

# Husky Lakes Ecological Assessment Progress Report (2002)

Lois Harwood  
Dept. of Fisheries and Oceans  
Yellowknife, NT

For

Fisheries Joint Management Committee  
PERD (Northern POL)  
Devon Canada Corporation  
Tuktoyaktuk Hunters and Trappers Committee  
Inuvik Hunters and Trappers Committee

April 2003

## Introduction

Inuvialuit fishermen from Tuktoyaktuk and Inuvik utilize the Husky Lakes area. The importance of this area relates to a variety of traditional activities, including fishing, hunting, trapping and travelling. It also supports an important recreational fishery, home of the only fly-in fishing lodge in the Inuvialuit Settlement Region.

This project reported here is designed to collect baseline ecological data on the Husky Lakes system, working closely with the communities involved. The project is part of a larger *complex*, which includes harvest data summation, sampling harvested fish (separate study) and synthesis of data collected in this area in the 1980's.

The information we collect will be widely available for use in future assessments, to ensure continued subsistence fishing opportunities, traditional pursuits, and developments that are conducted in a manner consistent with traditional use and ecological relationships. The data will be helpful to communities, FJMC, regulatory agencies and industry in ensuring their preparedness to plan, review and assess possible development activities in the Husky Lakes area.

## Fisheries Assessment

This progress reports on the second year of the project, 2002. Field work centered on Basins 3 and 4, and the Inner Fingers, of the Husky Lakes system (Fig. 1) in 2002. Test netting and water quality sampling were conducted between July 3- 17, 2002. The 2002 field season represents year two of a four-year study.

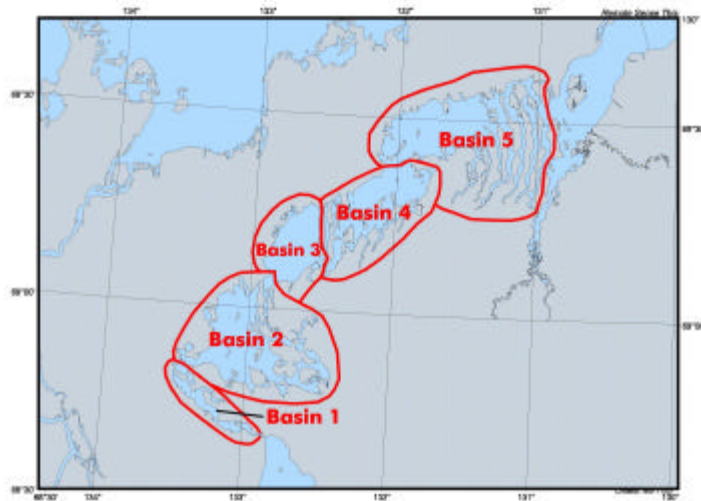


Fig. 1. Location of study basins, Husky Lakes Assessment

The field work was conducted by three field technicians from Tuktoyaktuk (Fred Gruben Sr. ; Douglas Panaktalok; Joseph Felix Jr.); one technician from DFO (Joseph Illasiak); one FJMC summer student (Kyle Kisoun) and two contractors (GIS Tech Todd Slack and Fisheries Biologist Paul Sparling).



The crew was based out of Sauniktok Lodge, and were flown in via Beaudel air charters with a single engine aircraft. Sampling was conducted from 18" Lund boats rented from Adam and Lennie Emahok (2) and from Sharon Gruben (1).

The 2002 study involved:

- Non-destructive, small mesh gillnet sets (50 minute sets) distributed throughout Basins 3 and 4 and the Inner Fingers;
- Measurement of in-situ water chemistry parameters including pH, conductivity, dissolved oxygen, turbidity, water temperature and salinity at 90 stations.
- A bathymetric survey of Basin 3 and part of Basin 4;
- Water sampling at four locations in the study area for detailed water quality analyses (inorganic suite sent to EC lab).
- Surface sediment sampling at seven sites throughout the Husky Lakes area

During the field survey, a total of 203 gillnet sets were made, an average distance of 2 km apart. They were set from shore at all areas marked on Fig. 2. Extensive shallow areas were avoided for net setting locations.

The field crew set 60 m test nets consisting of 1 ½"; 2 ½" and 3" mesh panels 20 m in length, and with net depths of either 6 or 12 m.

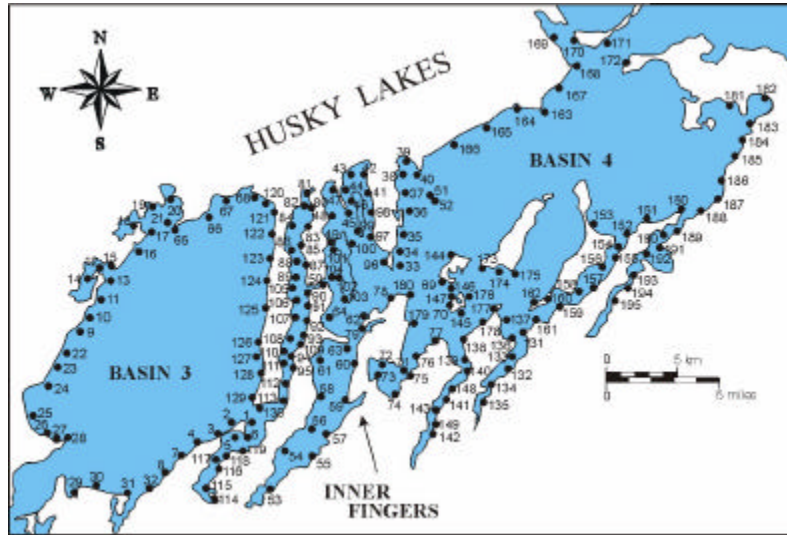
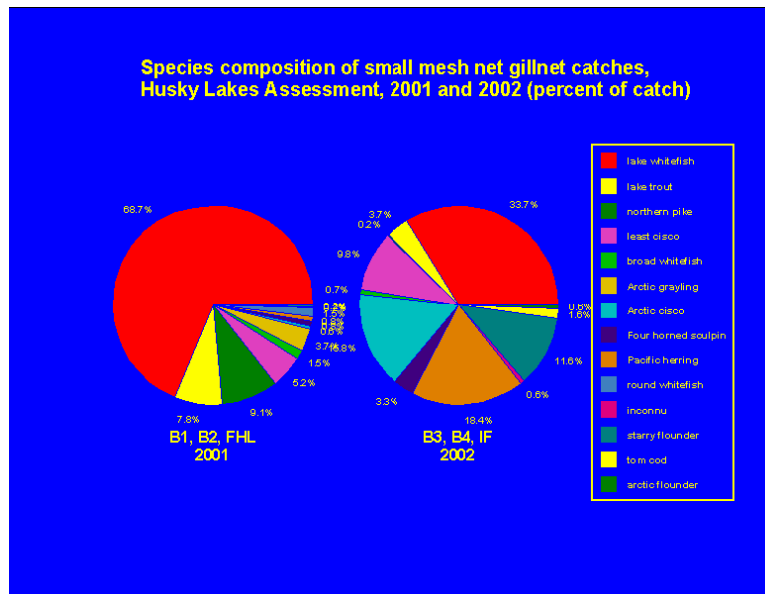


Fig. 2. Test Netting Sites

A total of 1237 fish, representing 12 different species, were captured in 203 sets of the small mesh net gillnets in 2002. The relative proportion of each species in the catches for 2001 and 2002 are shown below.



A total of 161 lake trout were tagged with floy tags in the series HL0051-HL0545 (with gaps in the sequencing).



### Dead sampling

The following fish were dead sampled (Lake trout 17; Lake whitefish: 18; Broad whitefish: 7; Least cisco 11; Arctic cisco 10; Pacific herring 10; Inconnu 1; Northern Pike 1; Starry Flounder 1; Saffron Cod 2; Arctic flounder 3).

Tissues were sent to Winnipeg for hydrocarbon analysis. We originally did not have enough funding to complete the lab analysis of these fish tissues. We later were offered support from Devon Canada in December 2002 which allowed us to have the lake trout (10), lake whitefish (5), Pacific herring (5), inconnu (1) and Northern Pike (1) tested. The remaining samples are in the freezer and will be analysed in 2003, if sufficient funds are available. For the 2003 season, we would like to complete the analysis of 5 Arctic cisco, 5 least cisco, 5 broad whitefish (n=15) and the budget includes funds for this accordingly.

### Physical and chemical measurements

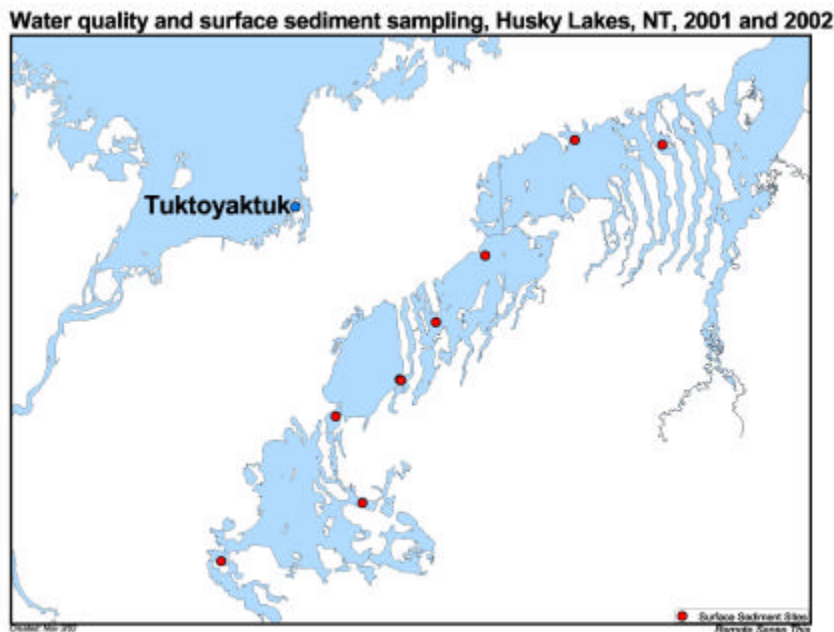
Surface in situ water chemistry measurements were taken at 90 of the gillnet sites. Measurements included pH, conductivity, turbidity, water temperature, dissolved oxygen, and salinity.

Four water-sampling stations were established and samples collected from the surface, the thermo-cline and 2 m from the lakebed for a full suite of

water quality measurements including organics. In-situ water chemistry profiles by m to a depth of 25 meters were recorded at 90 water sampling stations. In situ profiles to depth were also taken at several other locations in the lake.

During the fisheries investigations, a Garmin navigational device was used to collect GPS locations and water depths. This information will be used to develop a map depicting bathymetric contours for basins 3 and 4. Detailed bathymetric data collected by IOS /DFO in the 1980's in this area have been obtained the GIS technician is incorporating these data into our database.

Surface sediment sampling was done at the following locations on August 18, 2002, by float plane.



### Data Entry and Reporting

All data entry, aging, stomach content analyses and laboratory analyses are complete for the 2001 and 2002 field seasons of the assessment. At the present time, data are being analysed for the first two years of the project, bathymetric data is being plotted in a GIS format, and planning for the third (2003) field season is underway.

Summary of Progress on Husky Lakes Project

Item	2001	2002	2003	2004
Planning, Permits, Licenses, consultation	Done	Done	Underway	
Field Work	Done	Done	Starts June 27, 2003	
Aging	Done	Done		
Data Entry	Done	Done		
Lab Work	Done	Done		
Data analysis	Underway	Underway		
Bathymetric map	Done	Done		
Sediment analyses	Na	Underway	na	
Water quality	Done	Done		
Reporting	Newsletter Community meetings Steering Committee mtgs	Newsletter Community meetings PERD meeting	Underway	
Issues		Could not install water gauge as planned due to funding constraint	Present shortfall 21.7_K to conduct project – may have to postpone or drop wq; gauge or hydrocarbons in fish?	

## Acknowledgements

Paul Sparling, Joseph Felix Jr., Freddie Gruben, Douglas Panalaktolak, Joseph Illasiak Jr., Todd Slack, Kyle Kisoun and Forrest Day ably conducted the field work in 2001 and/or 2002. We are grateful to Beaudel Air for safe flights to and from the camp; to Sharon Gruben and Adam Emahok for accommodations in the field; and to Eleanor Ross of the Tuk HTC and Shelley and Donna of the Inuvik HTC for assistance with administration of the project. We also acknowledge trout monitors John Dick, Joseph Felix Jr., Abraham Klengenber, Tony Klengenber, and Otto Binder for their efforts in sampling and measuring trout catches.

Thanks to Curtis Martin of DFO Winnipeg for doing the stomach content analyses; Gary Carder for aging the otoliths; Ken Mills, DFO, for aging the fins; Gary Stern, DFO, for conducting the hydrocarbon analyses; Mike Foreman, DFO for providing bathymetric data from the 1980's; Carol Read for assistance with various tasks including literature review; and Archipelago Marine Research for historical data sets. Of Environment Canada, we thank Marlene Evans for doing the sediment analyses; Doug Halliwell for the water quality work; and Roger Pilling and George Lennie, WSC, for preparations for the water gauging system.

We gratefully acknowledge FJMC, PERD, Devon Canada and DFO for providing funding for the conduct of the study.

