

The Peel River Fish Study, 2001



GRRB Report # 02-01

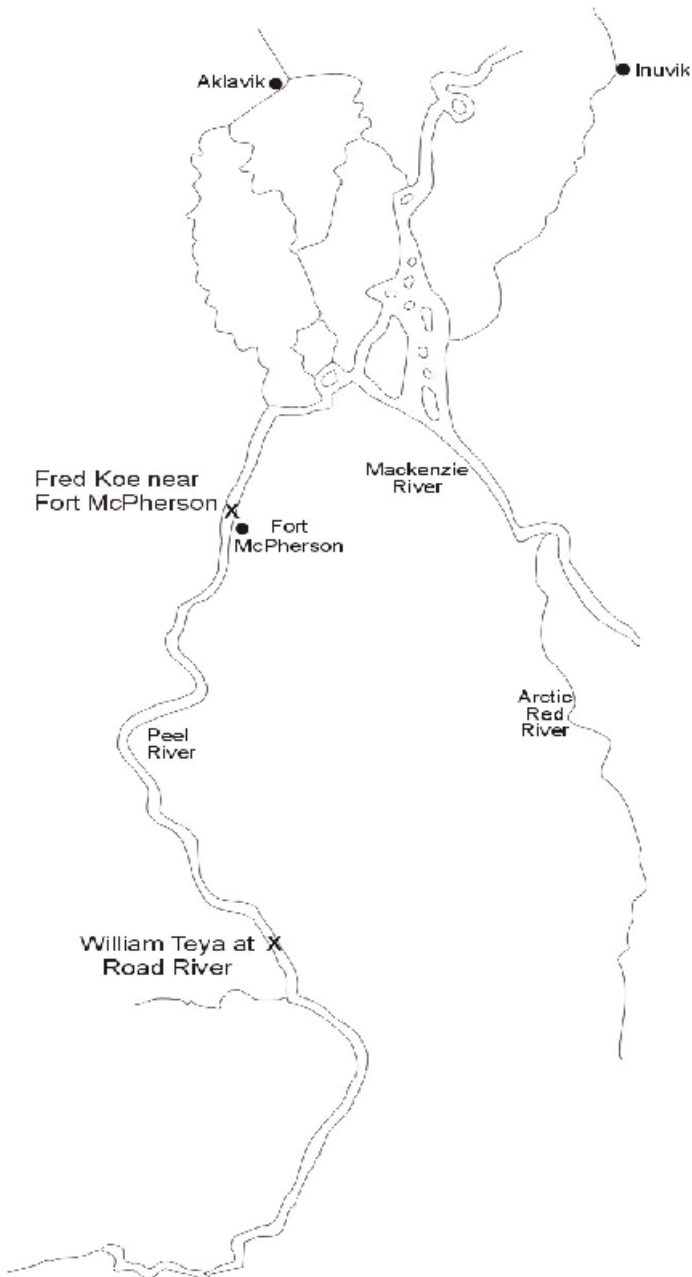
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Introduction

Coney (inconnu, *Stenodus leucichthyes*), whitefish (broad whitefish, *Coregonus nasus*), crookedback (lake whitefish, *Coregonus clupeaformis*), least cisco (herring, *Coregonus sardinella*), and arctic cisco (also called herring, *Coregonus autumnalis*) are important fish species for people living in the Mackenzie Delta. 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. 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.



Methods

Fred Koe and William Teya were hired to be monitors for the study.

Fred worked from his camp near Fort McPherson from July 16th until November 16th. William worked from his camp at Road River from October 10th to October 29th.

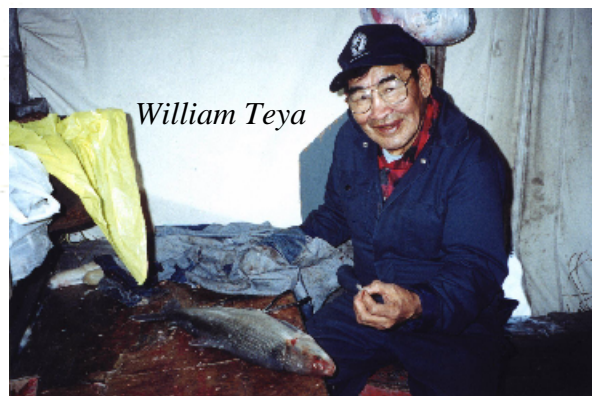
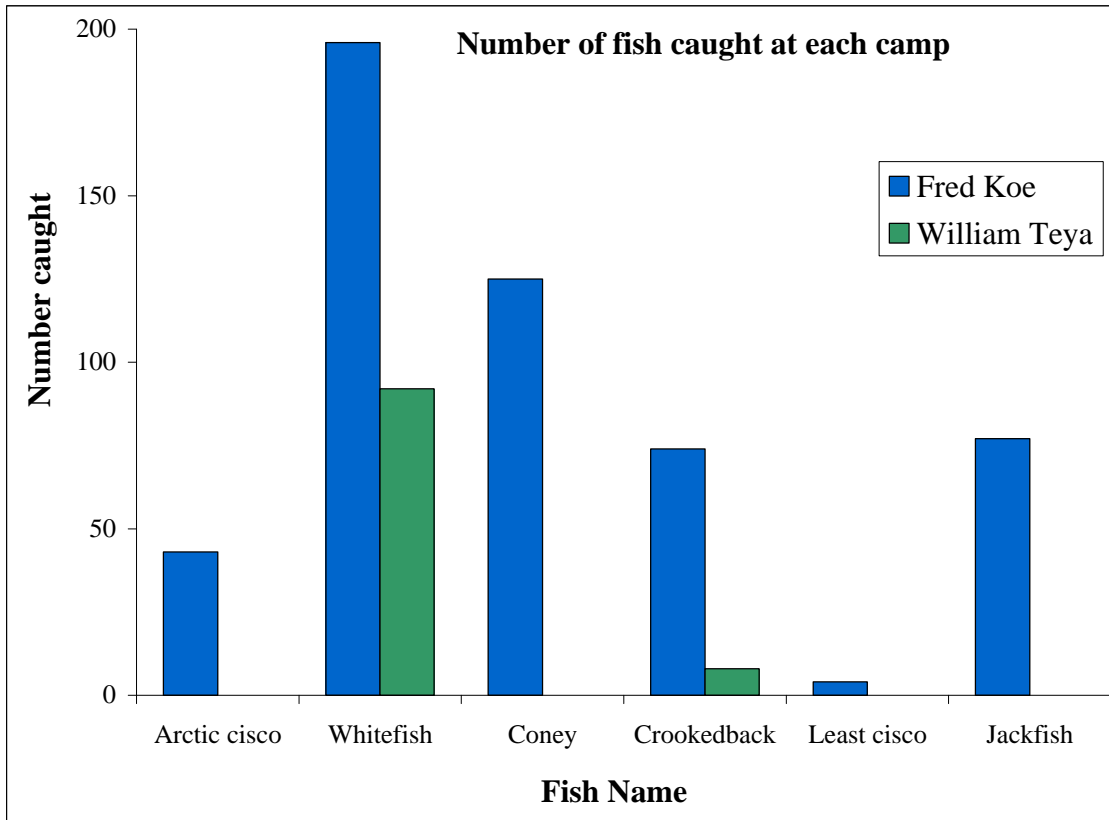
Both monitors worked 3 days a week. They fished using a 5-inch gill net and an experimental gill net with mesh sizes from 1.5 inch to 4.5 inch.

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 and female gonads were collected to determine the potential number of offspring (fecundity).

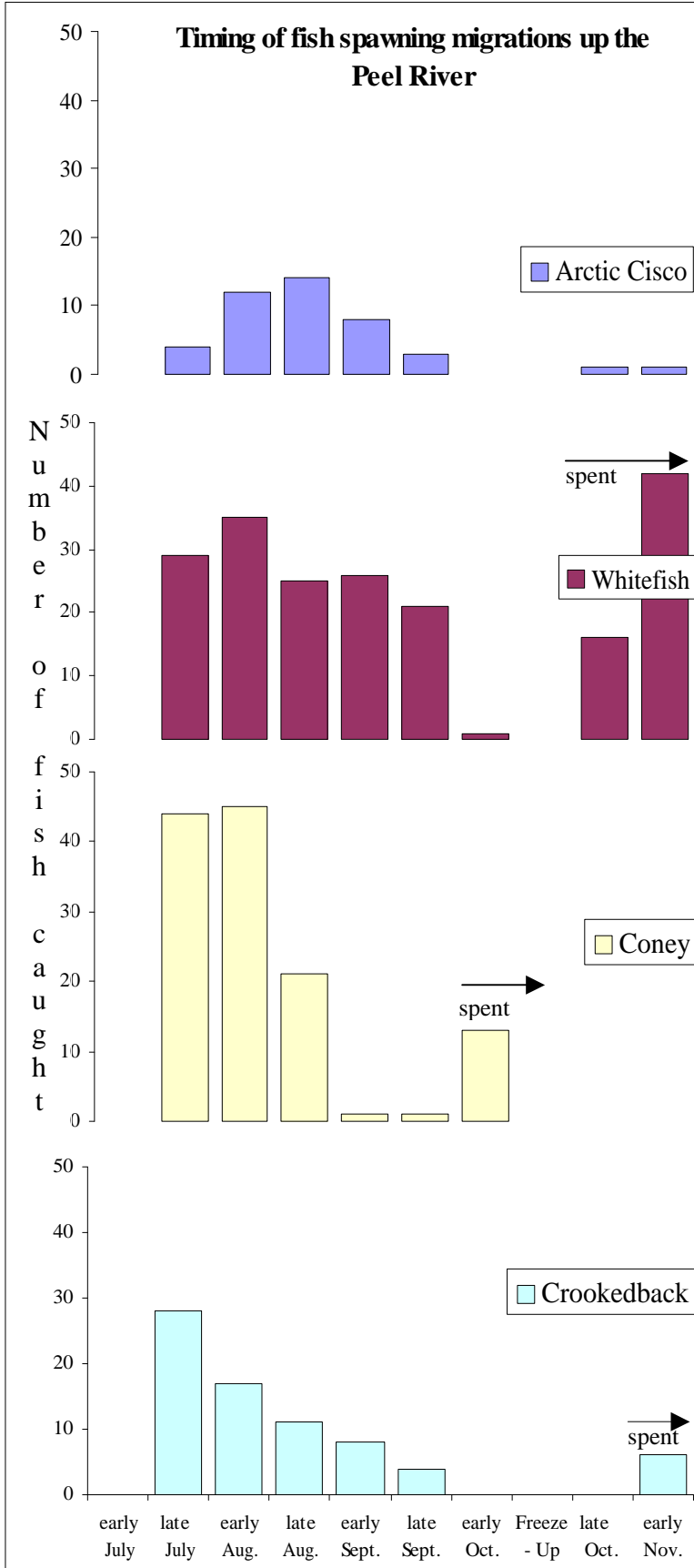
Monitors also recorded environmental information such as air temperature and water temperature.

Results

Whitefish was the most abundant species caught at Fred's camp. This was followed by coney, crookedback, jackfish, arctic & least cisco (herring), and a couple pickerel. Whitefish was the most abundant species caught at William's camp, with crookedback the only other species caught.



Fish Runs up the Peel River



Arctic ciscoes (herring) were caught from late July until late September, but most in late August. No arctic ciscoes were caught in early October and only a couple were caught after ice freeze-up. All fish caught were in pre-spawning condition.

Pre-spawning whitefishes were caught from late July until late September. Few whitefishes were caught in early October. After ice freeze-up, post-spawning (spent) whitefishes were caught.

Pre-spawning coneys were caught from late July until late August. Few were caught in September. In early October, post-spawning coneys were caught.

Pre-spawning crookedbacks were caught from late July until late September. No crookedbacks were caught in October. In early November, a few post-spawning crookedbacks were caught.

Biological information for fish in the Peel River

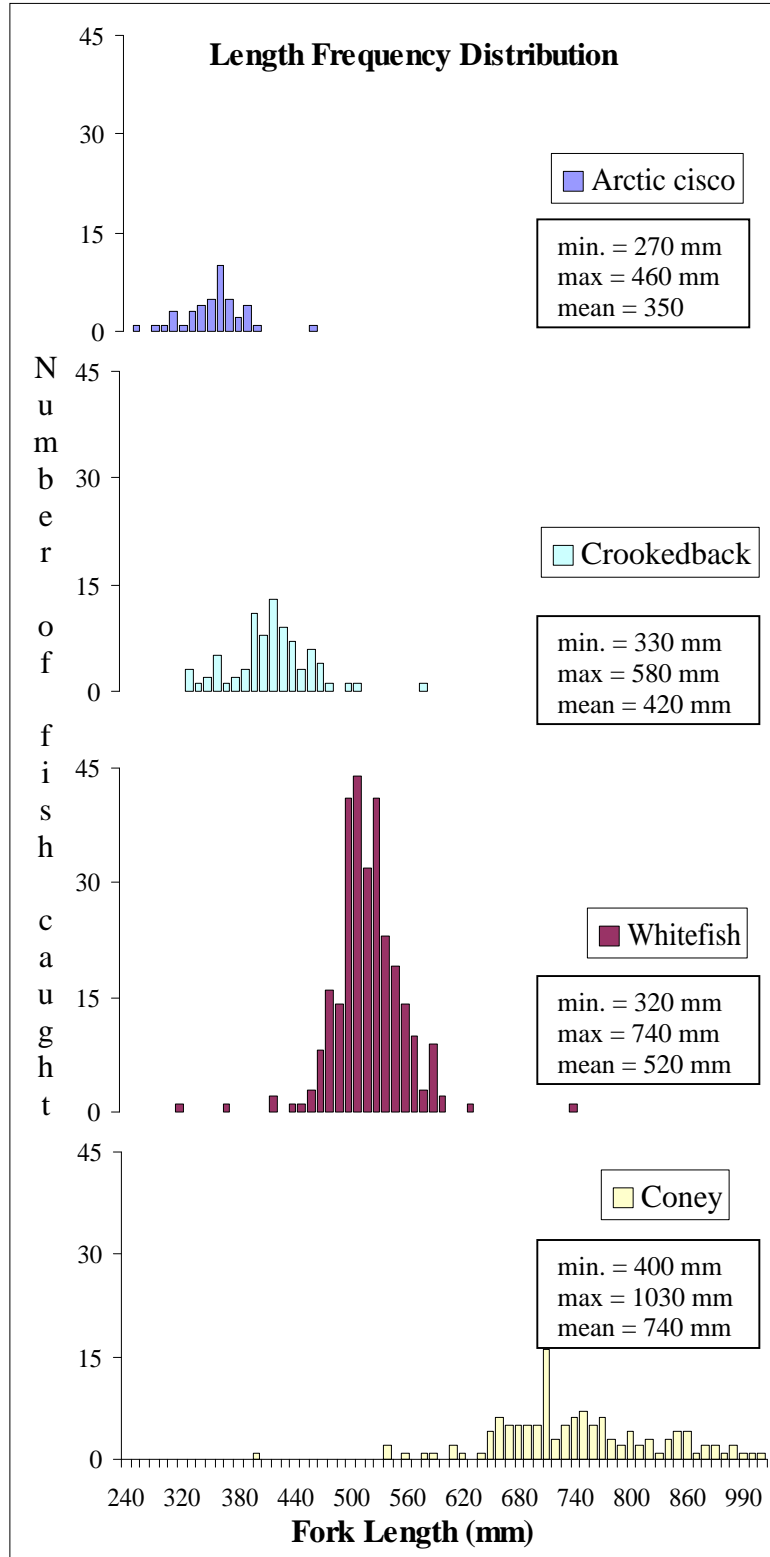
Age

The age of the fish caught in 2001 has not been determined. We hope to gain this information this year.

Length Frequency Distribution

The herrings (arctic ciscoes and least ciscoes) were the smallest fish caught. However, since very few least ciscoes were caught, they are not included in the graph. Crookedbacks were the next smallest, followed by whitefishes, and coneys.

The length-frequency distribution appears to be normal (peak at mean length and tapering on either side) for arctic ciscoes, crookedbacks, and whitefishes. However, coneys do not appear to be normally distributed.



Sex

Of the whitefish and coney caught during the study, both were comprised of over 60% males. The arctic cisco catch also comprised of more males than females, but the ratio of male to female was more equal than that of whitefish and coney. Only 4 least ciscoes were caught in 2001, therefore, the ratio of male to female does not provide much information. Only crookedback had a higher percentage of female fish than male fish, but again the ratio was approximately equal.

Percent of male and female fish				
Fish	<i>total # fish</i>	<i>% Female</i>	<i>% Male</i>	<i>% unidentified</i>
Arctic cisco	43	42	58	0
Whitefish	286	38	62	0
Coney	125	34	65	1
Crookedback	81	54	44	1
Least cisco	4	25	50	25

Discussion

The Peel River Fish Study will continue in 2002. Upon completion, extensive work will be performed to analyse the 5-year study and a report will be written. This study will provide information on the natural variation in the fish biological characteristics, identify sensitive times of the year when the fish are migrating to spawning areas, and produce information that can be compared to future (perhaps post-disturbance) information. More so, this project has provided valuable training and experience for Gwich'in beneficiaries (including youths) in the field of renewable resources and has provided an excellent basis for establishing fish-monitoring programs in the Mackenzie River System.

Acknowledgements

We thank Fred Koe and William Teya for their hard work which resulted in an excellent year of the study. 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 Mackenzie Valley Cumulative Impact Monitoring Program for their financial contributions and to the Polar Continental Shelf Program for supplying helicopter time.