23-5ad	27 2W 23	Gile Creek	.5	1.0	4	.04	2.0		0	5	64	6.8	150	Clear	7-10-64
Creek 24-6	27 2W 24	Gile Creek	.1	.6	2	.02	1.1		0	5	46	6.8	111	Clear	7-10 - 64
Creek 34-3	27 2W 34	Black River	.3	.8	3	.03	1.1		0	5	64	6.8	163	Clear	7-10-64
Creek 34-14	27 2W 34	Black River	.5	1.0	4		1.0	~-	0	5	68	7.3	158	Clear	7-10-64
Creek 12-12	27 3W 12	Norwegian Creek	1.5	2.4	5	.30	3.4		0	5	52	6.8	131	Clear	7-15-64
														,	

Appendix Π_{\bullet} Physical and chemical data of Clark County streams (continued).

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<u>Urnamed Streams</u>	Outlet Location Tn. Rg. Sec. Watershe	Surface d Acres	Length (Miles)	Avg. Width (Feet)	Approx Flow (cfs)	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ Mile)	Miles of Public Frontage	Fishery (See _Code)	Methyl Purple Alkalinity (ppm)	, pH	Specific Conductance (mmhos-77° F)	Water Color	Date of Sampling
Creek 18-16	27 3W 18 Black Creek	1.3	2.5	5	.15	3.0	16	4.	1-5	33	6.9	78	Clear	7-17-64
Creek 28-16	27 3W 28 S.F. Eau Clair	e R3	.8	3	.03	2.7		0	5-7	47	6.8	123	Clear	7-15-64
Creek 29-13	27 3W 29 S.F. Eau Clair	e R3	1.4	2	.11	1.0	3.2	1.	5-7	111	7.3	225	Clear	7-16-64
Creek 36-3	27 3W 36 Rocky Run	.7	1.5	4	.13	2.8		0	5	84	7.1	178	Clear	7-10-64
Creek 16-10	27 4W 16 N.F. Eau Clair	e R3	1.7	2	.06	3.1	11.8	2.	5	31	6.5	69	Med. Bri	1.7-16-64
Creek 34-9	27 4W 34 S.F. Eau Claire	e R8	1.6	4	.33	1.9	12.5	1.6	5	34	6.3	84		1.7-20-64
Creek 14-1	28 1E 14 Dill Creek	.5	.9	4	0	1.7		0	5	137	8.6	282	Clear	6-16-64
Creek 14-13	28 1E 14 Dill Creek	.04	.7	1	.02	1.0		0	5	142	8.1	285	Clear	6-16-64
Creek 19-3	28 1E 19 S.F. Poplar Riv	rer 2.2	4.0	5	.8	5.4		0	5	156	7.8	319	Clear	6-17-64
Creek 9-6	28 1W 9 N.F. Poplar Riv	ver 1.8	3.0	5	.06	5.7		0	5	175	8.4	356	Clear	6-22-64
Creek 15-6	28 1W 15 S.F. Poplar Riv	er .4	1.0	3	.3	3.2		0	5	174	8.4	343	Clear	6-23-64
Creek 15-7	28 1W 15 S.F. Poplar Riv	er .2	.7	3	.01	.4		0	5	38	8.6	96	Clear	6-23-64
Creek 22-4	28 1W 22 S.F. Poplar Riv	er .04	.3	2	.07	1.5		0	5	82	8.4	189	Clear	6-23-64
Creek 25-2	28 1W 25 S.F. Poplar Riv	er .1	.3	3	.04	1.4		0	5	202	8.3	402	Clear	6-18-64
Creek 26-16	28 1W 26 S.F. Poplar Riv	er 14.5	9.2	13	2.80	22.2		0	5-7	125	8.2	264	Clear	6-18-64
Creek 33-7	28 2W 33 Black River	.5	1.4	3	.58	3.9		0	5	100	8.3	298	Clear	6-24-64
Creek 27-8	28 3W 27 S.F. Eau Claire	R. 4.0	4.1	8	1.76	8.6	16	0	5	72	8.2	171	Clear	6-24-64
Creek 34-7	28 3W 34 S.F. Eau Claire	R7	1.5	4	.15	2.8	32	0	5	40	8.4	101	Clear	6-25-64
Creek 3-1	28 4W 3 N.F. Eau Claire	e R. 1.8	2.5	6	.60	3.7	48	0	5	97	8.6	487	Clear	5-27-64
Creek 15-4	28 4W 15 N.F. Eau Claire	e R. 3.7	3.5	9	.09	6.5	28.6	0	5	110	8.2	237	Clear	6-26-64
Creek 30-5	28 4W 30 Wolf River	1.1	1.5	6	.04	5.3	13.3	0	5	58	8.4	164	Clear	6-29-64
Creek 34-1	28 4W 34 N.F. Eau Claire	e R1	.2	3	.04	1.4	80	0	5	32	8.2	83	Clear	6-26-64
Creek 34-3	28 4W 34 N.F. Eau Claire	e R. 2.1	2.7	7		3.1	13.3	2.2	5	35	6.1	91	Med. Brn.	-
Creek 14-10	29 1E 14 N.F. Poplar Riv	er .5	1.3	3	.09	2.0		0	5		8.6	254		4-27-64
Creek 17 -1	29 1E 17 N.F. Poplar Rive	er .9	2.5	3	.7	2.5		0	5		8.8	218		4-27-64
													OTEGI	± 2/ -04

Appendix II. Physical and chemical data of Clark County streams (continued).

Unnamed Streams	Ĺ	Outle .ocati	t	,	Surface Acres	Length (Miles)	Avg. Width (Feet)	Approx. Flow (cfs)	Approx. Watershed Area (Sq. Miles)	Gradient (Feet/ Mile)	Miles of Public Frontage	Fishery (See Code)	Methyl Purple Alkalinit (ppm)		Specific Conductance (mmhos-77°F)	Water Color	Date of Sampling
Creek 18-2	29	1E	18	N.F. Poplar R.	.7	2.0	3	.63	2.1	···	0	5	43	8.8	138	Clear	4-28-64
Creek 6-5	29	1W	6	Trappers Creek	.8	2.3	3	.22	2.5	ess	.5	5	42	8.6	112	Clear	5-18-64
Creek 12-7	29	1W	12	N.F. Poplar R.	.6	.7	7 7	.37	2.2		0	5	50	8.6	217	Med. Brn.	5-18-64
Creek 18-14	29	1 W	18	Brick Creek	1.4	2.3	5	.35	2.0		.9	5 _	59	8.6	143	Clear	5-19-64
Creek 22-3	29	1W	22	N.F. Poplar R.	2.8	3.9	6	.84	3.8		0	5	44	8.6	113	Med. Brn.	5-19-64
Creek 23-2	29	1W	2.3	N.F. Poplar R.	1.8	3.0	5 .	.36	3.1		0	5	134	8.6	279	Clear	5-19-64
Creek 33-5	29	1W	33	N.F. Poplar R.	.4	.7	5	.28	2.1		0	5	112	8.6	241	Clear	5-20-64
Creek 5-14	29	2W	5	Black River	, ,,,7	1.0	- 6	.27	2.5		0	5	62	8.6	150	Med. Brn.	5-21-64
Creek 5-15	29	2W	5	Black River	.9	1.8	4	0	2.6		0	5	60	8.6	144	Clear	5-20-64
Creek 24-10	29	2W	24	Brick Creek	.3	.8	3	.11	1.6		0	5	47	8.6	125	Clear	5-21-64
Totals and Averages	- Named Str	ream	s 53	3	2,355.5	430.1					204.5		49.5	7.5	129.3		
	Unnamed	Strea	ms 97	7	120.12	162.5					72.7		58.3	7.4	149.6		
Grand Totals and Ave	rages		150)	2,475.62	592.6					277.2		55.2	7.4	142.4		

Fishery Code:

1. Trout

6. Smallmouth Bass

2. Muskellunge

Panfish

3. Walleye

8. Northern Pike

4. Largemouth Bass

9. Catfish

5. Forage Fish

NOTE: Physical and chemical data based on date of sampling. Since all streams in Clark County were low during 1964, it is likely that many of these characteristics would have been different under normal level and flow conditions.

Flow data for the Black River is a 53 year average (1905-1908, 1913-1963) based on data gathered by the U.S.G.S. at its gauge near Neillsville. Runoff during the 1962 calendar year amounted to 8.95 inches while 6.86 inches ran off during the water year (Oct. 1962 - Sept., 1963). All other flow data were obtained by using the floating chip method of calculating volume of flow and, where possible, were gathered from the lower third of the streams investigated.

Appendix III

DEFINITIONS

To facilitate data collection and reporting, several technical terms are employed with which some readers may not be familiar. The following definitions should serve to clarify the meaning of these terms.

- acidity Is the preponderance of hydrogen (H) ions, which are acid, over base (OH) ions that are alkaline. It is ordinarily expressed as a pH below seven.
- alkalinity A measure of the carbonates, bicarbonates, and hydroxides present in a sample of water, expressed as parts per million (ppm) calcium carbonate. In this report, alkalinity, determined with the acid-base indicator methyl purple, is assumed to represent total alkalinity.

aquatic plant types:

- floating Plants whose leaves normally float on the water surface such as duckweeds, white water lily, and yellow pond lily, for example.
- emergent Plants whose leaves mostly emerge from the water such as cattail, various rushes, pickerel weed, and arrowhead, for example.
- submergent Plants whose leaves are mostly submerged beneath the water surface such as coontail, water milfoil, bladderwort, and wild celery or eel grass, for example.
- dabbler ducks Ducks characteristic of small streams, ponds, and marshes and who obtain their food at or near the water surface by dabbling or tipping rather than diving. Examples include mallard, black duck, pintail, wood duck, and teal.
- diving ducks Ducks more commonly found on the more open bodies of water, such as large rivers and lakes, who dive for their food. When taking off from water, they run along the surface before taking wing instead of springing up. Examples include bluebill, redhead, canvasback, bufflehead, goldeneye, and ring-necked duck.
- drainage area The land area where runoff flows directly into only a particular lake or stream, as differentiated from watershed areas. The drainage area for streams includes only the area within the county that is drained. The drainage area for a lake includes the total area, including that from other counties.

fertility classification - Used in Clark County report and in part from Moyle, 1946.

Total alkalinity	Classification	Productivity	General
0.0- 14	very soft	low	infertile
15 - 49	soft	low-medium	infertile
50 - 99	medium hard	medium-high	infertile-fairly fertile
100 - 199	hard	high	moderately fertile
200 and more	very hard	high	very fertile

lake types:

drainage - Lake or impoundment having an inlet and outlet.

drain - Lake that has no inlet, but has an outlet of no substantial flow.

seepage - A lake having no visible inlets or outlets. It is dependent upon groundwater seepage to maintain its level.

spring fed - A lake or impoundment having no inlet, but has an outlet of substantial flow which reflects spring sources. These sources may be marginal or internal springs.

littoral zone - That part of the lake basin around the shore which is occupied by rooted aquatic plants. For this report, it refers to the shoreward part of the basin visible to the naked eye.

pH - The negative logarithm of the hydrogen ion concentration expressed in gram equivalents. A pH of less than 7.0 is acid, a pH of 7.0 is neutral, and more than 7.0 is alkaline.

shoreline development factor (S. D. F.) - A method of expressing the degree of irregularity of the shoreline of a lake. It is the ratio of the length of shoreline to the circumference of a circle having the same area as a lake. The number is therefore never less than 1.00.

soil bottom types:

sand - Particles having diameters of 0.125 inch or less.

gravel - Has diameter of 0.125 inch to 3.0 inches.

rock - This includes rubble (3.0 to 12.0 inches in diameter), rock 12.0 inches and larger in diameter, and bedrock.

muck - Includes detritus, silt, clay and marl.

- specific conductance A measure of the ability of water to conduct an electric current. It is therefore a measure of the total dissolved electrolytes in water and has use in determining relative purity of waters. The unit of measurement is reciprocal megohms or micromhos, as measured at 77° F. (25° C.).
- transparency It is a measure of vertical distance that can be seen into water using an instrument known as a secchi disk. The distance a secchi disk can be seen is influenced by a number of factors including amount of sunlight, turbidity, and water color, to mention a few. Where secchi disks can be seen at depths not exceeding 5.5 feet, the transparency is low, 6.0 to 12.0 feet, moderate; 12.5 to 20.0 feet, high; and 20.5 feet and deeper, very high.
- water color As used in this report, water was either clear, light brown, medium brown, or dark brown. The color was determined of samples taken directly from the water; therefore, apparent color rather than true color was measured as it included not only that color produced by materials in solution, but also any color produced by substances in suspension. According to the American Public Health Association (1949), true and apparent color of clear water having low turbidity, is nearly alike.
- unimproved or difficult access An access of this type exists when a <u>public</u> road of any kind which permits vehicular traffic passes within 200 feet of the shoreline of a lake or stream but does not permit direct access. Also, the land between the road and the water must be in public ownership.
- wetlands Any area where the water table is at such a level that raising of a cultivated crop, other than cranberries, is usually not possible. Wetland classifications include bog, fresh meadow, shallow marsh, deep marsh, shrub swamp, and timber swamp.
- wilderness access An access of this type exists when there are no roads open to vehicular traffic within 200 feet of a lake or stream and where the land lying between the nearest road and the water is in public ownership.
- winterkill A fish mortality in ice and snow covered lakes resulting from the depletion of dissolved oxygen in the water to a level where it is no longer capable of supporting fish life. The high oxygen demand of, and the formation of methane, carbon dioxide, hydrogen sulfide and other gases, by the decay of organic matter contribute to the kill. Winterkills usually occur in shallow or very fertile lakes, or in shallow bay areas of deeper lakes.

SURFACE WATER RESOURCE PUBLICATIONS

Barron County	1964
Chippewa County	1963
Clark County	1965
Columbia County	1965
Dane County	1962
Dunn County	1962
Eau Claire County	1964
Green County	1961
Kenosha County	1961
Marquette County	1963
Menominee County	1963
Milwaukee County	1964
Ozaukee County	1964
Polk County	1961
Racine County	1961
St. Croix County	1961
Vilas County	1963
Walworth County	1961
Washington County	1962
Waukesha County	1963

