

# Aboriginal Aquaculture in Canada Initiative

September 27, 2018

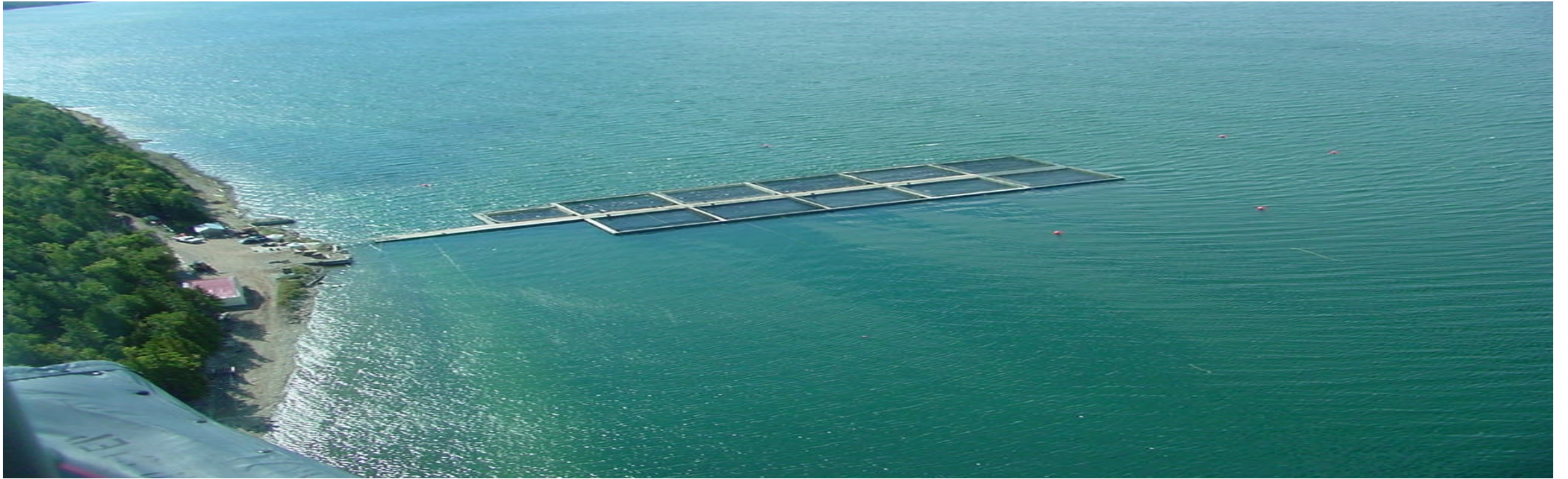
Saskatoon, Saskatchewan



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# Thank you very much for having me!



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- **Nicholas Huber, Waubetek**



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# Aboriginal Aquaculture in Canada Initiative (AACI)

- Established 2013 –14; Support for Aquaculture growth will continue.
- Funded by SPI (INAC); Administered by DFO.
- Facilitated by Waubetek for Central Canada (Ontario, Manitoba, Saskatchewan) and now Alberta.....
- Aquaculture Development support position has been confirmed for another 5 years.
- Details surrounding potential funding program should be known soon.



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# Purpose

- The Purpose of the Initiative is to support Aboriginal involvement in the aquaculture industry with emphasis on economic, environmental and social sustainability.



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# Waubetek's Aquaculture Services

- Assist in identifying new or expanding opportunities.
- Identify new innovations, best practices and approaches.
- Advisory on the implementation of early-stage aquaculture business development plans.
- Identify joint venture opportunities and partnerships.
- Advisory services specific to aquaculture related fisheries and support.
- Assist with flagship business development projects.
- Assist with business improvement projects.



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# Main Focus

- This program is designed to allow the Aquaculture Development Officer to be a resource, asset and ally which can provide support for nearly any aquaculture related activity within any stage (Pre-Development-Post Operational).
- Main focus is to ensure the best interest of the community is always acknowledged and to ensure all projects are feasible and sustainable.
- I am here for you & I am Free for you 😊



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# Who Can Apply?

- Indigenous/Aboriginal communities;
- Aboriginal for profit and not-for-profit corporations, partnerships, associations, co-operatives and institutions which are majority owned and controlled by Aboriginal people;
- Aboriginal-owned businesses, partnerships, and joint ventures.



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# Most Recent Projects within the AACI Program

## Moose Cree Aquaponics Facility (Ontario) – Detailed Design Phase

This facility is designed specifically to the needs and population of the community and will provide;

- Approx. 1,000 fish per month at approximately 1 kg
- Approx. 5,400 heads of lettuce, per month, basil or Kale
- Approx. 1,225 kgs per month of Tomatoes and or Cucumbers

### This project has the ability to impact the community by providing;

- Fresh and nutritious fish and vegetables on a year round basis leading to healthier diets
- More reasonable prices for fresh fish and vegetables
- Enhanced food security and self sufficiency
- Training and employment opportunities
- Integration into the schools



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# Most Recent Projects within the AACI Program

## Myera (Manitoba) – Expand from demonstration level to commercial scale business operation

- Myera is a land based Arctic Char rearing recirculation facility, that uses nutrients to grown vegetables and Algae.
- Arctic Char is grown for food production with the establishment of brood stock for egg production.
- Vegetables are for food production and fodder for livestock.

### This project assist in promoting;

- Healthy living and life styles, healthy eating, diets and food delivery



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# Most Recent Projects within the AACI Program

## New North Fisheries (Ontario) – Pilot Project, Feed

- Funds were used to assist with the cost of feed for the growing cycle of the Whitefish while in a submersible net pen facility.

### This project will;

- Reduce commercial fishing pressure to ideally allow for some population recovery.
- Provide a source of surplus hatched fry for restocking purposes.
- Provide a year round dependable source of fresh Lake Whitefish for domestic markets
- Provide full time employment to an otherwise seasonal capture fishery.



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# Most Recent Projects within the AACI Program

## Wikwemikong Development Commission (Ontario) – Business plan and Feasibility Study

- Through AACI Funding a Specific technical feasibility work was conducted, site characteristics studies economic feasibility studies and business plan were produced. Assessment and studies were also done on the various submersible cage technologies.
- Additional sites around Manitoulin are being looked at with a secured Rainbow trout markets in tact. Focus on value chain opportunities.
- Great employment opportunities for a community that already knows fish farming very well.
- In a position to be leaders in off shore aquaculture with specific system technology that can handle the off shore weather conditions.



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# Aboriginal Aquaculture Law Templates and Supporting Documents

- Aboriginal Aquaculture Law template to be developed with a consultation process which will be available throughout Central Canada.
- Establishing an Aboriginal Aquaculture Licensing process template pertaining to indigenous and non-indigenous aquaculture ventures operating within traditional territories.
- Environmental Standards, sampling procedures and reporting templates.
- Best Management Practices templates.



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# Workshops/Presence

- 2017-2018 Fiscal we hosted or participated in 7 Full day workshops throughout Ontario/Manitoba.
- 2017-2018 Fiscal we arranged 6 Mini or half day workshops in either communities or other locations.
- Allot of communities or individuals are not familiar with Aquaculture and were trying to change that through the means of workshops and discussions.



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# Aquaculture

- The cultivation of aquatic animals and plants, especially fish, shellfish and seaweed, in natural or controlled marine or freshwater environments; underwater agriculture.



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# Aquaculture

- Aquaculture occurs across Canada from coast, to coast to coast.
- The largest and most prominent aquaculture sectors in Canada are Atlantic salmon, mussels, trout, oysters and clams. Other species are farmed as well.
- Canada's aquaculture industry is an important employer and economic driver in many coastal, rural and Aboriginal Communities.

Cite- Canadian Aquaculture Industry Alliance\_ <http://www.aquaculture.ca/>



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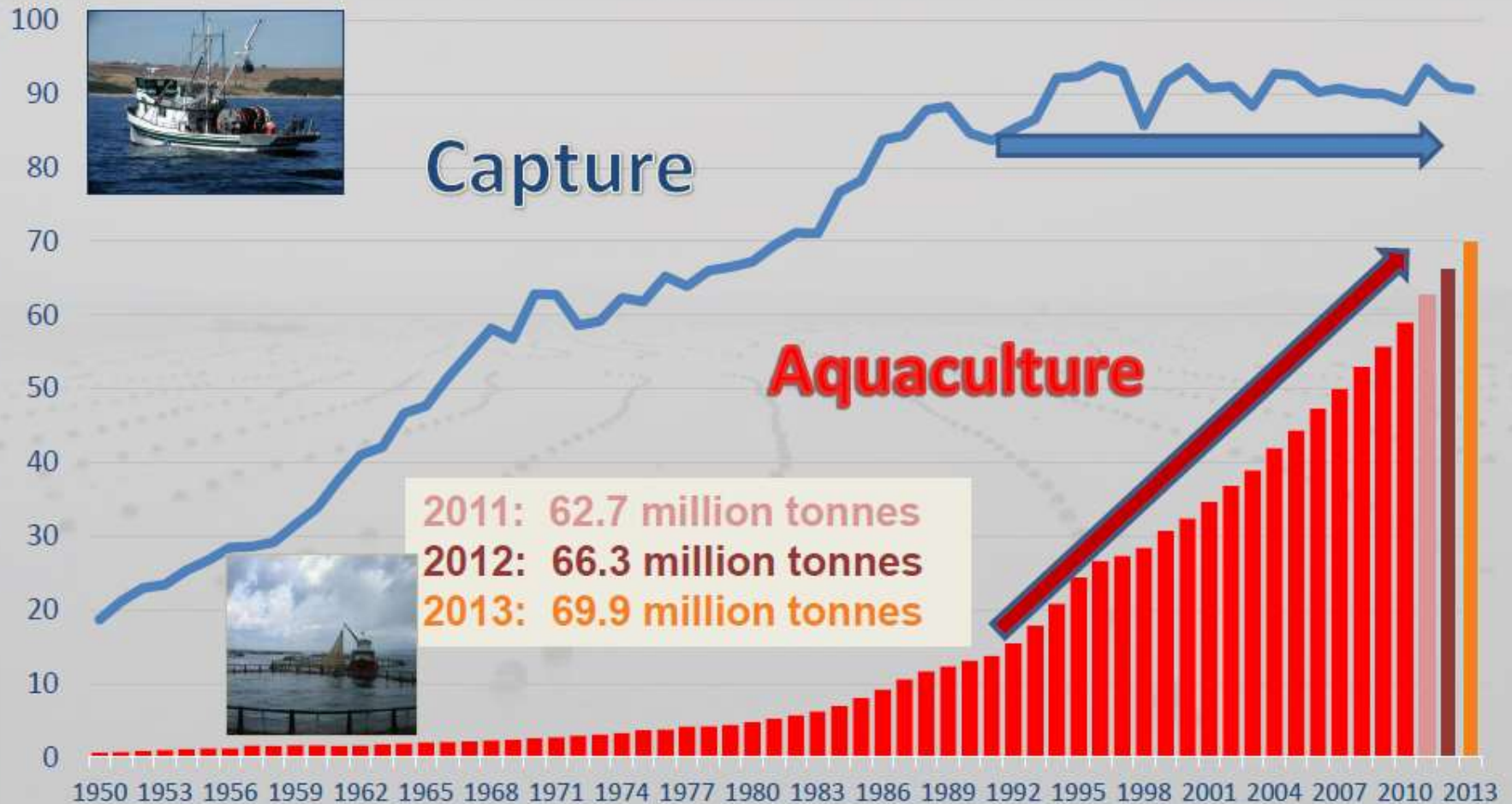
# Where Does Our Fish & Seafood Come From?



- ❖ Historically – our lakes and oceans
- ❖ When we needed more, we just fished
  - Harder,
  - Longer,
  - Deeper
  - or Further Away

# Seafood Production

million tonnes live weight



2011: 62.7 million tonnes  
2012: 66.3 million tonnes  
2013: 69.9 million tonnes

2012: estimate; 2013: forecast

# Why Aquaculture?

- ❖ Demand for seafood exceeds fisheries capacity
- ❖ Represents a sustainable and healthy source of food
- ❖ Provides a means to rehabilitate wild populations
- ❖ 10 years from now aquaculture will need to increase by 50% to supply the growing demand for seafood. There is no possibility to increase wild capture fisheries worldwide.



# Benefits of Aquaculture

- ❖ Economic development in rural and coastal communities
- ❖ Year-'round operations
- ❖ Capability to produce to meet market demand and consumer needs
- ❖ Expanding domestic and international markets
- ❖ Enhanced balance of trade (exports)
- ❖ Non-extractive, renewable resource industry
  - i.e. sustainable development
- ❖ Considerable un-developed potential
- ❖ Augments productivity of entire fishery sector

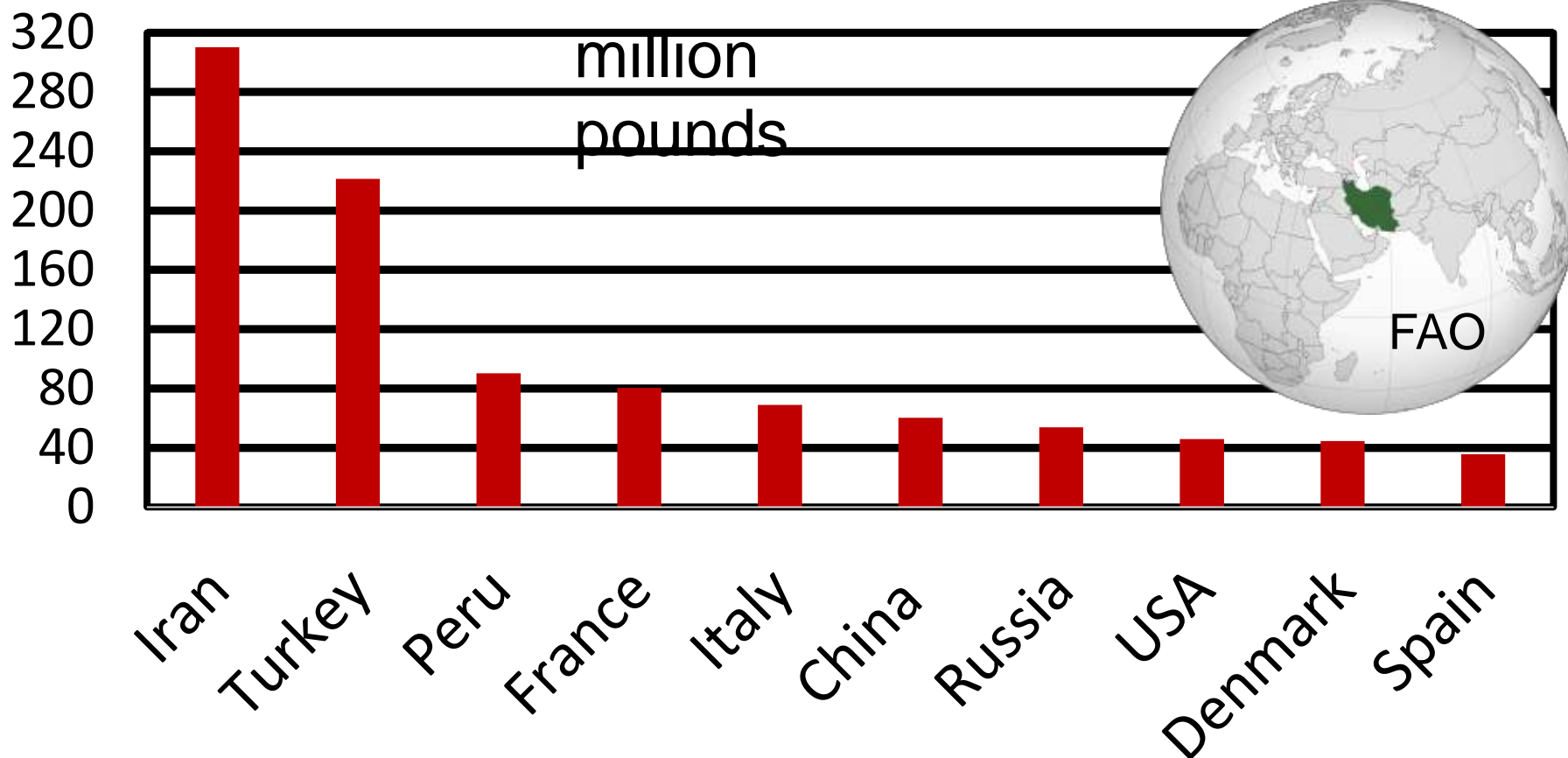


# Common Challenges to Aquaculture Development

- ❖ Opportunities awareness
- ❖ Access to financing
- ❖ Training & skills development
- ❖ Availability of objective information
- ❖ Capacity to develop opportunities
- ❖ Infrastructure, transportation costs & economies of scale in often remote locations



## 2015 Top 10 Trout Producing Countries



# Types & Forms of Aquaculture

- Open Net Pen
- Land based (RAS, Flow through systems, Pond Culture)
- Rehabilitation
- Put and Take/Pay to fish
- Aquaponics
- Commercial/Commodity/Live Markets
- R&D
- Niche (Organics)
- Supplying Fingerlings to the on growers
- Food Security



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# Pacific White Shrimp



First Ontario Shrimp





# Pond Culture

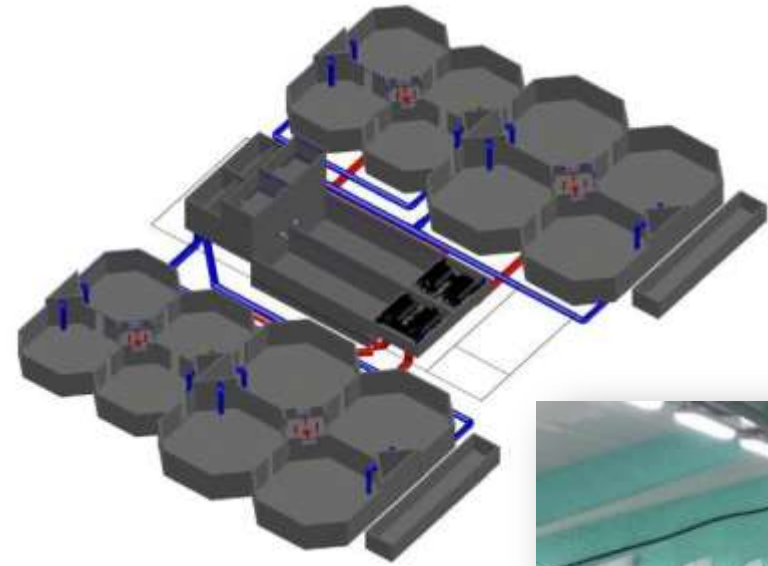


# Raceway Culture





# Octagonal Tanks



# Floating Containment Systems



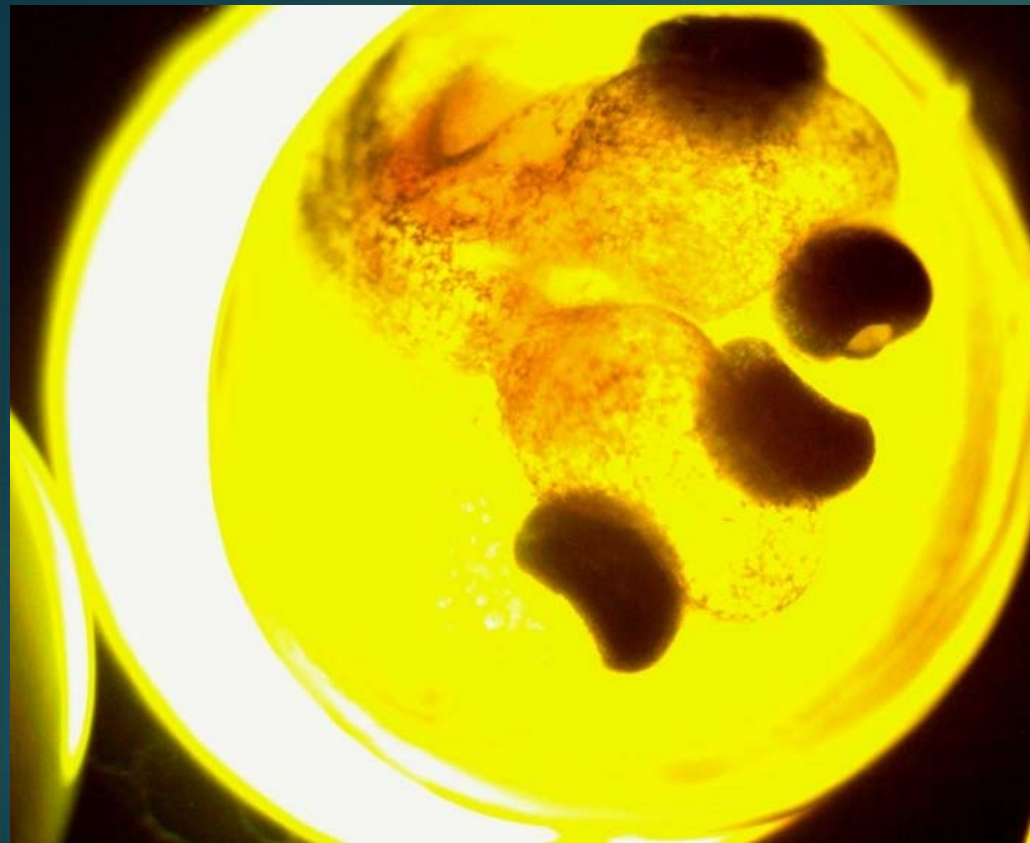
# Aquaculture – Emergence of Net Pen Culture

- ❖ Modern (for-profit) phase of finfish aquaculture began in the 1970s
  - Development of large-scale cage culture operations
  - Countries saw the advantage of growing fish in the oceans and in large bodies of freshwater
  - Technology and economics became favourable
- ❖ This strategy has been highly effective on a global scale; e.g.
  - Salmon in Norway, Scotland, Chile, Canada, Australia
  - Sea bream and sea bass in Mediterranean countries





Student from Pontiac School with their (School Micro-Hatchery)



M'chigeeng First Nation Lakeview School  
2 headed brook trout still inside the egg  
found by grade 2 students using  
their microscope provided by  
School Micro-Hatcheries Programs



This is a walleye egg. You can see the  
head, eyes and tail of the embryo





Lakeview School 5,000 Hatched Brook Trout Larvae still in Micro-Hatchery



**Student from Wikwemikong Wasse Abin Pontiac School grade 6 class  
stocking walleye fry**

# Indigenous Communities are Poised for Growth

- The industry in Central Canada is ready for expansion.
- Aboriginal Communities are in a unique position to benefit from sustainable aquaculture development due to their aquatic resources, rights, and special access to aquaculture development sites.



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# The abundant potential...



- 20% of the world's freshwater,
- Plentiful biophysical resources,
- Developed culture technology,
- Still not meeting domestic demand,
- Substantial export potential with proximity to the U.S. market,
- The industry has the experience, expertise and desire to support development.



# Contact Information

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Thank you



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