The Business of Sustainability

Presented by:

Joe Hunter

Sustainable Sturgeon Culture
Personal Background

- Graduate of Sir Sandford Fleming College-Aquaculture Technician Program
- Employed as Full-time Hatchery Manager in 1995
- Became Sole Proprietor in 2003. Specializing in fertilized eggs and yolksac fry shipments
- First overseas egg shipment to China in 2004. 2 million egg contract
- 2010 participated in developing the Lake sturgeon Recovery Strategy
- Full-time employment with Rainy River First Nations as Community Wellness Worker
Hatchery Background

- **1992** - Rainy River First Nations forms 4-year R&D program with Ontario Hydro Technologies Division

- **1993** - Manitou Fish Hatchery constructed as prototype for culture of Lake sturgeon

- **1995** - RRFNs enacts a Self-Imposed moratorium on commercial fishing of Lake sturgeon. OMNR buys out non-native commercial licenses

- **1996** - Manitou Fish Hatchery begins Symbolic Release of Lake sturgeon offspring produced in hatchery

- **1997** - Major capital investment converts hatchery to a recirculation aquaculture facility

- **2003** - Manitou Fish Hatchery closes as a Band operated business

Since April 2003, the hatchery has been operating as a sole proprietorship (Sustainable Sturgeon Culture)
The Lake sturgeon’s range includes the Hudson Bay Drainage, the Great Lakes and the Mississippi and St. Lawrence Rivers.
Habitat & Feeding Behavior

• Inhabit large freshwater lakes and rivers
• Prefer feeding in water less than 10 metres deep, along bottoms of rivers and lakes
• Diet consists of zooplankton and chironimids in early life stages, and insect larvae, crayfish, clams etc. throughout later life stages
Sexual Maturation and Spawning Frequency of the Lake sturgeon

• Of all our freshwater fish, the Lake sturgeon has the slowest maturation rate

• Males reach sexual maturity at 12-18 years of age
• Females at 23-26 years of age

• Once mature, males spawn every 2-3 years, while females will spawn every 4-7 years
Lake Sturgeon Spawning Process
Clearing the Oviduct
De-adhesion or mucking of the eggs
Transferring eggs to incubation jars
Egg Development and Fertilization Rate Estimation
Broodstock returned to river
Sub-Yearling Lake sturgeon
Ceremonial Sturgeon Release
Technology Transfer

- MN Fish and Wildlife Society
- UC Davis Sturgeon Conference-CA
- The Fisheries-Sacramento CA
- Stolt Fish Farm-CA
- Malaspina College-BC
- Sir Sandford Fleming College-ON
- Forus Fish Farms-Hungary
- BC Aboriginal Fisheries Conference
- Sault Ste. Marie Fisheries Conference
- DFO Sturgeon Recovery Conference
- Keeyask Working Group-Manitoba

Rehabilitation/Scientific

- White Earth Natural Resources (MN)-Rehabilitation
- Minnesota DNR-Rehabilitation
- China Animal Breeding Stock-Commercial Trials
- University of Manitoba-Feeding Trials
- Kholov Sturgeon Farm (ON)-Commercial
- Red Lake Band of Chippewa (MN)-Rehabilitation
- OMNR/Dalles First Nation-Rehabilitation
- Illinois Technical Institute-Scientific
- Nelson River Co-management Board-Culture Methods/Rehabilitation
- River of Life Hatchery-Commercial
- Underwater World/Mall of America-Aquarium Stock
- Tennessee Aquarium-Aquarium Stock
- DFO-Scientific
- Keeyask Working Group-Lake sturgeon culture and restoration
Rainy River Watershed Program

To protect, conserve, and revitalize the Rainy River watershed
Controlling Cattle Access to Eliminate Erosion

Heyens Brothers' farm, Rainy River First Nations, Ontario Ministry of Natural Resources, and Environment Canada are working together to protect the Rainy River watershed by installing a 2 km fence along Rainy River and Cameron Creek to control cattle access to the water's edge.
2012 Sturgeon Egg Dewatering of Sturgeon Eggs
International Rainy-Lake of the Woods Watershed Board

Through our assertion of our interests and obligations to protect and preserve the environment in the Rainy River-Lake of the Woods, the Rainy River First Nations has influenced, and been involved in developing procedures on flow regimes of the Rainy River to protect the Lake sturgeon environment and habitat.
IRLBC DIRECTIVE
Illustrated below is the response at Manitou Rapids in terms of gauge (height) as a result of the IRLBC directive to increase flows from 100 cms to 150 cms. At Manitou rapids water levels increased approximately 6 inches.
NEW DIRECTIONS
Partnership between Rainy River First Nations, Connor Clark & Lunn and Terrma Capital

The Project encompasses two 10 MW facilities and a 5 MW facility

Full commercial operation of the facilities is anticipated in the first half of 2015

The Rainy River Solar Project will produce enough clean energy to meet the needs of over 3,900 households
It is expected between $1.3 and $2.3 million in profits will be realized by RRFN annually.
Thank you for your time

Questions/Comments