

Original: Fish Division ✓
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INSTITUTE FOR FISHERIES RESEARCH
DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

ALBERT S. HAZZARD, PH.D.
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July 23, 1952

ADDRESS
UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

Report No. 1345

THE RECREATIONAL USE OF THE RIFLE RIVER AREA, OGEMAW COUNTY,
DURING THE CALENDAR YEAR, 1951

by

David S. Shetter

Abstract

Entrants on the Rifle River Area again increased to a new high during 1951. A total of 19,769 visitors were recorded, consisting of 4,514 anglers, 2,037 hunters, 144 trappers and 13,074 sight-seers.

The streams of the Area were the scene of 2,847 angling days involving 7,326 hours of fishing effort. The total trout catch consisted of 9 brook trout, 711 brown trout and 534 rainbow trout whose total weight was 507.36 pounds. In addition, 248 warm-water fish and rough fish weighing 195.99 pounds also were taken from the streams (mainly from the Upper Rifle River). Quality indices were 0.21 fish per hour and 0.096 pounds per hour. For trout fishing alone the quality indices were 0.17 fish per hour and 0.070 pounds per hour. Hatchery fish, either tagged or fin-clipped, constituted 38.5 percent of the trout catch, and were mostly rainbow trout.

The lake fishermen utilized 8 lakes on the Area or 1,667 angling days and expended 5,385.50 hours in angling activity. Their total catch consisted of 6,564 fish, frogs and turtles whose combined weight was

1,509.45 pounds. The over-all quality indices for lake fishing during 1951 were 1.21 fish per hour and 0.275 pounds of fish per hour--about the same as in 1950. Loon Lake continued to provide the best fishing with a catch per hour of 3.18 fish and 0.652 pounds of fish per hour.

The per acre yields and angling pressures during 1951 were: trout streams--221 hours, 15.29 pounds of trout, 5.91 pounds of other forms; lakes--16 hours, 4.05 pounds of game and rough fish, 0.35 pounds of frogs and turtles.

Small-game hunters spent 1,540.5 hours of hunting on 559 hunter-days during 1951. The total game bag consisted of 254 specimens with a total weight of 403.27 pounds. The kill by species consisted of 147 ruffed grouse, 24 woodcock, 32 ducks, 12 cottontail rabbits, and 39 snowshoe hares.

Two does and one buck were killed by archers during the archery season (October 1 to November 5), which, for the first time, permitted the taking of deer of either sex in Ogemaw County. This encouraged the archers to spend 1,060.5 hours in bow hunting on the Rifle River Area. During the rifle season for deer, 5,020.5 hours of hunting on 1,226 hunter-days produced a kill of 22 bucks with a field-dressed weight of 2,310 pounds. The 25 legal deer killed yielded a total weight of 2,577 pounds of venison.

During 1951, a total of 144 trapping permits were issued. In approximately 5,000 trap-nights the trappers removed 6 beaver, 1 otter, 167 muskrats, 8 mink and 9 raccoon, or 191 pieces whose total weight was 739.08 pounds.

A summary of the general statistics for the years 1945 through 1951 is also included. The total weight of fish, game and furbearers removed in 1951 was 5,932.15 pounds.

Improvements to the Area in 1952 included the completion of the Gamble Creek diversion around Devoe Lake to introduce colder water into the Rifle River headwaters, and the removal of the old gamekeepers' cabins at the Ranch.

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DURING THE CALENDAR YEAR, 1951

by

David S. Shetter

The use of the Rifle River Area continued to increase in 1951. A slightly greater number of tourists and sportsmen were issued entrance permits during the past year than in any previous year. A total of 19,769 entrants were recorded in 1951 consisting of 4,514 anglers, 2,037 hunters, 144 trappers, and 13,074 sight-seers. The total registration for 1950 was 19,709.

Trout stream angling results (Table 1)

Again anglers fished over 6 of the streams on the Area. Almost 89 percent of all trips were made on the Rifle River proper. The total trout stream angling effort amounted to 2,847 angling days involving 2,827 trips during the trout season and 20 trips on the "Whirlpool" during the winter spearing season. The total catch amounted to 1,254 trout weighing 507.36 pounds and 248 warm-water fish and rough fish which weighed 195.99 pounds, or a grand total of 1,502 fish and 703.35 pounds creeled during 1951 in 7,326 hours of angling. Based on the grand totals, the catch per hour was 0.21 fish and 0.096 pounds of fish per hour. For trout fishing alone the angling quality was found to be 0.17 trout per hour and 0.070 pounds of trout per hour.

Table 1. Summary of angling results on the Rifle River Area trout streams, 1951 season
Total weights are given in pounds, average lengths in inches

Stream	Total angling trips (and number catching, 0 trout)	Total hours of angling	Brook trout		Brown trout		Rainbow trout		Total trout	
			number	total weight (av. length)	number	total weight (av. length)	number	total weight (av. length)	number	total weight
Rifle River	2,498 (2,001)	6,583.0	2	0.56 (9.6)	644	329.97 (10.8)	479	141.16 (9.3)	1,125	471.69
Gamble Creek	130 (112)	257.5	3	0.78 (8.7)	23	6.94 (9.2)	8	2.08 (8.9)	34	9.80
Houghton Creek	78 (53)	173.5	...	...	42	12.63 (8.6)	44	10.46 (8.8)	86	23.09
Brown Trout Creek	69 (67)	123.0	...	...	1	0.26 (9.3)	2	0.44 (8.1)	3	0.70
Fontinalis Creek	21 (16)	33.0	4	1.31 (9.0)	1	0.46 (11.1)	1	0.31 (9.3)	6	2.08
Skunk Creek	31 (31)	96.0	...	...	...	...	...	...	...	...
Totals and averages, ↓ trout fishing	2,827 (2,280)	7,266.0	9	2.65	711	350.26	534	154.45	1,254	507.36
Winter spearing ² on "Whirlpool"	20 (9)	60.0	...	...	...	...	...	...	...	...

↓ In addition to the trout catch listed, stream angling also removed 139.55 pounds of warm-water fish and rough fish as follows: 104 common suckers (111.27 pounds), 93 rock bass (17.44 pounds), 8 pumpkinseed sunfish (1.19 pounds), 2 bluegills (0.31 pounds), 23 yellow perch (2.71 pounds), 2 bullheads (0.50 pounds), and 1 carp (6.00 pounds).

² Total catch of winter spearing amounted to 56.44 pounds, made up of 2 northern pike (4.88 pounds), 3 common suckers (2.75 pounds), 9 carp (48.5 pounds), and 1 bullhead (0.31 pounds).

The total poundage of all fish removed by all methods during 1951 from the trout streams amounted to 507.36 pounds of trout, and 195.99 pounds of warm-water fish and rough fish or a total of 703.35 pounds of all species.

Brown trout continued to dominate the catches in all streams except Fontinalis Creek. For the entire Area the trout catch consisted of 9 brook trout (2.65 pounds), 711 brown trout (350.26 pounds), and 534 rainbow trout (154.45 pounds).

The 9 brook trout caught all were of native origin. Of the 711 brown trout creeled on the Area 4 left pelvic-marked fish were of hatchery origin. These fish originated from a planting of 1,000 fingerling brown trout in Gamble Creek in October, 1949.

Of the 534 rainbows observed in anglers' catches, 481 (or over 90 percent) were marked fish planted prior to the 1951 season. They originated from four different plantings. Two tagged fish survived from the April, 1948, release of 2,000 jaw-tagged rainbow trout on Devoe Lake; 207 left pelvic-clipped fish were noted which came from the May, 1950, "fingerling" release (size range 2.7-8.9 inches) in the Rifle River consisting of 10,000 fish; 180 right pelvic-clipped rainbow trout which originated from a planting of 1,000 legal-sized hatchery fish in Devoe Lake in April, 1951; and 92 left pectoral-clipped rainbow trout which survived from a release of 1,000 hatchery-reared fish of legal size in Devoe Lake in November, 1950.∇ Trout of hatchery origin constituted 38.5 percent of the total catch of the 1951 anglers (485/1,254). The remainder was of natural origin.

The best fishing, as measured by the usual quality indices, again was noted on the short portion of Houghton Creek within the Area's boundaries (0.50 fish per hour, 0.133 pounds of fish per hour). The Rifle River proper, where 1,125 of the 1,254 fish creeled were captured, was next best (0.17 fish per hour, 0.072 pounds of fish per hour);

∇ A more detailed report discussing the results from these plantings of marked rainbow trout will be prepared shortly.

also the Rifle River was the most heavily fished of all the streams. The remaining streams were rather lightly, and in most instances, rather unsuccessfully fished. For all angling trips listed, only 19.3 percent were successful in catching one or more trout (2,280/2,827).

Lake fishing results (Table 2)

Eight of the 10 lakes on the Area were fished for a total of 1,657 angling days, of which 848 (or 51.2 percent) were unsuccessful. A total of 5,348.50 hours were spent fishing, during which time a total catch of 6,469 fish and turtles were captured whose total weight was 1,469.45 pounds. Over-all quality indices for 1951 were 1.21 fish per hour and 0.275 pounds of fish per hour, or about at the same high level of 1950.

The catch consisted of 26 rainbow trout (8.04 pounds), 6 brown trout (7.78 pounds), 123 largemouth black bass (135.02 pounds), 71 small-mouth black bass (91.38 pounds), 21 northern pike (71.79 pounds), 2,556 bluegills (450.56 pounds), 1,742 yellow perch (192.80 pounds), 303 black crappies (73.86 pounds), 1,617 "other fish"² (358.50 pounds), and 4 snapping turtles (79.72 pounds).

Loon Lake continued to provide excellent angling for pan fish. Approximately 75 percent of all trips were successful on this lake, and the catch per hour was 3.18 fish per hour or 0.652 pounds of fish per hour. Devils Wash-Basin, although lightly fished also showed a catch per hour of 3.09 fish. Indices of quality on the other lakes were: Dollar Lake, 2.41 fish per hour and 0.473 pounds per hour; South Pond, 2.13 fish per hour and 0.412 pounds per hour; Teal Lake, 1.66 fish per hour and 0.310 pounds per hour; Devoe Lake, 0.56 fish per hour and 0.155

² Common sunfish, rock bass, common sucker, bullheads, and bluegill x sunfish hybrids.

Table 2. Summary of angling results on the lakes of the Rifle River Area, 1951 season.
(Weights in pounds are given in parentheses)

Lake	Total angl- ing days	Number angl- ing days	Total hours of angl- ing	Fish taken by angling									Total ² fish (and total lbs.)	Catch per hour	Pounds per hour
				Trout	Large- mouth bass	Small- mouth bass	North- ern pike	Blue- gill	Yellow perch	Black crappie	Others ¹	Turtle			
Devoe Lake	698	468	2,472.0	32 (15.82)	22 (42.16)	46 (55.0)	16 (45.88)	61 (14.50)	948 (81.53)	21 (9.26)	232 (72.55)	2 (46.50)	1,380 (383.20)	0.56	0.155
North Lake	274	220	947.0	...	6 (18.56)	25 (36.38)	5 (25.91)	1 (0.25)	147 (21.03)	...	25 (7.53)	...	209 (109.66)	0.22	0.116
Dollar Lake	371	48	1,035.5	...	83 (61.95)	...	...	1,814 (297.80)	191 (34.84)	159 (29.99)	249 (69.76)	...	2,496 (494.34)	2.41	0.473
Loon Lake	201	48	638.0	...	10 (10.94)	...	...	576 (116.29)	293 (25.77)	123 (34.61)	1,028 (194.84)	2 (33.22)	2,032 (415.67)	3.18	0.652
South Pond	52	23	87.5	...	2 (1.41)	...	...	104 (21.72)	20 (3.44)	...	60 (9.50)	...	186 (36.07)	2.13	0.412
Teal Lake	23	9	76.0	...	...	...	...	...	126 (23.56)	...	...	...	126 (23.56)	1.66	0.310
Spring Lake	33	30	81.5	...	...	...	...	...	3 (0.69)	...	3 (0.38)	...	6 (1.07)	0.07	0.013
Devils W. B.	5	2	11.0	...	...	...	...	...	14 (1.94)	...	20 (3.94)	...	34 (5.88)	3.09	0.534
Totals	1,657	848	5,348.5	32 (15.82)	123 (135.02)	71 (91.38)	21 (71.79)	2,556 (450.56)	1,742 (192.80)	303 (75.86)	1,617 (358.50)	4 (79.72)	6,469 (1,469.45)	1.21	0.275

↓ Other "fish" include pumpkinseed sunfish, rock bass, common suckers, bullhead, and bluegill x pumpkinseed sunfish hybrids.

↻ In addition to these totals listed, there were 100 frogs weighing 40 pounds removed from North and Spring lakes in 10 trips involving 37 hours of effort.

pounds per hour; North Lake, 0.22 fish per hour and 0.116 pounds per hour; and Spring Lake, 0.07 fish per hour and 0.013 pounds per hour.

The take of frogs from Spring and North lakes amounted to 100 frogs weighing 40 pounds in 37 hours during 10 trips.

Angling pressure and yield per acre to anglers (Table 3)

The yields for the lakes and streams of the Rifle River Area for the period 1945 through 1951 inclusive are given in Table 3. Stream acreage within the Area's boundaries has been computed from aerial photos and numerous width measurements and was found to be 33.18 acres. Angling pressure (hours of fishing per acre) has ranged from a low of 102 hours (1945 and 1946) to a high of 221 hours (1951). The yield of trout per acre to the angler has varied from 5.89 pounds (1945) to 17.77 pounds (1947). In 1951 trout stream anglers removed 15.29 pounds per acre of trout. The per acre yields of otherforms, such as rough fish, warm-water fish, and turtles has ranged between 0.79 and 3.48 pounds per acre.

From outline maps made by winter surveys, the total area of lakes of the Rifle River Area has been found to be 343.2 acres. In combination with the creel census data, the yearly angling pressure on the lakes is found to vary between 16 hours per acre in 1951 to 27 hours per acres in 1945--the reverse of the trend noted on the trout streams. The per acre yields of game fish and rough fish to the anglers on the lakes has ranged from a low of 3.39 pounds (1948) to a high of 6.55 pounds (1945). From 0.11 to 0.35 pounds per acre of turtles and frogs also have been removed annually. The 1951 per acre catch by angling was 4.05 pounds of game fish and rough fish, 0.35 pounds of turtles and frogs.

Table 3. Summary of per acre angling pressures and per acre yields to anglers from streams and lakes of the Rifle River Area, 1945-1951 inclusive

Item	Year	Angling pressure		Total yield in pounds of		Pounds per acre yield of	
		Total hours	Hours per acre	Trout	Other ¹	Trout	Other ¹
Streams,	1945	3,395.50	102	195.56	26.36	5.89	0.79
total water	1946	3,396.00	102	395.48	52.50	11.92	1.58
average,	1947	4,659.00	140	589.69	115.56	17.77	3.48
33.18 acres	1948	5,081.00	153	442.35	87.03	13.33	2.62
	1949	4,135.00	125	372.20	99.22	11.22	2.99
	1950	6,921.50	209	368.34	72.38	11.10	2.18
	1951	7,326.00	221	507.36	195.99	15.29	5.91

Item	Year	Angling pressure		Total yield in pounds of		Pounds per acre yield of	
		Total hours	Hours per acre	Game fish	Other ² forms	Game fish	Other ² forms
Lakes,	1945	9,304.00	27	2,247.13	...	6.55	...
total water	1946	5,826.50	17	1,460.89	63.00	4.26	0.18
acreage,	1947	6,132.00	18	1,208.06	38.69	3.52	0.11
343.2 acres	1948	6,996.00	20	1,163.31	79.44	3.39	0.23
	1949	7,790.50	23	1,659.66	90.41	4.84	0.26
	1950	7,577.00	22	2,102.57	28.44	6.13	0.08
	1951	5,385.5	16	1,389.73	119.72	4.05	0.35

¹"Other forms" include rough fish, warm-water game fish and turtles from streams.

²"Other forms" include turtles and frogs only.

Residence of trout stream anglers (Table 4)

Wayne County anglers exerted the greatest angling pressure on the Area's trout streams (466 days), followed by fishermen from Genesee, Saginaw, Ogemaw, Bay and Oakland counties (446, 444, 316, 291 and 208 days respectively). Anglers from 36 other Lower Peninsula counties made up the remainder of Michigan users. In addition, nonresident anglers from Ohio (96), Indiana (10), West Virginia (8), Wisconsin (3), and New Jersey and Missouri (1 each) also fished the Area's trout streams. Much the same residence pattern has been noted in earlier years on both lakes and streams.

Small game hunting results (Table 5)

During 1951 small game seasons, a total of 1,540.5 hours of hunting were expended during 559 hunter-days, only slightly less hunting pressure than that recorded in 1950. The total game taken consisted of 254 specimens whose total weight was 403.27 pounds. The bag consisted of 147 ruffed grouse (188.49 pounds), 24 woodcock (11.40 pounds), 32 ducks (74.56 pounds), 12 cottontail rabbits (28.12 pounds), and 39 snowshoe hare (100.70 pounds). The number of snowshoe hare killed in 1951 increased over the 1950 bag, which had been the highest take (33) up to that time. Ruffed grouse in the 1951 hunters' coats were about 25 percent fewer, and the other species were not quite so numerous as in 1950.

Bow and arrow hunting results (Table 6)

Deer of either sex became legal game for archers during the period October 1 to November 5 inclusive in Ogemaw County in 1951. More archers than ever before utilized the Rifle River Area for bow and arrow hunting. A total of 252 hunter-days involving 1,060.5 hours of hunting with the

Table 4. Angling days spent on Rifle River Area trout streams by residents of various counties and states, 1951 trout season

County	Number of angling days	State	Number of angling days
Alcona	4	Ohio	96
Alger	4	Indiana	10
Arenac	50	W. Virginia	8
Bay	291	Wisconsin	3
Calhoun	3	New Jersey	1
Crawford	3	Missouri	1
Eaton	1		
Genesee	446	Nonresident	119
Gladwin	2		
Grand Traverse	1	Grand total	2,827
Gratiot	10		
Hillsdale	9		
Huron	13		
Ingham	46		
Ionia	4		
Iosco	21		
Isabella	3		
Jackson	19		
Kalamazoo	1		
Kent	29		
Lapeer	4		
Lenawee	4		
Macomb	70		
Mason	1		
Midland	76		
Monroe	5		
Montmorency	3		
Oakland	208		
Oceana	2		
Ogemaw	316		
Osceola	4		
Oscoda	5		
Otsego	1		
Ottawa	5		
Roscommon	2		
Saginaw	444		
St. Clair	9		
Sanilac	2		
Shiawassee	62		
Tuscola	22		
Washtenaw	37		
Wayne	466		
Residents	2,708		

Table 5. Small game hunting statistics, 1951 Rifle River Area

Date	Total hunter- days	Total hours of hunting	Grouse		Woodcock		Ducks		Cottontail		Snowshoe hare		Totals	
			number	pounds	number	pounds	number	pounds	number	pounds	number	pounds	number	pounds
January 6	4	6.0									2	4.75	2	4.75
7	2	3.0												
13	3	9.0									2	6.25	2	6.25
20	8	14.0									2	5.75	2	5.75
21	4	8.0									1	2.50	1	2.50
27	4	8.0							1	1.75			1	1.75
28	4	12.0									1	2.50	1	2.50
October 12	4	11.0					2	4.75					2	4.75
13	14	30.5												
14	8	14.5												
15	27	147.0	23	31.19	3	1.37	1	2.50	2	5.00	3	6.75	32	46.81
16	16	66.0	8	10.56	5	2.50			1	3.25			14	16.31
17	32	97.0	5	6.00	5	2.44							10	8.44
18	16	27.0	3	3.65			1	3.31					4	6.96
19	17	37.0	5	6.44	1	0.53	1	2.50					7	9.47
20	67	243.0	24	30.13	3	1.44	5	13.19	1	2.50	1	3.13	34	50.39
21	74	257.0	23	29.00	1	0.50	5	13.06	4	8.19	7	19.75	40	70.50
22	13	24.0	7	9.25									7	9.25
23	2	4.0												
24	3	4.5	3	4.00									3	4.00
25	4	6.0	1	1.13									1	1.13
26	5	11.0	4	5.56	1	0.44							5	6.00
27	27	100.0	9	11.56	1	0.56	1	1.50			2	4.25	13	17.87
28	46	86.5	9	11.28	1	0.37					1	2.00	11	13.65
29	13	22.5	3	4.13							1	3.31	4	7.44
30	6	16.0	1	1.37							1	2.38	2	3.75
31	5	4.0	1	1.31									1	1.31
November 1	2	1.5	1	1.31									1	1.31
2	5	13.5												
3	29	58.5	4	4.94									4	4.94
4	45	93.5	12	14.37	3	1.25	3	7.13	1	2.62	6	16.69	25	42.06
5	3	7.0	1	1.31									1	1.31
6	2	1.0												
7														
8	2	8.0					9	17.62	1	3.06			10	20.68
9														
10	1	2.0					3	5.50					3	5.50
11	7	9.0												
12	1	4.0												
13	1	4.0					1	3.50 ¹					1	3.50
14	2	4.0												
15	1	2.0												
15	1	5.0							1	1.75			1	1.75
22	1	5.0												
26	2	4.0												
December 4	2	2.0												
7	4	4.0									1	1.75	1	1.75
8	3	18.0									2	3.25	2	3.25
9	13	23.0									2	5.69	2	5.69
15	1	1.0												
28	3	3.0												
30	1	3.0									4	10.00 ²	4	10.00
Totals, 1951	559	1,540.5	147	188.49	24	11.40	32	74.56	12	28.12	39	100.70	254	403.27

¹ Estimated; bird had been discarded (Am. merganser)² Estimated; dressed weights given

Table 6. Bow and Arrow Hunting Statistics, 1951 Rifle River Area
 (Deer of either sex legal game for archers in Ogemaw County in 1951, Oct. 1-Nov. 5)

Date	Total hunter-days	Total hours hunting	Deer killed	Total pounds of venison
October 1	25	125.5		
2	25	87.0		
3	16	73.0		
4	17	53.5		
5	7	16.5		
6	22	92.0		
7	14	32.0		
8	5	18.0	1 (Doe)	85
9	7	41.5		
10	4	25.0		
11	10	42.0		
12	9	38.5		
13	16	84.0		
14	10	48.0		
15				
16	1	3.0		
17	3	2.5		
18				
19	2	20.0		
20	13	51.0		
21	10	31.0		
22	2	2.0		
23, 24, 25, 26				
27	4	20.0		
28	6	26.0		
29, 30, 31				
November 1	3	6.0		
2	3	6.5		
3	6	18.5	1 (Doe)	79
4	10	33.0	1 (Buck 5-point)	103
5	2	6.0		
Totals, 1951	252	1,060.5	3 (2 does 1 buck)	267

bow produced a kill of two does and one buck. These animals yielded 267 pounds of venison.

The effect of the liberalized archery regulations for Ogemaw County was to increase the archery hunting on the Area very noticeably. In prior years, when bucks only were legal game, rarely more than 100 hours per season were undertaken.

Rifle deer hunting results (Table 7)

The rifle hunting pressure for deer continued to show a decline. During the 1951 rifle season a total of 1,226 hunter-days were spent on the Area in the prosecution of 5,020.5 hours of hunting--a drop of 293 hunter-days and 2,078 hours compared with 1950 pressures. The total legal kill was 22 bucks whose total field-dressed weight was 2,310 pounds, or an average of 105 pounds per buck.

Additional information on the 1951 rifle deer season on the Rifle River Area will be found in Game Division Report No. 1138.

Trapping results (Table 8)

The beaver season in 1951 extended between March 20 and March 31, and 42 permit holders set traps for a total of 295 trap-nights. They caught 6 beaver (219 pounds), and 1 otter (19 pounds).

Between November 16 and December 15, 102 permit holders set 2,942 traps for a total of 4,700 trap-nights. Their total take amounted to 167 muskrats (364.52 pounds), 8 mink (16.87 pounds), 9 raccoon (119.69 pounds). The total catch of furbearers in 1951 amounted to 191 pieces with a total weight of 739.08 pounds. The 1951 catch of furbearers was the third highest, both in numbers and in weight. The low prices paid for raw

Table 7. Rifle Deer Hunting Statistics, 1951 Rifle River Area

Date	Total hunter-days	Total hours of hunting	Bucks killed	Total pounds of venison
November 15	182	1,070.0	12	1,247
16	170	729.5	2	202
17	196	790.0	3	329
18	148	549.0	2	186
19	66	215.5	1	130
20	41	181.0	...	...
21	43	217.5	1	106
22	70	266.5	...	...
23	50	181.5	...	...
24	117	397.0	...	...
25	73	210.5	...	...
26	5	18.0	...	...
27	14	38.0	...	...
28	7	23.0	...	...
29	15	43.5	...	...
30	29	90.0	1	110
Totals, 1951	1,226	5,020.5	22 ↓	2,310

↓ In addition to the legal kill of 22 bucks, a total of 12 does and/or fawns were reported or dragged out of the woods on the Rifle River Area during the rifle season. Thus the total minimum known kill would amount to 22 bucks, and 12 does and fawns with a total weight of 3,510 pounds (if an average weight of 100 pounds for the illegally-killed deer is assumed).

Table 8. 1951 Trapping Statistics, Rifle River Area

Period or date	Number of permits issued	Number of traps used	Total trap nights	Muskrat		Mink		Raccoon		Beaver		Otter		Totals	
				number	pounds	number	pounds	number	pounds	number	pounds	number	pounds	number	pounds
March 20-31	42	295	295							6	219.00	1	19.00	7	238.00
November 15															
16	5	141	141	33	76.75	1	1.50							34	78.25
17	6	211	211	14	31.25									14	31.25
18	4	163	163	9	19.88									9	19.88
19	5	39	43	2	3.44									2	3.44
20	4	101	161	7	17.25									7	17.25
21	5	110	117	5	11.94									5	11.94
22	5	131	131	10	21.75			1	11.19					11	32.94
23	5	160	160	8	17.75	2	5.25	1	20.75					11	43.75
24	6	184	268	12	25.00			1	17.00					13	42.00
25	4	63	63	8	16.19									8	16.19
26	4	63	63	6	11.88	1	1.25							7	13.13
27	5	97	197	8	15.75	1	2.50							9	18.25
28	4	84	204	5	11.88	1	2.00							6	13.88
29	5	176	356	4	8.25									4	8.25
30	4	70	70	3	4.56									3	4.56
December 1	5	170	334	12	25.00			4	37.50					16	62.50
2	4	150	150	6	13.00	1	1.75	1	13.50					8	28.25
3															
4	3	40	80	4	8.50			1	19.75					5	28.25
5															
6	4	117	547	3	6.25									3	6.25
7															
8	2	131	261	2	4.50									2	4.50
9	4	140	178	3	7.50									3	7.50
10															
11	3	131	262	2	4.00	1	2.62							3	6.62
12															
13	3	139	278												
14															
15	3	131	262	1	2.25									1	2.25
Totals, 1951	144	3,237	4,995	167	364.52	8	16.87	9	119.69	6	219.00	1	19.00	191	739.08

furs probably made it one of the poorest years for the trappers from a financial standpoint.

General summary of use and take statistics (Table 9)

Table 9 lists the trends of the use and the fish and game take on the Area since it was opened in 1945. Note that the total use of the Area is still increasing.

In general, trout stream angling shows an irregular increase, although angling quality has fluctuated. Lake fishing pressure shows an irregular decrease despite an increase in quality during the past two seasons.

Small game hunting increased in popularity on the Area, and during the past two seasons has been noticeably greater than in earlier years. The take is to a large degree dependent on the grouse and rabbit cycles and the time of the woodcock and duck migrations.

The trend in deer-hunting pressure continues downward and reflects the general condition of the deer herd in the southeastern areas of upper Michigan (north of Townline 16). There are apparently fewer bucks available for the rifle hunters today than there were in 1945. The opening of Ogemaw County to archer hunters for deer of either sex may provide further stimulus for archery hunting on the Area in coming years.

Trapping has continued to attract a number of local individuals regularly after a relatively low level of interest in the early years. The furbearers taken have varied with the amount of trapping done, the price of furs and the weather--all of which are contributing factors affecting the catch.

In totaling up the poundage of fish, game and furbearers taken yearly it is found that the Rifle River Area has provided from approximately 3

Table 9. General statistics, Rifle River Area, 1945-1951 inclusive

Item		Year						
		1945	1946	1947	1948	1949	1950	1951
Use (number of permit-days)	Sightseers	9,993	8,861	10,543	10,627	12,986	12,454	13,074
	Fish	4,080	3,294	3,881	4,176	4,335	5,042	4,514
	Hunt	2,257	2,487	2,342	2,134	2,004	2,127	2,037
	Traps	40	75	52	141	118	86	144
	Total entrants	16,370	14,717	16,818	17,078	19,443	19,709	19,769
Trout Streams	Angling days	1,472	1,427	1,959	2,162	1,778	2,615	2,847
	Fish taken	446	1,164	1,695	1,533	1,031	1,100	1,502
	Catch per hour	0.13	0.34	0.36	0.30	0.24	0.16	0.21
Lake Fishing	Angling days	2,608	1,867	1,922	2,014	2,557	2,427	1,667
	Fish taken	6,192	5,159	4,538	4,042	4,563	8,200	6,479
	Catch per hour	0.67	0.89	0.74	0.58	0.57	1.08	1.21
Small Game Hunting	Hunter-days	334	328	421	350	435	580	559
	Pieces killed	92	126	115	132	217	332	254
Deer Hunting	Hunter-days	1,923	2,159	1,921	1,784	1,569	1,547	1,478
	Deer killed	54	51	48	32	37	40	25
Trapping	Permits issued	40	75	52	141	118	86	144
	Pieces taken	14	172	126	304	79	208	191
Pounds of	Stream fish by rod	221.92	447.98	705.00	529.38	513.70	440.72	703.35
	Stream fish by experimental fishing	...	...	...	...	6.47	...	...
	Lake fish by rod	2,247.13	1,523.89	1,246.75	1,242.75	1,718.91	2,116.48	1,509.45
	Lake fish by experimental fishing	...	...	...	...	31.16	14.53	...
	Small game	301.87	438.19	145.72	234.75	462.24	489.49	403.27
	Deer killed	6,912.00	6,150.00	5,498.00	3,583.00	3,844.00	4,350.00	2,577.00
	Furbearers	42.00	393.90	294.40	1,248.50	1,269.38	689.19	739.08
	Total pounds-all forms	9,724.92	8,953.96	7,889.87	6,838.38	7,845.68	8,100.41	5,932.15

to almost 5 tons of wild fish or game each year. This total is affected very markedly by the success of the deer hunters, as the weight of venison taken usually makes up from one-half to two-thirds of the total poundage recorded.

Other activities on the Area in 1952

During 1952 the Rifle River Watershed Improvement crew under the direction of Wayne H. Tody completed a diversion drain recommended by Fred Locke in the Institute survey of the Rifle River (Report No. 1282) to bring the colder Gamble Creek waters into the head of the Rifle River without passing through Devoe Lake, where the storage and exposure tended to warm the water past the point of trout tolerances. This was accomplished by the construction of bulkheads on Gamble Creek just below the lower bridge in which removable stop-logs can be set to provide water in the diversion in any desired amount. The drain, about 15 feet wide and 2 feet deep in mid-channel, was dug by dragline, and has been graded, sodded, and planted to stabilize the banks. A stop-log bulkhead constructed at the Gamble Creek end of the diversion permits the shunting of the Gamble Creek flow into Devoe Lake in time of flood to slow up flood run-off into the Rifle River. Thus this construction work will serve a dual purpose. Considerable bank stabilization along the Rifle River within the Area was also accomplished by the Watershed development crews.

The old gamekeepers' lodges just south of the Ranch buildings were auctioned off and dismantled by the bidders during the fall of 1952. The removal of these structures has improved the appearance of the old Ranch site.

The staff

The Area was maintained by the same individuals as in 1950. Road and building maintenance and recording of the fish and game and fur take were under the direction of Basil V. Hughes, Lake Mapping Supervisor I. He was assisted by Arthur DeClaire, Fisheries Technician A; Charles V. Kohn, Maintenance Technician B; and Lawrence H. Bush, Fisheries Technician B. Assistance in recording the deer kill and hunting pressure during the rifle season for deer was given by Lewis C. Ruch, Game Management Planner of the Game Division. Mrs. Arthur DeClaire continued to furnish numerous meals and lodgings to Department personnel and visiting investigators and administrators who visited the Area and the Rifle River Watershed Improvement Project in search of information.

INSTITUTE FOR FISHERIES RESEARCH

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