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ATLANTIC STURGEON and SHORTNOSE STURGEON

FISHERIES AND OCEANS CANADA
MARITIMES REGION
SUMMARY REPORT



US Sturgeon Workshop
Alexandria, VA
8-10 February 2011



Canada

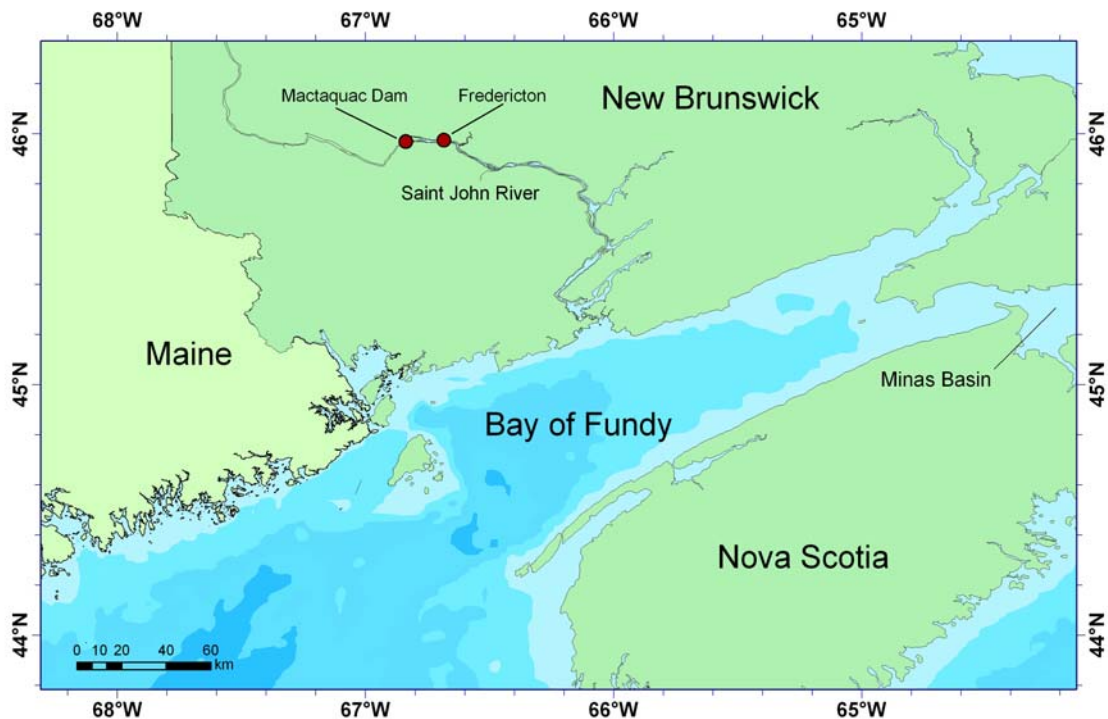
POPULATION STATUS AND RESEARCH

All references to Atlantic sturgeon in this section apply to the Bay of Fundy population unless otherwise specified.

POPULATION STATUS

Atlantic Sturgeon

- Spawning of Atlantic sturgeon in the Bay of Fundy only occurs in one location, the Saint John River estuary, New Brunswick.
- In Canada, Atlantic sturgeon are also known to spawn in the middle St. Lawrence River and estuary.
- The abundance of Atlantic sturgeon in the Saint John River has not been formally assessed, and the current population size and age structure is not known.
- The status of Atlantic sturgeon in Canadian waters is currently scheduled for formal review in May 2011 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (see *Species at Risk Act* section of this report for further details).
- There is evidence of some mixing of Canadian and U.S. Atlantic sturgeon in the Bay of Fundy and DFO Science, would be interested in the level of mortality of Canadian sturgeons captured in the U.S. as well as U.S. assessment and research priorities in order to assist in identifying areas of potential collaborations.



Shortnose Sturgeon

- In Canada, Shortnose sturgeon occur only in the Saint John River, New Brunswick, below the Mactaquac Dam. This population represents the most northerly population of the species. Shortnose sturgeon are not found in the St. Lawrence River.
- The adult population size in the lower Saint John River has not been assessed since 1977 when 18,000 were estimated.
- The Shortnose sturgeon is listed under the federal *Species at Risk Act* as a species of Special Concern (see Species at Risk Act section of this report for further details).
- Threats to the Shortnose sturgeon population include poaching, potential loss of habitat and/or fragmented population (habitat above the dam is no longer accessible since its construction in 1967), and bycatch in commercial fisheries for alewife and shad.
- The status of Shortnose sturgeon was formally assessed by COSEWIC in 2005 and the status report is available online at: http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=719

RESEARCH

DFO Science, Maritimes Region is presently engaged in the following sturgeon related research activities:

- Investigations into the scope for interaction between Atlantic sturgeons and pilot-scale in stream tidal power generation in the Minas Channel. (A summary of the tidal power project including weblinks to additional information can be found on the Nova Scotia Department of Energy website - <http://www.gov.ns.ca/energy/renewables/public-education/tidal.asp>).
- Collaborative studies on the population biology and movements of significant fish species through Minas Channel (Striped bass, Atlantic sturgeon, American eel).
- Acquisition, in collaboration with Dr. Cornel Ceapa (Acadian Sturgeon & Caviar, Inc.), of catch data, biological data (size, sex), and biological materials (pectoral fin rays for ageing, tissues to support assessment of genetic health) to support an assessment of the status of Saint John River Atlantic sturgeon.
- Monitoring commercial landings against the administrative 350 harvest limit (with a 50:50 sex ratio) for Saint John River Atlantic sturgeon.

Active university researchers in the Maritimes Region include:

- **Dr. Mike Dadswell**, Professor at Acadia University is involved in research on the biology of Atlantic and shortnose sturgeon, including tagging using acoustic and archival tag technology <http://biology.acadiau.ca/faculty-staff.html>
- **Dr. Michael Stokesbury**, Assistant Professor and Canada Research Chair in the Ecology of Coastal Environments at Acadia University is involved in research on the biology of Atlantic sturgeon in Minas Basin, including tagging using acoustic and archival tag technology

- <http://employees.acadiau.ca/employee-news-reader/items/acadias-new-canada-research-chair-watching-the-waters.1011.html>.
- **Dr. Allen Curry**, Professor at the University of New Brunswick and Director of the Canadian Rivers Institute is involved in hydroacoustic tracking of sturgeon in the Saint John River.
<http://www.unb.ca/research/institutes/cri/people/fellows/curry/index.html>
 - **Dr. Matthew K. Litvak**, Professor in the Department of Biology at Mount Allison University is active in sturgeon ecology research, development of culture techniques, production of farmed sturgeon, and tagging using acoustic and archival tag technology.
<http://www.mta.ca/faculty/science/bio/BIOSITE/FACULTY/mattlitvak.html>

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FISHERIES and FISHERIES MANAGEMENT

All references to sturgeon in this section apply to both Atlantic and Shortnose sturgeons of DFO Maritimes Region (i.e., Bay of Fundy populations) unless otherwise specified.

FISHERIES

- In Atlantic Canada, licensed fisheries for sturgeon occur in the Bay of Fundy (BoF) (there are also licensed fisheries for Atlantic sturgeon in the St. Lawrence River but only the fishery in the BoF export from Canada).
- There is a recreational fishery for sturgeon in New Brunswick and there have been several angling tournaments (requiring live releases) on the Saint John River in the past.
- Recreational fishing for sturgeon is permitted in Nova Scotia, but a fishery has not developed.
- There are currently two Aboriginal fishing licences that authorize sturgeon harvest in the Bay of Fundy area, but these licences have not reported any sturgeon landings in the past five years.
- There are currently only two active sturgeon aquaculture facilities in New Brunswick: Acadian Sturgeon & Caviar, Inc. (www.acadian-sturgeon.com/) and Breviro Caviar Inc. (www.breviro.com). There are a small number of other operations under development.
- Sturgeon can be incidentally caught in commercial gear such as otter trawls, gill net, fyke nets and weirs. All sturgeon bycatch are required to be released alive.



Herring brush weir in the Minas Basin, equipped with an escape gate for live release of bycatch including sturgeon

FISHERIES MANAGEMENT

- In Canada, the sturgeon fishery is governed by the provisions of the *Fisheries Act* and subordinate regulations.
 - In the Maritime Provinces, Fisheries and Oceans Canada (DFO) is responsible for management of the sturgeon fishery under the provision of the *Maritime Provinces Fishery Regulations* (MPFR) made pursuant to the *Act*.
 - In the St. Lawrence River and estuary, the Province of Québec is responsible for management of the sturgeon fishery under the provisions of the *Québec Fishery Regulations* made pursuant to the *Act*.
- The commercial sturgeon fishery is carried out under a federal licence that restricts the amount of gear that can be fished and the waters in which fishing can occur. There is an administrative total allowable catch (TAC) of 350 fish annually (see bullet 4 under Research).
- The sturgeon fishery in the Maritimes is carried out in the Bay of Fundy, primarily in the estuary of the Saint John River. There are 5 remaining licence holders of which only 1-2 are regularly active.
- Under the federal MPFRs, sturgeon may only be fished commercially with gill nets having a minimum mesh size of 330 mm (13 inches). Under these same regulations, it is illegal to retain or possess any sturgeon less than 120 cm (48 inches) in length and the season is closed during the month of June to protect spawning adults. The completion and submission of detailed log books is a condition of the commercial licence. Retention of incidentally caught sturgeon in other fisheries is strictly prohibited.
- In Canada, nearly all shortnose sturgeon are smaller than the minimum size limit for retention, consequently, shortnose sturgeon are not retained and no shortnose sturgeon bycatch is permitted. By default, the commercial fishery retains Atlantic sturgeon only.
- Two options are available for aquaculturists to obtain wild sturgeon for broodstock. They may purchase sturgeon that have been legally caught in the commercial fishery. In the event that a commercial supply is not readily available, an aquaculturist may apply to the DFO for written permission under the FA to fish for broodstock. Any such permission imposes strict terms and conditions with respect to the quantity and size of fish that may be taken, the gear that may be used, the facility where the fish will be located and the requirement to provide annual reports.
- Federal fishery officers in the course of their routine vehicle, vessel and foot patrols carry out enforcement of the regulations and licence conditions applicable to sturgeon. Provincial conservation officers also have enforcement powers under federal fisheries legislation.

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CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES (CITES)

- Environment Canada is the lead on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in Canada (<http://www.ec.gc.ca/cites/>). However, Fisheries and Oceans Canada (DFO) has the delegated responsibility for the issuance of CITES export permits for aquatic species.
- All CITES permits must be accompanied by a positive Non-Detriment Finding (NDF) which indicates that export is not considered detrimental to the species in the wild.
- DFO undertook in 2009 a formal Canadian Science Advisory Secretariat evaluation on the sustainability of the total removals of Atlantic sturgeon from the Bay of Fundy in order to inform a CITES Non-Detriment Finding (See 'Reference Information' section of this report for document reference and online availability).
- Atlantic sturgeon and Shortnose sturgeon are listed on Appendix II and I of CITES, respectively.
- Wild Atlantic sturgeon (primarily meat and fertilized eggs for scientific purposes) are exported regularly from Canada. Canada does not currently authorize the export of Atlantic sturgeon caviar originating from wild-caught sturgeons, but the process to authorize such exports is currently underway. This is a lengthy process owing to the strict regulations imposed by CITES on trade of wild caviar. These regulations were implemented owing to sturgeon conservation concerns in the Caspian and Black Sea.
- As Shortnose sturgeon is listed on Appendix-I, export for commercial purposes is prohibited. However, exports of Shortnose sturgeon for research purposes do occur, and Canada has a CITES registered breeding operation for this species which allows exports for commercial purposes.

SPECIES AT RISK ACT (SARA)

GENERAL INFORMATION

- The *Species at Risk Act* (SARA) is Canada's commitment for the conservation, recovery and protection of species at risk.
- The prohibitions of SARA make it illegal to harm, harass, capture, kill or take a listed Threatened or Endangered species, or to destroy its critical habitat.
- The Minister of Fisheries and Oceans (DFO) is the competent Minister for aquatic species.
- The SARA Public Registry is an online service which gives users easy access to documents and information related to SARA. It included are all of the documents specified in various sections of the Act. <http://www.sararegistry.gc.ca>

SARA STATUS OF SHORTNOSE AND ATLANTIC STURGEON

Shortnose sturgeon

Shortnose sturgeon was listed as a species of Special Concern (SC) under SARA in March 2009, and a SARA Management Plan is scheduled for completion in 2014. While the prohibitions of SARA (i.e., harm against individuals and their habitat) don't apply to species of SC, the Management Plan will be developed in consultation and cooperation with all appropriate parties and will set objectives and management measures for maintaining sustainable population levels to prevent the species from becoming further at risk.

Atlantic sturgeon

The status of Atlantic sturgeon in Canadian waters (including the St. Lawrence River population and the Bay of Fundy population as two separate Designatable Units (DU)) is currently being reviewed by COSEWIC with an assessment date of May, 2011. A comprehensive Status Report is in preparation for this review, and once finalized will be made available through COSEWIC's website (www.cosewic.gc.ca). Pending the assigned level of risk (particularly if Threatened or Endangered) and potential subsequent listing under SARA (likely not before at least 2012/2013), there would be eventual SARA conservation/recovery planning with possible future SARA implications, such that current and future activities will need to be reviewed and restrictions to certain activities could be implemented.

DFO Maritimes Region is responsible for SARA processes of the Bay of Fundy DU and DFO Québec Region is responsible for SARA processes of the St. Lawrence River DU.

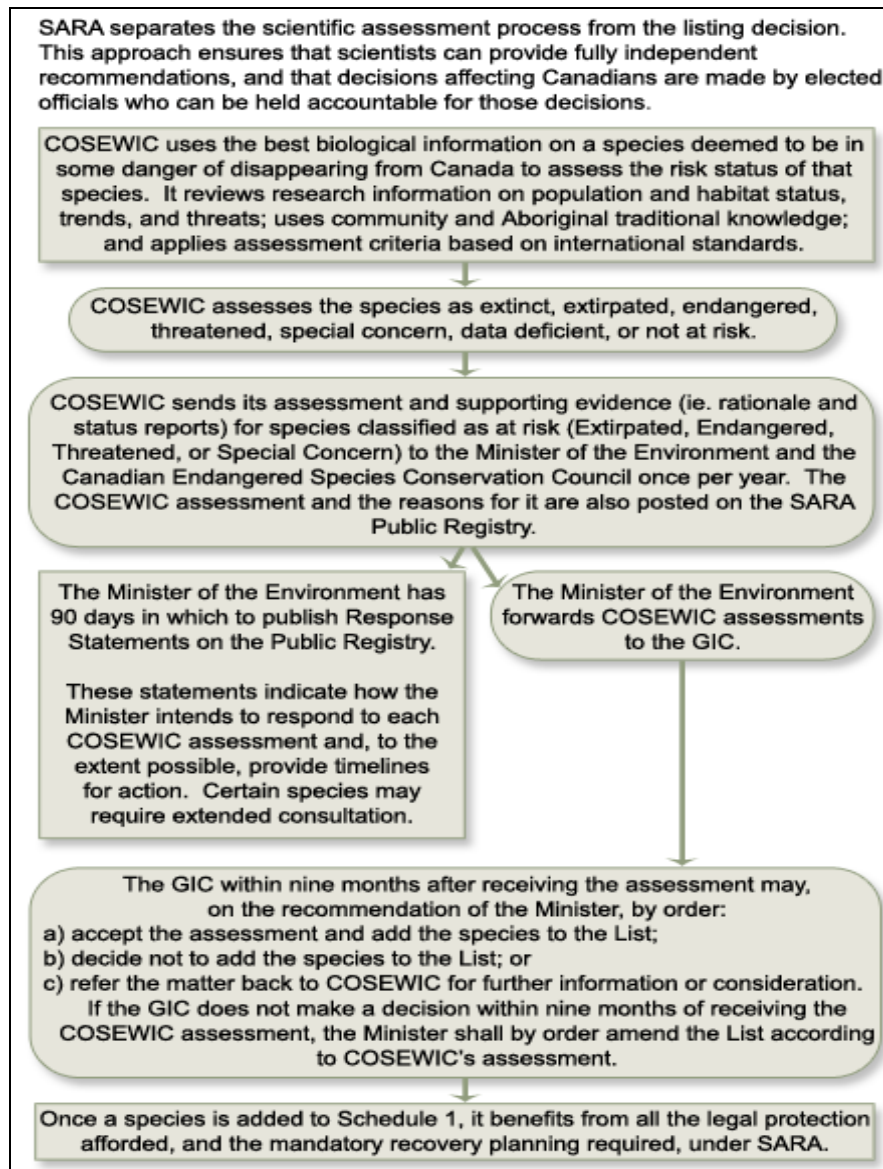
SARA LISTING PROCESS

- The listing process, begins with a species assessment that is conducted by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
- COSEWIC is an independent body of experts given the authority under SARA to assess a species status and assign it a level of risk. The Committee reviews status assessments twice per year (November and April) and posts the results on the SARA

Public Registry shortly after the meeting, along with a brief rationale for the designation.

- There are many processes (including Recovery Potential Assessment, Socio-Economic Analysis, Consultations) that must take place from the time the COSEWIC assessment results are posted and a final listing decision is made and it typically takes a minimum of 2 years to go from DFO officially receiving the assessment results to a final listing decision being published on the Canada Gazette.

Listing Process Diagram



SARA RECOVERY PROCESS AND TIMELINES

- Once a species is listed on the SARA List of Wildlife Species at Risk (i.e., Schedule 1), prohibitions against harm to the species come into effect and the recovery planning process, which includes the identification and protection of critical habitat,

is triggered with specific timelines and requirements depending on the species' level of risk

- Recovery strategies and action plans must be developed for threatened, endangered and extirpated species. Management plans must be developed for species of special concern.
- Recovery Strategies identify the threats to the species and its habitat and describes scientifically sound goals, objectives and strategies for the survival and recovery of the species, including an identification of the species critical habitat to the extent possible.
- Action Plans outline the projects or activities that must be carried out to achieve the goals and objectives described in the recovery strategy. They include an evaluation of the socio-economic costs and benefits of the actions to be undertaken
- Management Plans outline appropriate conservation measures for maintaining sustainable population levels of a species and conserving its habitat.
- For new species added to Schedule 1, the timelines for the production of recovery documents are 1 year for endangered species, 2 years for threatened and extirpated species, and 3 years for species of special concern. Timelines are longer for species which were assessed by COSEWIC prior to 1999.

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REFERENCE INFORMATION

COSEWIC 2005. COSEWIC assessment and update status report on the shortnose sturgeon *Acipenser brevirostrum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 27 pp.

Available on the COSEWIC Website:

http://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_shortnose_sturgeon_e.pdf

DFO 2009. Evaluation of Atlantic Sturgeon (*Acipenser oxyrinchus*) in the Maritimes Region with Respect to Making a CITES Non-detriment Finding. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2009/029.

Available on DFO's Canadian Science Advisory Secretariat Website: http://www.dfo-mpo.gc.ca/csas-sccs/publications/sar-as/2009/2009_029-eng.htm