

Box 499

Sitka, Alaska

January 27, 1965

Mr. Robert Nelson
Box 416
Ketchikan, Alaska

Dear Bob:

First, apologies are in order for the long delay in replying to your letter. The reason for the delay is that available literature pertaining to forage fish introductions was reviewed and a staff conference was held in Juneau this month to fully review the situation. Thirdly, budgetary considerations which dictate the logistics of any program had to be worked out.

There is always the possibilities of opening a biological "Pandora's Box" with the introduction of a foreign species of fish. Briefly, let me review some of these considerations.

The consequence of introducing new species to a given ecosystem in relation to the stability and continuity of that ecosystem, and the reasons for the amount and composition of the production must be sought.

The introduction of exotic species is intended to substitute inefficient fish, or to introduce fish to occupy niches which at present are unoccupied, or to produce an effect upon certain existing species of fish which in turn will reduce their effect upon other elements (forage fish or predator fish).

In seeking to maximize the productivity of a given system, man makes changes which are intended to increase the efficiency of the pace of the processes of the system. The efficiency of each stage of the system may be expressed as a ratio of the nutrient materials available to it and the end product which it yields, within unit time. The efficiency of the total system is a similar index relating the primary nutrient materials to the final end products. The efficiency of a certain system may be low because of inefficient elements at certain stages or because of the absence of certain elements.

Part of any maximization program will consist of replacing inefficient elements, or introducing new elements. Man attempts to maximize by making taxonomic changes in the composition or numerical changes in the composition of the system, by changing it's size, or by changing its accessions of energy. Specifically, in Thayer Lake this would mean the introduction of a forage type fish to fill a presumably unoccupied niche. Makana salmon are predominantly plankton feeders and would offer little interspecific competition for other forms of food and in turn form a larger food supply as forage fish for larger predators, (cutthroat trout).

You have pointed out in your letter that you have reviewed the publication on Kokanee salmon introductions in California. This is an excellent paper to study in this regard. In particular, it was pointed out that the value of Kokanee salmon as forage for large trout has not been established in California. There is even the possibility that Kokanee may depress the present cutthroat population in Thayer Lake. However, on the other hand conditions in Southeast Alaska are quite dissimilar to those of California lakes.

The Division of Sport Fish is not negative in its' approach to this particular problem but rather it's objective to point out as many pros and cons based on available knowledge as possible so that the best possible management plan may be formulated.

A management program has been proposed for Thayer Lake to begin this summer. It is the intention of the Division to experimentally transfer live Kokanee from the Hasselborg system to Thayer Lake. This program will necessitate an intensive live trapping program using fyke net traps and seines. In this way we hope to transfer adult fish which would not be subjected to immediate predation from the cutthroat trout as say fry might be and also there is a good chance that if obtained at the proper seasonal time they might spawn this year.-

There is some basis for optimism in the success of the program. A comparison of average lengths and maximum lengths from fish netted in Hasselborg Lake this fall and fish from Thayer Lake this summer indicates a significant difference. Cutthroat trout in Hasselborg Lake ranged in length from 7.4 in. to 20.0 in., and a mean length of 10.7 inches. Thayer Lake netting results showed a range in length from 6.0 in. to 11.3 in. for cutthroat trout, and a mean length of 8.9 inches. If this difference in size for Hasselborg trout can be assumed to be in part caused by the presence of a forage fish (Kokanee) then perhaps the experimental planting of Kokanee in Thayer Lake will result in increased food and subsequent growth.

The actual work schedule has not been fully worked out but I will stay in contact with you and keep you informed of our progress. If you have any questions or comments Bob, please drop me a line.

Best regards,


Rupert E. Andrews
Fishery Biologist

cc: Ajax McRae, Director