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Angling results on Kinne Creek, Wingleton Club, 1946 trout season

by

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The trout season just concluded was the ninth consecutive year of accurate records of the angling success of Wingleton Club members taken for the Institute on Kinne Creek in Lake County. The author extends his thanks to the club members for their continued cooperation in recording their catches. The results of the 1946 season are summarized and discussed in the following pages.

Angling Results (Table 1)

Because of various war-time difficulties, no hatchery brook trout were planted in Kinne Creek in 1944 or 1945. However, in 1946 rainbow trout were available from Castalia Farm (Wm. E. Levis, owner) at Castalia, Ohio, and 500 fish ranging from 10 to 15 inches were released on May 15, 1946.

Angling pressure on the stream was over twice as heavy in 1946 as in 1945. About 80 percent of the fishing was done during the months of June, July and August and about 82 percent of the total catch was made in those months.

Table 1.--1946 angling results on Kinne Creek. Average lengths are given in inches in parenthesis.

Month	Number of anglers	Number of hours fishing	Trout caught			Total trout	Catch per hour
			brook	brown	rainbow		
April	1	12.00	4 (9.0)	6 (9.8)	2 (9.0)	12 (9.4)	1.00
May	14	30.25	6 (8.4)	11 (10.2)	15 (11.8)	32 (10.6)	1.06
June	35	88.00	36 (8.4)	8 (10.5)	68 (12.1)	112 (10.8)	1.27
July	22	64.00	18 (8.5)	28 (9.5)	61 (12.1)	107 (10.8)	1.67
August	25	67.00	5 (8.6)	25 (9.9)	34 (12.3)	64 (11.1)	0.96
September	5	16.00	2 (8.8)	12 (8.9)	2 (13.0)	16 (9.4)	1.00
Totals	102	277.25	71 (8.5)	90 (9.7)	182 (12.1)	343 (10.7)	1.24

Brook trout fishing was best during June when 36 brook trout were caught. Twenty-three of these fish came from the portion of the stream above the railroad grade (Section C). For the entire season, 29 of the 71 brook trout came from Section C as the result of 13 hours fishing by 9 anglers. Brown trout were most numerous in the catches during July and August, when 28 and 25 respectively were taken. The most rainbow trout entered the June and July catches (68 and 61 respectively).

The total catch of the various species was as follows: brook trout, 71; brown trout, 90; rainbow trout, 182; or a total of 343 trout.

Angling quality was generally good, and varied from 0.96 fish per hour (August) to 1.67 fish per hour (July). In every other month the catch per hour was 1.00 fish or better, and the average for the season was 1.24 fish per hour, approximately 32 percent better than in 1945, when the catch per hour was only 0.94 fish.

Of the rainbow trout caught, judging by the size range, and the dates of capture, seven of the 182 rainbow trout taken were wild fish, since the hatchery rainbow trout were not planted until May 15 and were considerably larger than most wild rainbow trout in the stream. It appears, therefore, that 35 percent of the planted fish were removed during 1946 (175/500). The hatchery-reared rainbow trout in the catches comprised 51 percent of the total number of trout removed from the stream.

The length of the trout taken varied as follows: Brook trout, 8 to 11 inches; brown trout, 8 to 16 inches; and rainbow trout, 8 to 15-3/4 inches. The average length of the brook trout was greatest in April (9.0 inches), brown trout averaged longer during June than any other month (10.5 inches), and rainbow trout taken in September were larger than in any other month (13.0 inches). For the entire season, the average lengths of the three

species were as follows: Brook trout 8.5 inches; brown trout, 9.7 inches, rainbow trout 12.1 inches. The average size of all trout was largest in August (11.1 inches), and the average size of all trout removed during 1946 was 10.7 inches. The average size of the trout taken in 1946 compared favorably with previous seasons. Brook trout averaged the same as for the previous three seasons (8.5 inches); brown trout were only 0.1 inch less in average size than in 1945, and because of the large average size of the planted rainbow trout, their average size in the catches was the highest so far recorded for Kinne Creek.

Discussion and recommendations

As may be demonstrated from Table 2, the 1946 season provided the best fishing experienced during the past three years. Despite no plantings of either brook or brown trout since 1943, an increase in the catch of both species was noted over the 1945 catches. The differences noted in the catches of the past three years may be the result of natural fluctuations, but more probably reflect the variations in angling pressure. For the years for which the angling pressure is known, it will be seen that 1946 ranked second in quality (3.36 fish per angling day). It was topped only by 1941 (3.94 fish per angling day).

Previous experience has demonstrated that the catch of wild rainbow trout in Kinne Creek ranges from two or three to 13 rainbow trout per season. The remainder of the rainbow trout catch has consisted of planted fish. It appears from the catch records, however, that the club members do not fish the stream hard enough to justify the release of 500 to 700 adult trout, at least in one planting. Hatchery-reared trout remaining in the stream at the end of the fishing season are a detriment to the

Table 2.--Stocking record and catch record, Kinne Creek, Wingleton Club, Lake County, 1938-1946 inclusive.

Year	Angling days	Number of legal trout stocked			Number of legal trout caught			Total	Catch per angling day
		Brook	Brown	Rainbow	Brook	Brown	Rainbow		
1938	251	1,500	...	...	346	370	4	720	2.86
1939	...	...	994	2	92	279	3	374	...
1940	...	167	...	250	92	96	88	276	...
1941	100	302	201	203	162	145	82	394[1]	3.94
1942	...	50	200	250	143	229	144	516	...
1943	...	50	200	250	75	153	145	373	...
1944	89	...	...	...	62	120	7	189	2.12
1945	44	...	...	...	33	69	13	115	2.38
1946	102	...	...	500	71	90	182	343	3.36

[1] Species not given for 5 trout which were added to total catch.

general stream economy, since they eat food and occupy space that might otherwise accommodate wild fish, and experience at Kinne Creek and elsewhere has proven that not over 2.5 percent of the hatchery planting may be expected to enter the catch in succeeding seasons. Since the club anglers are not removing enough of the stocked fish, it would seem wise, both biologically and financially, to reduce the number released.

From the previous catch records it appears that good sport is provided if 500 to 700 fish in a combination of species is planted. This is suggested by the comparatively good total catches for the years 1941, 1942, and 1943, when all three species were stocked in comparatively small numbers.

Research on public trout streams has indicated that plantings of legal trout at the rate of 100 to 160 trout per mile of stream 50 feet wide have given higher returns to the angler than releases of larger numbers (Hazzard and Shetter, 1940). If Kinne Creek were planted at this level of stocking, it would receive about 150 legal trout, since the length of the stream below the railroad has been determined by map measurement to be 1.87 miles (area 5.4 acres, average width 23.6 feet). Our recommendations always have been for two or more times as many legal trout for release with the expectation that the club members would remove a majority of such plantings each year. The data available on the angling pressure suggests strongly that not enough fishing has been prosecuted on the Kinne Creek trout population which is augmented each year (except for the war years) by more than liberal plantings of legal trout. For the years for which records are available, angling pressure

on Kinne Creek has varied from 8 angling days per acre (1945) to 46 angling days per acre (1938). For comparison, Hunt Creek in the experimental waters has had angling pressures ranging from 72 angling days per acre to 236 angling days per acre.

In view of the comparatively light fishing pressure and the danger of adversely affecting the food supply and the survival of wild trout present, to which Kinne Creek is subjected, it is recommended that only 400 rainbow trout be planted in 1947. If possible, two plantings of 200 fish, one about April 15 to make some early season fishing, and another about June 20 to stimulate the angling in July and August. Because of the difficulties in obtaining disease-free brook trout or brown trout, these species are not recommended for introduction at present. Both plantings should be distributed evenly throughout the stream below the railroad grade.

Also it is recommended that the club's creel and size limits be adjusted to conform with those now in effect on other Michigan trout streams. According to correspondence between Dr. Hazzard and C. F. Idema (9/5/46), the creel and possession limit on rainbow trout was 5, on brook trout and brown trout, 15, and all species were subject to an 8-inch size limit. The available angling data indicate that the stream is lightly fished in comparison to most other trout streams on which similar information is recorded. Why, therefore, limit the club anglers to only a portion of the trout which would normally be legal game elsewhere? It is obvious that the carry over of planted trout from one season to the next is insignificant, and if the planted trout are to provide

sport they must be removed during the season of planting. The reduction of the size limit from 8 to 7 inches would increase the total catch of any season, and very likely without reducing the catches in later years.

A population study by Shetter and Leonard at Hunt Creek suggests continuous and heavy mortality throughout the life span of a trout population. In other words, one hundred 7-inch trout in the stream this fall will not be one hundred 8-inch trout next spring and summer. Is it not better that they end their lives on a fly as 7 inches than as unseen victims of various natural catastrophes at some point between the seasons.

Literature cited

Shetter, David S., and Albert S. Hazzard

1941. Results from plantings of marked trout in streams and lakes of Michigan. Trans. Am. Fish. Soc., Vol. 70, 1940, pp. 446-468.

Shetter, David S., and Justin W. Leonard

1943. A population study of a limited area in a Michigan trout stream, September, 1940. Trans. Am. Fish. Soc., Vol. 72, 1942, pp. 35-51.

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