

**Workshop on the assessment of the recovery potential of Eastern sand darter,
Channel darter and Copper redhorse within the context of the Species at Risk Act
(SARA)**

Regional Workshop - Quebec Region

Hotel Courtyard by Marriott
Montreal, QC
December 11th (pm) and 12th, 2006

TERMS OF REFERENCE

Background

Eastern Sand Darter:

In 1994, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated the Ontario and Quebec Eastern sand darter as a “threatened species” and confirmed this status in 2000. Since 2003, the species has been added to Appendix 1 of the *Species at Risk Act* (SARA). The reasons presented by COSEWIC for designating this species as threatened are because of its limited distribution in Canada and its fragmented and isolated populations which have little chance of recolonizing should they disappear. The species has been declining since the 1950s due to the loss or deterioration of their habitat caused by silting, impoundment and pollutants. In Quebec, the species is on the list of wildlife species likely to be designated as threatened or vulnerable according to the Act respecting threatened or vulnerable species.

Channel Darter:

Channel darter was evaluated by COSEWIC in 1993, and Quebec and Ontario populations were designated as “threatened species”. The situation was re-examined in May 2002 and the species’ status was maintained. The species was added to Appendix 1 of the SARA in April 2006. The reasons presented by COSEWIC for designating this species as threatened are because of the small number of individuals found where the species resides and the disturbances to their habitat caused by silting and fluctuating water temperatures. In Quebec, the species is designated as vulnerable according to the Act respecting threatened or vulnerable species.

Copper Redhorse:

Copper redhorse, found only in Quebec, was first evaluated by COSEWIC in 1987 and was given the status of “threatened species”. In November 2004, its situation was re-examined and it became designated as “endangered”. A decision to add this species or not to Appendix 1 of the SARA should be taken in 2007. COSEWIC rationale behind designating it as “endangered” is due to the fact that the species is Canada endemic. It has only been observed in three areas in the south-west part of Quebec, which may represent

only one population. The distribution and abundance of the species has considerably diminished due to a number of man-made factors (e.g. urban development, agriculture practices and the building of dams), which have led to poorer water quality and diminishing habitat availability. The recent introduction of exotic species, such as the zebra mussel, may have other repercussions on the quality of habitat. In Quebec, the species is designated as threatened according to the Act respecting threatened or vulnerable species.

Meeting objectives in terms of SARA requirements

The purposes of SARA are to protect wild species at risk and their habitats in Canada, and to promote their recovery. The *Act* stipulates that it is forbidden to kill individuals of a species listed under the Act as threatened, endangered or extirpated or to harm, harass, capture or take them. The SARA also prohibits damaging or destroying their residence or any part of their critical habitat. Furthermore, the SARA provides for the preparation of a recovery strategy for species listed as threatened, endangered or extirpated. The provisions of these recovery strategies must ensure that any possible threat to a given species and its habitat does not jeopardize its survival and recovery.

Recovery strategies are currently being developed for Eastern sand darter, Channel darter and Copper redhorse. The deadline for including the Eastern sand darter recovery strategy in the public registry according to the SARA is 2007, and 2010 for Copper redhorse and Channel darter.

Section 73 (2) of the Sara provides the competent ministers with the authority to permit normally prohibited activities affecting a listed species, its critical habitat, or its residence, even though they are not part of a previously approved recovery plan. Such activities can only be approved if: 1) they are scientific research relating to the conservation of the species and conducted by qualified persons; 2) they will benefit the species and are required to enhance its chance of survival in the wild; or 3) affecting the species is incidental to the carrying out of these activities.

The decision to permit allowable harm and the development of a recovery strategy must take into consideration the species' current situation and its recovery potential, the impacts of human activities on the species and on its ability to recover, as well as the alternatives and measures to reduce these impacts to a level which will not jeopardize the survival and recovery of the species.

A species recovery potential assessment (RPA) process was therefore set up by DFO Science in order 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. In the case of a species that has not yet been added to Appendix 1 of the SARA, the scientific information also serves in deciding whether or not to add the species to the list. 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.

Work in progress and framework used by DFO to develop an RPA

Two regional workshops have already been led by the Central and Arctic Region to produce an RPA for each of 22 freshwater species at risk, including channel darter and eastern sand darter (Ontario populations). Some work has also been done by the DFO Quebec Region (in collaboration with Quebec government specialists) in order to gather the available information on these two species (Quebec populations) as well as on Copper redhorse.

Differences can remain regarding available information or preferred work approaches. The framework used by DFO Science for developing an RPA is relatively new and will continue to evolve in the near future to take into account the experience gained in the context of species at risk. The consistent application of this framework for all RPAs will represent a significant element to be considered during this workshop. Currently, this framework is mostly based on the work conducted regarding two RPA components in particular, i.e. the evaluation of allowable harm (http://www.dfo-mpo.gc.ca/csas/Csas/status/2004/SSR2004_048_revised_e.pdf) and the determination of recovery targets (http://www.dfo-mpo.gc.ca/csas/Csas/status/2005/SAR-AS2005_054_e.pdf). The main components of this framework are identified in Appendix 1.

Proposed approach for the workshop

The goal of this workshop is to assess the level of information available on Eastern sand darter, Channel darter and Copper redhorse, as well as the various approaches suggested in relation with the RPA development framework. This exercise will help identify a specific approach and clearly establish what is required to address, to the extent possible, the various components of this framework.

The preliminary list of work documents which will be presented at the workshop is as follows:

- Summary of available information on Eastern sand darter and Channel darter (Quebec populations)
- Summary of available information on Copper redhorse
- Results of RPA for eastern sand darter and channel darter (Ontario populations) from two workshops conducted on 22 freshwater species at risk by the Central and Arctic Region
- Draft of recovery strategies on the three species of concern

Products

The main discussions and conclusions of this workshop will be documented in the series of proceedings of the Canadian Science Advisory Secretariat and will serve to direct the work towards the subsequent step consisting in the production of a scientific advice on the recovery potential of these three species.

Expected Participation

DFO experts (Quebec and Central and Arctic Regions), Quebec provincial government and the academic community will take part in the workshop.

Appendix 1: Topics that should usually be covered in a recovery potential assessment.

The list below will be the subject soon to a review by a national working group with the objective of improving the actual framework for the provision of recovery potential assessments. To the extent possible, future changes to this framework will be integrated in the context of this specific RPA for Eastern sand darter, channel darter and copper redhorse.

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

Phase I: Assess Current Species Status

1. Evaluate present species status for abundance and range
2. Evaluate recent species trajectory for abundance and range
3. Estimate **amount of critical habitat** currently available (using critical habitat descriptions defined in the pre-COSEWIC RAP, and considering information in COSEWIC Status Report).
4. Evaluate expected **population and distribution targets** for recovery, according to DFO Guidelines
5. Evaluate expected **general time frame for recovery to the target**, assuming only natural mortality, and estimate how time to recovery targets would increase at various levels of human-induced mortality
6. Evaluate **Residence Requirements**, if any.

Phase II: Scope for Human – Induced Mortality

7. Evaluate **maximum human-induced mortality** which the species can sustain without jeopardizing survival or achievement of recovery targets for the species.
8. **Quantify** to the extent possible the magnitude of each major potential source of mortality/harm identified in the pre-COSEWIC RAP, and considering information in COSEWIC Status Report.
9. **Aggregate total mortality** / harm attributable to all human causes and contrast with that determined in tasks 5 and 7.
10. Evaluate to the extent possible the likelihood that critical habitat is currently limiting to the species' abundance or range, or would become limited before the recovery goals were reached.
11. Inventory to the extent possible the **threats to critical habitat**, and estimate their current levels of impact on habitat quantity and quality

Phase III: Scenarios for Mitigation and alternative to activities

To the extent possible with the information available,

12. Develop an inventory of all feasible measures to minimize the impacts of activities in task 8 and 11.
13. Develop an inventory of all reasonable **alternatives to the activities** in tasks 8 and 11, but with potential for less impact. (e.g. changing gear in fisheries causing bycatch mortality, relocation of activities harming critical habitat)
14. Document the expected harm after implementing **mitigation measures** as described in 12 and determine whether survival or recovery is in jeopardy after considering cumulative sources of impacts
15. Document the expected harm after implementing alternatives to the activities as described in 13 and determine whether survival or recovery is in jeopardy after considering cumulative sources of impacts
16. 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.