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INTENSIVE CREEL CENSUS RESULTS ON THE HUNT CREEK FISHERIES EXPERIMENTAL AREA, 1945 TROUT SEASON

by

David S. Shetter

Introduction

The 1945 trout season was the seventh consecutive season of operation of the intensive creel census on the experimental waters in the vicinity of the station. These waters included the five experimental sections of Hunt Creek (A, B, C, D, and E), Fuller Creek and East Fish Lake Outlet, East Fish Lake, and the newly-purchased portion of Hunt Creek immediately downstream from the experimental waters known as "Below A." A report has been submitted already which discussed the angling results on East Fish Lake for 1944 and 1945 (Institute for Fisheries Research Report No. 1040). This present report will present the angling results on the stream areas mentioned above, and discuss the relationship of these results to various researches in progress on the area.

Methods

The creel census clerks attempted to contact every angler fishing in the experimental waters. This was accomplished by stationing them at the four points of access, or by visiting these points approximately every two hours between 8:00 A.M. and 10:00 P.M. each day during the trout season.

Insofar as could be determined, only three anglers using the experimental waters during 1945 were not contacted.

Upon interviewing a fisherman, the following information was entered on the Intensive Trout Stream Creel Census Blank: name, residence, date, section of stream fished, sex, measurements of trout kept, number of sub-legal trout returned, type of fishing and lures used, amount of time fished, and any information pertinent to tagged or fin-clipped fish in the catch. The data has been summarized for the various stream sections by two-week periods, or for the entire season, and will be found among the tables at the end of the report.

The entire staff of the Hunt Creek Fisheries Experiment Station assisted in gathering creel census records. This included Pat Galvin, O. M. Corbett, Henry Vondett, Ole M. Pynnonen, and the writer.

Angling Results (Tables 1, 2, 3, 4, 5, and 6)

On the experimental Sections A, B, C, D, and E, anglers spent 375 angling days, an increase of 10.3 per cent over the 340 days noted in 1944. This amount of time was spent by 188 different anglers (171 males, 17 females), and the total number of hours spent in fishing was 637.00. Although there were more fishermen in 1945, their average fishing day was shorter (1.7 hours), and the total time spent in angling 3 hours less than in 1944. For two hundred and twenty-one (221) fisherman days, or 59 per cent of the total recorded, no legal brook trout were caught.

During the 1945 season, anglers caught 315 legal brook trout, of which 312 were kept. These fish weighed 51.74 pounds. This gives a quality index for 1945 of 0.49 fish per hour, or 0.081 pounds of legal fish per hour.[1]

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[1] Three anglers who fished in Section D during the period August 4-17 were not contacted. If they were given the average fishing time for the nine anglers from Section D for that period, it can be estimated that they fished about 3 hours and caught 1 legal brook trout. The totals for the experimental sections for the 1945 season then would be: total angling days 378, total angling hours 640.00, total legal catch 316, catch per hour 0.49, total pounds of legal fish, 52.0+ pounds, pounds per hour 0.081.

In addition to these fish, a total of 25 sublegal brook trout, ranging in size from 6.3 inches to 6.9 inches which weighed 2.63 pounds were removed by the anglers, with the general excuse that "they were hooked in the throat (gills, eye) and would only die anyway." The addition of these fish to the legal catch brings the total weight removed to 54.37 pounds for Sections A, B, C, D, and E.

The best fishing, as measured by the catch per hour or the pounds per hour, was experienced in Section E, the uppermost of the experimental sections which flows through the "Bushman" cedar swamp. Twelve anglers, only three of whom were unsuccessful, fished 23.00 hours and caught 16 legal brook trout, and returned 154 small trout, for a catch per hour of 0.70 legal trout, and a pounds per hour removal of 0.100. This was almost three times better than experienced in this same section in 1944.

Section D had the next best angling; a total of 121 anglers fishing 185.50 hours caught 101 brook trout weighing 16.40 pounds for a catch per hour of 0.54 legal trout and a pounds per hour removal of 0.088. Eight hundred sublegal trout were reported returned. This quality index was considerably above the 0.35 fish per hour noted in 1944 for approximately the same amount of fishing.

Section A dropped from its usual place at the head of the list during 1945. Both pressure and angling quality decreased. Sixty-seven anglers fished 124.50 hours and caught 60 legal brook trout weighing 8.83 pounds, a catch per hour of 0.48 legal brook trout, and a pounds per hour removal of 0.071 pounds. In former years this section of stream has averaged about 140 legal fish per season.

Pressure and catch in Section B was lower in 1945 than in 1944. Only 52 anglers (as compared with 68 in 1944) visited this section, and spent 77.75 hours there. The legal catch of 36 brook trout weighing 7.09

pounds gave a catch per hour of 0.46 legal trout and 0.091 pounds per hour.

Section C, which was the most heavily fished, with 123 anglers spending 226.25 hours in it, yielded 102 legal brook trout weighing 17.10 pounds, for a catch per hour of 0.45 legal trout and a pounds per hour removal of 0.076 pounds. Compared with the 1944 data for this section, this represents a definite improvement in angling quality despite a much higher angling pressure.

Considering the experimental sections as a whole, angling quality was below the season's average during the first four weeks. From May 26-June 22, the next four weeks, the best fishing of the season was experienced. For the remainder of the season, the angling quality was of only average or below-average proportions. The individual sections varied considerably from the over-all trends, depending on the angling pressure and the part of the season under consideration for the various sections.

In 1944, and to a considerable degree in previous years, Sections A and B were providing better fishing than the stream sections above them. This trend was reversed in 1945, when Sections D and E led in quality. Although Section C was last in quality, along with Sections D and E it helped boost the total production far more than either Sections A or B. The reasons for this change are obscure at the present moment, but it is hoped that the current population studies eventually will provide an answer.

Yield to the Angler, Pounds and Numbers of Legal Brook Trout Removed by Angling (Table 7)

The yield to the anglers for the various sections will be found in Table 7, where the dimensions and areas of the sections are listed, together with the yield in pounds and number of legal brook trout per acre are given for 1945. For comparative purposes, the average yields per acre are given for the 1939-1945 period for each section.

In the various experimental sections, the per acre yield varied from 6.14 pounds and 42 legal brook trout in Section A to 24.10 pounds and 144 legal brook trout in Section C. For the entire experimental area (Sections A, B, C, D, and E) the average yield per acre in 1945 was 11.95 pounds and 73 legal brook trout.

Comparison of the 1945 yields with the average yields for the period 1939-1945 demonstrates that in four of the five sections the 1945 season was below the average for the seven seasons. Sections A and E showed the greatest decreases in per acre yields. They were between 50 and 60 per cent below the average; Sections B and D were from 8 to 30 per cent less than average; while Section C was the only one of the experimental sections to produce an above-average yield during 1945, and this piece of water was from 6 to 9 per cent above the 7-year average.

Average Size of Brook Trout Taken in the Experimental Sections by Angling in 1945 (Table 8)

In Table 8 will be found the average lengths given in inches and average weights given in ounces for all the experimental sections for each year since the inception of the creel census. Yearly averages for the entire area, 7-year averages for each experimental section, and the 7-year average for all sections also will be found. The number of specimens on which the averages are based are given in parentheses below each figure.

Based on data from approximately 3,000 specimens from seven successive seasons, the average brook trout from the experimental sections was 7.6 inches long and weighed 2.5 ounces. Reference to the table will show that in any year and in any section there has been little variation from the average figures. The anglers' catch has averaged as low as 7.4 inches and as high as 8.0+ inches in length, and from 2.2 ounces to 3.0 ounces in weight.

Sections B and C produced the brook trout of the greatest average length over the 7-year period, 7.8 inches. However, the Section B brook trout were of an average weight of 2.8 ounces, compared with 2.6 ounces for the brook trout from Section C. Section E brook trout, which were of an average size of 7.7 inches and 2.6 ounces were next in order, followed by those from Section D (7.6 inches, 2.5 ounces), and Section A (7.5 inches, 2.4 ounces).

Comparison of the yearly averages for all sections with the 7-year grand average demonstrates that in the years 1939 and 1943 the average length was below the 7-year norm, while in all other years it was the same or greater. The average weight for any season was less than the 7-year average only in the 1939 and 1940 seasons.

In 1945, the average size of the brook trout taken was the best for any year yet observed. The average size of 7.9 inches and 2.7 ounces was better by 0.2 inch and 0.1 ounce than the best previous season. All experimental sections produced brook trout for the anglers which were larger than those in previous seasons. The best fish of the 1945 season were taken during the period July 7-20, when 20 brook trout were of an average size of 8.5 inches and 4.0 ounces.

Number of Marked Brook Trout from Experimental Plantings Entering the Catch of Legal Brook Trout During the 1945 Trout Season

Previous reports have described the details and progress of the fingerling marking experiments which were initiated in 1939 and 1940 (see Reports 644, 801, 889, 943, 1021). During the 1945 trout season, no marked fish from the fingerling planting experiments appeared in the anglers' catches of the experimental sections. Marked fish were recovered in each of the seasons 1940 to 1944 inclusive. Since it is unlikely that any fish from these two markings will appear in future catches, the

percentage of recovery on these brook trout fingerlings marked and released in the early fall may be set as follows:

1939, wild fingerlings, left pectoral clipped, 1,000 marked--2.6 per cent recovery;
1939, hatchery fingerlings, right pectoral clipped, 1,000 released--0.5 per cent recovery;
1940, wild fingerlings, left pelvic clipped, 500 marked--4.8 per cent recovery;
1940, hatchery fingerlings, right pelvic clipped, 464 released--1.3 per cent recovery.

During 1945, one right pectoral clipped brook trout 6.8 inches long was noted in the catch of Below A. If it was one of the survivors of the hatchery fingerlings of 1939 it had grown extremely slowly, as it would then have been in its 7th summer. It appears likely that this fish had suffered a natural injury to its right pectoral fin.

Yield of Specially Designated Water Areas (Table 9)

The catch of two designated pools in Section A were recorded. These two pools, numbered 1 and 2, made up 2.6 and 2.8 per cent of the area of Section A.

Pool 1, the lowermost of the two, is located in an open piece of grassy marshland, has a bottom consisting chiefly of sand, and is nearly devoid of bank or underwater cover, except that provided by a slightly undercut bank. Pool 2 is near the upper end of Section A and has a gravel and sand bottom with considerable shade on its undercut banks, and considerable underwater cover. The greatest depth in either pool is approximately 3 1/2 feet.

In Table 9, the combined 1940-1945 data concerning these pools were listed for comparison with the 1945 figures. From 1940 to 1945, approximately 14.6 per cent of the numerical catch and 16.0 per cent of the poundage of Section A was removed from these two pools, despite the fact that they make up only 5.4 per cent of the total area of Section A.

For Pool 1, the percentage of the numerical catch removed was 9.03 over the 6-year period; in 1945, Pool 1 provided 8.33 per cent of the numerical catch. For Pool 2, the 6-year percentage was 5.62; in 1945, this pool provided 13.33 per cent of the numerical catch of Section A.

Study of the percentage of the total poundage taken by anglers from these two pools indicates that over the 6-year period Pool 1 has provided 9.52 per cent and Pool 2 has yielded 6.52 per cent of the total poundage of Section A. In 1945, they yielded 6.34 and 19.02 per cent respectively. Review of data from previous years shows that Pool 1 was above the average in 1941 and 1942, while Pool 2 was above average in 1941 and 1945.

The average size of the fish from Pool 1 was 7.3 inches and 1.8 ounces, while those from Pool 2 were of an average size of 8.1 inches and 2.9 ounces. The 1945 averages for Section A as a whole were 7.7 inches and 2.4 ounces. The data appear to indicate that stream areas such as these pools are likely to produce fish considerably out of proportion to the percentage of the total stream area made up by them.

Contribution of Tributary Streams to the Catch of the Main Stream (Table 10)

One of the questions which often is debated by fisheries administrators and anglers alike is the role of tributary streams. Some contend the small feeders should be closed, on the theory that small brook trout resident in them are protected and move into the larger streams after reaching a catchable size. Others take the opposite view, maintaining that no benefit is obtained, and that the law enforcement problem is too complex.

In order to obtain information on this general question fish traps have been operated on four tributaries to the main stream of Hunt Creek during the past six years. Since 1941, all fish longer than 4 inches

passing through the traps, have been jaw-tagged, and since early in 1944, all fish less than 4 inches long have been marked by clipping a distinctive fin or fin combination. Daily records of the weir catches are kept indicating the numbers of fish moving and their direction of movement. Thus we have an accurate record of the numbers of brook trout moving out of the tributaries and entering the main stream. These data are summarized in Table 10 which shows the numbers of brook trout (exclusive of fingerlings less than 4 inches long) which moved downstream in 1942, 1943, 1944, and 1945 from Tributaries 2, 3, and 4.[2] Also listed are the numbers of tagged fish from the various tributaries which entered the anglers' catches on the main stream, both for the experimental sections and Below A. The percentage of the total catch made up of migrants from the tributaries both in A and Below is given, and also the percentage of recovery in the combined catches.

Between October 1, 1941 and September 30, 1942, a total of 3,355 brook trout were passed downstream in Tributaries 2, 3, and 4. These fish were for the most part between 4 - 6 1/2 inches long. All were jaw-tagged for future recognition. In the 1942, 1943, 1944, and 1945 trout seasons, anglers in the experimental sections and Below A caught a total of 41 tagged fish from these marked downstream migrants--a percentage of recovery of 1.22 per cent.

Thirty of these recoveries were made in the experimental sections, or 1.8 per cent of the anglers' catch, and 11 were recovered by angling Below A, or 1.0 per cent of the total catch for that area.

In no year have migrants from the tributaries constituted over 3.0 per cent of the total catch of the experimental sections, having varied between 0.7 per cent and 3.0 per cent. Below A the percentage of the observed catch consisting of tributary migrants has ranged between 0.0 and 2.5.

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[2] Data from Tributary 5 is not given as comparatively few brook trout moved into or out of this stream, and no fish from Tributary 5 were ever noted to enter the main stream catches.

The data above indicate strongly that the tributary streams contribute only a very minor percentage of the anglers' catch in the main stream. If this is true, the tributary streams should be open to angling as they are at present. Closure of these tributary streams would only force a part of the angling public, which enjoys "brush stream" boat fishing, into other already overcrowded waters further downstream. A more detailed report on the results of the weir operations will be submitted at an early date.

The individual data on the five tagged brook trout recovered during the 1945 season by anglers is listed in Table 11. Two of the recoveries were originally tagged in 1942, two were tagged in 1943, and one in 1945. Their size at tagging ranged between 94 mm. and 186 mm., their size at recovery varied between 186 and 196 mm. Gains in length were from 10 to 100 mm., periods of freedom ranged between 106 and 1,095 days, and the average gain in length per day varied between 0.07 and 0.10 mm. per day of freedom.

Four of the five were recovered from 1/8 to 1/2 mile downstream in the main stream from the point of tagging. One migrant from Tributary 4 had moved approximately 1/2 mile upstream into Section C.

Contribution of the April Sublegal Population to the 1945 Catch

Through the use of the electric shocker, population studies were made at three intervals during 1945 in experimental sections A, B, C, and D; preceding the season during the first week of April, in mid-July, and immediately following the close of the season on Labor Day. The investigations on the population will not be discussed in detail here but will be the subject of a future report. However, from the data available from this study, it is possible to calculate the number of sublegal brook trout entering the anglers' 1945 catch of legal trout.

From the population study data, the number of sublegal fish between 4 and 6 7/8 inches in the entire area on April 12 could be calculated (based on known numbers of fish taken from known areas). This amounted to 2,251 sublegal trout. Of this total, 278 were jaw-tagged.

In the course of the 1945 creel census of the experimental sections, 11 tagged brook trout were captured as legal (7 inches or larger) fish which had been less than 7 inches when marked in April. On the basis of the known recoveries from the creel census, it may be estimated that 89 brook trout (or 3.95 per cent of the April sublegal population) which were between 4 and 6 7/8 inches in April became legal during the course of the season, ($11/278 = x/2,251$, $x = 89$) and entered the catch of legal trout.

Since the anglers' catch for Sections A, B, C, and D amounted to 299 legal fish, the 89 April sublegals which grew to legal size contributed 29.8 per cent of the season's catch.

Creel Census Results Below A, 1945 (Table 12)

Records of the majority of the angling were obtained again from this 3/4 mile stretch of stream. Because an unknown number of anglers park at Brailey's cottage, the entire angling over this water cannot be checked completely. However, it is felt that approximately the same proportion is obtained each year, and for comparative purposes, the data collected provide an accurate measure of the angling quality of this water.

In 1945, a total of 175 angling days were recorded Below A, expended by 150 different individuals. These fishermen spent 423 hours on the stream and caught 182 legal fish of which six were released. The catch per hour amounted to 0.43 legal brook trout per hour. The total weight of legal trout removed was 30.48 pounds, or 0.072 pounds of trout per hour of angling. Sublegal trout reported returned to the water amounted

to 1,649 or 3.90 short fish per hour of angling. In addition to the catch of legal trout, anglers kept 23 sublegal trout of a combined weight of 2.26 pounds, making the total weight of fish removed 32.74 pounds.

Angling quality in this area fluctuated very noticeably; every other two-week period was above the season's average. The heaviest pressure was in the period July 7-20, when 35 anglers spent 115.75 hours on the stream and caught 82 legal brook trout for a catch per hour of 0.71 fish and 0.131 pounds of fish per hour--the best fishing Below A for the season.

Of the 175 angling days spent here, 103 showed no legal fish, or 58.9 per cent.

The average size of the anglers' legal catch for the 1945 season was 7.8 inches and 2.6 ounces, slightly better than the 1944 average of 7.6 inches and 2.5 ounces. The best fish were captured during the period July 21-August 3, when 9 fish averaged 8.2 inches in length and 3.5 ounces in weight.

Angling Results on Fuller Creek (including East Fish Lake Outlet and Fuller Creek Beaver Dam) (Table 13)

The waters listed above comprise the main tributary to the experimental waters of Hunt Creek flowing almost entirely through a dense cedar swamp. The majority of the fishing listed was done in Fuller Creek proper downstream from the East Fish Lake Outlet.

During 1945, a record of 102 angling days (spent by 65 different people) was obtained. These fishermen, of whom 63, or 61.8 per cent were unsuccessful in capturing any legal trout, expended a total of 159.25 hours in catching 64 legal brook trout weighing 9.09 pounds. The catch per hour amounted to 0.40 legal fish, and the pounds per hour removed was 0.057 pounds.

Sublegal brook trout were returned at the rate of 4.48 per hour; a total of 714 were returned. Only two sublegal fish were kept by the Fuller Creek anglers adding 0.18 pound to the total weight of fish removed.

The average size of the 1945 catch on these combined Fuller Creek waters was 7.5 inches and 2.2 ounces.

The heaviest fishing pressure came during the opening two-week period, when 22 anglers fished 33.50 hours and took 21 legal brook trout for a catch per hour of 0.63 fish. The best fishing occurred during the period June 9-22, when three anglers fished 4.50 hours and took 7 legal fish for a catch per hour of 1.56 fish. These two periods were the peaks of the season.

Number and Percentage of Anglers Taking Various Numbers of Trout from the Experimental Sections of Hunt Creek, 1945 (Table 14)

Some 58.9 per cent of the total angling days were unsuccessful. The remaining 41.1 per cent yielded from one to 12 brook trout. Catches of 7, 9, 10, and 12 brook trout were made by one angler each, or approximately one per cent of the total. Catches of one to six trout were made by 21.9 per cent, 9.6 per cent, 4.5 per cent, 1.9 per cent, and 1.1, and 1.1 per cent of the anglers respectively.

Section E had the lowest percentage of unsuccessful anglers (33.3) followed by Section B (55.8).

Residence of Anglers (Table 15)

A total of 355 anglers from 25 Michigan counties in the lower peninsula, and 12 fishermen from 4 states other than Michigan fished on the experimental waters of Hunt Creek in 1945. Residence of eight fishermen was not learned. Montmorency County fishermen again were most numerous (89), followed closely by Wayne County Waltons (83). Those giving Oakland County as their home

were third (34). Outstate fishermen were led by Ohioans (5). Indiana and Pennsylvania with three each and Illinois with one followed in that order.

The three leading counties also were found to be represented in the same order among anglers fishing Below A and in Fuller Creek. No outstate fishermen were attracted to Fuller Creek.

INSTITUTE FOR FISHERIES RESEARCH

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Table 1

INTENSIVE CREEL CENSUS DATA FOR SECTION A,

HUNT CREEK, 1945 TROUT SEASON

Two week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours of angling	Legal brook trout		Sublegal brook trout		Total weight of legal fish (grams)	Pounds of legal fish per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	6	3	50.0	10.25	8✓1	0.78	47	4.59	405	0.087
May 12-May 25	6	3	50.0	10.50	8	0.76	92	8.76	478(2)	0.100
May 26-June 8	7	2	28.6	15.75	13	0.83	115	7.30	795	0.111
June 9-June 22	6	2	33.3	11.50	5	0.44	49	4.36	345	0.066
June 23-July 6	5	5	100.0	7.25	0	0.00	29	4.00	...	...
July 7-July 20	8	8	100.0	9.25	0	0.00	25	2.70	...	...
July 21-Aug. 3	11	4	36.4	36.75	16	0.44	160	4.35	1,232(3)	0.074
Aug. 4-Aug. 17	5	2	40.0	5.75	5	0.87	47	8.17	281	0.108
Aug. 18-Sept. 3	13	10	76.9	17.50	5	0.29	38	2.17	474	0.059
Totals	67	39	57.2	124.50	60✓1	0.48	602	4.84	4,010(5) (8.83 lbs.)	0.071

✓ Number in caret indicates number of legal trout returned to stream.

○ Number in circle indicates number of fish for which weights are curve weights.

Table 2

INTENSIVE CREEL CENSUS DATA FOR SECTION B,

HUNT CREEK, 1945 TROUT SEASON

Two week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours of angling	Legal brook trout		Sublegal brook trout		Total weight of legal fish (grams)	Pounds of legal fish per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	12	7	58.3	29.25	7	0.23	262	8.96	451 ④	0.034
May 12-May 25	6	5	83.3	5.00	1	0.20	39	7.80	70	0.030
May 26-June 8	3	2	66.7	3.25	2	0.62	10	3.08	125	0.080
June 9-June 22	3	0	00.0	2.50	5	2.00	26	5.20	526 ①	0.464
June 23-July 6	4	2	50.0	8.00	6	0.64	79	9.88	472 ④	0.130
July 7-July 20	2	1	50.0	5.50	1	0.18	38	6.91	145	0.058
July 21-Aug. 3	2	0	00.0	2.00	2	1.00	12	6.00	116	0.130
Aug. 4-Aug. 17	4	4	100.0	3.25	0	0.00	21	6.46	...	...
Aug. 18-Sept. 3	16	8	50.0	19.00	12	0.63	58	3.05	1,310 ⑤	0.152
Totals	52	29	53.8	77.75	36	0.46	545	7.01	3,215 (7.09 lbs.)	0.091

○ Number in circle indicates number of fish for which weights were taken from 1944 curve charts due to fish being weighed dressed.

Table 3

INTENSIVE CREEL CENSUS DATA FOR SECTION C,

HUNT CREEK, 1945 TROUT SEASON

Two week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours of angling	Legal brook trout		Sublegal brook trout		Total weight of legal fish (grams)	Pounds of legal fish per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	26	19	73.1	46.00	23	0.50	435	9.46	1,561	0.075
May 12-May 25	13	12	85.7	14.75	4	0.27	62	4.20	267	0.040
May 26-June 8	3	1	33.3	5.50	3	0.55	25	4.55	288	0.115
June 9-June 22	8	1	12.5	19.75	15	0.76	88	4.46	1,009	0.112
June 23-July 6	20	10	50.0	44.75	18✓1	0.40	199	4.45	1,146	0.057
July 7-July 20	13	7	53.9	21.25	15	0.71	123	5.79	1,504	0.156
July 21-Aug. 3	7	6	85.7	12.00	2	0.17	31	2.58	184	0.034
Aug. 4-Aug. 17	8	3	37.5	21.25	10	0.47	116	5.46	845	0.087
Aug. 18-Sept. 3	25	17	68.0	41.00	12	0.29	106	2.59	956	0.087
Totals	123	76	61.8	226.25	102✓1	0.45	1,185	5.24	7,760 (17.10 lbs.)	0.076

✓ Number in caret indicates number of legal trout returned to stream.

Number in circle indicates number of fish for which weights are curve weights.

Table 4

INTENSIVE CREEL CENSUS DATA FOR SECTION D,

HUNT CREEK, 1945 TROUT SEASON

Two week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours of angling	Legal brook trout		Sublegal brook trout		Total weight of legal fish (grams)	Pounds of legal fish per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	29	20	68.9	43.25	19	0.44	218	5.04	1,344	0.068
May 12-May 25	11	5	45.5	14.00	8 ✓1	0.57	70	5.00	444	0.070
May 26-June 8	9	2	22.2	17.50	14	0.80	100	5.71	1,092 ⑤	0.138
June 9-June 22	12	8	66.7	12.00	7	0.58	61	5.08	457	0.084
June 23-July 6	13	8	61.5	27.00	17	0.63	100	3.70	1,093	0.089
July 7-July 20	14	11	78.6	21.00	4	0.19	77	3.67	365	0.038
July 21-Aug. 3	4	2	50.0	5.50	5	0.91	15	2.73	510 ③	0.204
Aug. 4-Aug. 17	9	5	55.6	10.50	4	0.38	67	6.38	249	0.052
Aug. 18-Sept. 3	20	12	60.0	34.75	23	0.66	92	2.65	1,886	0.120
Totals	121	73	59.5	185.50	101 ✓1	0.54	800	4.31	7,440 (16.40 lbs.)	0.088

✓ Number in caret indicates number of legal trout returned.

○ Number in circle indicates number of fish for which weights are curve weights.

Table 5

INTENSIVE CREEL CENSUS DATA FOR SECTION E,

HUNT CREEK, 1945 TROUT SEASON

Two week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours of angling	Legal brook trout		Sublegal brook trout		Total weight of legal fish (grams)	Pounds of legal fish per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	1	0	00.0	1.00	2	2.00	4	4.00	111	0.240
May 12-May 25	1	0	00.0	2.00	1	0.50	20	10.00	97	0.105
May 26-June 8	3	0	00.0	9.00	9	1.00	52	5.77	599	0.147
June 9-June 22		No fishing								
June 23-July 6		No fishing								
July 7-July 20	3	3	100.0	4.50	0	0.00	24	5.33	...	...
July 21-Aug. 3		No fishing								
Aug. 4-Aug. 17	3	0	00.0	6.00	4	0.67	50	8.33	235	0.087
Aug. 18-Sept. 3	1	1	00.0	0.50	0	0.00	4	8.00	...	...
Totals	12	4	33.3	23.00	16	0.70	154	6.70	1,042 (2.29 lbs.)	0.100

Table 6

INTENSIVE CREEL CENSUS DATA, ALL EXPERIMENTAL

SECTIONS COMBINED (A, B, C, D, E), 1945 TROUT SEASON

Two week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours of angling	Legal brook trout		Sublegal brook trout		Total weight of legal fish (pounds)	Pounds of legal fish per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	74	49	66	129.75	59 $^{\vee 1}$	0.45	966	7.44	8.54 ④	0.066
May 12-May 25	37	25	68	46.25	22 $^{\vee 1}$	0.48	283	6.12	2.99 ②	0.065
May 26-June 8	25	7	28	51.00	41	0.80	302	5.92	6.39	0.125
June 9-June 22	29	11	38	45.75	32	0.70	224	4.90	5.15 ①	0.113
June 23-July 6	42	25	60	87.00	41 $^{\vee 1}$	0.47	407	4.68	5.98 ⑭	0.078
July 7-July 20	40	30	75	61.50	20	0.33	287	4.67	4.44	0.072
July 21-Aug. 3	24	12	50	56.25	25	0.44	218	3.88	4.50 ③	0.080
Aug. 4-Aug. 17	29	14	48	46.75	23	0.49	301	6.44	3.55	0.076
Aug. 18-Sept. 3	75	48	64	112.75	52	0.46	298	2.64	10.20 ⑤	0.090
Totals, averages	375	221	59	637.00	315 $^{\vee 3}$	0.49	3,286	5.16	51.74 ⑲	0.081

$\vee$ Number in caret indicates number of legal trout caught and returned to stream.

○ Number in circle indicates number of dressed fish whose weights were obtained from a length-weight curve.

Table 7

COMPARISON OF 1945 YIELD OF EXPERIMENTAL SECTIONS, HUNT CREEK, WITH 1939-1945 AVERAGE YIELDS. (Actual pounds and numbers of legal brook trout taken are given in parentheses)

Stream section	Dimensions: Length (feet)	Dimensions: Av. width (feet)	Area (acres)	Yield per acre, 1945 in: Pounds	Yield per acre, 1945 in: Numbers	Average yield per acre, 1939-1945 in: Pounds	Average yield per acre, 1939-1945 in: Numbers
A	2,577	24.3	1.44	6.14 (8.84)	42 (60)	12.80 (129.00)	90 (907)
B	1,605	17.5	0.64	11.08 (7.09)	56 (36)	12.05 (53.98)	74 (333)
C	3,970	11.8	1.07 or 0.71	24.10 (17.11)	144 (102)	22.01 (125.25)	136 (776)
D	2,386	21.5	1.18	13.90 (16.41)	86 (101)	18.41 (152.07)	121 (1,002)
E	1,250	11.8	0.36	6.36 (2.29)	44 (16)	14.59 (31.51)	92 (198)
Totals, Averages	11,788	17.4	4.33 or 4.69	11.95 (51.74)	73 (315)	16.04 (491.81)	105 (3,216)

Table 8

AVERAGE LENGTHS (INCHES) AND AVERAGE WEIGHTS (OUNCES) OF BROOK TROUT FROM EXPERIMENTAL SECTIONS OF HUNT CREEK TAKEN BY ANGLING, 1939-1945 SEASONS

Stream section	Average length (inches) and average weight (ounces) for season							Averages 1939-1945
	1939	1940	1941	1942	1943	1944	1945	
A	7.6 - 2.5 (121)	7.4 - 2.2 (151)	7.5 - 2.3 (126) (116)	7.6 - 2.5 (130) (128)	7.4 - 2.4 (132)	7.6 - 2.4 (136)	7.7 - 2.4 (59)	7.5 - 2.4 (855) (843)
B	7.4 - 2.5 (7)	8.0 - 2.9 (41)	7.7 - 2.7 (30) (25)	7.8 - 2.9 (62)	7.6 - 2.7 (52)	7.6 - 2.6 (70)	8.0 - 3.0 (36)	7.8 - 2.8 (298) (293)
C	7.6 - 2.4 (106)	7.8 - 2.6 (111) (105)	7.9 - 2.8 (180) (172)	7.7 - 2.5 (117) (109)	7.6 - 2.5 (74) (72)	7.9 - 2.7 (62)	8.0 - 2.8 (101)	7.8 - 2.6 (751) (727)
D	7.6 - 2.3 (204)	7.6 - 2.4 (90) (89)	7.7 - 2.6 (252) (247)	7.4 - 2.3 (194) (191)	7.7 - 2.8 (79)	7.9 - 2.6 (62)	7.8 - 2.6 (100)	7.6 - 2.5 (981) (972)
E	...	...[1]	7.7 - 2.6 (132) (109)	7.8 - 2.6 (24) (23)	...[1]	7.6 - 2.6 (5)	7.8 - 2.5 (16)	7.7 - 2.6 (177) (153)
Totals, averages	7.5 - 2.4 (438)	7.6 - 2.4 (393) (386)	7.7 - 2.6 (720) (669)	7.6 - 2.5 (527) (513)	7.5 - 2.6 (337) (335)	7.7 - 2.5 (335)	7.9 - 2.7 (312)	7.6 - 2.5 (3,062) (2,988)

[1] A small number of legal fish taken in Section E combined with the Section D catches in these years.

Table 9

PERCENTAGE OF THE TOTAL CATCH OF SECTION A MADE IN POOLS 1 AND 2, 1940-1945, AND 1945 (Actual numbers and pounds are given in parentheses)

Pool number	Per cent of total area of Section A in pool	Per cent of total catch from pool, 1940-1945		Per cent of total catch from pool, 1945	
		Number	Pounds	Number	Pounds
1	2.6	9.03 (69/764)	9.52 (10.38/108.97)	8.33 (5/60)	6.34 (0.56/8.83)
2	2.8	5.62 (43/764)	6.52 (7.10/108.97)	13.33 (8/60)	19.02 (1.68/8.83)

Table 10

NUMBERS OF BROOK TROUT (EXCLUSIVE OF FISH LESS THAN 4 INCHES LONG) MOVING FROM TRIBUTARIES INTO HUNT CREEK, AND NUMBERS TAKEN BY ANGLERS IN 1942, 1943, 1944, AND 1945

Year [1]	Moving down from tributary to Hunt Creek			Tagged brook trout caught in Hunt Creek coming from						Anglers' catch in year		Per cent of total catch coming from tributaries		Per cent of recovery by angling in experimental Sections and Below A
	No. 2	No. 3	No. 4	No. 2		No. 3		No. 4						
				Exp. Sec.	Below A	Exp. Sec.	Below A	Exp. Sec.	Below A	Exp. Sec.	Below A	Exp. Sec.	Below A	
1942	380	257	33	1	1	3	2	0	0	543	352	0.7	0.8	1.04
1943	150	587	377	1	3	7	3	2	0	379	233	2.6	2.5	1.43
1944	163	282	316	1	0	6	2	4	0	364	333	3.0	0.6	1.70
1945	90	524	196	1	0	1	0	3	0	315	182	1.5	0.0	0.61
Totals to date	783	1,650	922	4	4	17	7	9	0	1,601	1,100	1.8	1.0	1.22

[1] Weir summaries are for the periods October 1-September 30. For example, the 1942 figures are for the period October 1, 1941-September 30, 1942.

Table 11

INDIVIDUAL DATA ON TAGGED BROOK TROUT CAUGHT BY ANGLERS IN HUNT CREEK IN 1945 WHICH ORIGINATED IN TRIBUTARIES SHOWING GROWTH AND MOVEMENT

(Sizes are given in millimeters, distance is given in miles)

Tag number	Section of recovery	Where tagged	Date tagged	Size at tagging	Size at recovery	Gain	Days free	Gain per day	Direction and approximate distance moved
36671	Sec. A	Trib. 3	10/15/43	149	186	37	525	0.07	Down - 1/4
36098	Sec. A	Trib. 2	6/8/42	113	190	77	1,095	0.07	Down - 1/8
36800	Sec. B	Trib. 4	10/29/42	94	194	100	998	0.10	Down - 1/8
32060	Sec. C	Trib. 4	3/30/45	186	196	10	106	0.09	Up - 1/8
39989	Sec. A	Trib. 4	11/5/43	139	187	48	554	0.09	Down - 1/2

Table 12

INTENSIVE CREEL CENSUS DATA FOR SECTION "BELOW A,"

HUNT CREEK, 1945 TROUT SEASON

Two-week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours angling	Legal brook trout		Sublegal brook trout		Total weight legal fish	Pounds of legal trout per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	38	25	65.8	97.00	26 ✓1	0.27	370	3.81	1,441 ⑥	0.033
May 12-May 25	13	5	38.5	25.50	15	0.59	166	6.51	1,258 ②	0.109
May 26-June 8	9	6	66.7	20.75	5	0.24	159	7.66	357	0.038
June 9-June 22	12	7	58.3	31.50	18	0.57	159	5.05	1,086 ③	0.076
June 23-July 6	14	13	92.8	17.50	3	0.17	99	5.66	223 ②	0.028
July 7-July 20	35	13	37.1	115.75	82 ✓2	0.71	319	2.76	6,878 ⑲	0.131
July 21-Aug. 3	19	11	57.9	38.50	9	0.23	133	3.45	814 ②	0.046
Aug. 4-Aug. 17	18	10	55.6	43.00	17 ✓3	0.40	131	3.05	1,250 ⑦	0.064
Aug. 18-Sept. 3	17	13	76.5	33.50	7	0.21	113	3.37	519 ①	0.034
Totals	175	103	58.9	423.00	182 ✓6	0.43	1,649	3.90	13,826 (30.48 lbs.)	0.072

◯ Number in circle indicates number of fish for which weights were taken from 1944 curve charts due to fish being weighed dressed or not having been weighed.

✓ Number in caret indicates fish which were returned.

Table 13

CREEL CENSUS DATA FOR FULLER CREEK, FULLER CREEK BEAVER POND

AND EAST FISH LAKE OUTLET, 1945 TROUT SEASON

Two-week period	Number of anglers	Unsuccessful anglers	Per cent taking no fish	Total hours angling	Legal brook trout		Sublegal brook trout		Total weight legal fish	Pounds of legal trout per hour
					Number caught	Catch per hour	Number returned	Catch per hour		
Apr. 28-May 11	22	11	50.0	33.50	21	0.63	243	7.25	1,427 ④	0.094
May 12-May 25	8	5	62.5	16.25	3	0.18	50	3.08	158	0.022
May 26-June 8	17	11	64.7	22.50	9	0.40	147	6.53	555	0.054
June 9-June 22	3	1	33.3	4.50	7	1.56	11	2.44	371	0.182
June 23-July 6	9	6	66.7	23.00	4	0.17	50	2.17	226	0.022
July 7-July 20	15	10	66.7	22.75	9	0.40	83	3.65	621	0.060
July 21-Aug. 3	2	2	100.0	2.50	0	0.00	8	3.20	...	...
Aug. 4-Aug. 17	11	5	45.5	13.00	7	0.54	60	4.62	501	0.085
Aug. 18-Sept. 3	15	12	80.0	21.25	4	0.19	62	2.92	263 ①	0.027
Totals	102	63	61.8	159.25	64	0.40	714	4.48	4,122 (9.09 lbs.)	0.057

○ Number in circle indicates number of fish for which weights are curve weights.

Table 14

NUMBER AND PERCENTAGE OF ANGLERS TAKING VARIOUS NUMBERS OF TROUT FROM THE EXPERIMENTAL SECTIONS OF HUNT CREEK, 1945 TROUT SEASON

Experimental section	Number (and percentage) of anglers catching numbers of fish													Total anglers
	0	1	2	3	4	5	6	7	8	9	10	11	12	
A	39 (58.2)	11 (16.4)	7 (10.4)	6 (9.0)	3 (4.5)	1 (1.5)	...	...	...	...	...	...	...	67 (100.0)
B	29 (55.8)	14 (26.9)	6 (11.6)	2 (3.8)	1 (1.9)	...	...	...	...	...	...	...	...	52 (100.0)
C	76 (61.6)	26 (21.3)	7 (5.7)	7 (5.7)	2 (1.6)	1 (0.8)	3 (2.5)	...	...	...	1 (0.8)	...	...	123 (100.0)
D	73 (60.3)	27 (22.3)	13 (10.8)	2 (1.7)	1 (0.8)	2 (1.7)	...	1 (0.8)	...	1 (0.8)	...	...	1 (0.8)	121 (100.0)
E	4 (33.3)	4 (33.3)	3 (25.0)	...	...	...	1 (8.3)	...	...	...	...	...	...	12 (100.0)
Totals, averages A,B,C,D,E	221 (58.9)	82 (21.9)	36 (9.6)	17 (4.5)	7 (1.9)	4 (1.1)	4 (1.1)	1 (0.2+)	...	1 (0.2+)	1 (0.2+)	...	1 (0.2+)	375 (100.0)

Table 15

RESIDENCE OF ANGLERS USING VARIOUS STREAM SECTIONS OF THE HUNT CREEK FISHERIES EXPERIMENTAL AREA, 1945 TROUT SEASON

County or State	Experimental sections	Below A	Fuller Creek	Totals
Arenac	4	3	...	7
Bay	2	2	1	5
Calhoun	3	...	...	3
Genesee	27	7	3	37
Ingham	1	11	...	12
Iosco	2	...	...	2
Jackson	6	5	2	13
Kent	5	1	3	9
Kalamazoo	1	1	...	2
Lapeer	7	2	...	9
Livingston	...	2	...	2
Macomb	6	2	...	8
Midland	3	3	...	6
Monroe	5	3	...	8
Montmorency	89	28	54	171
Oakland	34	18	5	57
Ogemaw	1	1	...	2
Oscoda	19	12	2	33
Otsego	...	...	1	1
Roscommon	2	1	...	3
Saginaw	14	9	4	27
Shiawassee	4	...	...	4
St. Clair	20	6	...	26
Tuscola	7	...	5	12
Van Buren	3	2	...	5
Washtenaw	7	6	...	13
Wayne	83	42	21	147
Resident total	355	167	101	623
Illinois	1	...	...	1
Indiana	3	1	...	4
Ohio	5	7	...	12
Pennsylvania	3	...	...	3
Non-resident total	12	8	...	20
Unknown	8	...	1	9
Grand total	375	175	102	652