

Recovery Strategy for the Ross's Gull (*Rhodostethia rosea*) in Canada

Ross's Gull



July 2007



Environment
Canada

Environnement
Canada

Canada

About the *Species at Risk Act* Recovery Strategy Series

What is the *Species at Risk Act* (SARA)?

SARA is the Act developed by the federal government as a key contribution to the common national effort to protect and conserve species at risk in Canada. SARA came into force in 2003, and one of its purposes is “*to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity.*”

What is recovery?

In the context of species at risk conservation, **recovery** is the process by which the decline of an endangered, threatened, or extirpated species is arrested or reversed, and threats are removed or reduced to improve the likelihood of the species' persistence in the wild. A species will be considered **recovered** when its long-term persistence in the wild has been secured.

What is a recovery strategy?

A recovery strategy is a planning document that identifies what needs to be done to arrest or reverse the decline of a species. It sets goals and objectives and identifies the main areas of activities to be undertaken. Detailed planning is done at the action plan stage.

Recovery strategy development is a commitment of all provinces and territories and of three federal agencies — Environment Canada, Parks Canada Agency, and Fisheries and Oceans Canada — under the Accord for the Protection of Species at Risk. Sections 37–46 of SARA (www.sararegistry.gc.ca/the_act/default_e.cfm) outline both the required content and the process for developing recovery strategies published in this series.

Depending on the status of the species and when it was assessed, a recovery strategy has to be developed within one to two years after the species is added to the List of Wildlife Species at Risk. Three to four years is allowed for those species that were automatically listed when SARA came into force.

What's next?

In most cases, one or more action plans will be developed to define and guide implementation of the recovery strategy. Nevertheless, directions set in the recovery strategy are sufficient to begin involving communities, land users, and conservationists in recovery implementation. Cost-effective measures to prevent the reduction or loss of the species should not be postponed for lack of full scientific certainty.

The series

This series presents the recovery strategies prepared or adopted by the federal government under SARA. New documents will be added regularly as species get listed and as strategies are updated.

To learn more

To learn more about the *Species at Risk Act* and recovery initiatives, please consult the SARA Public Registry (www.sararegistry.gc.ca/) and the Web site of the Recovery Secretariat (www.speciesatrisk.gc.ca/recovery/).

**Recovery Strategy for the Ross's Gull
(*Rhodostethia rosea*) in Canada [Proposed]**

July 2007

Recommended citation:

Environment Canada. 2007. Recovery Strategy for the Ross's Gull (*Rhodostethia rosea*) in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. iv + 18 pp.

Additional copies:

Additional copies can be downloaded from the SARA Public Registry (www.sararegistry.gc.ca/).

Cover illustration: Mark Mallory

Également disponible en français sous le titre
« Programme de rétablissement de la Mouette rosée (*Rhodostethia rosea*) au Canada
[Proposition] »

© Her Majesty the Queen in Right of Canada, represented by the Minister of Environment, 2007.
All rights reserved.
ISBN To come
Catalogue no. To come

Content (excluding the illustrations) may be used without permission, with appropriate credit to the source.

DECLARATION

This recovery strategy has been prepared in cooperation with the jurisdictions responsible for the Ross's Gull. Environment Canada has reviewed and accepts this document as its recovery strategy for the Ross's Gull, as required under the *Species at Risk Act*. This recovery strategy also constitutes advice to other jurisdictions and organizations that may be involved in recovering the species.

The goals, objectives, and recovery approaches identified in the strategy are based on the best existing knowledge and are subject to modifications resulting from new findings and revised objectives.

This recovery strategy will be the basis for one or more action plans that will provide details on specific recovery measures to be taken to support conservation and recovery of the species. The Minister of the Environment will report on progress within five years.

Success in the recovery of this species depends on the commitment and cooperation of many different constituencies that will be involved in implementing the directions set out in this strategy and will not be achieved by Environment Canada or any other jurisdiction alone. In the spirit of the Accord for the Protection of Species at Risk, the Minister of the Environment invites all responsible jurisdictions and Canadians to join Environment Canada in supporting and implementing this strategy for the benefit of the Ross's Gull and Canadian society as a whole.

RESPONSIBLE JURISDICTIONS

Environment Canada
Parks Canada Agency
Government of Manitoba
Government of Nunavut
Nunavut Wildlife Management Board (NU)
Wildlife Management Advisory Council (NT)

AUTHORS

Renee Franken and Mark Mallory - Canadian Wildlife Service (Prairie and Northern Region)

ACKNOWLEDGMENTS

The authors would like to thank Bonnie Chartier, Rudolf Koes, Cary Hamel, and Ken DeSmet for providing information on Ross's Gulls around Churchill, including population numbers, the status of the gulls, the threats to them, and advice regarding conservation of this species. Ken DeSmet and Mike Setterington provided reviews of the draft strategy.

STRATEGIC ENVIRONMENTAL ASSESSMENT

A strategic environmental assessment (SEA) is conducted on all SARA recovery planning documents, 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.

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. The planning process based on national guidelines directly incorporates consideration of all environmental effects, with a particular focus on possible impacts on non-target species or habitats. The results of the SEA are incorporated directly into the strategy itself, but are also summarized below.

This recovery strategy will clearly benefit the environment by promoting the recovery of the Ross's Gull. The potential for the strategy to inadvertently lead to adverse effects on other species was considered. The SEA concluded that this strategy will clearly benefit the environment and will not entail any significant adverse effects. In particular, the reader should refer to the section, Effects on Other Species.

RESIDENCE

SARA defines residence as: *a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating* [Subsection 2(1)].

Residence descriptions, or the rationale for why the residence concept does not apply to a given species, are posted on the SARA public registry: www.sararegistry.gc.ca/plans/residence_e.cfm

PREFACE

The Ross's Gull was officially listed as Threatened under the *Species at Risk Act* (SARA) in June 2003. Section 37 of the *Species at Risk Act* requires the competent minister to prepare recovery strategies for listed extirpated, endangered, or threatened species. Canadian Wildlife Service (Prairie and Northern Region), Environment Canada, led the development of this recovery strategy, in cooperation with the Parks Canada Agency, Manitoba Conservation, the Nunavut Department of Environment, and the Nunavut Wildlife Management Board. This strategy meets SARA requirements in terms of content and process (Sections 39–41).

EXECUTIVE SUMMARY

Ross's Gull is a small gull with a wedge-shaped tail and black collar. It develops a deep pink hue on its chest during breeding season. Ross's Gulls breed mainly in the Eurasian Arctic; however, there are a few breeding locations in Canada. The breeding habitat of Ross's Gull is varied and includes gravelly reefs, marshy wetlands, and hummocky areas in the subarctic, boreal, and high arctic tundra. Ross's Gulls seem to require access to open water such as lakes, ponds, or openings in the pack ice. Nests are often located in areas near Arctic Tern (*Sterna paradisaea*) colonies. Ross's Gulls winter in the Bering Sea and Sea of Okhotsk.

The global population is estimated at 50 000 breeding adults and appears to be stable. The known Canadian breeding population is very small, with only a few known breeding pairs each year.

The main threats to the Ross's Gull in Canada include human disturbance, predation, and habitat vulnerability, loss, or destruction. Other limiting factors include their life history (low reproductive output), climate change, and weather.

The recovery goal for the Ross's Gull is to maintain the current population size and distribution in Canada. Because this species has likely always existed in Canada in very low numbers, there will be no attempt at this time to increase the number of breeding pairs.

Four objectives have been identified for the recovery of this species:

- (1) maintain known current distribution and number of pairs of Ross's Gulls breeding in Canada over a five-year average;
- (2) encourage further research and surveys that may reveal previously unknown nesting concentrations in the Canadian Arctic;
- (3) protect breeding habitat through stewardship and conservation agreements and undertake studies to identify critical habitat; and
- (4) determine the significance of threats at breeding locations and implement management strategies to reduce threats.

A number of research and management activities have been identified:

- survey known breeding sites annually;
- survey potentially suitable habitat at least every five years;
- examine breeding success, productivity, and limiting factors at known nesting sites;
- use adaptive management to address threats;
- restrict detrimental human activities through stewardship and management plan;
- identify and conserve suitable habitat;
- identify ways to provide viewing opportunities for birders and photographers without disrupting breeding; and
- encourage the public to report sightings of Ross's Gulls.

Following research into the effects of disturbance on this species and consultations with the community, critical habitat for the Ross's Gull will be identified in the action plan.

TABLE OF CONTENTS

| | |
|-------------------------------------------------------------------------|-----|
| DECLARATION..... | i |
| RESPONSIBLE JURISDICTIONS | i |
| AUTHORS..... | i |
| ACKNOWLEDGMENTS..... | i |
| STRATEGIC ENVIRONMENTAL ASSESSMENT | ii |
| RESIDENCE | ii |
| PREFACE | ii |
| EXECUTIVE SUMMARY..... | iii |
| 1. BACKGROUND..... | 1 |
| 1.1 Species assessment information from COSEWIC..... | 1 |
| 1.2 Description | 1 |
| 1.3 Populations and Distribution..... | 2 |
| 1.3.1 National and Global Status | 2 |
| 1.3.2 Canadian Distribution..... | 2 |
| 1.4 Needs of the Ross's Gull..... | 4 |
| 1.4.1 Habitat and Biological Needs..... | 4 |
| 1.4.2 Ecological Role | 5 |
| 1.4.3 Importance to People..... | 6 |
| 1.4.4 Limiting Factors..... | 6 |
| 1.5 Threats | 6 |
| 1.5.1 Human Disturbance | 6 |
| 1.5.2 Predation | 7 |
| 1.5.3 Habitat Loss and Destruction..... | 7 |
| 1.6 Actions Already Completed or Underway | 8 |
| 1.7 Knowledge Gaps | 8 |
| 2. RECOVERY | 9 |
| 2.1 Rationale for Recovery Feasibility..... | 9 |
| 2.2 Recovery Goal..... | 9 |
| 2.3 Recovery Objectives for the Ross's Gull (2007-2011)..... | 9 |
| 2.4 Approaches Recommended to Meet Recovery Objectives | 9 |
| 2.5 Critical Habitat for Ross's Gull..... | 11 |
| 2.5.1 Schedule of Studies to Identify Critical Habitat | 11 |
| 2.6 Existing Protection..... | 12 |
| 2.7 Recommended Approach for Conservation and Habitat Protection | 12 |
| 2.8 Performance Measures | 12 |
| 2.9 Effects on Other Species..... | 13 |
| 2.10 Statement of When One or More Action Plans Will Be Completed | 13 |
| 3. REFERENCES..... | 14 |
| 4. CONTACTS | 16 |
| 4.1 Recovery Team Members | 16 |
| APPENDIX A. Breeding Records of Ross's Gull | 17 |

1. BACKGROUND

1.1 Species assessment information from COSEWIC

Date of Assessment: April 2007

Common Name: Ross's Gull

Scientific Name: *Rhodostethia rosea*

COSEWIC Status: Threatened

Reason for Designation: In Canada, this species is known to occur in small numbers in very few locations. Threats include disturbance in some breeding areas and changes in ice and snow patterns associated with climate change.

Canadian Occurrence: Nunavut, Manitoba

COSEWIC Status History: Designated Special Concern in April 1981. Status re-examined and confirmed in April 1996. Status re-examined and designated Threatened in November 2001 and in April 2007. Last assessment based on an update status report. .

1.2 Description

Ross's Gull (*Rhodostethia rosea*) is a small gull with a wedge-shaped tail and a black collar. During breeding season, Ross's Gull develops a deep pink hue on its breast.

Ross's Gulls breed mainly in the Eurasian Arctic, but a few breeding locations are known from Canada. They do not migrate south like most North American birds but instead are thought to move around the North Pole to the edge of the ice pack in the Bering Sea (Alvo et al. 1996).

Their nests can be a depression in the ground or a moss cup, or they can be located in sedge tussocks (Chartier and Cooke 1980; Macey 1981). Ross's Gull eggs are olive with faint reddish-brown markings (Ehrlich et al. 1988) and measure approximately 30 mm × 43-46 mm (Béchet et al. 2000). Clutch size is generally three, but a clutch may contain one or two eggs. Nests are incubated by both parents (Macey 1981) for 21 to 22 days, and chicks fledge at 20+ days after hatch (Chartier and Cooke 1980; Ehrlich et al. 1988). In Canada, chicks hatch approximately mid-July (Macey 1981).



Figure 1. Ross's Gull (*Rhodostethia rosea*) © Her Majesty the Queen in Right of Canada (Mark Mallory, Environment Canada).

1.3 Populations and Distribution

1.3.1 National and Global Status

Ross's Gull is an arctic species with a circumpolar distribution (Macey 1981). The main breeding grounds are found in northeastern Siberia (Macey 1981), with additional breeding locations on Spitsbergen Island in Svalbard (Norway), a few islands in Greenland, and in northern Canada (Béchet et al. 2000; Mallory et al. 2006).

There is little information on the abundance of this species, either in Canada or globally. The global population of Ross's Gull is estimated at 50 000 breeding adults (Degtyaryev 1991) and is considered vulnerable/apparently secure (G3G4). The global population appears to be stable, based on accounts of birds migrating by Point Barrow, Alaska (Divoky et al. 1988).

In Canada, the Ross's Gull has likely always persisted at low population numbers scattered throughout the Low Arctic and the High Arctic. A few small colonies comprise a total known population of 0-10 pairs in any year. The Ross's Gull is listed as Threatened on Schedule 1 of the *Species at Risk Act* at the federal level and is considered rare nationally (N2B) (NatureServe 2004).

1.3.2 Canadian Distribution

In Canada, there are four known nesting areas: Prince Charles Island, Nunavut; Cheyne Islands, Nunavut; an unnamed island in Penny Strait, Nunavut; and Churchill, Manitoba (Figure 2). Occasional sightings of Ross's Gulls are also made south of the breeding grounds in British Columbia, Ontario, Nova Scotia, and Newfoundland and Labrador (Macey 1981).

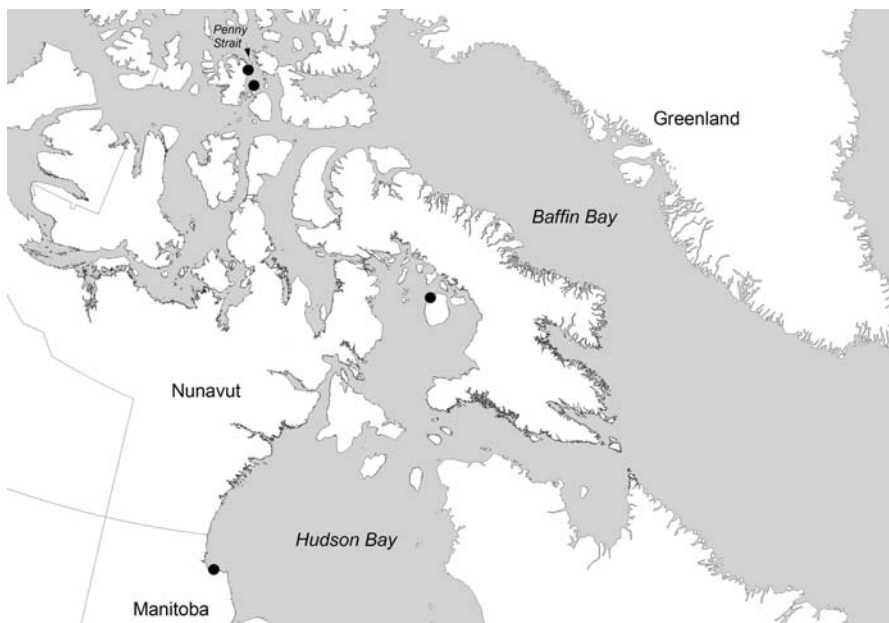


Figure 2. Known breeding distribution of Ross's Gull (*Rhodostethia rosea*) in Canada

Churchill

Churchill is the breeding site most used by Ross's Gulls in Canada, although breeding has become sporadic in recent years (COSEWIC, in prep). Observers have recorded Ross's Gulls around Churchill since 1978, with the first breeding record in 1980 and more than 10 birds observed in 1982 (Appendix A). It is difficult to assess breeding, in part because of the remoteness of the current breeding location at Churchill and in part because of their vulnerability to human disturbance. Thus, birders and biologists have avoided surveying the area (B. Chartier, pers. comm.). Ross's Gulls are also seen in the company of other gull species at Prince of Wales Fort National Historic Site near Churchill but are not known to breed there.

Cheyne Islands

Ross's Gulls bred at the Cheyne Islands in 1976 and 1978, and it is possible that they nested here for several years, with up to seven pairs of gulls found in a single year (MacDonald 1978; MacDonald, pers. comm. in Alvo et al. 1996). No gulls were found at the Cheyne Islands in 1986 (Alvo et al. 1996), 2002, 2003, or 2004, nor was there evidence of nesting in these years (Mallory et al. 2006) (Appendix A). However, four pairs of birds were observed at the site in July 2006, with at least three of these pairs nesting (Mallory et al. 2006).

Prince Charles Island and Air Force Island

A single pair of breeding Ross's Gulls was discovered on Prince Charles Island in 1997 (Appendix A) (Béchet et al. 2000); it is not known if they have nested here at other times. Despite intensive aerial and terrestrial surveys, no additional birds were found on Prince Charles and Air Force islands during 1996 and 1997, nor have Ross's Gulls been reported from aerial surveys in earlier years (see Béchet et al. 2000). Yet, it is still possible that Ross's Gulls could be a regular breeder in this area, as independent but unconfirmed observations of Ross's Gulls were made on the southeastern coast of the island in 1984 (Béchet et al. 2000).

Unnamed island in Penny Strait

A small colony of approximately five breeding pairs was found on an unnamed island in Penny Strait in July 2005 (Mallory et al. 2006) about 80 km from the Cheyne Islands. This island had not supported Ross's Gulls in 2002-2004. The appearance and disappearance of nesting birds at sites in Penny Strait suggest that Ross's Gulls in the High Arctic may use colonies intermittently, perhaps moving to avoid predators that have cued in on nesting locations.

1.4 Needs of the Ross's Gull

1.4.1 Habitat and Biological Needs

Breeding habitat

The majority of Ross's Gulls breed in Siberia, where the habitat consists of shrub tundra with sedge meadows and numerous ponds (Densley 1991). In Canada, Ross's Gulls breed in a variety of habitats; the only common nesting requirement among sites appears to be the presence of open water, such as lakes, ponds, or open leads in the pack ice (Macey 1981). The most common habitat is marshy wetland in subalpine and boreal tundra (Blomqvist and Elander 1981), but the gulls also use high arctic tundra and gravel reefs (Macey 1981; Béchet et al. 2000; Mallory et al. 2006).

Churchill, Manitoba — The Churchill breeding location is at the most southerly latitude for nesting Ross's Gulls in the world (Chartier and Cooke 1980). The Churchill Special Conservation Area was established to protect Ross's Gull breeding sites around Churchill. The habitat at the original breeding site consisted of vegetated hummocks elevated above wet grass or sedge tundra, small pools, or shallow lakes. The hummocks were dominated by grasses, lichens, and willows (*Salix* sp.) (Chartier and Cooke 1980; Macey 1981; Alvo et al. 1996). The three nest sites described by Chartier and Cooke (1980) were located beside water and usually in *Carex aquatilis* marsh. This original breeding location was temporarily flooded in 1984, and the Ross's Gulls have since relocated upstream, where they nest with Little Gulls (*Larus minutus*) and Arctic Terns (*Sterna paradisaea*) (R. Koes, pers. comm. and B. Chartier, pers. comm.). There is no road access to this area. There are no habitat descriptions for the new nesting location. The new nesting location is also within the Churchill Special Conservation Area (G. Suggestt, pers. comm.). Additional suitable nesting habitat may exist elsewhere in the Hudson Bay Lowlands (Alvo et al. 1996).

Prince Charles Island, Nunavut — At Prince Charles Island the nest was located on an elevated hump covered with moss and willow. The area surrounding the nest consisted of a network of medium-sized lakes in an area of poorly vegetated, dry tundra and gravel, although the area immediately surrounding the nest was completely covered with vegetation (Béchet et al. 2000). Ross's Gulls nested here with Arctic Terns (Béchet et al. 2000).

Cheyne Islands in Penny Strait, Nunavut — Ross's Gulls nested within a colony of Arctic Terns on small gravel reefs approximately 400 m long and 1 m high (MacDonald 1978).

Unnamed island in Penny Strait, Nunavut — Ross's Gull nests were found in mossy gravel on a gravel reef island 3 km long (Mallory et al. 2006). Ross's Gulls nested with Arctic Terns and Sabine's Gulls (*Xema sabini*) at this location.

Non-breeding birds in summer

During the summer, non-breeding and immature Ross's Gulls use areas of drift ice in the Eurasian Arctic Ocean up to the North Pole (Hjort et al. 1997). In particular, the edge of the continental shelf (the shelf break) is associated with high numbers of birds due to high food productivity resulting from upwelling nutrients (Hjort et al. 1997).

Migration

In the fall, Ross's Gulls briefly head to the Arctic Ocean, but within a few weeks the ocean freezes over and they return westward and south via the Bering Strait to winter in the Bering Sea and Sea of Okhotsk (Degtyarev et al. 1987; Zubakin et al. 1990). Ross's Gulls seem to prefer feeding in loose ice at the edge of the Arctic ice pack, as these areas are very productive and prey is abundant and relatively easily to locate (Macey 1981; Alvo et al. 1996; Stirling 1997).

Diet

Little is known about the diet or foraging behaviour of Ross's Gulls. On the nesting grounds in Siberia, the main food of Ross's Gulls is insects; on occasion, they have taken fish and small molluscs (see Macey 1981). Blomqvist and Elander (1981) suggest that the main food of the Ross's Gull is small fish and invertebrates. In Alaska, Arctic cod (*Boreogadus saida*) comprised the majority of the diet of Ross's Gulls (Divoky 1976). At Prince Charles Island, breeding birds have been observed foraging either by hovering above the water surface or by walking along the shoreline; the birds were suspected of feeding on small crustaceans or insects (Béchet et al. 2000). At Churchill, birds were observed taking small items from below the surface of ponds, and at the Cheyne Islands, Ross's Gulls were observed flying to the edge of the pack ice to feed (Macey 1981). In the fall and winter, the Ross's Gull relies on the abundance of food found along the pack ice. This abundance of food likely accounts for the large concentration of birds in the Chukchi Sea in the fall (Macey 1981).

1.4.2 Ecological Role

The ecology of the Ross's Gull and its role in arctic ecosystems are very poorly known. Based on diet and breeding locations, we assume that it plays a role similar to that of Sabine's Gull, Ivory Gull (*Pagophila eburnea*), and Arctic Tern. All four species feed principally on invertebrates and small fish, although Sabine's Gulls may feed more in freshwater habitats. However, Sabine's Gulls and Arctic Terns fly far south (tropics or southern high latitudes) for the winter, while Ivory and Ross's gulls are well adapted to polar, ice-covered regions all year. Both Ivory and Ross's gulls will apparently scavenge carrion (Ivory Gulls are much more likely). In the absence of detailed study of Ross's Gulls, a further examination of their ecological role is not possible at this time.

1.4.3 Importance to People

The Ross's Gull appears to have had a minor role in the traditional life of aboriginal inhabitants of Arctic Canada (although Ross's Gulls are sought by aboriginal hunters in Alaska; Macey 1981). The Inuit harvest eggs of many birds, including gulls (Priest and Usher 2004). However, aboriginal harvest of this species (adults or eggs) in Canada is probably low. A Ross's Gull was harvested near Arctic Bay in the 1980s, and an adult was shot in the spring of 2006 near Pond Inlet (Mallory, unpubl. data). Due to their exceptionally small numbers, unpredictable presence, and the remoteness of their colonies, subsistence harvest of this species has probably been negligible.

The Ross's Gull does have considerable importance among the bird-watching community because of its rarity (Macey 1981; Alvo et al. 1996), aesthetic value, and contribution to biodiversity.

1.4.4 Limiting Factors

Ice cover and weather conditions likely play a critical role in the breeding success and survival of Ross's Gulls (Stirling 1997). Weather events such as floods and long, cold springs can decrease reproduction substantially (Macey 1981). For example, in Siberia in 1986, a heavy rainstorm killed five of six hatched chicks (Densley 1988). Although the effects of climate change are unknown, it is possible that preferred breeding locations for Ross's Gulls will shift.

The low productivity of the Ross's Gull may limit its ability to recover. Ross's Gulls are probably similar to other arctic seabirds in that they are long-lived with slow reproductive rates; populations would therefore recover slowly after successive reproductive failures (Macey 1981).

1.5 Threats

Because Ross's Gulls are known from only four locations in Canada and each population is very small in size, any factor affecting reproductive success or survival could severely affect the persistence of Ross's Gulls in Canada. Threats to the survival of Ross's Gull are discussed below, in order of importance.

1.5.1 Human Disturbance

Churchill is a well-known location for bird watchers to visit, and the opportunity to observe Ross's Gulls here contributes to the popularity of Churchill as a destination (Hamel 2002). However, disturbance by bird watchers, photographers, and tourists is a threat to the Ross's Gull in Canada (Macey 1981). The presence of humans disrupts Ross's Gulls and may lead to lower breeding success. At least one nest was abandoned because a photographer was too close to it (Alvo et al. 1996). Observers within 100 m of a nest will disturb the gulls (Béchet et al. 2000); approaching to within less than 200 m of nests is therefore discouraged.

The remoteness of the breeding sites in Nunavut offers some protection to the birds. The initial breeding site in Churchill used to be the most readily accessible to humans, but since Ross's Gulls have moved further away from the centre of Churchill, the threat of human disturbance has decreased. However, the potential for disturbance still exists: airboats and helicopters, operated by tour companies, have on occasion been close to Ross's Gull nests around Churchill (B. Chartier, pers. comm. in Hamel 2002).

1.5.2 Predation

Gulls (*Larus* spp.), jaegers (*Stercorarius* spp.), Arctic fox (*Alopex lagopus*), weasels, and polar bears (*Ursus maritimus*) are known predators of Ross's Gull (Alvo et al. 1996). In Russia, gulls and jaegers are the major predators of the Ross's Gull (Densley 1991), and at the Cheyne Islands, Glaucous Gulls (*Larus hyperboreus*) are suspected predators of Ross's Gull chicks (Alvo et al. 1996).

Predators were thought to be partially responsible for the low breeding success at Churchill between 1980 and 1987 (Densley 1988), and Herring Gulls (*Larus argentatus*) continue to be a major factor affecting Ross's Gull populations around Churchill today (B. Chartier, pers. comm.). It is believed that Herring Gull numbers increased around Churchill due to the large open garbage dump, which attracted the birds. In the last 15 years, Herring Gulls have begun nesting on small islands in ponds, effectively increasing their success because predators cannot reach the nesting locations (B. Chartier, pers. comm.).

Although Ross's Gulls and Arctic Terns share nesting colonies, Ross's Gulls appear to be more susceptible to predation by Herring Gulls. When avian predators fly overhead, Arctic Terns quickly leave their nests, while Ross's Gulls are slower to take off, resulting in Herring Gulls being able to spot where the eggs and chicks are (B. Chartier, pers. comm.).

1.5.3 Habitat Loss and Destruction

Loss and destruction of habitat can threaten the Ross's Gull. In 1984, the Akudlik Marsh was flooded, resulting in the submergence of all previous nesting sites (Gallop 1984). Temporary habitat loss of this nature can result in reduced reproduction and may lead to a shift of breeding locations in future years (Hamel 2002). The shift in breeding location following the flooding at Churchill, and the subsequent increased remoteness of the breeding colony, may partly explain the decline in nest records observed at this location since 1984 (Hamel 2002).

Oil drilling and disposal of waste products from mining activities at fall migration stop-over areas are potential threats to the Ross's Gull. During fall migration, Ross's Gulls congregate in high concentrations and thus are susceptible to pollution events, such as oil spills, that affect the availability of prey (Divoky 1988). Although this threat is generally located in areas beyond Canadian jurisdiction, it can affect the Canadian and global population.

1.6 Actions Already Completed or Underway

- Ongoing surveys for breeding birds, including Ross's Gull, in the High Arctic conducted by M. Mallory and G. Gilchrist (2002-2006).
- COSEWIC status report for the Ross's Gull updated by R. Knapton (COSEWIC in prep.).

1.7 Knowledge Gaps

Many life history characteristics, including nesting and fledging success, adult and juvenile survival, causes of mortality, predation rates, philopatry to natal and breeding sites, and habitat and food preferences, are unknown for the Ross's Gull worldwide. As well, there is very little information on wintering grounds and migration paths, or on the effects of weather and climate change on survival.

2. RECOVERY

2.1 Rationale for Recovery Feasibility

Maintaining the Ross's Gull breeding population and distribution within Canada is considered feasible based on four criteria (Environment Canada 2005). First, there are currently no known factors negatively affecting their productivity in Canada. Second, there is sufficient suitable habitat available to support the species. Third, significant threats to the species or its habitat can be avoided or mitigated through recovery actions. Finally, the techniques for effective recovery appear achievable for this species.

2.2 Recovery Goal

The Ross's Gull has always been rare in Canada, and does not appear to be declining. Because of its limited population numbers, there is little potential for this species to be downlisted from Threatened. Despite its small population size, maintaining Ross's Gull at its current distribution and population numbers should be feasible.

The recovery goal for the Ross's Gull is to ensure its long-term survival by maintaining the population at its current level¹ and by maintaining current and some historical breeding locations.²

2.3 Recovery Objectives for the Ross's Gull (2007-2011)

The short-term objectives for the recovery of Ross's Gulls in Canada are to:

- 1) maintain known current distribution and number of pairs of Ross's Gulls breeding in Canada over a five-year average (Priority – Urgent);
- 2) encourage further research and surveys that may reveal previously unknown nesting concentrations in the Canadian Arctic (Priority – Urgent);
- 3) protect breeding habitat through stewardship and conservation agreements and undertake studies to identify critical habitat (Priority – Necessary); and
- 4) determine the significance of threats at breeding locations and implement management strategies to reduce threats (Priority – Beneficial).

2.4 Approaches Recommended to Meet Recovery Objectives

Table 1 provides a general description of the research and management activities needed to meet the recovery objectives, and broad strategies to address threats to the Ross's Gull. An action plan will contain more detail on the specific activities and will include an implementation schedule.

¹ Within its natural range of variability as observed between 1990 and 2005.

² Includes Churchill (Manitoba) and three sites in Nunavut.

Table 1. Recovery planning table for Ross's Gull

| Priority | Objective number | Threat addressed | Broad strategy to address threats | Recommended approaches to meet recovery objectives |
|-----------|------------------|------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Urgent | 1, 2 | All | Inventory and Monitoring | <ul style="list-style-type: none"> • Develop and implement standardized monitoring protocols. • Complete annual surveys at three of the four current breeding sites (Prince Charles Island poses high logistic challenges and should be surveyed when possible). • Concurrently monitor breeding success. • Identify additional areas to be surveyed. • Survey additional suitable habitat every five years. • Assess threats to Ross's Gulls and their habitat at all known breeding sites. Determine effects of disturbance on breeding Ross's Gulls. • Prioritize knowledge gaps and promote/conduct research to address gaps in order of urgency. • Obtain aboriginal knowledge on Ross's Gull life history and breeding locations. |
| Necessary | 1, 4 | Human disturbance | Communication and Stewardship | <ul style="list-style-type: none"> • Develop educational products on Ross's Gull, its status, and threats (including human disturbance), to be distributed to bird watchers and tourists in Churchill. • Work with tour operators in Churchill to identify methods to provide viewing opportunities for birders and photographers without disrupting breeding. • Develop management strategies to address the threat of human disturbance, including establishing set-back distances from nests. • Identify additional target audiences and develop an effective communication strategy. • Cooperate with other governments internationally to address threats to Ross's Gulls outside Canada. • Mitigate exploration and development-related disturbances around known and potential nest sites in Nunavut through improved communication with development proponents (e.g., permit review). |
| Urgent | 1, 4 | Predation | Monitoring and site management | <ul style="list-style-type: none"> • Determine whether predation is affecting survival and productivity. • Develop site-specific management plans, such as predator deterrents in areas where predators are a threat, to reduce predation. |
| Urgent | 3, 4 | Habitat Loss and Destruction | Habitat Protection and Stewardship | <ul style="list-style-type: none"> • Evaluate habitat where breeding is known to have occurred and identify new areas to be surveyed based on breeding habitat characteristics. • Identify areas of critical habitat. • Develop adaptive management strategies and stewardship agreements to protect and enhance nesting locations. • Protect and manage critical habitat through stewardship agreements—this may include increased enforcement in the Churchill area during Ross's Gull breeding season. |

2.5 Critical Habitat for Ross's Gull

The federal *Species at Risk Act* 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 a recovery strategy or in an action plan for the species."

Critical habitat is not identified in this recovery strategy. This species is relatively unstudied in Canada, and we do not know what habitat is necessary for the survival and recovery of this species. There are very few breeding records for this species in Canada, occupation at the few known nesting sites appears to be intermittent, and fidelity to breeding areas is unknown. With such limited information, it is not possible to identify critical habitat at this time. Critical habitat will be identified through activities outlined in 2.5.1 (Schedule of Studies to Identify Critical Habitat) and will be included in a forthcoming action plan and/or a revised recovery strategy.

The nests of Ross's Gulls are protected under the *Migratory Birds Convention Act, 1994* and as a "residence" under the *Species at Risk Act* throughout Canada.

2.5.1 Schedule of Studies to Identify Critical Habitat

Studies to identify critical habitat will be concentrated in the High Arctic, near one of the sites where the birds may nest (Mallory et al. 2006). (Conducting studies near Churchill would probably lead tourists to the active nesting areas.)

Broad studies and actions to support the identification of critical habitat are outlined in Table 1.

This section outlines specific studies and actions necessary to identify critical habitat.

- By August 2008, identify characteristics of habitat occupied by breeding Ross's Gulls. Also undertake studies to determine impacts of disturbance on breeding gulls (including Ross's Gulls) in remote locations.
- On an ongoing basis, survey additional suitable habitat for presence of Ross's Gulls in the High Arctic and around Churchill. These surveys may identify additional critical habitat if new nesting areas are found.
- By December 2008, apply knowledge of significant habitat features to all areas within the breeding range and map known and potential breeding habitat.
- By December 2008, use synthesized information on abundance, distribution, and habitat use to identify critical habitat within an action plan and/or revised recovery strategy.
- Opportunistically identify potential foraging sites, resting sites, or transit sites that may be considered critical habitat.

2.6 Existing Protection

This species and its nests are protected under the *Migratory Birds Convention Act, 1994*, and Ross's Gull as a species is covered under the *Species at Risk Act*. The *Migratory Birds Convention* of 1916 prohibits the hunting or collecting of the eggs, nests, and birds ("take") of listed species in Canada and the United States. In addition, the Ross's Gull is listed as an endangered species under Manitoba's *Endangered Species Act*. Under this act, no person shall kill, injure, possess, disturb or interfere with an endangered species; destroy, disturb or interfere with the habitat of an endangered species; or damage, destroy, obstruct or remove a natural resource on which an endangered species depends for its life and propagation. Hunting of Ross's Gulls is also prohibited in Russia (Macey 1981).

The Churchill Special Conservation Area (35 823.1 ha), designated under the *Manitoba Wildlife Act*, was established to conserve and protect Ross's Gull nesting habitat around Churchill. Both the original and current breeding sites are located within the Churchill Special Conservation Area (G. Suggett, pers. comm.). In addition, the current Churchill breeding site is more difficult to access, thus limiting human disturbance. The northern breeding locations in Nunavut are not protected, but their remote and inaccessible locations limit human disturbance at these sites.

2.7 Recommended Approach for Conservation and Habitat Protection

The Manitoba site is located on Crown land. The federal and provincial government will work cooperatively to determine the appropriate approach for habitat protection of this site. Education and communication with the community and birdwatchers may be a useful tool in ensuring the conservation of this area.

In Nunavut, known breeding locations are all on Crown land and are extremely remote and difficult for tourists or even Inuit hunters to access during the breeding season. Thus, stewardship and conservation agreements should focus more on engaging community hunters' and trappers' organizations to assist in reporting sightings of birds during migration or breeding and in minimizing the incidental harvest of eggs or birds when hunters are after other species (e.g., Arctic Terns). Agreements should leave open the possibility of future habitat protection measures, should they be required. Engagement of the key federal land manager, Indian and Northern Affairs Canada, in conservation agreements will be crucial in ensuring habitat protection.

2.8 Performance Measures

The implementation of approaches identified within this recovery strategy to maintain the distribution and abundance of Ross's Gull will be considered successful if the following evaluation criteria are met:

- critical habitat has been protected at all designated locations through stewardship or conservation agreements;
- monitoring of Ross's Gulls demonstrates they are continuing to breed at known locations; and
- identification of threats to Ross's Gulls and their habitat (on a site-by-site basis) has resulted in the development and implementation of measures that eliminate, reduce, or mitigate threats.

2.9 Effects on Other Species

This recovery strategy may potentially benefit other species such as the Arctic Tern and Sabine's Gull, as Ross's Gulls are often found nesting in association with these birds. In addition, other northern breeding birds found in similar habitat may benefit from any conservation activities resulting from this strategy and the upcoming action plan. These species include Arctic Loon (*Gavia arctica*), Horned Grebe (*Podiceps auritus*), Long-tailed Duck (*Clangula hyemalis*), Common Eider (*Somateria mollissima*), King Eider (*Somateria spectabilis*), Greater Scaup (*Aythya marila*), Hudsonian Godwit (*Limosa haemastica*), Lesser Yellowlegs (*Tringa flavipes*), Stilt Sandpiper (*Calidris himantopus*), Common Redpoll (*Carduelis flammea*), and Smith's Longspur (*Calcarius pictus*) (Chartier and Cooke 1980).

While many species may benefit from the implementation of this recovery strategy and the upcoming action plan, some local populations of species may be negatively affected. For example, using deterrents to discourage Herring Gulls in the vicinity of Ross's Gull colonies could reduce Herring Gull reproductive success locally, but, given their abundance and wide distribution, this action would be unlikely to affect Herring Gull populations overall.

2.10 Statement of When One or More Action Plans Will Be Completed

The action plan for the Ross's Gull will be completed by June 2009. Steps to achieve recovery as listed in the recovery objectives will be ongoing in the interim.

3. REFERENCES

- Alvo, R., D. McRae, S. Holohan, and G. Divoky. 1996. Updated Status Report on the Ross's Gull, *Rhodostethia rosea*, in Canada. Committee on the Status of Endangered Wildlife in Canada. 12 pp.
- Béchet, A., J.L. Martin, P. Meister, and C. Rabouam. 2000. Second breeding site for Ross's Gull. *Arctic* 53: 234-236.
- Blomqvist, S., and M. Elander. 1981. Sabine's Gull (*Xema sabini*), Ross's Gull (*Rhodostethia rosea*) and Ivory Gull (*Pagophila eburnea*). In *Gulls in the Arctic: A Review*. *Arctic* 34: 122-132.
- Chartier, B., and F. Cooke. 1980. Ross's Gulls (*Rhodostethia rosea*) nesting at Churchill, Manitoba, Canada. *American Birds* 34: 839-841.
- COSEWIC. *In prep.* COSEWIC assessment and update status report on the Ross's Gull *Rhodostethia rosea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa, Ontario.
- Degtyarev, A.G. 1991. A method of airborne census of Ross Gull, *Rhodostethia rosea*, in Yakut Tundras. *Zoologicheskyy Zhurnal* 70: 81-85.
- Degtyarev, A.G., Y.V. Labutin, and Y.Y. Blohin. 1987. Ross's Gull *Rhodostethia rosea*: notes on its migration and on peculiarities in its reproductive cycle near the limit of its distribution. *Zoological Journal* 66: 1873-1885. [In Russian]
- Densley, M. 1988. James Clark Ross and Ross's Gull—a review. *Naturalist* 113: 85-102.
- Densley, M. 1991. Ross's Gulls in Siberia. *Dutch Birding* 13: 168-175.
- Divoky, G.L. 1976. The pelagic feeding habits of Ivory and Ross's gulls. *Condor* 78: 85-90.
- Divoky, G. J. 1988. The distribution and abundance of birds in the eastern Chukchi Sea in late summer and early fall. In *Environmental Assessment, Alaska Continental Shelf, Final Report*. Bureau of Land Management, U.S. National Oceanic and Atmospheric Administration, Outer Continental Shelf Environmental Assessment Program, Anchorage, Alaska.
- Divoky, G.J., G.A. Sanger, S.A. Hatch, and J.C. Haney. 1988. Fall migration of Ross's Gull (*Rhodostethia rosea*) in Alaskan Chukchi and Beaufort Seas. *Outer Continental Shelf (OCS) Study, Minerals Management Service (MMS) 88-0023*. 119 pp.
- Ehrlich, P., D. Dobkin, and D. Wheye. 1988. *The Birders Handbook: A Field Guide to the Natural History of North American Birds*. Simon and Schuster Inc., New York.

- Environment Canada. 2005. Policy on the feasibility of recovery (Draft June 1, 2005). Species at Risk Act Policy. Government of Canada, Ottawa, Ontario.
- Gollop, J.B. 1984. Prairie provinces region. *American Birds* 38: 1031-1033.
- Hamel, C. 2002. Status Summary for the Ross's Gull. Manitoba Conservation Data Centre, Winnipeg, Manitoba.
- Hjort, C., A. Gudmundur, and M. Elander. 1997. Ross's Gulls in the central Arctic Ocean. *Arctic* 50: 289-292.
- MacDonald, S.D. 1978. First breeding record of Ross's Gull in Canada. *Proceedings of the Colonial Waterbird Group* 1978: 16.
- Macey, A. 1981. Status Report on the Ross's Gull, *Rhodostethia rosea*, in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa, Ontario. 24 pp.
- Mallory, M.L., and H.G. Gilchrist. 2003. Marine birds breeding in Penny Strait and Queens Channel, Nunavut, Canada. *Polar Research* 22: 399-403.
- Mallory, M.L., H.G. Gilchrist, and C.L. Mallory. 2006. Ross's Gull *Rhodostethia rosea* breeding in Penny Strait, Nunavut, Canada. *Arctic* 59: 319-321.
- NatureServe. 2004. NatureServe Explorer: An online encyclopedia of life [web application]. Version 3.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed June 14, 2004).
- Priest, H., and P. J. Usher. 2004. The Nunavut Wildlife Harvest Study. August 2004. Nunavut Wildlife Management Board, Iqaluit. 822 pp.
- Stirling, I. 1997. The importance of polynyas, ice edges, and leads to marine mammals and birds. *Journal of Marine Systems* 10: 9-21.
- Zubakin, V.A., A.A. Kischinski, V.E. Flint, and V.O. Avdanin. 1990. *Rhodostethia rosea* Rosenmove. In Ilichev, V. D., and Zubakin, V. A. (editors). *Handbuch der Vogel der Sovjetunion* 6. A. Ziemsen Verlag, Wittenberg.

4. CONTACTS

4.1 Recovery Team Members

Mark Mallory (Chair)
Seabird Biologist
Canadian Wildlife Service
Environment Canada
P.O. Box 1714
Iqaluit, NU X0A 0H0
Canada
mark.mallory@ec.gc.ca

H. Grant Gilchrist
Research Scientist
Science and Technology Branch
Environment Canada
National Wildlife Research Centre
Raven Road
Carleton University
Ottawa, ON K1A 0H3
Canada

APPENDIX A. Breeding Records of Ross's Gull

Table A1. Ross's Gull pairs and individuals observed at an unnamed island, the Cheyne Islands, Prince Charles Island, and Churchill

| Site | Year | Number of pairs/nests | Number of birds observed | Source |
|------------------------------------------------------------------------------|-------|-----------------------|-------------------------------------------------------|------------------------------------------------------------|
| unnamed island, Nunavut | 2002 | 0 | | Mallory and Gilchrist (2003) |
| | 2003 | 0 | | Mallory et al. (2006) |
| | 2004 | 0 | | Mallory et al. (2006) |
| | 2005 | 5 nests | 9 | Mallory et al. (2006) |
| | 2006 | 1 nest | 2 | Mallory et al. (2006) |
| Cheyne Islands, Nunavut | 1974 | - | >1 | Mallory and Gilchrist (2003) |
| | 1976 | 3 pairs | | MacDonald (1978) |
| | 1977 | 0 | | Macey (1981) |
| | 1978 | 6 pairs | | MacDonald (1978) |
| | 1979 | 0 | | Macey (1981) |
| | 1986 | 0 | | Alvo et al. (1996) |
| | 2002 | 0 | | Mallory et al. (2006) |
| | 2003 | 0 | | Mallory et al. (2006) |
| | 2004 | 0 | | Mallory et al. (2006) |
| | 2005 | 0 | | Mallory et al. (2006) |
| | 2006 | 4 | 8 | Mallory et al. (2006) |
| Prince Charles Island, Nunavut | 1997 | 1 pair | 2 | Béchet et al. (2000) |
| Churchill, Manitoba * indicates historical breeding site at Akudlik Marsh | 1978* | | 1 | MacDonald, pers. comm. <i>in</i> Chartier and Cooke (1980) |
| | 1980* | 3 pairs | | Chartier and Cooke (1980) |
| | 1982* | 5 nests | 10+ | R. Koes, pers. comm. <i>in</i> Hamel (2002) |
| | 1992 | | 4+ | R. Koes and B. Chartier, pers. comm. |
| | 1993 | | 4 | R. Koes and B. Chartier, pers. comm. |
| | 1994 | 1 nest | 6 | R. Koes and B. Chartier, pers. comm. |
| | 1995 | | 3 | R. Koes and B. Chartier, pers. comm. |
| | 1996 | | 0 | R. Koes and B. Chartier, pers. comm. |
| 1997 | | | 1, possibly 2 R. Koes and B. Chartier, pers. comm. | |

| Site | Year | Number of pairs/nests | Number of birds observed | Source |
|------|------|-------------------------------------|-----------------------------------------------------|--------------------------------------|
| | 1998 | | Seen, but no numbers given | R. Koes and B. Chartier, pers. comm. |
| | 1999 | | 1 | R. Koes and B. Chartier, pers. comm. |
| | 2000 | | 2 | R. Koes and B. Chartier, pers. comm. |
| | 2001 | At least 1 nest | 2 (pair seen at end of summer, 1 juvenile observed) | R. Koes and B. Chartier, pers. comm. |
| | 2002 | 5 | | COSEWIC, in prep. |
| | 2004 | Breeding area used, numbers unknown | 2 briefly seen | R. Koes and B. Chartier, pers. comm. |
| | 2005 | 1 nest | 4 (1 juvenile observed) | COSEWIC, in prep |