



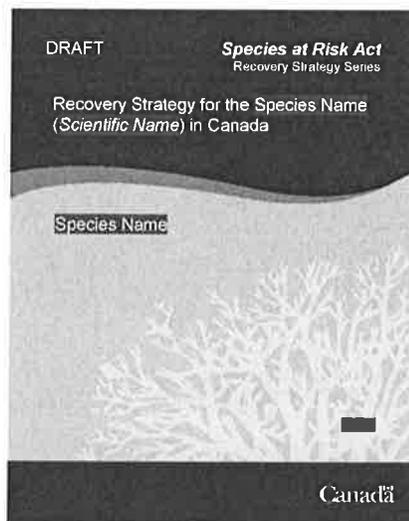
Government
of Canada

Gouvernement
du Canada

Species at Risk Act **Implementation Guidance**

Guidelines for Completing Recovery Strategy Templates (federal)

September 2010



- As drafted by Environment Canada, Fisheries and Oceans Canada, and
the Parks Canada Agency -

Canada

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CONTEXT

The federal government, through the competent Minister(s), must prepare a recovery strategy for all extirpated, endangered, and threatened species listed under the *Species at Risk Act* (SARA). To ensure consistency and compliancy with SARA policies and guidelines, recovery strategy templates have been developed. What follows is guidance for using the companion 'SARA Recovery Strategy Templates' to complete a federal recovery strategy for a listed species at risk.

GETTING STARTED

The competent minister(s) may develop a recovery strategy or adopt an existing recovery strategy, in whole or in part, as the federal recovery strategy for a species at risk. In either situation, this guidance applies to the appropriate sections of the recovery strategy template used.

Development of a federal recovery strategy

Where the competent minister(s) develop a recovery strategy, the appropriate template to select will depend on the recovery feasibility determination. For species, in which the answers to the feasibility determination questions are yes or unknown, the 'feasible' recovery strategy template will be used. For species where recovery has been determined to be 'NOT feasible', use the 'not feasible' recovery strategy template and the corresponding sections from these guidelines to complete the recovery strategy.

Federal adoption of an existing recovery strategy

SARA allows competent ministers to adopt existing plans relating to a wildlife species, in part or in whole, as recovery strategies under SARA. Recovery strategies developed by a province or territory under the Accord for the Protection of Species at Risk, or their respective species at risk legislation, may be slightly different in presentation and content, but reflect a common and complementary approach in keeping with the Accord. The competent Minister will provide additional text to an adopted recovery strategy, as needed, to ensure that the federal recovery strategy is SARA-compliant prior to posting on the Species at Risk Public Registry. The federal recovery strategy then consists of both the adopted document and the added text.

Development of combined recovery planning documents

The competent minister(s) may develop a combined recovery planning document, such as a combined recovery strategy and action plan in a single document where sufficient information relating to specific recovery actions exists at the time of the writing of the recovery strategy or a combined multi-species recovery strategy and management plan. In such cases, appropriate sections of the recovery strategy, action plan, and/or management plan templates are used accordingly, ensuring SARA requirements for recovery strategies, action plans, and management plans are met where they apply (s. 41, s. 49 and s.65, respectively).

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Supporting Guidance¹

To complete the recovery strategy, you should obtain the appropriate policies, guidelines, and fact sheets, as required:

- SARA Recovery Strategy templates (feasible, not feasible, or adoption)
- Guidance for adopting an existing strategy or plan
- Recovery Planning chapter of the Species at Risk Act Policies: Overarching Policy Framework (Government of Canada, 2009)
- Formatting Specifications for SARA Recovery Planning Documents
- Guidelines on Identifying and Mitigating Threats to Species at Risk²
- Guidelines on Establishing Recovery Goals and Objectives³
- Technical Guidelines for Identifying Critical Habitat
- COSEWIC Status Report and website
- DFO Guidance on Critical Habitat – *to come*
- Strategic Environmental Assessment of a Recovery Strategy Fact Sheet
- PCA Operational Procedures – *to come*
- COSEWIC Guidelines for Naming Wildlife Species - http://www.cosewic.gc.ca/eng/sct2/sct2_9_e.cfm
- Guidelines for Completing Action Plan Template

Comment [n1]: PCA only

Comment [n2]: DFO to remove

Comment [n3]: DFO only

Comment [n4]: PCA only

Most of the guidelines listed above can be found in the Guidance section on the Recovery Information Management System (RIMS): www.recovery.gc.ca. Specifically, they can be found under the 'Preparing a Recovery Planning Document' (guidelines, etc) and 'Preparing a Recovery Strategy (templates)' categories within the ROMAN subdirectory in the Guidance section (tab on the left side of main homepage). If you do not have access to RIMS, contact the RENEW Secretariat. Other guidelines can be obtained from your recovery planning contact.

FORMATTING, STYLE AND CONVENTIONS

Formatting

The standard format for recovery planning documents is outlined in the guidance on 'Formatting Specifications for SARA Recovery Planning Documents'. These formatting specifications have already been set in the recovery strategy templates.

Recommended Length

Recommended lengths are provided for most sections as a general guide to ensure the development of concise, strategic, management-oriented documents. As complexities surrounding species' recovery will vary, so too will the length of recovery strategies.

-
- ¹ All technical guidelines are subject to periodic review and revisions.
 - ² The guidelines will be updated to reflect the changes to the recovery strategy template. Until the guidelines are updated, please use relevant portions of the existing guidelines.
 - ³ Same as #2.

Guidelines for Completing Recovery Strategy Templates (federal)

Because recovery strategies are strategic, management-oriented planning documents, they should present pertinent information in a concise manner. A comprehensive literature review on the species should not be included.

Writing Style

The writing style or tone should generally use terms such as, “will be”, “is”, or “are”, rather than the conditional “should be” or “could be”.

Although the singular is used throughout the recovery strategy template and guidelines, it should also be taken to refer to the plural where appropriate (i.e., when dealing with more than one species, ecosystem, habitat, etc.) by making the appropriate adjustments.

Tone

Because the recovery strategy ultimately becomes the competent ministers’ document, correspondingly appropriate wording and tone must be used throughout. In addition, personal pronouns should not be used.

Evidence-Based and Critically Assessed

Lack of full knowledge of a species is a common feature for most recovery strategies. This should not impede development of a well-constructed strategy; however, it is important to clearly articulate the degree of certainty or confidence of the information provided. All available information must be critically assessed and statements provided to justify approaches taken.

When a statement or fact is presented in the recovery strategy that has a significant bearing on the recovery approach to be taken, a citation from an authoritative source needs to be provided, which may include personal communications.

Citation and Reference Standards

References should follow the standard procedures found in the instructions for COSEWIC Status Report authors. Web site: http://www.cosewic.gc.ca/html/documents/Instructions_e.htm#18. In-text citations should follow this format (e.g. Nernberg, 1995).

Species’ Naming Conventions

Species names:

- The scientific and common names used for the species should be those used on the Species at Risk Public Registry - web site: http://www.sararegistry.gc.ca/default_e.cfm.
- The common name and the scientific name (in parentheses) should be provided for all other species mentioned in the document.
- Follow the species naming conventions in the ‘COSEWIC Guidelines for Naming Wildlife Species.
- As per the American Fisheries Society, the first letter in each word in the common names of fishes and mussels will be capitalized. This applies only to fish and mussels and not other aquatic species.

Comment [n5]: DFO only

COMPLETING EACH SECTION OF THE TEMPLATE

Components of the Recovery Strategy

Document Sections:

- 1 – Cover page
- 2 – Inside cover page
- 3 – Preface (page i) to Table of Contents (page iii)
- 4 – Main body (page 1 to end)

Section breaks are already set in the template between each section

Header:

- Fill in the species' common name for the header title, "Recovery Strategy for the Species' Common Name" and the year when this version was completed in the header of section 3 (Preface). Make certain the year is on the same line as the species name and at the far right side of the page.

Footer (already set in template):

- Starting on first page of section 3 (Preface), number the bottom right hand corner with i, ii, iii system.
- Starting on first page of section 4 (Main body), number the bottom right hand corner with 1, 2, 3 system.

Completing the Cover

Outside cover:

- Use cover template.
- Indicate the stage of development in the top left corner:
 - 'Draft' – document in development
 - 'Proposed' – document submitted to the Public Registry for 60-day comment period.
 - 'Proposed' is subsequently removed when the final document is posted on the Public Registry.
- Provide the species common name and scientific name.
- Insert an illustration or photo of the species (credited accordingly) that will photocopy well.
- The year should correspond to the year that the document will be posted on the SAR Public Registry.

Inside cover:

Provide the **Recommended citation** (see example below).

- Indicate after the title if this is a 'Draft' or 'Proposed' version of the document, as per instructions for outside cover (above).
- Indicate the number of introductory pages (e.g., vii) and pages in the main body (e.g., 22).

Example of citation format:

SARA Responsible Agency. 2008. Recovery Strategy for the Species Common Name (*Species Scientific Name*) in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. SARA Responsible Agency. Ottawa xx + XX pp.

SARA recovery strategies are Ministerial documents. As such, the lead competent agency holds authorship of the document. Individuals who contributed to the development of the document are acknowledged in the Acknowledgements section.

- Provide the credit for the cover illustration or photo.

At the time of document finalization:

- The French title will be added once the final document has been translated.
- The ISBN and Catalogue numbers will be added.

Preface

Use the wording exactly as provided in the template:

- Fill in the species' common name where indicated.
- Indicate the competent minister(s) responsible for preparing the document.
- Where there is more than one competent minister or competent department or agency, both must be reflected.

Acknowledgments

It is customary to acknowledge those who contributed to the development of the document, (e.g., drafters, recovery teams, advisors or advisory groups, reviewers, sources of funding, support of landowners, etc.).

Executive Summary

Length: up to 1 page

Begin this section on a new page. Summarize the highlights of the recovery strategy. Highlights to include are:

- Brief statements on the species description;
- Status and occurrence in Canada;
- Limitations and threats the species is facing;
- Population and distribution objectives;
- Statement indicating that the broad strategies to be taken to address the threats to the survival and recovery of the species are presented in the section on Strategic Direction for Recovery, however do not provide a list of the broad strategies in the Executive Summary. The reader can refer to the body of the document for these details;
- Clear articulation as to whether critical habitat is identified in the recovery strategy and a brief rationale as to the approach taken, and;

- A statement on when “one or more action plans will be completed”.

Recovery Feasibility Summary

In preparing the recovery strategy, the competent minister must determine whether the recovery of the listed wildlife species is technically and biologically feasible. The determination must be based on the best available information, including information provided by COSEWIC. [SARA, S.40]

Length: Concise statements responding to each of the four criteria.

See the ‘Recovery Planning chapter of the Species at Risk Act Policies: Overarching Policy Framework (Government of Canada, 2009)’ for guidance on assessing whether recovery is, or is not, technically and biologically feasible for the species.

This section will be presented in the introduction of the recovery strategy to signify its foundational importance to the document. If recovery is deemed not feasible, the non-feasible recovery strategy template will be used and a clear and detailed rationale will be provided.

SARA policy establishes four criteria on which to base the assessment of feasibility. The competent ministers will develop a recovery strategy, in accordance with SARA s.41 (1), if the responses to the following four criteria are either ‘yes’ or ‘unknown’:

1. Individuals of the wildlife species that are capable of reproduction are available now or in the foreseeable future to sustain the population or improve its abundance.
2. Sufficient suitable habitat is available to support the species or could be made available through habitat management or restoration.
3. The primary threats to the species or its habitat (including threats outside Canada) can be avoided or mitigated.
4. Recovery techniques exist to achieve the population and distribution objectives or can be expected to be developed within a reasonable timeframe.

Each criterion will be addressed in the affirmative, negative, or as unknown, followed by a brief rationale. These statements will summarize detailed information and analysis. A full, detailed assessment of feasibility is not required here.

Where there is insufficient information to assess feasibility, a precautionary approach will be taken and the response should be ‘unknown’.

The competent minister will reassess the feasibility of recovery when new information warrants.

In assessing feasibility, the best available biological and technical information will be used, including information provided by COSEWIC; however, social and economic information will not be used in the recovery strategy, consistent with section 40 of SARA. In addition, the feasibility determination should be consistent with science advice in the Recovery Potential Assessment (RPA), where available. If an RPA is not available, the feasibility determination will be based on information from other credible sources.

Comment [n6]: DFO only

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If all four questions are answered by 'yes' and/or 'unknown', use the 'feasible' recovery strategy template. If the answer to any one of the questions is 'no', species recovery should be determined *not feasible* and the 'not feasible' recovery strategy template should be used.

TABLE OF CONTENTS (in the templates)

Use the Table of Contents tool provided by Word; see 'Formatting specifications for SARA recovery planning documents' for guidance on numbering system and font. These are set automatically in the templates.

As this is not a scientific publication, do not include lists of figures and tables.

1. COSEWIC SPECIES ASSESSMENT INFORMATION

Fill in the 'COSEWIC assessment summary box' provided in the template, reproducing, without deviation, the information from the COSEWIC web site:
http://www.cosewic.gc.ca/eng/sct1/searchform_e.cfm.

2. SPECIES STATUS INFORMATION

Length: 1 paragraph

Include a brief statement on the global, national, and provincial/territorial status and % of the species' range inside and outside Canada. The ranking from the National Biological Ranking System may also be provided. For species found in numerous jurisdictions, an option of providing the information in tabular format is shown below for the Monarch.

Table X. List and description of various conservation status ranks for the Monarch (NatureServe, 2009).

	Global (G) Rank	National (N) Rank	Sub-national (S) Rank	COSEWIC Status
Monarch <i>(Danaus plexippus)</i>	G5 (secure)	N4N5B (apparently secure/ demonstrably widespread, abundant, and secure / breeding)	Alberta (S3) British Columbia (S3B) Newfoundland Island (S2B) and Labrador (SNR) Manitoba (S5) New Brunswick (S2B) Nova Scotia (SNA) Ontario (S2N, S4B; COSSARO - SC) Prince Edward Island (SNA) Quebec (S5B) Saskatchewan (S3B)	SC (Special Concern)

S1: Critically Imperiled; S2: Imperiled; S3: Vulnerable; S4: Apparently Secure; S5: Secure; SNR: Unranked; SNA: Not Applicable; B: Breeding; COSSARO: Committee on the Status of Species at Risk in Ontario

3. SPECIES INFORMATION

A description of the species and its needs that is consistent with the information provided by COSEWIC [SARA, S.41(1)(a)].

These elements will be presented concisely in three subsections: Species Description, Population and Distribution, and Species Needs. The level of detail will be commensurate with that required to provide the needed context to assist with recovery planning.

3.1 Species Description

Length: 1 paragraph

The following information will be provided:

- a) A brief, general description of the species to provide the needed context (written in plain language);
- b) A reference to the COSEWIC status reports and other authoritative sources, where needed, to direct readers to more detailed information (could add hyperlinks where appropriate);
- c) New information not presented in the COSEWIC status report, but that is necessary for understanding or implementing the recovery strategy (in a concise fashion).

The following information should not be provided:

- a) Technical terms and detailed, repeated information from the COSEWIC status report or other sources;
- b) An exhaustive description of the species.

3.2 Population and Distribution

Length: as necessary to provide the needed context (~1/2 page); length may vary depending on size and number of maps

This section will consist of a series of concise statements summarizing population status and/or distribution information associated with COSEWIC's assessment of the species' status. For example, where contraction of the species' distribution has led to a status classification of 'Threatened', this will be the focus of the section, providing the needed context for the development of the broad strategies to address threats and the general description of the research and management approaches to meet the population and distribution objectives. Relevant new information not presented in the COSEWIC report, but with a clear link to the recovery of the species, may also be provided.

The following information will be provided:

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- a) Population and/or distribution context will reflect the COSEWIC assessment criteria used for determining status;
- b) A statement on the species' population abundance and distribution, including the trends of populations in Canada;
- c) One or two maps illustrating the species' distribution in Canada and internationally. The map(s) should be understandable when printed in black and white.

The following information should not be provided:

- a) Historical accounts of surveys completed to date and detailed information presented in the COSEWIC status report;
- b) Detailed, technical information.

3.3 Needs of the Species

Length: as necessary to provide the needed context. This section will vary with the complexity of the situation (~1/2 - 1 page).

This information will inform other sections of the recovery strategy, including identification of critical habitat, broad strategies to address threats and fill information gaps, and the general description of the research and management approaches needed to meet the population and distribution objectives.

The following information will be provided:

- a) Key factors limiting the survival and recovery of the species which contributed to the species' status determination, as identified in the COSEWIC status report, including habitat needs of the species and habitat characteristics to assist with the identification of critical habitat.

The following should not be provided:

- a) Detailed information available in the COSEWIC status report or other accessible sources;
- b) Information on general needs of the species that do not inform other sections of the recovery strategy.

4. THREATS

An identification of the threats to the survival of the species and threats to its habitat that is consistent with information provided by COSEWIC and a description of the broad strategy to be taken to address those threats. [SARA, S.41(1)(b)]

Length: Threat assessment to be presented in tabular and text format. Descriptions in the narrative to vary in length according to importance – for example, ½ page for key threats, 1 sentence to mention unsubstantiated threats or threats of a lesser importance

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See 'Guidelines on Identifying and Mitigating Threats to Species at Risk' for additional guidance and examples of threat descriptions.

One of the main focuses of the recovery strategy is a structured approach to the identification of threats and the development of recovery approaches to remove or alleviate those threats. The purpose of the threat assessment is to identify significant threats to the species, at the population-level, and to their habitat in order to inform approaches to manage for the recovery of the species. Therefore, it is important to reflect the amount and quality of existing evidence for each threat – that is, the degree of certainty that a given threat had, is having, or could in the near future have a population-level effect. As a result, the threat assessment will be based on credible evidence, where it exists (including scientific, Aboriginal traditional knowledge, and community knowledge). However, this does not preclude the implementation of management actions consistent with the precautionary principle.

The following information will be provided:

- a) The threats identified by COSEWIC in the status report, which are linked to the status determination in the COSEWIC assessment;
- b) Additional threats beyond those identified in the COSEWIC status report may also be presented in the recovery strategy, provided they are accompanied with justification for their inclusion – presumably based on new information;
- c) Threat descriptions will provide a sufficient level of detail to support the development of broad strategies that pertain to the elimination or abatement of threats, particularly where threats to the species are imminent;
- d) There will be a clear articulation of the attributes of each threat, including extent, occurrence, frequency, severity, and causal certainty;
- e) In the absence of objective evidence, the degree of certainty the threat is having population-level effects (causal certainty) - i.e., correlation or based on expert opinion - will be clearly articulated in the threat description narrative. Planning a future assessment of such threats may be warranted to ensure the development of effective recovery actions.

The following information should not be provided:

- a) Detailed accounts of evidence supporting the threats and detailed descriptions of impacts. Information should be summarized in the recovery strategy;
- b) Threat assessments made at the species' individual-level (i.e., a threat to a single individual).

4.1 Threat Assessment

Table X. Threat Assessment Table

Complete the table provided in the template using the applicable guidance of the 'Guidelines on Identifying and Mitigating Threats to Species at Risk'. Prioritize the threats by significance, starting with the greatest threat to the survival of the species based on the strongest evidence.

NOTE: To list more threats, expand the table as necessary by adding new lines or copying and pasting sections of the table template.

See Annex 1 for examples of the threat assessment table.

4.2 Description of Threats

Provide narrative, as necessary, to concisely describe the threats listed in the threat assessment table using the 'Guidelines on Identifying and Mitigating Threats to Species at Risk' and the guidance provided above, ensuring consistency between assessments made within the threats table and the narrative. List the threats in order of decreasing importance (level of concern).

5. POPULATION AND DISTRIBUTION OBJECTIVES

A statement of the population and distribution objectives that will assist the recovery and survival of the species [SARA, S.41(1)(d)].

Length: 1 paragraph

See 'Guidelines on Establishing Recovery Goals and Objectives' for guidance.

Population and distribution objectives specify how 'recovery' is to be interpreted for a given species, thus setting the strategic direction for recovery of the species. The importance of developing effective objectives also should be viewed from an evaluation standpoint; the progress toward achieving recovery for a given species will be measured against the stated population and distribution objectives. Where available, population and distribution objectives should be consistent with advice provided in the Recovery Potential Assessment (RPA).

Comment [n7]: DFO only

The Population and Distribution Objectives will:

- a) Be well-thought out, scientifically sound, and biologically and technically realistic objectives which direct the development of recovery and management approaches that are appropriate for a given species and context;
- b) Incorporate quantifiable metrics where possible, supported by credible evidence. To the extent possible, they will also establish the number of individuals, populations and/or geographic distribution of the species required to successfully recover the species. Where baseline information is not available to develop realistic, quantifiable objectives, approaches to obtain this information are needed in the recovery planning table.
- c) Be linked to the COSEWIC assessment criteria used for the species' status determination (i.e. A1-4, B1-2, C1-2, D1-2 or E), thereby specifying how 'recovery' is to be interpreted for a given species;
- d) Provide a clear rationale for establishing the population and distribution objectives, consistent with the broad context for recovery, points outlined above, and with the RPA advice.

Comment [n8]: DFO only

Some species are naturally rare, or at the edge of their distribution in Canada, and it is recognized that, in such cases, research and management approaches to achieve population and distribution objectives may never result in delisting or down-listing. In such cases it is appropriate to provide a statement to this effect to demonstrate the reality of recovery constraints. It may also be appropriate to acknowledge recovery constraints for species with a very long lifespan, for which recovery may not be seen for a long time.

An introduction to the Population and Distribution Objectives may be included to provide the broad context for recovery of the species, thus explaining what is realistic and achievable considering COSEWIC status criteria and other information (e.g., down-listing the species to Special Concern, de-listing the species, maintaining the species population, etc.).

6. BROAD STRATEGIES AND GENERAL APPROACHES TO MEET OBJECTIVES

... a description of the broad strategy to be taken to address those threats [SARA, S.41(1)(b)].

... a general description of the research and management activities needed to meet those objectives [SARA, S.41(1)(d)].

A statement about whether additional information is required about the species [SARA, S.41(1)(f)].

6.1 Actions Already Completed or Currently Underway

[Optional introduction for Broad Strategies and General Approaches to Meet Objectives]

SARA does not require the inclusion of information regarding completed or ongoing recovery actions, however this information may provide needed context to understand the broad strategies and associated research and management approaches that are included in the recovery strategy. For example, if 'release of captive-raised individuals' is presented as a management activity to increase the number of populations, and individuals have already been captive-reared in a facility, it would be appropriate to briefly provide a statement to this effect within the introductory section, thereby providing context for the broad strategies presented. In such cases, an optional Actions Already Completed or Currently Underway section may be provided, 1) as an introductory paragraph to the Broad Strategies and General Approaches to Meet Objectives section, or 2) immediately prior to the relevant threat to be addressed.

The following information will be provided:

- a) A concise overview of those key recovery or management activities that have been conducted or initiated, to date, consisting of 1-4 sentences per applicable broad strategy or threat.

The following information should not be provided:

- a) Detailed accounts of all activities, and their chronology, completed to date.

6.2 Strategic Direction for Recovery

Length: The number of broad strategies and approaches should be commensurate with the complexity of the situation.

See Annex 2 for examples of recovery planning tables.

Another focus of the recovery strategy is to provide broad direction to recover the species, consistent with the population and distribution objectives. As such, recovery planning is essentially an exercise of problem identification and resolution. The 'problems', from a species recovery perspective, include the naturally limiting factors¹ and the threats to the survival of the species identified by COSEWIC, including any loss of habitat. Resolving these problems will involve developing and implementing appropriate mitigation measures. Lack of baseline biological information, however, may make it challenging to define the problems and the required mitigation measures. In such cases, research to address the information gaps has an important role to play in recovery planning.

Complete the Recovery Planning Table in the template using the guidance below.

The following information will be provided:

- a) Under the Broad Strategy to Recovery column heading, provide broad strategies:
 - i. To address substantiated threats to the species and its habitat which contributed to its 'at risk' status, through eliminating, abating, and/or mitigating the threat;
 - ii. Not covered in (i) above but considered necessary to achieve the population and distribution objectives;
 - iii. To obtain credible evidence to adequately assess the significance of a threat (at the population level) for threats that are currently unsubstantiated but of concern;
 - iv. To obtain baseline population information where it is not currently possible to set quantitative population and distribution objectives; and
 - v. To address key information needs about the species for the purposes of recovery

- b) Under the General Description of Research and Management Approaches column heading:
 - i. Expand upon the broad strategies to explain the general types of approaches needed to achieve the population and distribution objectives. These should not be specific detailed actions appropriate for an action plan.

¹ Limiting factors relate to characteristics of the species' life history or ecology (i.e. late age of onset of sexual maturity). The lack of knowledge about a species' population and distribution also can be a limitation. If these limiting factors could impede the recovery of the species, they should be addressed or considered during the development of broad strategies and approaches in the Recovery Planning Table.

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The following information should not be provided:

- a) A list of all potential activities that could be conducted, including those to address a comprehensive list of 'unknowns' pertaining to the species' biology;
- b) Identification of specific, proposed research projects;
- c) Identification of who is responsible for implementing these strategies and approaches or by whom they will be completed;
- d) Repetition of information requirements outlined in the 'Schedule of Studies to Identify Critical Habitat'.

Note: The 'Priority' identified in the Recovery Planning Table should be the priority of the Broad Strategy and be consistent with the level of concern of the threat.

6.3 Narrative to Support the Recovery Planning Table

Length: ½ to 1 page, if necessary

Provide narrative if the information found in the Recovery Planning Table requires additional context. For research and managements approaches which do not address a threat, provide a brief rationale for their importance.

7. CRITICAL HABITAT

An identification of the species' critical habitat, to the extent possible, based on the best available information, including the information provided by COSEWIC, and examples of activities that are likely to result in its destruction [SARA, S.41(1)(c)]

Please note: Approaches to identifying critical habitat is beyond the scope of this document and will be dealt with in separate inter-departmental or departmental SAR operational procedural document(s).

7.1 Identification of the Species' Critical Habitat

Length: 1 to 5 pages (excluding maps or graphics), dependent on the complexity of the critical habitat identification of the species.

SARA defines “habitat” as:

- a) *In respect of aquatic species, spawning grounds and nursery, rearing, food supply, migration and any other areas on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic species formerly occurred and have the potential to be reintroduced; and*
- b) *In respect of other wildlife species, the area or type of site where an individual or wildlife species naturally occurs or depends on directly or indirectly in order to carry out its life processes or formerly occurred and has the potential to be reintroduced.*

SARA defines “critical habitat” as:

The habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species.

[SARA, S.2(1)]

The purpose of identifying critical habitat is to ensure that it is protected from human activities that would result in its destruction. Critical habitat identification should reflect what is needed to achieve the population and distribution objectives as the objectives define what constitutes recovery for the species.

The identification of critical habitat should reflect advice in the RPA, where available, including advice on the quantity of habitat required to meet the chosen population and distribution objectives, the biological functions provided by the habitat as well as any additional advice on critical habitat provided by the RPA.

Comment [n9]: DFO only

The following information will be provided:

- a) The extent to which the amount, quality, and the locations of identified critical habitat achieve the population and distribution objectives established in the recovery strategy;
- b) The identification of critical habitat, specifying the geographical location of the critical habitat or describing the area within which critical habitat is found, and a description of the known biophysical attributes of that critical habitat that are required by the listed wildlife species in order to carry out life processes necessary for its survival or recovery;
- c) A clear description of the critical habitat of sufficient detail to allow a person to determine where critical habitat ‘is’, and where critical habitat ‘is not’. A map may be included to help identify critical habitat or the area within which critical habitat is found (a standard map template is available);
- d) If all of the critical habitat can not be identified based on the best available information, then critical habitat will be identified to the extent possible. Critical habitat identification is often an iterative process and partial identification may be possible in advance of full identification;
- e) Where critical habitat can not be identified due to a “lack of adequate information”, it is appropriate to reflect the progress made to date in identifying critical habitat. In such cases, a schedule of studies to identify critical habitat will be developed;

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- f) If available information is assessed to be insufficient to identify critical habitat, a rationale/explanation must be provided.

The following information should not be provided in the recovery strategy, but should be available as a supporting document:

- a) Detailed methods or decision-making processes relating to critical habitat identification. This information will be archived elsewhere and summarized within this section.

Putting this guidance into practice

Clearly specify whether or not critical habitat is being identified at this stage by indicating one of the following:

1. **If critical habitat is fully identified**, include a clear statement such as “Critical habitat is identified as . . .”, include a description of what is being identified, specify the geographical location of the critical habitat or describe the area within which critical habitat is found, and include a description of the known biophysical attributes that are required by the listed wildlife species in order to carry out life processes necessary for its survival or recovery. Explain how you arrived at your assessment (e.g., approach, methods, and information used to identify critical habitat). If critical habitat is fully identified, then a schedule of studies is not required.
2. **Where information is incomplete and critical habitat is partially identified**, identify clearly what is known to be critical habitat (to the extent possible, based on the best available information) and develop a schedule of studies (see below) to attain the information needed to identify the rest of the critical habitat. Include a clear statement such as “Critical habitat is identified as . . .” and include a description of the critical habitat that is being identified, along with a geospatial location of the critical habitat and biophysical attributes. Provide a **rationale** explaining clearly why information is inadequate to fully identify critical habitat (e.g., what information on the species and/or the species’ habitat requirements is lacking).
3. **If information is inadequate to identify any critical habitat**, include a clear statement such as “Critical habitat cannot be identified at this time”, and provide a **rationale** explaining clearly “why” identification is not possible (e.g., what information on the species and/or the species’ habitat requirements are lacking). Develop a schedule of studies (see below) for the information needed to identify critical habitat.

Where recovery is deemed ‘not feasible’, critical habitat still must be identified to the extent possible. If new information becomes available at a later date, critical habitat will be identified, to the extent possible, in a revised recovery strategy, as there is no requirement to develop an action plan.

7.2 Schedule of Studies to Identify Critical Habitat

A schedule of studies to identify critical habitat where available information is inadequate [SARA, S. 41(1)(c.1)]

Length: 1 sentence or row (in tabular format), per study (section not required if critical habitat completely identified or does not exist in Canada).

The purpose of the schedule of studies is to outline the essential studies required to identify the critical habitat necessary to meet the population and distribution objectives for the species. It is only needed if the information at the time of writing the recovery strategy is inadequate to fully identify critical habitat and it should provide a clear and reasonable path forward for obtaining or improving the necessary information. If critical habitat can only be partially identified, a schedule of studies is still required to outline what is necessary to fully identify critical habitat. Timelines for the completion of each study must be included.

Note that the timing of these studies should allow for identification of critical habitat within the action plan. Studies may apply to either the entire, or a portion of, critical habitat or a segment of the listed species population.

The following information will be provided:

- a) Only those studies which are essential for obtaining the information required to identify critical habitat to reach the population and distribution objectives;
- b) A brief description of the study, the outcome of the study in terms of how it will help identify critical habitat, and the timeline for completion.

The following information should not be provided:

- a) Detailed study design or methodologies to be employed;
- b) General habitat research.
- c) Consultation with landowners / land managers

See Annex 3 for examples of schedules of studies to identify critical habitat.

7.3 Activities Likely to Result in the Destruction of Critical Habitat

Length: max. 1 paragraph or bullet per activity

If any critical habitat is identified in a recovery strategy, this section is needed and examples of activities that are likely to result in critical habitat destruction must be provided. **If critical habitat is not identified** in a recovery strategy, then this section is not required.

Understanding what constitutes destruction of critical habitat is necessary for the protection and management of critical habitat. Destruction is determined on a case by case basis. Destruction would result if part of the critical habitat were degraded, either permanently or temporarily, such that it would not serve its function when needed by the species. Destruction may result from a

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single or multiple activities at one point in time or from the cumulative effects of one or more activities over time.

The recovery strategy must provide a level of detail sufficient to inform the management of these activities to prevent degradation to the point where critical habitat is no longer able to serve its biological function for the species. Where appropriate and possible, thresholds beyond which destruction would occur should be provided. Management activities, protection, and enforcement will be informed by providing information pertaining to cumulative effects wherever appropriate and possible. In many cases it will be important to use adequate qualifiers that describe the time-frame and level of intensity of the activity.

The following information will be provided:

- a) Specific examples of human activities that are likely to result in the destruction of critical habitat. This will in most cases be linked to the threats listed in the threats section. Naming an industrial sector, for example, is insufficient. There are numerous activities involved in any given industry which may, or may not, be likely to result in the destruction of critical habitat for a species;
- b) The examples of activities provided must be relevant to the critical habitat identified in terms of likelihood of occurring and the likelihood that these activities would result in the destruction of the critical habitat attributes. They may include those which originate outside the geospatial boundaries of critical habitat identified;
- c) The effect of the activity that is likely to result in the destruction of critical habitat must be clearly articulated, serving three main purposes:
 - i. Providing a clear understanding as to why a given activity is likely to destroy critical habitat;
 - ii. Allowing for extrapolation to other activities with similar effects;
 - iii. Identifying which elements of critical habitat that the activity could destroy and how.
- d) If timing plays a role in the threat that these activities pose (e.g., time of day or year), include those details;
- e) If there are differences in the likelihood, or threat, of the activities between sites, this should be indicated as well.

The following information should not be provided:

- a) Descriptions of human activities that kill, harm, harass the individuals (these are described in the threats section);
- b) Names of organizations or companies.

8. MEASURING PROGRESS

The Competent minister must report on the implementation of the recovery strategy, and the progress towards meeting its objectives, within five years after it is included in the public registry... [SARA, S.46]

Length: up to 2-6 performance indicators

This section will be useful in the context of meeting the five-year reporting requirements of s. 46 of SARA and so is very important to employ a standard approach among all SARA recovery strategies.

Use the wording of the introductory paragraph provided in the template. This wording makes the distinction between more strategic or outcome-oriented performance indicators in the recovery strategy whose purpose is to demonstrate success toward achieving the population and distribution objectives, and implementation or output-oriented performance indicators that are more appropriate for an action plan. Follow this by writing performance indicators using the guidance below.

Performance indicators should define and measure the progress towards achieving the population and distribution objectives. Performance indicators should answer the question, 'We will know the species is on its way to recovery when . . .?'. Performance indicators should reflect responses likely to be detectable in a timeframe that will permit adaptive management and accurate reporting of progress.

Performance indicators consist of a **target** (goal or objective) and a **measure** (the value we are measuring). A performance indicator for a species at risk recovery strategy with a population and distribution objective focused on increasing the population size might be: "Increase the number of individuals from 20 to 80-100 by 2015". This is a clear performance indicator that everyone will be able to understand and take specific action to accomplish. It consists of a target (increase from 20 to 80-100 individuals by 2015) and makes explicit the value to be measured (number of individuals).

Besides developing a performance indicator, there will be a need to develop a way to measure it (e.g., via a survey, etc). The 'how' to measure the target, however, is not addressed in the performance indicator itself. Rather, the 'how', or approach, is addressed broadly in the recovery planning table and then further specified in an action plan.

Performance indicators must be **SMART**:

- Specific** The target and associated description is concrete, focused, and well-defined.
The nature and the required level of performance can be clearly identified;
- Measurable** The required performance can be measured, the source of the data is identified and accessible, and the performance indicator is valid and meaningfully reflects the desired performance, condition, or state.
Measurable means that it is numeric or descriptive of outcomes, quantity,

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	quality, or time-performance;
Achievable	The required performance associated with the indicator can be accomplished. It is possible in the foreseeable future. Achievable means that it is appropriately limited in scope;
Relevant	The required performance will materially contribute to achieving the population and distribution objectives for the species' recovery, focusing on outcomes ¹ rather than outputs ² ;
Time-bound	There is a deadline or specified reporting time frame, the deadline or time frame is reasonable, and the time frame is relevant, i.e., the deadline is not beyond the point at which achieving the goal loses its value; however, some performance indicators are better suited to longer timelines, necessitating provision of one or two shorter, interim targets.

While many things are measurable, that does not make them key to achieving the population and distribution objectives. In selecting key performance indicators for inclusion in the recovery strategy, it is essential to limit them to those that are pertinent to reaching the population and distribution objective. It is also important to keep the number of key performance indicators small to stay focused on achieving the targets, and wherever possible and appropriate, they should incorporate relevant values that are already being monitored and collected through established monitoring or reporting programs.

Direct or Indirect Measures

It is recognized that exact population and distribution information may not always be readily attainable. Individuals are often difficult to capture or observe, or the associated costs and effort of obtaining the exact number of individuals may be prohibitive. In such cases, one can use indices of population size and monitor these indices over time as a proxy for monitoring changes in actual population size. Indices may be direct - derived from sampling a small fraction of a population using a standardized methodology (e.g., salamanders captured per pitfall trap) or indirect - such as based on auditory cues (calling intensity in frog choruses, singing birds per standard listening interval), evidence of animal activity (e.g., scat/ tracks per unit area), or changes in rate of mortality (e.g., whale mortality from ship strikes). Such indices could also constitute the measure.

The following information will be provided:

- a) Performance indicators should be commensurate with the complexity of the situation.
- b) Performance indicators that demonstrate progress toward achieving recovery of the species. These relate primarily to:
 - i. Number of individuals (e.g., survival/ mortality, recruitment, introductions, etc.,) or number of populations
 - ii. Extent of distribution

• ¹ Outcome: the results or achievements of an activity, plan, process, or program.
• ² Outputs: the actions or deliverables.

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- iii. Habitat (e.g., amount, number of parcels of suitable habitat)
- c) Measures should take into account the species' or ecosystem's response time to restoration or active management initiatives. It may take decades to observe a demonstrable effect in relation to the population and distribution objectives for some species. Therefore, it is important to consider performance indicators that will aid in reporting on intermediate steps toward achieving the objectives, such as changes in habitat relating to restoration initiatives.

The following information should not be provided:

- a) A list of actions or deliverables (outputs) to be completed. Such outputs should be reserved for an action plan;
- b) Performance indicators that are not key to achieving the population and distribution objectives;
- c) 'How' the performance measure will be measured;
- d) Measures that relate to administrative or reporting requirements under SARA.

See Annex 4 for examples of performance indicators

9. ACTIVITIES PERMITTED BY THE RECOVERY STRATEGY

[Optional, as appropriate]

Subsections 32(1) and (2), section 33 and subsections 36(1), 58(1), 60(1) and 61(1) do not apply to a person who is engaging in activities that are permitted by a recovery strategy, an action plan, or a management plan and who is also authorized under an Act of Parliament to engage in that activity, including a regulation made under section 53, 59 or 71. [SARA, S.83(4)].

Length: 1 paragraph or bullet per activity, or as needed to adequately and defensibly justify permitting

Certain activities that affect SARA-listed species or their critical habitat can, in some circumstances, be permitted through a recovery strategy. As per SARA policy, it must be demonstrated that the permitting conditions prescribed in s.73(3) are met. Where provided in recovery strategies, this information will be presented in sufficient detail so that a person would understand the precise activity that the recovery strategy is permitting.

[This section should be supported by the scope for harm as outlined in the RPA.]

Comment [n10]: DFO only

The following information will be provided:

- a) A statement indicating who is permitted to engage in which activity and under the authority of which federal legislation;
- b) An explanation as to why the activity has been determined to be eligible for an exemption as per s.83(4);

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- c) A summary of the results of the scientific evaluation which determined that the pre-conditions pertaining to activities eligible for an exemption as per section s.73(3) and s.83(4) have been met;
- d) This section may also identify conditions under which the permitted activity can be conducted.

10. STATEMENT ON ACTION PLANS

Length: 1 sentence

If the competent minister determines that the recovery of the listed wildlife species is feasible, the recovery strategy . . . must include a statement of when one or more action plans in relation to the recovery strategy will be completed. [SARA, S.41(1)(g)].

SARA requires the recovery strategy to include a statement of when one or more action plans will be completed for all extirpated, endangered or threatened species for which recovery is determined to be feasible.

Guidance for Environment Canada and Parks Canada Agency

In recovery strategies, the following statement will be provided:

“One or more action plans will be completed by [month YYYY]” or ‘One or more action plans will be completed within X years of the final posting of the Recovery Strategy’ [PCA does not use the second choice].

The date provided will be the date one or more proposed action plans will be required to be completed and posted on the Species at Risk Public Registry for the 60-day public comment period. It is important that this timeline is realistic and allows the federal government the flexibility to set priorities and direct its resources in a timely way to the highest priorities. Remember that critical habitat must be identified in action plans, to the extent possible, or a statement provided indicating the critical habitat was identified in the recovery strategy. If additional critical habitat is being identified in the action plan than was identified in the recovery strategy, this distinction should be made.

Note that where sufficient information relating to specific recovery actions to be implemented exists at the time of recovery strategy writing, there is the option to deliver a combined recovery strategy and action plan in a single document, provided all SARA requirements of these respective documents are met (s.41 and s.49). Under such circumstances, a statement on action plans is not required.

The statement will:

- a) Include a delivery date for an action plan(s), consistent with timelines presented within the recovery strategy.

Note to Recovery Planners: The date will be determined by the competent minister(s). The Recovery Planner may estimate the date when a substantial draft may be prepared in order to guide this decision but the decision by the SRA will be made in the context of priority with other action plans.

Guidance for Fisheries and Oceans Canada

In recovery strategies, the following statement will be provided:

“An action plan or X action plans will be completed by [month YYYY]” or “An action plan or X action plans will be completed within [#] years of posting the final recovery strategy”.

The date provided will be the date a proposed complete action plan will be required to be posted on the SAR Public Registry for the 60-day public comment period. It is important that this timeline is realistic and allows the federal government the flexibility to set priorities and direct its resources in a timely way to the highest priorities. In order for an action plan to be considered complete, it must include all requirements of SARA s. 49 (an identification of critical habitat to the extent possible, based on the best available information and consistent with the recovery strategy; activities likely to destroy critical habitat; measures to be taken to protect critical habitat, measures to be taken to implement the recovery strategy; methods to monitor the recovery of the species)

If a document does not contain all the elements set out above, then it would be considered a portion of an action plan and not a complete action plan. The recovery strategy should set out the next steps in producing portions or “chapters” of the action plan (i.e, when will the first “chapter” of the action plan be posted on the SAR Public Registry) as well as a timeline for when the department expects to have a statutorily complete plan (i.e., a document which meets all the requirements of s. 49(1)). It is recognized that it will not be possible to provide this information in great detail in the recovery strategy and that the completion date for all the elements of 49(1) will sometimes be a long term target. It would nevertheless be helpful to provide some indication of the timeline for the key “chapters” to the extent possible.

Note that where sufficient information relating to specific recovery actions to be implemented exists at the time of recovery strategy writing, there is the option to deliver a combined recovery strategy and action plan in a single document, provided all SARA requirements of these respective documents are met (s.41 and s.49). Under such circumstances, a statement on action plans is not required.

11. REFERENCES

Length: as required, typically no more than 1-2 pages.

The following information will be provided:

- a. References cited in the recovery strategy.

The following information should not be provided:

- a. References not cited in the recovery strategy – the intent is not to produce a comprehensive bibliography.

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References should follow the standard procedures in the 'Instructions for the Preparation of COSEWIC Status Reports', that can be found at this website:

http://www.cosewic.gc.ca/pdf/Instructions_e.pdf

APPENDICES OF THE RECOVERY STRATEGY

Appendix A: Effects on the Environment and Other Species

Length: ½ to 1 page

See Departmental guidelines or operational procedures for more detailed guidance.

This section identifies the anticipated effects (positive or negative) of the proposed recovery approaches on non-target species, natural communities, or ecological processes. Recovery planning is intended to benefit species at risk and biodiversity in general. However, it is recognized that strategies may also inadvertently lead to environmental effects beyond the intended benefits.

This section represents the statement of a strategic environmental assessment (SEA), which should be conducted in accordance with the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*. The purpose of a SEA is to incorporate environmental considerations into the development of public policies, plans, and program proposals to support environmentally sound decision-making.

The following information will be provided:

- a) Use the wording as provided in the template explaining the Strategic Environmental Assessment Statement.
- b) An indication of the probability of each effect being realized (e.g., probable, possible, or unlikely) and the significance of such effects;
- c) Identification of other species, particularly species at risk and recovery planning initiatives that could be affected.

The following questions may help guide your thinking:

- Would there be any effects on non-target species; land, air, or water; natural communities; or ecological processes?
- Would any of these effects be compounded by existing or likely future sources of stress, or concerns such as population declines?
- If any adverse effects are identified, can they be mitigated, and to what extent? What effects would remain after mitigation?
- Does this analysis raise any uncertainties about effects on non-target species, communities, or ecological processes? (If so, these should be addressed in the section on broad strategies and general approaches.)

Appendix B: Record of Cooperation and Consultation

Comment [n11]: DFO only

Length: brief summary of 1-2 paragraphs maximum

(1) To the extent possible, the recovery strategy must be prepared in cooperation with
(a) the appropriate provincial and territorial minister for each province and territory in which the listed wildlife species is found;
(b) every minister of the Government of Canada who has authority over federal land or other areas on which the species is found;
(c) if the species is found in an area in respect of which a wildlife management board is authorized by a land claims agreement to perform functions in respect of wildlife species, the wildlife management board;
(d) every aboriginal organization that the competent minister considers will be directly affected by the recovery strategy; and
(e) any other person or organization that the competent minister considers appropriate.
(2) If the listed wildlife species is found in an area in respect of which a wildlife management board is authorized by a land claims agreement to perform functions in respect of wildlife species, the recovery strategy must be prepared, to the extent that it will apply to that area, in accordance with the provisions of the agreement.
(3) To the extent possible, the recovery strategy must be prepared in consultation with any landowners and other persons whom the competent minister considers to be directly affected by the strategy, including the government of any other country in which the species is found. [SARA, S.39]

Providing information regarding the other jurisdictions, stakeholders and organizations that participated in the development of the recovery strategy, as well as those that were part of the consultations during recovery strategy development, serves as an important record.

The following information will be provided:

- a) A brief statement acknowledging the other jurisdictions and organizations that provided input to the recovery strategy;
- b) A summary of the consultation activities undertaken by the department.

EXAMPLES TO ASSIST COMPLETION OF THE TEMPLATE

Annex 1: Examples of Threat Assessment Table

Prairie Plant

Threat	Level of Concern	Extent	Occurrence	Frequency	Severity	Causal Certainty
<i>Habitat loss and degradation</i>						
Cultivation	High	Widespread	Historic and Current	One-time / recurrent	High	High
Oil and Gas Activities	High	Widespread	Current	One-time / recurrent	Medium	Medium-high
Sand and Gravel Extraction	Low-medium	Localized	Historical	One-time / recurrent	Low	High
Urban Development	Low	Localized	Current	One-time	Low	High
Military Activities	Low	Localized	Unknown / anticipated	One-time / continuous	Low	Unknown

Freshwater Fish

Threat	Level of Concern	Extent	Occurrence	Frequency	Severity	Causal Certainty
<i>Location: River #1</i>						
Siltation	High	Widespread	Current	Continuous	High	Medium
Turbidity	High	Widespread	Current	Continuous	High	Low
Exotic Species	High	Localized	Current	Unknown	Low	Medium
Toxic Compounds	Medium	Localized	Current	Seasonal	Medium	Medium
Habitat Loss/Degradation	n/a	n/a	n/a	n/a	n/a	n/a
<i>Location: River #2</i>						
Siltation	Medium	Localized	Current	Continuous	Low/Medium	Medium
Turbidity	Low	Widespread	Current	Continuous	Low	Low
Exotic Species	High	Widespread	Current	Continuous	High	Medium
Toxic Compounds	High	Localized	Current	Continuous	High	Medium
Habitat Loss/Degradation	High	Localized	Current	Continuous	High	Medium

Annex 2: Examples of Recovery Planning Table

Table 1: Recovery Planning Table – Example Where Different Populations Require Different Mitigation Approaches

Note: Elements of this table are drawn from a number of recovery strategies and used here for illustration purposes only.

Threat or Limitation	Priority	Broad Strategy to Recovery	General Description of Research and Management Approaches
Knowledge of Baseline Information	High	Determine population and distribution baselines in the south	<ul style="list-style-type: none"> Conduct standardized population surveys (population numbers and size) and habitat surveys (quality and extent of suitable habitat)
Habitat Loss/Degradation	Medium	Determine population and distribution baselines in the north	<ul style="list-style-type: none"> Determine viability of southern populations Restore additional habitat to meet population and distribution objectives for southern populations Monitor populations
Erosion	High	Mitigate habitat loss for southern populations	<ul style="list-style-type: none"> Monitor habitat quality, at the ecosystem level, as an early warning surveillance system
Erosion	Low	Monitor quality of associated ecosystems in the north	<ul style="list-style-type: none"> Engage landowners/land managers in discussions around effective ways to reduce wave-action caused by heavy boat traffic Provide landowners/land managers with information on species' locations and habitat needs Implement mitigation measures most effective and appropriate for the population/location/ situation Monitor population-level impacts
Changes to Water Regime	High	Reduce wave-action caused by heavy boat traffic	<ul style="list-style-type: none"> Monitor South Island population to assess threat severity at the population-level and level of concern for species recovery Research the effects of flooding and drought on populations to address this information gap Investigate potential techniques to mitigate against changes to water regime in cooperation with dam operators near South Island
Alien Invasive Plants	Medium	Determine significance of population-level effects at South Island	<ul style="list-style-type: none"> Monitor the presence and impact of alien invasive plants at the Storey Lake site.
Alien Invasive Plants	Low	Determine significance of population-level effects at Storey Lake	

Table 2: Recovery Planning Table – Whale Species

Threat or Limitation	Priority	Broad Strategy to Recovery	General Description of Research and Management Approaches
Food Availability	High	Implement control and follow-up measures to protect food resources	<ul style="list-style-type: none"> • Promote the continuation of the moratorium on exploitation of forage species to prevent further strain on food resources • Investigate feeding behaviour and diet of the species • Implement a research and monitoring program to increase understanding of the distribution, concentration and variability of prey • Investigate the impacts of noise on the aggregation of prey in feeding areas
Vessel Strikes	High	Increase knowledge concerning the threat of reduced availability of food resources	<ul style="list-style-type: none"> • Reduce mortality and injury as a result of vessel strikes • Evaluate the risk of vessel collisions to better understand the relationship between vessel activity and the species • Evaluate and implement management strategies that reduce the amount of overlap, in time and space, between vessel activity and the species • Collaborate with shipping industry and operators on ways in which to reduce the number/frequency of interactions between whales and vessel operations
Acoustic Disturbance	Medium	Reduce mortality and injury as a result of vessel strikes	<ul style="list-style-type: none"> • Increase understanding of and monitor threat from anthropogenic noise • Investigate the effects of noise on the species • Investigate management thresholds for marine noise in the species' habitat • Periodically monitor noise in known habitat

Table 3: Recovery Planning Table – Plant

Threat or Limiting Factors	Priority	Broad Strategy to Recovery	Description of Research and Management Approaches
<p>Farming practices</p> <p>Construction of cottages or homes</p> <p>Development of highway infrastructures</p> <p>Logging</p> <p>Increase in forest cover</p>	<p>Urgent</p>	<p>Communication and promotion of better management practices</p> <p>Habitat management and protection</p>	<ul style="list-style-type: none"> • Develop a program to raise awareness among landowners and land managers regarding better management practices • Secure or protect the habitat of this plant in the seven priority sites identified
<p>Shortcoming concerning standardized inventory methods</p>	<p>Necessary</p>	<p>Inventory and monitoring of existing population numbers</p>	<ul style="list-style-type: none"> • Develop and use standardized methods for accurate population counts and monitoring of existing occurrences
<p>Shortcoming related to population trends</p>	<p>Necessary</p>	<p>Population parameter studies</p>	<ul style="list-style-type: none"> • Develop a protocol for detecting population trends and determining the minimum viable population threshold

Table 4: Recovery Planning Table – Migratory Bird

Threat or Limitation	Priority	Broad Strategy to Recovery	General Description of Research and Management Approaches
Urban and Agricultural Development	High	Protect habitat from further development	<ul style="list-style-type: none"> Protect at least five large patches of habitat used by the species
Oil and Gas exploration	High	Promote management of habitat that favours the species	<ul style="list-style-type: none"> Assess impacts of management activities on the habitat and species Determine factors important to producing healthy, vigorous, dense patches of habitat Develop and implement habitat management guidelines Implement communications strategy for the management of habitat
Habitat Management	High		
Fire Suppression	High		
Over-grazing	High		
Nest Predation	High		
Population size and distribution information gaps	Medium	Develop and implement a survey and monitoring program	<ul style="list-style-type: none"> Survey suitable habitat Encourage bird-watchers to report sightings
Information gaps concerning: wintering range; wintering habitat requirements; threats to wintering areas	Low	Collaborate with international partners	<ul style="list-style-type: none"> Encourage American and Mexican partners to survey suitable habitats and consider wintering needs of the species

Table 5: Recovery Planning Table – Reptile

Threat or Limitation	Priority	Broad Strategy to Recovery	General Description of Research and Management Approaches
Residential, industrial and recreational development. Conversion of land to agricultural uses Development of aggregate resources	High	Protect key habitat	<ul style="list-style-type: none"> • Prioritize sites for acquisition • Develop protection strategies for sites in conjunction with landowners • Encourage protection under local and provincial government regulations and policies • Develop and promote best management practices and land-use guidelines • Engage First Nation communities
Population and habitat use information gaps	High	Conduct population studies	<ul style="list-style-type: none"> • Conduct surveys to determine habitat use, home range area and population density
Persecution and collection	Medium	Implement an education and outreach campaign	<ul style="list-style-type: none"> • Develop a communication strategies and materials aimed at reducing persecution • Develop a communication strategy for the retail pet industry to reduce the trade of species at risk • Develop a training program for wildlife enforcement officers
Road construction / road kill	Medium	Raise awareness of motorists and encourage caution	<ul style="list-style-type: none"> • Develop a signage program to reduce mortality from road kills

Annex 3: Examples of Schedules of Studies to Identify Critical Habitat

Example 1 - moth

Table x. Schedule of Studies to Identify Critical Habitat

Description of Activity	Rationale	Timeline
Conduct targeted surveys in areas of suitable habitat that are not known to be occupied; assess population data against criteria for identifying critical habitat	Additional populations and corresponding critical habitat are required to meet the population and distribution objectives	2010-2012
Conduct population and site surveys of all known occupied sites not currently identified as critical habitat and assess against criteria for identifying critical habitat	Strengthen confidence in data used to determine if sites meet the criteria to identify critical habitat; monitor sites for changes in population data that may result in changes to critical habitat identification	2010-2013
Conduct research to quantify habitat requirements and use for all life stages: <ul style="list-style-type: none"> • Identification of habitat requirements for adults, larva, and host plants • Identification of optimal patch size, and clarification of dispersal capabilities 	Ensure critical habitat is identified to support all life stages and to fully meet population and distribution objectives. Currently only adequate information exists to identify critical habitat for adults	2012-2013

Example 2 - bird

Table x. Schedule of Studies to Identify Critical Habitat

Note: Elements of this example is from the Correction to the Sage Grouse Recovery Strategy. It has been modified for illustration purposes only.

Description of Activity	Rationale	Timeline
Develop habitat model(s) for application throughout the current range in Alberta, where possible	The original habitat model was developed for a small but important part of the species' Alberta range. Some of the data used in that model are unavailable elsewhere in the range, so new model(s) will have to be developed based on available data.	2010 - 2011
Apply the model to produce a preliminary map of critical habitat throughout the current range in Alberta, where possible	Additional iterations of critical habitat identification will be required to ensure that sufficient habitat is protected to meet the recovery population and distribution objectives	2010 - 2011
Evaluate the model inputs and outputs against independent information and expert opinion	Observation data is very limited throughout the species' range. Where available, it will be used to validate models; otherwise model outputs will be assessed by Sage Grouse experts.	2010 - 2011
Create corrected data layers for areas where data is available	The accuracy of some base-layer data can be improved dramatically, which will in turn help to improve the accuracy of the habitat model(s).	2010 - 2011
Develop a habitat model(s) of proposed critical habitat throughout the current range in Saskatchewan, where possible	Some of the data used in the original model are unavailable in Saskatchewan, so new model(s) will have to be developed based on available data	2010 - 2011
Apply model to produce a map of proposed critical habitat throughout the current range in Saskatchewan, where possible	Additional iterations of critical habitat identification will be required to ensure that sufficient habitat is protected to meet the recovery population and distribution objectives.	2010 - 2011
Evaluate model inputs and outputs against independent information and expert opinion	Observation data is limited. When available, it will be used to validate models; otherwise model outputs will be assessed by experts.	2010 - 2011
Continue fieldwork to locate leks	Leks are essential for sage grouse mating rituals. Surveys must continue to locate new or previously unknown leks and to monitor known leks for slight changes in location.	2010 - 2013

Annex 4: Examples of Performance Indicators

The population and distribution objectives and the rationale would be found in other sections of a recovery strategy, but they are provided here to give context for the examples.

Example 1. Yellow-stemmed Water-willow:

Population and Distribution Objective: “To maintain or increase the current level of individuals (accounting for natural fluctuations) within the 10 extant populations.”

Performance indicators:

Every five years, success of recovery strategy implementation will be measured against the following performance indicators:

- Continued persistence of all 10 extant populations of Yellow-stemmed Water-willow;
- Maintain or increase the number of individuals in all Yellow-stemmed Water-willow populations.

Example 2. Western Diamond-backed Racer:

Population and Distribution Objective: “To maintain the current distribution of Western Diamond-backed Racer populations within Canada.”

Rationale: This objective addresses the primary criteria used in the COSEWIC status determination, which is loss of habitat (declining area of occupancy, due to agricultural encroachment). Population numbers are not known, so it is not possible to establish an objective that targets the number of individuals or populations required to recover the species. The species is intrinsically rare in Canada and is a peripheral extension of a stable population in the US.

Performance indicators:

Every five years, success of recovery strategy implementation will be measured against the following performance indicators:

- Continued persistence of all 10 extant populations of Western Diamond-backed Racer in Canada;
- Maintain current distribution of Western Diamond-backed Racer populations.

Example 3. Sage Thrasher:

Population and Distribution Objective: “The population and distribution objective is to maintain a population of Sage Thrashers within the current distribution in the range of 15-20 breeding pairs.

Rationale: Historical occurrence data suggest that this species was never abundant in Canada; consequently, achieving a “minimum viable population” is not a reasonable goal. It is reasonable to have an objective of 15-20 pairs given maxima in B.C., reported annual detections of no more than six birds from Saskatchewan and Alberta, and recognition of unrecorded sightings. This population will therefore always be vulnerable to extirpation due to stochastic events in sagebrush habitats in Canada and perhaps adjacent United States. While the peripheral nature of the population in Canada means that the number of pairs present in any year will vary in relation to external factors, it is possible to increase the likelihood of this species persisting in Canada by maintaining the habitat that supports the small and sporadic occurrences of this species

Performance indicators:

- Five large (>311 ha) patches of sagebrush habitat in the south Okanagan are secured by 2015;
- The number of Sage Thrashers breeding in Canada is maintained on average at 15-20 pairs or more by 2015;
- Current distribution is maintained.

Example 4. Long-lived marine species:

Population and Distribution Objective: “To achieve an increasing trend in population abundance over three generations (60 years)”

Performance indicators:

- Short term (5 years)
 - a. Reduction in mortality from vessel strikes from current level (10/year in 2009) to 0-5 deaths per year
 - b. Reduction in mortality from entanglement from current level (8/year in 2009) to 0-4 deaths per year
 - c. Maintenance of current level of reproductive success
 - d. Maintenance of current distribution
- Mid term (1-2 generations)
 - a. Maintenance or increase in the number of individuals
 - b. Maintenance or increase in level of reproductive success from current level
 - c. Maintenance of current distribution
- Long term (3 generations)
 - a. Increase in distribution (occupied habitat) by 10% of current range
 - b. Increase in the number of individuals