

Travaillant Lake Fish Movement Study



2002

Prepared by
Melanie VanGerwen – Toyne
Gwich'in Renewable Resource Board

For
NWT Cumulative Impact Monitoring
Program

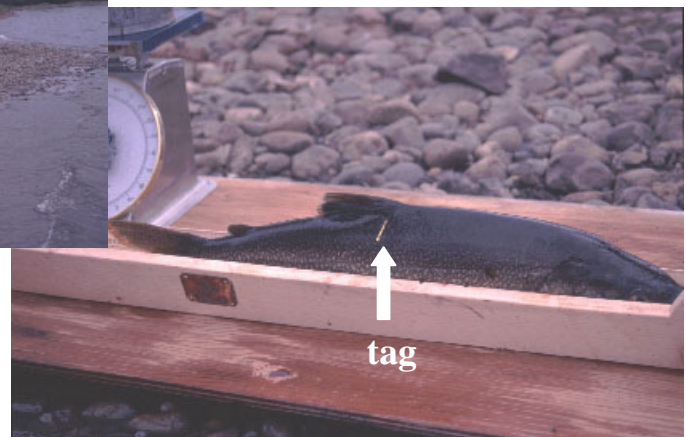
February 2003



Introduction

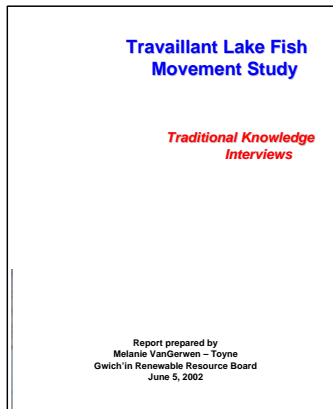
To protect the fish populations we need to understand fish movements and biology, and apply that knowledge to management decisions. The Travaillant Lake Fish Movement Study is a new project started by the Gwich'in Renewable Resource Board (GRRB) and the Gwichya Renewable Resource Council (GRRC). The goal of the study is to find out if fish in Travaillant Lake stay in the lake all year or if they move out into the Mackenzie to spawn. It is important to know if the fish stay in the lake or leave and go elsewhere because:

- 1) People are concerned that the fish in Travaillant Lake could be affected if the proposed gas pipeline is built near the lake.
 - a. having the pipeline close to the lake will make an easy route for people to fish in Travaillant Lake and therefore, the fish populations could be over-harvested.
 - b. problems with the pipeline itself could harm the fish. For example, contaminants, such as oil, from maintenance vehicles could run into the lake.
- 2) Fish that travel long distances are harvested by more people at more places than fish that stay in a lake.
 - a. for example, whitefish that come from the coast to spawn in the Mackenzie are fished by many families in more than one community.
 - b. but whitefish in a lake may only be fished by one or two families.
- 3) Fish that travel long distances also have different characteristics than fish that stay in a lake.
 - a. for example, whitefish living in lakes are usually smaller at the same age, have fewer eggs, and start spawning at a younger age than fish that travel long distances from the coast to spawn. These characteristics change what the sustainable harvest levels can be.



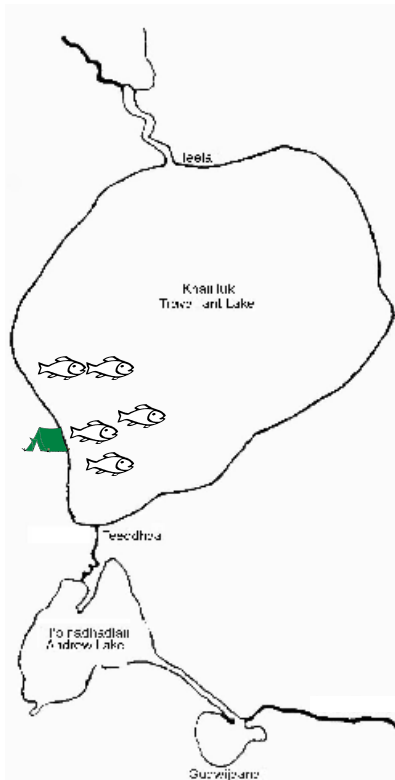
Methods

Traditional Knowledge Interviews



In April, John Norbert and I interviewed 6 elders from Tsiigehtchic about fish in and around Travaillant Lake. We learnt about the fish species present, fish movements, traditional fishing locations, when to fish, feeding areas, overwintering areas, spawning areas, and nursery areas. For more information about the traditional knowledge interviews please contact the Gwich'in Renewable Resource Board and ask for GRRB Report 02-02..

Field Studies



Who:

- Cecil Andre,
- Melanie Toyne,
- two youths; Shawn Van Loon and Mary Firth, and
- Donald Andre.

What:

- fished using 5-inch gill nets and multi-mesh gill nets,
- set minnow traps,
- fish caught were measured for length, tagged with a small external plastic tag, and released.
- fish that did not survive were sampled for length, weight, sex, maturity, gonad (organs containing female eggs or male milt) weight, and ageing structures (mostly otoliths; a small bone in the head).
- collected location information around the southern end of the lake.

When:

- July 3 to 9, and
- September 25 to 30.



Results:

Broad whitefish:

- 48 caught in total
- 36 tagged and released
- 2 released without being tagged
- 10 sampled for length, weight, and more
- smallest = 0.9 ft, 0.5 lbs (27 cm, 0.25 kg)
- largest = 1.7 ft, 3.1 lbs (51 cm, 1.4 kg)



Lake trout:

- 38 caught in total
- 15 tagged and released
- 1 released without being tagged
- 22 sampled for length, weight, and more
- smallest = 1.6 ft, 3.3 lbs (50 cm, 1.5 kg)
- largest = 2.9 ft, 12.8 lbs (88 cm, 5.8 kg)



Lake whitefish:

- 61 caught in total
- 44 tagged and released
- 2 released without being tagged
- 15 sampled for length, weight, and more
- smallest = 0.9 ft, 0.4 lbs (27 cm, 0.2 kg)
- largest = 1.8 ft, 4.0 lbs (55 cm, 1.8 kg)



Least cisco:

- 3 caught in total
- 0 tagged and released (too small)
- 0 released without being tagged
- 3 sampled for length, weight, and more
- smallest 0.9 ft, 0.4 lbs (27 cm, 0.2 kg)
- largest = 1.1 ft, 0.9 lbs (34 cm, 0.4 kg)



Northern pike:

- 51 caught in total
- 0 tagged and released (need different tag)
- 31 released without being tagged
- 20 sampled for length, weight, and more
- smallest = 2.1 ft, 4.2 lbs (63 cm, 1.9 kg)
- largest = 3.6 ft, 22.7 lbs (111 cm, 10.3 kg)



What's Next?

The return of tag and harvest information will help to determine if the fish in Travaillant Lake remain in the lake or not. Tag-reward posters have been put up in Inuvik, Fort McPherson, Tsiigehtchic, and Aklavik. If anyone catches a fish with a tag they should:

For **\$10**, write down:

- the **date** the fish was caught,
- the **place** the fish was caught (as specific as possible)
- the **name** of the fish
- the **tag number**
- give **information and tag** to the RRC or the GRRB

For **\$20**, write down:

- the **date** the fish was caught,
- the **place** the fish was caught (as specific as possible)
- the **name** of the fish
- the **tag number**
- give **information and whole fish with tag** to the RRC or the GRRB

This year the study focused on fish movements and collecting biological information. It was successful in initiating the collection of much needed information about fish in Travaillant Lake. However, this was just the first step. In 2003, another study will be proposed, but will be expanded based on community priorities and results from 2002.

Acknowledgements

Many thanks to John Norbert, Cecil Andre, Shawn Van Loon, Mary Firth, and Donald Andre for their great work on this project. Thank you to the Elders who shared their knowledge of Travaillant Lake. Thanks also to the GRRB for their help organizing the project and the Dept. of Fisheries & Oceans for the use of field supplies. Financial support was provided by the GRRB and the NWT Cumulative Impact Monitoring Program, DIAND.

Appendix 1. Alternate Fish Names

Common name 1	Common name 2	Gwich'in	Scientific
trout	lake trout	Vit	<i>(Salvelinus namaycush)</i>
whitefish	broad whitefish	Luk digaii, Luk zheii	<i>(Coregonus nasus)</i>
crooked back	lake whitefish	Dalts'an	<i>(Coregonus clupeaformis)</i>
herring, little coney	least cisco	Treeluk	<i>(Coregonus sardinella)</i>
jackfish	northern pike	Eltin	<i>(Esox lucius)</i>