Parks Canada and Species at Risk Initiatives at Bruce Peninsula and Georgian Bay Islands National Parks

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Abstract

Parks Canada has a long history of protecting species, including those that are at risk, in Canada's national protected hreitage areas. More recently, its Species at Risk Program supports the Parks Canada mandate for protecting nationally significant examples of natural heritage as well as its obligations under the Species at Risk Act. *This paper briefly discusses the Species at Risk Program and identifies other programs and initiatives within the Parks Canada Agency that support it. Specific examples are drawn form Bruce Peninsula and Georgian Bay Islands National Parks. The initiatives discussed include Eastern Massasauga rattlesnake (*Sistrurus catenatus catenatus*) communication evaluation and delivery, Massasauga monitoring protocol development and a recovery strategy for alvar ecosystems.*

Keywords: *national parks, species at risk, monitoring, communication, recovery strategies*

Introduction

Governments and non-governmental organizations have been working on the identification, protection and recovery of species at risk in Canada for many years. The Parks Canada Agency actively participates in the *Canadian Biodiversity Strategy* and the *Accord for the Protection of Species at Risk*, as well as bing a responsible agency under the *Species at Risk Act* (SARA).

In 1995, the federal, provincial and territorial governments of Canada adopted the *Canadian Biodiversity Strategy*. The strategy is Canada's response to the United Nations *Convention on Biological Diversity*, an inter-

Table 1. Major program elements to make Parks Canada's Species at Risk program operational.

Component	Description
Species Inventories and Assessments	Determination of species distribution, abundance and viability with a focus on how these relate to Parks Canada management lands.
Data Management Systems	Development and maintenance of internal and shared databases related to the program (e.g., research permits, element occurrences, document management).
Legal Listing under SARA	Support to the Minister of the Environment on legal listing of species under the Act and related duties.
Protection and Compliance	Enforcement of federal legislation and Parks Canada policies related to the recovery of species at risk on Parks Canada managed lands (e.g., *Species at Risk Act*, *Canada National Parks Act*, national park policies and operational procedures.)
Environmental Assessments, Permits and Similar Authorizations	Compliance with species at risk related responsibilities related to Canadian *Environmental Assessment Act* and other permits, agreements, licences, orders and other similar documents pertaining to Parks Canada managed areas.
Recovery Planning	Participation in recovery feasibility assessments, the recovery planning process, recovery teams, preparation of recovery planning documents, species prioritization for recovery, determination of population and distribution objectives, identification of soci-economic considerations, identification of cooperation and consultation requirements, and integrating species at risk in national park management plans.
Critical Habitat Identification and Protection	Critical habitat identification and mapping, critical habitat protection, national park zoning and compensation.
Aboriginal Involvement in SARA	Supporting the National Aboriginal Council on Species at Risk, incorporating aboriginal traditional knowledge into the recovery process, consultation and cooperation with aboriginal organizations, and consideration of aboriginal and treaty rights related to SARA.
Recovery Implementation and Funding	Identification of recovery implementation priorities and supporting the funding process and administration for plan implementation.
Public Education and Communication	Development of training and information packages, public education and communication strategies.
Reporting	Coordination of reporting requirements under SARA.
Tools	Development of tools (e.g., decision support systems) in aid of recovery planning and implementation.

national agreement to protect and restore the Earth's biological biodiversity, genetic resources, species (threatened or not), natural habitats and ecosystems through the development and implementation of management plans and recovery strategies. The *Canadian Biodiversity Strategy* focuses on intergovernmental cooperation to create the necessary conditions for policy development, effective management and research in order to move the concept of ecosystem management forward.

In 1996, the federal, provincial and territorial governments of Canada signed the *Accord for the Protection of Species at Risk* to provide national direction for the protection and recovery of species at risk. They agreed to participate in the activities of the Canadian Endangered Species Conservation Council (CESCC), to recognize the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as a source of independent advice on the status of species at risk nationally and to establish complementary legislation and programs that provide for effective protection of species at risk throughout Canada. The *Species at Rick Act*, adopted in December 2002, partially fulfills this commitment at the federal level.

Through its participation in the *Canadian Biodiversity Strategy* and the *Accord for the Protection of Species at Risk*, Parks Canada is fulfilling its mandate to "*protect and present nationally significant examples of Canada's natural and cultural heritage, and to foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations*."

While Parks Canada has a long history of protecting species (at risk or not) in Canada's national protected heritage areas, its national Species at Risk Program has officially existed only since 2000. Through the program, Parks Canada is meeting its commitments regarding the protection and recovery of species, and more particularly, its obligations under the *Species at Risk Act* (SARA).

The Species at Risk Program supports the development of tools and the deployment of resources for administrative, research, environmental management and education activities related to:

- assessment of the conservation status of species at the national level and at sites managed by Parks Canada;
- management and exchange of data on the conservation of species (distribution, abundance, etc.) and their habitat;
- planning, implementation and monitoring of species at risk recovery;
- protection of species in national parks, national historic sites and national marine conservation area;

- proper training of employees; and,
- interdepartmental and intergovernmental cooperation in the development of programs, policies, directives and legal and regulatory framework necessary for the protection and recovery of species at risk.

The Species at Risk Program team is made up of:

- coordinators and specialists at the national office that focus on overall program development and collaboration with Environment Canada and Department of Fisheries and Oceans on federal strategy and policies;
- a coordinator in each service centre responsible for regional coordination for recovery planning; and
- biologists deployed in specific field units throughout the country (e.g., Point Pelee National Park) focusing on species at risk inventory, monitoring, protection, education and program implementation.

From an operational perspective, the major program elements of Parks Canada's Species at Risk Program can be summarized by the components described in Table 1. These broad components represent the types of activities that Parks Canada undertakes to achieve species recovery and to meet obligations under SARA. Within Ontario, Parks Canada currently has three dedicated SAR staff who focus primarily on recovery planning and implementation. These staff are supported by national office, Ontario Service Centre, and park staff who collectively participate in all program components.

Parks Canada's Species at Risk Program is further supported by other program functions within the Agency. Parks Canada's ecological integrity program, for example, shares many of the same requirements through the *Canada National Parks Act*. Through the ecological integrity program, and others, Parks Canada invests in a wide range of natural and social science research, long-term monitoring, data management, communications, environmental education, and partnership building. These activities become integrated at a park level primarily through the park management planning process.

Species-at-risk work by Parks Canada can be illustrated by briefly referring to recent activity at Bruce Peninsula and Georgian Bay Islands National Parks, Ontario. Three initiatives can be highlighted for 2004-2005. These are Eastern Massasauga rattlesnake (*Sistrurus catenatus catenatus*) communication evaluation and delivery, Massasauga monitoring protocol development and alvar ecosystems. Some details on these initiatives are presented below.

Eastern Massasauga Rattlesnake Communication Evaluation and Delivery

Bruce Peninsula National Park (BPNP), Georgian Bay Islands National Park (GBINP) and their greater ecosystems are home to two of the world's last large viable populations of the threatened Eastern Massasauga rattlesnake (EMR). Parks Canada and partners of the Eastern Massasauga rattlesnake Recovery Team have considered public education a critical element in the recovery of the EMR and therefore have invested significant resources in public education and stewardship programs. This has been accomplished through a well-coordinated partnership between BPNP, GBINP and the Greater Georgian Bay Reptile Awareness Program (GBRAP).

Prior to 2005, success has been assessed largely by measurement of product development and delivery. There was a need to improve our methods for objectively evaluating the effectiveness of EMR communications as a basis for shaping future efforts.

Funding was used to contract the services of a professional consultant to evaluate our EMR communications and to make recommendations for future direction. The results from the consultants survey indicate several key findings including:

- a significant percentage of the population is being provided with information that is accurate and provides useful information that is appropriate to different audiences;
- the Recovery Team has been very successful in reaching the residents and in conveying the message of the importance of preservation;
- the Recovery Team has provided a number of consistent messages that cultivate awareness of the EMR, provide safety procedures, discourage deliberate persecution and improper translocation, and promote the preservation of critical habitat; and,
- the Recovery Team has achieved many of its objectives in relation to the residents of the area, so there is now a need to focus on parts of the population that are more challenging and different tactics may need to be used.

The consultant also assisted us in developing methods for building evaluation into all of our ongoing communication programs. Furthermore, the consultant's results provide baseline data to which future evaluations can be compared.

Funding also allowed us to continue with our ongoing and highly successful public education and stewardship programs in critical EMR regions on the

Bruce Peninsula and on the eastern side of Georgian Bay. This program has steadily improved each year, and 2004-05 results indicate strong success in reaching target audiences.

Massasauga Monitoring Protocol Development

Reliable monitoring is necessary for determining the status of species at risk and is a central objective of the recovery strategy for the Eastern Massasauga rattlesnake. We evaluated the effectiveness of three census methods, cover board monitoring, gestation site monitoring, and time-constrained searches, as a step towards the ultimate goal of developing a practical and effective monitoring strategy for Massasauga rattlesnakes on the Bruce Peninsula. We searched weekly under 240 cover boards we had placed in known Massasauga habitat. Many other snake species were found under cover boards but few (2) Massasauga rattlesnakes. We recommend adopting an experimental approach to determine which cover board design, if any, will attract Massasauga Rattlesnakes. We surveyed 13 known gestation sites bi-weekly under the premise that capture rates might be higher there than in foraging habitat. Gestation site monitoring detected 40 snakes in 22 hours of searching (1.82 snakes/hour) with 17 snakes captured (0.77 snakes/hour), rates substantially higher than the previous 4 years of Eastern Massauga rattlesnake monitoring. However, captures were biased towards gravid females and neonates. If males and non-gravid females ultimately cannot be attracted by cover board or gestation site monitoring, active searching may be the only alternative to derive information from that segment of the population. Snakes were detected by searching a 2500 m^2 area for 20 min in approximately 1 in 7 (14%) trials. Under weather conditions leading to intermediate body temperatures (20-30 ^oC), when snakes were more likely to bask, detect ability improved to 1 in 4 snakes.

Alvar Ecosystems

Bruce Peninsula and Manitoulin Island are world recognized for the presence of high quality alvar ecosystems. Numerous alvars are found within Bruce Peninsula National Park and the Greater Park Ecosystem. These unique and rare ecosystems are under threat from cottage development, quarries and motorized vehicle use. There is also a lack of understanding and appreciation for this ecosystem, many consider them barren wastelands. A draft Bruce Peninsula and Manitoulin Island Alvar Ecosystem Recovery Strategy is underway and is expected to identify inventory and communications as a high priority. Considerable work to date has been accomplished in completing alvar inventories but there are still gaps in our inventories.

Previous recovery team meetings were held to identify the scope of the strategy and the featured species to be addressed which include: Gattinger's agalinis (*Algalinus gattingeri*), lakeside daisy (*Hymenoxyus herbacea*) and Houghton's goldenrod (*Solidago houghtonii*). Hill's thistle (*Cirsium hillii*) and dwarf lake iris *(*Iris lacustris*)* will not be incorporated into the current alvar ecosystem strategy, as they are present in habitat outside of alvars. However, the recovery team will address these species in recovery strategies, as required under the *Species at Risk Act* by 2008. Because these species are also present in alvar habitats, the Bruce Peninsula alvar inventories will include these species.

Conclusion

Parks Canada's ultimate objective is to contribute to reducing the number of species at risk in Canada by minimizing, or even eliminating, threats to species at sites managed by the Agency and by implementing recovery measures. The Species at Risk Program, in concert with other programs and activities, supports this objective. Initiatives such as those described in this paper illustrate the potential to address challenges related to species at risk through communication, monitoring and recovery.

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