

ARCTIC GOOSE JOINT VENTURE

A Prospectus

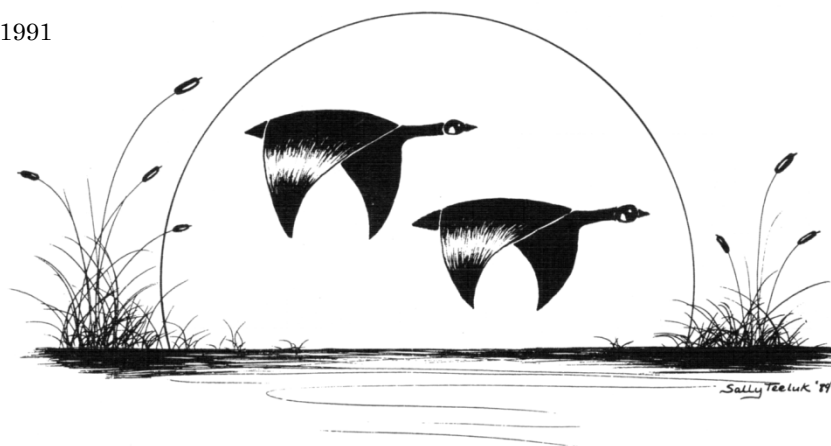


*North American Waterfowl
Management Plan*



Arctic Goose Joint Venture A Prospectus

October 1991



Contents

Executive Summary	3
Introduction and Background	4
Problems and Issues	5
Assessment of Population Dynamics	5
Habitat Destruction by Geese	5
Sustained Yield	6
Important Habitats	6
Climate change	6
Impact Assessment and Environmental Contaminants	6
Parasites and Disease	6
Proposed Solution - The Arctic Goose Joint Venture	7
Goals	7
Objectives	7
<i>Planning</i>	7
<i>Facilitation</i>	7
<i>Communication/Coordination</i>	8
Scope	8
Structure and Function of the Arctic Goose Joint Venture	15
Management Board	15
Technical Committee	15
Coordination Office	15
Funding	17

Executive Summary

Unknown breeding distributions of many Arctic-nesting geese, recent changes in their number and winter distribution, alteration of ranges, uncertain status of populations, and population-mixing are among the issues that require immediate attention for effective population management. Given the international scope of Arctic geese, partnerships are required to study Arctic goose populations effectively during their annual cycles.

An Arctic Goose Joint Venture, recommended by the North American Waterfowl Management Plan of 1986, will facilitate research and monitoring of Arctic goose populations. Such a partnership approach will be especially valuable for conducting Arctic research where logistics are more costly and where maximum return from available funds is highly desirable.

The goal of the Arctic Goose Joint Venture is to foster greater research and monitoring of Arctic geese so that improved population management may proceed. This goal will be achieved primarily through Planning, Facilitation, and Communication and Coordination. The Arctic Goose Joint Venture will integrate and facilitate Arctic goose research and monitoring by identifying information needs and priorities, identifying funding requirements, reviewing proposals, and communicating results. It will not replace, but rather will complement existing Arctic goose research and management programs, including those established through Flyway Councils and individual Federal, State, Provincial and Territorial agencies.

The organizational structure of the Arctic Goose Joint Venture will include: a 16—member *Management Board* comprised of senior Canadian and U.S. Federal, Provincial, Territorial, and State government representatives from the four Flyway Councils, and non-government groups; a *Technical Committee* with representatives from each management board organization as well as the private sector; a *Coordination Office* to facilitate the work of the Arctic Goose Joint Venture.

The focus of the Arctic Goose Joint Venture will be on geese that nest primarily in the Arctic (north of the boreal forest). Specific guidelines for inclusion of populations in the Arctic Goose Joint Venture have been developed, and, based on these, 16 populations of geese will be addressed initially.



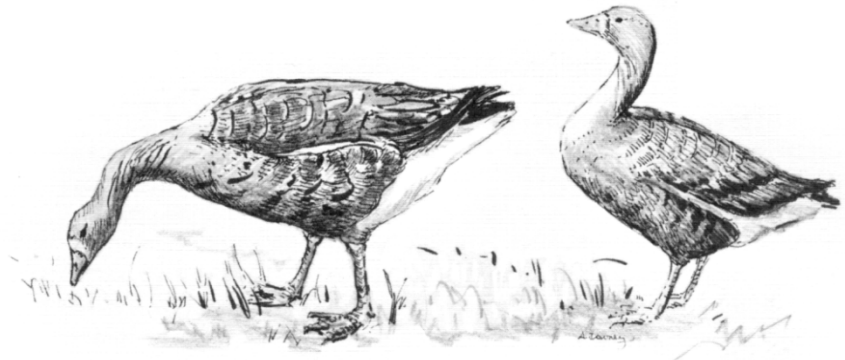
Introduction and Background

In signing The North American Waterfowl Management Plan (NAWMP) in 1986, Canada and the United States identified goals for 27 populations of geese that exist in those two countries. The NAWMP noted that management of most goose populations is currently done through goose management plans developed and implemented by Flyway Councils, and continuation of this approach was encouraged. However, the NAWMP also directed that an Arctic Goose Joint Venture be developed by Canada and the United States that, unlike habitat joint ventures, will emphasize population research and monitoring.

The NAWMP discussed development of a joint venture to monitor status and productivity of colony-nesting geese in the north. Key habitats on which geese depend would be delineated, and environmental impacts of future developments would be assessed.

A technical scoping committee, appointed by the North American Waterfowl Management Plan Committee in 1986, identified some significant problems that must be resolved to assure successful future management of Arctic geese. These stem largely from an inability to clearly determine status, distribution, utilization, dispersal through several flyways, the relative fragility of their habitats, and the high cost and logistical difficulty in carrying out research and related population monitoring activities in the Arctic.

Existing goose management plans, developed through the Flyway Council system, define goals and objectives for populations, habitat, and utilization. They also identify research needs for achieving these goals and objectives. These plans provide a substantial foundation for the development and implementation of an Arctic Goose Joint Venture. Conversely, many



Arctic-nesting geese are associated with several flyways and their status, range, and utilization are not adequately understood or monitored through existing mechanisms. A joint venture, comprised of organizations representing Canada, the United States, and all four Flyways, is necessary to facilitate and assist in the identification and promotion of high priority research that is needed to understand these goose populations and their habitats. Thus, an Arctic Goose Joint Venture would not replace existing Flyway plans and national processes, but would complement them and facilitate monitoring and research that requires concerted international and cross-Flyway cooperation.

Native land claims have become an increasingly important factor in waterfowl management, as more and more of North American goose nesting and moulting grounds have come under native ownership and influence. Claims have already been settled in Alaska, Yukon Territory, and parts of Quebec and Northwest Territories. Traditional subsistence hunting must be recognized and included in the management, of Arctic geese. For the Arctic Goose Joint Venture to be successful, native peoples must be involved in cooperative conservation of breeding populations and associated habitats, as well as the

planning and execution of waterfowl management activities in their regions.

There is a need to expand somewhat beyond the original intent of the NAWMP and consider research needs for additional populations of Arctic-nesting geese. Also, research needs have been identified for goose populations that do not nest in the Arctic. It may be desirable in the future to direct more attention toward these populations once the organizational structure of the Arctic Goose Joint Venture is in place. Likewise, because some Arctic-nesting geese utilize habitats in the Soviet Union, Mexico, Greenland, Iceland and Ireland, the Arctic Goose Joint Venture may expand to accommodate representation from those countries on specific Arctic Goose issues.

Achievement of goose population goals, as well as monitoring status of populations, will require an accelerated and focused monitoring and research program that is fully coordinated and integrated with all parties having responsibilities for management and conservation of North American geese. The Arctic Goose Joint Venture will provide a forum and mechanism to ensure that coordination and integration is accomplished.

Problems and Issues

The partnership approach of the Arctic Goose Joint Venture is well adapted to studying geese throughout their annual cycles, especially those that use several flyways. Such an approach will be valuable in the Arctic where logistics are more costly and operations more difficult. Several issues, outlined below, are in need of immediate attention to manage Arctic-nesting goose populations effectively. Foremost among them is the need to improve abilities to estimate annual population size, breeding distribution, winter distribution, mortality, productivity and harvest of geese. Traditionally, population management has been based more on winter populations, but large-scale mixing of breeding populations during winter has made this difficult. Management of populations based on breeding ground delineations may be more effective, and marking efforts under the Arctic Goose Joint Venture should reflect this. Some populations may need to be renamed to reflect their geographical distributions during breeding.

Assessment of Population Dynamics

As a result of changes in distribution and mixing of once segregated populations, it has become extremely difficult to monitor the status of many goose populations in recent years. Likewise, the ability to monitor harvest, non-hunting mortality, and survival rates for individual populations is suboptimal. Improved monitoring programs and directed research into factors that regulate the size of Arctic goose populations is a fundamental requirement for effective management. The most immediate monitoring programs should involve marking of geese on Arctic nesting grounds, while the greatest research needs involve studies that address population regulation, and breeding distribution. Also, knowledge about changing winter distributions would assist in understanding and possibly maintenance of traditional distribution and harvest patterns.

Habitat Destruction by Geese

Many populations of Arctic geese have increased dramatically. Some populations of white geese are too large for their traditional habitats to sustain. In some cases this has resulted in destruction of brood-rearing habitat during summer, and in local conflicts with agriculture during migration and winter. Little is known about long-term effects of overgrazing on summer habitat and the ability of geese to colonize new nesting areas with suitable summer range. Research is needed in areas where there is potential for destruction by more abundant species to adversely affect productivity of less abundant species that use the same habitats.



Sustained Yield

Future waterfowl hunting, non-hunting and tourism activities will be influenced by the status of Arctic geese. Geese provide enormous socio-economic benefits. Current continental drought conditions have resulted in curtailed duck hunting opportunities, that in turn has resulted in greater harvest of Arctic geese in some jurisdictions. If poor habitat conditions of prairie ducks persist, it is expected that the harvest of some goose populations will continue to increase. Also, governments have expressed support for providing legal, regulated harvest of geese for subsistence. Providing legalized opportunities for spring and summer harvest would require amendments to international treaties through discussions that have been initiated. Improved monitoring of Arctic goose mortality, harvest and population size is necessary to effectively manage and conserve these populations. Within that framework is a need to measure the extent of spring and summer harvest, and to assess its impacts on goose populations.



Important Habitats

Breeding and moulting areas remain to be inventoried completely. Regular monitoring of populations and habitats in breeding and moulting areas should follow. Ecological relationships between breeding/moulting areas and staging/winter habitats must be determined. Such areas must be identified and conserved to meet current and future requirements of Arctic goose populations. Conservation of such habitats can best be accomplished through integration with existing habitat joint ventures under the NAWMP.



Climate change

Changes in Arctic climate could result in alterations to the distribution and productivity of Arctic geese. Arctic geese should receive attention, perhaps as indicators of climate change, perhaps by multi-discipline climate study groups.

Impact Assessment and Environmental Contaminants

Human activities have adversely affected several key areas used by Arctic-nesting geese. These activities will likely increase. Prevalence and impacts of environmental contaminants is only partly known and future industrial development or energy exploration and extraction may influence Arctic goose populations. Assessment of such impacts will require monitoring and analysis.



Parasites and Disease

Parasites and disease are important to certain populations of Arctic-nesting geese, yet the significance of these factors is not fully understood. Certain large increasing populations of white geese may serve as reservoirs of disease that may adversely impact less abundant species or other populations. Greater knowledge of conditions that lead to outbreaks, and the mechanism of disease transmission and control is desirable.

Proposed Solution - The Arctic Goose Joint Venture

To most effectively address the social, economic and biological issues and problems confronting Arctic geese, a cross-flyway, international approach is required. An Arctic Goose Joint Venture, with participation from Canadian and U.S. Federal, State, Provincial and Territorial agencies, and non-government organizations, provides a unique opportunity to address widespread, multi-flyway issues and research needs. The primary function of the Arctic Goose Joint Venture will be to coordinate and promote high-priority data gathering activities. Additionally, data gathered through the Arctic Goose Joint Venture will assist many habitat joint ventures in all four Flyways and Canada.

Goals

The goal of the Arctic Goose Joint Venture is to encourage the acquisition of a sound information base of population parameters (population size, production rate, harvest rate, survival rate), encourage re-evaluation of population distributions throughout annual cycles, and motivate directed research on topics that may greatly influence the status of Arctic goose populations. The Arctic Goose Joint Venture will advise and facilitate international and cross-flyway research and management studies focusing on high-priority information needs for Arctic-nesting goose populations. Consistent with principles and issues identified in the NAWMP, this broad integrated approach is aimed to support and enhance the effectiveness of continental management programs for these populations.

Objectives

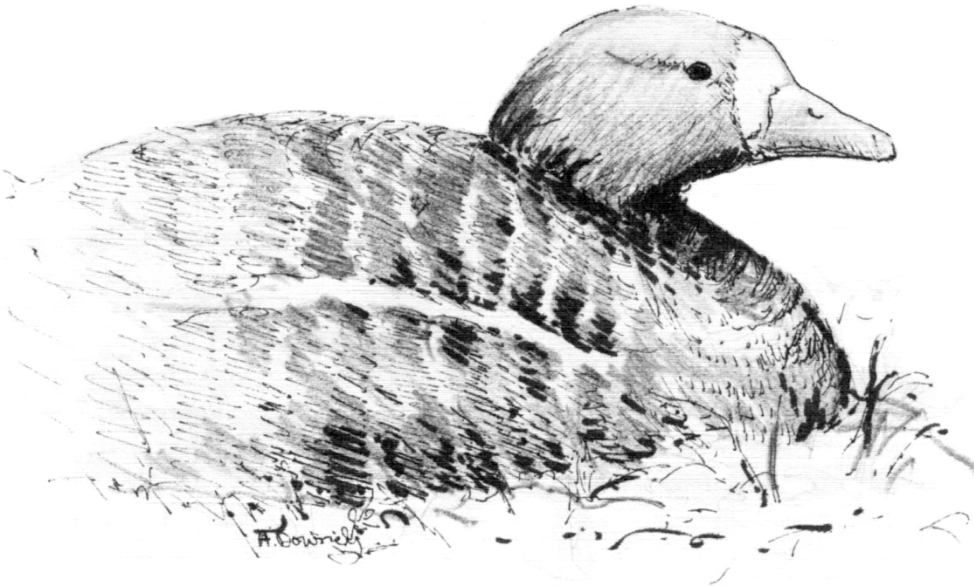
The goal of the Arctic Goose Joint Venture will be accomplished through three general areas of emphasis, including planning, facilitation, and communication and coordination. Specific objectives for each are as follows:

Planning

- To identify important information needs and specific projects concerning Arctic goose management on a continuing basis.
- To sponsor efforts to develop and define project-level areas of work for particularly broad or complex Arctic goose conservation issues (e.g. global warming, contaminants).
- To recommend priorities to managing agencies and others for Arctic goose research efforts, on the basis of the most urgent information needs and most effective opportunities to gather data, across the array of Arctic Goose Joint Venture subject populations.

Facilitation

- To establish working relationships and ongoing coordination with management agencies, research institutions, and public interests for developing commitments to Arctic Goose Joint Venture research priorities.
- To encourage and assist agencies to incorporate Arctic Goose Joint Venture projects into operational programs.
- To support the development and review of proposals for high-priority Arctic Goose Joint Venture research projects.



- Communication/Coordination*

Within Arctic-nesting populations, priority will be given to populations with an extensive international distribution involving more than a single flyway, those which provide major benefits to Canada and the U.S., and those for which there are significant data gaps or major threats to their status.



Table 1. Scope of the Arctic Goose Joint Venture indicated by the composition, status, trends and goals for Arctic Goose populations.

Species	Population	Average Index ¹ (1988-90)	5-YR Trend ² (1986-90)	10-YR Trend (1981-90)	Goals
White-fronted Geese	Eastern Midcontinent	118,500w	+	+	65,000w
	Western Midcontinent	122,500w	0	0	250,000s
Canada Geese	Shortgrass Prairie	392,700w	+	+ *	150,000w
	Tallgrass Prairie	232,900w	0	0	250,000w
	Eastern Prairie	297,600s	+	+	300,000s
	Mississippi Valley	750,000s	+	+	900,000s
	Southern James Bay	157,300w	0	0	200,000w
	Atlantic Flyway	700,500w	0	-	850,000w
	Pacific	133,800w	0	0	185,000w
Brant	Atlantic	140,400w	+	+	124,000w
	Greater Snow	365,100s	+	+	185,000b
Snow Geese	Midcontinent Lesser	1,938,700w	0	0	1,000,000b
	Western Central Flyway	72,500w	0	0	110,000w
	Western Arctic Lesser	205,000b ³	0 *	0 *	200,000b
	Wrangel Island Lesser	42,600b ⁴	-	0	120,000b
	Ross' Geese	160,000b ⁵	+ *	+ *	100,000b

¹ Letter indicates whether a population is measured in terms of total winter (w), spring (s), or breeding adults on nests (b).

² Increasing population (+); stable population (0); decreasing population (-); estimated trend, surveys not conducted annually (*).

³ Air photo inventory from 1987 (inventories at 5 year intervals).

⁴ Annual ground survey.

⁵ Air photo inventory from 1988 (inventories at 5 year intervals).

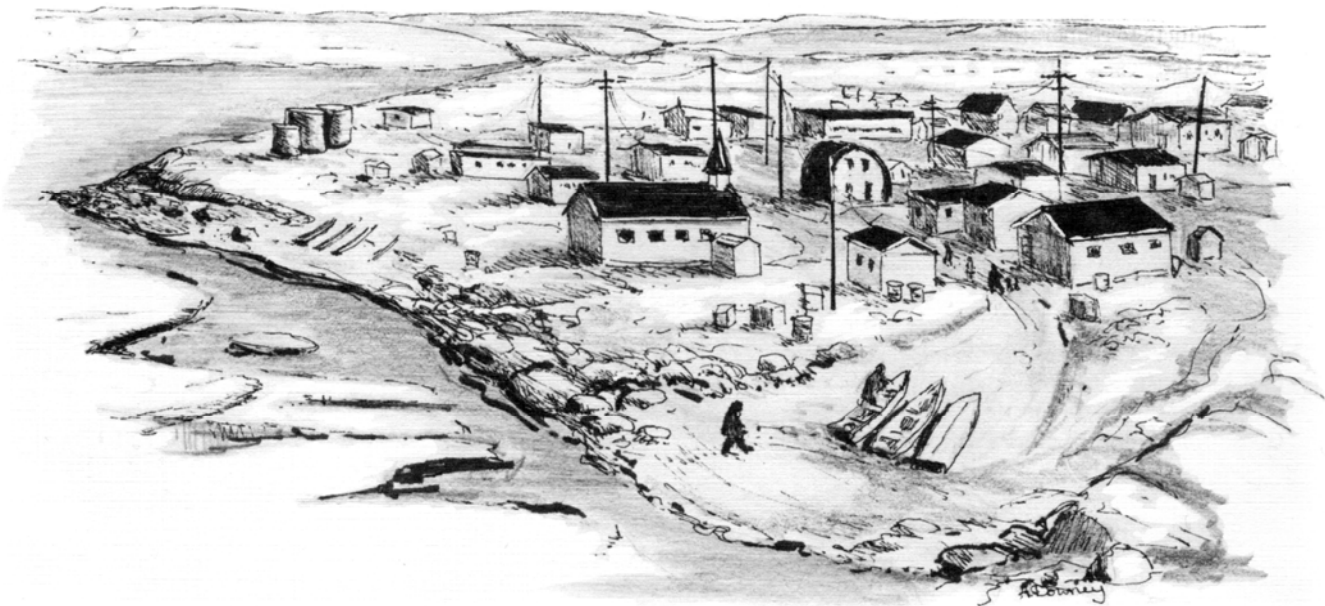


Figure 1. *White-fronted Goose distributions.*



Figure 2. Canada Goose distributions.

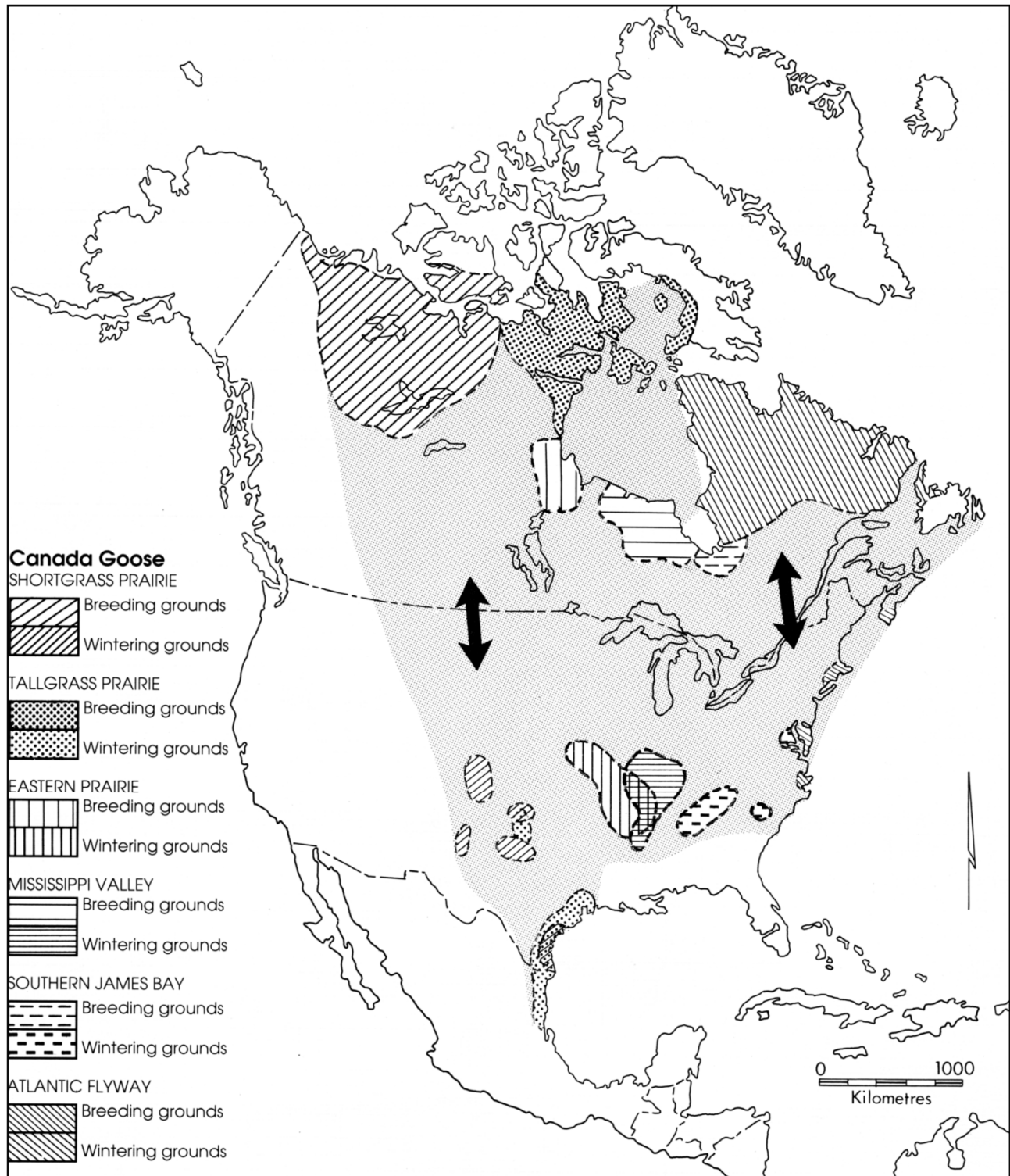


Figure 3. Brant distributions.

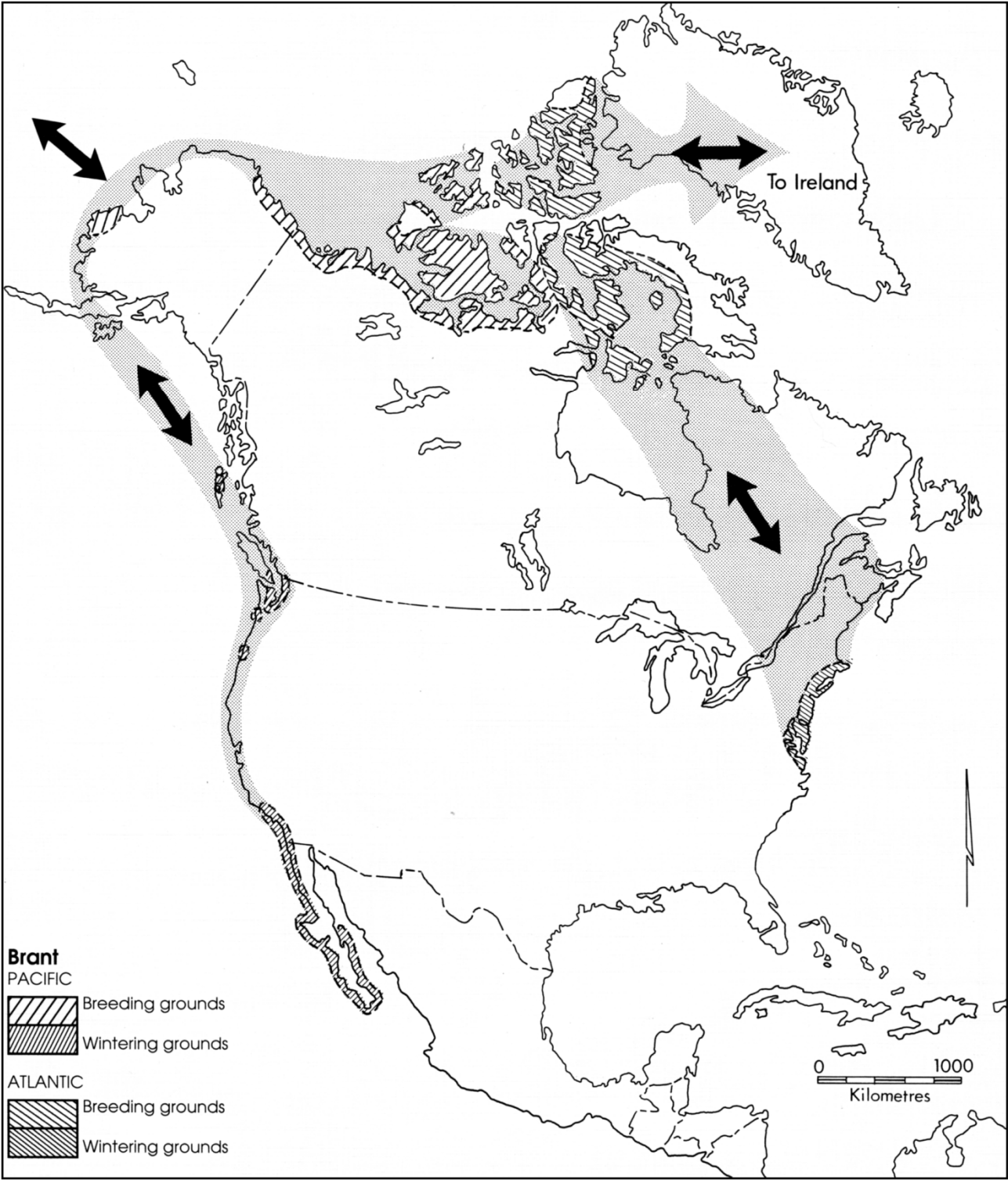


Figure 4. *Snow Goose distributions.*

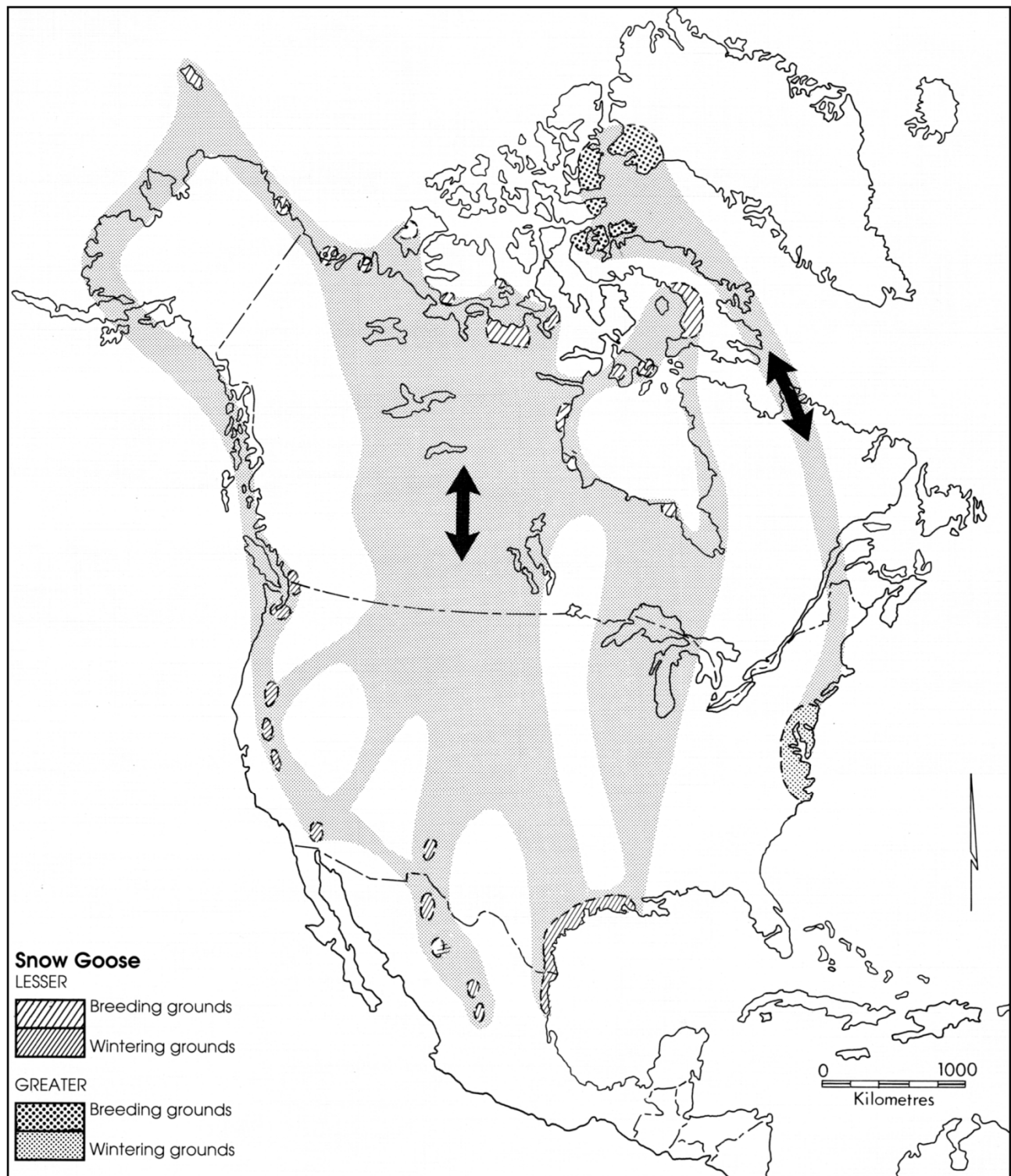
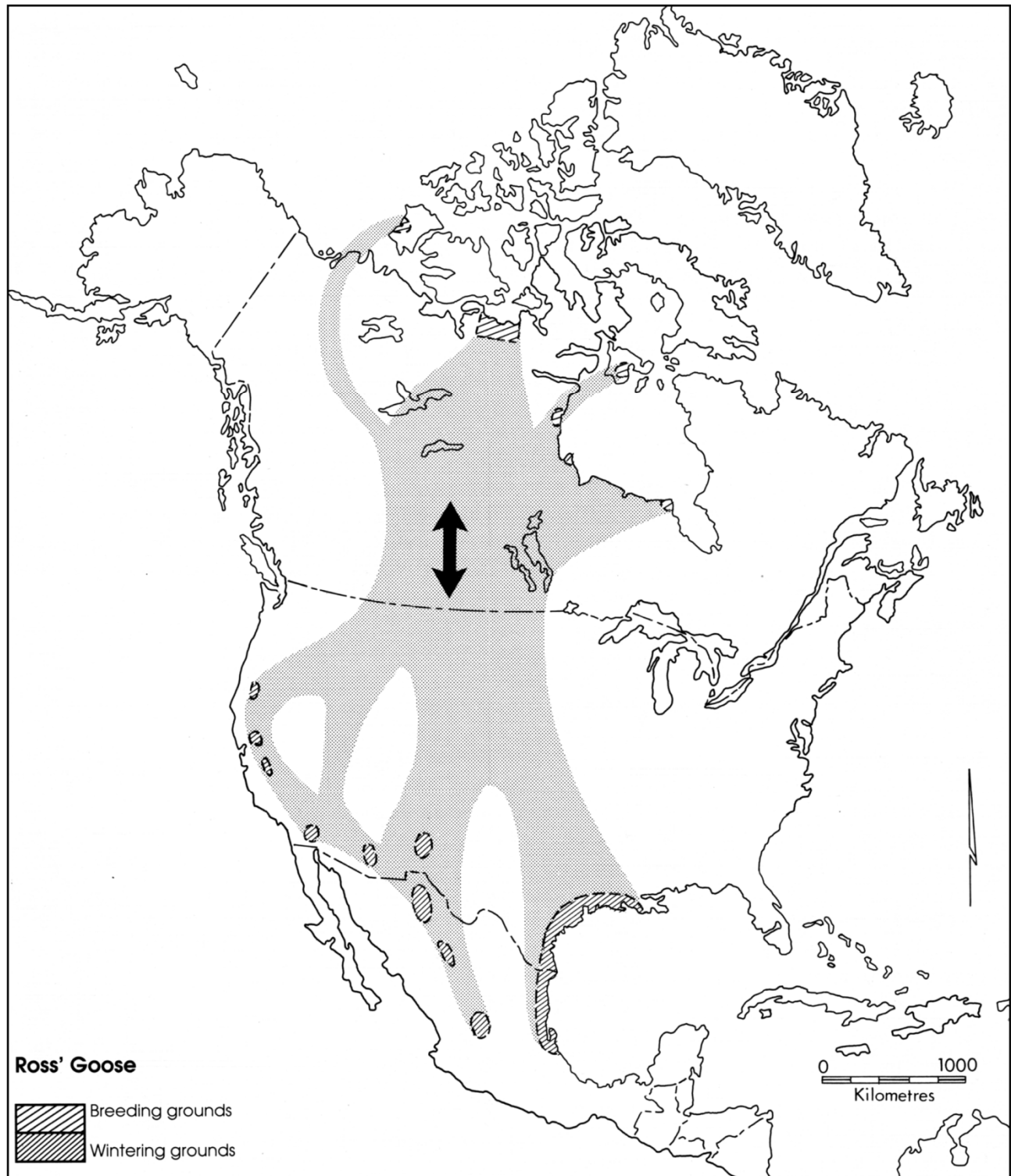


Figure 5. Ross' Goose distributions.



Structure and Function of the Arctic Goose Joint Venture

To address the major issues involving Arctic geese requires improved monitoring of populations, directed research and better communication among existing administrative bodies. Toward those ends, the Arctic Goose Joint Venture will provide three major functions: (1) identify information needs and assign priorities from a continental perspective; (2) promote and encourage funding of and participation in priority projects; and (3) provide a communication mechanism to facilitate timely dissemination of information. These functions will each be provided through a Management Board, a Technical Committee, and a Coordinating Office, respectively (Figure 6).

Management Board

The **Management Board** will consist of 16 senior personnel from public wildlife agencies in the United States and Canada. Membership will include Canadian Wildlife Service (2 members), U.S. Fish and Wildlife Service (2 members), Western Canada Waterfowl Advisory Committee (2), Eastern Canada Waterfowl Advisory Committee (2), Pacific Flyway Council (1), Central Flyway Council (1), Mississippi Flyway Council (1), Atlantic Flyway Council (1), Ducks Unlimited Canada (1), Ducks Unlimited Inc. (1), Wildlife Habitat Canada (1), and the Wildlife Management Institute (1). Such membership will ensure balanced representation from all relevant administrative regions. Additional potential members may be nominated for consideration by Board members subject to approval by the full Management Board. This Board will meet at least annually to consider recommendations developed by the Technical Committee. When

possible, Arctic Goose Joint Venture meetings should be planned to coincide with other events to reduce travel costs. The Management Board will actively seek and encourage commitment of funding to meet any financial shortfall of endorsed proposals. The Canadian Wildlife Service and the United States Fish and Wildlife Service will provide co-chairpersons, with any meeting chaired by the host country.

Technical Committee

The **Technical Committee** will consist of scientific representatives from corresponding agencies represented on the Management Board (except for Wildlife Habitat Canada and the Wildlife Management Institute). If necessary, additional members will be added. Where needed, the Technical Committee will form working groups that will include other interested cooperators. The Technical Committee will identify information needs, evaluate research proposals and recommend specific monitoring and research activities on a priority basis, and recommend actions to the Management Board. The prospectus and action plans generated by the Arctic Goose Joint Venture Technical Committee will be comprehensive documents reviewed and updated on a continuing basis. The co-chairpersonship of the Technical Committee will have one representative from Canada and the United States.

Coordination Office

A **Coordination Office** will provide a vehicle for communication among external research interests, the Technical Committee and the Management Board. It will facilitate administration of the Arctic Goose Joint Venture. The Coordinator will produce an annual report of Arctic Goose Joint Venture activities. The Canadian Wildlife Service will provide a Coordinator in its Edmonton Office.

In summary, the functions of the Arctic Goose Joint Venture do not include actively conducting research and monitoring, replacing existing management bodies, or funding projects directly. Organizations representing various user groups will be encouraged to provide input to the Arctic Goose Joint Venture.



Figure 6. . Administrative Structure of the Arctic Goose Joint Venture and Committee Membership

Arctic Goose Joint Venture Management Board

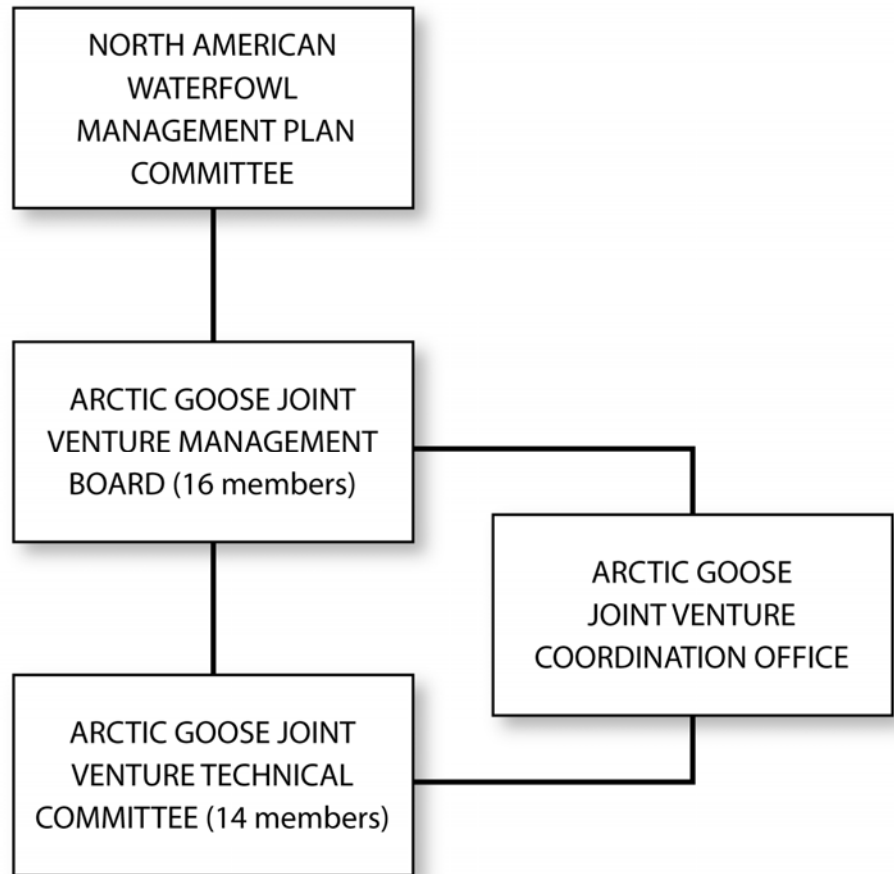
Canadian Wildlife Service (2)
 Western Canada Waterfowl
 Advisory Committee (2)
 Eastern Canada Waterfowl
 Advisory Committee (2)
 United States Fish & Wildlife
 Service (2)
 Pacific Flyway Council (1)
 Central Flyway Council (1)
 Mississippi Flyway Council (1)
 Atlantic Flyway Council (1)
 Ducks Unlimited Canada (1)
 Ducks Unlimited Inc. (1)
 Wildlife Habitat Canada (1)
 Wildlife Management Institute (1)

Arctic Goose Joint Venture Technical Committee

Representation same as Management
 Board except for Wildlife Habitat
 Canada and The Wildlife Manage-
 ment Institute

Arctic Goose Joint Venture Coordination Office

Canadian Wildlife Service,
 Western and Northern Region,
 2nd Floor, Twin Atria Building,
 4999 98 Avenue Edmonton, Alberta
 T6B 2X3 Canada



Funding

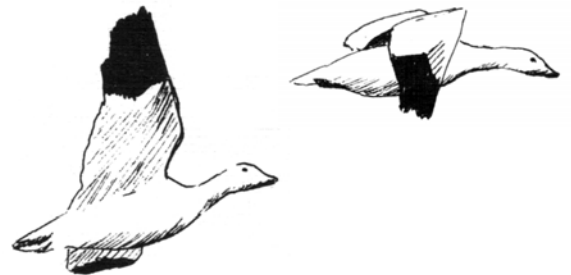
Funding for Arctic Goose Joint Venture activities will be shared by Canadian and American agencies with an interest in Arctic-nesting geese. The Management Board will encourage the financial support of high-priority research and monitoring projects (as identified through approved action plans developed by the Technical Committee) by various federal, state, provincial, territorial and private organizations. Enhanced cooperation and coordination will lead to more effective use of funds. Action plans, generally covering 5-year planning horizons will be prepared periodically which identify specific research and monitoring projects, with priorities and costs associated with each.

Unsolicited project proposals are to be sent to:

Arctic Goose Joint Venture
Coordination Office
Canadian Wildlife Service
2nd Floor, Twin Atria Building
4999 98 Avenue
Edmonton, Alberta
T6B 2X3

Proposals will be delivered by the Coordinator to the Technical Committee who will review, accept or reject, and recommend a priority to the proposal if accepted. Acceptable proposals will then be referred to the Management Board who, after further review and final acceptance would then endorse them, and actively seek funding if efforts to that point had failed to find the necessary funding.

Notes



*North American Waterfowl
Management Plan*



*Plan nord-américain de
gestion de la sauvagine*