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DIVISION OF FISHERIES  
**MICHIGAN DEPARTMENT OF CONSERVATION**  
COOPERATING WITH THE  
**UNIVERSITY OF MICHIGAN**

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July 10, 1962

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ANN ARBOR, MICHIGAN

Report No. 1646

THE SEVENTEENTH ANNUAL REPORT ON THE  
RIFLE RIVER AREA, OGEMAW COUNTY, 1961

by

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The Rifle River Area is a 4,318-acre tract of wooded land located in northeastern Ogemaw County. Six lakes, a number of ponds, and approximately 9.5 miles of stream are within its fenced boundary (Fig. 1). Purchased by the Department of Conservation in 1944, it has been open to recreational use by the public since 1945. As visitors pass through the single entrance, they are given free permits which they return to the checking station upon leaving. Pertinent information on fish and game taken from the Area is recorded at the checking station. This report on the recreational use of the Area presents detailed results of the fishing trips on the lakes and streams and brief summaries of hunting and trapping activities.

In 1961, more than 26,000 permits (26,122) were issued to visitors. Of these permits, 17,726 (67.9 percent) were for sightseeing, 5,075 (19.4 percent) for fishing, 3,288 (12.6 percent) for hunting, and 33 (0.1 percent) for trapping.

MICHIGAN DEPARTMENT OF CONSERVATION  
FISH DIVISION  
**RIFLE RIVER AREA**  
OGEMAW COUNTY

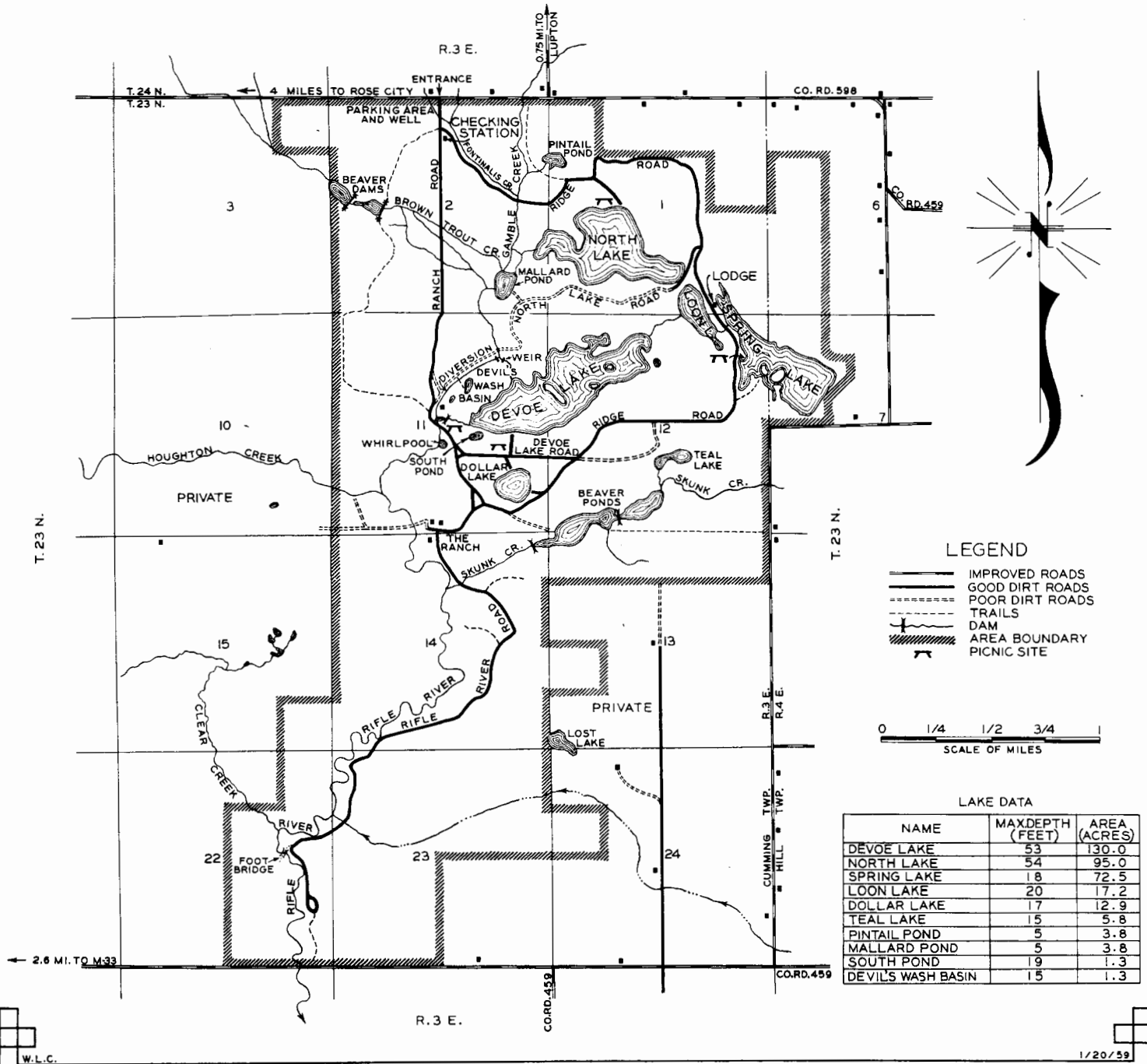


Figure 1

## RIFLE RIVER AREA

This 4,318-acre tract was purchased in 1945, with money from fishing and hunting licenses, to provide (1) additional public fishing and hunting grounds, and (2) a field laboratory for fish and game research. The former owner was H. M. Jewett, pioneer auto maker, who operated the Area as a private hunting and fishing preserve under the name of "Grousehaven."

Public use of the Rifle River Area is governed by the general rules for State-owned lands, except for special regulations which are announced on signs and posters. The Area is open daily, except Christmas; opening and closing hours are posted at the entrance. The Lodge is not open to the public; it is used by Department personnel for small meetings and to house people doing research work on the Area.

EVERYONE MUST REGISTER AT THE CHECKING STATION WHEN ENTERING AND AGAIN WHEN LEAVING THE AREA. Results of fishing, hunting and trapping must be reported to the clerk at the Checking Station. Fish should not be dressed until checked by the clerk. General seasons for fishing, hunting and trapping apply, except as posted. All other recreational activities are permitted except camping. If persons camped on the Area, it would complicate the daily checking out of fish and game which is essential to research on the Area. The clerk can suggest camping areas outside the Area. Permission to build cooking fires at designated sites must be obtained from the clerk on duty. It is unlawful to enter or leave the Area other than through the Checking Station, except by permission of the attendant on duty.

The Area is under the jurisdiction of the Fish Division of the Conservation Department. The other divisions of the Department are consulted on special problems and cooperate in management of the Area. The United States Weather Bureau and Geological Survey provide instruments for daily recording of data on weather, stream flow, and ground water levels.

Public use of Rifle River Area since  
1945

Year	Number of persons				Total
	Sight-seeing	Fish-ing	Hunt-ing	Trap-ping	
1945	9,784	4,339	2,207	40	16,370
1946	9,198	2,997	2,447	75	14,717
1947	10,532	3,893	2,342	51	16,818
1948	10,976	3,821	2,132	141	17,070
1949	13,320	4,021	1,968	134	19,443
1950	12,945	4,578	2,109	86	19,718
1951	13,391	4,216	2,018	144	19,769
1952	14,176	3,959	2,915	117	21,167
1953	13,478	5,132	5,994	88	24,692
1954	15,364	5,812	4,021	72	25,269
1955	14,825	5,651	3,236	45	23,757
1956	13,160	5,231	3,541	87	22,019
1957	13,321	4,486	3,266	66	21,139
1958	17,135	5,232	3,511	105	25,983

### Research Activities

The many lakes and streams on the Area provide a good opportunity for research on methods to improve fishing. Management techniques developed here might be applied elsewhere in Michigan. Likewise, research on game management problems is carried on throughout the year.

A record of annual harvest of fish and game is obtained at the Checking Station. Studies on age and growth of fish and game species are made from weights and measurements taken at the Checking Station and from scale samples of fish, wings and tail feathers from grouse, and by examining the teeth of deer. Other studies may involve records of fin-clip marks or tags on fish, leg bands on grouse, and blood samples from certain birds or animals. Special research projects on the Area involve: (1) evaluation of stream and lake improvement, (2) fish population census in lakes and streams, (3) effects of fishing and hunting pressures on populations, (4) fish population manipulation, (5) stocking of different combinations of fish, (6) movements of stream fishes, (7) establishment of a flock of Canada geese to encourage local nesting, (8) grouse studies, (9) investigations on other game populations and their habitats, and (10) developing new techniques in fish and game research.

Anglers from 44 of Michigan's 83 counties fished in the Rifle River Area in 1961. Eighty-five percent of the fishermen were residents either of Ogemaw County or the metropolitan areas in Bay, Genesee, Macomb, Oakland, Saginaw, and Wayne counties. Of the 116 nonresident anglers, 68 were from Ohio.

#### Lake fishing

The downward trend in total yield from Area lakes that began in 1953 was reversed in 1961. In 6,274 hours of fishing, anglers caught 2,555 fish that weighed 685.6 pounds (Table 1). Twenty-five percent of the anglers caught one or more fish and the average catch per hour per angler was 0.39. Bluegills and yellow perch, together, comprised two-thirds of the catch (Table 2). None of the other 11 kinds of fish contributed as much as 10 percent. No fish were caught in Spring Lake and Devil's Wash Basin where new populations are being established.<sup>1</sup>

Procedures for scale sampling and estimating the age composition of the catches followed those of the past 5 years and are described in Report Nos. 1550 and 1575 of the Institute for Fisheries Research. Fishing records for the lakes and ponds were tabulated by method of fishing and by season of the year. As in the past, seasons were defined as follows: spring--open-water angling prior to the opening of the bass season (June 17, 1961); summer--June 17 to September 4 (Labor Day), inclusive; fall--open-water fishing after Labor Day; and winter--fishing through the ice.

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<sup>1</sup> Although no fish were caught in Spring Lake, 10 persons caught 51 frogs that weighed 15.9 pounds.

Table 1.--The fishing pressure, yield, and fishing quality on seven Rifle River Area lakes in 1961

Lake <sup>1</sup>	Fishing pressure				Yield				Fishing quality	
	Number of fishing trips	Trips per acre	Hours of fishing	Hours per acre	Number of fish	Fish per acre	Pounds of fish	Pounds per acre	Catch per hour per angler	Percentage of fishermen successful
Devoe	1,106	8.5	3,699	28.5	1,048	8.1	278.8	2.1	0.30	23
North	394	4.1	990	10.4	345	3.6	121.9	1.3	0.27	20
Dollar	468	36.3	1,104	85.6	703	54.5	206.8	16.0	0.57	31
Loon	119	7.1	282	16.8	282	16.8	51.4	3.1	0.76	48
South Pond	47	36.2	87	66.9	138	106.2	18.8	14.5	1.31	38
Teal	17	2.9	39	6.7	39	6.7	7.9	1.4	0.55	29
Spring	46	0.6	73	1.0	0	...	...	...	...	..
Totals	2,197	6.5	6,274	18.7	2,555	7.6	685.6	2.0	0.39	25

<sup>1</sup> Number of surface acres for each lake are: Devoe, 130.0; North, 95.0; Dollar, 12.9; Loon, 16.8; South Pond, 1.3; Teal, 5.8; Spring 72.5. Total acreage, including 1.3-acre Devil's Wash Basin: 335.6.

Table 2.--The species composition, by number (N) and percentage (P), of the catch from six lakes on the Rifle River Area, 1961<sup>1</sup>

Species	Lake												Total number of fish	Percent- age of Area total
	Devoe		North		Dollar		Loon		South	Pond	Teal			
	N	P	N	P	N	P	N	P	N	P	N	P		
Bluegill	144	13.7	154	44.6	520	74.0	75	26.6	98	71.0	8	20.5	999	39.1
Yellow perch	503	48.0	145	42.0	2	tr	47	16.7	23	16.7	14	35.9	734	28.7
Pumpkinseed	12	tr	2	tr	27	3.8	56	19.9	9	6.5	8	20.5	114	4.5
Rock bass	73	7.0	4	1.2	7	1.0	12	4.3	4	2.9	...	...	100	3.9
Largemouth bass	7	tr	18	5.2	110	15.6	12	4.3	...	...	...	...	147	5.8
Smallmouth bass	30	2.9	14	4.1	...	...	...	...	...	...	...	...	44	1.7
Black crappie	16	1.5	...	...	5	0.7	...	...	...	...	...	...	21	tr
Hybrid sunfish <sup>2</sup>	1	tr	2	tr	27	3.8	6	2.1	4	2.9	9	23.1	49	1.9
Redear sunfish	...	...	...	...	2	tr	...	...	...	...	...	...	2	tr
Bullheads <sup>3</sup>	3	tr	...	...	3	tr	74	26.1	...	...	...	...	80	3.1
Brown trout	23	2.2	...	...	...	...	...	...	...	...	...	...	23	tr
Rainbow trout	234	22.3	...	...	...	...	...	...	...	...	...	...	234	9.2
Northern pike	2	tr	6	1.7	...	...	...	...	...	...	...	...	8	tr
Totals	1,048	...	345	...	703	...	282	...	138	...	39	...	2,555	...

<sup>1</sup> In the table, tr = less than 0.5 percent.

<sup>2</sup> Bluegill x pumpkinseed.

<sup>3</sup> Black bullhead or brown bullhead.

Devoe Lake. --In 1,106 fishing trips, anglers fished 3,699 hours and caught 1,048 fish (Table 1), for the largest catch from any Area lake. The catch of 278.8 pounds of fish amounted to 2.1 pounds per acre. Nearly one-half of the catch (48.0 percent) consisted of yellow perch, with hatchery rainbow trout ranking second (Table 2). More bluegills were taken in 1961 than in any previous year. In 1959, during high water, a movement of small centrarchids from Loon Lake into Devoe Lake was observed and these fish (or their progeny) have appeared in the anglers' catches ever since. As shown in Table 3, age-groups II and IV comprised 98 percent of the bluegill catch. The bluegills in the catch averaged 6.5 inches. Also, estimated age compositions of the catch of perch and smallmouth bass are presented in Table 3.

All but one of the 234 rainbow trout caught in 1961 were from plantings made in 1959, 1960, or 1961; more than half (133) came from the planting of 1,000 made in April, 1961. One of the rainbows bore a lamprey scar as did one of the 23 brown trout.

The two most frequently used methods of fishing on Devoe Lake were still fishing with worms and trolling with a worm and spinner combination. Anglers using these methods (52 percent of total number) caught two-thirds of the fish. Casting artificial lures for 155 hours produced a total catch of 10 fish (bass and rainbows).

Between May 15 and June 30, fish were captured either by nets or electrofishing and marked by removal of a fin. Exploitation rates were estimated from the number of these marked fish recaptured by anglers

Table 3.--The estimated age composition of the catch of three species  
of fish from Devoe Lake in 1961  
[ N = number; P = percentage]

Age group	Year class	Species					
		Yellow perch		Bluegill		Smallmouth bass	
		N	P	N	P	N	P
II	1959	144	28.6	44	30.6	26	86.7
III	1958	199	39.6	...	...	...	...
IV	1957	77	15.3	97	67.4	3	10.0
V	1956	62	12.3	...	...	1	3.3
VI	1955	20	4.0	3	2.0	...	...
VI+	...	1	0.2	...	...	...	...
Totals		503	100.0	144	100.0	30	100.0



between May 16 and December 31 (Table 4). Most rates were rather low but the extremely high rate shown for smallmouth bass may explain why few bass over three years of age are caught in this lake. Exploitation rates for largemouth bass and pike also were considerably higher than for the other eight species.

North Lake. --The catch of 345 fish from this lake in 1961 approached the relatively high catch made in 1960 (387). In 394 fishing trips, anglers caught fish at the rate of 0.27 fish per hour per angler (Table 1). Bluegills and perch, together, comprised 86.6 percent of the catch (Table 2). The average size of the bluegills was 6.7 inches; of perch, 7.1 inches. As in Devoe Lake, the presence of so many bluegills in the catch presumably resulted from the influx of fish during the flood of 1959. Most of these fish probably originated from adjacent Mallard Pond as 2-year-old fish. All but one of the 154 bluegills caught were from the year class of 1957 (this year class comprised 82 percent of the 1960 catch). Seven age groups were identified among the perch captured. Most of the fish were caught by anglers using earthworms for bait. Anglers fishing with artificial lures accounted for 4 of the 32 bass.

Dollar Lake. --In 1961, the catch increased 46 percent over 1960, when the poorest catch on record was made. Fishing pressure was about the same in both years. In 1,104 hours of angling, fishermen caught 703 fish at the rate of 0.57 fish per hour per angler (Table 1). Bluegills comprised 74 percent of the catch, followed by largemouth bass (15.6 percent). Only two redear sunfish were caught in 1961. The catch of 110 bass nearly equalled the record high of 115 set in 1960.

Table 4. --Exploitation rates of fish by angling in Devoe Lake, 1961

Species	Minimum length (inches)	Number of marked fish	Number of marked fish caught	Percentage exploitation
Largemouth bass	10.0	10	5	50.0
Smallmouth bass	10.0	9	9	100.0
Bluegill	5.0	161	23	14.3
Rock bass	5.0	348	13	3.7
Black crappie	6.0	50	4	8.0
Pumpkinseed	5.0	55	4	7.3
Brown bullhead	7.0	68	2	2.9
Yellow perch	6.0	75	6	8.0
Brown trout	10.0	6	1	16.7
Northern pike	20.0	5	2	40.0
Rainbow trout <sup>1</sup>	7.0	988	79	8.0
Rainbow trout <sup>2</sup>	7.0	1,000	133	13.3
Totals		2,775	281	10.1

<sup>1</sup> Of the 1,000 fish planted Oct. 19, 1960, 12 were caught in 1960.

<sup>2</sup> Planted April 26, 1961.

Data secured in 1960 suggested that the improved success in bass fishing resulted from three factors, namely (1) the strong 1957 year class, (2) increased vulnerability resulting from the scarcity of bluegills, and (3) greater effort devoted to fishing for bass. Again in 1961 it appeared that less effort was expended in bluegill fishing; the ratio of "worm" fishing hours to total hours was changed from 0.504 in 1960 to 0.478 in 1961. Three-year-old bass (1958 year class) comprised 60 percent of the catch of bass whereas only 16.4 percent of the catch were bass from the 1957 year class (Table 5). The estimated age composition of the bluegill catch is shown in Table 5. Four-year-old bluegills made up almost 90 percent of the catch. The mean length of bluegills caught was 6.6 inches.

No newly marked fish were present in Dollar Lake in 1961 but the presence of older marks was noted for the fish caught. Of the 110 bass, 58 were marked. Forty-four of the marked bass were positively identified as having been marked in 1960. In 1960, 138 bass were marked of which 65 were caught. Assuming no natural mortality, 73 marked bass were still available to anglers in 1961 and 44 (60 percent) were caught. Thus, in a two-year period 109 of 138 marked bass were caught for an exploitation rate of 79 percent. Undoubtedly there was some natural mortality and the true rate of exploitation was somewhat higher.

Loon Lake. -- Two hundred and eighty-two fish were caught by 119 anglers in 282 hours of fishing (Table 1). Nearly one-half (48 percent) of the anglers caught at least one fish. Bluegills and bullheads constituted slightly more than half of the catch (Table 2), followed in order by pumpkinseeds and yellow perch. The average length of the bluegills was 6.3

Table 5. --The estimated age composition of the catch  
of two species of fish from Dollar Lake in 1961

[ N = number; P = percentage]

Age group	Year class	Species			
		Largemouth bass		Bluegill	
		N	P	N	P
III	1958	66	60.0	37	7.1
IV	1957	18	16.4	462	88.8
V	1956	9	8.2	17	3.3
VI	1955	9	8.2	4	0.8
VII	1954	7	6.4	...	...
XII	1949	1	0.8	...	...
Totals		110	100.0	520	100.0

inches and most of the fish were either four or five years old. Pumpkinseeds averaged 5.4 inches long, and most were four or five years old.

South Pond. --In 47 fishing trips, anglers caught 138 fish at the rate of 1.31 fish per hour per angler, the highest rate of success among the Area lakes in 1961 (Table 1). Bluegills constituted 71 percent of the catch. Other species caught included yellow perch, pumpkinseeds, rock bass, and hybrid sunfish (Table 2). As in 1960, the 1957 year class of bluegills made up more than 90 percent (95.9) of the catch and their mean length was 6.0 inches.

Teal Lake. --Thirty-nine fish were caught in the 39 hours of fishing spent during 17 fishing trips to this lake (Table 1). The catch consisted of yellow perch, bluegills, pumpkinseeds, and hybrids between the latter two species.

#### Stream fishing

The Area includes portions of six<sup>2/</sup> trout streams, with a combined length of 9.6 miles and an area of 33.9 acres. During the season 3,246 anglers fished 8,689 hours (256.3 hours per acre) on the streams (Table 6). Anglers on streams spent an average of 2.7 hours per trip.

Participants in stream fishing were divided into five groups as follows: licensed males, 79.5 percent; unlicensed minor males, 12.3 percent; wives of licensed males, 6.3 percent; unlicensed minor females, 1.5 percent; licensed females, 0.4 percent.

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<sup>2/</sup> Skunk Creek, a warm-water stream in the Area, was not included in the body of the report. Five anglers fished Skunk Creek for 5.5 hours and caught no fish.

Table 6.--A summary of angling on the trout streams of the Rifle River Area in 1961

Stream	Area (acres)	Number of anglers	Hours of fishing	Fish caught							
				Hatchery- reared trout		Native fish				Total	
				Num- ber	Pounds	Trout		Others		Num- ber	Pounds
		Num- ber	Pounds	Num- ber	Pounds	Num- ber	Pounds	Num- ber	Pounds		
Rifle River	22.8	2,724	7,494.0	646	113.53	792	364.78	353	392.85	1,145	757.63
Gamble Creek	5.9	166	368.5	49	10.86	70	23.98	1	0.37	71	24.35
Houghton Creek	0.9	169	455.5	83	13.07	40	16.46	...	...	40	16.46
Fontinalis Creek	0.9	64	179.5	9	2.54	100	25.77	...	...	100	25.77
Diversion	0.8	98	154.0	24	6.65	11	3.80	...	...	11	3.80
Brown Trout Creek	2.6	25	37.5	5	1.17	1	0.34	...	...	1	0.34
Totals	33.9	3,246	8,689.0	816	147.82	1,014	435.13	354	393.22	1,368	828.35

From Area streams anglers harvested 2,184 fish that weighed 976.17 pounds (Table 6). The harvest amounted to 64.4 fish or 28.8 pounds per acre. The catch was composed of 1,014 native trout, 816 hatchery trout, and 354 "other fish." The catch of native trout was composed of 985 brown and 29 brook trout with a total weight of 435.13 pounds (12.8 pounds per acre). The hatchery trout (701 rainbow, 114 brown, 1 brook) weighed 147.82 pounds for a yield of 4.4 pounds per acre. Most (about 89 percent) were planted in 1961 and the rest were planted in previous years.

As in the past, anglers who fished Fontinalis Creek were most successful; 40.6 percent of them caught at least one native trout. Anglers were least successful on Brown Trout Creek (4.0 percent). For all Area streams 14.1 percent of the fishermen were successful (Table 7). Angling quality for native trout ranged between 0.04 fish per hour per angler on Brown Trout Creek and 0.36 on Fontinalis Creek. Angling quality for all streams combined amounted to 0.10 fish per hour per angler. For hatchery trout, the average catch was 0.07 fish per hour per angler. Angling quality for all fish, including "other fish," was 0.22 fish per hour per angler.

The most frequently used lure was worms (67.6 percent). Artificial flies ranked second (13.3 percent) followed by artificial lures, other than flies (4.2 percent).

Rifle River. --In 2,724 angler trips, fishermen spent 7,494 hours on the Rifle River, 86.2 percent of the total hours expended on all Area streams (Table 6). Angling pressure amounted to 328.7 hours per acre whereas in 1960 it was 271.8 hours per acre. In 1961 the mean length of a fishing trip was 2.8 hours.

Table 7. --A summary of angling quality for native trout on the trout streams of the Rifle River Area in 1961

Stream	Trout caught per acre of stream		Catch per hour per angler	Percentage of fishermen successful
	Number	Pounds		
Rifle River	34.7	16.0	0.09	13.3
Gamble Creek	11.9	4.1	0.16	20.5
Houghton Creek	44.4	18.3	0.09	14.2
Fontinalis Creek	111.1	28.6	0.36	40.6
Diversion	13.8	4.8	0.05	10.2
Brown Trout Creek	0.4	0.1	0.04	4.0
Average	29.9	12.8	0.10	14.1



Of the 1,014 native trout caught in the Area streams, about 78 percent, or 792 fish, were caught in the Rifle River (Table 8). The catch of native trout consisted of 782 brown and 10 brook trout which were harvested at the rate of 34.7 fish, or 16.0 pounds, per acre. The brown trout averaged 10.6 inches in length and 0.46 pound in weight. In 1960, 980 brown trout averaging 10.6 inches and 0.50 pound were caught.

Hatchery trout made a large contribution to the total catch of trout in the Rifle River; 646 (44.9 percent) of the 1,438 trout harvested. The catch of hatchery trout was composed of 550 rainbow, 95 brown, and one brook trout.<sup>3</sup> These trout came from the plantings listed below:

Locality of release	Year released	Species	Number caught
Rifle River, in Area	1961	Rainbow	506
Rifle River, in and below Area	1961	Brown	88
Rifle River, below Area	1961	Rainbow	7
Devoe Lake, in Area	1961	Rainbow	6
Devoe Lake, in Area	1960	Rainbow	21
Rifle River, below Area	1960	Rainbow	6
Rifle River, below Area	1960	Brown	3
Devoe Lake, in Area	1959	Rainbow	4
Gamble Creek, in Area	1959	Brown	2
Rifle River, in Area	1959	Brown	1
Rifle River, in Area	1958	Brown	1

<sup>3</sup> Inadvertently planted in Rifle River along with hatchery brown trout in 1961.

Table 8.--Number of fish of different species caught in six streams of the Rifle River Area in 1961<sup>1</sup>

Kind of fish	Stream						Total number of fish	Percentage of total catch
	Rifle River	Gamble Creek	Houghton Creek	Fontinalis Creek	Diver-sion	Brown Trout Creek		
Brown trout								
Native	782	67	40	85	10	1	985	45.1
Hatchery	95	9	6	4	...	...	114	5.2
Rainbow trout								
Hatchery	550	40	77	5	24	5	701	32.1
Brook trout								
Native	10	3	...	15	1	...	29	1.3
Hatchery	1	...	...	...	...	...	1	tr
White sucker	322	...	...	...	...	...	322	14.7
Yellow perch	17	1	...	...	...	...	18	0.8
Rock bass	10	...	...	...	...	...	10	tr
Bluegill	2	...	...	...	...	...	2	tr
Carp	1	...	...	...	...	...	1	tr
Brown bullhead	1	...	...	...	...	...	1	tr
Total	1,791	120	123	109	35	6	2,184	...
Percentage of total Area catch	82.0	5.5	5.6	5.0	1.6	tr	...	...

<sup>1</sup> In body of table, tr = less than 0.5 percent.

Current season plantings accounted for 88 hatchery brown trout while seven trout were survivors from plantings made in 1958, 1959, and 1960. Similarly, hatchery rainbow trout originated primarily from current season plantings. Of the 550 hatchery rainbow trout caught, 519 came from plantings made in 1961.

A planting of sublegal-length rainbow trout in the Rifle River was primarily responsible for the bulk of the catch of this species in the river. Over a three-day period (May 2-4, 1961), 9,996 rainbow trout that weighed 712 pounds were planted in the Rifle River. These fish ranged from 4.0 to 6.5 inches long and averaged 5.5 inches. The recorded yield from this planting is summarized below:

Site of capture	Number of fish caught
Rifle River	506
Houghton Creek	77
Diversion	14
Gamble Creek	5
Brown Trout Creek	1

Trout from this planting first entered the catch about 25 days after release. By the end of the season, 603 legal-length fish were caught from the Area streams. Trout recovered by anglers averaged 7.5 inches long. In addition to the 603 legal-length fish recovered, 21 sublegal trout (shorter than 7.0 inches) were caught by anglers. At the close of the season there was an

estimated residual population of 448 rainbow trout in the Rifle River. For Gamble Creek the estimate was 24 rainbow trout.

The quality of angling for native trout in the Rifle River was 0.09 fish per hour per angler, a significant decrease below that of 1960 (0.13 fish per hour per angler). In 1961, 13.3 percent of the fishermen were successful in catching at least one native trout compared to 16.1 percent in 1960.

Most of the native brown trout were two- and three-year-old fish (Table 9). Comparatively few yearlings and trout older than three years were caught. The age distribution of fish in the catch in 1961 differed somewhat from that of 1960. In 1961, the catch consisted of a relatively greater proportion of three-year-old fish than in 1960. Also, in 1961 the contribution of yearlings to the total catch was comparatively smaller than in 1960.

In Area streams anglers caught 354 fish other than trout; 353 of them were caught in the Rifle River (Table 8). Our measure of the harvest of these fish, particularly white suckers, is not very precise. The spawning run of white suckers often extends into the first week or two of the trout season. Anglers catch an unknown number of white suckers and discard them along the bank. In 1961, 322 white suckers were reported caught. The balance of the catch of "other fish" consisted of yellow perch, rock bass, bluegill, brown bullhead, and carp.

About 67 percent of the anglers fishing the Rifle River used worms for bait and caught 56.9 percent of the total catch of native trout. Artificial flies were used on 14.1 percent of the angler-trips and accounted for 25.5 percent of the catch of native trout.

Table 9.--Number (N) and percentage (P) of native brown trout of different age groups caught in streams of the Rifle River Area in 1961

Age group	Stream											
	Rifle River		Gamble Creek		Houghton Creek		Fontinalis Creek		Diversion		Brown Trout Creek	
	N	P	N	P	N	P	N	P	N	P	N	P
I	31	4.1	...	...	1	2.6	5	6.2	...	...	...	...
II	432	56.4	23	38.3	24	63.2	41	50.6	4	40.0	1	100.0
III	273	35.6	31	51.7	11	28.9	31	38.3	4	40.0	...	...
IV	26	3.4	6	10.0	2	5.3	4	4.9	2	20.0	...	...
V	4	0.5	...	...	...	...	...	...	...	...	...	...
Totals	766	...	60	...	38	...	81	...	10	...	1	...
Total catch <sup>1</sup>	782	...	67	...	40	...	85	...	10	...	1	...

<sup>1</sup> Includes fish for which age was not determined.

Whirlpool. --An oxbow-like pond of about 0.6 acre adjoins the Rifle River a short distance below Devoe Lake Dam. During the year, 121 anglers fished this pond for 245 hours and caught 62 fish that weighed 133.55 pounds. Of the 245 hours of fishing on the Whirlpool, winter spearing and hook-and-line fishing in the summer accounted for 118 and 87.5 hours, respectively. Fall fishing represented 27.5 hours and spring fishing 12.0 hours. The harvest of fish from the Whirlpool was as follows:

	White sucker	Northern pike	Carp	Blue- gill	Brown trout	Gar
Winter fishing Dec. 1-March 31	25 (18.19) <sup>1</sup> ✓	9 (21.25)	1 (4.75)	..	..	1 (1.88)
Spring fishing Apr. 1-June 16	..	2 (4.81)	..	..	..	..
Summer fishing June 17-Sept. 4	..	4 (9.88)	3 (23.38)	..	1 (2.19)	..
Fall fishing Sept. 5-Nov. 30	7 (6.62)	1 (1.75)	7 (38.44)	1 (0.41)	..	..

<sup>1</sup>✓ Weight in pounds given in parentheses

Most of the fish were caught by the following methods and/or lures: spearing--36 fish; still fishing with worms--15 fish; casting with plugs--5 fish. The gar cited above is the first record of this species taken in the Rifle River drainage.

Gamble Creek. --In 1961, 166 anglers fished Gamble Creek for 368.5 hours and caught 70 native trout (Table 6) while, in 1960, 180 anglers fished 170 hours and harvested 66 trout. In both years the stream was fished at the rate of approximately 62 hours per acre. Angling quality for native trout in

1961 was 0.16 fish per hour per angler compared to 0.22 in 1960. Hatchery trout made a relatively larger contribution to the total catch in 1961 (49 fish) than in 1960 (8 fish). Origin of the 49 hatchery trout in 1961 was as follows: 23 rainbow trout from a 1960 fall planting of legal-length fish in Devoe Lake; 12 rainbow trout from a 1961 spring planting of legal-length fish in Devoe Lake; 7 brown trout from a 1959 fall planting of fingerling fish in Gamble Creek; 5 rainbow trout from a 1961 spring planting of sublegal fish in the Rifle River; 2 brown trout from a 1961 planting of legal-length fish in the Rifle River.

As shown in Table 9, nearly 52 percent of the native brown trout in the catch were three-year-old fish followed, in order, by two-year-old fish (38.3 percent). No yearling fish appeared in the catch.

Houghton Creek. --On the 0.2 mile of Houghton Creek within the Area, angling pressure increased from 200 hours per acre in 1960 to 506.1 hours in 1961. The catch in 1961 consisted of 40 brown trout compared to 26 native brown trout in 1960. However, the increased pressure in 1961 was accompanied by a decline in success from 0.15 fish per hour per angler in 1960 to 0.09 in 1961. Of the 40 native brown trout caught in 1961, about 63 percent were two-year-old fish and approximately 29 percent were three-year-old fish.

There was a marked increase in the catch of hatchery trout in 1961 (83 fish) over that of the previous year (3 fish). The 1961 spring planting of sublegal rainbow trout in the Rifle River resulted in the catch of 77 of these fish in Houghton Creek. Six hatchery brown trout were caught, all of which probably originated from plantings in Houghton Creek above the Area-- five from 1961 plantings and one carryover from 1960.

Fontinalis Creek. --On the 0.9 mile of Fontinalis Creek within the Area, angling pressure in 1961 increased 62.5 percent over 1960 (from 122.7 to 199.4 hours per acre). With greater angling pressure the catch of native trout increased 51.5 percent, or from 34 brown and 32 brook trout in 1960 to 85 brown and 15 brook trout in 1961. Angling quality for native trout in 1961 was 0.36 trout per hour per angler compared to 0.55 in 1960. Most of the native brown trout caught were either two or three years old. Age determinations for 14 of the 15 brook trout caught were: age-group I, 4 fish; age-group II, 8 fish; age-group III, 2 fish.

As usual in this creek, the contribution of hatchery trout to the total catch was comparatively small (Table 8). Nine hatchery trout (5 rainbow, 4 brown) were caught. The five rainbow trout originated from a 1960 fall planting of legal-length fish in Devoe Lake; three brown trout came from a 1959 fall planting of fingerling trout in Gamble Creek, and one brown trout represented a survivor from a stocking in the Rifle River in 1959.

Diversion. --Ninety-eight anglers spent 154 hours on the Diversion and caught 11 native trout, 10 brown and 1 brook trout. In addition 24 hatchery rainbow trout from the following sources were caught:

Number caught	Source of fish
14	1961 spring planting of sublegal fish in Rifle River
5	1960 fall planting in Devoe Lake
3	1961 spring planting in Devoe Lake
1	1959 spring planting in Devoe Lake
1	1960 "in-season" planting, probably in Rifle River



Angling quality for native trout was 0.05 fish per hour per angler and for hatchery trout it was 0.12 fish per hour per angler.

Brown Trout Creek. --Only 25 anglers fished this small creek in 1961. In 37.5 hours of fishing, one native brown trout and five hatchery rainbow trout were caught. Of the hatchery trout, three were derived from a 1960 fall planting in Devoe Lake, one originated from a 1961 spring planting in Devoe Lake, and one came from a 1961 spring planting of sublegal fish in the Rifle River.

All streams. --In 1961 there was an increase in angling pressure over that of 1960. The number of fishermen increased 17.1 percent and hours fished rose 25.2 percent. In 1961, angling pressure was at the rate of 256.3 hours per acre compared to 204.8 in 1960.

The harvest of native trout dropped from 1,162 fish in 1960 to 1,014 fish in 1961. The quality of angling for native brown trout in 1961 was 0.10 fish per hour per angler compared to 0.14 in 1960.

Of the 1,830 trout caught in Area streams in 1961, about 45 percent were of hatchery origin (9.8 percent in 1960). The relatively large contribution of hatchery trout to the total catch was primarily the result of the planting of sublegal rainbow trout in the Rifle River in the spring of 1961.

### Hunting

A summary of the 1961 hunting pressure and results is presented in Table 10. Despite a slight decrease in hunting pressure there was a pronounced increase in the kill of ruffed grouse and woodcock. Ninety grouse were shot

Table 10.--Summary of hunting and trapping activities  
on the Rifle River Area in 1961

Season and game species	Number of permits	Hunting hours or trap nights	Animals harvested
HUNTING			
<u>Small game</u>	620	1,909	
Ruffed grouse	...	...	90
Woodcock	...	...	49
Ducks	...	...	10
Squirrel	...	...	14
Cottontail	...	...	8
Snowshoe	...	...	1
Raccoon	...	...	2
Red fox	...	...	1
Porcupine	...	...	1
<u>Deer</u> <sup>↓</sup>			
Gun	2,080	9,390	34
Archery	588	2,944	3
TRAPPING	33	370	...
Beaver	...	...	5
Mink	...	...	2

<sup>↓</sup> In addition to the legal kill shown, 15 illegal deer were reported of which 12 were located.

(69 in 1960) and 49 woodcock were bagged (36 in 1960). The grouse kill represents 4.5 birds shot per 100 hours of hunting.

Game Division Report No. 2363 by L. C. Ruch presents a detailed account of the deer hunting results. A total of 49 deer were known to have been killed. The 1961 season was a bucks-only season and the 34 legal bucks taken represented a 70 percent increase in the buck kill over that of 1960. The heaviest buck weighed 160 pounds.

### Trapping

Four trappers used the 33 daily permits issued in 1961. Their results are presented in Table 10. Of particular interest is the absence of muskrats for the first time since the Rifle River Area was in public ownership. Only one person trapped in the Area during the fall season and he caught two mink. Muskrats were especially abundant in Spring Lake but no effort was made to trap them in 1961.

### Acknowledgments

A. W. DeClaire, C. J. Kohn, K. R. Sammons, and G. Smith, Jr. assisted in the collection and tabulation of data. K. G. Fukano handled the processing of stream data for IBM tabulation by the Department's Administrative Services. The junior author prepared the section on stream fishing; the rest of the report was prepared by the senior author. Portions of the hunting data were provided by L. C. Ruch and R. J. Moran of the Game Division.

INSTITUTE FOR FISHERIES RESEARCH

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Report approved by G. P. Cooper

Typed by M. S. McClure

ABSTRACT NO. 193

MICHIGAN DEPARTMENT OF CONSERVATION  
(Institute for Fisheries Research Report No. 1646)  
THE SEVENTEENTH ANNUAL REPORT ON THE  
RIFLE RIVER AREA, OGEMAW COUNTY, 1961

by

Mercer H. Patriarche and Howard Gowing

July 10, 1962

Permits were issued to 26, 122 visitors in 1961. Of these permits, 67.9 percent were for sightseeing, 19.4 percent for fishing, 12.6 percent for hunting, and 0.1 percent for trapping. Of 5, 443 fishing trips to Area waters, 2, 197 were to lakes and ponds and 3, 246 to streams.

The downward trend in total yield from Area lakes that began in 1953 was reversed in 1961. In 6, 274 hours of fishing, anglers caught 2, 555 fish that weighed 685.6 pounds. Twenty-five percent of the anglers caught one or more fish and the average catch per hour per angler was 0.39. Dollar Lake had the greatest fishing pressure (85.6 hours per acre) but more fish (1, 048) were caught in Devoe Lake than in any other lake or pond. Bluegills and yellow perch, together, comprised two-thirds of the catch from Area lakes. In Devoe Lake, all but one of the 234 rainbow trout caught were from plantings made in 1959, 1960, or 1961. More than half of these fish (133) came from the planting of 1, 000 made in April, 1961.

Rate of exploitation by anglers in Devoe and Dollar lakes was determined from the percentage of marked fish captured. Most rates were rather low (less than 15.0 percent) in Devoe Lake with the exception of smallmouth bass (100 percent), largemouth bass (50 percent) and northern pike (40 percent). The extremely high rate for smallmouth bass may explain why few smallmouth bass older than three years are caught in this lake. Over a 2-year period (1960-1961) in Dollar Lake, 109 of 138 largemouth bass marked in 1960 were caught for an exploitation rate of 79 percent. Undoubtedly there was some natural mortality and the true rate of exploitation was somewhat higher.

Angling pressure on individual streams ranged from 14.4 hours per acre on Brown Trout Creek to 328.7 hours per acre on the Rifle River. In 8, 689 hours of fishing on six trout streams in the Area, anglers caught 2, 184 fish that weighed 976.2 pounds. This yield amounted to 64.4 fish or 28.8 pounds per acre. Wild brown trout comprised 45.1 percent and wild brook trout 1.3 percent of the catch. Hatchery fish contributed 37.3 percent of the catch. The relatively large contribution of hatchery trout to the total catch was primarily the result of the planting of 9, 996 sublegal rainbow trout in the Rifle River in the spring of 1961.

(over)

The average catch of wild trout per hour per angler was 0.10 for all Area streams as compared to 0.14 in 1960. At least one wild trout was caught on 14 percent of the trout fishing trips. Anglers who fished Fontinalis Creek were most successful; 40.6 percent of them caught at least one native trout. Two-thirds of the trout anglers fished with worms and about one in seven used artificial flies only. The rest used a variety of other natural and artificial baits.

Fishermen caught 792 native trout (782 brown trout and 10 brook trout) in the Rifle River in 1961. On the average, the brown trout were 10.6 inches long and weighed 0.46 pound--virtually the same as in 1960. Ninety-two percent of these fish were either 2 or 3 years old. The total catch of hatchery trout in the Rifle River consisted of 95 brown, 550 rainbow, and 1 brook trout.

During the small-game season 620 hunters spent 1,909 hours in the field. Ninety grouse (69 in 1960) and 49 woodcock (36 in 1960) were shot. A total of 9,390 hours of deer hunting was done in 2,080 trips by hunters during the rifle season, and 588 archers hunted 2,944 hours. Thirty-seven legal deer (three by archers) were killed during the 1961 bucks-only season. The 1961 buck kill was 70 percent greater than in 1960.

In 370 trap nights, trappers harvested 5 beaver and 2 mink. No effort was made to trap muskrats in 1961.

**Distribution: A and AA**