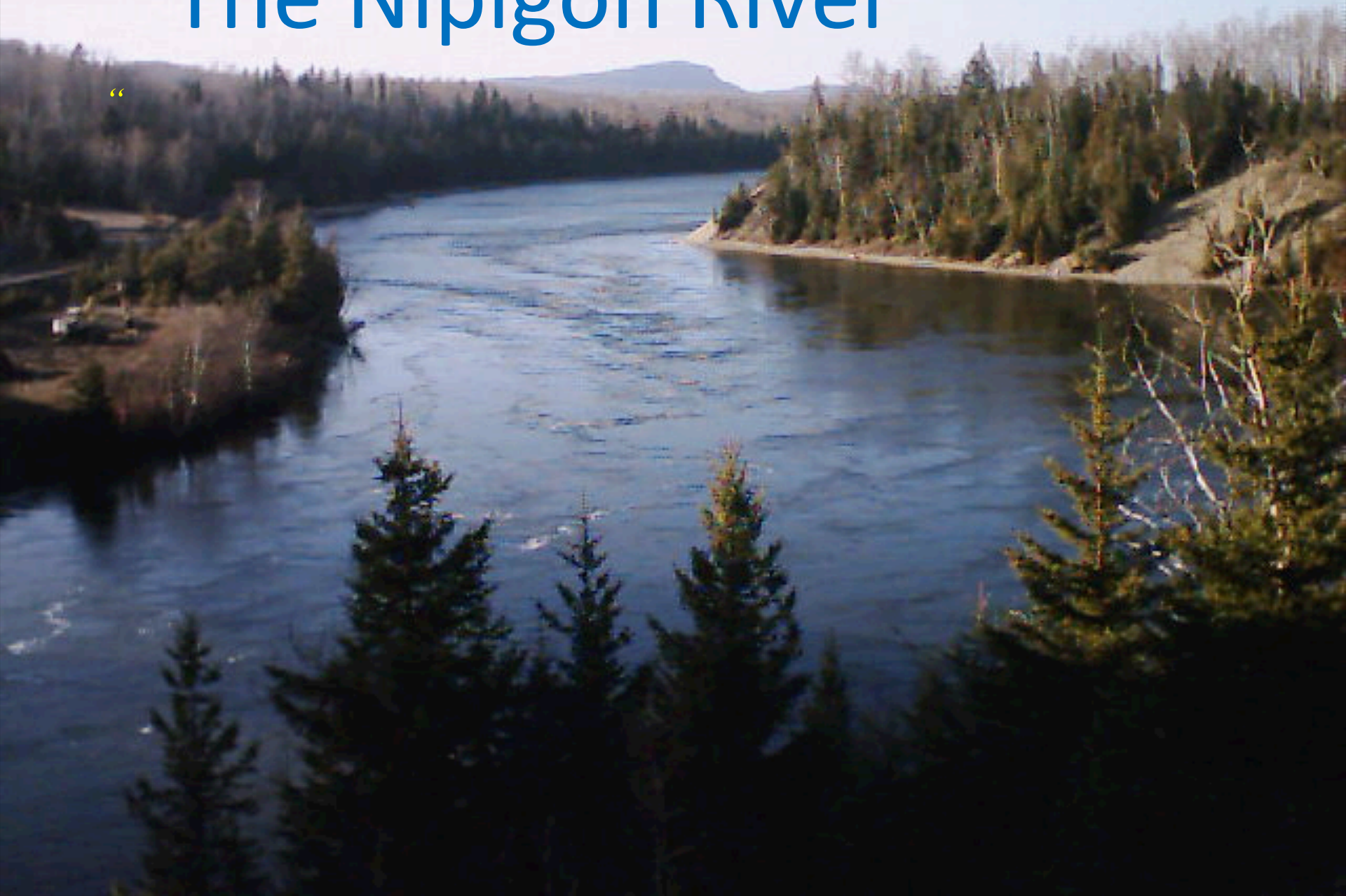
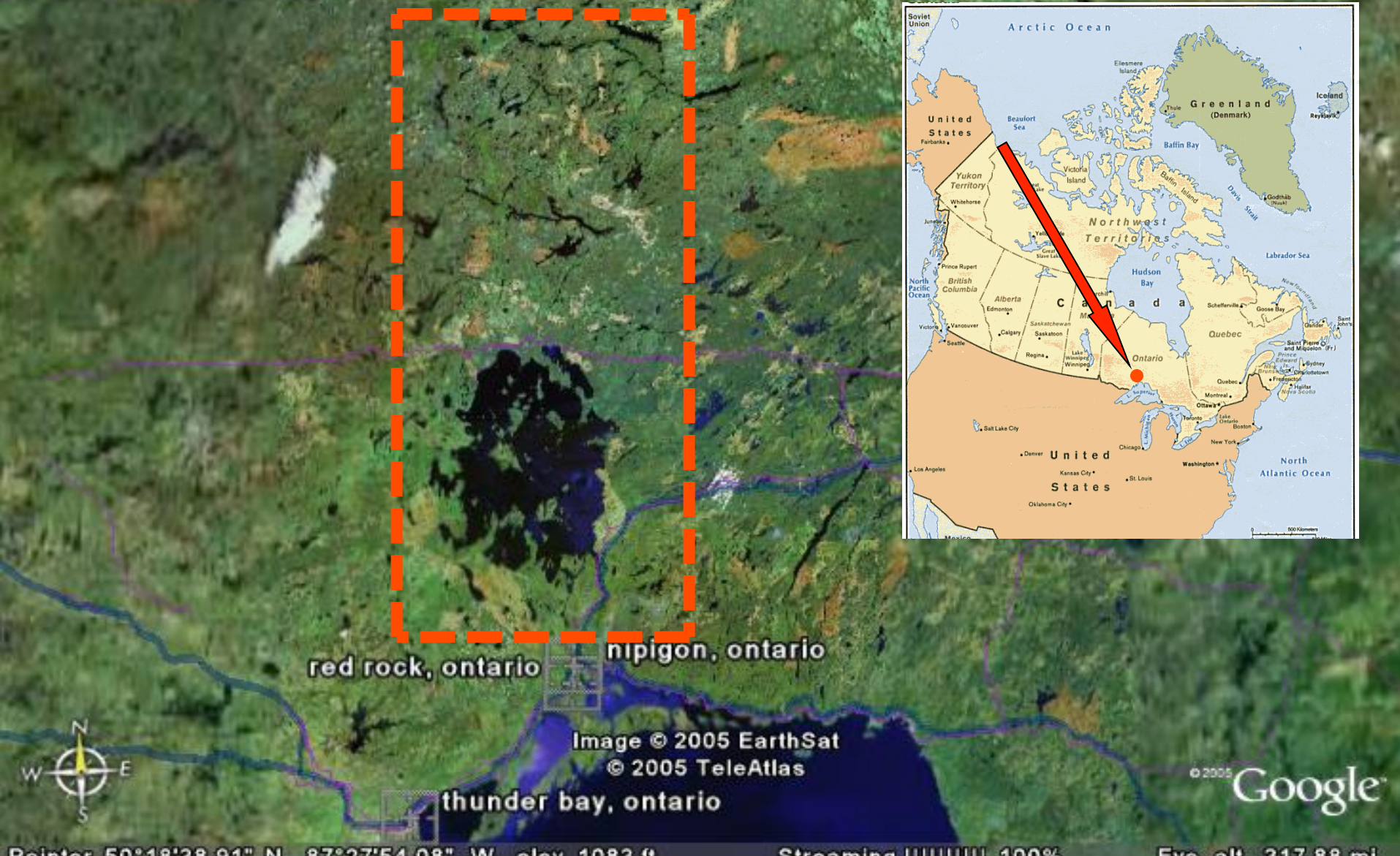


The Nipigon River



The Nipigon Basin



History of the Area

1000-1600
Aboriginals are well established in the area.

1850
Ojibway sign the Robinson Superior Treaty

1900s
First log drive attempted down the Nipigon river. Full log drives occurred from 1923-73.

WW1
Commercial fishing begins. Construction of hydro dams begin along the Nipigon R. Hydro dams were constructed until the 1950s.

1940
Long Lake Diversion.



1650
Europeans arrive and are in awe at the limitless supply of beavers, otters and muskrats. Became huge center for fur trade.

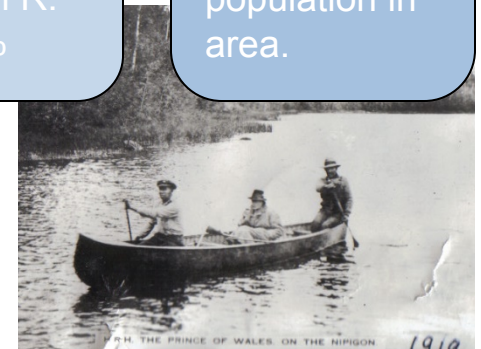
Late 1800s
The Nipigon Region begins to be identified as a beautiful area internationally. CPR is built through Nipigon. The region is now connected to the rest of the country.

1916
World Record Brook Trout Caught (14.5 lbs)

Theodore Roosevelt

1943
Ogoki river diversion begins. Increased flow of Nipigon R. by 50%

2001
Nipigon places a special focus on sustaining bald eagle population in area.



H.R.H. Edward Prince of Wales

History of Dams in the Nipigon Region

- Cameron Falls Dam – 1920
- Alexander Dam – 1930
- Pine Portage Generating Station – 1950

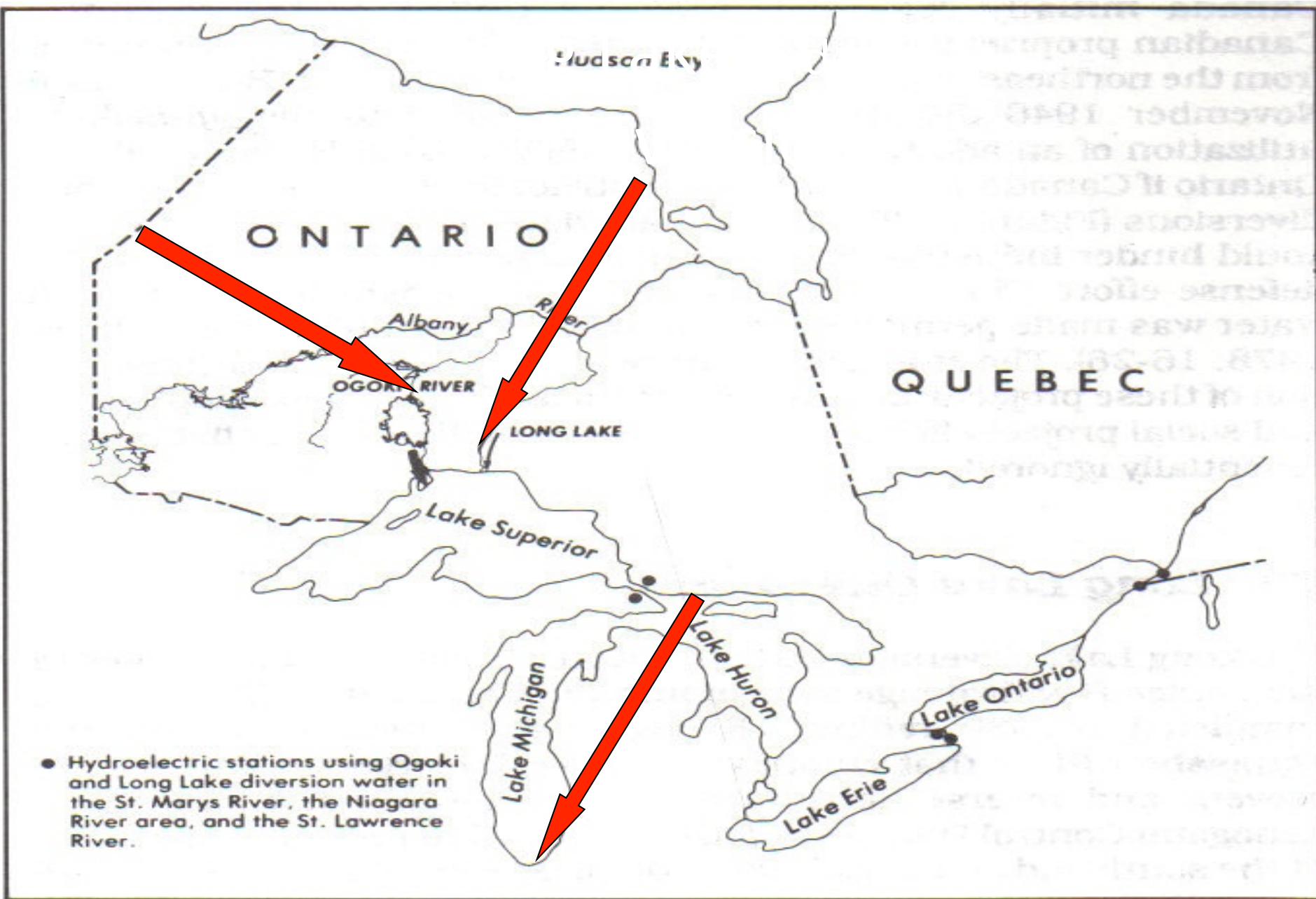


Figure 9: Hydroelectric Stations Using Ogoki and Long Lake Diversion Water

Purpose of the Projects

To ease fears that energy shortages in the United States would hinder industrial production of material for the World War II defense effort

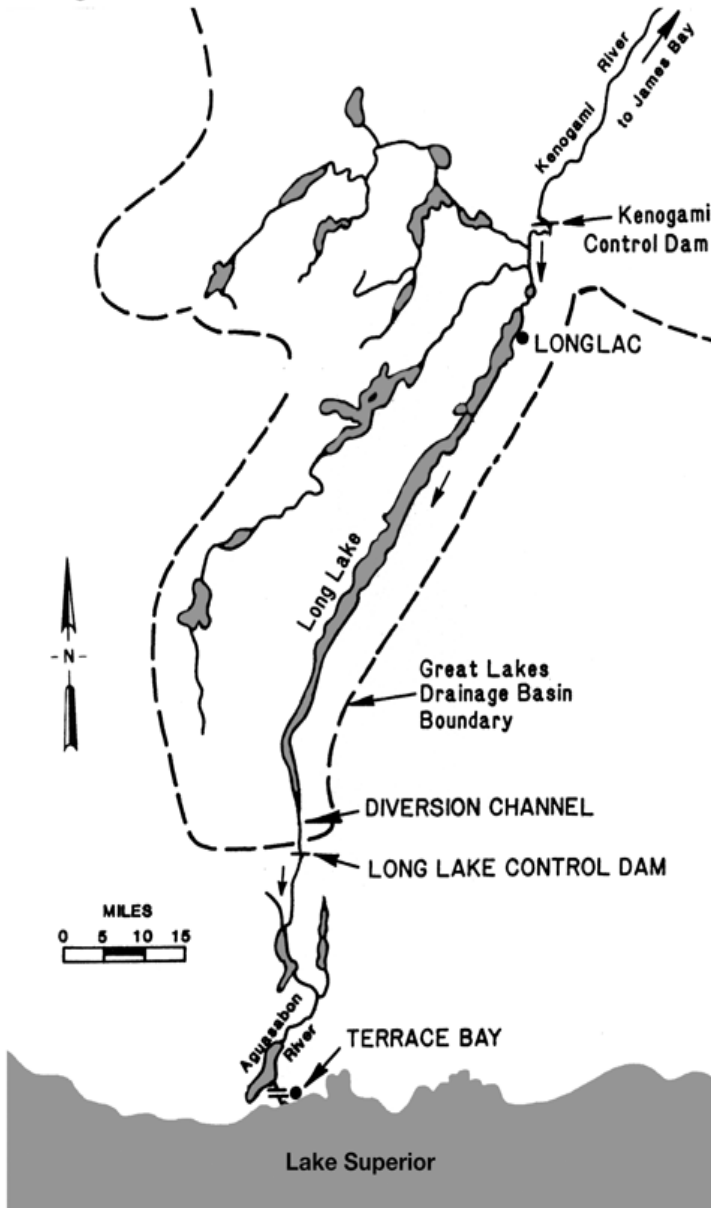
a) Long Lake Diversion

Move water from the Albany River/ James Bay system into the Great Lakes

Kenogami River now flows south into the Agassiz River into Lake Superior

Early function was Interbasin pulpwood transportation plus Power generation in the St. Mary's, Niagara and the St. Lawrence Rivers.

Long Lac Diversion



History of the projects

In 1940, the United States agreed to use $143 \text{ m}^3/\text{s}$ of water at Niagara Falls in Ontario, if Canada would rapidly construct the Ogoki diversion and continue with Long Lake.

b) Ogoki Diversion

To divert northeastward flowing Ogoki River southward through Lake Nipigon and into the Great Lakes system.

To provide an average $113 \text{ m}^3 / \text{s}$ flow increment of water for power production at generating stations on the Nipigon,

St. Mary's,

Niagara and

St. Lawrence rivers.

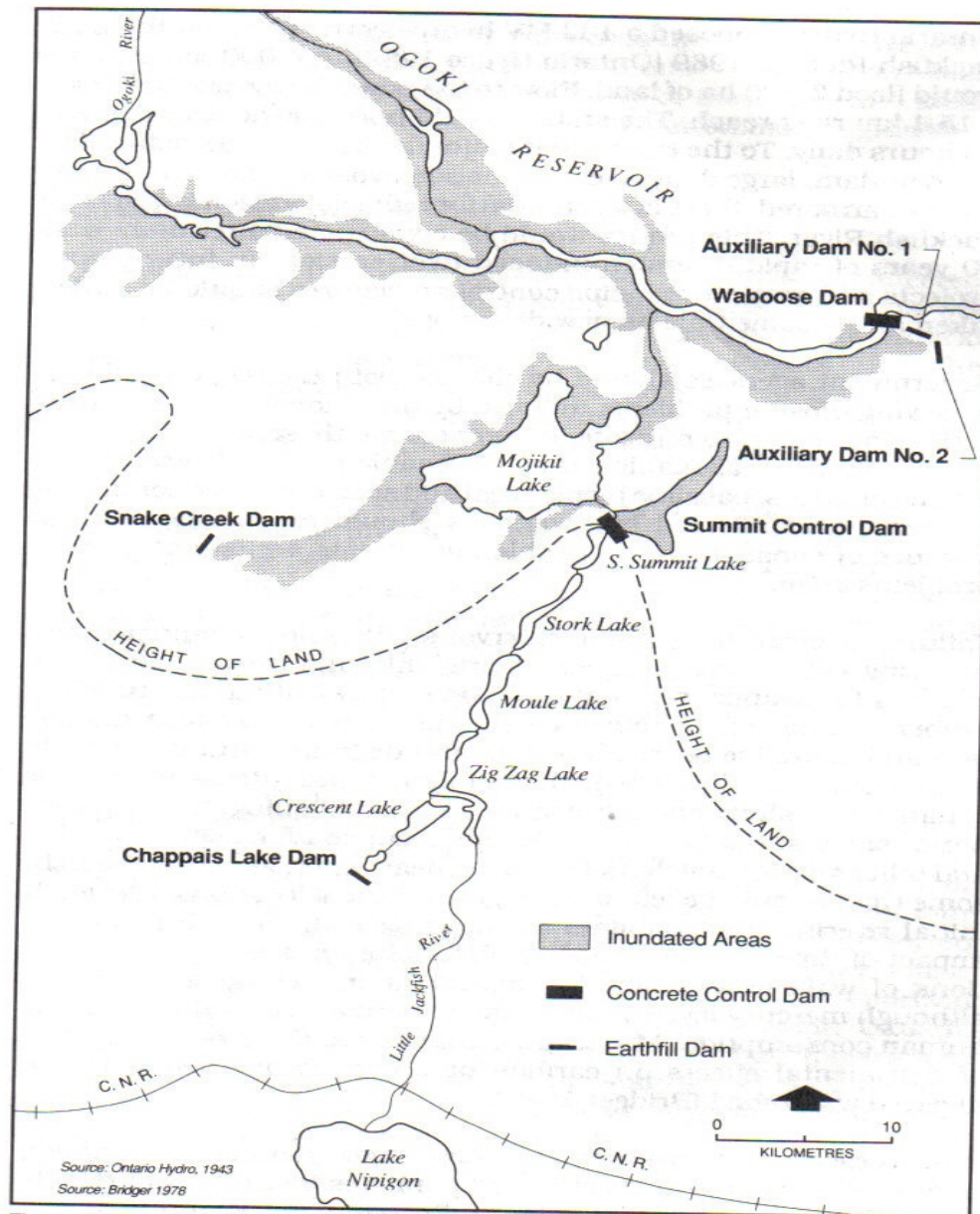


Figure 11: The Ogoki Diversion

The Process of the Ogoki Diversion

Construction of a diversion dam at Waboose Rapids

- Caused water levels at Ogoki River to rise 12 m.
- Flooded river valley and Mojikit Lake up to the height of the land
- There, a 0.4 km diversion channel was excavated

The Summit Control Dam regulates southerly flows

- The diverted water enlarges the Little Jackfish River which discharges into Ombabika Bay at the north end of Lake Nipigon
- Trees were not cleared from the reservoir prior to inundation.

The project became operational in July 1943.

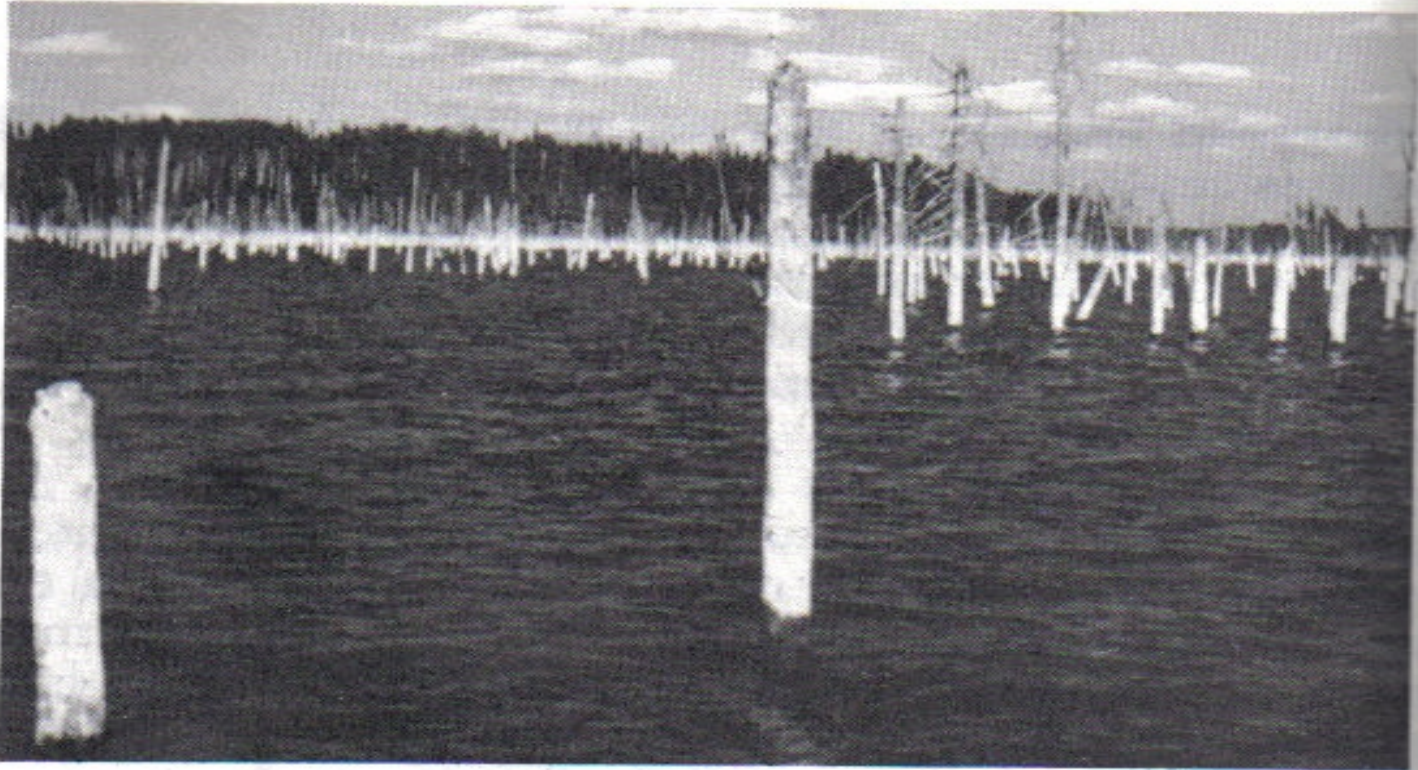
Summit Dam



Waboose Dam



Diversion Effects



Traditionally, forests have not been cleared prior to flooding and interbasin diversion. Vegetation such as this in the Ogoki Reservoir creates valuable fish cover as well as habitat for fish-food organisms. *(Photo: Keith Bridger)*

Biophysical Changes

Erosion in Reservoirs, Diversion Channels and downstream Water Bodies

Erosion has led to . . .

- Increased turbidity
- Degraded water quality
- Damaged private property & cultural artifacts

Impaired habitats for fish

Biophysical Changes (cont)

Trees are in or near reservoirs, diversion channels and Lake Nipigon

Failure to clear trees has led to ...

- ❖ Excess debris
(Will take 100s of years to disappear by natural oxidation)
- ❖ Partially submerged standing trees
Causes navigation & shoreline access hazards
- ❖ Degraded natural aesthetics

Biophysical Changes (cont)

- ❖ Drowned vegetation
- ❖ Creates a hazard for commercial fishing
- ❖ Long term impact on fish habitats is unclear
- ❖ Still an abundant population of walleye and pike in Ogoki Reservoir
- ❖ Mercury levels in fish flesh are above acceptable levels for consumption
- ❖ No evidence of detrimental effects on moose, caribou or other animals living in the watershed.

Socioeconomic Change

Economic Benefits from Hydroelectricity of Long Lake & Ogoki Diversions

- 1943 to 1974

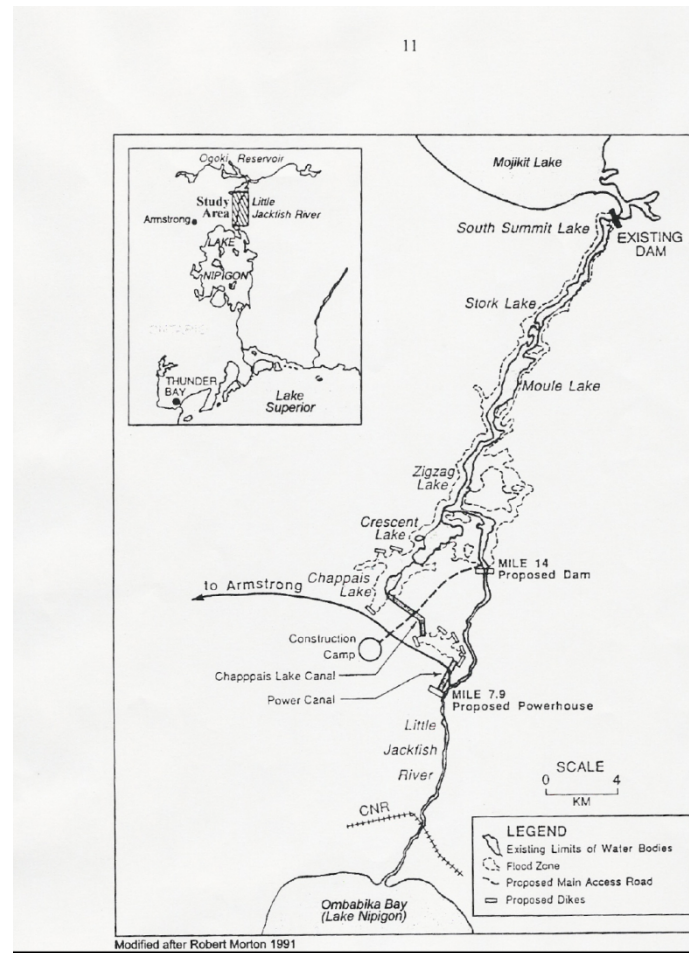
- profits exceeded 220 million dollars.

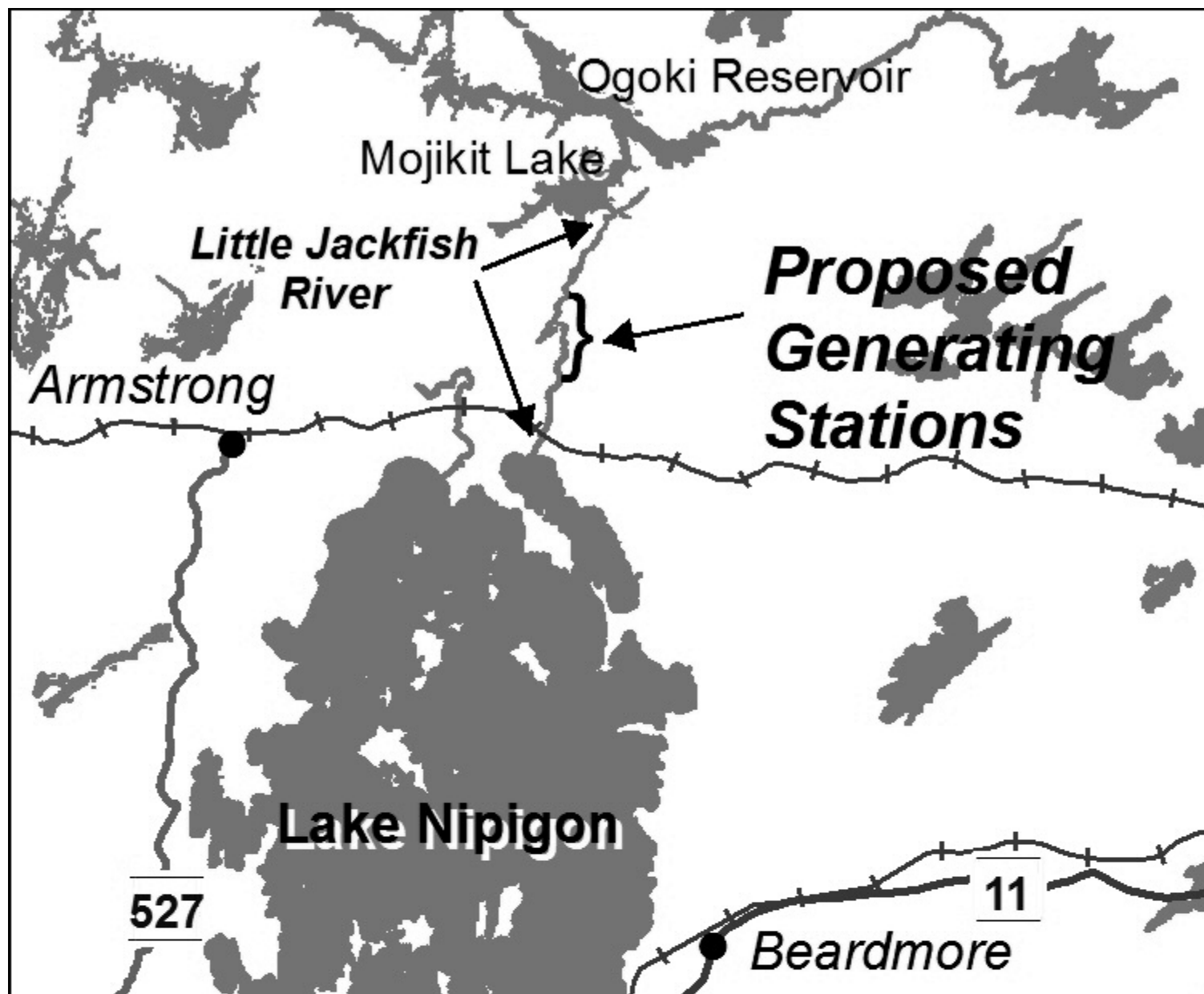
Socioeconomic Change

- Credit for Diverted Water
 - Canada's right to the diverted water was made permanent by the 1950 Niagara River Treaty.
 - 1943 to 1972 → diversions averaged $18.7 \text{ m}^3/\text{s}$ more than expected.
 - Under the treaty, Canada can use only half of the surplus ($9.3 \text{ m}^3/\text{s}$).
 - The United States agreed in principal that the rights of water diverted into the Great Lakes should be vested in the country from whose territory it comes.
 - This agreement was not approved by the U.S. Senate.
 - Canada does not receive credit for about $9.3 \text{ m}^3/\text{s}$ of water at Niagara and for half of the diverted water in the St. Mary's and St. Lawrence rivers. (The result of failing to create an international Great Lakes Basin water agreement.)

Proposed Little Jackfish River Hydroelectric

11





The Aboriginals

Present Conflict

- ◎ Conflict between the Whitesand Indian Band and Ontario Hydro concerning the proposed Little Jackfish Hydroelectric Project.
- ◎ Whitesand Indian Band is afraid of the same effect the Ogoki Diversion had on their community.
- ◎ The proposed Little Jackfish Hydroelectric Project has the potential of damaging the river system by flooding and destroying the land.

The Aboriginals

Actions Taken

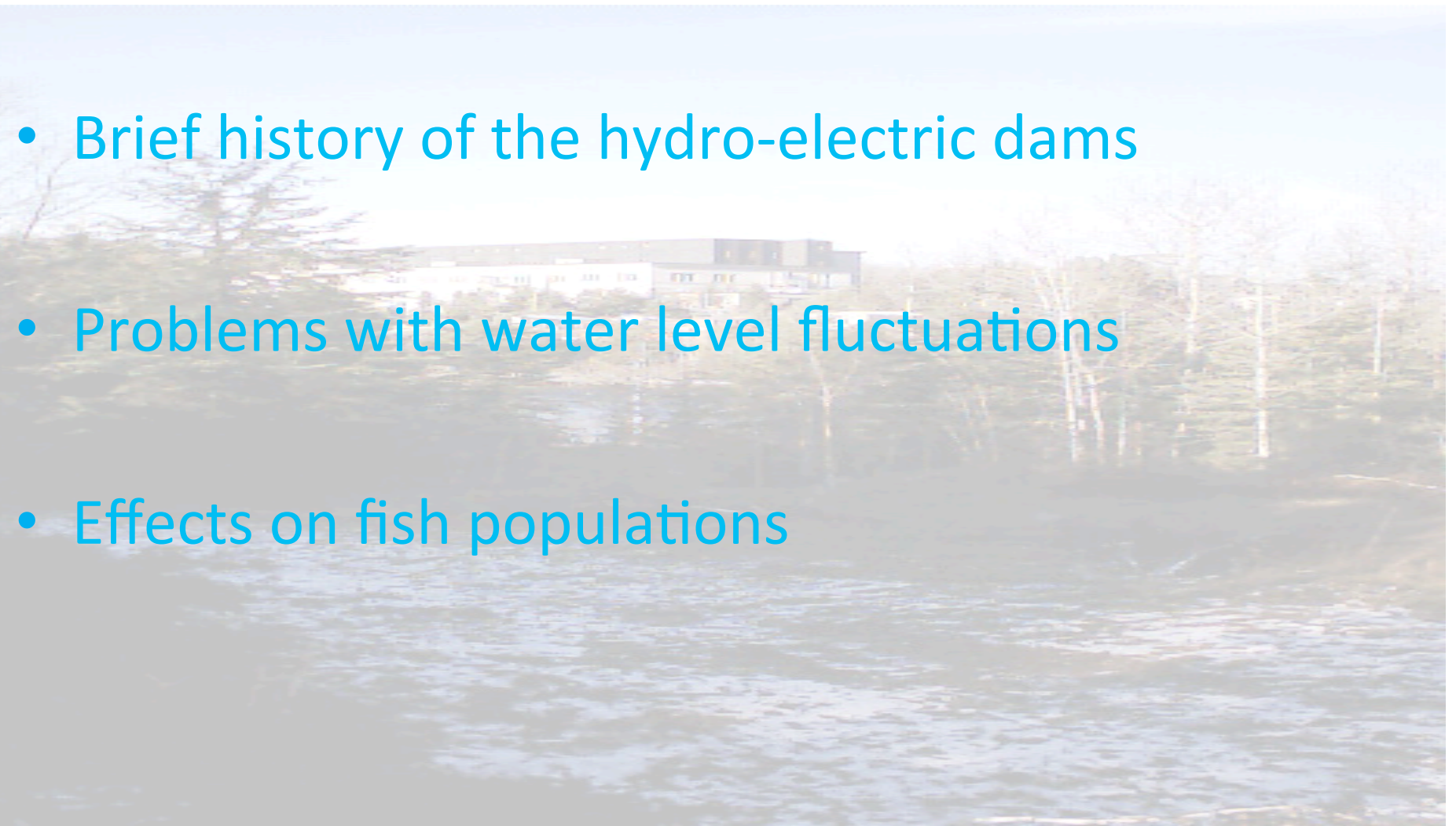
- June 4, 1990, Ontario Hydro and the Chief and Council of the Whitesand Indian band announced a comprehensive land use and harvesting study.
- Highlights from the study included the economic, social, cultural, and spiritual importance of living off the land.
- Conflicts between Whitesand Indian Band and Ontario Hydro dealt with in a fair and effective manner.
- The Little Jackfish River Hydroelectric Project has not started construction.

Hydro-Electric Dams and Their Effect on Fish Populations



Problems Associated with the Damming of the Nipigon River

- Brief history of the hydro-electric dams
- Problems with water level fluctuations
- Effects on fish populations



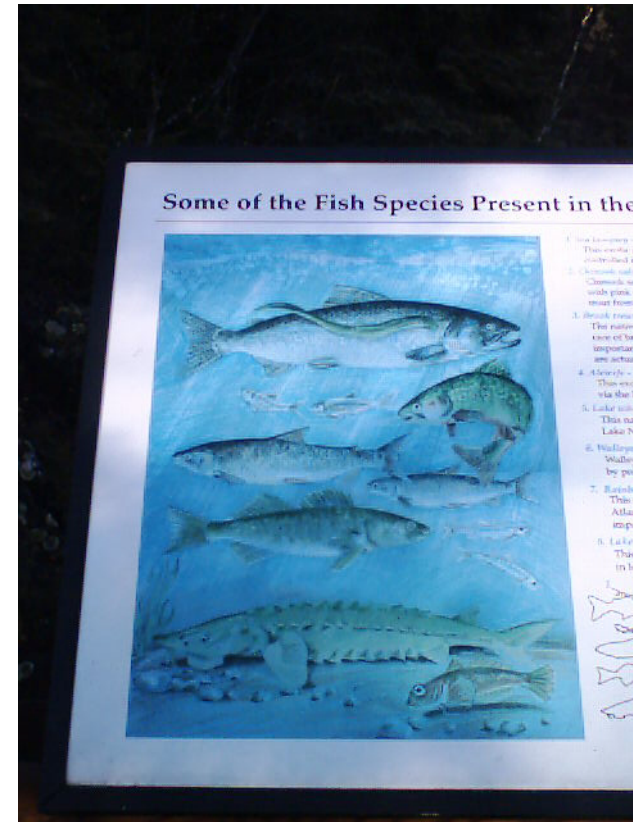
Problems Associated with Water Level Fluctuations

- Water level fluctuations necessary to regulate flow to dams
- Resulted in flooding of surrounding land and lakes
- Erosion of stream banks and sediment load
- Negatively affected fish populations: migrating and spawning patterns.



Effects of the Dams on Fish

- Construction of dams has reduced migration and affected spawning
- Greatest impact on Brook Trout
- Fluctuating river levels in combination with competition from other introduced fish species, and extensive fishing caused populations to drop significantly
- 1989 rehabilitation program put into effect
- Populations are improving since implementation of program.



Map of Dams

