

# Arctic Charr Monitoring and Research Programs



Zoya Martin & Ross Tallman  
Science Stock Assessment, DFO

# OUTLINE

- Background
- Arctic Char Research in NU
  - Completed reports
  - Commercial & Exploratory
  - Plant Sampling
  - Highlight community monitoring program

## Other DFO Research in NU

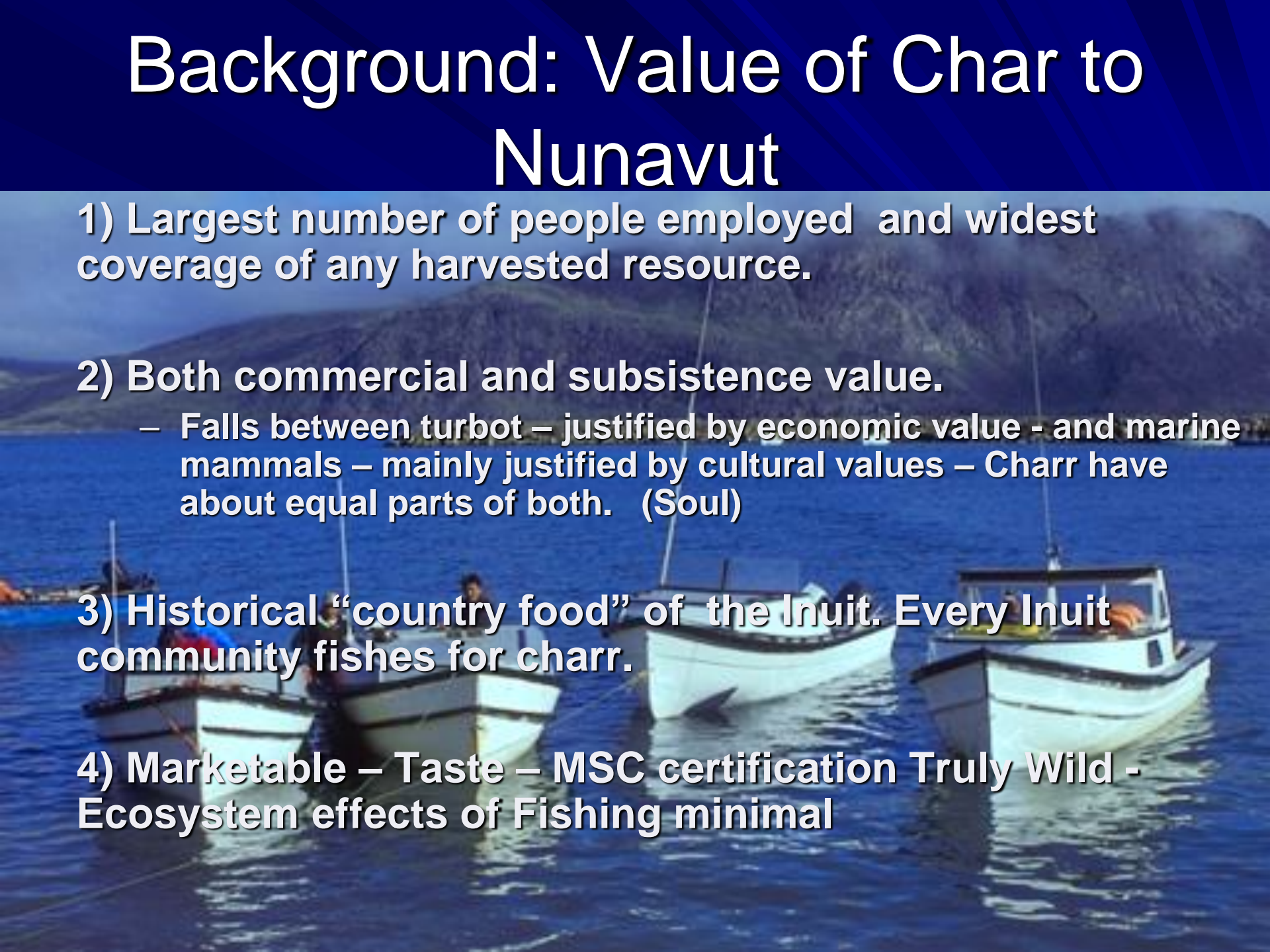
- High Arctic Cetacean Research





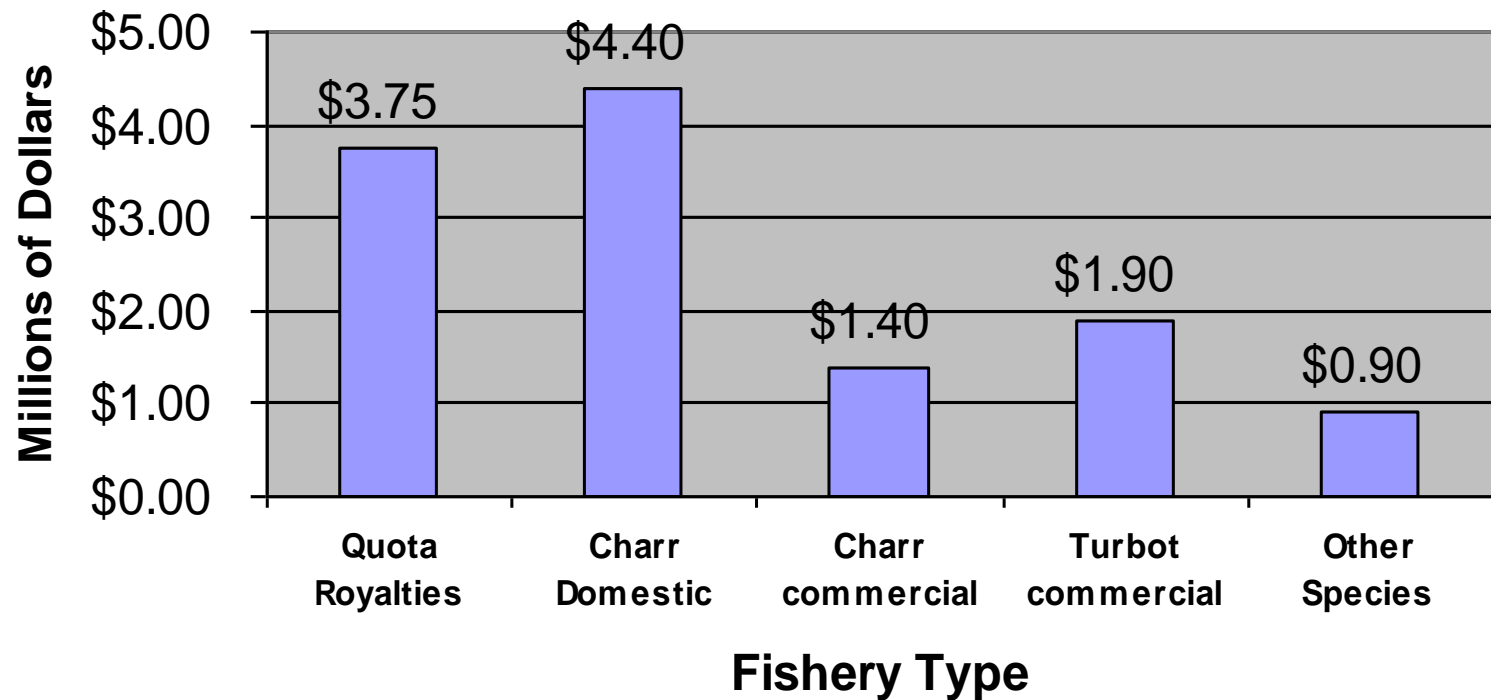
# Background: Value of Char to Nunavut

- 1) Largest number of people employed and widest coverage of any harvested resource.
- 2) Both commercial and subsistence value.
  - Falls between turbot – justified by economic value - and marine mammals – mainly justified by cultural values – Charr have about equal parts of both. (Soul)
- 3) Historical “country food” of the Inuit. Every Inuit community fishes for charr.
- 4) Marketable – Taste – MSC certification Truly Wild - Ecosystem effects of Fishing minimal



# Background: Char Value

**Nunavut Fishery Value - Brubacher and Associates (2004)**



# DFO Arctic Char Research in Nunavut

# DFO - COMPLETED ASSESSMENTS

- *CAMBRIDGE BAY ARCTIC CHAR STOCK STATUS REPORT (CSAS 2004/010)*
- *STOCK ASSESSMENT REPORT ON KIPISA ARCTIC CHAR (CSAS 2005/028)*
- *ASSESSMENT OF THE IMPACT OF SNAGGING ON THE SYLVIA GRINNELL RIVER ARCTIC CHAR POPULATION (CSAS 2008/016)*
- *ASSESSING THE IMPACT OF HARVEST ON KINGNAIT FJORD ARCTIC CHAR IN THE CUMBERLAND SOUND AREA OF BAFFIN ISLAND (CSAS 2009/013)*
- *EXPLORATORY FISHERY PROTOCOL - NUNAVUT AND NORTHWEST TERRITORIES ANADROMOUS ARCTIC CHAR (CSAS 2010/022)*
- *STOCK ASSESSMENT OF ARCTIC CHAR FROM THE ISUITUQ SYSTEM, NUNAVUT (CSAS 2010/060)*
- *QASIGIYAT LAKE ARCTIC CHAR ASSESSMENT (CSAS 2013/006)*

# Commercial & Exploratory Data Collection

- Catch\*
- Effort\*
- Commercial Index – CPUE\*
- Biological Characteristics of Catch\*
- Research Index – CPUE
- Biological Characteristics of Population
  - \*Fishery Dependent Measures



# Catch Monitoring and Plant Sampling

## ■ Catch monitoring

- Commercial – trade records
- Subsistence – Harvest study – Community meetings (regional advisory process)

## ■ Plant Sampling

- Cambridge Bay - existing
- Pangnirtung – developing
- Rankin Inlet - TBA



# Commercial and Exploratory Research

Exploratory Fisheries –

Cumberland Sound

- Monitoring Program

Coral Harbour

Iglulik and Pond Inlet - FUTURE

Commercial Fisheries

Cumberland Sound – 3 Fisheries

Cambridge Bay

Kivalliq

# Commercial & Exploratory Research (2012-2013)

## Exploratory Fisheries

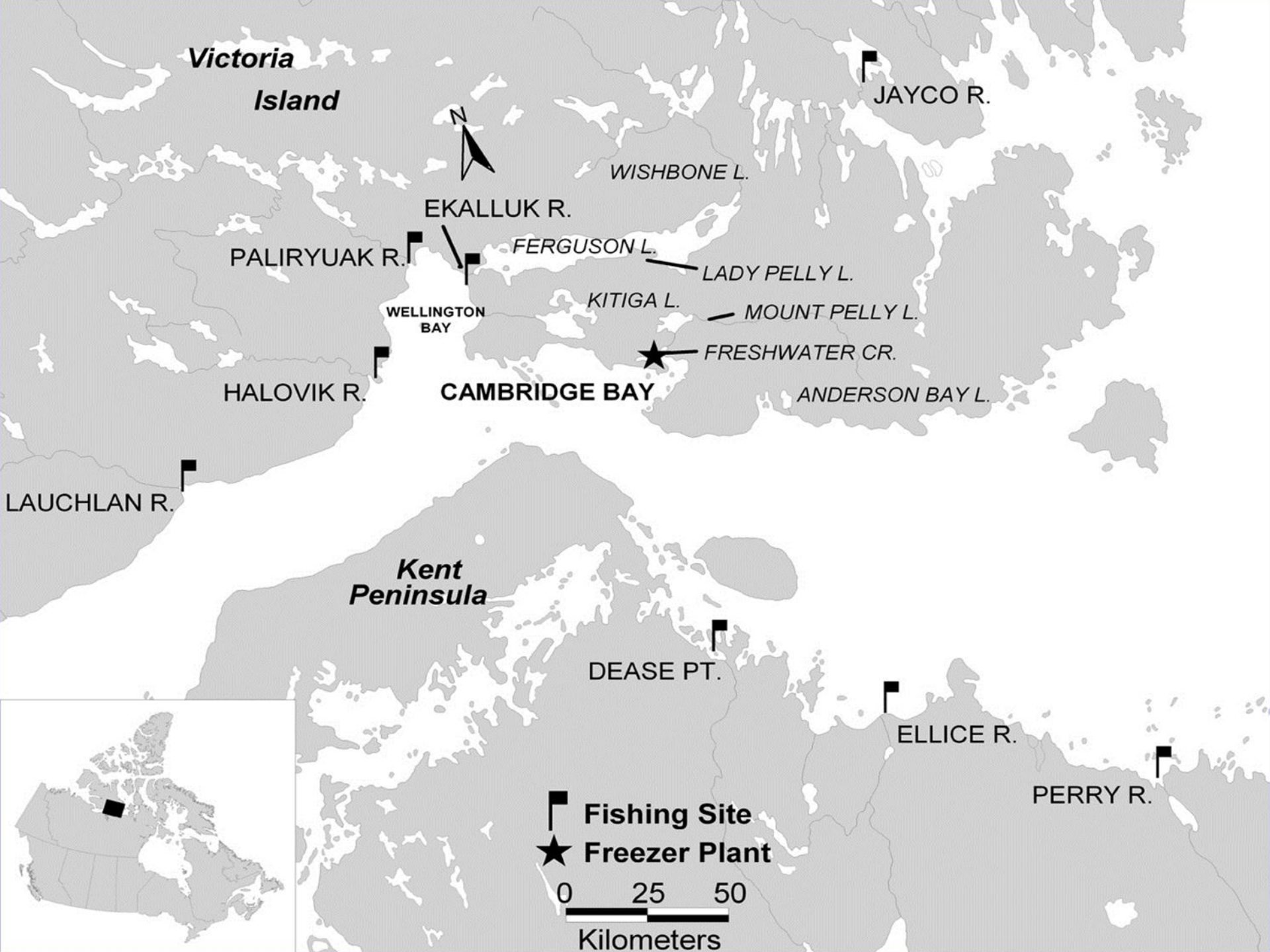
Cumberland Sound - 9 Stocks sampled  
(Martin, Wiley, Young, Imrie)

## Commercial Fisheries

- Cumberland Sound – 2 Fisheries sampled (Toyne)
- Cambridge Bay – Survey of Jayco, Wellington Bay – Assessments – Cambridge Bay – Lachlan R. (Harris)
- Kivalliq – summarize information (Harris)

## Research Schedule Commercial and Exploratory Arctic Char Fisheries in Cumberland Sound

<i>body</i>										
Lake Name	Code	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ijaruvung Lake	PG003	W	W	W	W	RAP				
Irvine Inlet	PG018	S	S	S		RAP				
Iqalugaarjuit Lake South	PG027	W	W	W		RAP				
Iqaluit Lake	PG001	W	W	RAP						
Naulinarvik	PG008		W	W	RAP					
Anaktuajuit	PG010		W	W	W	W	W/RAP			
Millut Bay	PG081		S	S	S	S	S	RAP		
Arvituajuk	PG013			?	?	?	?	?	RAP	
Kanayuktuk/Ikpit	PG041		S	S	S	S	S	RAP		
Qasigjalimi Lake	PG068				S?	S?	S?	S?	S?	RAP
Tagioyuk Lake	PG055				?	?	?	?	?	RAP





# Highlight Community Monitoring Program

# DEVELOPMENT OF A SCIENCE FRAMEWORK FOR THE ASSESSMENT AND MONITORING OF ARCTIC CHARR RESOURCES IN NUNAVUT.

$\Delta L^q \Gamma \triangleright C \text{ on } \mathbb{P}^d \text{ b.e. } C \Gamma$ .

**Fisheries and Oceans Canada, Arctic Stock Assessment and Integrated Ecosystem Research**

## Objective

- 
- A close-up photograph of a large fish, possibly a salmon, being held by a person's hands in shallow water. The fish has a silvery body with dark spots and a yellowish-orange belly. The water is clear and greenish, and the background shows a rocky riverbed.

# Productivity-Susceptibility risk assessment

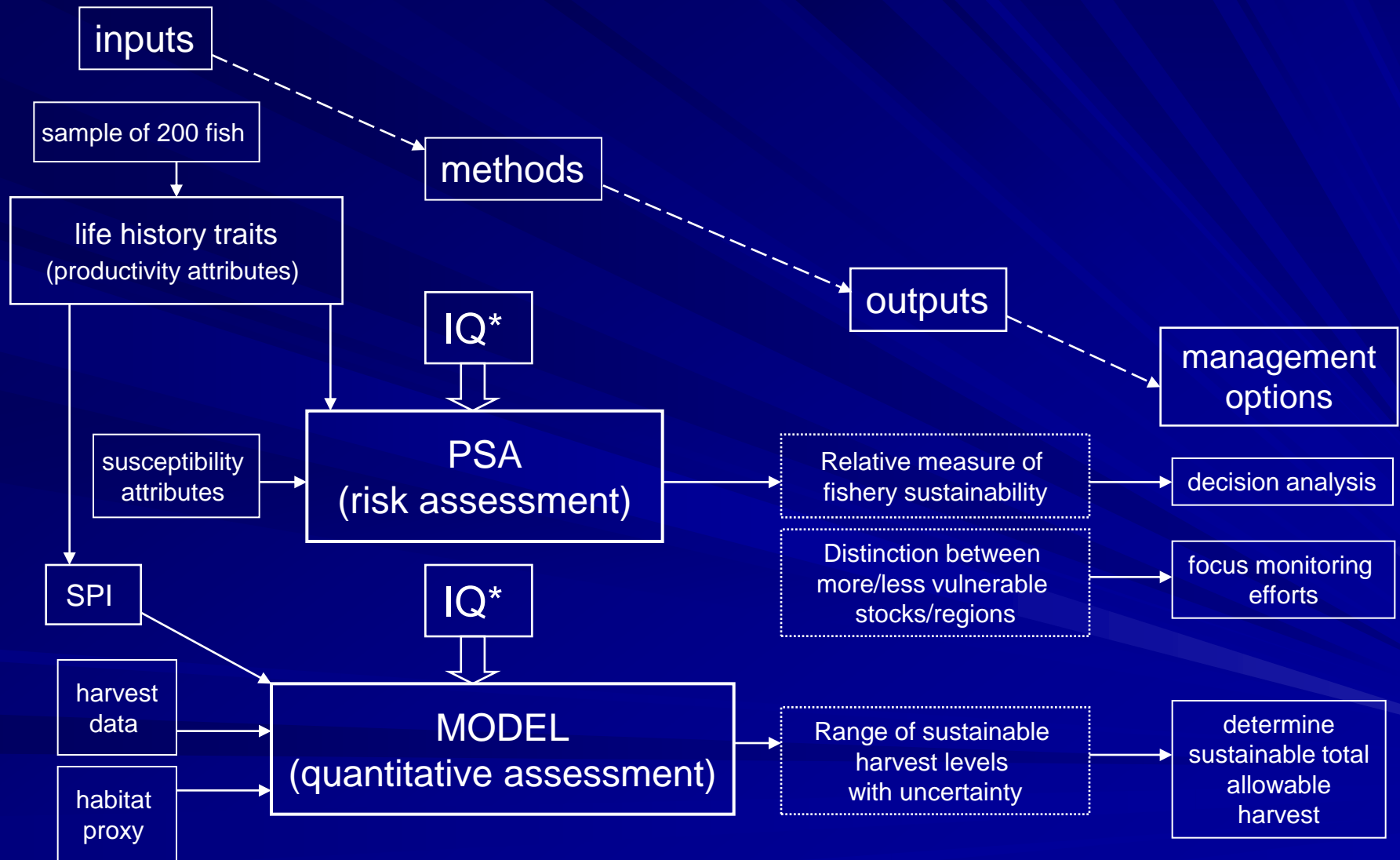
PSA results



MODELING



# A FRAMEWORK FOR THE ASSESSMENT AND MONITORING OF ARCTIC CHARR RESOURCES IN NUNAVUT

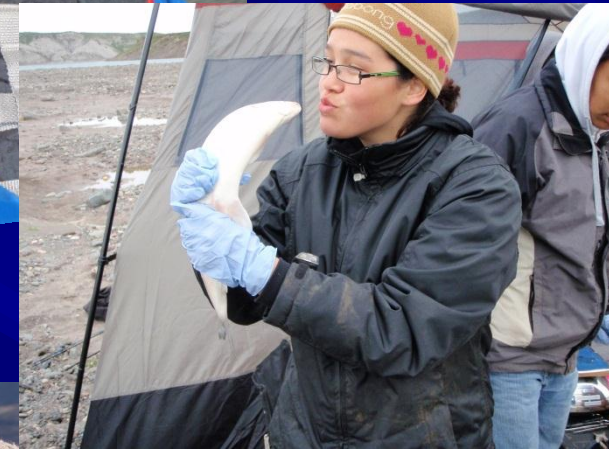


# COMMUNITY MONITORING PROGRAM





- HARVEST INFORMATION
- TRADITIONAL KNOWLEDGE
- ENVIRONMENTAL INFORMATION
- SAMPLES FROM FISH HARVESTED
- SAMPLES FROM SCIENCE RESEARCH
  - *Hire youth and women when possible*



## Benefits

- [illegible]



# Conclusions of Arctic Char Research in NU

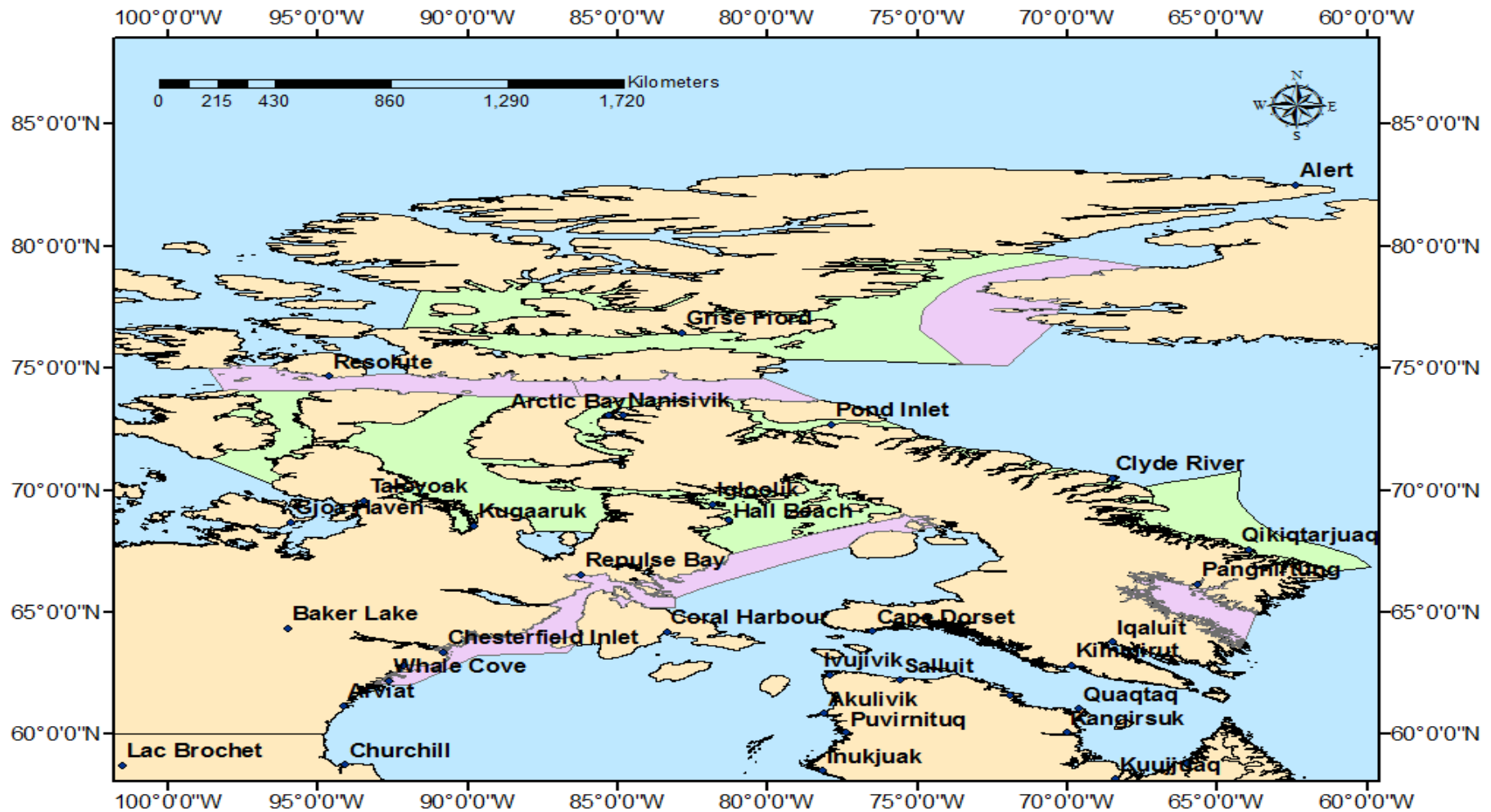
- Progress in stock assessment – scientific understand of abundance and productivity, migration/habitat use, stock structure (genetic variation), ecosystem trophic position, modeling.

# Other DFO Research in NU

# High Arctic Cetacean Survey

- Multi-species aerial survey
  - Narwhal, beluga and bowhead whales
- Three planes
  - Five person science crews
    - Crew leader
    - One Inuit observer
    - Three DFO observers
- Approximately one month
  - Late July to late August

# High Arctic Cetacean Survey





# High Arctic Cetacean Survey

## ■ Community approval received from:

- Arctic Bay
- Gjoa Haven
- Grise Fiord
- Hall Beach
- Igloolik
- Kugaaruk
- Kugluktuk
- Pangnirtung
- Pond Inlet
- Qikiqtarjuaq
- Resolute Bay
- Taloyoak

## ■ Approval pending:

- Clyde River

**Thank you!**  
**Questions?**

