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RESULTS OF A TAGGING STUDY ON SILVER CREEK - 1950

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Introduction

As an outgrowth of a fishery survey of Silver Creek, Blaine County, and its tributary streams this tagging study was instigated to determine the extent of migration of rainbow trout from the closed headwater streams to the lower portions which are open to fishing. During the survey of 1947 and through periodic observations since that time a good population of trout, ranging in size from three inches to five pounds has been noted in all tributary streams. This was the case regardless of the time of year observations were made, whether spring, summer, fall or winter. The question arose as to the validity of the reported use of the headwater tributaries as "feeder" streams and it was decided that a tagging experiment would be the logical method to determine if such reports are true, and if so, to what extent.

Prior to July, 1948, all of the headwater streams of Silver Creek, except for the lower mile of Loving Creek, were closed to fishing. In July, 1948, the closure boundary was changed so that an additional 10 miles of stream were opened to fishing. There remains approximately 10 miles of stream still closed to fishing and which, it has been argued, are necessary to serve as "feeders" to the streams below. It was thought that adult fish used the headwater streams for spawning and that the resultant new populations moved downstream into larger waters after they began to attain maturity.

Method

To test the validity of the "feeder" stream theory as it applies to Silver Creek headwaters 99 wild rainbow trout ranging in size from 6 to 21 inches were caught, tagged, and released in four of the headwater streams as follows: (see map for location)

Name	No. tagged	Size range	Distance above Closure Boundary
Loving Creek	25	6.2 - 21 inches	3/4 mile
Grove Creek	38	6 - 19.6 "	1 3/4 miles
"A" Creek	30	6.1 - 10 "	2/3 mile
"B" Creek	6	6.3 - 8.5 "	24 feet

These wild rainbow trout were taken with the use of the electric shocker, placed in a live box while being tagged and observed for possible injury, then released at the point at which they were taken.

As a control to the study 101 mature rainbow trout, of a semi-wild nature, were tagged and planted in waters open to fishing. These were cull, male brood fish from the Hayspur Hatchery, ranging in size from 14 to 20 inches in length. The wild fish were captured and tagged December 6 and 7, 1949, and the brood fish were tagged at the same time. The latter were not planted, however, until January 17, 1950. In the interval nine of these adult males lost tags or died, leaving a total of 92 to be planted.

Tag Returns

The [illegible] fisherman was depended upon entirely for the return of tags.

the two lots of tagged trout no tags were returned from the wild stock--tagged and released in closed waters--and 16 tags, or 17.4 per cent, were returned from those planted in open waters.

Conclusions

1. The results of this tagging study indicate that the "feeder" stream theory has no basis when applied to Silver Creek and its tributaries. There is no evidence that rainbow trout migrate downstream when they become larger.

2. The unknown factor: fisherman response to return tags voluntarily would show up in a comparable manner on both lots of fish.

3. Observations made at various times of the year over a four-year period indicate a "resident" population of large fish in headwater streams, both open and closed to fishing. Spawning migrations are not too evident, that is, spawning fish apparently do not move very far upstream in order to spawn.

4. From a management viewpoint it would be wise to either: (a) open to fishing all headwater streams, or parts thereof, now closed and continue present stocking plans; or, (b) discontinue stocking of fish in closed headwater streams. The former plan is recommended, at least for the larger streams; inasmuch as it would add another 10 miles of fishing water to the Silver Creek area (presently giving 30 miles of fishing water) and insure a harvest of legal fish which remain resident in these closed waters. It would also insure a harvest of eastern brook trout, which formerly were confined to Deep Creek, and retard their spread to all the tributaries of Silver Creek as well as the main stream itself.

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