

Peel River Fish Study 2002



Report prepared

by

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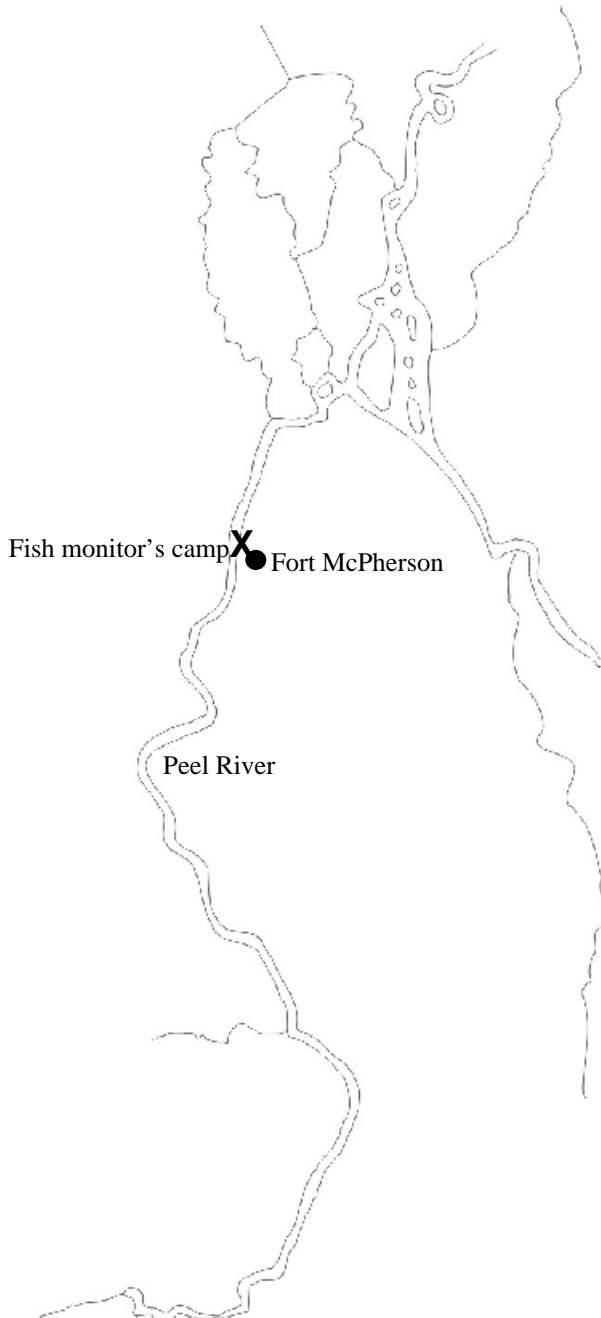
for

NWT Cumulative Impact Monitoring Program, DIAND

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Introduction

Inconnu (*Stenodus leucichthyes*), broad whitefish (*Coregonus nasus*), lake whitefish (*Coregonus clupeaformis*), least cisco (*Coregonus sardinella*), and arctic cisco (*Coregonus autumnalis*) are important fish species for people living in the Mackenzie Delta, especially in Fort McPherson. The Peel River Fish Study was initiated in 1998 due to community concerns that potential development on or near the Peel River would affect the fish. This year, 2002, was the final year of the study. The goals of the study are to record when each species migrate up the Peel River to spawn, and to collect biological information about these fish. This report provides a brief summary of the results for 2002.



Methods

This year, one Gwich'in beneficiary was hired to be the fish-monitor for the study.

The monitor worked from his camp near Fort McPherson from July 16th until November 16th. He fished using a 5-inch gill net and an experimental gill net with mesh sizes from 1.5 inch to 5 inch.

All the fish caught were sampled for length, weight, sex, maturity stage, and gonad weight. Otoliths (small bones in the head) were collected to determine the age of the fish. Gonads (organs containing the eggs) from mature females were collected to determine fecundity (the potential number of offspring).

Environmental information, such as air temperature and water temperature, was also recorded.

Over the summer, 5 youth were hired through the GRRB's Youth Work Experience program. They went to the monitor's camp and learned about fish monitoring, the environment, and Gwich'in history.

An analysis to determine fish ages and fecundity is being completed for all samples collected from 1998 – 2002.

Results

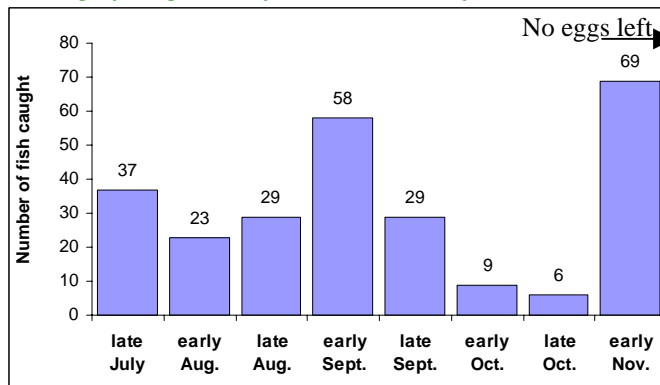
Broad whitefish



Summary information for broad whitefish

- Number caught: 260
- Smallest: 25 cm (10 inch)
- Largest: 64 cm (25 inch)
- Lightest: 0.8 kg (1.7 lbs)
- Heaviest: 4 kg (9 lbs)
- Number of females: 118 (45%)
- Number of males: 142 (55%)

Timing of migration for broad whitefish



- Broad whitefish can be caught all summer and into early November.
- Most caught in early November.
- 2nd most caught in early September.
- Not many caught in October.
- Ice freeze-up occurred from Oct 8 to 14, during which time there was no fishing.

Timing of spawning for broad whitefish

- All female broad whitefish caught before November were preparing to spawn (they still had eggs).
- In November, 45 female broad whitefish were caught and 36 of them had completed spawning (no eggs left).

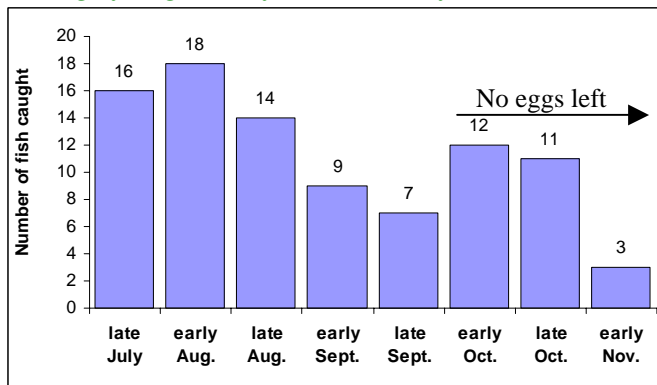
Lake whitefish



Summary information for lake whitefish

- Number caught: 90
- Smallest: 24 cm (9 inch)
- Largest: 57 cm (23 inch)
- Lightest: 0.2 kg (0.4 lbs)
- Heaviest: 2 kg (4.5 lbs)
- Number of females: 45 (50%)
- Number of males: 45 (50%)

Timing of migration for lake whitefish



- Caught throughout summer and into November.
- Most caught in late July and all of August.
- Less caught in September.
- More caught again in October.
- Few caught in November.

Timing of spawning for lake whitefish

- From July through September, all female lake whitefish were preparing to spawn.
- From October to the end of the study, most females caught were finished spawning (only 4 fish still had eggs).

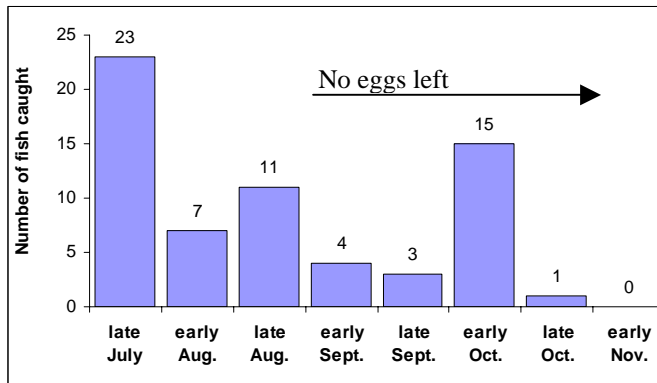
Inconnu



Summary information for inconnu

- Number caught: 64
- Smallest: 49 cm (19 inch)
- Largest: 91 cm (36 inch)
- Lightest: 1 kg (2 lbs)
- Heaviest: 8 kg (18 lbs)
- Number of females: 31 (48%)
- Number of males: 32 (50%)
- Number sex unknown: 1 (2%)

Timing of migration for inconnu



- Most inconnu caught in late July.
- Less caught in August and September.
- More caught again in early October.
- Only 1 caught in late October.
- None caught in early November.

Timing of spawning for inconnu

- All female inconnu caught from July to the end of August were still getting ready to spawn.
- All female inconnu caught from September to the end of the study were finished spawning.

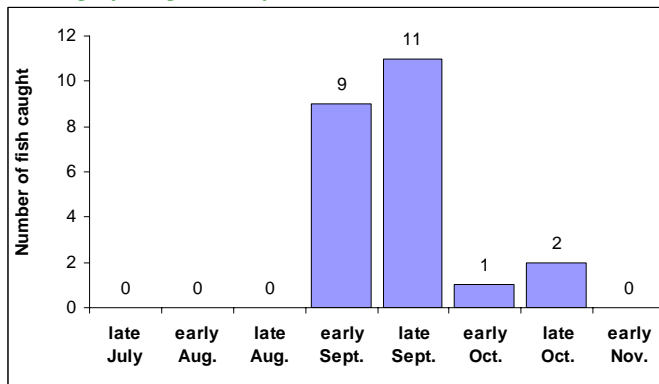
Least cisco



Summary information for least cisco

- Number caught: 23
- Smallest: 21 cm (8 inch)
- Largest: 33 cm (13 inch)
- Lightest: 0.08 kg (0.2 lbs)
- Heaviest: not available
- Number of females: 2 (9%)
- Number of males: 18 (78%)
- Number sex unknown: 3 (13%)

Timing of migration for least cisco



- No least cisco caught in July or August.
- Almost all caught in September.
- Only 3 caught in October.
- None caught in November.

Timing of spawning for least cisco

- Only 2 female least cisco were caught.
- Both were caught in September.
- Both were preparing to spawn (had eggs).

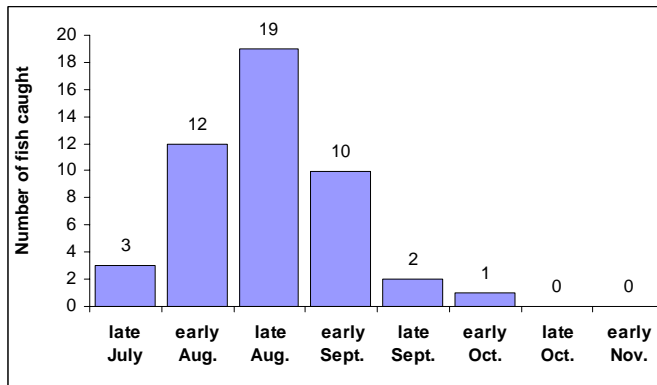
Arctic cisco

No picture available

Summary information for arctic cisco

- Number caught: 47
- Smallest: 26 cm (10 inch)
- Largest: 44 cm (17 inch)
- Lightest: 0.18 kg (0.4 lbs)
- Heaviest: 0.9 (2 lbs)
- Number of females: 19 (40%)
- Number of males: 28 (60%)

Timing of migration for arctic cisco



- Arctic cisco caught from late July to early September.
- Most caught in late August.
- 2 caught in late September.
- 1 caught in early October.
- None caught in late October or early November.

Timing of spawning for arctic cisco

- Female arctic cisco were caught from late July to early September.
- All were preparing to spawn (had eggs).

Discussion

The study went smoothly again this year. Valuable information about the fish in the Peel River was collected. However, one problem with the information has been identified. Some of the weights of the smaller fish (ciscoes) seem to be incorrect, they are much smaller than in any previous year. This may be the result of equipment malfunctions. Northern pike were also sampled during the study, however, this species has not been analyzed and is not included in this report.

The next step is to collectively analyze the information gathered from 1998 through 2002. Between-species and yearly within-species analyses may be performed. Information on growth, fecundity, size distribution, sex ratio, migration timing, etc, will be summarized in a final report which is expected to be completed in 2003.

Acknowledgements



Fred Koe

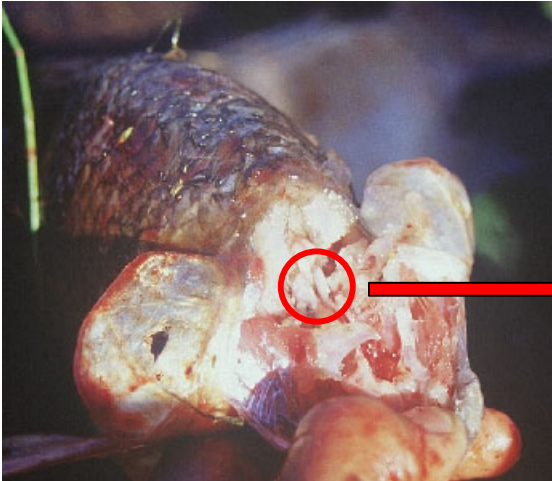
We thank Fred Koe for his many years of hard work as a fish monitor, it was much appreciated. Special thanks to Peter Koe for his unending help over the years. We also thank the Tetlit Renewable Resource Council and all the beneficiaries who helped with the study in many ways. We are grateful to the Gwich'in Renewable Resource Board and the NWT Cumulative Impact Monitoring Program (DIAND) for their financial contributions, and to the Polar Continental Shelf Program (NRCAN) for supplying logistical support.



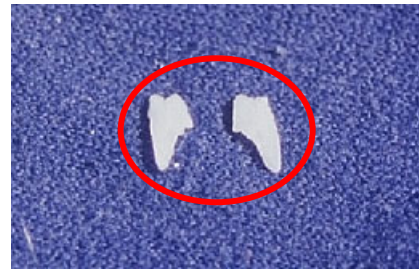
Peter Koe

Appendix: Fish Names

Common name 1	Common name 2	Gwich'in	Latin
whitefish	broad whitefish	Luk digaii, Luk zheii	<i>(Coregonus nasus)</i>
crooked back	lake whitefish	Dalts'an	<i>(Coregonus clupeaformis)</i>
herring	arctic cisco	Treeluk	<i>(Coregonus autumnalis)</i>
herring, little coney	least cisco	Treeluk	<i>(Coregonus sardinella)</i>
coney	inconnu	Sruh	<i>(Stenodus leucichthyes)</i>
jackfish	northern pike	Eltin	<i>(Esox lucius)</i>



Head of fish showing location of 2 otoliths.



Close-up of fish otoliths.



Fred Koe putting label in fish's mouth.



Youth, Robbie Itsy, weighing fish.



Youth, James William Wilson, removing fish otoliths.