

BIOLOGICAL BOARD OF CANADA

MANUSCRIPT REPORTS OF THE BIOLOGICAL STATIONS

No. 200B

Title

THE DISTRIBUTION AND FEEDING HABITS OF LAKE TROUT
(CRISTIVOMER NAMAYCUSH) IN FIRST CHAMCOOK LAKE, N. B., CANADA.

Author

A.D. Bajkov.

THE DISTRIBUTION AND FEEDING HABITS OF LAKE TROUT,
CRISTIVOMER NAMAYCUSH, in FIRST CHAMCOOK
LAKE, NEW BRUNSWICK, CANADA.

by

A. D. Bajkov
Atlantic Biological Station,
St. Andrews, N. B.

1936.

THE DISTRIBUTION AND FEEDING HABITS OF LAKE TROUT,
CRISTIVOMER NAMAYCUSH, IN FIRST CHAMCOOK LAKE, N. B.

In the chain of Chamcook lakes this species occur only in largest and deepest First lake, being strictly limited in its distribution by temperatures and depth. Lake trout, Cristivomer namaycush, or, as it is locally called, togue is a native fish of this lake. As speckled trout are extremely rare in this lake togue can be considered as the most important game fish after landlocked salmon. Cristivomer namaycush is not a rare species in First Chamcook lake and the total number caught yearly by fishermen is probably not less than landlocked salmon but on account of its less energetic fighting habits this species is not so highly valued as a game fish as Salmo sebago. However, it reaches a considerable size and a specimen of 27 lbs. was taken in 1927. The largest specimen secured in 1934 was 9 lbs. but the average weight of this fish is much smaller, being between five and six pounds. It must be noted, however, that in the summer of 1935 we secured more Cristivomer than Salmo in gill nets but this condition can be explained easily if we will take into consideration the fact that Cristivomer is distributed during this time of year in the deeper water where it can be caught much easier than salmon.

During the summer lake trout is distributed in deep water just below the thermocline (hypolimnion) where the temperatures at this time have never been found to exceed 12.8°C. and are usually less.

But in spring before the surface water has warmed up this fish can be caught by means of an artificial spoon in fairly shallow places near the shores. The same phenomena occurs in late autumn just before the spawning season when this fish leaves the deeper water and comes into shallow waters. When smelt gather into large schools on the way to the spawning beds, lake trout follow the schools of this fish and can be observed and easily caught by hook through the ice in a depth less than one metre. During the summer, on the other hand, all our specimens secured by gill nets were caught in places where the upper strata of hypolimnion meet the bottom in vicinity of the shore. As can be judged by their stomach analyses lake trout follow the movements of smelt in deep water but it seems that they never come to the surface during the summer months.

Lake trout is the chief, or maybe the only, competitor for food with landlocked salmon in First Chamcook lake since we have never found the smelt in the stomachs of eels. The speckled trout on account of their very limited number cannot be considered as a competitor for salmon. As it is shown by the stomach analyses the main food of Cristivomer namaycush in First Chamcook lake is landlocked smelt.

Lake trout is a more rapacious fish than salmon and the average number of smelt found in their stomachs was as many as 5.5. The ratio between average number of smelt in the stomachs in these two fishes has been estimated as 3 : 5.5. (23 salmon and 20 lake trout examined).

The following are the results of stomach analyses of lake trout from First Chamcook lake, obtained during 1934 and 1935.

<u>No.</u>	<u>Date</u>	<u>Length</u>	<u>Sex</u>	<u>Stomach content</u>
1	22-2-34	550/575	F	Seven smelts
2	2-3-34	435 /485	F	Eight "
3	5-3-34	490/530	M	" "
4	26-3-34	525/570	M	Two smelts
5	1-3-34	535/580	F	Seven "
6	1-3-34	540/560	M	One "
7	26-3-34	450/490	F	Two "
8	29-3-34	720/760	M	Twenty "
9	15-3-34	495/450	M	Two smelts, 7 sticklebacks
10	15-3-34	525/580	M	One <u>Couesius plumbeus</u> 5 smelts, 2 sticklebacks
11	16-3-34	540/580	F	Seven smelts
12	1-5-34	495/540	F	1 stickleback, 48 Chironomid puppae.
13	26-8-34	(from fisherman)		1 smelt, 3 sticklebacks, 1 <u>Hexagenia</u> nymph, 3 Parnid beetles (Adults)
14	20-8-35	"		Fourteen smelts
15	25-8-35	"		Five "
16	20-9-35	"		Six "
17	14-8-35	410/450	F	Five "
18	21-8-35	375/402	M	Three "
19	31-8-35	355/380	M	Three "
20	31-8-35	522/570	M	Three smelts (remains)

Note: All the sticklebacks belong to pungitius pungitius