

Original: Fish Division
cc: Dr. Leonard
Mr. Hans Peterson 8-7-42
Dr. Shetter

INSTITUTE FOR FISHERIES RESEARCH Education-Game
DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

out. (M)

ALBERT S. HAZZARD, PH.D.
DIRECTOR

July 14, 1942

ADDRESS
UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

REPORT NO. 801

CREEL CENSUS ON THE HUNT CREEK FISHERIES EXPERIMENTAL
AREA, 1941 TROUT SEASON

by

David S. Shetter

This report presents the summary of the angling results obtained by intensive creel census methods from the various experimental waters on this state-owned area which are under the year-round observation of the staff of the Hunt Creek Experimental Station (see map). Complete angling records are available from Sections A, B, C, D, and E of Hunt Creek. Angling statistics collected at random from two special sections of the middle and lower course of Hunt Creek give some indication of the quality of the fishing further downstream. Data which are quite likely incomplete are available for about $3/4$ mile of Hunt Creek below Section A, for Fuller Creek Beaver Pond, for Fuller Creek, and for Hunt Creek above and below the special sections I and II. The results from East Fish Lake will be presented and discussed in a separate report.

Methods

The intensive creel census technique employed was the same as that used in previous years (see Reports 555, 644), except for the special sections I and II. These sections, both approximately three-quarters of a mile long, were patrolled on four days every two weeks. The days on which they were checked were chosen at random (following the system suggested and set up by Dr. C. McC. Mottley of Cornell University) and the results obtained are supposedly representative of the fishing in those sections. The creel census clerks for the 1941 season were Lawrence Bush, who was in charge of the general operations, Rhmer Scholma, and Robert Frank. Edwin L. Cooper, who was stationed at the Experimental Laboratory, also gave assistance in the creel census work until called into military service in June, 1941.

Anglers' catches again were recorded by the various types of trout water in which the anglers had fished, such as lake, beaver dam, or stream. The catch records have been separated into the five different sections or trout habitats of Hunt Creek proper. In Section A, the limits of two pools were designated by signs, and in Section D the limits of one beaver

dam were established by markers, and the catch records for these waters were separated from the rest of the yield statistics to obtain information on the yield of these special types of trout habitat.

Results--Hunt Creek Proper
(See also Tables 1, 2, 3, 4, 5, 6 and 7)

During the 1941 trout season, a total of 1,015 days of angling were spent on the five experimental sections (A, B, C, D, E) of Hunt Creek. This amount of time was expended by 683 different anglers (600 males, 83 females). Of the total number of angling-days spent on the stream, 701, or 69 per cent, yielded no fish. The total hours spent in fishing was 1,546.00 (an increase of approximately 40 per cent over the 1940 season); this fishing effort yielded 722 legal brook trout for an average catch per hour over the entire 1941 season of 0.47 legal brook trout for the experimental stream areas.

Undersized brook trout reported as returned to the water numbered 5,478, and were caught at the rate of 3.54 fish per hour.

The total weight of legal brook trout removed (93.2 per cent of the total catch was weighed) has been carefully estimated to be 116.21 pounds. The yield per acre during 1941 to the anglers may then be estimated at 26.83 pounds per acre for the waters of the experimental section (Table 8).

More anglers (430), and more hours of fishing (570.25) were recorded for Section D than for any other section. Sections C, A, E, and B followed in that order. The best average catch per hour for the 1941 season was found in Section E, where 0.93 legal brook trout were caught for each hour of fishing. In Sections A, B, C, and D, the average catch per hour for the 1941 season varied from a low of 0.40 fish in Section A to a high of 0.44 fish in Section D.

The largest number of legal brook trout and the largest number of pounds of fish were removed from Section D (252 brook trout, 40.49 pounds), followed by Section C (130 brook trout, 31.75 pounds), Section E (132 brook trout, 21.13 pounds), Section A (126 brook trout, 17.61 pounds), and Section B (32 brook trout, 5.23 pounds).

The trend of the fishing for the five sections of the experimental stream during 1941 can be generalized in brief as follows: From April 26 to June 6, fishing was poor, as the catch per hour varied between 0.25 and 0.31 fish; from June 7 to August 15 the quality of the fishing was good to excellent as the average catch per hour never was lower than 0.58 fish and was as high as 0.82 fish; from August 16 to September 1, fishing dropped off to "poor," as the catch per hour was 0.28 to 0.24 fish. These judgments as to the quality of the angling are further brought out by the recorded pounds per hour of trout removed. When the fishing was classed as "good," those periods showed a poundage per hour caught of 0.09 to 0.11 pounds, while in the early and late parts of the season when fishing was poor, the pounds per hour caught was 0.05 or less.

Yield--Pounds of brook trout and number of
brook trout per acre removed by angling

Table 8 lists the water acreages of the various experimental sections of Hunt Creek, the number of pounds of brook trout removed, and the number of fish removed from these sections during the 1941 season. The yield per acre can be calculated readily from these figures. Similar information from the two preceding seasons of creel census over the identical waters is presented also for comparison.

The calculated yields per acre for the various sections in 1941 are as follows:

| | <u>Pounds/acre</u> | <u>No. legal brook trout/acre</u> |
|-----------|--------------------|-----------------------------------|
| Section A | 12.2 | 85 |
| B | 8.1 | 50 |
| C | 44.7 | 253 |
| D | 34.3 | 214 |
| E | 58.7 | 367 |
| Average | 26.8 | 167 |

In Section A, even though there was a slight increase in fishing pressure, the yield (both in number and pounds caught per acre) dropped to a point about 20 per cent lower than recorded in 1939. There was a drop of similar magnitude in Section B, where the fishing pressure also diminished. However, in Sections C and D where the angling pressure was increased from 1 1/2 to 2 1/4 times as much as in 1940, the yield per acre was from 2 1/2 to 3 times as great as in 1940. In Section E, the greatest all-around increase in angling pressure and production was noted. Approximately 18 times more fishing in 1941 yielded an increase in the pounds per acre of approximately 16 times more than in 1940, in the catch per acre of approximately 15 times more than in 1940.

Number of marked brook trout from experimental plantings
entering the legal catch during 1941.

In 1941, the presence of marked fish in the catch of legal trout was more noticeable, although the number caught constituted only a very minor percentage of the total catch. The numbers of marked trout caught in the several localities are listed in Table 9, along with the fin-clip combination used, the number of fish marked, and the month and year of release. It should be remembered that all of these fish were released in Section C, and were supposedly "fingerling" brook trout, that is, less than one year old at the time of seining for marking (in the case of the wild fish) or release from the rearing pond.

The results from the planting of a number of hatchery-reared fingerlings in October, 1939, cannot be evaluated accurately, since, through error, the total number planted at Section D bridge and at Halberg's Bridge is not known. A total of 11 of these fish (dorsal and adipose fins removed) were caught in 1941 as legal trout in the experimental stream (1 below A, 9 in A, 1 in D). The 9 legal, dorsal-adipose-clipped brook trout taken in Section A

constituted 7.1 per cent of the total catch of Section A. As can be seen from Table 3, the legal, left-pectoral-clipped (wild) brook trout made up a greater percentage of the total catch than did any other marking.

Since all the pectoral- and pelvic-marked fingerling brook trout were planted in Section C, the recoveries by anglers of these marked trout indicate the direction of movement and relative abundance in the various localities. Apparently many of the marked trout which have grown to legal size prefer Section D to Section C and have moved upstream, since all of the left and right pelvic-marked fish and all the right pectoral-marked fish recovered as legal fish were taken in Section D. The left pectoral-marked fish (wild fingerlings marked and returned to Section C in August, 1939, as controls for an equal planting of hatchery fingerlings) have exhibited the greatest wandering. One was captured below A, one was caught in the Fuller Creek Beaver Pond, three were caught in Section C, and 7 were reported from Section D in 1941. The single specimen recovered from this marking captured in 1940 was taken in Section B.

Yield of specially-designated water areas

Two pools in Section A were designated by signs placed at the upper and lower limits of each pool, and the creel census clerks were instructed to question the anglers as to what fish from their catches were taken in those pools. Catches from the beaver dam in Section D were treated in the same manner.

Pool 1 in Section A is an "open" pool in the middle of a marsh-grass meadow. It is approximately 60 feet long and varies in width from 15 to 25 feet. The bottom is composed of sand, silt and muck. The maximum depth is approximately 4 feet, and between 60 and 70 per cent of the pool area is deeper than 12 inches. The only cover available to the fish is provided by the undercut sod bank on the west shore and the depth of water available.

During 1941, a total of 22 legal brook trout were captured from Pool 1; these fish weighed 2.9 pounds. They ranged from 7 to 8 inches in size and from 1 1/2 to 2 3/4 ounces in weight. As shown in Table 10, Pool 1 has been estimated to embrace not over 2.5 per cent of the total area of Section A, yet it contributed 17.4 per cent of the total legal catch of Section A, and 16.4 per cent of the total pounds of legal trout removed from Section A during 1941.

Pool 2 lies near the upstream end of Section A at the edge of a cedar swamp. This pool, which is between 90 and 100 feet long, and varies in width from 12 to 20 feet, is really a series of small, contiguous pools. Bank cover, particularly on the east bank, is excellent, and consists of overhanging tag alder bush and roots and tamarack trees. High grass and tag alder are on the west bank. Underwater cover is present in the form of sunken logs, submerged root systems, and the east bank is well undercut by current action. The bottom is mainly sand and silt, with some fine gravel in the upper end. In places this pool reaches a depth of 4 feet, but there is not as much deep water (1-3 feet) in Pool 2 as there is in Pool 1.

During 1941, anglers removed 14 legal brook trout from Pool 2. These fish weighed 2.1 pounds, and they ranged from 7 to 9 1/4 inches in size and from 1 1/2 to 3 1/4 ounces in weight. From Table 10 it will be noted that the area of Pool 2 has been estimated to include not more than 1/4 per cent of the entire area of Section A, yet it yielded 11.1 per cent of the total brook trout catch, and 11.8 per cent of the total weight of legal brook trout captured in Section A.

Section D Beaver Pond was much the same in appearance and in trout habitat characteristics during 1941 as in 1940. Although repair of the dam was recommended in the 1940 creel census report (No. 644), construction projects of greater importance did not allow time or labor to carry out this recommendation. The water level during 1941 was approximately 8 inches lower than when the dam was originally surveyed in 1939, and the author has estimated the areal reduction of the dam pond proper to be about 1/3 to 1/2. Some underwater cover is still afforded by partially flooded tag alder bushes. There are also some submerged logs. Previously undercut banks in the upper end of the pond are now of no cover value to brook trout because of the recession of the water. The bottom consists mainly of silt and muck with some sand exposed in the upper pond and in mid-channel. Depth of water varies from 1-6 inches at the upper end to not over 3 1/2 feet in the hole just back of the now-leaky dam.

During 1941 anglers removed 41 legal brook trout from the beaver dam limits, and these fish weighed 5.9 pounds. These fish ranged in size from 7 to 9 inches, and in weight from 1 3/4 to 3 3/4 ounces. The area of the beaver dam has been estimated to contain not over 10 per cent of the total area of Section D. In 1941 the beaver dam yielded 16.2 per cent of the total legal catch, and 14.6 per cent of the total weight of legal brook trout captured in Section D (Table 10).

From the data just presented on the yield of special, more or less favorable trout habitats, it will be obvious to the reader that a relatively small percentage of a stream area gives up to the angler a considerable percentage of the total yield of legal trout. It is planned to include the study of more and different types of pools in the other sections of Hunt Creek where it proves practicable. Information of this type will be of assistance particularly in planning stream improvement installations.

Size of legal brook trout taken by anglers
in census sections of Hunt Creek

Almost all (720 of 722) of the legal brook trout caught by anglers were measured. Between 92 and 93 per cent (669/722) were weighed. The average lengths and average weights have been assembled by two-week periods for each section of the stream, and these figures are presented in Table 11a.

The average size of all fish taken in the five census sections was 7.7 inches and 2.5 ounces, slightly longer and heavier than in 1940. By census sections, the average size of legal brook trout taken was as follows:

| <u>Section</u> | <u>Av. total length</u> | <u>Av. weight</u> |
|----------------|-------------------------|-------------------|
| A | 7.50 inches | 2.3 ounces |
| B | 7.75 " | 2.6 " |
| C | 7.90 " | 2.8 " |
| D | 7.60 " | 2.4 " |
| E | 7.60 " | 2.5 " |

For the five sections of stream, the average size of legal brook trout captured was largest during the last three days of the season (August 30-September 1), when 23 fish averaged 8.2 inches in length and 3.0 ounces in weight. The average size was smallest in the two-week period May 10-23 when 22 legal brook trout averaged 7.2 inches in length and 1.8 ounces in weight.

When compared with the average sizes of the legal trout removed in 1940 and in 1939, ^(Table 12) it will be noted that there have been only slight changes in the average sizes of the brook trout caught by anglers. The average size of legal brook trout taken in Section A has decreased slightly (0.1 inches, 0.2 ounces) since 1939; in Section B during the last two years when there was an adequate number of specimens removed, the average size was the same (7.75 inches, 2.6 ounces) in both years. Section C is the only area where the average size has increased each year; here the average trout has increased from 7.4 inches and 2.4 ounces in 1939 to 7.9 inches and 2.8 ounces in 1941. In Section D, the average size of trout removed has been more or less constant at 7.6 inches and either 2.3 or 2.4 ounces. The average size of all fish taken in the experimental sections has varied as follows: 1939, 7.6 inches, 2.3 ounces; 1940, 7.6 inches, 2.3 ounces; 1941, 7.75 inches, 2.5 ounces.

It is encouraging to note that the average size of the legal trout removed by anglers has not decreased in spite of the increase in fishing pressure, and the increase in the anglers' catch since the census was started in 1939. A decrease in average size of catch is usually associated with over-fishing.

Angling pressure on the experimental sections of
Hunt Creek in relation to fish yield of the
experimental sections.

In the previous report for the 1940 trout season (Report No. 644) the theory was advanced that it might be possible to predict from catch records kept over a period of years whether or not a water area was overfished, using the criterion a comparison between the percentage changes in the fishing pressure (man-hours of fishing per acre per season) and the percentage changes in the catch per unit area per season (pounds of legal trout removed per acre per season). The data on which the following discussion is based is presented in Table 13 in which the hours of fishing, angling pressure per acre, pounds of legal brook trout removed per acre for the several sections for each of the three years are listed, together with the acreage of each special section. The percentage changes in fishing pressure and the percentage changes in pounds of trout removed per acre for each year for each section have been calculated from these data.

As judged by the data in Table 13, Section A was overfished again in 1941, since the percentage change in angling pressure was increased 3 per cent over 1940 and the percentage decrease in pounds per acre of trout caught was 15 per cent.

In Section B, there was a percentage decrease in both angling pressure and pounds of trout removed per acre of 13 per cent, compared with 1940 records. Since there had been an astounding increase in pressure and yield in 1940 over 1939, the small drop is of little or no significance, and it might be said that Section B could stand much greater angling pressure than it has experienced in the past three years.

In Section C, after the 1940 season, a percentage decrease of one per cent in angling pressure over 1939 and a percentage increase of pounds per acre of trout removed of 13 per cent over 1939 indicated that this section could tolerate much heavier angling pressures. During 1941 the percentage increase in angling pressure over 1940 was 157 per cent and the percentage increase in pounds of legal trout removed per acre was 166 per cent. According to the author's interpretation Section C was not over-fished even in 1941.

A similar situation occurred in Section D, which appeared to have been over-fished in 1939 or 1940. Here a percentage increase in angling pressure of 127 per cent in 1941 produced a percentage increase in pounds of trout removed of 198 per cent over 1940.

In considering the data from Section E, one should remember that there was a relatively small amount of angling in this section in 1940, followed by considerable fishing there in 1941. Here an increase of 1,695 per cent in the fishing pressure gave an increased yield amounting to 1,486 per cent over the 1940 yield.

Considering the five sections of the stream as a whole, the 1941 data indicate that a percentage increase of 87 per cent in angling pressure produced a percentage increase of 109 per cent in the pounds of legal trout removed per acre. Since the catch per hour figures for the various sections have not fluctuated to any marked degree between 1940 and 1941, and since the catch per hour for the stream as a whole rose slightly in 1941, the fact that an increase in the percentage change of pounds of trout removed per acre took place along with an increase in the percentage changes of angling pressure suggests strongly that the experimental stream has not been over-fished as yet. Also, the fact that the average size of brook trout taken has increased slightly since 1939 (Table 12) tends to bear out this conclusion.

Angling results on other water areas where the complete fishing effort could not be checked.

Hunt Creek below Section A (Table 14)

Since it is uncertain that anglers do not fish upstream into this area and return downstream without detection by creel census clerks, the angling records for this part of Hunt Creek always have been regarded as incomplete. However, the data gathered probably represent the majority of the fishing effort expended over 3/4 mile of stream below Section A.

In 1941, a total of 296 anglers fished below Section A (an increase of 134 anglers over 1940) for a period of 675.25 hours. Sixty-seven per cent (197 fishermen) caught no fish. The total legal catch consisted of 224 legal brook trout, for a catch per hour of 0.33 fish, and 2,615 undersized fish were reported as returned to the water. The total weight of legal trout removed was 15,715 grams, or 34.64 pounds. The quality of the fishing varied considerably from period to period, the best fishing (0.61 fish per hour) came during the two-week period June 21-July 4, and the poorest (0.04 fish per hour) in the two-week period June 7-20. The average size of the brook trout removed by anglers was slightly larger in 1941 than those captured in 1940 (as shown by Table 12), since the average length in 1941 was 0.15 inches greater and the average weight was 0.2 ounces greater than in 1940.

As the water acreage over which the recorded fishing was conducted is not known, estimates of the angling pressure and per acre yield have not been made.

Fuller Creek Beaver Pond
(Table 15)

Fishing pressure continued to decrease on this body of water compared with previous years, as only 26 records of fishing on the beaver pond were received (compared with 112 in 1939, 65 in 1940). Of these 26 anglers, 27 per cent (7 fishermen) took no fish. The 26 anglers spent 50.25 hours in catching 57 legal brook trout, and 58 sub-legal brook trout for a catch per hour of 1.13 legal fish and approximately the same catch per hour of sub-legal trout.

The total weight of fish removed by angling from the Fuller Creek Beaver Pond in 1941 amounted to only 14.4 pounds. The average size of these fish (as shown in Tables 11b and 12) was 8.6 inches and 4.7 ounces. The quality of the catch as measured in terms of pounds of legal trout caught per hour was 0.28.

A study of the angling statistics on the Fuller Creek Beaver Pond reveal several interesting facts. Although the catch per hour was highest in 1941 (1.13 fish per hour of angling as compared with 0.66 fish per hour in 1939 and 0.61 fish per hour in 1940), the average size of trout taken has decreased steadily since it was first censused in 1939 (from 10.9 to 8.6 inches). The quality of the fishing, as judged by the pounds of trout removed per hour of angling, has varied as follows:

| | | | | | | | |
|------|---|------|--------|----|-------|-----|------|
| 1939 | - | 0.35 | pounds | of | trout | per | hour |
| 1940 | - | 0.26 | " | " | " | " | " |
| 1941 | - | 0.28 | " | " | " | " | " |

Evidently the continually decreasing fishing pressure has decreased at a rate greater than any changes effected on the brook trout stock, since the catch per hour increased in 1941. Despite the fact that many more legal trout were caught per unit of angling effort, the fact that their average weight was considerably less than in the two years previous brought down the total poundage and the pounds per hour yielded to the angler.

The decline in pounds of trout removed by the sport fishery on this beaver pond may be attributed directly to the wearing out of the dam with consequent leakage of the water which has diminished the fishable area of the pond by at least two-thirds. The only pond area now under water is the old stream channel, which, although possessing a few deep holes (greater than three feet) has been reduced in area to less than half the water-holding capacity it possessed when the dam was in a solid condition.

At present (April, 1942), brook trout are still found in the pond, but there seemed to be more undersized fish than before, as the author and Burt Hunt caught fish in the ratio of 16 illegal fish to 2 slightly above the legal limit of 7 inches.

It is doubted by the author that this general stream area of Fuller Creek will yield anywhere near its former poundage of brook trout under the present ecological conditions. It is suggested that the old beaver dam be rebuilt, or replaced with an earth fill dam (such as was built at East Fish Lake) containing a spillway with splash-board control as soon as labor and finances are available. There appears to be no reason why such fishing as was found on the pond in 1939 could not be re-established again by the presence of such a structure.

East Fish Lake Outlet and Fuller Creek
(Table 16)

More anglers than were recorded in the previous two years of census fished in these waters, which are typical "feeder" streams (i.e., narrow, brush-covered, small pools with deeply undercut banks with many small bank-side springs). Since these waters are continuous they have been considered as one in compiling the angling statistics.

A total of 59 fishermen spent 96.50 hours on these waters. Of this number, 39, or 67 per cent, caught no fish. They caught a total of 33 legal brook trout for a catch per hour of 0.34 fish. Listed as returned to the water were 440 undersized brook trout, indicating that they had caught the small fish at a rate of 4.56 fish per hour.

The total weight of legal trout removed by the anglers was 4.99 pounds, and the pounds of trout caught per hour of fishing amounted to 0.05 pounds of fish.

It must be mentioned here that of the 33 legal fish recorded, 12, or 36 per cent, were of hatchery origin (9 fin-clipped, 3 tagged) and had migrated downstream out of East Fish Lake into these waters. As there were 493 marked hatchery fish planted, this represents a known 2.4 per cent which moved out of East Fish Lake. The weight of these marked trout was 1.80 pounds, or 38 per cent of the total weight yielded to the anglers from these waters.

Creel census results on areas downstream
from the experimental waters.

Among other lines of investigation being pursued at the Experimental Station, research is being prosecuted on the survival of hatchery-reared fingerlings released in the lower portions of Hunt Creek downstream from

the experimental area in the fall of the year. Two such plantings have been made; in the fall of 1939, a total of 35,109 brook trout fingerlings were released in various parts of Hunt Creek (these fish are recognizable by their missing dorsal and adipose fins); in 1940, a total of 17,635 brook trout fingerlings were marked by clipping their adipose and right pelvic fins and were distributed over Hunt Creek between the Ohio Club and the Thunder Bay River.

The ideal method to determine the results of these fingerling plantings in terms of legal trout finding their way to anglers' creels would be an intensive creel census of the entire Hunt Creek drainage. However, because of the numerous road crossings and cottage sites located on or near Hunt Creek, an accurate, complete creel census would not be financially feasible.

In order to obtain a sample of the fishing results on the lower waters of Hunt Creek, two special census areas were designated. These sections were both approximately three quarters of a mile in length, and were completely covered by patrolling on designated days during the 1941 trout season. The days on which these special sections I and II were censused were chosen from a table of random numbers as recommended by Dr. C. McC. Mottley of Cornell University. Since (according to Mottley) the sample is random, the total fishing effort and the total catch may be found by sample proportion.

The special sections were located as follows: Section I was in T. 29 N., R. 3 E., Sec. 19 (northwest quarter) and extended downstream from an old pole bridge approximately in the mid-section to Schmidt's landing; Section II was located also in T. 29 N., R. 3 E., Sections 9 and 16, and the upstream boundary was the section line between sections 16 and 17, and it extended downstream to Hall's Hunt Creek Lodge.

Incomplete data are available also from the stream area immediately surrounding the Hunt Creek Rearing Station. These creel census reports were obtained through the efforts of the caretaker, Gerard Perry.

Data are also available on the results of spring plantings of legal brook trout (all tagged), obtained through the efforts and cooperation of the Field Administration personnel, Fish Division employees, and the voluntary efforts of anglers themselves. The results from these various experimental sources will be discussed in the order mentioned above.

The estimated angling results obtained from the census conducted on Special Section I are presented in Table 17. The figures presented in this table were derived as follows:

According to Mottley's plan of sampling, census records were to be taken on four days out of every 14 days. The average daily fishing pressure, average daily catch, etc., was calculated on the basis of the number of days on which fishing was prosecuted and then multiplied by 14 [✓] to obtain the estimated total fishing and the estimated total catch. The data obtained in this fashion for the two-week periods were then totalled to secure the estimated total season's results over Special Section I for the entire season. By using the various samples to calculate the totals for two-week periods, it is felt that a truer picture of the angling pressure and total catch is obtained than if the estimates of the fishing results were made

✓ Except for the last period, which included 17 days.

by calculations lumping the entire season's sampling data before calculation.

According to the estimates made from the creel census data on Special Section I, 339 anglers fished 796.20 hours and caught 477 legal brook trout and 2,102 undersized brook trout. Of these anglers, 196, or 58 per cent, caught no fish. The catch per hour of legal brook trout was 0.60 fish and of sub-legal fish, 2.64. The total weight of legal fish removed was 31,745 grams, or approximately 70 pounds. The number of pounds of trout caught per hour of fishing may then be estimated to be 0.09.

Hatchery-reared brook trout from two different plantings were found to be in the catch; tagged fish planted on April 10, 1941, and also legal fish with their dorsal and adipose fins missing which were released as fingerling fish in October, 1939. Of the 477 legal trout estimated to have been caught, 245, or 51.4 per cent, were tagged; 28, or 5.9 per cent, came from the 1939 fingerling planting; and the remainder, 204, or 42.7 per cent, originated from natural spawning. All marked fish were taken during the first six weeks of the season, and all tagged fish were taken during the first two weeks of the season. The latter observation is in accordance with results from spring plantings of legal-sized trout obtained elsewhere by the author and Dr. Hazzard (Shetter and Hazzard, 1941).

On Special Section II (Table 18) where the data presented were obtained in a manner similar to that used for Special Section I, 535 anglers fished an estimated 860.05 hours and caught 180 legal brook trout, and 2,931 sub-legal brook trout. Unsuccessful anglers constituted 83 per cent of the estimated total (444 fishermen). The catch per hour of legal trout amounted to 0.21 fish, and sub-legal trout were returned to the water at the rate of 3.41 small fish per hour. The total weight of legal trout removed was 14,147 grams, or 31.1 pounds. The number of pounds of legal trout removed per hour of angling was 0.04 pounds.

In Special Section II the legal catch was made up of brook trout originating from different sources--tagged hatchery fish from the April 10, 1941, planting of legal brook trout, fin-clipped (adipose and right pelvic fins removed) fish which had been planted as fingerlings in October, 1940, and wild fish. Of the 180 legal fish estimated to have been removed, 57, or 31.7 per cent, were tagged brook trout originating from the April, 1941, legal-sized planting; 7, or 3.9 per cent, were fin-clipped brook trout of legal size from the October, 1940, release; and the remainder, 116, or 64.4 per cent, were wild trout.

The records of the angling in the vicinity of the Hunt Creek Rearing Station are complete for the last half of the 1941 season (Table 19). No records, however, are available for the period April 26-June 24. Fishing was much better than elsewhere on Hunt Creek for the period completely covered. This can be partly explained by the semi-private nature of the water and the comparative inaccessibility of this stream area to the general public. Also, the water area was fairly heavily stocked with fingerlings in the fall of 1940 and fingerlings escaping from the rearing ponds probably also contribute toward keeping a more than adequate number of fish in the waters above and below the rearing ponds.

From June 21 to September 1, a total of 36 fishermen spent 118.75 hours in angling, and took 127 legal brook trout and one legal rainbow trout. They returned 239 undersized brook trout to the water. Six anglers, or 17 per cent, caught no fish. The catch per hour of legal fish was 1.07 brook trout per hour and 0.00+ rainbow trout per hour. The catch of undersized brook trout was 2.01 fish per hour.

Of the 127 legal fish caught in this general vicinity, two, or 1.5 per cent, were tagged brook trout from the April, 1941, planting, while 31 were fin-clipped (adipose and right pelvic) fish which had been planted as fingerlings in October, 1940 (24.4 per cent of the recorded catch of this area). Wild, unmarked, legal brook trout made up 74.1 per cent of the total catch.

To summarize our knowledge to date on the fate of the fingerling trout planted in the autumn seasons of 1939 and 1940, Table 20 has been drawn up. These figures represent the actual numbers of marked and unmarked fish examined in anglers' catches during the 1941 trout season on various parts of Hunt Creek. The figures do not include tagged hatchery fish which were recovered from the planting of April 9, 1941.

A total of 1,176 legal brook trout were examined, and this catch was made up of 1,121 unmarked brook trout, 23 legal brook trout with the dorsal and adipose fins clipped (1939 fall release), and 32 legal brook trout with the adipose and right pelvic fins clipped (1940 fall release). These 1,176 brook trout represent the total catch of 1,577 anglors (exclusive of 142 tagged hatchery trout). The 23 fish planted as fingerlings in October, 1939, made up 1.96 per cent of the total catch, the 32 fish planted as fingerlings in October, 1940, made up 2.72 per cent of the total catch, while 95.32 per cent of the total catch consisted of unmarked, and probably for the most part, wild fish, since no unmarked hatchery-reared fish have been planted in Hunt Creek since the fall of 1938.

The known percentage of recovery to date on the two plantings is as follows:

1939 - 23 of 35,109, or 0.07 per cent,
1940 - 32 of 17,635, or 0.18 per cent.

The author does not claim that the figures just presented represent complete recovery data on the fingerling plantings. However, even if five times as many have been recovered as legal trout, not even one per cent of the planted fingerlings have been retaken as legal brook trout.

In considerable contrast to the results from fingerling plantings previously discussed were the results obtained from the release of 2,000 hatchery-reared brook trout of legal size (7 inches and larger). All of these fish were jaw-tagged before release in four different areas of Hunt Creek on April 9, 1941, so they were distinguished readily when they appeared in the catches. These fish were released in the following localities over approximately 1/2 to 3/4 mile of stream at each point, and 500 tagged fish were planted at each locality:

Hall's Hunt Creek Lodge,
Highway 612 crossing,
New cabin near powerline south of Highway 612,
Meadow above Schmidts landing.

Through the cooperation of anglers, conservation officers, and Fish Division employees, a total of 536 recoveries have been listed, or 29.3 per cent of the total number of tagged fish released. Since the great majority of the cooperators did not list their total catches including tagged and unmarked fish, we cannot estimate what percentage of their total catch consisted of marked fish. From casual observation and testimony furnished by Dr. Hazzard, who fished the mid-course of Hunt Creek on the opening day of the 1941 season, the early-season anglers caught the recently-planted hatchery fish almost exclusively. The catch of Dr. Hazzard and two companions consisted of 16 tagged brook trout, 3 brook trout with dorsal and adipose fins clipped, and one wild, legal brook trout. Obviously, the anglers caught many more legal fish from the planting of 2,000 legal brook trout on April 9, 1941, than they did from the combined releases of October, 1939, and October, 1940--a total release of 52,744.

Number and percentage of "anglers"¹ catching
various numbers of brook trout.

The number of fishermen catching various numbers of brook trout in the experimental sections of Hunt Creek are presented in Table 21. It will be observed that almost 70 per cent of the fishermen-days were recorded as blanks. Of the total number of anglers, 14.4 per cent caught one legal brook trout, 6.6 per cent caught two legal fish, 3.9 per cent captured three fish, 2.6 took home four legal brook trout, and 1.9 per cent caught five brook trout large enough to keep. Less than 0.5 per cent of the anglers caught 6, 7, 8, 9, 10, 12, and 13 legal fish each. No angler took his limit (15 fish) from any experimental section, although one angler fishing in both Sections D and E caught 15 fish.

These results parallel closely those obtained in 1940 (Table 21) when only 2.6 per cent of the total number of "anglers" caught more than 5 legal trout. In 1941, only 1.4 per cent of the total "anglers" caught more than 5 legal trout.

From the comparative data presented in Table 21 and from the results obtained at Hunt Creek, it appears that only a very limited number of "expert" or "lucky" anglers ever attain the present legal limit of 15 trout. Apparently less than 5 per cent of the total anglers catch more than 10 legal trout. It might be to the benefit of all concerned if the legal limit on number of fish in possession were reduced to 10 trout per day for trout stream angling, since the five extra fish which the "expert" or "lucky" angler takes on exceptional days might be more equitably distributed at some later date among the members of our constantly-growing angling fraternity. The psychological value of a lower limit should also be considered. A limit of ten trout would be in keeping with that of several other progressive states in which trout fishing is an important feature.

¹ "Anglers," in this discussion, actually refers to fisherman-days.

Residence of anglers using the experimental
sections (A, B, C, D, E) of Hunt Creek.

A total of 918 Michigan residents from 25 counties of the state fished in the experimental waters. The "test" waters were fished mainly by residents of Montmorency, Wayne, Genesee, and St. Clair Counties in that order (Table 22). Non-resident fishermen came from Ohio (49), Indiana (33), and Pennsylvania (4). The residence of 11 anglers was not learned.

As has been pointed out in previous creel census reports, trout streams located in east and central Michigan are fished chiefly by fishermen residing in the eastern half of the state. This fact is again borne out by the residence tabulation. Also, Ohio and Indiana trout fishermen are found most often on Lower Peninsula trout streams, probably because of their comparative closeness to those states.

Literature Cited

Shetter, David S. and Albert S. Hazzard. 1941. Results from plantings of marked trout of legal size in streams and lakes of Michigan. Trans. Am. Fish. Soc., Vol. 70, 1940, pp. 446-468. -- 2-3-48 # 614

INSTITUTE FOR FISHERIES RESEARCH

By David S. Shetter

Report approved by: A. S. Hazzard

Report typed by: R. Bauch

Table 1

Intensive Creel Census Data For Section A, Hunt Creek,
1941 Trout Season

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal fish | Wt. of legal trout caught per hour | |
|--------------------|-------------------|-----------------------|-------------------------|------------------------|-------------------|----------------|-----------------------|----------------|-------------------------|------------------------------------|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 27 | 17 | 59 | 44.25 | 24 | 0.54 | 226 | 5.11 | 1,389 | 31.4 | 0.07 |
| May 10-May 23 | 15 | 8 | 53 | 34.75 | 12 | 0.35 | 210 | 6.04 | 639 | 18.4 | 0.04 |
| May 24-June 6 | 20 | 13 | 65 | 44.25 | 13 | 0.29 | 250 | 5.65 | 828 | 18.7 | 0.04 |
| June 7-June 20 | 11 | 5 | 45 | 22.00 | 13 | 0.59 | 141 | 6.41 | 795 | 36.1 | 0.08 |
| June 21-July 4 | 21 | 12 | 57 | 38.75 | 18 | 0.47 | 297 | 7.66 | 1,127 | 29.1 | 0.06 |
| July 5-July 18 | 10 | 3 | 30 | 16.25 | 2 | 0.12 | 61 | 3.75 | 127 | 7.8 | 0.02 |
| July 19-Aug. 1 | 17 | 13 | 76 | 23.75 | 5 | 0.21 | 127 | 5.35 | ↓ 341 | 11.4 | 0.03 |
| Aug. 2-Aug. 15 | 19 | 10 | 53 | 31.25 | 15 | 0.48 | 177 | 5.66 | 1,035 | 33.1 | 0.07 |
| Aug. 16-Aug. 29 | 27 | 18 | 66 | 39.75 | 18 | 0.43 | 112 | 2.82 | ↘ 723 | 40.1 | 0.08 |
| Aug. 30-Sept. 1 | 14 | 12 | 85 | 20.75 | 6 | 0.24 | 69 | 3.33 | 293 | 14.1 | 0.03 |
| Totals or averages | 181 | 116 | 64 | 315.75 | 126 | 0.40 | 1,670 | 5.29 | ↘ 7,297 | 23.1 | 0.05 |
| | | | | | | | | | ↘ (7,988) | 25.3 | 0.06 |

↓ Indicates number of specimens weighed when all fish were not weighed.

↘ Figure in parentheses indicates total weight of total legal catch and includes estimated weights of fish not weighed.

Table 2

Intensive Creel Census Data For Section B, Hunt Creek,
1941 Trout Season.

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal fish | Wt. of legal trout caught per hour | |
|--------------------|-------------------|-----------------------|-------------------------|------------------------|-------------------|----------------|-----------------------|----------------|-------------------------|------------------------------------|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 10 | 7 | 50 | 19.00 | ^a 5 | 0.26 | 119 | 6.26 | 192 | 10.1 | 0.02 |
| May 10-May 23 | 4 | 4 | 100 | 4.75 | 0 | 0.00 | 44 | 9.26 | ... | 0.0 | 0.00 |
| May 24-June 6 | 5 | 4 | 80 | 8.00 | 1 | 0.13 | 65 | 8.12 | 64 | 8.0 | 0.02 |
| June 7-June 20 | 1 | 0 | 0 | 1.25 | 1 | 0.80 | 15 | 12.00 | 59 | 47.2 | 0.10 |
| June 21-July 4 | 6 | 4 | 50 | 4.25 | ^a 4 | 0.71 | 73 | 17.17 | 170 | 40.0 | 0.09 |
| July 5-July 18 | 12 | 7 | 50 | 20.50 | 14 | 0.68 | 99 | 4.83 | ¹⁰ 998 | 48.7 | 0.11 |
| July 19-Aug. 1 | 7 | 5 | 71 | 6.50 | 2 | 0.31 | 40 | 6.15 | ¹ 64 | 9.8 | 0.02 |
| Aug. 2-Aug. 15 | 7 | 4 | 57 | 5.50 | 5 | 0.91 | 44 | 8.00 | 352 | 64.0 | 0.14 |
| Aug. 16-Aug. 29 | 4 | 4 | 100 | 3.00 | 0 | 0.00 | 14 | 4.66 | ... | ... | 0.00 |
| Aug. 30-Sept. 1 | 2 | 2 | 100 | 2.00 | 0 | 0.00 | 15 | 7.50 | ... | ... | 0.00 |
| Totals or averages | 58 | 37 | 64 | 74.75 | 32 | 0.43 | 528 | 7.06 | ²¹ 1,899 | 25.4 | 0.06 |
| | | | | | | | | | ^b (2,373) | 31.7 | 0.08 |

¹ Indicates number of fish weighed where all were not weighed.

^a One legal fish released, not weighed.

^b Figure in parentheses indicates total weight of total legal catch and includes estimated weights of fish not weighed.

Table 3

Intensive Creel Census Data for Section C, Hunt Creek,
1941 Trout Season

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal fish | Wt. of legal trout caught per hour | |
|--------------------|-------------------|-----------------------|-------------------------|------------------------|-------------------|----------------|-----------------------|----------------|-------------------------|------------------------------------|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 39 | 32 | 82 | 72.75 | 9 | 0.15 | 168 | 2.31 | 8✓ 498 | 6.9 | 0.01 |
| May 10-May 23 | 12 | 9 | 75 | 19.75 | 3 | 0.15 | 86 | 4.35 | 164 | 8.3 | 0.02 |
| May 24-June 6 | 20 | 14 | 70 | 26.00 | 9 | 0.35 | 201 | 7.73 | 826 | 31.8 | 0.07 |
| June 7-June 20 | 8 | 3 | 38 | 12.50 | 9 | 0.72 | 49 | 3.92 | 573 | 45.8 | 0.10 |
| June 21-July 4 | 7 | 4 | 57 | 14.00 | 6 | 0.43 | 25 | 1.78 | 350 | 25.0 | 0.06 |
| July 5-July 18 | 38 | 22 | 58 | 84.00 | 49 | 0.58 | 224 | 2.66 | 4,114 | 49.0 | 0.11 |
| July 19-Aug. 1 | 18 | 8 | 44 | 36.00 | 38 | 1.03 | 114 | 3.17 | 33✓ 2,653 | 73.6 | 0.16 |
| Aug. 2-Aug. 15 | 35 | 17 | 48 | 74.75 | 38 | 0.49 | 315 | 4.21 | 3,325 | 44.4 | 0.10 |
| Aug. 16-Aug. 29 | 57 | 51 | 89 | 74.00 | 10 | 0.14 | 216 | 2.92 | 8✓ 516 | 7.0 | 0.01 |
| Aug. 30-Sept. 1 | 21 | 17 | 81 | 29.25 | 9 | 0.31 | 59 | 2.02 | 709 | 24.2 | 0.05 |
| Totals or averages | 255 | 177 | 69 | 443.00 | 180 | 0.41 | 1,457 | 3.34 | 172✓ 13,728 | 31.0 | 0.07 |
| | | | | | | | | | a/ (14,400) | 32.5 | 0.07 |

8✓ Indicates number of specimens weighed where all were not weighed.

a/ Figure in parentheses indicates total weight of total legal catch and includes estimated weights of fish not weighed.

Table 4

Intensive Creel Census Data for Section D
 Exclusive of the Beaver Dam, Hunt Creek,
 1941 Trout Season

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal fish | Wt. of legal trout caught per hour | |
|--------------------|-------------------|-----------------------|-------------------------|------------------------|-------------------|----------------|-----------------------|----------------|-------------------------|------------------------------------|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 47 | 37 | 78 | 69.00 | 13 | 0.19 | 172 | 2.49 | ↓ 764 | 11.1 | 0.02 |
| May 10-May 23 | 15 | 14 | 93 | 9.00 | 3 | 0.33 | 44 | 4.89 | 154 | 17.1 | 0.04 |
| May 24-June 6 | 21 | 14 | 66 | 27.75 | 9 | 0.32 | 81 | 2.92 | 590 | 21.3 | 0.05 |
| June 7-June 20 | 13 | 7 | 54 | 19.75 | 14 | 0.71 | 38 | 1.92 | 951 | 48.1 | 0.11 |
| June 21-July 4 | 16 | 8 | 50 | 31.25 | 25 | 0.80 | 78 | 2.49 | 1,722 | 54.2 | 0.12 |
| July 5-July 18 | 41 | 21 | 51 | 72.25 | 42 | 0.62 | 154 | 2.13 | ↓ 2,751 | 38.1 | 0.08 |
| July 19-Aug. 1 | 28 | 16 | 57 | 43.00 | 26 | 0.60 | 126 | 2.93 | ↘ 2,145 | 49.9 | 0.11 |
| Aug. 2-Aug. 15 | 52 | 32 | 62 | 71.25 | 48 | 0.66 | 261 | 3.66 | 3,462 | 48.6 | 0.11 |
| Aug. 16-Aug. 29 | 96 | 81 | 84 | 149.25 | 26 | 0.17 | 297 | 1.99 | ↘ 2,098 | 14.1 | 0.03 |
| Aug. 30-Sept. 1 | 22 | 18 | 82 | 30.25 | 5 | 0.17 | 48 | 1.59 | 659 | 21.8 | 0.05 |
| Totals or averages | 351 | 238 | 68 | 522.75 | 211 | 0.40 | 1,299 | 2.48 | ↘ ²⁰⁶ 15,296 | 29.3 | 0.06 |
| | | | | | | | | | ↘ (15,656) | 29.9 | 0.07 |

↓ Indicates number of specimens weighed where all were not weighed.

↘ Figure in parentheses indicates total weight of total legal catch and includes estimated weights of fish not weighed.

Table 5

Intensive Creel Census Data For the Section D
Beaver Dam, Hunt Creek,
1941 Trout Season

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal fish | Wt. of legal trout caught per hour | |
|-----------------------|-------------------------|-----------------------------|-------------------------------|---------------------------|-------------------|-------------------|--------------------------|-------------------|-------------------------------|--|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 11 | 10 | 91 | 5.00 | 1 | 0.20 | 14 | 2.80 | 97 | 19.4 | 0.04 |
| May 10-May 23 | 1 | 1 | 100 | 0.25 | 0 | 0.00 | 0 | 0.00 | ... | ... | ... |
| May 24-June 6 | 1 | 1 | 100 | 0.50 | 0 | 0.00 | 2 | 4.00 | ... | ... | ... |
| June 7-June 20 | 3 | 3 | 100 | 1.25 | 0 | 0.00 | 0 | 0.00 | ... | ... | ... |
| June 21-July 4 | 10 | 4 | 40 | 15.25 | 31 | 2.03 | 58 | 3.80 | 1,989 | 130.4 | 0.29 |
| July 5-July 18 | 7 | 6 | 85 | 4.25 | 1 | 0.23 | 11 | 2.59 | 81 | 19.1 | 0.04 |
| July 19-Aug. 1 | 8 | 8 | 100 | 3.50 | 0 | 0.00 | 4 | 1.14 | ... | ... | ... |
| Aug. 2-Aug. 15 | 19 | 17 | 89 | 10.75 | 5 | 0.47 | 15 | 1.39 | 309 | 28.7 | 0.06 |
| Aug. 16-Aug. 29 | 13 | 11 | 84 | 4.75 | 2 | 0.42 | 4 | 0.84 | 131 | 27.6 | 0.06 |
| Aug. 30-Sept. 1 | 6 | 5 | 83 | 2.00 | 1 | 0.50 | 0 | 0.00 | 60 | 30.0 | 0.07 |
| Totals or averages | 79 | 66 | 84 | 47.50 | 41 | 0.86 | 108 | 2.27 | 2,667 | 56.1 | 0.12 |

Table 6

Intensive Creel Census Data for Section E, Hunt Creek,
1941 Trout Season

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal fish | Wt. of legal trout caught per hour ^a | |
|--------------------|-------------------|-----------------------|-------------------------|------------------------|-------------------|----------------|-----------------------|----------------|-------------------------|---|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 4 | 3 | 75 | 1.25 | 1 | 0.80 | 5 | 4.00 | 71 | 56.8 | 0.13 |
| May 10-May 23 | 1 | 0 | 00 | 1.75 | 4 | 2.29 | 3 | 2.00 | 233 | 133.1 | 0.29 |
| May 24-June 7 | 4 | 4 | 100 | 4.00 | 0 | 0.00 | 21 | 3.25 | ... | ... | ... |
| June 8-June 21 | 2 | 2 | 100 | 3.00 | 0 | 0.00 | 0 | 0.00 | ... | ... | ... |
| June 21-July 4 | 3 | 1 | 33 | 4.50 | 5 | 1.11 | 9 | 2.00 | 252 | 56.0 | 0.13 |
| July 5-July 18 | 6 | 2 | 33 | 8.25 | 12 | 1.45 | 31 | 3.76 | ↓ ¹⁰ 665 | 80.6 | 0.18 |
| July 19-Aug. 1 | 8 | 2 | 25 | 15.50 | 23 | 1.48 | 32 | 2.06 | ↓ ¹¹ 783 | 50.5 | 0.11 |
| Aug. 2-Aug. 15 | 27 | 14 | 52 | 49.75 | 54 | 1.08 | 152 | 3.06 | 4,116 | 82.7 | 0.18 |
| Aug. 16-Aug. 29 | 29 | 19 | 66 | 44.00 | 31 | 0.71 | 148 | 3.36 | ↓ ²² 1,640 | 37.3 | 0.08 |
| Aug. 30-Sept. 1 | 7 | 6 | 86 | 10.25 | 2 | 0.20 | 15 | 1.46 | 151 | 14.7 | 0.03 |
| Totals or averages | 91 | 53 | 58 | 142.25 | 132 | 0.93 | 416 | 2.93 | ↓ ¹⁰⁹ 7,911 | 55.6 | 0.12 |
| | | | | | | | | | ↓ ^a (9,583) | 67.3 | 0.15 |

↓¹⁰ Indicates number of specimens weighed where all were not weighed.

↓^a Figure in parentheses indicates total weight of total legal catch and includes estimated weights of fish not weighed.

Table 7

Summary of Intensive Creel Census on Hunt Creek for the
1941 Trout Season
(Data from Sections A, B, C, D, and E Combined).

| Time periods | Total anglers | No. of anglers catching no legal fish | Percentage of anglers catching no legal fish | Total hours of fishing | Legal brook trout caught | | Sub-legal brook trout reported | | Total weight of legal fish removed (grams) | Wt. of legal trout caught per hour | |
|--------------------|---------------|---------------------------------------|--|------------------------|--------------------------|----------------|--------------------------------|----------------|--|------------------------------------|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | grams | Pounds |
| April 26-May 9 | 138 | 106 | 77 | 211.25 | ✓ 53 | 0.25 | 704 | 3.33 | ↓ ⁴⁹ 3,011 | 14.3 | 0.03 |
| May 10-23 | 48 | 36 | 73 | 70.25 | 22 | 0.31 | 387 | 5.50 | 1,190 | 16.9 | 0.04 |
| May 24-June 6 | 71 | 50 | 70 | 110.50 | 32 | 0.29 | 620 | 5.61 | 2,308 | 20.9 | 0.05 |
| June 7-20 | 38 | 20 | 53 | 59.75 | 37 | 0.62 | 243 | 4.07 | 2,378 | 39.8 | 0.09 |
| June 21-July 4 | 63 | 33 | 52 | 108.00 | 89 | 0.82 | 540 | 5.00 | ↑ ⁸⁸ 5,610 | 51.9 | 0.11 |
| July 5-18 | 114 | 66 | 58 | 205.50 | ✓ 120 | 0.58 | 580 | 2.82 | ↓ ¹¹³ 8,736 | 42.5 | 0.09 |
| July 19-Aug. 1 | 36 | 52 | 60 | 128.25 | 94 | 0.73 | 443 | 3.45 | ↓ ⁷⁴ 5,986 | 46.7 | 0.10 |
| Aug. 2-15 | 159 | 94 | 59 | 243.25 | 165 | 0.68 | 964 | 3.96 | 12,599 | 51.8 | 0.11 |
| Aug. 16-29 | 226 | 185 | 82 | 314.75 | 87 | 0.28 | 791 | 2.51 | ↑ ⁶⁷ 5,108 | 16.2 | 0.04 |
| Aug. 30-Sept. 1 | 72 | 59 | 82 | 94.50 | 23 | 0.24 | 206 | 2.18 | ↓ ²² 1,372 | 19.8 | 0.04 |
| Totals or averages | 1,015 | 701 | 69 | 1,546.00 | 722 | 0.47 | 5,478 | 3.54 | ↑ ⁶⁶⁹ 48,798 | 31.6 | 0.07 |
| | | | | | | | | | ↑ ⁷²⁰ (52,667) | 34.1 | 0.08 |

✓ One legal brook trout returned to the water.

↓ Total weights based on indicated number of specimens.

Table 8

Yield Statistics for the Experimental Sections of Hunt Creek for 1939, 1940, and 1941, giving pounds of legal trout and number of legal trout removed per acre of water surface by angling (actual numbers and pounds removed are in parentheses).

| Stream section | Length (feet) | Width (feet) | Area (acres) | 1939 yield per acre in | | 1940 yield per acre in | | 1941 yield per acre in | |
|----------------------------------|---------------|--------------|--------------|------------------------|--------------|------------------------|--------------|------------------------|--------------|
| | | | | Pounds | Number | Pounds | Number | Pounds | Number |
| A | 2,577 | 24.3 | 1.44 | 13.9 (20.02) | 99 (143) | 14.4 (20.75) | 105 (152) | 12.2 (17.61) | 85 (126) |
| B | 1,605 | 17.5 | 0.64 | 1.7 (1.09) | 23 (15) | 10.5 (6.69) | 64 (41) | 8.1 (5.23) | 50 (32) |
| C | 3,970 | 11.8 | ↓ 1.07 | 14.9 (15.97) | 105 (112) | 16.8 (17.95) | 106 (113) | 44.7 (31.75) | 253 (180) |
| D | 2,386 | 21.5 | 1.18 | 25.3 (29.90) | 186 (220) | 11.5 (13.62) | 77 (91) | 34.3 (40.49) | 214 (252) |
| E | 1,250 | 11.8 | 0.36 | Not censused | | 3.7 (1.34) | 25 (9) | 58.7 (21.13) | 367 (132) |
| Totals or averages, all sections | 11,788 | 17.4 | ↓ 4.69 | 15.4 (66.98) | 112 (192) | 12.8 (60.35) | 84 (106) | 26.8 (116.21) | 167 (722) |

↓ In 1939, the total acreage under census was 4.33 (Section E not censused).

In 1940, Section E was added, and the total acreage censused was as indicated (4.69 acres)

In 1941, 0.36 acres of Section C was closed to fishing in the vicinity of the experimental raceways, so the total area under census was again 4.33 acres.

Table 9

Location of recovery by anglers, percentage of total legal catch by section, and percentage of marked fingerlings recovered as legal fish, of marked fingerlings released or seined in Section C, 1941 trout season.

| Stream section or locality of recovery | Wild fingerlings | | Hatchery fingerlings | |
|--|--|--|---|---|
| | Left pectoral 1,000 marked Aug., 1939 | Left pelvic 500 marked Aug., 1940 | Right pectoral 1,000 marked Aug., 1939 | Right pelvic 404 marked Aug., 1940 |
| Below A | 1 (0.4) | ... | ... | ... |
| Section A | ... | ... | ... | ... |
| Section B | ¹ / _√ 1 (2.5) | ... | ... | ... |
| Section C | 3 (1.6) | ... | ... | ... |
| Section D | 7 (3.0-) | 1 (0.4) | 3 (1.2) | 1 (0.4) |
| Section E | ... | ... | ... | ... |
| Fuller Cr. Beaver Pond | 1 (1.7) | ... | ... | ... |
| Total recovered to date | 13 | 1 | 3 | 1 |
| Per cent recovered as legal fish | 1.3 | 0.2 | 0.3 | 0.2+ |

¹/_√ This fish was the only marked fingerling recovered as a legal trout in 1940; all others listed were caught in 1941.

Table 10

Yield of special pools, showing percentages of total catch and percentage of total pounds of legal trout removed from the pools.

| Pool and location | Legal brook trout caught | | Per cent of total area of section in pool | Per cent of total catch of section in | |
|-------------------|--------------------------|--------|---|---------------------------------------|---------------------|
| | Number | Pounds | | Number | Pounds |
| Pool 1 (A) | 22 | 2.9 | Not over 2.5 | 17.4 (22/126) | 16.4 (2.9/17.61) |
| Pool 2 (A) | 14 | 2.1 | Not over 4 | 11.1 (14/126) | 11.8 (2.1/17.61) |
| Beaver Dam (D) | 41 | 5.9 | Not over 10 | 16.2 (41/252) | 14.6 (5.9/40.49) |

Table 11a

The average length (in millimeters) and the average weight (in grams) of legal brook trout taken in the intensively censused experimental waters of Hunt Creek, 1940 trout season.
(Numbers of specimens weighed or measured are given in parentheses).

1 ounce = 28.5 gr. 7 inches = 178 mm.
2 ounces = 57.0 gr. 7½ inches = 190 mm.
3 ounces = 84.5 gr. 8 inches = 203 mm.
 8½ inches = 215 mm.

| Two-week period | Section A | | Section B | | Section C | | Section D Beaver Dam | | Section D stream | | Section E | | Totals, all sections | |
|--------------------|--------------|-------------|-------------|-------------|--------------|-------------|----------------------|------------|------------------|-------------|--------------|-------------|----------------------|-------------|
| | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight |
| Apr. 26-May 9 | 186 (24) | 64 (24) | 173 (4) | 50 (4) | 194 (9) | 62 (8) | 226 (1) | 97 (1) | 197 (13) | 69 (11) | 201 (1) | 71 (1) | 190 (52) | 64 (49) |
| May 10-23 | 184 (12) | 51 (12) | ... | ... | 183 (3) | 55 (3) | ... | ... | 183 (3) | 51 (3) | 176 (4) | 58 (4) | 182 (22) | 53 (22) |
| May 24-June 6 | 193 (13) | 65 (13) | 190 (1) | 64 (1) | 202 (9) | 92 (9) | ... | ... | 187 (9) | 66 (9) | ... | ... | 194 (32) | 73 (32) |
| June 7-20 | 185 (13) | 63 (13) | 178 (1) | 59 (1) | 186 (9) | 64 (9) | ... | ... | 186 (14) | 68 (14) | ... | ... | 185 (37) | 65 (37) |
| June 21-July 4 | 189 (18) | 64 (18) | 180 (3) | 56 (3) | 187 (6) | 58 (6) | 186 (31) | 64 (31) | 192 (25) | 69 (25) | 180 (5) | 50 (5) | 188 (88) | 64 (88) |
| July 5-18 | 184 (2) | 64 (2) | 208 (14) | 100 (10) | 202 (49) | 84 (49) | 205 (1) | 81 (1) | 191 (42) | 67 (41) | 189 (12) | 67 (10) | 197 (120) | 77 (113) |
| July 19-Aug. 1 | 195 (5) | 85 (4) | 208 (2) | 64 (1) | 200 (38) | 80 (33) | ... | ... | 204 (26) | 86 (25) | 197 (23) | 71 (11) | 200 (94) | 81 (74) |
| Aug. 2-15 | 195 (15) | 70 (15) | 195 (5) | 68 (5) | 204 (38) | 88 (38) | 189 (5) | 62 (5) | 197 (48) | 72 (48) | 198 (54) | 76 (54) | 198 (165) | 76 (165) |
| Aug. 16-29 | 196 (18) | 71 (10) | ... | ... | 190 (10) | 65 (8) | 191 (2) | 66 (2) | 205 (26) | 84 (25) | 195 (31) | 75 (22) | 198 (87) | 76 (67) |
| Aug. 30-Sept. 1 | 188 (6) | 61 (5) | ... | ... | 204 (9) | 79 (9) | 198 (1) | 60 (1) | 240 (5) | 132 (5) | 202 (2) | 76 (2) | 207 (23) | 86 (22) |
| Totals or averages | 190 (126) | 65 (116) | 196 (30) | 76 (25) | 200 (130) | 80 (172) | 190 (41) | 65 (41) | 197 (211) | 74 (206) | 195 (132) | 73 (109) | 196 (720) | 73 (669) |

Table 11b

The average length (in millimeters) and the average weight (in grams) of legal brook trout taken in waters not intensively censused in the Hunt Creek Area, 1940 trout season.
(Numbers of specimens weighed or measured are given in parentheses).

| Two-week period | Below A | | Special Section I | | Special Section II | | Fuller Creek Beaver Pond | | Fuller Creek and E. Fish Lake Outlet | | Hunt Creek at Rearing Station | |
|-----------------------|--------------|-------------|-------------------|-------------|--------------------|------------|-----------------------------|-------------|---|------------|----------------------------------|------------|
| | Av. length | Av. weight | av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight |
| Apr. 26-May 9 | 193 (27) | 68 (27) | 196 (112) | 72 (104) | 199 (14) | 80 (14) | 226 (13) | 123 (13) | 200 (13) | 67 (13) | ... | ... |
| May 10-23 | 192 (23) | 64 (15) | ... | ... | 197 (9) | 73 (9) | 203 (10) | 84 (10) | ... | ... | ... | ... |
| May 24-June 6 | 191 (16) | 66 (16) | 201 (8) | 84 (8) | 224 (2) | 125 (2) | 217 (31) | 113 (31) | ... | ... | ... | ... |
| June 7-20 | 178 (1) | 57 (1) | ... | ... | 250 (2) | 160 (2) | ... | ... | ... | ... | ... | ... |
| June 21-July 4 | 191 (69) | 69 (68) | ... | ... | 192 (11) | 69 (11) | ... | ... | 190 (1) | 58 (1) | 226 (49) | ... |
| July 5-18 | 198 (19) | 81 (16) | ... | ... | 182 (2) | 57 (2) | ... | ... | 191 (3) | 60 (3) | 201 (5) | ... |
| July 19-Aug. 1 | 198 (24) | 78 (17) | ... | ... | ... | ... | ... | ... | 196 (5) | ... | 210 (9) | ... |
| Aug. 2-15 | 200 (22) | 70 (22) | 185 (1) | 70 (1) | 180 (2) | 53 (2) | ... | ... | 186 (3) | 55 (3) | 216 (8) | ... |
| Aug. 16-29 | 194 (14) | 60 (9) | 206 (4) | 107 (3) | ... | ... | 245 (3) | 141 (3) | ... | ... | 222 (10) | ... |
| Aug. 30-Sept. 1 | 205 (7) | 106 (5) | ... | ... | ... | ... | ... | ... | 195 (5) | 72 (5) | 228 (2) | ... |
| Totals or averages | 196 (222) | 71 (196) | 197 (124) | 74 (115) | 199 (42) | 79 (42) | 218 (57) | 133 (57) | 196 (31) | 60 (25) | 214 (125) | ... |

Table 12

Comparison of average sizes of legal brook trout taken by anglers from the experimental sections of Hunt Creek, 1939-1941 inclusive.

(Figures in parentheses indicate numbers of specimens on which averages are based).

| Section or locality | 1941 | | 1940 | | 1939 | |
|---------------------|---------------|--------------|---------------|--------------|----------------|---------------|
| | Av. length | Av. weight | Av. length | Av. weight | Av. length | Av. weight |
| Below A | 7.75 (222) | 2.5 (196) | 7.60 (195) | 2.3 (195) | Not separated. | |
| Section A | 7.50 (126) | 2.3 (116) | 7.50 (151) | 2.2 (151) | 7.60 (121) | 2.5 (121) |
| Section B | 7.75 (30) | 2.6 (25) | 7.75 (41) | 2.6 (41) | 7.40 (7) | 2.5 (7) |
| Section C | 7.90 (180) | 2.8 (172) | 7.70 (111) | 2.6 (105) | 7.60 (106) | 2.4 (106) |
| Section D | 7.60 (252) | 2.4 (247) | 7.60 (90) | 2.4 (89) | 7.60 (204) | 2.3 (204) |
| Section E | 7.60 (132) | 2.5 (109) | 7.20 (5) | 2.2 (5) | Not censused. | |
| Fuller Creek | 7.70 (31) | 2.3 (25) | ... | ... | ... | ... |
| Fuller Cr. Pond | 8.60 (57) | 4.7 (57) | 9.75 (88) | 6.9 (88) | 10.90 (164) | 9.25 (164) |

Table 13

Relationship between angling pressure and pounds of trout removed per acre on the experimental sections of Hunt Creek, 1939-1941 inclusive.

| Section | Area (acres) | Hours of fishing | | | Pressure per acre ² | | | Pounds of fish per acre | | | Percentage change in fishing pressure | | Percentage change in pounds/acre of trout | |
|--------------------|--------------|---------------------|--------|----------|--------------------------------|------------------|------------------|-------------------------|-------------------|-------------------|---------------------------------------|------------|---|------------|
| | | 1939 | 1940 | 1941 | 1939 | 1940 | 1941 | 1939 | 1940 | 1941 | '39 to '40 | '40 to '41 | '39 to '40 | '40 to '41 |
| A | 1.44 | 179.00 | 296.25 | 315.75 | 138 | 206 | 219 | 13.9 | 14.4 | 12.2 | + 15 | + 6 | + 3 | - 15 |
| B | 0.64 | 33.50 | 86.50 | 74.75 | 52 | 135 | 117 | 1.7 | 10.5 | 8.1 | +160 | -13 | + 517 | - 13 |
| C | 1.07 | 262.75 | 259.50 | 443.00 | 246 | ³ 243 | ³ 624 | 14.9 | ³ 16.8 | ³ 44.7 | - 1 | +157 | + 13 | + 166 |
| D | 1.18 | 263.25 | 251.00 | 570.25 | 223 | 213 | 483 | 25.3 | 11.5 | 34.3 | - 4 | +127 | - 55 | + 193 |
| E | 0.36 | Not censused | 3.00 | 142.25 | Not censused | 22 | 395 | Not censused | 3.7 | 58.7 | Not censused | +1,695 | No data | +1,486 |
| Totals or averages | 4.69 | ¹ 780.50 | 901.25 | 1,546.00 | 180 | 203 | 390 | 15.4 | 12.8 | 26.8 | +15 | + 87 | - 17 | +109 |

¹ - Includes 22 hours of angling where sections fished were not clearly designated.

² - Pressure per acre is given in terms of man-hours of angling per acre of water surface for the entire season.

³ - Calculated on the basis of 0.71 acres (the area of the natural divisions closed to fishing).

Table 14

Intensive creel census data for
Below Section A, Hunt Creek,
1941 trout season.

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal fish | Wt. of legal trout caught per hour | |
|-----------------------|-------------------------|-----------------------------|-------------------------------|------------------------------|-------------------|-------------------|--------------------------|-------------------|-------------------------------|--|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | grams | Pounds |
| April 26-May 9 | 48 | 35 | 73 | 94.50 | 27 | 0.30 | 361 | 4.82 | 1,836 | 19.4 | 0.04 |
| May 10-May 23 | 30 | 19 | 63 | 73.25 | 23 | 0.34 | 255 | 3.48 | 1,472 | 20.1 | 0.04 |
| May 24-June 6 | 33 | 29 | 76 | 63.00 | 18 | 0.32 | 435 | 7.70 | 1,056 | 16.7 | 0.04 |
| June 7-June 20 | 10 | 9 | 90 | 26.75 | 1 | 0.04 | 67 | 2.50 | 57 | 2.1 | 0.00+ |
| June 21-July 4 | 36 | 16 | 44 | 106.25 | 71 | 0.61 | 523 | 4.92 | 4,761 | 44.8 | 0.10 |
| July 5-July 18 | 32 | 19 | 59 | 76.50 | 19 | 0.25 | 227 | 2.97 | 1,539 | 20.1 | 0.04 |
| July 19-Aug. 1 | 25 | 14 | 56 | 54.25 | 26 | 0.44 | 247 | 4.55 | 1,872 | 34.5 | 0.08 |
| Aug. 2-Aug. 15 | 22 | 15 | 68 | 54.25 | 22 | 0.39 | 167 | 3.07 | 1,540 | 28.4 | 0.06 |
| Aug. 16-Aug. 29 | 33 | 29 | 76 | 36.75 | 14 | 0.16 | 199 | 2.29 | 840 | 9.7 | 0.02 |
| Aug. 30-Sept. 1 | 17 | 12 | 71 | 39.75 | 7 | 0.18 | 84 | 2.11 | 742 | 18.7 | 0.04 |
| Totals or averages | 296 | 197 | 67 | 675.25 | 224 | 0.33 | 2,615 | 3.87 | 15,715 | 23.3 | 0.05 |

Table 15

Intensive creel census data for
Fuller Creek Beaver Dam,
1941 trout season.

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal trout | Wt. of legal trout caught per hour | |
|--------------------|-------------------|-----------------------|-------------------------|------------------------|-------------------|----------------|-----------------------|----------------|--------------------------|------------------------------------|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 5 | 1 | 20 | 14.00 | 13 | 0.93 | 12 | 0.86 | 1,602 | 114.4 | 0.25 |
| May 10-23 | 2 | 0 | 0 | 2.50 | 10 | 4.00 | 20 | 8.00 | 844 | 337.6 | 0.74 |
| May 24-June 6 | 14 | 3 | 21 | 28.50 | 31 | 1.09 | 26 | 0.91 | 3,490 | 122.4 | 0.27 |
| June 7-20 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| June 21-July 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| July 5-18 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| July 19-Aug. 1 | 2 | 2 | 100 | 1.00 | ... | 0.00 | ... | 0.00 | ... | 00.0 | 0.00 |
| Aug. 2-15 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Aug. 16-29 | 3 | 1 | 33 | 4.25 | 3 | 0.71 | ... | 0.00 | 522 | 122.8 | 0.27 |
| Aug. 30-Sept. 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Totals or averages | 26 | 7 | 27 | 50.25 | 57 | 1.13 | 58 | 1.15 | 6,458 | 128.5 | 0.28 |

Table 16

Intensive creel census data for
Fuller Creek, E. Fish Lake Outlet,
1941 trout season.

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout catch | | Sub-legal brook trout reported | | Total wt. of legal trout | Wt. of legal trout caught per hour. | |
|-----------------------|-------------------------|-----------------------------|-------------------------------|------------------------------|----------------------------|-------------------|-----------------------------------|-------------------|--------------------------------|---|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 10 | 4 | 40 | 14.00 | 13 | 0.93 | 16 | 1.14 | 369 | 62.1 | 0.14 |
| May 10-23 | 11 | 11 | 100 | 15.25 | ... | 0.00 | 98 | 6.43 | ... | 00.0 | 0.00 |
| May 24-June 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| June 7-20 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| June 21-July 4 | 4 | 3 | 75 | 5.50 | 1 | 0.18 | 19 | 3.45 | 58 | 10.5 | 0.02 |
| July 5-18 | 7 | 3 | 43 | 7.00 | 4 | 0.57 | 36 | 5.14 | ↓ 245 | 35.0 | 0.08 |
| July 19-Aug. 1 | 11 | 6 | 55 | 17.75 | 6 | 0.34 | 56 | 3.15 | ↖ 396 | 22.3 | 0.05 |
| Aug. 2-15 | 4 | 3 | 75 | 9.00 | 3 | 0.33 | 42 | 4.67 | 165 | 18.3 | 0.04 |
| Aug. 16-29 | 3 | 3 | 100 | 3.00 | ... | 0.00 | 9 | 3.00 | ... | 00.0 | 0.00 |
| Aug. 30-Sept. 1 | 9 | 6 | 67 | 25.00 | 6 | 0.24 | 164 | 6.56 | 432 | 17.3 | 0.04 |
| Totals or averages | 59 | 39 | 66 | 96.50 | 33 | 0.34 | 440 | 4.56 | 2,165 | 22.4 | 0.05 |

↓ Average weight for all fish (66 grams) added for one fish not weighed.

↖ Average weight for all fish (66 grams) added for 6 fish not weighed.

Table 17

Estimated fishing pressure and estimated total catch
of Special Section I, Hunt Creek, as derived from
data collected by the restricted, stratified,
random sampling method.

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal trout | Wt. of legal trout caught per hour | |
|---------------------------------|-------------------------|--------------------------------|----------------------------------|------------------------------|-------------------------------------|-------------------|--------------------------|-------------------|--------------------------------|--|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 147 | 67 | 45 | 369.25 | 392 ^{245t} 21 ^d | 1.06 | 795 | 2.15 | 25,326 | 68.6 | 0.15 |
| May 10-May 23 | 14 | 14 | 100 | 49.00 | 0 | 0.00 | 126 | 2.57 | ... | 0.0 | 0.00 |
| May 24-June 6 | 49 | 7 | 14 | 120.75 | 63 ^{7d} | 0.52 | 483 | 4.00 | 4,725 | 39.1 | 0.09 |
| June 7-June 20 | 21 | 21 | 100 | 24.50 | 0 | 0.00 | 56 | 2.29 | ... | 0.0 | 0.00 |
| June 21-July 4 | 0 | 0 | 0 | 0.00 | 0 | ... | ... | ... | ... | ... | ... |
| July 5-July 18 | 14 | 14 | 100 | 38.50 | 0 | 0.00 | 84 | 2.18 | ... | 0.0 | 0.00 |
| July 19-Aug. 1 | 28 | 28 | 100 | 42.00 | 0 | 0.00 | 168 | 4.00 | ... | 0.0 | 0.00 |
| Aug. 2-Aug. 15 | 23 | 19 | 80 | 50.20 | 5 | 0.10 | 173 | 3.14 | 327 | 6.5 | 0.01 |
| Aug. 16-Sept. 1 | 43 | 26 | 60 | 102.00 | 17 | 0.17- | 217 | 2.13 | 1,367 | 13.4 | 0.03 |
| Estimated totals or averages | 339 | 196 | 58 | 796.20 | 477 ^{245t} 28 ^d | 0.60 | 2,102 | 2.64 | 31,745 | 39.9 | 0.09 |

^{245t} Indicates 245 tagged hatchery fish.

^{7d} Indicates number of dorsal- and adipose-clipped legal fish.

Table 18

Estimated fishing pressure and estimated total catch of Special Section II, Hunt Creek, as derived from data collected by the restricted, stratified, random sampling method.

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal trout | Wt. of legal trout caught per hour | |
|-------------------------------|-------------------|-----------------------|-------------------------|------------------------|----------------------------------|----------------|-----------------------|----------------|--------------------------|------------------------------------|--------|
| | | | | | Number | Catch per hour | Number | Catch per hour | | Grams | Pounds |
| April 26-May 9 | 84 | 53 | 63 | 129.50 | 49 ^{32t} | 0.38 | 375 | 2.89 | 3,913 | 30.2 | 0.07 |
| May 10-23 | 31 | 63 | 78 | 103.25 | 32 ^{25t} | 0.31 | 427 | 4.14 | 2,307 | 22.3 | 0.05 |
| May 24-June 6 | 28 | 21 | 75 | 77.00 | 14 | 0.18 | 385 | 5.00 | 1,743 | 22.6 | 0.05 |
| June 7-20 | 42 | 33 | 78 | 149.04 | 9 | 0.19 | 224 | 4.57 | 1,494 | 30.5 | 0.07 |
| June 21-July 4 | 49 | 39 | 79 | 79.63 | 39 | 0.48 | 319 | 4.00 | 2,678 | 33.6 | 0.07 |
| July 5-13 | 98 | 89 | 90 | 163.00 | 9 | 0.06 | 658 | 4.03 | 528 | 3.2 | 0.01 |
| July 19-Aug. 1 | 28 | 28 | 100 | 49.00 | 0 | 0.00 | 28 | 0.57 | ... | 0.0 | 0.00 |
| Aug. 2-15 | 91 | 84 | 92 | 152.25 | 28 ^{7r} | 0.18 | 455 | 2.99 | 1,484 | 9.7 | 0.02 |
| Aug. 16-Sept. 1 | 34 | 34 | 100 | 57.38 | 0 | 0.00 | 60 | 1.04 | ... | 0.0 | 0.00 |
| Estimated totals and averages | 535 | 444 | 83 | 360.05 | 180 ^{57t} ^{7r} | 0.21 | 2,931 | 3.41 | 14,147 | 16.4 | 0.04 |

^{57t} Indicates estimated number of tagged hatchery fish in the catch.

^{7r} Indicates estimated number of right pelvic- and adipose-clipped fish in catch.

Table 19

Creel census data from the vicinity of the
 Hunt Creek Rearing Station, Hunt Creek,
 1941 trout season.

| Two-week period | Number of anglers | Number taking no fish | Per cent taking no fish | Total hours of angling | Legal brook trout | | Sub-legal brook trout | | Total wt. of legal trout |
|-----------------------|-------------------------|--------------------------------|----------------------------------|------------------------------|--|-------------------|--------------------------|-------------------|--------------------------------|
| | | | | | Number | Catch per hour | Number | Catch per hour | |
| April 26-May 9) | | | | | | | | | |
| May 10-May 23) | No data available | | | | | | | | |
| May 24-June 6) | | | | | | | | | |
| June 7-June 20) | | | | | | | | | |
| June 21-July 4 | 12 | 2 | 17 | 53.50 | 50 ^{2t} ↓ _r | 0.93 | 96 | 1.79 | Data |
| July 5-July 18 | 5 | 1 | 20 | 11.25 | 7 | 0.62 | 20 | 1.78 | not |
| July 19-Aug. 1 | 4 | 1 | 25 | 12.50 | 9 | 0.72 | 55 | 4.40 | avail- |
| Aug. 2-Aug. 15 | 7 | 2 | 29 | 18.00 | 12 | 0.67 | 24 | 1.33 | able |
| Aug. 16-Aug. 29 | 6 | 0 | 0 | 17.00 | 45 ^{28r} | 2.65 | 38 | 2.24 | |
| Aug. 30-Sept. 1 | 2 | 0 | 0 | 6.50 | 1 ^{2r} | 0.62 | 6 | 0.92 | |
| Totals or averages | 36 | 6 | 17 | 118.75 | 127 ^{2t} ↓ _r 31 _r | 1.07 | 239 | 2.01 | |

2^t Indicates number of tagged fish.

31_r Indicates number of right pelvic-and adipose-clipped fish of legal size.

Table 20

Summary of recoveries reported on fingerling plantings made in fall of 1939 (dorsal- and adipose-clipped) and in fall of 1940 (adipose and right pelvic fins) from Hunt Creek during the 1941 trout season.

(Figures in parentheses indicate percentage of total catch made up by the marked and unmarked fish)

| Section | Mark used and number caught | | | Total legal trout | Total catches examined |
|------------------------------|-----------------------------|--------------------------|------------------|-------------------|------------------------|
| | Dorsal- and adipose-clipped | Right pelvic and adipose | Wild unmarked | | |
| Experimental sections | 10 | ... | 712 | 722 | 1,015 |
| Below A | 1 | ... | 221 | 222 | 296 |
| Above and below Section I | ... | ... | 10 | 10 | 11 |
| Section I | 7 | ... | 49 | 56 | 71 |
| Hunt Creek Rearing Station | ... | 31 | 94 | 125 | 36 |
| Above and below Section II | ... | ... | 7 | 7 | 31 |
| Section II | ... | 1 | 27 | 28 | 114 |
| Miscellaneous records | 5 | ... | 1 | 6 | 4 |
| Totals | 23 (1.96) | 32 (2.72) | 1,121 (95.32) | 1,176 (100.00) | 1,578 |
| Number released | 35,109 | 17,635 | ... | ... | ... |
| Percentage recovered to date | 0.07 | 0.18 | ... | ... | ... |

Table 21
 Numbers and percentages of "anglers" taking various numbers of
 legal brook trout from Sections A, B, C, D, E of Hunt Creek,
 1941 season, with comparative data from previous creel censuses.

| Two-week periods | Numbers of fish taken by numbers of fishermen | | | | | | | | | | | | | | | | Totals |
|---|---|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|--------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | |
| April 26-May 9 | 106 | 20 | 6 | 4 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 138 |
| May 10-23 | 36 | 6 | 3 | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 48 |
| May 24-June 6 | 50 | 13 | 6 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 71 |
| June 7-20 | 20 | 7 | 5 | 4 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 38 |
| June 21-July 4 | 33 | 12 | 6 | 4 | 4 | 1 | ... | 1 | ... | ... | 1 | ... | ... | 1 | ... | ... | 63 |
| July 5-13 | 66 | 17 | 13 | 6 | 7 | 3 | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 114 |
| July 19-Aug. 1 | 52 | 13 | 7 | 6 | 2 | 3 | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | 86 |
| Aug. 2-15 | 94 | 28 | 14 | 9 | 2 | 7 | 3 | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | 159 |
| Aug. 16-29 | 135 | 24 | 5 | 2 | 5 | 4 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 226 |
| Aug. 30-Sept. 1 | 59 | 7 | 3 | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 72 |
| Totals | 701 | 146 | 68 | 40 | 26 | 19 | 4 | 2 | 1 | 2 | 2 | ... | 2 | 1 | ... | ... | 1,015 |
| Percentage, 1941 | 69.2 | 14.4 | 6.6 | 3.9 | 2.6 | 1.9 | 0.4 | 0.2 | 0.1 | 0.2 | 0.2 | ... | 0.2 | 0.1 | ... | ... | 100 |
| Percentage, 1940 | 66.1 | 15.1 | 7.1 | 5.0 | 2.1 | 2.0 | 0.9 | 0.6 | 0.9 | 0.2 | ... | ... | ... | ... | ... | ... | 100 |
| Percentage, 7 streams, 1939 ^a | 50 | 14 | 10 | 7 | 5 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | ↓... | ↓... | 1 | 100 |
| Percentage, 6 streams, 1938 ^b | 45 | 17 | 11 | 7 | 5 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | ↓... | ↓... | ↓... | 1 | 100 |

^a Data from intensive trout stream creel census areas on Pine, Pigeon, N. Branch Au Sable, Little Manistec, Canada Creek, White River, and Hunt Creek - 11,179 angling records.

^b Data from intensive trout stream creel census areas on streams mentioned in a except Hunt Creek - 9,532 angling records.

↓ 0.5 per cent or less.

Table 22

Residence of anglers using the experimental sections (A, B, C, D, E) of Hunt Creek during the 1942 trout season.

| Angling days expended by | | | |
|--|--------|---------------|--------|
| Residents | | Non-residents | |
| County | Number | State | Number |
| Alcona | 2 | Ohio | 49 |
| Alpena | 9 | Indiana | 33 |
| Bay | 35 | Pennsylvania | 4 |
| Calhoun | 5 | | |
| Charlevoix | 2 | Unknown | 11 |
| Eaton | 2 | | |
| Genesee | 125 | | |
| Ingham | 72 | | |
| Jackson | 30 | | |
| Kent | 3 | | |
| Lenawee | 3 | | |
| Macomb | 6 | | |
| Midland | 8 | | |
| Monroe | 7 | | |
| Montmorency | 201 | | |
| Oakland | 62 | | |
| Oscoda | 25 | | |
| Ottawa | 3 | | |
| Saginaw | 29 | | |
| St. Clair | 122 | | |
| Sanilac | 4 | | |
| Shiawassee | 1 | | |
| Tuscola | 1 | | |
| Washtenaw | 22 | | |
| Wayne | 139 | | |
| Totals | 918 | Totals | 97 |
| Total fishermen-days on Sections A, B, C, D, E 1,015 | | | |