Recovery Potential Assessment for Lake Sturgeon - Great Lakes - Upper St. Lawrence Populations

Zonal Peer Review Meeting - Central and Arctic and Quebec Regions

Sault Ste Marie, Ontario
November 5-7, 2007

Terms of Reference

Background

The *Species at Risk Act* (SARA) is intended to protect species at risk of extinction in Canada, and promote their recovery. SARA includes prohibitions on killing, harming, harassing, capturing, or taking individuals of species listed as threatened or endangered on Schedule 1. SARA prohibits the sale or trade of individuals of such species (or their parts), damage or destruction of their residences or destruction of their critical habitat. SARA specifies that a recovery strategy should be prepared for species that are listed as threatened or endangered. The recovery strategy will have to address all potential sources of harm, including harvesting activities, in a way that does not jeopardize the survival and recovery of the populations concerned.

In order to address recreational and subsistence fishing in a recovery strategy, scientific evaluation of the likelihood that recovery goals or targets will be achieved in biologically reasonable time frames should be included. The basis for the designation of recovery targets and times-to-recovery for species listed under SARA is informed by sound peer reviewed scientific advice. SARA provides for exemptions to the prohibition to harm under certain circumstances, including specific activities permitted in the recovery strategy. Therefore, it is important that, if recreational fisheries are to continue after designation, the recovery strategy includes levels of harvest, recovery assessment, recovery rate, level of confidence, etc.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the status of lake sturgeon (*Acipenser fulvescens*) in November 2006. That assessment resulted in the designation the western populations of lake sturgeon as Endangered, those in populations in Lake of the Woods - Rainy River and Southern Hudson Bay as Special Concern, and Great Lakes - Upper St. Lawrence River populations as Threatened. The species, having been assessed by COSEWIC, now enters a consultation process prior to a listing decision. It is expected that this part of the process may take up to two years, so it is important to begin recovery planning as soon as possible and initiate actions to protect the species.

Initial steps required under the legislation to inform the listing decision include conducting a Recovery Potential Analysis (RPA), a subsequent socio-economic analysis and listing consultations with affected stakeholders. A species RPA process was developed by DFO Science to provide the information and scientific advice required to meet the various requirements of the SARA, such as the authorization to carry out activities that would otherwise violate the SARA as well as the development of recovery

strategies. The scientific information also serves as advice to the Minister of Fisheries and Oceans Canada regarding the listing of the species under SARA. Consequently, the information is used when analyzing the socio-economic impacts of adding the species to the list as well as during subsequent consultations, where applicable.

This workshop is being held to consider the scientific data available with which to assess the recovery potential of the species. The designation of Threatened for the Great Lakes - Upper St. Lawrence River populations was not anticipated, and a RPA planned for lake sturgeon in the spring of 2007 focused on the Endangered western populations. The recommendation of Threatened for DU 8 populations has necessitated a meeting to conduct a peer-reviewed RPA for the Great Lakes - Upper St. Lawrence River populations. It is expected that the RPA will be generated during the three months following this scientific review. The RPA will provide guidance to management on the protections necessary and the harms that may be allowed for this species until such time as a Recovery Strategy is in place.

Objectives

The intent of this meeting is to assess the recovery potential of the Great Lakes - Upper St. Lawrence River lake sturgeon populations. It is a science-based peer review of the designatable unit assigned by COSEWIC, and the 17 steps in the RPA framework outlined below. The advice will be provided to the DFO Minister for his consideration in any listing decision under SARA for these populations.

The topics (from the national framework) for which an assessment that should be done for any species/designatable unit is as follows:

Phase I: Assess Current Species Status

1. Evaluate **present species status** for each population in the Great Lakes - Upper St. Lawrence River designatable unit
2. Evaluate **recent species trajectory** for each population in the Great Lakes - Upper St. Lawrence River designatable unit
3. Estimate, to the extent that information allows, the current or recent **life history parameters** for the species (total mortality [Z], natural mortality[m], fecundity, maturity, recruitment, etc) or reasonable surrogates; and associated uncertainties for all parameters.
4. Address the **habitat requirements and habitat use patterns** of the species using the separate Terms of Reference for describing and quantifying habitat outlined below (to the extent possible)
5. Estimate expected **population and distribution targets** for recovery.
6. Project **expected population trajectories** over three generations (or other biologically reasonable time), and trajectories over **time to the recovery target** (if possible to achieve), given current population dynamics parameters and associated uncertainties (step 3) using DFO guidelines on long-term projections.
7. Evaluate **residence requirements** for the species, if any.

Phase II: Scope For Management to Facilitate Recovery, Taking Account of Associated Uncertainties.

8. Assess the **probability that the recovery targets can be achieved** under current rates of population dynamics parameters, and **how that probability would vary with different mortality (**especially lower**) and productivity (**especially higher**) parameters**
9. Quantify to the extent possible the **magnitude of each major potential source of mortality** identified in the pre-COSEWIC RAP, and considering information in COSEWIC Status Report, from DFO sectors, and other sources.
10. Quantify to the extent possible the **likelihood that the current quantity and quality of habitat is sufficient** to allow population increase, and would be sufficient to support a population that as reached its recovery targets
11. Assess to the extent possible the magnitude by which current **threats to habitats have reduced habitat quantity and quality.**

Phase III: Scenarios for Mitigation and alternative to activities

To the extent possible with the information available:

12. Using input from all DFO sectors and other sources as appropriate, develop an **inventory of all feasible measures to minimize/mitigate** the impacts of activities in Steps 9 and 11.
13. Using input from all DFO sectors and other sources as appropriate, develop an inventory of all reasonable **alternatives to the activities** in tasks 9 and 11, but with potential for less impact. (e.g. changing gear in fisheries causing bycatch mortality, relocation of activities harming critical habitat)
14. Using input from all DFO sectors and other sources as appropriate, develop an inventory of all **reasonable and feasible activities that could increase the productivity or survivorship parameters** in steps 3 and 8.
15. Estimate, to the extent possible, the **reduction in mortality rate expected** by each of the mitigation measures in 12 or alternatives in 13. and **the increase in productivity or survivorship** associated with each measure in 14
16. Project **expected population trajectory** (and uncertainties) over three generations (or other biologically reasonable time), and to the time of reaching recovery targets when recovery is feasible; given mortality rates and productivities from 15 that are **associated with specific scenarios** identified for exploration. Include scenarios which provide as high a probability of survivorship and recovery as possible for biologically realistic parameter values.
17. Recommend **parameter values for population productivity and starting mortality rates,** and where necessary, specialized features of population models that would be required to allow exploration of additional scenarios as part of the assessment of economic, social, and cultural impacts of listing the species.

Products

The meeting will generate a proceedings report summarizing the deliberations of the participants. This will be published in the Canadian Science Advisory Secretariat (CSAS) Proceedings Series on the CSAS website. There may be a CSAS Research Document(s) produced in relation to the working paper(s) presented at the workshop. The advice from the meeting will be published in the form of a Science Advisory Report.