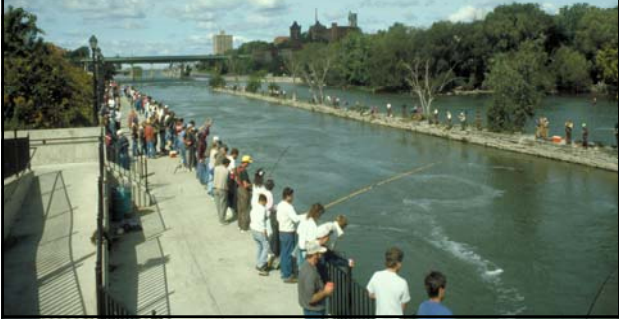


# Lake Ontario Fishery

Bruce Morrison

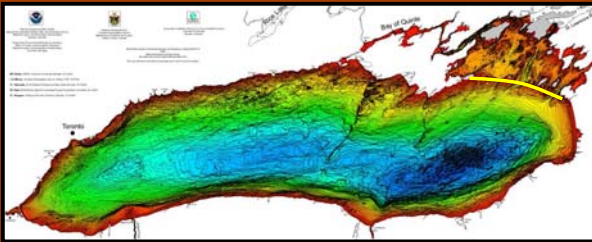
Ontario Ministry of Natural Resources



## Overview

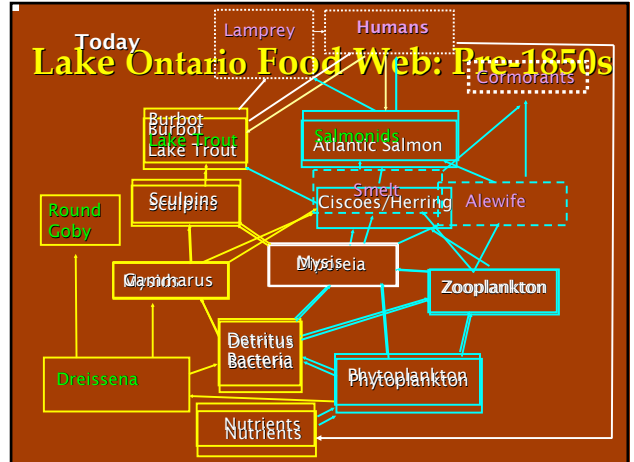
- Indicators and habitat
- Benthos
- Status of species driving fishery trends
  - Nearshore - walleye
  - Offshore - lake trout, other salmonids
  - Prey fishes and sea lamprey status
- Fishery trends

## Great Lakes indicators and fisheries

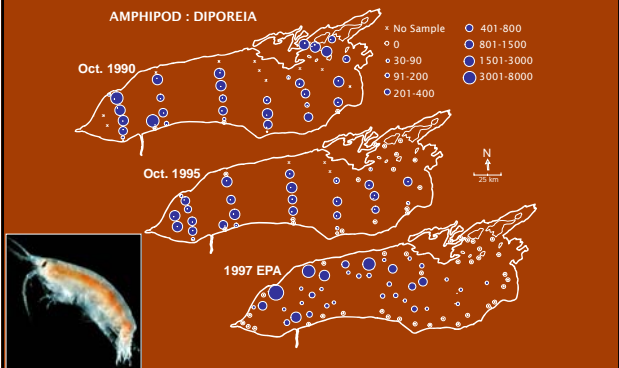


- Organized by habitat
  - Mesotrophic shallow near shore areas (red)
  - Oligotrophic and very deep off shore areas

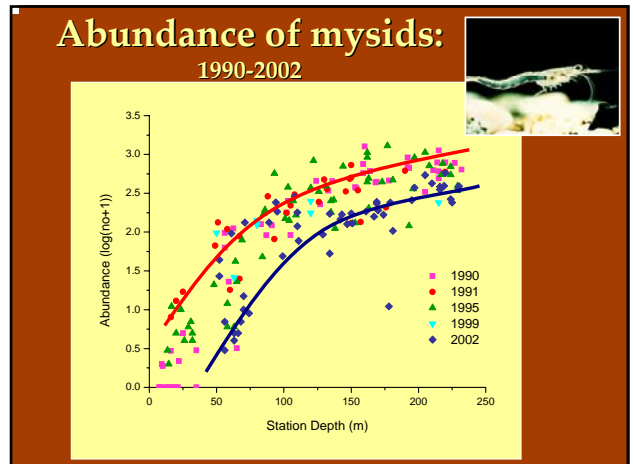
## Lake Ontario Food Web: Pre-1850s



## Diporeia distribution 1990-1997



## Abundance of mysids: 1990-2002

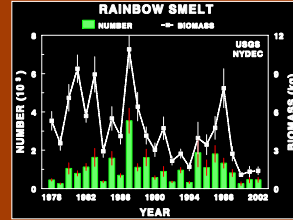
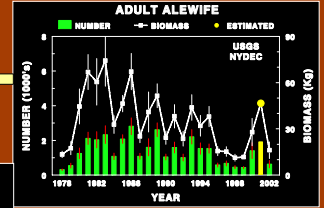


## Nearshore prey fishes

- Very productive nearshore areas support a large number and diversity of prey fishes including the latest arrival, round goby

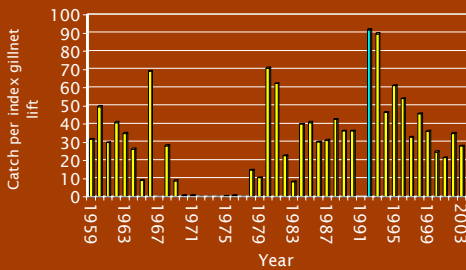


## Prey fishes: Alewife and smelt



## Walleye

Index of walleye abundance Bay of Quinte

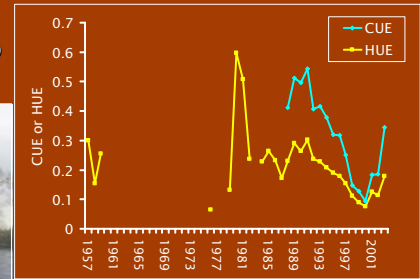


Status: Fair

Trend: Stable

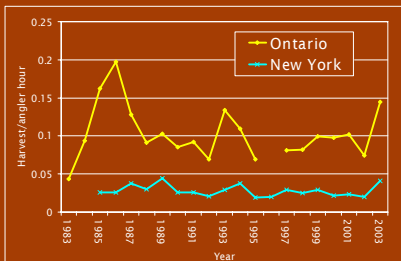
## Walleye: Recreational fishing

- Effort up
- Catch rate up



## Salmon and trout

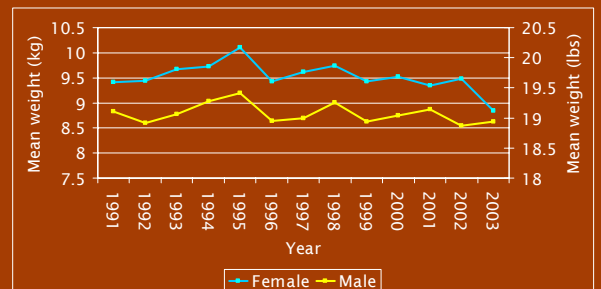
Harvest rate of Chinook salmon by boat anglers in Lake Ontario



Status: Fair to good

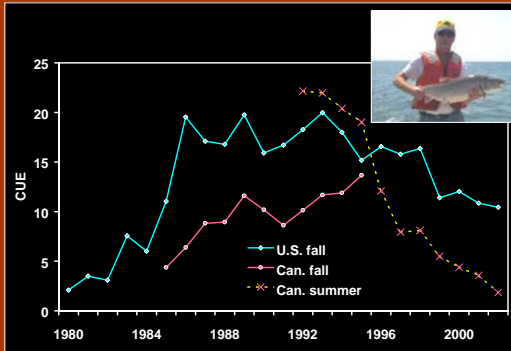
Trend: Undetermined

## Chinook salmon weight at 900 mm



Collected from Credit River during the spawning run about October 1

## Lake trout

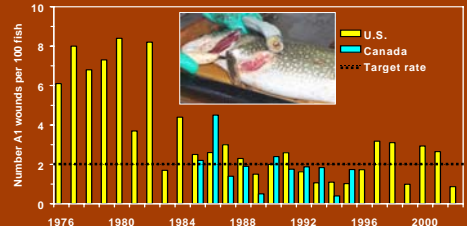


Status: Mixed to poor

Trend: Undetermined

## Sea lamprey

Sea lamprey  
Wounding rate on lake trout (> 433 mm TL)



Status: Good (staying where we want it)

Trend: Will remain stable

## Other species

American eel

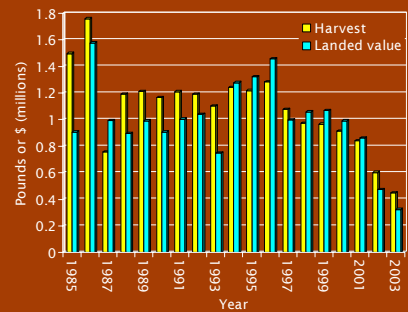
Trend: Critical

Sturgeon

Trend: Uncertain  
but improving



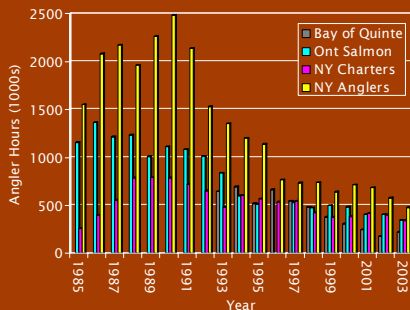
## Commercial fishery (Ontario only)



Status: Poor

Trend: Undetermined

## Recreational fishery



Status: Fair

Trend: Stable - Improving

## Edibility: Consumption guidelines

- Status: Poor
- Trend: Stable to becoming more complex
  - Given the current list of contaminants and levels in Lake Ontario fish: stable
  - As new contaminants are listed by USFDA and/or Health Canada: likely to worsen

## Concluding remarks



- The Lake Ontario ecosystem is perturbed
- Recently, several non-native species have colonized and permanently altered habitat
- Prevention of new non-natives is key
- The food web has and is still changing
- Native species need continued protection and restoration
- Demands on natural resources will continue to increase

## Acknowledgments

