

Adam Creek Lake Sturgeon Relocation

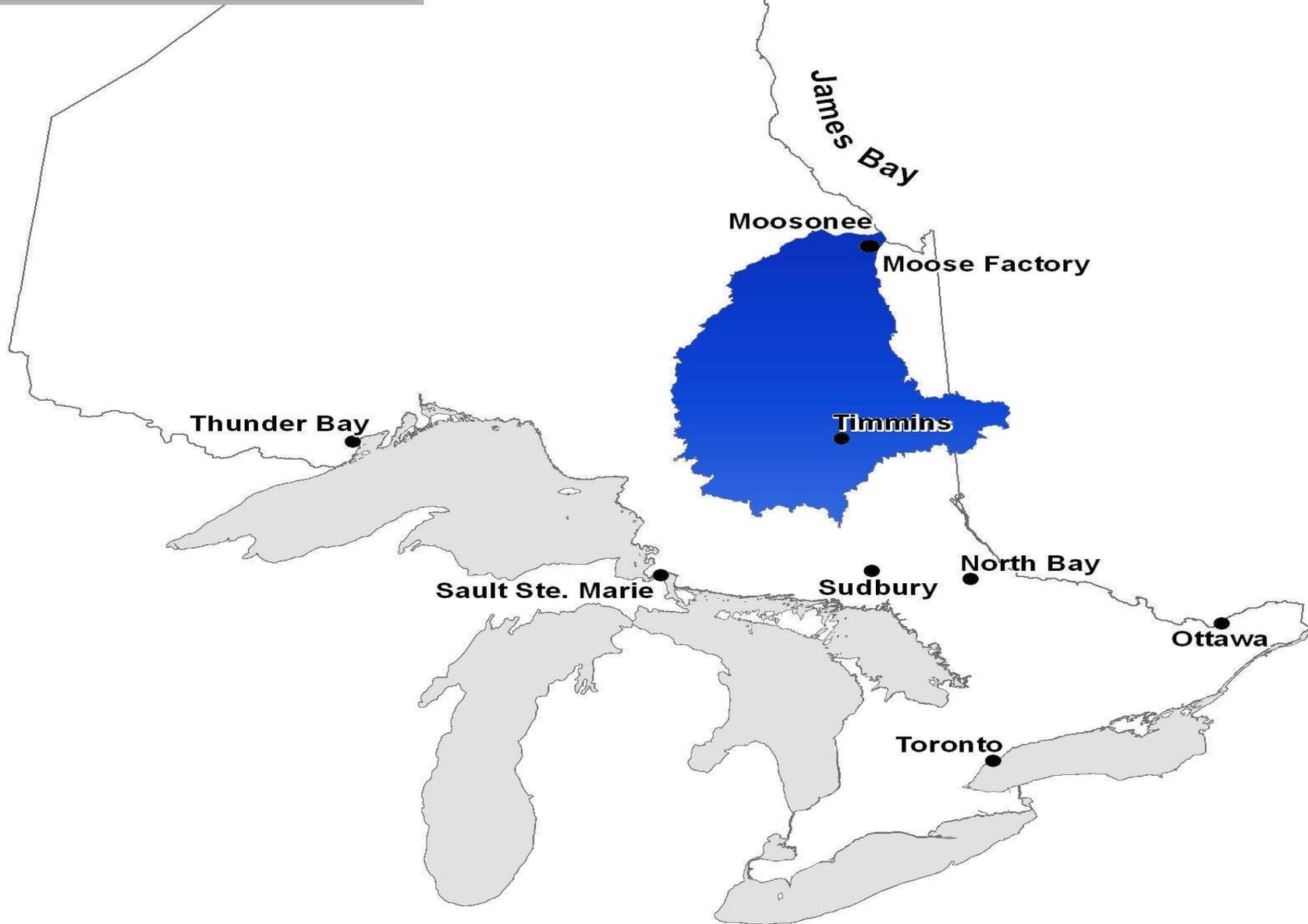
Is this a sustainable management
practice?



Legend



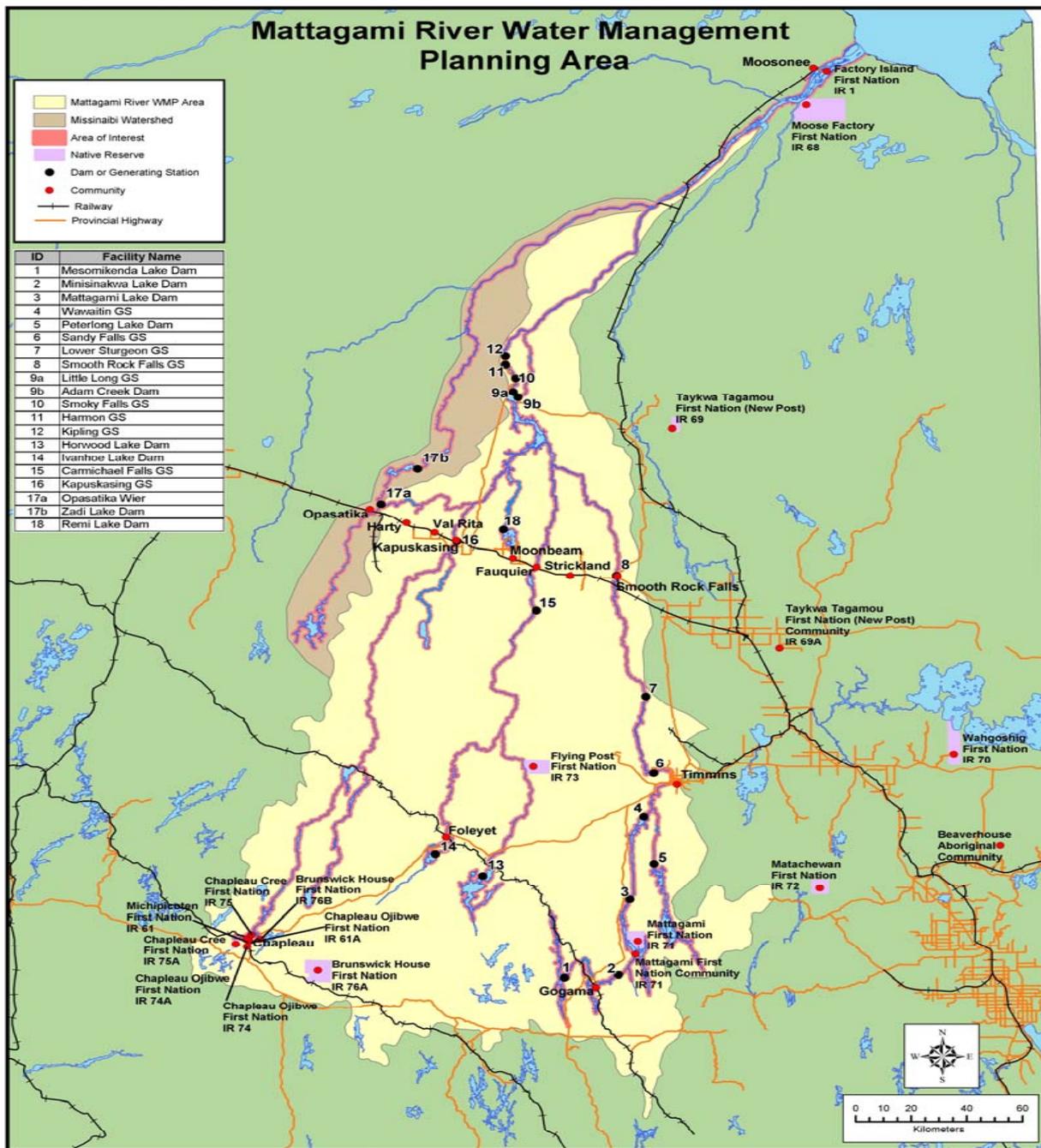
Moose River Basin

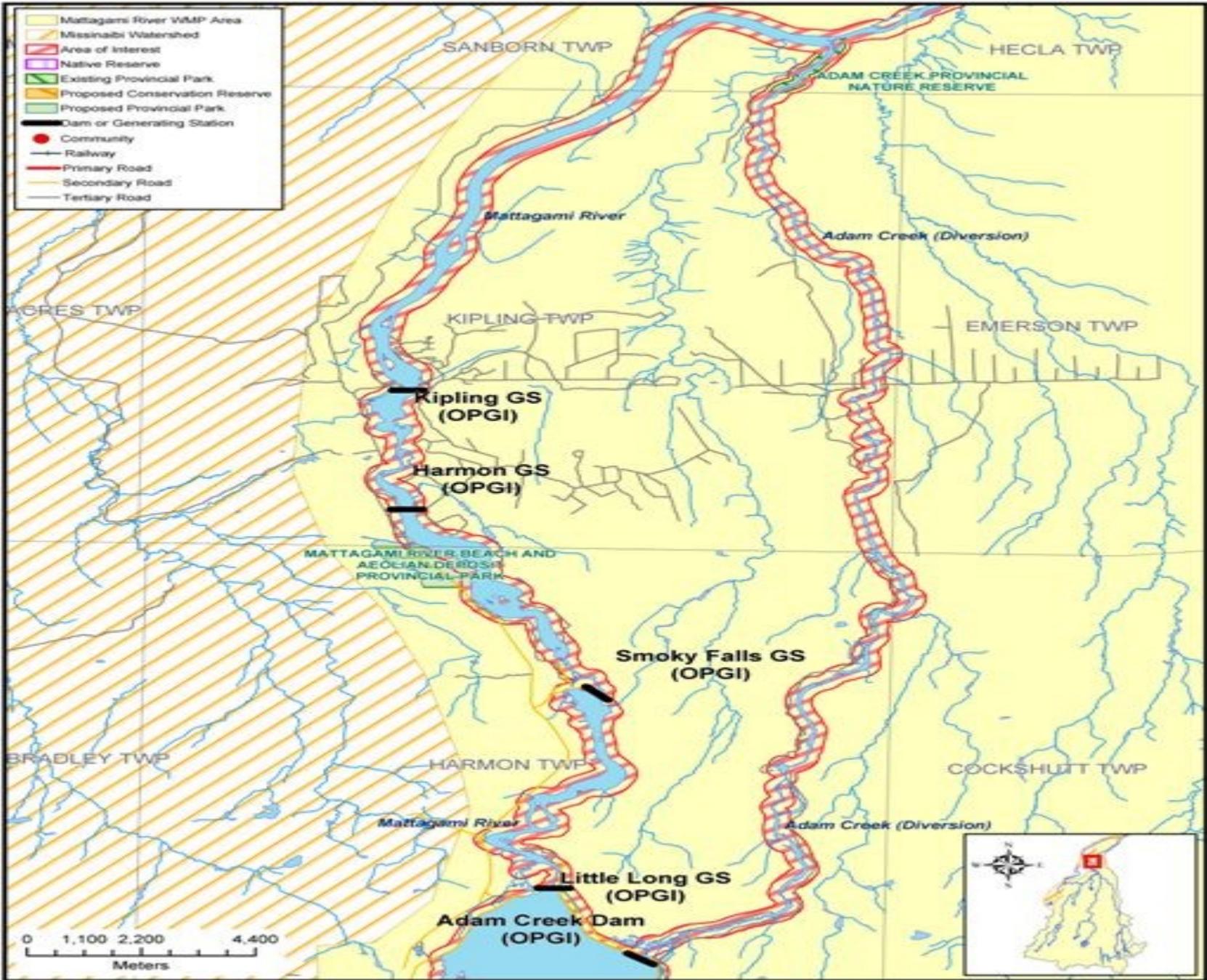


Mattagami River Water Management Planning Area



ID	Facility Name
1	Mesomikenda Lake Dam
2	Minisinakwa Lake Dam
3	Mattagami Lake Dam
4	Wawa'in GS
5	Peterlong Lake Dam
6	Sandy Falls GS
7	Lower Sturgeon GS
8	Smooth Rock Falls GS
9a	Little Long GS
9b	Adam Creek Dam
10	Smoky Falls GS
11	Harmon GS
12	Kipling GS
13	Horwood Lake Dam
14	Ivanhoe Lake Dam
15	Carmichael Falls GS
16	Kapuskasing GS
17a	Opasatika Wier
17b	Zadi Lake Dam
18	Remi Lake Dam





Mattagami Complex





Adam Creek Spillway



8 spillway gates that each have the capacity to pass 600cms each. Total spill capacity of 4870cms (1.3 million gallons per second or 111 billion gallons per day) Average spring spill at Adam Creek 1250cms (330,215 gpd or 28.5 billion gpd)

Adam Creek Areas of Concern

- High flows - No flows
- Entrainment (lake sturgeon)
- Erosion / Sedimentation

Adam Creek Diversion Spillway



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Investigations of fish protection systems

- 1990 - Preliminary experiments with low frequency sound deterrence with lake sturgeon (little reaction to low frequency sound in lab)
- 1991 – Investigated proposal to reduce sturgeon entrainment by installing sectional service gates to convert the intake to a surface draw
- 1993-2001 – First 250 cms to be passed through sluices at main dam to provide reduced spill at Adam Creek (entrainment occurred through active sluice gates)
- 1995-2001 – Adam Creek Sturgeon Entrainment Working Committee concluded that perceptual and physical barriers have the greatest potential to minimize lake sturgeon entrainment in Adam Creek

1996-2000 Investigations of Physical/Perceptual Barriers

- Physical Perceptual guidance system – boom chain structure would have to be installed 400m in front of gates and would have to be 600m wide. A single module was installed and tested at a narrows in 2000 but response of sturgeon to the structure was inconclusive.
- guidance systems, sound barriers, bubble curtains
- Popper and Carlson publication concluded that behavioural systems fail when other strong stimuli, especially strong water currents, override the primary stimulus

2000 review of Diversion Technology for the Little Long Reservoir

- No proven systems were currently known to be available for the effective diversion/guidance of lake sturgeon at either station intakes or water control structures
- No reliable methods to mitigate sturgeon entrainment through the use of screens or behavioural deterrence systems.



2001 - Operating Procedure

- At the request of the MNR changes in the procedures to open sluice gates
- Preliminary cracking and modifying gate sequence operation has been partially successful
- Entrainment continues to occur annually

Adam Creek Fish Habitat Determination – DFO's Perspective

- Informally DFO made a determination of the Adam Creek Fish Habitat status on Sept. 10, 2003
- The upper portion of Adam Creek is not considered fish habitat in. From High Falls to the Mattagami confluence – DFO does not have enough information to prove that this stretch of the diversion is not fish habitat.
- Until an effective deterrence system is found the relocation program is to continue.



Little Long Head Pond Population Estimates

- 3 population estimates surveys conducted between 1984 – 2001
- 1991 and 2001 estimates were conducted on Little Long Head Pond assessing adult sturgeon populations
- Third party review identified 2001 study as more accurate assessment
- Estimated 12 400 adult sturgeon in head pond area.

1990-2008

4300 Sturgeon Relocations Conducted between Adam
Creek and Little Long Spill Way



Survival after relocation ???...



Where are we at....?

- Presently OWA RFP for the development of a Best Management Practices Guide for Waterpower Development and Operation Affecting Lake Sturgeon
- Elevation of Sturgeon Status in Ontario – Treated as a Species at Risk
- Need effective options to ensure long term health of Sturgeon – rehabilitation activities or a recovery strategy is not a strategy
- May have to re evaluate options that have previously been considered non feasible or too expensive
- Will the annual sturgeon entrainment and relocation of entrained sturgeon LLGS and Adam Creek sustain the Little Long Head Pond sturgeon population?

