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A Brief Fisheries Survey of the
New Rifle River Recreation Area

by

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The Rifle River Recreation Area lies in Ogemaw County about 3 1/2 miles east of Rose City. This 4,400 - acre tract of land was purchased by the State Conservation Department during the summer of 1944 from the estate of the late Harry M. Jewett, who operated it under the name of "Grousehaven". In addition to considerable cover for deer, grouse, ducks, and other small game, there are four large and six small lakes on the area totalling about 320 acres, as well as about 6 1/2 miles of trout streams. Purchase of the area was undertaken for two reasons: (1) to provide a public hunting and fishing territory reasonably close to large centers of population (distance to Detroit 170 miles, Flint 110 miles, Saginaw 80 miles, Lansing 155 miles); and (2) to obtain complete State ownership on lakes and streams where various types of experimental fisheries research projects might be carried on without interference to or from private land-owners.

Now that the rustic retreat of the ex-automotive pioneer is about to become public fishing ground, a short summary of what anglers may expect to catch from these waters should be of some interest. With this purpose in mind, the writer, accompanied by W. F. Carbine, Robert Barber, and O.M. Corbett, all of the staff of the Institute for Fisheries Research, spent the first two weeks of October, 1944, in gill-netting and seining the lakes and studying the trout population of Gamble Creek with the aid of the electric "shocker".

ALBERT S. HAZZARD, PH.D.
DIRECTOR

Findings on Lakes

A tabular summary of the lakes and the species of fish found in the more important lakes is presented in Table 1. Where additional species of fish were noted in a previous survey of these lakes by the Institute for Fisheries Research in 1932, (Report No. 151) those species are indicated in the tables as "Present '32" or "Reported '32". A brief description of each lake, the species of fish found there in October, 1944, and the fishing possibilities for the future follow.

DEVOE LAKE is the largest of the lakes on the area, covering approximately 125 acres, and has a maximum depth reported to be about 52 feet. The two best points of access are at the outlet and from a trail on the south shore just east of Dollar Lake. It is one of the most scenic of the lakes, and has several small islands. Much of its shoreline is wooded to the waters' edge. Almost the entire beach consists of marl, which in most places is firm enough to wade. The drop-off is steep enough so that considerable angling will be possible from shore or by wading fishermen. Devoe Lake receives the flow of Gamble Creek, and the overflow from Loon Lake flows into it through a sluggish connective. The Rifle River starts at the outlet dam at the southwest end of the lake.

During the course of the netting operations, the following species of fish were taken:

Game fish

Brown Trout (Salmo trutta), - 1 lb. 10 1/2 oz. to 5 lb. 9 3/4 oz. - 6 specimens.

Smallmouth Black Bass (Micropterus d. dolomieu), - young of the year only. 5 specimens.

Largemouth Black Bass (Huro salmoides), - young to 10 1/2 inches. 13 specimens.

Northern Pike (Esox lucius), - 3 lb. 3 oz. to 13 lb. 13 oz. 5 specimens.

Yellow Perch (Perca flavescens), - 2 1/2 inches to 10 1/2 inches. 123 specimens.

Rock Bass (Ambloplites rupestris), - 5 inches to 8 3/4 inches. 41 specimens.

Ciscoe (Leucichthys artedi), were captured by the Rifle River Survey party in the summer of 1941 and also in the 1932 survey.

Coarse Fish

Common sucker (Catostomus c. commersonii), - 8 to 19 inches. 5 specimens.

Carp (Cyprinus carpio), - reported to be present by Ned Jewett.

Forage Fish

Despite considerable seining on the various beaches, only two species of forage fish were found here. These were the bluntnosed minnow (Hyborhynchus notatus), and the Johnny Darter (Boleosoma n. nigrum). At the time of the seining they were not very plentiful. The common shiner (Notropis cornutus frontalis) was reported present in Devoe Lake in 1932, but was not encountered in 1944.

NORTH LAKE is the second largest of the lakes, and has approximately 87 acres, and is also reported to have a maximum depth of 52 feet. This body of water is as appealing to the eye as Devoe Lake, and has handsomely wooded hills on its south and west shores with several deep, irregular bays and coves that break up the shoreline. The beach is firm enough for wading fishermen, and is also of marl. There are two good points of access at present, one on the north shore and one on the east shore. There are no inlets to this lake, but Lone Star Creek drains the surplus water west to Gamble Creek.

The following fish were taken in the course of our investigation:

Game fish

Brown trout - one specimen, 2 lb. 3 oz.

Smallmouth Black Bass- numerous young-of-the-year.

Largemouth Black Bass- numerous young, one 13-inch adult.

Northern Pike - one specimen - 4 lb. 10 oz.

Yellow Perch - 16 specimen - 6 1/4 to 13 1/2 inches.

Rock Bass - two specimens, young.

Bluegill (Lepomis macrochirus), - two specimens, young-of-the-year.

Coarse fishes

Common sucker - 5 specimens, 8 - 17 inches.

Black bullhead (Ameiurus melas), - one specimen, 13 inches.

Forage fishes

Three species of forage fishes were encountered in the seining and gill-netting. The common shiner, all of which were taken in the gill nets, were of large size, ranging from 5 to 9 inches. This species has been reported by Conservation Officer Jesse Baird to be obnoxious to the fly-fishermen who have used the lake in the past. However, their young should provide an excellent source of food. The Johnny Darter was taken in limited numbers in the shallow waters of the beaches, as was the bluntnosed minnow.

LOON LAKE is a small marsh-bordered body of water which lies just south-east of North Lake, and is separated from the latter body of water by a low ridge. It has a maximum depth reported to be about 20 feet, but over most of its surface it is less than 10 feet deep. Except at the shoreward edges, which are of fibrous peat, the entire bottom is pulpy peat. This lake has considerably more aquatic vegetation than either Devoe or North Lake. At present there is no good boat landing on this lake.

Because of the presence of numerous snags and the extremely soft bottom, seining could not be conducted, so only gill-net samples of the fish population were obtained. These were as follows:

Game fish

Brown trout - one specimen. - 19 inches.

Largemouth Black Bass - one specimen - 12 inches.

Yellow Perch - 14 specimens - 7 1/2 - 12 1/2 inches.

Bluegill - one specimen - 4 inches.

Pumpkinseed - six specimens - 4 - 6 inches.

Coarse fishes.

Common sucker - three specimens - 11 - 17 inches.

Black bullhead - 69 specimens - 6 - 7 inches.

No seining was done in 1944. Iowa Darters were taken by the 1932 survey, and this and other species of minnows are presumably present.

SPRING LAKE, lies to the east and south of Loon Lake, and is separated from Loon Lake by a narrow high "hog-back" ridge. It is the third largest lake on the area (about 58 acres). The northeast and southwest shores are quite steep and wooded, the upland cover consisting chiefly of poplar and white birch. The north end tapers off into a ~~swamp~~, and the southeast end lies in open farm land. The shoreline is quite irregular, and there is one small island in the southern end of the lake. There is no inlet, but there is an intermittent outlet to Loon Lake through a tube under the road. The bottom is chiefly pulpy peat except for a few places along the shores where there is a narrow border of sand.

No game fish were captured in our gill net sets in 1944, but yellow perch and pumpkinseeds were present here in 1932. Young-of-the-year pumpkinseed sunfish were captured by seining.

The only coarse fish encountered in the netting was the black bullhead, of which 48 heavily parasitized specimens 4 - 7 inches long were taken. Limited seining on the southeast shore revealed the presence of the following species of forage fish: mud minnow (*Umbra limi*) golden shiner (*Notemigonus c. crysoleucas*), blacknosed shiner (*Notropis h. heterolepis*), and the Iowa darter.

DOLLAR LAKE is located about in the middle of the area in an open, lightly

wooded plain. It is surrounded almost entirely by an encroaching shoreline composed of leather leaf. It is about 13 acres in extent, more or less circular in shape, and the maximum depth given in the 1932 survey was 18 feet. There is no inlet or outlet. A fair trail leads to a moderately accessible boat landing on the north shore. The bottom of this lake is chiefly pulpy peat, except near shore where fibrous peat, or a narrow band of sand, makes up the bottom material.

The soft bottom and the numerous snags again eliminated seining as a method of fish collection.

The following species of fish were captured in gill-nets:

Game fish

Yellow perch - 32 specimens - 7 1/4 to 10 inches.

Bluegills - 4 specimens - 5 to 8 inches.

Pumpkinseeds - 3 specimens - 6 1/4 to 7 1/4 inches.

(In addition, the 1932 survey indicated the presence of northern pike and black crappie (Pomoxis nigro-maculatus), although we did not observe them in 1944.)

The only coarse fish captured was one yellow bullhead (Ameiurus natalis) approximately 10 inches long, and the only forage fish on record are Iowa darters, which were listed by the 1932 investigators.

TEAL LAKE lies about 3/4 mile due east of Dollar Lake and is also of the same general type, having an encroaching bog-and-marsh shoreline. A trail leads toward the lake off from the main road, but there is no good boat landing at present. A mucky, soft portage of about 100 yards is now necessary to launch a boat. The lake has no inlet, but an outlet is shown connecting Teal Lake with Skunk Creek on the only available map. The bottom is composed of peat - pulpy peat in the deeper waters, which reach a maximum of 14 feet, and

fibrous peat at the edges. There is an abundance of submerged and floating aquatic vegetation.

The list of fishes found in the netting operations was as follows:

Game fish

Yellow perch - 3 specimens - 5 - 11 1/2 inches.

Largemouth black bass - 5 specimens - 2 1/4 - 4 1/2 inches.

Bluegills - 4 specimens - 3 1/2 - 4 inches.

Pumpkinseed - 6 specimens - 4 - 5 3/4 inches.

Black Crappie - 1 specimen - 4 1/2 inches.

In addition to these fish, northern pike were listed in the 1932 survey, although not taken by us.

The only coarse fish captured was the black bullhead, of which 54 were taken, all of a uniform size of about 6 inches.

Both young and adult common and golden shiners were observed in 1944, and black-nosed shiners were reported in 1932.

SOUTH POND and DEVIL'S WASH-BASIN are located near the outlet of Devoe Lake, South Pond being about 50 feet from the south side of the lake, and the Devils Wash-Basin about 300 feet from the north side. Neither has any inlet or outlet. Both are small, "pit-"type lakes left by the receding glacier. There is little or no shoal in either and the bottom drops off steeply from the shore to a maximum depth of between 15 and 20 feet. The bottom in South Pond is a mixture of marl and pulpy peat, while in the Devil's Wash-Basin the bottom has some fibrous peat at the edges and pulpy peat over the deep waters. Many deadfalls line the shores of both ponds.

Strangely enough, in South Pond all of the fish captured were adults of good average size. These were two yellow perch (11 1/2 and 12 3/8 inches), one large-mouth bass (11 1/8 inches) and three black bullheads (10 - 10 1/2 inches). In Devils Wash-Basin, netting and seining turned up one pumpkinseed

(1 1/2 inches), one black bullhead (9 inches), and one mud minnow (2 inches). In 1932, largemouth bass, rock bass and bluegills were present, and possibly are present yet.

Pintail Pond was not visited in the course of the survey. It is reported to hold very little water, and to be of insignificant value as a fishing lake. Time did not permit an examination of Mallard Pond, which is really a "wide-water" of Gamble Creek.

Summarizing the species of fish present which are most commonly sought by anglers, we find that brook trout were formerly reported for one lake, brown trout were taken in three of the lakes, smallmouth bass in two lakes, largemouth bass in five lakes and reported present in a sixth; northern pike were taken in two lakes and reported formerly present in two others, yellow perch were taken in six of the lakes and reported formerly present in another. Rock bass were observed in two lakes, and were formerly present in another; bluegills were captured in two lakes, and were observed in a fourth in 1932; pumpkinseeds were taken in five lakes, and black crappies are apparently present still in one lake, and were formerly present in another. Bullheads were found in all but Devoe Lake.

Trout Stream Findings

Studies on the trout streams of the Rifle River Recreation Area were confined to the upper portion of Gamble Creek and the lowermost portion of Fontinalis Creek. Time did not permit any work on the Rifle River below Devoe Lake, but this is reputed to furnish brown trout and rainbow trout fishing of at least average quality.

On Gamble Creek, five sections of stream, varying in length between 68 feet and 96 feet were blocked off at each end with fine meshed seines. The

fish populations of the blocked-off portions were then removed with the aid of the electric "shocker". The "shocker" produces an electric current of low amperage which stuns the fish momentarily, but long enough to allow the operators to pick up the fish in dip nets. After removal to uncharged water the fish recover. When all fish have been removed from a sample area, they are sorted as to species, counted, measured, and weighed. The stream section shocked is then measured to determine the area occupied by the known population. From these data, the per acre population of the stream area sampled may be calculated.

The combined results from the five sample sections on Gamble Creek are presented in the upper part of Table 2. The species of fish encountered were as follows:

Brown trout - 128 specimens

Brook trout - 7 specimens

Muddlers - 281 specimens

Stickleback (Eucalia inconstans) - 4 specimens

Creek Chubs (Semotilus a. atromaculatus) - 21 specimens

Common sucker - 1 specimen

Iowa darter - 1 specimen

Black bullhead - 1 specimen

Brook lamprey (Entosphenus lamettenii) - many observed but not counted, as the majority were so small that they could escape through the fine meshes of the dip nets.

Computations on the per acre population, based on the areal measurements and the observed numbers of fishes found indicate that the upper portion of Gamble Creek on the Rifle River Recreation Area was carrying approximately 139 legal brown trout per acre which weighed 44.1 pounds. About 5 legal brook trout were present which weighed 1.7 pounds, or a total legal trout population per

acre weighing 44.8 pounds. The sublegal and fingerling trout populations per acre were as follows: 144 sublegal (4 to 6 7/8 inches) brown trout and 5 sublegal brook trout; 353 fingerling (2 to 4 inches) brown trout and 25 fingerling brook trout, all of which weighed a total of 15.5 pounds. The total standing crop of all trout was 60.3 pounds per acre.

In addition to the trout present, it was estimated that there were 1,397 muddlers weighing 6.7 pounds per acre, 159 miscellaneous minnows and other fish weighing 0.7 pounds per acre, and 40 crayfish weighing 1.2 pounds per acre. The total per acre production was estimated to be in the vicinity of 2,268 individuals and 69.9 pounds of fish and crayfish.

The estimated population per acre found in the single 117 foot section of Fontinalis Creek was as follows:

29 legal brown trout	weighing	7.1	pounds,
176 sublegal brown trout	"	13.5	" ,
206 fingerling "	" "	2.6	" ,
853 muddlers	"	8.0	" ,
206 assorted minnows	"	5.7	" .

or a grand total of 1,470 fish weighing 36.9 pounds. The inclusion of additional sample sections on Fontinalis Creek would undoubtedly alter the estimates, since it can be pointed out that the estimates of the per acre population of Gamble Creek based on single sections alone varied from 1,470 individuals and 31.1 pounds to 3,969 individuals and 213.5 pounds.

Fishing Possibilities

Now just what do the survey figures just presented indicate as to how good the fishing may be (notice that word is underlined)? The thought has been expressed by many people that the newly-opened lakes and streams of the area should be an angler's paradise because they were stocked during Mr. Jewett's ownership, and they have had little or no fishing for more than a decade. Judging from the

size of the specimens taken in the netting, the lakes should yield northern pike, brown trout and perch which are of better than average size. We did not see enough bass of either species to make any predictions, but they are reputed to be of fair size, also. Just how many the anglers will capture remains to be seen.

The trout streams should furnish fair to good angling although we have no samples from the Rifle River where it flows through the area, creel census studies about 4 miles downstream during 1944 showed that anglers caught a little more than 1 legal fish for every three hours of fishing. The new state-owned portion is reported to furnish better angling. No angling data are available for Gamble Creek, but from a comparison of the population studies for Gamble Creek and Hunt Creek, and the known catch per hour on the latter stream, one might predict that a catch per hour of 0.30 to 0.50 legal trout (assuming that brown trout will react to angling as do the brook trout) for Gamble Creek.

The Creel Census

If we are to know how good or how poor the fishing on the Rifle River Recreation Area is, the Fish Division must have complete and accurate catch records, both for the lakes and streams. These records will tell definitely whether or not fishing is exceptionally good, average, or poor. Continued over a period of years they should show what happens as these almost virgin waters are fished. The creel census data will also provide a measure of the success or failure of any fisheries management policies which may be tested on the area in the future. Considered in one sense, the creel census records are comparable to sales' slips in a business organization, and aid in determining how much stock has been removed, and how much effort was required to remove it.

In order to obtain the creel census data, all persons entering the Rifle River Recreation Area will be registered at the main entrance gate (3 1/2 miles east of Rose City) where they will be given a registration card which allows

them to fish anywhere on the area. Fishing hours on the area will be unrestricted but the entrance gate will be attended only from 7 A.M to 11 P.M. Central War time. On completion of fishing anglers will show their catch to the census clerk posted at the main gate as they leave, or report their unsuccessful fishing to him (we hope, of course, that there will be few such reports - but don't forget - it is just as important for us to know you didn't catch any fish as if you did). The clerk will record the amount of time you spent fishing, where you fished, and weigh and measure your catch by species.

A large number of Michigan anglers are familiar with creel census procedure from their fishing on other waters throughout the state. They may, at first, be confused by the registration at the entrance gate. However, since not all persons entering the Rifle River Recreation Area will desire to fish, we must keep count of the number of people who use the area for hunting, trapping, sightseeing, pick-nicking and hiking, as well as the fishermen. All will be registered, and the registration card will indicate the chosen activities. Information on the predominant use of the area will be available from the registration. Registration forms and procedures will be kept as simple as possible for the convenience of both the recreationists and those charged with the administration of the area.

Well, that is the set-up for a fair chunk of water that Mr. Average Fishermen has never had a chance to fish over before. is it as red-hot as some folks claim, or is Mud Lake back near home just as good? There's only one way for you to find out. Save out a few of those A coupons and come up and register and tell us how you make out. A Fish Division Creel Census clerk will be there to find out how you fared. We won't promise anything except that you'll see some interesting and rather scenic lakes and streams

Institute for Fisheries Research

Report approved by A. S. Hazzard
Report typed by Jane Galvin

By David S. Shetter

Associate Aquatic Biologist

Table 1.
 Species of fish collected in various
 lakes on the Rifle River Recreation Area,
 October, 1944

Species of fish	Lake or Pond							
	Devoe	North	Loon	Spring	Dollar	Teel	South Pond	Devils W. B.
GAME FISH								
Brook Trout	---	Present, '32	---	---	---	---	---	---
Brown Trout	adult	ad.	ad.	---	---	---	---	---
Smallmouthed Bass	young	Yg.	---	---	---	---	---	---
Large mouthed Bass	yg., ad.	Yg., ad.	ad.	---	---	Yg.,	ad.	Present, '32
Northern Pike	ad.	ad.	---	---	Present, '32	Present, '32	---	---
Yellow Perch	yg., ad.	ad.	ad.	Present, '32	ad.	Yg., ad.	ad.	---
Rock Bass	Yg., ad.	ad.	---	---	---	---	---	Present, '32
Bluegill	---	Yg.	---	---	ad.	Yg.	---	Present, '32
Pumpkinseed	---	---	Yg., ad.	Yg.,	ad.	Yg.,	---	Yg.,
Black Crappie	---	---	---	---	Present, '32	Yg.,	---	---
Ciscoe	Present, '32	Present, '32	---	---	---	---	---	---
COARSE FISH								
Common Sucker	ad.	ad.	ad.	---	---	---	---	---
Black Bullhead	---	---	ad.	ad.	---	ad.	ad.	ad.
Yellow Bullhead	---	ad.	---	---	ad.	---	---	---
Carp	Reported	---	---	---	---	---	---	---
FORAGE FISH								
Black-nosed shiner	---	---	---	Yg.,	---	Reported, '32	---	---
Common shiner	Present, '32	ad.	---	---	---	Yg., ad.	---	---
Golden shiner	---	---	---	Yg.,	---	Yg., ad.	---	---
Bluntnosed minnow	Yg., ad.	Yg.,	---	---	---	---	---	---
Mud minnow	---	---	---	ad.	---	---	---	ad.
Johnny darter	Yg., ad.	ad.	---	---	---	---	---	---
Iowa darter	---	---	Present, '32	ad.	Present, '32	---	---	---

Table 2
 Population Study Summary,
 Gamble and Fontinalis Creeks,
 October, 1944

Stream	Species and size range of trout		Actual number collected	Total weight of collection (grams)	Estimated number per acre	Estimated weight per acre (pounds)
Gamble Creek, 5 sections, total area, 0.201 acres.	Brown Trout	Legals	28	4,008	139	44.1
		sub-legals	29	897	144	9.9
		fingerlings	71	462	353	5.1
	Brook Trout	legals	1	158	5	1.7
		sub-legals	1	14	5	0.2
		fingerlings	5	26	25	0.3
	Muddlers		281	610	1,397	6.7
	Other fish		32	66	159	0.7
	Crayfish		8	113	40	1.2
	Grand totals			456	6,354	2,268
Fontinalis Creek 1 section, total area, 0.034 acres.	Brown Trout	legals	1	109	29	7.1
		sub-legals	6	208	176	13.5
		fingerlings	7	40	206	2.6
	Muddlers		29	123	853	8.0
	Other fish		7	88	206	5.7
Grand totals			50	568	1,470	36.9