

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

Original: Fish Division ✓  
cc: Education-Game  
Paul Eschmeyer  
Florin Warren - 3-19-43  
George Washburn  
Inst. for Fisheries Res.

ALBERT S. HAZZARD, PH.D.  
DIRECTOR

ADDRESS  
UNIVERSITY MUSEUMS ANNEX  
ANN ARBOR, MICHIGAN

March 4, 1943

REPORT NO. 850

TAG RETURNS FROM PLANTINGS OF LEGAL TROUT  
IN THE MIDDLE BRANCH OF THE ONTONAGON  
RIVER, GOGEBIC COUNTY, MICHIGAN

by

Paul Eschmeyer

In recent years the Institute for Fisheries Research has carried on a number of experiments in various waters of the state, to compare different methods of stocking legal-sized trout, and to determine the time of year for planting which will result in the greatest good to the greatest number of anglers. One such experiment was carried out in 1941 in the Middle Branch of the Ontonagon River, Gogebic County, Michigan.

On each of two dates, October 18, 1941 and April 16, 1942, 300 jaw-tagged trout were stocked in the Middle Branch immediately below the Ontonagon Trout Station, one mile east of Watersmeet, Michigan. On each date, 75 brook trout and 75 rainbow trout were planted in the first pool below the Ontonagon Station. An additional 75 tagged fish of each species were spread by boat, (a few fish to each pool) between the Ontonagon Station and a point about  $1\frac{1}{2}$  miles downstream known as Crossier's Bridge (see map, Fig. 1\*). The objects of this and other similar studies is to compare returns to the angler from spring and fall planted fish, and to compare results of spreading fish by boat and planting all fish in a single pool (the method generally referred to as "spot planting"). The one study here reported is not meant to be complete in itself, but is a part of the above mentioned series of experiments, in various waters of the state. These will ultimately be used by the Conservation Department in the formulation of a policy for legal-sized plantings in the future.

All fish used in the Middle Branch experiment were taken from an identical group, which was being held for legal-size planting during the spring and summer of 1942. The trout planted in the fall averaged 6.8 inches in length, while those stocked in the spring had an average size of 8.0 inches. The average size of the various groups was as follows: (1) brook trout planted in first pool below the Ontonagon Station: fall - 7 inches, spring - 7.9 inches; (2) brook trout planted by boat: fall - 6.9 inches, spring - 7.7

---

\*A copy of the map showing points of recovery will be found with the Institute for Fisheries Research file copy and Dist. Biol. 1. file copy. Fig. 1 in other copies shows only location of plants.

inches; (3) rainbow trout stocked in first pool below the Ontonagon Station: fall - 6.9 inches, spring - 8.3 inches; (4) rainbow trout spread over a section of stream by boat: fall - 6.6 inches, spring - 8.1 inches.

Returns of tagged fish are shown in Table I and in Figure 1. The total return for the 600 tagged fish was 7.02 per cent. Returns for the various groups follow: (1) brook trout planted in the first pool below the Ontonagon Station: fall - 8 per cent, spring 14.67 per cent; (2) brook trout spread by boat: fall - 8 per cent, spring - 8 per cent; (3) rainbow trout stocked in first pool below the Ontonagon Station: fall - 1.33 per cent, spring 4 per cent; (4) rainbow trout planted by boat: fall - 2.67 per cent, spring - 10.67 per cent.

From the standpoint of total tag returns, best results were obtained from brook trout planted at a single location in the spring, just before the fishing season. Brook trout planted at a single location in the fall, and those planted by boat during both spring and fall, showed equal return percentages.

Rainbow trout scattered by boat in the spring brought the best returns insofar as this species is concerned in this experiment. Other groups showed up poorly. Only one of the 75 rainbow trout planted in the first pool below the Ontonagon Station, in the fall, was reported captured.

The number of fishermen participating in the harvesting of artificially stocked fish is of some importance. Little public advantage occurs if a few fishermen catch a large number of a given group of newly planted hatchery fish. This experiment does not offer a great deal of data on this aspect of legal-size plantings. However, it is of interest to note that, of the 11 tags returned for the 75 brook trout planted in the first pool below the Ontonagon Station, in the spring, 4 were returned by one angler and 3 by another. So far as is known no fisherman caught more than one fish on any one day from any of the other groups studied. Thirty fishermen cooperated in turning in the 43 tags.

In connection with the major objects of the study, as described above, some incidental observations were made on the migration of trout. The point in the stream at which each trout was reported recaptured is shown in Fig. 1. The number of days which each trout was at liberty is shown in Table I. Some fish did not move, while others migrated from  $2\frac{1}{2}$  miles upstream to about 16 miles downstream, between the time of tagging and recapture.

Brook trout planted in the fall of the year migrated upstream to a distance of  $2\frac{1}{2}$  miles above the point of release, and downstream as far as 5 miles. Brook trout planted in the spring moved about the same distance. Rainbow trout planted in the fall migrated downstream to a distance of 6 miles. Rainbows stocked in the spring migrated upstream one mile above the Ontonagon Station and to a distance of 16 miles downstream.

Since no tagged trout had previously been placed in the streams of the western Upper Peninsula, fishermen were, in general, unfamiliar with the

procedure to follow when a tagged fish was caught. Although this was explained in signs placed at the Ontonagon Station and at Crossier's Bridge, much of the stream in which tagged fish were caught was not so covered. To check the results of this experiment, and with the hope that a larger number of returns will be made by fishermen due to their better familiarity with the tagging program, the study is being repeated this year. (With the recent departure of Mr. Eschmeyer to serve in the Navy, it is doubtful if the experiment can be immediately repeated, unless Mr. Eschmeyer is replaced. Mr. Eschmeyer did tag 150 rainbow trout and 150 brook trout, and distributed them in the manner described, before he left Watersmeet in the fall of 1942. These fish will be available for the 1943 anglers. D. S. S.).

INSTITUTE FOR FISHERIES RESEARCH

by Paul Eschmeyer

Report approved by: A. S. Hazzard

Report typed by: T. Maki

Table I.

BROOK TROUTPlanted in First Pool Below Ontonagon Station

Tag Number	Approximate Date of Capture	(October, 1941)	
		Total Days of Liberty	Where Caught
29161	5/3/42	198	Two miles below Ontonagon Trout Station
29164	4/26/42	191	First pool below Ontonagon Trout Station
29171	6/8/42	234	First pool below Ontonagon Trout Station
29179	5/28/42	223	Four miles below Ontonagon Trout Station
29204	4/25/42	190	First pool below Ontonagon Trout Station
29225	5/28/42	223	Found dead, 800 feet up Sargent's Creek
	average -	210	
(April, 1942)			
29453	5/26/42	42	Two miles below Ontonagon Station
29458	4/25/42	11	About 1000 feet below Ontonagon Station
29468	4/25/42	11	First pool below Ontonagon Station
29472	4/25/42	11	First pool below Ontonagon Station
29484	4/25/42	11	First pool below Ontonagon Station
29485	4/25/42	11	First pool below Ontonagon Station
29490	4/25/42	11	About 1000 feet below Ontonagon Station
29498	4/25/42	11	About 1000 feet below Ontonagon Station
29584	4/26/42	12	About 1000 feet below Ontonagon Station
29590	4/25/42	11	About 1000 feet below Ontonagon Station
29592	8/10/42	118	Four and one-half miles above Ontonagon Sta.
	average -	23	

BROOK TROUTScattered over  $1\frac{1}{2}$  miles of Stream by Boak

(October, 1941)			
29376	5/20/42	215	About 800 feet up Sargent's Creek
29390	6/8/42	234	First pool below Ontonagon Station
29411	6/5/42	231	First pool below Ontonagon Station
29426	5/7/42	202	First pool above Ontonagon Station
29431	5/10/42	205	Two and one-half miles above Ontonagon Sta.
29432	6/4/42	230	Five miles below Ontonagon Station, in Morrison Creek
	average -	219	
(April, 1942)			
29522	6/30/42	77	Six miles below Ontonagon Station
29524	4/25/42	11	About 1000 feet below Ontonagon Station
29527	5/26/42	42	Three miles below Ontonagon Station
29543	5/8/42	24	First pool below Ontonagon Station
29551	5/25/42	41	One mile above Ontonagon Station
29553	5/17/42	33	One and one-half miles below Ontonagon Sta.
	average -	38	

Table I. (contd.)

RAINBOW TROUTPlanted in First Pool Below Ontonagon Station(October, 1941)

Tag Number	Approximate Date of Recapture	Total Days of liberty	Where Caught
29267	5/29/42	224	One mile below Ontonagon Trout Station

(April, 1942)

29609	6/30/42	77	Six miles below Ontonagon Trout Station
29619	6/25/42	72	One mile below Ontonagon Station.
29651	8/26/42	134	Sixteen miles below Ontonagon Station
	average -	94	

RAINBOW TROUTScattered over  $1\frac{1}{2}$  miles of Stream by Boat(April, 1942)

29684	5/17/42	33	One mile above Ontonagon Trout Station
29685	8/18/42	126	About 13 miles below Ontonagon Station
29712	5/20/42	36	One mile below Ontonagon Station
29717	5/20/42	36	One mile below Ontonagon Station
29719	5/29/42	45	Three miles below Ontonagon Station
29720	6/25/42	72	One mile below Ontonagon Station
29722	5/20/42	36	One mile below Ontonagon Station
29737	6/24/42	71	North of mouth of Tamarack River - 6 miles below Ontonagon Station
	average -	57	

(October, 1941)

29334	6/30/42	256	Six miles below Ontonagon Trout Station
29331	8/5/42	292	Within 2 miles of place of release
	average -	274	

