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RESULTS OF THE INTENSIVE TROUT STREAM CREEL CENSUS,  
1945 SEASON, ON THE TROUT STREAMS OF THE  
RIFLE RIVER AREA (GROUSEHAVEN)

by

David S. Shetter

For the first time in many years 9.05 miles of trout streams, closed to the general public when the former H. M. Jewett owned and operated Grousehaven, were open to public fishing. During the fore-part of the 1945 season these waters were rather heavily fished by many anglers who anticipated excellent catches because the waters had been closed to fishing for such a long period of time, and also partly because they thought that Mr. Jewett's efforts at stocking fingerling trout would furnish many fish that escaped the lures of his personal guests.

This report will describe the fishing results for the various trout waters on the Rifle River Area, which in comparison with other trout waters in Michigan, are comparatively poor as far as numbers removed are concerned.

Operation of the Census

The type of angler-census conducted here was similar to the game census operations carried on at the Rose Lake Wildlife Station. All

persons entering the area were required by law to register at the entrance and indicate the activity they intended to pursue (see permit form). On leaving the area, they stopped at the checking station, and their angling success on whatever waters they fished was recorded. Fish were measured and weighed. This type of census was possible because of the road pattern on the area. In general, excellent cooperation was received from the angling public, and violations, with regard to the regulation concerning fishing without registering, were so few as to be almost non-existent. The checking station was kept open from daylight to about two hours after sunset for the ~~accommodation~~ <sup>accommodation</sup> of the angling public.

Institute personnel who handled the recording of the creel census during the trout season were under the immediate supervision of Basil V. Hughes and the project was under the general direction of the writer. His assistants included Robert Barber, Tom Brooke (now Trapper-Instructor with the Field Administration Division), and Arthur DeClaire.

#### Trout Streams Covered by the Census

(See Map, Fig. 1)

Fishing records were obtained from the following streams (given in order of greatest use): Rifle River (from Devoe Lake to the south line), Gamble Creek (from the north line to Devoe Lake), Brown Trout Creek (from the north line to Mallard Pond), Houghton Creek (from the west line to the Rifle River), Fontinalis Creek (from the north line to Gamble Creek), Skunk Creek (from Teal Lake to the Rifle River). After the first two weeks, angling records for the upper section of the Rifle River (from Devoe Lake to the Ranch Bridge) were kept separate from the lower section of the Rifle River (Ranch Bridge to the south line); Gamble Creek was separated into three sections, the upper (north line to Upper Bridge),

middle (Upper Bridge to Mallard Pond), and lower (Mallard Pond to Devoe Lake). Brown Trout Creek records were tallied separately for the stream fishing and the beaver pond angling. No separation appears necessary for Fontinalis, Skunk and Houghton creeks.

No separation has been made in preparing the tables, since the great majority of the fishing was done during the first two weeks when separate records were not kept for the various stream areas. However, a survey of the data indicates that on Brown Trout Creek almost all fishing was done in the beaver pond, and all trout from Brown Trout Creek came from the beaver pond. In Gamble Creek, the greater part of the fishing was done in the middle portion of the stream, and much of the catch came from this area also. The lower part of the Rifle, which is much the longer of the two sections, appears to have provided much of the fishing and a majority of the fish in that stream.

#### Data Taken

Angling results were recorded on the intensive trout stream creel census blank as the fishermen came past the checking station to leave the area. The angler's name, residence and sex were listed, along with the numbers of hours of angling, and the water on which he or she had fished. The method of angling (from shore, wading, or boat), and the type of lure used was recorded also, and finally the measurements and weights of any fish captured were entered, as well as the numbers of undersized fish released. The angling results on the area as a whole will be presented first, followed by a short discussion of each individual water.

All trout taken were measured for length, but only 204 brown trout and 10 rainbow trout were presented to the checking station "in the round."

Particularly during the warmer weather, many anglers dressed their catches on the stream. In order to obtain an estimate of the total weight of fish removed, a length-weight curve was drawn up for the brown trout of the Area, utilizing the lengths and weights of the 204 whole fish. The weights for the cleaned fish were read from this curve. The weights of the two rainbow trout were estimated, and the weights of four northern pike were obtained by comparing the weights of fish of similar length captured in the lakes.

Results for the entire season on all streams (Table 1)

Between 86 and 87 per cent of all the stream trout fishing recorded on the area was done on the Rifle River, and the remainder was divided among the five other streams. Less than 10 hours were spent on Fontinalis Creek and Skunk Creek. A total of 1,472 angling days were spent on all the streams, made up of 1,318 male and 154 female anglers (the latter comprising slightly more than 10 per cent of the total anglers). Of these days of piscatorial trials, 1,284 (or 87 per cent) reported taking no legal trout. In the course of these angling days, a total of 3,397.50 hours of fishing effort were expended. The total legal trout catch for the area amounted to 418 trout, made up of 25 brook trout, 380 brown trout and 12 rainbow trout, and one hybrid brook x brown trout. In addition, 1 yellow perch, 8 rock bass, 5 northern pike, 3 largemouth black bass and 11 common suckers were captured in the Rifle River.

With the exception of Houghton Creek where it flows through the Rifle River Area, the quality of the fishing was uniformly low, no matter whether the number or the weight of fish caught per hour is used as the standard for judgment. Houghton Creek yielded fair fishing - 0.43 legal trout per hour, and 0.126 pounds of fish per hour. The rest of the streams varied between 0.11 and 0.14 legal trout per hour even though

there was considerable variation in the amount of angling prosecuted. The pounds of legal fish removed per hour of angling in the latter streams varied between 0.019 and 0.058, and appeared to be dependent on the average size of the fish in the respective streams.

The total weight of trout removed amounted to 195.41<sup>↓</sup> pounds, consisting of 9.67 pounds of brook trout, 181.53<sup>↓</sup> pounds of brown trout, and 4.36 pounds of rainbow trout. In addition, warm water fish captured in the Rifle River amounted to 26.36 pounds (Table 2), which would bring the total weight of fish removed from streams on the area to 221.92 pounds. The pounds per hour removal of trout amounted to 0.057 pounds; of all fish, 0.065 pounds.

Since the area of these waters has not been surveyed, no figures on angling pressure (man-hours per acre per season) or yield (pounds of legal fish removed) per acre can be presented. Until the streams are mapped, the only unit of measure which can be used to compare the streams of the Rifle River Area with other Michigan trout waters is the catch per mile and pressure per mile. The data in Table 3 give the number of legal trout and the pounds of fish removed per mile of stream for the various streams in the area. Pressure (man-hours per mile per season) per mile of stream is shown also.

The per mile catch varied between 1.2 legal fish and 0.2 pounds per mile (Fontinalis Creek) and 74.6 legal trout and 37.0 pounds (Rifle River) per mile. The average catch per mile for all streams

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<sup>↓</sup> Includes estimated weights of 12 brown trout eaten on area before checking and actual weight of one hybrid brook x brown.

on the area was 46.2 legal fish and 21.6 pounds. These data indicate a lower catch per mile than usually noted in previous trout stream censuses, where the average catch varied between 53 and 1,060 legal trout, with all except one yielding above 100 legal trout per mile. Perhaps the low yield is to be expected from streams dominated by brown trout. Previous intensively censused streams were either brook trout or rainbow trout streams.

As soon as possible, the streams of the area should be mapped so that the acreages can be determined. Data on an acreage basis is better for purposes of comparison, rather than mileage, since 1 mile in the Au Sable River encompasses considerably more water than 1 mile on Gamble Creek.

#### Individual Streams

##### Rifle River - (Table 4)

Although this water looks like trout water from Devoe Lake Dam to the south boundary, after the first few weeks of the trout season, that portion of the stream between Devoe Lake and the mouth of Houghton Creek becomes sub-marginal trout water because of the increase in water temperature brought about by the surface run-off from Devoe Lake. Numerous deep holes of ample size and much underwater cover in the form of submerged logs is present. This upper portion of the Rifle River produced the warm-water species previously mentioned. The better trout water (as far as temperature is concerned) in the Rifle River lies between the Houghton Creek mouth and the south boundary. Note the differences in water temperature on the same days between the Devoe Lake Bridge and the Ranch Bridge (just below Houghton Creek) in Table 5, where there was a variation of 4 to 9 degrees when air temperatures were higher than 80 degrees.

In the Rifle River (Table 4), approximately one-third of the fishing was done in the first two weeks of the season, and the most legal fish (62) were caught during that time, although angling quality was the poorest (0.06 fish per hour, 0.051 pounds per hour). The best fishing was experienced during the period July 7-20 when 31 legal trout were caught in 133 hours of fishing for a catch per hour of 0.23 fish and a per hour removal of 0.091 pounds of fish. Up to July 7, the angling quality was poorer than after that date. For the entire season, 1,227 angling days, of which 1075 (88 per cent) were unsuccessful, were spent on the stream. In those days a total of 2,939.50 hours of fishing were conducted with a total legal catch of 1 brook trout, 333 brown trout, and 12 rainbow trout, or a total of 346 trout. Of these trout, 12 were eaten before checking and 16 were returned to the stream. In addition, anglers caught 1 yellow perch, 8 rock bass, 5 northern pike, 3 largemouth bass and 11 common suckers. The total weight of fish removed by species is given in Table 6.

Two marked legal-sized rainbow trout were included in the catch. These fish were right pectoral-clipped, which mark was used to distinguish the October 1943 release of fingerling rainbow trout in the Rifle River below the (then) Jewett property. Both fish were between 9 and 10 inches long. Very likely both were a part of the planting made at the road bridge at the south boundary.

All legal trout released in the Rifle River Drainage in 1945 (except for a small planting near Alger) were fin-clipped so they could be distinguished as hatchery reared trout if they entered the catches on the Rifle River Area. A total of 7,054 legal trout (2,013 brook trout, 2,515 brown trout and 2,526 rainbow trout) were marked by clipping the right

pelvic fin before release in May, June and August. None of this marking was taken during the 1945 season on the trout waters of the Rifle River Area, indicating there was no movement either upstream in the Rifle River or down Houghton Creek after the releases.

The catch of undersized trout reported by the anglers of the Rifle River was astonishingly low. Only 29 undersized brown trout were tallied, and 4 sub-legal rainbow trout. Ordinarily, previous trout stream censuses have indicated that the number of sub-legal fish released is often equal to or greater than the number of legal fish creeled.

One of the undersized rainbow trout was noted as a survivor from the 1944 planting of left pectoral-fin-clipped rainbow trout fingerlings.

When compared with the 1944 results of the creel census on the public waters of the Rifle River in the vicinity of Selkirk, it will be noted that the fishing on the public waters was about twice as good (0.100 pounds of fish per hour as compared with 0.057 pounds), although it may not be fair to compare different years. It is of interest to note that both censuses recorded many fewer undersized fish returned than legal fish creeled. Also the public waters in the vicinity of Selkirk were dominantly rainbow trout water, whereas the waters on the Rifle River Area were almost preempted by brown trout.

Gamble Creek - (Table 7)

This stream enters the Area about the middle of the north boundary, flows through Mallard Pond, and finally empties into Devoe Lake on the northwest shore. It is a relatively slow-flowing stream. The upper 1/4 mile of its course on the area is through a dense cedar swamp, after which it passes for about 1/2 mile through a more or less open tag alder marsh before cutting across the west side of Mallard Pond. Below this wide-water the stream widens considerably and becomes more sluggish as it



approaches Devoe Lake. Above Mallard Pond, the bottom is composed chiefly of organic silt and sand, with small amounts of gravel, while below Mallard Pond, the bottom is almost entirely composed of silt and sand.

The remnants of some of the early experimental stream improvement devices installed by Dr. Clarence Tarzwell in the early 1930's are still in place, although not all are functioning.

Investigations by the Institute for Fisheries Research during October, 1944, indicated a legal trout population of 144 (139 brown trout, 5 brook trout) per acre of stream, or about 315 legal trout for that part of Gamble Creek above Mallard Pond, which is 0.87 miles long, according to the available maps.

On opening this stream to angling, 134 angling days of a total duration of 238.50 hours were spent here. Of this number, 119 angling days (or 89 per cent) were unsuccessful. The total catch consisted of 2 brook trout and 27 brown trout, or a catch per hour of 0.12 legal fish, or 0.037 pounds of legal fish per hour. This catch was considerably less than expected, on the basis of the population studies of the preceding fall. Almost all of the fishing was done on the stretch of stream above Mallard Pond, chiefly between Mallard Pond and the Upper Bridge on Gamble Creek.

A total of 10 undersized brown trout were reported as returned to the water, and no marked trout of any kind were taken.

As on the Rifle River, the majority of the fishing was done during the first two weeks (56 per cent). The best fishing came in mid-season June 9 - July 20, when the catch per hour varied from 0.07 fish to 0.42 fish. No fish were caught after July 20.

Brown Trout Creek - (Table 8)

This stream is a tributary of Gamble Creek, joining it through two mouths in the vicinity of Mallard Pond. It is in reality a series of three anastomosing channels after it leaves the beaver dam in the north-west corner of the area. It is sluggish, shallow for the most part, mud, silt, and peat-bottomed, and flows through a dense tag alder swamp. Except at the beaver pond, it is difficult to fish and uninviting to the angler. Over 90 per cent of the fishing was done on the beaver pond.

A total of 84 angling days were spent on this stream and the beaver pond, of which 76 were unsuccessful (or 91 per cent). During those days, a total of 166.00 hours of angling produced 22 brook trout, 2 brown trout and 1 hybrid brook x brown trout, for a catch per hour of 0.15 legal fish, or 0.057 pounds of legal fish per hour of angling. Insofar as is known, all fish were captured in the beaver pond. No undersized trout were reported captured. No fishing was done here after July 20, and the best fishing came during the period June 9-22.

Houghton Creek - (Table 9)

The lower end of this stream enters the area about the middle of the western boundary and there are approximately 0.29 miles of the lower course of Houghton Creek on State property. The stream is moderately wide and fairly deep. Cover is fair and the bottom is chiefly sand and silt with some clay. The slightest rain clouds this stream, and in turn it colors the waters of the Rifle River below its mouth.

During the 1945 season, 37.00 hours were spent fishing this 0.29 miles of stream by 12 anglers, only 1 of whom was unsuccessful (or 8 per cent). A total of 16 legal brown trout were captured, for a catch per

hour of 0.43 legal fish, or 0.126 pounds of legal fish. The quality varied from 0.16 legal fish to 3.00 legal fish per hour. The best fishing here came during the period July 21 - August 3 when three legal fish were captured in an hour's fishing.

One undersized brown trout was reported.

Fontinalis Creek - (Table 10)

This stream, a tributary of Gamble Creek, enters the Rifle River Area, just northwest of the checking station, and flows through a dense cedar swamp for almost its entire length on State property. It has good cover both above and under water. The bottom consists mainly of fibrous peat, with small amounts of gravel, sand and silt in the lower end. The amount of this stream on State property was determined to be 0.86 mile.

Based on the single section sampled in October, 1944, a population of 38 legal brown trout might have been expected in Fontinalis Creek for 1945.

It was very lightly fished. Eight anglers, seven of whom were unsuccessful (88 per cent) spent 9.00 hours on the stream and caught one legal brown trout, and one undersized brown trout was returned to the water. The catch per hour of legal fish was 0.11, and the pounds of legal fish removed per hour amounted to 0.019 pounds. The one legal fish captured was taken during the last two weeks of the season.

Skunk Creek - (Table 11)

This is a small stream which carries the overflow of Teal Lake and the country surrounding it. Only that part of the stream west and downstream from the beaver dam is habitable for trout in the warmer summer months. This portion of the stream is 0.64 miles long, and flows through a tag alder and cedar swamp. The stream is shallow, and has a bottom

composed chiefly of silt and with some sand and gravel.

The only fishing recorded here was for the period May 26 - June 22, when 7 anglers, 6 of whom were unsuccessful (86 per cent) fished 7.50 hours and caught one legal brown trout for a catch per hour of 0.13 legal fish and 0.025 pounds of legal fish. No undersized fish were reported. No other fishing was done here at any other time.

#### Size of Trout Taken by Anglers

As will be noted in Table 12, the average size of the trout taken on the Rifle River Area was fairly large (10.5 inches), somewhat compensating for the small numbers removed.

Twenty-two of the 25 brook trout recorded came from the Brown Trout Creek beaver pond, and they were of an average size of 9.5 inches (241 mm.) and their average weight was 6.2 ounces. The other three brook trout were 0.5 inch longer and of about the same weight.

Some 305 of the 346 brown trout measured came from the Rifle River, and the average length and weight of the brown trout were highest for this stream, averaging 10.5 inches in length and 8.1 ounces in weight. Brown trout from the other streams averaged from 8.1 inches in length and 3.0 ounces in weight (Skunk Creek, one fish) to 9.8 inches in length and 5.4 ounces in weight (Gamble Creek, 24 fish). For the entire area brown trout in the anglers' creels were of an average size of 10.4 inches in length and 8.1 ounces in weight.

Rainbow trout were captured only in the Rifle River. The 12 specimens taken were of an average length of 9.7 inches in length and 5.8 ounces in weight. The average length and weight of all trout measured was 10.3 inches and 7.9 ounces.

The size range of the trout taken from streams on the area was as follows:

<u>Species</u>	<u>Range in length (mm.)</u>	<u>Range in weight (grams)</u>
Brook trout	181 - 364	64 - 370
Brown trout	178 - 530	54 - 1,587
Rainbow trout	2.0 - 318	90 - 300

Number and Percentage Angling Days Reporting

Capture of Various Numbers of Trout (Table 13)

In Table 13 will be found the various numbers of angling days in which various numbers of trout were captured, ranging from no fish to 15 fish. One angler took 12 fish on one occasion. The number of angling days on which 5 to 9 trout were captured was 22 (1.6 per cent of the total). As has been mentioned previously, 87.2 per cent of the angling days on the area were unproductive; 7.0 per cent of the trips resulted in the capture of one trout; on 2.4 per cent of the fishing expeditions two trout were captured; while 1.1 and 0.7 per cent respectively of the total angling days resulted in the creeling of three and four fish.

Residence of Anglers - (Table 14)

In the analysis of the anglers' residence it was found that 1,424 resident stream anglers came from 36 counties in the Lower Peninsula, and 48 non-resident fishermen came from Ohio (40), New York (3), Indiana (2), Wisconsin, Pennsylvania and Canada (1 each). Slightly less than 97 per cent of the total angling days were spent by resident anglers and slightly more than 3 per cent by out-of-state Waltons.

The greatest use of the streams on the area was made by Ogemaw County anglers (359), who lived nearest to the Area, followed closely by Wayne

County fishermen (325). Genesee (187), Saginaw (156) and Oakland County (105) anglers followed in that order. The rod-and-line artists from these five counties constituted slightly more than 66 per cent of all the anglers using the area. The remaining 33<sup>+</sup> per cent of the anglers came from 31 counties of the Lower Peninsula and the above mentioned states. The great majority of the stream fishing was done by residents of southeastern and central Michigan.

#### Discussion

In the period 1925 - 1944, the lakes and streams of the Rifle River Area were lightly fished; according to the testimony of Bryan Graber, former caretaker, probably never in excess of 100 hours of fishing per season was spent, and that chiefly on the Rifle River, Gamble Creek, and Devoe Lake. For a short but unknown period of years before 1933, fingerling trout were reared in the small rearing station on Fontinalis Creek and distributed throughout the streams of the general area (outside the Jewett holdings as well as on Grousehaven). According to E. H. Jewett, as high as 150,000 fingerlings were raised and planted in some years. One might think that this combination of light fishing and heavy stocking should have produced a large population of legal-sized trout the progeny of many of which might have been present when the area was opened to the general public in 1945.

Contrary to the expectation of the general angling public, the number of trout removed from the streams was rather low as can be demonstrated by the creel census totals. Apparently closure of a stream for a period of years cannot be expected to increase the yield or the angling quality beyond the capacity of the stream to produce catchable fish. This conclusion is supported by the experience of the U. S. Forest Service in the

Pisgah Forest (Chamberlain 1941). If, under conditions of private ownership or closure, a population of fish become mature and reproduce, unless they are removed by angling or some other means, they will die a natural death. Regardless of the means of elimination of the surplus (by angling, natural mortality, predation), the population is constantly held at the level determined by the capability of the environment to support it. If this were not so, unfished waters would soon become overpopulated beyond their capacity to support the increasing population. In actuality, closure has probably been a detriment to this and numerous other private waters in Michigan, as numerous mature fish have been allowed to die instead of being removed by angling.

In addition to the effect on the trout population of the long closure of the area, the streams appear to have suffered from some deterioration of the stream environment. Much of the headwater area of the Rifle River drainage has been overgrazed or improperly cultivated. Drainage ditches have been cut directly into some of the tributaries; this causes a rapid run-off of silt-laden flood waters. Particularly on the Rifle River Area, beaver were allowed to dam up certain of the tributary streams until these became unshaded, silt-laden channels (particularly on Brown Trout Creek). Only time will restore the latter to some approximation of their original condition, provided beaver are kept out.

There were very few undersized trout reported in the 1945 trout season. This suggests that natural reproduction has been limited on or in the vicinity of the Rifle River Area, possibly because of the deleterious stream conditions described in the preceding paragraph. Certain of these conditions might be favorably altered by the addition of stream improvement devices, particularly in Gamble Creek and certain parts of the

Rifle River, to create deeper pools and expose gravel now covered by sand and silt. To correct the basic faults, a program of headwater drainage control of the surrounding territory would be necessary.

The suppositions concerning limited spawning facilities on the area are borne out by observations during 1944 and 1945. In Gamble Creek, 14 brown trout redds were noted during the 1944 spawning season. In 1945, no redds could be observed, and almost all of the channel was badly sanded in. In Brown Trout Creek, during 1945, two redds were observed at each Road Bridge (where the only gravel in the stream is to be found), and two brown trout redds were noted near one of the road bridges on Fontinalis Creek. On the Rifle River proper during October and November, 1945, two small and one large brown trout redd were observed, ~~xxxxxxx Rifle River~~ Observations on spawning activities in the Rifle River proper were hampered by muddy waters during much of the 1945 spawning season.

The 1945 data from the trout streams on the Rifle River Area indicate strongly that closure of streams, even for long periods, will not produce even average fishing. The improvement of the angling quality on this portion of the Rifle River will have to be effected by some other means and presents a distinct challenge to the knowledge and ingenuity of the Fish Division.

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Report approved by A. S. Hazzard  
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TABLE 1 - 1945 TROUT SEASON TOTALS AND AVERAGES FOR ALL STREAMS ON THE RIFLE RIVER AREA

Stream	Number of angling days			Number of unsuccessful angling days	Total hours of angling	Legal trout caught				Catch per hour	Total pounds of trout removed	Pounds per hour
	Male	Female	Total			Brook	Brown	Rainbow	Total			
Rifle River	109 <sup>4</sup>	133	1227	1075 (88)	2,939.50	1	333 <sup>16r, 12e</sup>	12	346 <sup>16r, 12e</sup>	0.12	171.91	0.058
Gamble Creek	123	11	134	119 (88)	238.50	2	27 <sup>3r</sup>	...	29 <sup>3r</sup>	0.12	9.17	0.038
Brown Trout Creek	77	7	84	76 (92)	166.00	22	3 <sup>a</sup>	...	25	0.15	9.45	0.057
Houghton Creek	10	2	12	1 (8)	37.00	...	16 <sup>2r</sup>	...	16 <sup>2r</sup>	0.43	4.68	0.126
Fontinalis Creek	7	1	8	7 (88)	9.00	...	1	...	1	0.11	0.16	0.019
Skunk Creek	7	0	7	6 (85)	7.50	...	1	...	1	0.13	0.19	0.025
1945 Totals Averages	1318	154	1472	1284 (87)	3,397.50	25	381 <sup>21r, 12e</sup>	12	418 <sup>21r, 12e</sup>	0.12	195.56 <sup>397</sup>	0.057

<sup>r</sup> - Indicates number of legal trout returned to water

<sup>e</sup> - Indicates number of legal trout eaten on area before reporting to census station

<sup>397</sup> - Indicates actual number of trout measured, and on which actual or estimated weights were available

<sup>a</sup> - Includes one hybrid brook x brown

TABLE 2

NUMBERS AND WEIGHT OF ALL FISH REMOVED  
BY ANGLING FROM TROUT WATERS OF THE  
RIFLE RIVER AREA, 1945 TROUT SEASON

<u>Species</u>	<u>Number Removed</u>	<u>Total Weight (lbs.)</u>
Brook Trout	25	9.67
Brown Trout	360 <sup>&amp;</sup>	181.53
Rainbow Trout	12	4.36
L. M. Bass	3	6.31
Northern Pike	5	9.06
Yellow Perch	1	0.25
Rock Bass	8	2.05
Common Sucker	11	8.69
Totals	425	221.92

Catch per hour all fish - 0.13

Pounds per hour all fish - 0.065

<sup>&</sup> One hybrid brook by brown included.

TABLE 3

YIELD TO THE ANGLERS AND ANGLING PRESSURE  
PER MILE OF STREAM ON THE TROUT STREAMS OF  
THE RIFLE RIVER AREA, 1945 TROUT SEASON

Stream	Miles under census	Legal trout captured	Pounds of fish removed	Hours of angling	Trout captured per mile	Pounds of fish removed per mile
Rifle	4.64	346	171.91	2939.50	74.6	37.0
Gamble	0.87	29	9.17	238.50	33.3	10.5
Brown Trout	1.75	25	9.45	166.00	14.3	5.4
Houghton	0.29	16	4.68	37.00	55.2	16.1
Fontinalis	0.86	1	0.16	9.00	1.2	0.2
Skunk	0.64	1	0.19	7.50	1.6	0.3
TOTALS, Averages	9.05	418	195.56	3397.50	46.2	21.6

TABLE 4

## INTENSIVE CREEL CENSUS, RIFLE RIVER, 1945 TROUT SEASON

Two-week period	Number of angling days			Number of unsuccessful angling days	Total hrs. of angling	Legal trout caught				Catch per hour	Average length (inches)			Total pounds of trout removed	Pounds per hour
	Male	Fem.	Total			Brook	Brown	R'bow	Total		Brook	Brown	R'bow		
Apr. 28-May 11	392	39	431	396	970.00	1	56	5	62	0.06	9.9	12.3	9.8	49.65	0.051
May 12-25	156	23	179	154	402.00	...	45	2	47	0.12	...	10.8	9.3	25.55	0.063
May 26-June 8	85	12	97	78	259.50	...	36	...	36	0.14	...	10.6	...	18.56	0.072
June 9-22	112	22	134	114	339.00	...	42 <sup>r</sup>	1	43 <sup>r</sup>	0.13	...	10.9	10.0	20.67 <sup>35</sup>	0.061
June 23-July 6	122	15	137	118	356.50	...	43 <sup>e</sup>	1	44 <sup>e</sup>	0.12	...	9.2	12.5	13.02 <sup>40</sup>	0.037
July 7-20	55	4	59	48	135.00	...	31 <sup>r</sup>	...	31 <sup>r</sup>	0.23	...	10.4	...	12.27 <sup>24</sup>	0.091
July 21-Aug.3	45	6	51	43	150.00	...	24	...	24	0.16	...	9.9	...	9.04	0.060
Aug. 4-17	33	4	37	34	74.50	...	15	1	16	0.21	...	9.5	8.5	4.87	0.065
Aug. 18-Sept.3	94	8	102	90	253.00	...	41 <sup>r,8e</sup>	2	43 <sup>r,8e</sup>	0.17	...	9.8	8.8	14.09 <sup>33</sup>	0.056
TOTALS, Averages	1094	133	1227	1075	2939.50	1	333 <sup>16r,12e</sup>	12	346 <sup>16r,12e</sup>	0.12	9.9	10.6	9.7	171.91 <sup>330</sup>	0.058

✓ Indicates number of legal trout returned to the water

⊙ Indicates number of legal trout eaten on area before reporting to census station

330 Actual or estimated weights available for this number of trout

TABLE 5

TEMPERATURE DATA - RIFLE RIVER AREA - 1945

Date	Time	Fontinalis at checking Sta. Bridge		Gamble Upper Bridge		Gamble Lower Bridge		Rifle River at Devoe Lake Bridge		Rifle River at Ranch		Devoe Lake		North Lake		Loon Lake		Spring Lake	
		Air °F.	Water °F.	Air °F.	Water °F.	Air °F.	Water °F.	Air °F.	Water °F.	Air °F.	Water °F.	Air °F.	Water °F.	Air °F.	Water °F.	Air °F.	Water °F.	Air °F.	Water °F.
June 23	2:30-5:00	81	72	81	66	77	71	78	69	80	67	83	77	81	79	81	79	84	77
July 5	2:00-4:30	76	67	77	62	76	66	76	65	72	65	74	72	75	75	75	76	79	76
July 18	1:00-4:00	84	62	85	65	84	66	83	74	84	65	80	76	84	76	82	82	85	80
July 23	1:30-4:00	84	68	84	65	84	75	84	78	85	70	84	79	85	80	85	82	82	80
Aug. 1	1:00-3:30	86	68	85	65	86	69	85	77	85	68	85	80	86	82	86	83	84	82
Aug. 20	1:00-4:30	85	68	84	63	84	69	84	70	84	66	85	77	83	80	83	83	85	81
Aug. 30	1:00-3:30	87	67	87	64	85	66	86	75	83	68	84	75	86	76	87	80	87	80

Water and air temperatures were taken when the air temperature was 80°F. or over at noon.

After heavy rainfall the water temperatures in the Lower Gamble and Fontinalis were higher than normal due to the warm water from the swamps and surface drainage running into the streams.

TABLE 6

OTHER FISH TAKEN IN RIFLE RIVER,

1945 TROUT SEASON

Species	Number Taken	Av. Length (inches)	Av. Weight (ounces)	Total Weight (pounds)
Largemouth Bass	3	14.9	34.0	6.31
Rock Bass	8	6.8	4.1	2.05
Northern Pike	5	21.4	29.0	9.06
Yellow Perch	1	...	4.0	0.25
Common Sucker	11	...	12.6	8.69
TOTALS	28	...	...	26.36
Number and Weight of Trout Taken	330	...	...	171.91
TOTALS (all fish)	358	...	...	198.27

TABLE 7

INTENSIVE CREEL CENSUS, GAMBLE CREEK, 1945 TROUT SEASON

Two-week Period	Number of anglers			Number of unsuccessful anglers	Total hrs. of fishing	Legal Trout Caught				Catch per hour	Average Length (inches)		Total Pounds of trout removed	Pounds per hour
	Male	Fem.	Total			Brook	Brown	R'bow	Total		Brook	Brown		
Apr. 28 - May 11	73	6	7.9	74	133.50	2	8	...	10	0.07	9.9	9.2	4.08	0.031
May 12 - 25	8	1	9	9	15.50	...	0	...	0	0.00	...	...	...	...
May 26 - June 8	9	0	9	8	23.00	...	2 <sup>2</sup>	...	2 <sup>2</sup>	0.09	...	...	...	...
June 9 - 22	16	3	19	12	33.00	...	14 <sup>1</sup>	...	14 <sup>1</sup>	0.42	...	9.7	4.50	0.136
June 23 - July 6	5	0	5	4	13.50	...	1	...	1	0.07	...	8.6	0.25	0.019
July 7 - 20	3	0	3	2	6.00	...	2	...	2	0.33	...	8.1	0.34	0.057
July 21 - Aug. 3	3	0	3	3	5.00	...	0	...	0	0.00	...	...	...	...
Aug. 4 - 17	2	0	2	2	3.00	...	0	...	0	0.00	...	...	...	...
Aug. 18 - Sept. 3	4	1	5	5	6.00	...	0	...	0	0.00	...	...	...	...
TOTALS, Averages	123	11	134	119	238.50	2	27 <sup>3</sup>	...	29 <sup>3</sup>	0.12	9.9	9.4	9.17 <sup>26</sup>	0.0381

<sup>3</sup> - Indicates number of legal trout returned to water.

<sup>26</sup> - Weight of legal trout removed.

TABLE 8

INTENSIVE CREEL CENSUS, BROWN TROUT CREEK, 1945 TROUT SEASON

Two-week Period	Number of anglers			Number of unsuccessful anglers	Total hrs. of fishing	Legal Trout Caught				Catch per hour	Average Length (inches)		Total Pounds of trout removed	Pounds per hour
	Male	Fem.	Total			Brook	Brown	R'bow	Total		Brook	Brown		
Apr. 28 - May 11	39	4	43	41	82.50	5	...	...	5	0.06	8.8	...	1.16	0.014
May 12 - 25	18	3	21	19	43.00	7	2 <sup>3</sup>	...	9	0.21	10.2	8.5	3.61	0.092
May 26 - June 8	4	0	4	4	9.00	...	...	...	...	0.00	...	...	...	...
June 9 - 22	4	0	4	3	6.50	4	...	...	4	0.62	9.5	...	1.40	0.215
June 23 - July 6	10	0	10	7	19.00	6	1	...	7	0.37	10.6	10.7	3.26	0.171
July 7 - 20	2	0	2	2	6.00	...	...	...	...	0.00	...	...	...	0.000
July 21 - Sept. 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS, Averages	77	7	84	76	166.00	22	3 <sup>3</sup>	...	25	0.15	9.5	9.2	9.45	0.057

<sup>3</sup> - Includes an hybrid brook x brown.



TABLE 9

## INTENSIVE CREEL CENSUS, HOUGHTON CREEK, 1945 TROUT SEASON

Two-week Period	Number of anglers			Number of unsuccessful anglers	Total hrs. of fishing	Legal Trout Caught				Catch per hour	Average Length (inches)	Total Pounds of trout removed	Pounds per hour
	Male	Fem.	Total			Brook	Brown	R'bow	Total				
Apr. 28 - May 11	3	0	3	1	8.00	...	2	...	2	0.25	10.8	1.14	0.142
May 12 - 25	...	...	...	...	...	...	...	...	...	...	...	...	...
May 26 - June 8	1	0	1	0	0.50	...	1	...	1	2.00	9.3	0.31	0.620
June 9 - 22	...	...	...	...	...	...	...	...	...	...	...	...	...
June 23 - July 6	2	0	2	0	7.00	...	5	...	5	0.71	9.5	1.80	0.257
July 7 - 20	1	0	1	0	2.00	...	1	...	1	0.50	8.5	0.20	0.100
July 21 - Aug. 3	1	0	1	0	1.00	...	3 <sup>↓</sup>	...	3 <sup>↓</sup>	3.00	10.0	0.63	0.630
Aug. 4 - 17	1	0	1	0	0.50	...	1 <sup>↓</sup>	...	1 <sup>↓</sup>	2.00	...	...	...
Aug. 18 - Sept. 3	1	2	3	0	18.00	...	3	...	3	0.16	8.2	0.60	0.033
TOTALS, Averages	10	2	12	1	37.00	...	2 <sup>↓</sup> 16	...	2 <sup>↓</sup> 16	0.43	9.4	4.68 <sup>11</sup>	0.126

↓ - Indicates number of legal trout returned to water.

11 - Weight of legal trout removed.

TABLE 10

INTENSIVE CREEL CENSUS, FONTINALIS CREEK, 1945 TROUT SEASON

Two-week Period	Number of anglers			Number of unsuccessful anglers	Total hrs. of fishing	Legal Trout Caught				Catch per hour	Average Length (inches)	Total Pounds of trout removed	Pounds per hour
	Male	Fem.	Total			Brook	Brown	R'bow	Total				
Apr. 28 - May 11	2	0	2	2	2.00	...	...	...	...	0.00	...	...	...
May 12 - 25	...	...	...	...	...	...	...	...	...	...	...	...	...
May 26 - June 8	3	1	4	4	6.00	...	...	...	...	0.00	...	...	...
June 9 - Aug. 17	...	...	...	...	...	...	...	...	...	...	...	...	...
Aug. 18 - Sept. 3	2	0	2	1	1.00	...	1	...	1	1.00	8.7	0.17	0.170
<b>TOTALS, Averages</b>	7	1	8	7	9.00	...	1	...	1	0.11	8.7	0.17	0.019

TABLE 11

INTENSIVE CREEL CENSUS, SKUNK CREEK, 1945 TROUT SEASON

Two-week Period	Number of anglers			Number of unsuccessful anglers	Total hrs. of fishing	Legal Trout Caught				Catch per hour	Average Length (inches)	Total Pounds of trout removed	Pounds per hour
	Male	Fem.	Total			Brook	Brown	R'bow	Total				
Apr. 28 - May 25	...	...	...	...	...	...	...	...	...	...	...	...	...
May 25 - June 8	1	0	1	0	3.00	...	1	...	1	0.33	8.1	0.19	0.063
June 9 - 22	6	0	6	6	4.50	...	...	...	...	0.00	...	...	...
June 23 - Sept. 3	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>TOTALS, Averages</b>	7	0	7	6	7.50	...	1	...	1	0.13	8.1	0.19	0.025

TABLE 12

AVERAGE LENGTH AND AVERAGE WEIGHT OF TROUT TAKEN FROM THE  
VARIOUS STREAMS OF THE RIFLE RIVER AREA, 1945 TROUT SEASON

(Measurements are given in millimeters and grams)

Stream	Brook Trout			Brown Trout			Rainbow Trout			All Trout		
	Number	Length	Weight	Number	Length	Weight	Number	Length	Weight	Number	Length	Weight
Rifle River	1	250	136	305	268	238	12	245	165	318	266	239
Gamble Creek	2	251	175	24	248	158	...	...	...	26	239	160
Brown Trout Creek	22	241	177	2	250	149	1 <sup>↓</sup>	202	86	25	240	171
Houghton Creek	...	...	...	14	239	152	...	...	...	14	239	152
Fontinalis Creek	...	...	...	1	221	76	...	...	...	1	221	76
Skunk Creek	...	...	...	1	205	85	...	...	...	1	205	85
All Combined	25	241	173	346	264	231	12	245	165	385	262	225

<sup>↓</sup> - This was a hybrid, a brook x brown, 202 mm. long, 86 grams in weight taken in Brown Trout Creek.

TABLE 13

NUMBER OF ANGLING DAYS RECORDING CAPTURE OF VARIOUS NUMBERS OF TROUT  
 FROM VARIOUS STREAMS OF THE RIFLE RIVER AREA, 1945 TROUT SEASON  
 (Percentages are given in parentheses)

Stream	Number of angling days reporting catches of various numbers of trout																	Total angling days
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Rifle River	1,075 (87.6)	83 (6.7)	31 (2.4)	10 (0.9)	9 (0.7)	9 (0.7)	4 (0.3)	4 (0.3)	1 (0.1)	2 (0.2)	...	...	1 (0.1)	...	...	...	1,227 (100.0)	
Gamble Creek	119 (88.8)	7 (5.3)	5 (3.8)	1 (0.7)	1 (0.7)	1 (0.7)	...	...	...	...	...	...	...	...	...	...	134 (100.0)	
Brown Trout Creek	76 (90.6)	3 (3.6)	1 (1.1)	3 (3.6)	...	...	...	...	1 (1.1)	...	...	...	...	...	...	...	84 (100.0)	
Houghton Creek	1 (8.3)	9 (75.0)	...	1 (8.3)	1 (8.3)	...	...	...	...	...	...	...	...	...	...	...	12 (100.0)	
Fontinalis Creek	7 (87.5)	1 (12.5)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8 (100.0)	
Skunk Creek	6 (85.7)	1 (14.3)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7 (100.0)	
All Streams	1,284 (87.2)	104 (7.0)	37 (2.4)	15 (1.0)	11 (0.7)	10 (0.6)	4 (0.3)	4 (0.3)	2 (0.2)	2 (0.2)	...	...	1 (0.1)	...	...	...	1,472 (100.0)	

TABLE 14

NUMBERS OF ANGLING DAYS RECORDED ON THE TROUT  
STREAMS OF THE RIFLE RIVER AREA FROM VARIOUS  
COUNTIES AND STATES, 1945 TROUT SEASON

County or State	Brown						Totals
	Rifle River	Gamble Creek	Trout Creek	Houghton Creek	Fontinalis Creek	Skunk Creek	
Alcona	1	4	...	...	2	...	7
Arenac	21	1	2	...	...	...	24
Bay	85	6	5	...	...	...	96
Branch	...	2	...	...	...	2	4
Emmet	...	1	...	...	...	...	1
Genesee	153	13	13	4	2	2	187
Gladwin	6	...	...	...	...	...	6
Grand Traverse	3	...	...	...	...	...	3
Huron	1	...	...	...	...	...	1
Hillsdale	2	...	...	...	...	...	2
Ingham	13	...	...	...	...	...	13
Ionia	6	...	...	...	...	...	6
Iosco	23	8	2	...	2	...	35
Isabella	1	...	...	...	...	...	1
Jackson	3	...	...	...	...	...	3
Lapeer	4	...	...	...	...	...	4
Lenawee	4	...	...	...	...	...	4
Livingston	11	...	...	...	...	...	11
Macomb	17	...	3	...	...	...	20
Midland	8	...	...	...	...	...	8
Montmorency	3	1	...	...	...	...	4
Monroe	1	...	...	...	...	...	1
Newaygo	1	...	...	...	...	...	1
Oakland	90	14	1	...	...	...	105
Oceana	2	...	...	...	...	...	2
Ogemaw	293	41	22	3	...	...	359
Oscoda	3	...	...	...	...	...	3
Roscommon	1	...	...	...	...	...	1
Saginaw	130	16	6	4	...	...	156
Shiawassee	3	...	...	...	...	...	3
Tuscola	12	...	1	1	...	...	14
Washtenaw	7	1	...	...	...	...	8
Wayne	274	26	20	...	2	3	325
Wexford	3	...	...	...	...	...	3
St. Clair	...	...	2	...	...	...	2
Antrim	...	...	1	...	...	...	1
Total Resident	1,185	134	78	12	8	7	1,424
Ohio	36	...	4	...	...	...	40
Wisconsin	1	...	...	...	...	...	1
New York	3	...	...	...	...	...	3
Pennsylvania	1	...	...	...	...	...	1
Canada	1	...	...	...	...	...	1
Indiana	...	...	2	...	...	...	2
Total Non-Resident	42	...	6	...	...	...	48
GRAND TOTALS	1,227	134	84	12	8	7	1,472

Register No. \_\_\_\_\_

REGISTRATION  
RIFLE RIVER AREA  
"Grousehaven"

Checker \_\_\_\_\_

Date \_\_\_\_\_, 194

Registrant has entered this area for the following reasons and is hereby given permission to:

Fish \_\_\_\_\_ Hunt \_\_\_\_\_ Picnic \_\_\_\_\_ Trap \_\_\_\_\_

Registrant agrees to abide by the State and Federal laws and regulations pertaining to these activities.

Registrant's Signature \_\_\_\_\_

Street \_\_\_\_\_

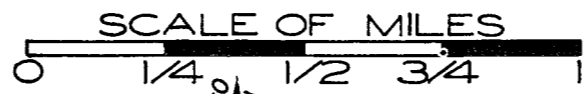
Number in Party \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

RESULTS OF YOUR HUNTING, FISHING OR TRAPPING MUST BE  
REPORTED BEFORE LEAVING THE AREA EVEN THOUGH NO GAME  
OR FISH ARE TAKEN--BE CAREFUL WITH FIRES--

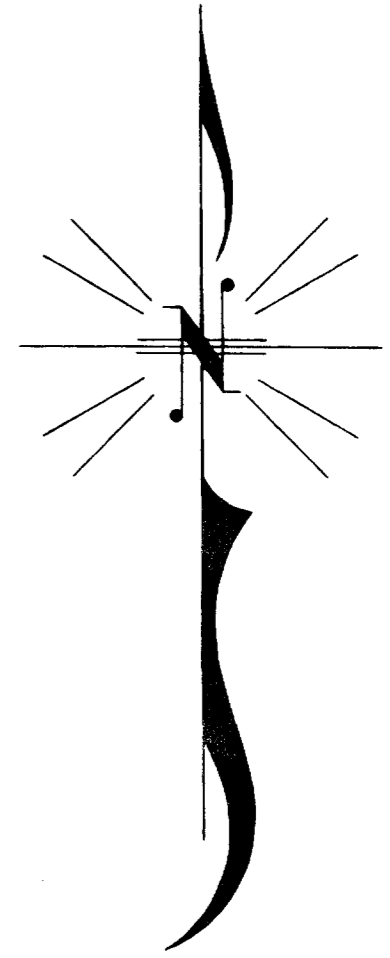
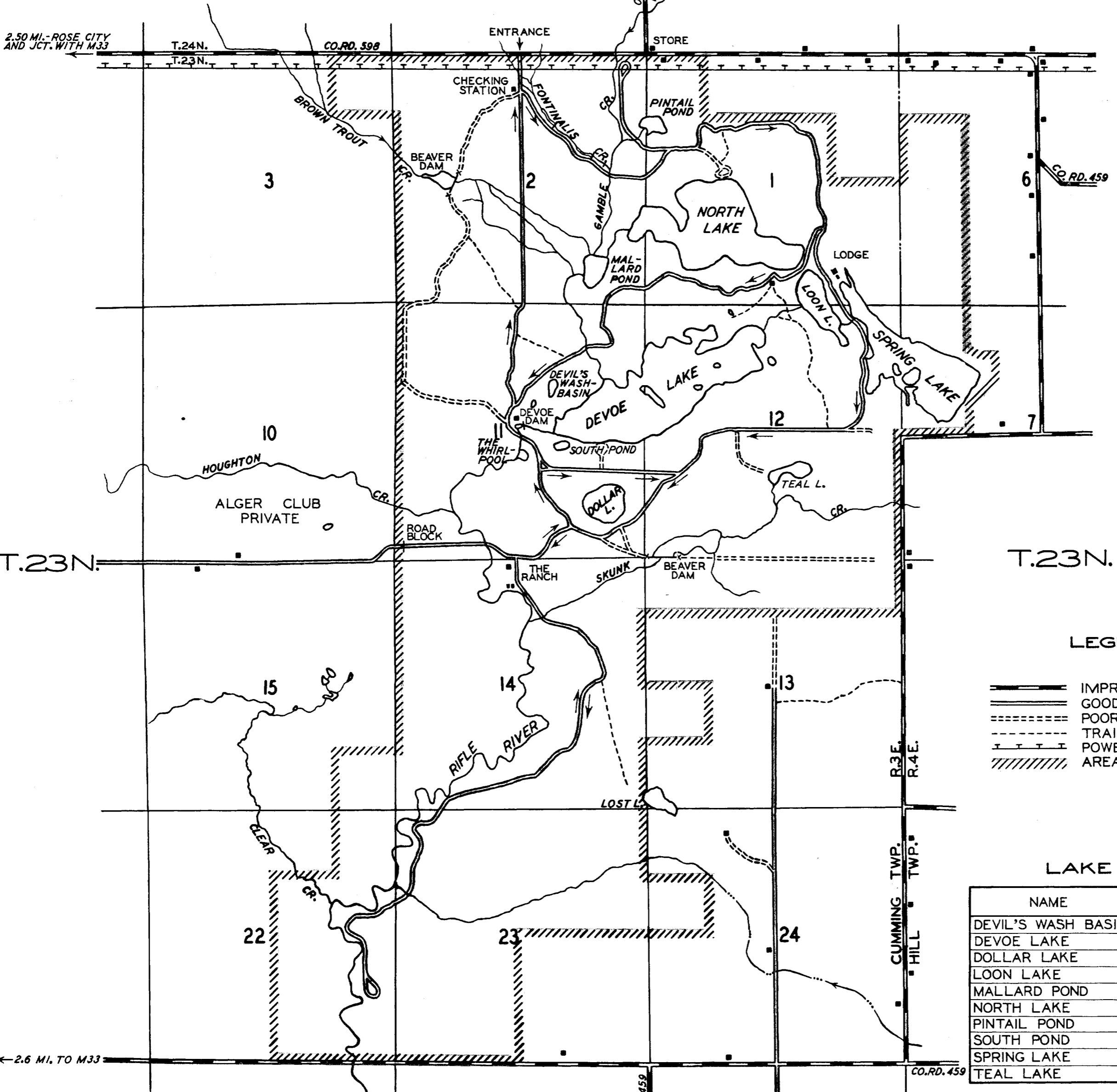
MICHIGAN DEPARTMENT OF CONSERVATION  
Fisheries Division

MICHIGAN DEPARTMENT OF CONSERVATION  
FISHERIES DIVISION  
**RIFLE RIVER AREA**  
"GROUSEHAVEN"  
OGEMAW COUNTY



R.3E.

2.50 MI. - ROSE CITY  
AND JCT. WITH M.33



LEGEND

- IMPROVED ROADS
- GOOD DIRT ROADS
- POOR DIRT ROADS
- TRAILS
- POWER LINES
- AREA BOUNDARY

LAKE DATA

NAME	MAX. DEPTH (FEET)	AREA (ACRES)
DEVIL'S WASH BASIN	15	1.5
DEVOE LAKE	52	124.7
DOLLAR LAKE	18	13.1
LOON LAKE	20	19.9
MALLARD POND	5	3.8
NORTH LAKE	52	87.6
PINTAIL POND	5	3.0
SOUTH POND	15	1.2
SPRING LAKE	18	58.2
TEAL LAKE	14	6.1

R.3E.

← 2.6 MI. TO M33

## RIFLE RIVER AREA

**HISTORY** This 4288 acre tract, formerly known as "Grousehaven", was owned for many years by the late H. M. Jewett, one of the pioneer automobile manufacturers of Michigan. Under his ownership the area was used solely for recreational purposes. He engaged in the breeding of pheasants and other game birds to be later liberated for hunting. Mr. Jewett also maintained small trout rearing ponds along Fontinalis Creek and planted numerous fry and fingerlings in streams on the tract. After his death in 1933 the family offered the property for sale. It was purchased in 1945 by the Department of Conservation with moneys derived from the sale of fishing and hunting licenses.

**REASONS FOR PURCHASE** This area includes ten lakes of varying sizes and seven miles of trout streams comprising the headwaters of the Rifle River. The fact that these waters are included in one solid block of land under state ownership and administration will make possible certain types of research in lake and stream management which cannot be undertaken on waters where part of the shoreline is in private ownership. The extensive game cover on the area will provide a good opportunity for working out game management problems through definite control of the entire area by the Conservation Department. The hunting, fishing and scenic values of the area make it particularly well suited to varied recreational uses by the general public. It is in close proximity to the large centers of population of the state and is easily accessible by trunk line highways.

**ADMINISTRATION** The State Department of Conservation, Fish Division, has jurisdiction over the area because of the predominance of fishing values. In general, the area will be open to the public for hunting and fishing during the regular seasons. Some special rules and regulations may be imposed on certain portions of the area to implement the various research problems.

Everyone must register upon entering and leaving the area. This requirement simplifies the supervision of the area and provides a means of securing data on the fish and game kill. These data will be invaluable to the department in formulating future fish and game management policies particularly because of the fact that the area was closed to the public for many years and fishing and hunting has therefore been relatively light.

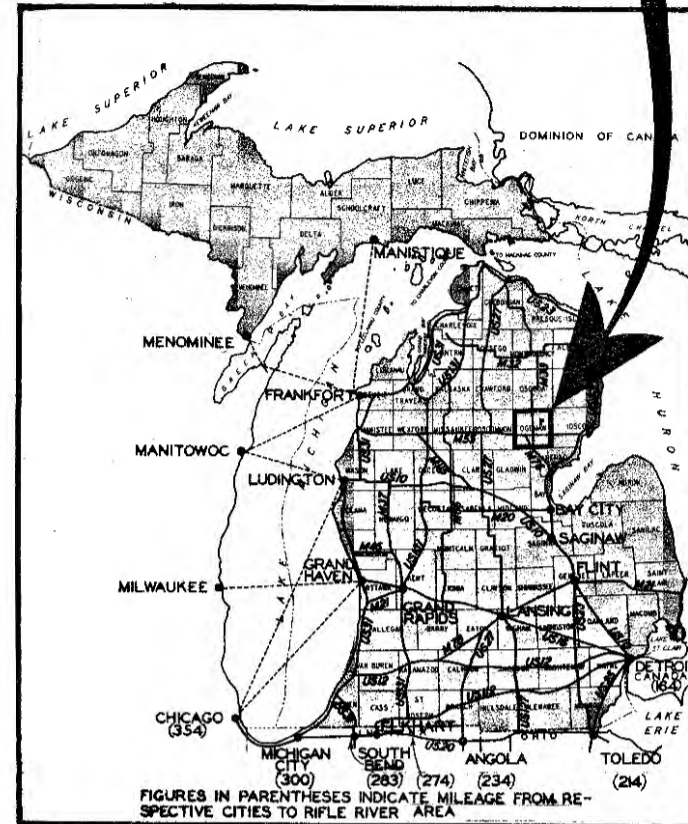
Picnicking is permitted but no particular sites are set aside or developed for this purpose at the present time. Boat landings, water and sanitary facilities and other necessary developments will be constructed as labor and materials become available and their need is justified.

The general policy of the department is to maintain the natural conditions of the area, insofar as is practicable, under accepted fish and game programs and good recreational uses.

**BE CAREFUL WITH FIRES**

 OBSERVE THE RULES AND REGULATIONS

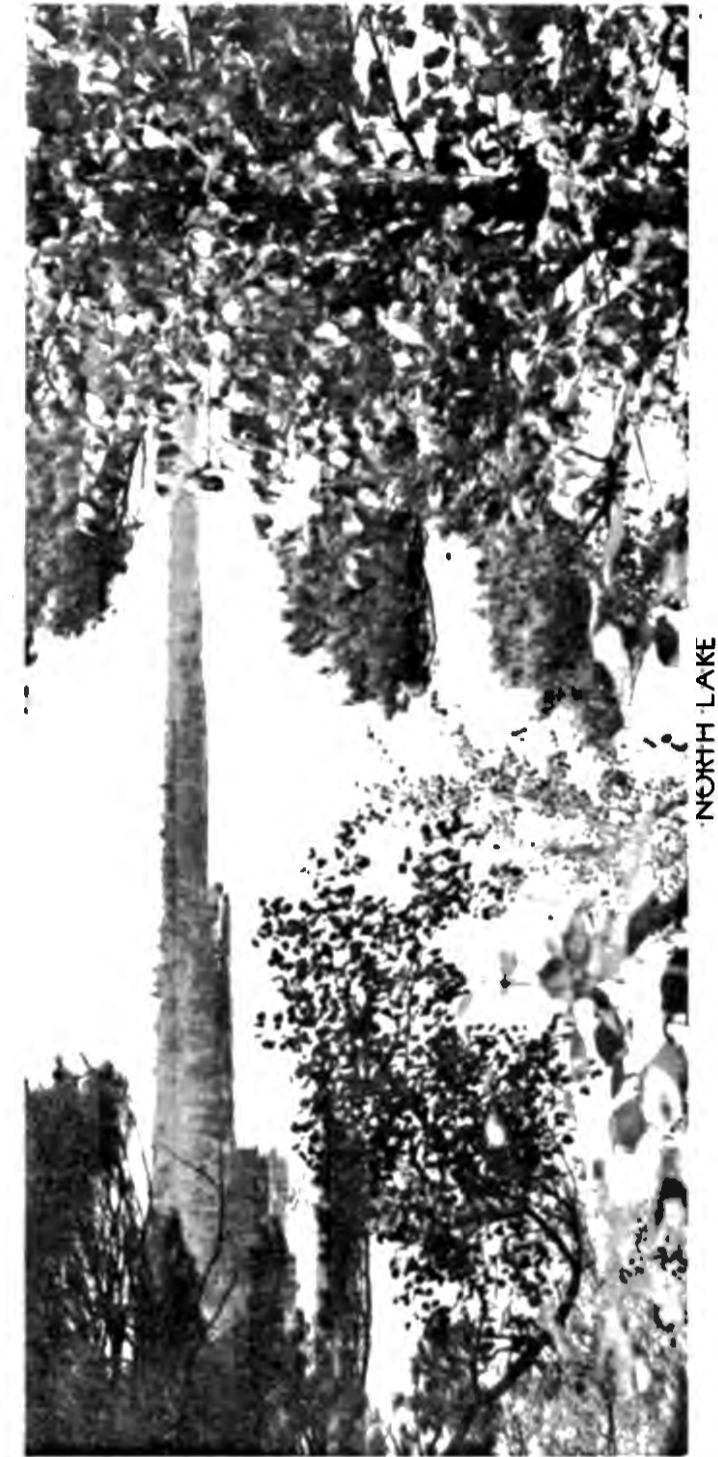
OFFICIAL MAP OF  
**RIFLE RIVER AREA**  
"Grousehaven"  
OGEMAW COUNTY  
MICHIGAN  
1945



Issued by  
**MICHIGAN DEPARTMENT OF CONSERVATION**  
FISHERIES DIVISION  
Lansing, Michigan



RIFLE RIVER



NORTH LAKE