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cc: Mr. Parker

Mr. Jack Van Coevering

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THE INTENSIVE CREEL CENSUS OF GUILLEY CREEK POND

FOR THE 1940 TROUT SEASON

by

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Guiley Pond is an artificially-created trout pond which has resulted from the placement of a five-foot earth and concrete dam across Guiley Creek in Iosco County (T. 22 N., R. 6 E., Sec. 9). The dam was built in 1938 and re-built in more permanent form in 1939. It is equipped with a fish ladder, which is usable by upstream migrants when sufficient water is being released through it. It was constructed on land owned by Eddie Parker of Whittemore, for fishing and to develop power for a small electrical generating plant. Mr. Parker provides rooms and meals and sells tackle to fishermen. The first two years' angling rights were sold to various interested fishermen, but in 1940 the pond was thrown open to the public and no fees were required to fish. Anyone could fish so long as he agreed to abide by the pond rules proposed by Mr. Parker. These rules, in addition to state laws, were as follows:

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1. Only artificial flies to be used, and no hooks smaller than a No. 6.
2. All trout under 8 inches to be returned to the water.
3. A daily limit of ten fish or five pounds of fish, or one fish of four pounds or larger.

The prime drawing card of this relatively small area of impounded trout water (6,000 square yards, 1.2 $\frac{1}{4}$ acres, according to Mr. Parker's measurements) is the presence of the large rainbow trout (2-10 pounds) which are trapped by the pond. These large fish enter the Au Gres River system in late winter and early spring in search of suitable spawning grounds, and after completion of spawning are seldom available to the fly fishermen or even to many bait fishermen, as most of the fish return to Lake Huron either before or shortly after the season opens if the weather is normal. There is also a run of brook trout upstream into the pond at the time the water begins to warm up in early summer. The pond acts as a collecting basin for small trout of both species. The effect of this pond on fishing in the stream system above and below is not definitely known, although a majority of those answering the questionnaire seemed to think there had been little or no effect on the fishing in Guiley Creek or in the east branch of the Au Gres River.

In the past two years, Mr. Parker has contacted the Institute several times regarding management procedure for this pond, which he feels can be made to produce better than average trout fishing, and to serve a class of anglers who like pond fishing and the chance of hooking a large trout. He has given freely of his own time to improve the fishing facilities in and around the pond, and has expressed a desire to cooperate

in any manner that might be suggested by the Fish Division of the Conservation Department. We suggested that the first step in learning more concerning the fishing on his water would be an intensive creel census of the fishing on the pond. This record was kept by him during the 1940 season, in an accurate and orderly fashion according to instructions which were given by the Institute. This entailed the measurement and weighing of the fish captured, as well as the recording of the catch. A description of the angling results on Guiley Pond, assembled by periods of two weeks, follows.

As shown in Table 1, a total of 354 anglers spent 666 fisherman-days in trying their luck on Guiley Pond. The total number of hours of fishing was 1,452.50. Of the 666 fisherman-days, 482, or 72 per cent, yielded no fish for the effort expended. The greatest number of fisherman-days (140) were recorded in the two-week period May 25-June 7. The average time fished varied from three hours during the last three days of the season to 1.4 hours during the first two weeks of the season, with an all-season average of 2.2 hours.

The total catch of trout was 385, consisting of 235 brook trout and 150 rainbow trout. The total weight of brook trout taken was 51 pounds, 2 ounces (slightly more than this figure, as four fish were not weighed), while the total weight of rainbow trout captured was 244 pounds, 6 ounces.

The average total length of the brook trout taken varied from 8.5 inches during the two-week period August 17-30 to 9.3 inches during the two weeks August 3-16. The average total length for the entire season's catch was 8.8 inches. The average weight of the brook trout varied from

a low of 2.9 ounces (average length, 8.9 inches) in the first two weeks of the season (April 27-May 10) to a high of 4.5 ounces (average length, 9.0 inches) during the two-week period June 22-July 5. The average weight of the brook trout over the entire season, based on averages for the two-week periods, was 3.6 ounces.

The average sizes for rainbow trout varied from two fish of an average length of 9.0 inches and an average weight of 3.5 ounces taken during the last three days of the season, to four fish captured during the first two weeks of the season, whose average length was 19.4 inches and whose average weight was 2 pounds, 13 ounces. During all the intervening weeks of the season, the daily average size of rainbow trout ranged from 11 to 15 inches long and from 9.8 ounces to 1 pound, 8.4 ounces in weight. The average length and average weight for the entire season's rainbow trout catch, based on the averages for the two-week periods, was 13.8 inches and 20.6 ounces (1 pound, 4.6 ounces). The largest fish taken was a rainbow trout of 5 3/4 pounds.

The best fishing, as measured by the total catch per fisherman-hour, was in the two-week period June 8-21, when the figure was 0.46 fish (0.35 brook trout, 0.11 rainbow trout). The catch per fisherman-hour of rainbow trout was best in the period May 11-24, when this species was taken at a rate of 0.29 fish. Brook trout fishing was slightly better than previously mentioned, in the period August 17-30, when 0.36 brook trout were captured per hour of fishing. For the entire season, the average catch per hour was 0.26 fish, a comparatively low figure compared with creel census results on other Michigan streams. This total was made up of 0.16 brook trout and 0.10 rainbow trout caught per hour of angling.

No fisherman on Guiley Pond caught the pond limit (10 fish), but 0.3 per cent took eight fish, and 0.7 per cent caught 7 fish, and 0.5 per cent caught five and six fish each. As previously stated, 72 per cent of the fishermen were unsuccessful. The percentages of anglers capturing one, two, three and four fish were fourteen, seven, three and two respectively (Table 2). Undoubtedly the pond rules, especially the eight-inch size limit and use of flies only, influenced the results of this tabulation to a certain degree.

Most of the anglers visiting the pond came from southeastern and eastern counties of Michigan. Saginaw County led with 105 fishermen, followed by Wayne (74), Genesee (59), and Bay (42) counties. Fifteen non-resident fishermen tried their skill at Guiley Pond - nine from Ohio, and three each from Indiana and Illinois. The large number of anglers of unknown residence resulted from Mr. Parker's method of alphabetically card-indexing the creel census blanks under the name of the fisherman the first time he fished the pond, and then not filling in his name and address on subsequent angling trips. Cards were misplaced, resulting in confusion with no way of identification. Although this method made it impossible to identify a number of fishing records, the value of the records is not impaired for important calculations. Each record will bear the fisherman's name in the future.

The total weight of fish taken from the pond was 295 pounds, 8 ounces, or 238.3 pounds per acre of water surface. The total weight of fish removed was divided as follows: rainbow trout 244 pounds, 6 ounces (197.1 pounds per acre), and brook trout 51 pounds, 2 ounces (41.2 pounds per acre). Since a relatively large number of rainbow trout were adult migrants which

were stopped from moving back to Lake Huron by the dam, the yield of rainbow trout should not be considered as having originated entirely in the pond. Mr. Parker reports a sizeable run of brook trout into the pond, which appears from downstream as the water temperature rises. A part of the crop of brook trout taken is probably produced in the pond, an equally unknown part from the stream above and below.

Although the catch per hour and the percentage of successful anglers was low, the size and weight of individual fish taken were above average, so that the angling might be considered at least of average quality. Much of the thrill of fishing here, according to Parker, lies in the fact that the anglers know they have a good chance to hook a big fish. Only about one of four big rainbow hooked was landed, according to his records. Despite the low percentage of successful anglers, the pounds of fish removed per hour^{of fishing} was 0.17, which was higher than the same figure for Hunt Creek for the 1939 season.

In order to ascertain the various anglers' reactions to the pond rules and to the general management plans, Parker circulated a questionnaire among the patrons of his establishment. Some 300 blanks were sent out, and to date 68 have been returned. Eight questions were asked, which appear on the next page.

(Copy)

Eddie Parker

Trout Specialist

Whittemore, Michigan

Guiley Pond

1. Do you approve of the present rules applying to fishing on Guiley Pond? _____ What suggestions can you make for improvement?

2. Would you prefer any other than present practices in management?

3. What method of rule enforcement would be best, in your estimation?

4. How many years have you fished for trout? _____

5. If you have fished this stream, and the Au Gres, in the past, have you noticed any effect, of the pond, on the balance of the stream system?

6. What do you think of the project, in general? _____

7. Would you like to see a similar development on the East Branch of the Au Gres, provided the public was allowed to fish at not more than 10¢ per hour, this fee to help defray construction and operating costs?

8. Would you like to see the present pond rules enforced, wherever possible, throughout the state? _____

Use Other Side For General
Remarks and Suggestions

NAME _____
ADDRESS _____

Those questions which could be answered by an expression of approval or disapproval have been tabulated in Table 4. Of the anglers expressing their opinions, the great majority approved of the rules under which Parker has conducted Guiley Pond, and would like to see them extended further throughout the state. The individual questionnaires are on file with the Institute for Fisheries Research.

Inasmuch as Mr. Parker has evidenced a sincere desire to cooperate with the Institute for Fisheries Research, it is suggested that he be given permission to transfer the upstream migrants over the dam, taking measurements and weights and tagging these fish on their release. He would also be required to keep a daily temperature record, and during the fishing season would continue to keep an intensive creel census record on the fishing in his pond. All these activities would be under the supervision of the Institute, and with partial assistance from members of the Institute staff (during the height of the runs and during the heaviest fishing).

Through Mr. Parker's efforts there would be an opportunity to obtain further data on the life history of the rainbow trout, such as the change in weight following spawning, relationship between water temperature and time of spawning run, and the numbers of adults seeking spawning grounds on Guiley Creek. We should also study this stream system carefully to better determine the effect of such management on the fishing and conditions (or temperature) for fish life below the dam. This idea of Mr. Parker's should be tested thoroughly to determine the advantages and disadvantages, and the possibilities of its application to other small trout streams in the state.

INSTITUTE FOR FISHERIES RESEARCH

David S. Shetter and A. S. Hazzard

Typed by: Alma Hartrick
Approved by: A. S. Hazzard

Table 1
Intensive Trout Creel Census
Guiley Pond - Summer, 1940

Two-week periods	No. of fishermen			Fishermen taking no. fish	Total no. of hours fished	Legal trout caught		Illegal fish caught		Brook Trout		Rainbow Trout		Catch per hour		Total catch per hour	Average no. of fish per fisherman-day	Average no. of hours per fisherman-day	Pounds of fish per hour of angling					
	Male	Female	Total			Brook	Rainbow	Brook	Rainbow	No.	Ave. length (in.)	No.	Ave. weight (oz.)	No.	Ave. length (in.)					No.	Ave. weight (oz.)	Brook trout	Rainbow trout	
																								No.
April 27-May 10	81	1	82	67	82	113.75	22	4	8	..	22	8.9	21	2.9	4	19.4	4	4.5	0.19	0.04	0.23	0.32	1.39	0.13
May 11-24	73	..	73	44	60	140.25	20	40	22	14	20	8.6	20	2.7	40	13.8	40	21.3	0.14	0.29	0.43	0.22	1.92	0.40
May 25-June 7	138	2	140	102	73	335.25	11	39	18	23	11	8.8	11	3.3	39	14.7	39	23.9	0.03	0.12	0.15	0.36	2.39	0.18
June 8-21	81	..	81	54	67	170.50	59	19	59	8	59	8.8	59	3.7	19	12.8	19	16.9	0.35	0.11	0.46	0.96	2.10	0.20
June 22-July 5	59	2	61	38	62	152.25	30	14	70	3	30	9.0	30	4.5	14	14.8	14	24.4	0.20	0.09	0.29	0.72	2.50	0.19
July 6-19	50	..	50	35	70	126.50	25	13	92	10	25	8.8	25	3.5	13	12.1	13	14.0	0.20	0.10	0.30	0.76	2.53	0.13
July 20-August 2	48	1	49	36	73	122.25	21	6	61	3	21	8.6	21	3.2	6	15.0	6	19.7	0.17	0.05	0.22	0.55	2.49	0.09
August 3-16	57	..	57	46	81	132.00	14	5	66	8	14	9.3	14	4.1	5	11.1	5	9.8	0.11	0.04	0.14	0.33	2.32	0.12
August 17-30	29	..	29	22	76	66.00	24	4	70	16	20	8.5	20	3.4	4	12.4	4	17.8	0.36	0.06	0.42	0.97	2.28	0.13
Aug. 31-Sept. 2	12	1	13	9	69	39.00	7	2	30	3	7	8.5	7	3.3	2	9.0	2	3.5	0.18	0.05	0.23	0.69	3.00	0.05
Unknown dates	31	..	31	29	94	54.75	2	4	1	1	2	9.1	2	3.0	4	11.0	4	10.0	0.04	0.07	0.11	0.19	1.77	0.05
Totals and averages	659	7	666	482	721	1,452.50	235	150	497	89	231	8.8	230	3.6	150	13.8	150	20.6	0.16	0.10	0.26	0.58	2.18	0.17

Table 2

Number and Percentage of Fishermen Taking
Various Numbers of Trout,
Guiley Pond, 1940

Date	0	1	2	3	4	5	6	7	8
April 27 - May 10	67	10	2	2	.	.	1	.	.
May 11 - 24	44	15	8	2	2	.	.	1	1
May 25 - June 7	102	28	8	2	.	.	.	.	.
June 8-21	54	6	9	2	6	2	.	2	.
June 22 - July 5	38	12	6	2	2	.	1	.	.
July 6 - 19	35	6	3	4	.	.	1	.	1
July 20 - August 2	36	5	5	1	1	1	.	.	.
August 3 - 16	46	6	3	1	1	.	.	.	.
August 17 - 30	22	1	1	1	2	.	.	2	.
August 31 - Sept. 2	9	1	2	.	1	.	.	.	.
Unknown dates	29	.	1	.	1	.	.	.	.
Total	482	90	48	17	16	3	3	5	2
Per cent of total	72	14	7	3	2	0.5	0.5	0.7	0.3

Table 3

Residence of Fishermen - Guiley Pond, 1940

<u>County</u>	<u>No. of anglers</u>	<u>State</u>	<u>No. of anglers</u>
Arenac	3	Illinois	3
Bay	42	Indiana	3
Calhoun	1	Ohio	9
Clinton	1		
Eaton	1		
Genesee	59	Total	<u>15</u>
Huron	1		
Ingham	5		
Iosco	19		
Isabella	1		
Jackson	3		
Kent	2		
Lapeer	2		
Macomb	1		
Menominee	3		
Midland	2		
Newaygo	1		
Oakland	22		
Ogemaw	2		
Saginaw	105		
St. Clair	3		
Tuscola	3		
Washtenaw	2		
Wayne	<u>74</u>		
Total	358		
Unknown	293		

Table 4

Tabulation of Eddie Parker's Questionnaire

Question	For	Against	?	No answer
Question 1	65	1	1	1
Question 2	2	56	2	8
Question 6	62	2	2	2
Question 7	54	4	1	9
Question 8	48	6	5	9

Average number of years fishing for trout (#4):	61 fishermen averaged 16 years. No answer, 7 blanks. (Varied from 1 to 55 years of fishing).
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