

INSTITUTE FOR FISHERIES RESEARCH
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FISH DIVISION

INVESTIGATION OF SALMON AND TROUT CONDITIONS IN TORCH LAKE, TORCH
RIVER AND TRIBUTARY WATERS, WITH SUGGESTIONS FOR A FISH MANAGEMENT
POLICY FOR THESE WATERS

Torch Lake - not covered by present investigation. I understand report is available of work done there by Koelz and Van Oosten. Survey now in progress by Eschmeyer and party. Lake supports Mackinaw trout and steelhead now and doubtless physical conditions are suitable for support of land-locked salmon. How many salmon it could support is problematical. It is not a rich lake in food supply and although lake herring are present as well as more or less other suitable food fish for adult salmon, it is not probable that salmon could be expected to reach a higher abundance than lake trout and steelhead do now. List of fish will be reported upon by lake survey investigation.

Spawning streams - since the land-locked salmon is known to spend the first two years of life in streams it is important to know if a suitable quality and quantity of streams are available to produce sufficient young to stock the lake. The salmon is a fall spawner and requires spawning streams which have gravel bottom and have water which forms no ice in winter. Only water in close proximity to springs could be expected to remain warm enough in winter to permit normal development.

Several streams enter Torch Lake but most of these are either impermanent or too small to consider as spawning streams. The only streams visited were Clam River, Alden

Creek, Torch River, and Rapid River.

Clam River is not a trout stream as it flows through several lakes and is rather warm. Temperatures: 2:30 P.M. air 83°, water 78°, Aug. 6.

Torch River is not suitable for small trout. There is a local controversy as to whether it should be classed as a trout stream. Brook and steelhead trout have been reported taken in lower Torch River in the spring fishing. Temperatures: 11 A.M., Air 82°, water 75°, Aug. 6. Lower Torch River 1/2 mile above the lake.

Alden Creek is a small trout stream entering the lake at Alden. It is about 10 ft. wide here and has a flow of about 4 to 5 cubic feet per second. The depth is small; several inches up to one foot. It is well supplied with gravel at the lower part. Temperatures: 2 P.M., air 83°, water 73°. This creek was seined with 4 foot seine and 5 rainbow trout fingerlings were taken in two hauls. Brook trout are reported from this creek and there is good evidence of a run of the steelhead rainbow (young found and townspeople report seeing the adults). The stream is not well suited to salmon reproduction in the lower part (temperature of 73° in summer would mean similar exposure to cooling in winter). It is too small a stream to consider as a salmon rearing stream (see map for length). Headwaters were not investigated. There may be suitable spawning places there but this stream alone could not rear many salmon.

The Rapid River is a large stream which enters Torch River. The Rapid has a width of as much as 100 feet in places and averages about 40 feet. The flow of water is at least 100 cubic feet per second. It is a good fishing stream for brook trout and rainbow trout. Brook trout predominate. There is an impassable dam at a point about six miles above the town of Rapid City (Michigan Public Service Corporation Dam). The dam is at least 15 feet high and holds a large pond. Brook trout are reported in the pond and above and a few large rainbows have been taken in the pond, according to reports. There is a fishway of boards and this consists of a series of twenty-two pools with baffles in between. The fishway is in poor condition and very little water was going

through it on August 6. The caretaker at the dam says that he does not think that many (if any) fish ascend it. It is probable that this is the case, although rainbow trout may possibly succeed in ascending as they are good jumpers.

It is reported that below the dam there is a considerable daily fluctuation in the stream level, caused by regulation of the amount of water going through the spillways. Mr. J. N. Rickers, caretaker of the state trout rearing station 2 1/2 miles below the dam, reports that very little water comes down in the morning. Others agree with this statement and report that fishing is not as good below the dam as above, on account of this fluctuation.

The Rapid River at the trout rearing station has a small dam but this is supplied with a spillway channel around one side that is doubtless passable to trout. Temperatures: 12:30 P.M. air 82°, water 66°. The river is well supplied with brook trout and is cold enough for young salmon. The main river is probably not suitable for spawning of salmon. However, there is a spring stream (48°) on Mr. Ricker's place which is suitable for brook trout to spawn. He reports seeing them every fall - as many as 25 to 30 in sight at one place in this stream, which is about 8 feet wide and has a flow of about 4 cubic feet per second. The bottom is predominantly gravel. There are two smaller feeders just below (largest about 100 gallons per minute) and he reports a few brook trout spawning at the mouth of the larger of these. According to Mr. Rickers, who knows the stream well, the feeder creeks on his farm are the best spawning places for brook trout, although he knows of several other spring runs between here and the power dam.

As a salmon possibility, these cold feeders (Ricker's place) are probable suitable spawning places, except that they are limited in size and could not be expected to accommodate many of these large fish.

Recommendations - I would advise against the introduction of land-locked salmon for the following reasons:

(1) The Rapid River is the only stream well suited to rearing a large number of young salmon and this stream is well regarded as a brook trout stream. In order to allow this stream to support a large number of salmon it would have to be closed to trout-fishing. (This step has been found necessary in the Main salmon lake inlets, because the young salmon are easily killed by trout fishermen). It seems a hazardous experiment to attempt to make Torch Lake a salmon lake because of the necessary curtailment of fishing waters. At present Torch Lake is producing Mackinaw trout and some large steelheads and Rapid River is producing good brook trout fishing.

(2) It is far from certain that salmon could be established there because of adverse factors in the lower Rapid River (fluctuation in water level below the dam) or possible loss in migrating down through the power plant or spillways, (if stocked above the dam). Salmon would have to stand the competition of brook and rainbow trout in the river and of Mackinaw and large rainbow in the lake.

All in all, it is not certain that land-locked salmon could be established and even if they could be established it is not certain that it would be to the best fishing interests of these waters; if it were necessary to sacrifice trout-fishing in the Rapid River.

Other notes: Complaint has been made by local residents, regarding Elk Rapids Dam which is said to prevent ascent of Lake Michigan fishes into the Torch River and Torch Lake.

Mr. Bingham, of Bingham Inn on Torch Lake, reports planting of 60,000 Chinook salmon from Washington or Oregon, about 12-14 years ago. He says several were taken by Walter Wilson, and others.

Mr. Wilson says "salmon" are occasionally taken, weighing about 5 pounds. They have pink flesh and black spots, he says.

A seven pound steelhead rainbow (♀) was taken by a fisherman named Doyle and was

examined by me. It had flesh of a distinct pink color and I think that all of the "salmon" taken in recent years are probably steelhead.

The failure of the steelhead rainbow to become more abundant is probably due to fluctuations in water level of lower Rapid River adversely affecting the spawning here. Brook trout and not rainbow predominate here. The present situation regarding rainbow seems most advisable to me; i. e., keeping Rapid River for brook trout and Torch Lake for Mackinaw trout. A considerable number of stream rainbow will, of course, persist and also a fair number of large adults will be taken in Torch Lake. If the administration of these waters goes on this basis, it would be wise to allow the fishway to remain as impassable as possible, to prevent dominance of rainbow in the excellent brook trout water above the dam.

Mr. Bingham reports catching black bass with adult tapeworms and has also noted the visceral adhesions characteristic of encysted bass tapeworm (Proteocephalus ambloplitis).

Mr. J. N. Rickers, who has lived 63 years on his farm, reports brook trout native to the Rapid River. He has never seen a grayling there.

INSTITUTE FOR FISHERIES RESEARCH

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Michigan Land-Locked Salmon

Dr. Lustig Catches Famous Fighting Fish in Torch Lake;
Believed Offspring of Planting Made 15 Years Ago



A catch of unusual interest to anglers of northern Michigan waters was the taking of a land-locked salmon in Torch lake by Dr. R. T. Lustig of 2305 Paris ave., S.E., who is spending his vacation at a cottage on the lake.

So unusual was the catch that within half an hour after the doctor landed with his catch, which also included a fine Mackinaw trout, representatives of the University of Michigan, department of fisheries, research division, were at his cottage to get complete data on this rare fish. They found that the fish measured 21¾ inches in length and weighed 4 pounds, 6 ounces. They obtained scales from the back for microscopic examination and also the head and tail of the fish for positive identification. The scales were expected to reveal the age of the fish.

Dr. Lustig was trolling with a power launch, using the regulation tackle for Mackinaw trout—about 1,000 feet of copper line with a pearl spoon—and had paid out less than 300 feet of line when he got the strike. The salmon fought valiantly for a few minutes and then came in

quite easily on the heavy tackle until nearly up to the side of the boat when he made a final struggle and nearly freed himself from the hook. The fish was taken about a mile out from the south end of the lake.

Representatives from the research division and the university stated that they were particularly interested to learn the age of the fish. They said that 15 years ago land-locked salmon had been planted in Torch lake and since then they had been unable to ascertain what the fate of this fine variety of fish had been. If microscopic examination of the scales reveals that the fish is less than 15 years old, which, taking the weight into consideration, seems very probable—then this fact will prove that the fish was spawned by the original stock planted in the lake and that this variety—land-locked salmon—will multiply in Torch lake. With this encouraging fact to work from it is very likely that additional efforts will be made to further increase the number of land-locked salmon in northern Michigan waters. "with the appropriate visiting these