

MONTANA STATE DEPARTMENT OF FISH AND GAME
FEDERAL AID IN FISH RESTORATION SECTION
HELENA, MONTANA

JOB COMPLETION REPORT
INVESTIGATIONS PROJECTS

State of Montana

Project No. F-7-R 3 Work Plan VII Job No. VII-A,B,C,&D

Title of Jobs: Job No. VII-A: Survey of Spawning Areas of Yellow Perch and Trout

Job No. VII-B: Food Taken by Mature Trout and Yellow Perch During the Summer Months After Their Eggs Are Hatched

Job No. VII-C: Comparison of the Growth Rate of Trout to That of Yellow Perch

Job No. VII-D: Distribution of Trout and Yellow Perch in Middle Thompson Lake

Abstract:

An investigation was made on the relationships between yellow perch and cutthroat trout in Thompson Lakes, Montana, in the summers of 1952 and 1953. These lakes originally contained cutthroat trout and were later planted with yellow perch. The spawning time of yellow perch was in early May, and for the cutthroat trout in late May. The population of yellow perch was large and growth was very slow. While the number of cutthroat trout was small, the growth rate for this species was about average. The food of yellow perch was largely immature aquatic insects and plankton while that of cutthroat trout was mostly mature aquatic insects and small perch. Yellow perch were commonly distributed along the lake margins and concentrations of perch fry and adults were found in these areas in the spring. During this same period the salmonid fishes were predominately in the deep water. Poisoning of the yellow perch concentrations was very effective. Management suggestions are given.

Objectives:

Job No. VII-A: It is well known that the early life period of many animals is the most vulnerable period in their life cycles. Adult perch have been observed during the warm summer months in large concentrations in streams tributary to trout lakes and around the mouths of these streams. Should such concentrations occur at the time trout fry are emerging from the gravel and moving to the lake, it is conceivable that the perch might have a disastrous effect. The object of this job is to study this life period of the trout and perch in an effort to establish the interrelation of the fish during this vulnerable time.

Job No. VII-B: It is important to find out to what extent yellow perch feed on trout fry and also to find if young perch are consumed by the trout. The aim of this job is to determine the feeding habits of perch after the trout fry come out of the gravel and to what extent perch spawn and fry are used as food by trout, and to what extent cannibalism prevails. Samples will be taken in such a manner that competition between the perch and trout can be evaluated.

Job No. VII-C: If the trout and yellow perch eat each other's young and also their own, it is important to know how fast each one grows in order to determine the length of time of availability of each species as food for the larger fish. The aim of this job is to find out if the taking of young fish accelerates the growth of the larger fish while the young are available, and attempt to determine the factors that may contribute to the stunting of perch.

Job No. VII-D: The object of this job is to establish the distribution of trout, yellow perch, and other resident fish in a trout lake contaminated with yellow perch.

Techniques Used and Findings:

A manuscript is being submitted in accordance with Section 1542 of the Federal Aid Manual prior to publication.

Recommendations:

Following are the recommendations proposed for the management of trout and yellow perch in the Thompson Lakes. Recommendations are the result of data included in the manuscript.

Total poisoning of the entire Thompson Lake chain is not economically feasible. During the spring months the yellow perch are concentrated on the shoal areas and kokanee and cutthroat trout are in deep water. Partial poisoning along the lake margins and in the bays at this time should be very effective in reducing the yellow perch population. The aim of such a program should be to reduce the yellow perch population to a level where this species will show good growth and attain useful size. Such a reduction should also make conditions more favorable for an increase in the number of salmonids. A combination method of poisoning yellow perch fry and chumming and poisoning the larger perch is recommended for Lower Thompson Lake. This should be initiated about June 20, and be continued as long as concentrations of yellow perch are found. It is believed that with further study an effective method might be developed for the reduction of yellow perch by the concentration and destruction of spawn. An age and growth study should be made at the end of the first year to check the effectiveness of this program.

As soon as the treated areas in Lower Thompson Lake are non-toxic, cutthroat trout fry at the rate of 300 or more per surface acre should be planted along the littoral zone.

Since the cutthroat trout are known to feed rather extensively on yellow perch fry it is recommended that heavy plantings of this species--seven inches or over in length--be made in Middle Thompson Lake. In order to prevent fish movement between Middle and Lower Thompson Lake a screen barrier should be installed in the connecting channel.

A careful check should be made on all plantings in both lakes by creel census and gill netting.

Fishermen should be encouraged to harvest yellow perch by furnishing them with all information available on effective fishing methods and perch distribution. Means should also be developed whereby the mountain whitefish, which is relatively abundant and very poorly utilized, can be harvested.

Summary:

An investigation was made on the relationships between yellow perch and cutthroat trout in Thompson Lakes, Montana, in the summers of 1952 and 1953. These lakes originally contained cutthroat trout and were later planted with yellow perch. The spawning time of yellow perch was in early May, and for the cutthroat trout in late May. The population of yellow perch was large and growth was very slow. While the number of cutthroat trout was small, the growth rate for this species was about average. The food of yellow perch was largely immature aquatic insects and plankton while that of cutthroat trout was mostly mature aquatic insects and small perch. Yellow perch were commonly distributed along the lake margins and concentrations of perch fry and adults were found in these areas in the spring. During this same period the salmonid fishes were predominately in the deep water. Poisoning of the yellow perch concentrations was very effective.

Data and Reports:

The original data is with the project assistant at Bozeman, Montana.

Prepared by John Echo Approved by _____

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