

Appendix A

Legal, Policy, and Planning Guidance

A. Legal, Policy, and Planning Guidance

A.1 Legal Guidance

The U.S. Fish & Wildlife Service (Service) manages national wildlife refuges pursuant to various legal and administrative requirements. Management of Arctic National Wildlife Refuge (Arctic Refuge, Refuge) is dictated, in large part, by the Alaska National Interest Lands Conservation Act of 1980 (ANILCA), which re-designated the Refuge and identified the purposes for which it was established. However, other laws, regulations and policies, and agreements with the State of Alaska also guide the management of Arctic Refuge. This section identifies the acts and policy guidance that are integral in the development of this Comprehensive Conservation Plan (Plan, Revised Plan). Among the most important are the National Wildlife Refuge Administration Act, as amended by the National Wildlife Refuge System Improvement Act; the Refuge Recreation Act; the Alaska Native Claims Settlement Act (ANCSA); and the Endangered Species Act. A brief description of these and other pertinent legal documents that influence management of Arctic Refuge is found in the following subsections.

A.1.1 International Treaties

Several treaties affect how the Service manages Arctic Refuge. Among these are migratory bird treaties with Canada, Mexico, Japan, and Russia and the Convention on Nature Protection and Wildlife Conservation in the Western Hemisphere. These treaties differ in emphasis and species of primary concern, but collectively provide clear mandates for identifying and protecting important habitats and ecosystems and for protecting and managing individual species.

A.1.1.1 Migratory Birds

A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Refuge and Service management of migratory birds must comply with the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) as amended. Key amendments to the act include the Migratory Bird and Game Mammal Treaty with Mexico of 1936; the Migratory Bird Treaty with Japan of 1974; and the Migratory Bird Treaty with the Soviet Union of 1978 (USSR Treaty). Migratory bird management must also comply with the Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere of 1940 (Convention).

The Convention, the Migratory Bird Treaty Act, and its amendments, provide a variety of management provisions, including:

- Unless permitted by regulations, a prohibition on “the pursuit, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird. . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird" (16 U.S.C. 703).

- A prohibition on the disturbance of nesting colonies (USSR Treaty, Article II).
- An allowance for the Secretary of the Interior to establish seasons for the taking of birds and the collection of their eggs by “indigenous inhabitants” of Alaska for their own nutritional and other essential needs (16 U.S.C. 712).
- Direction for each nation to undertake, to the maximum extent possible, measures necessary to protect and enhance migratory bird environments and to prevent and abate pollution or detrimental alteration of their habitats (USSR Treaty, Article IV).
- A requirement that each nation provide immediate notification to the other when pollution or destruction of habitats occurs or is expected (USSR Treaty, Article IV).
- A stipulation that each nation shall, to the extent possible, establish preserves, refuges, protected areas, and facilities for migratory birds and their habitats and manage them to preserve and restore natural ecosystems (Convention).
- Stipulations that special habitats outside the jurisdictional boundaries (territorial limits) may be designated in which, to the maximum extent, persons under each nation’s jurisdiction shall act in accordance with the principles of the treaty (for instance, this stipulation might require U.S. oil tankers to avoid or prevent pollution of special seabird areas on the high seas).
- An allowance that protective measures under the treaty may be applied to species and subspecies not listed in the specific convention, but which belong to one of the families containing listed species (USSR Treaty, Article VIII). All bird species that occur on Arctic Refuge, with the exception of grouse and ptarmigan, are covered by the Migratory Bird Treaty Act, as amended.



A.1.1.2 Agreement on the Conservation of Polar Bears

This is an agreement between the governments of Canada, Denmark, Norway, the former USSR, and the United States. It recognizes the responsibilities of circumpolar countries for coordinating actions to protect polar bears.

The agreement prohibits hunting, killing, and capturing polar bears except for bona fide scientific and conservation purposes, preventing serious disturbance to the management of other living resources, and by local people under traditional rights. This multilateral agreement also commits each associated country to sound conservation practices by protecting the ecosystem of polar bears with special attention to denning areas, feeding sites, and migration corridors based on best available science through coordinated research.

The agreement was signed by the United States on November 15, 1973, in Oslo, Norway, ratified on September 30, 1976, and entered into force in this country on November 1, 1976 (IUCN 2009).

A.1.1.3 International Porcupine Caribou Herd Agreement

In 1987, the U.S. and Canadian governments signed the “Agreement between the Government of the United States of America and the Government of Canada on the Conservation of the Porcupine Caribou Herd.” This bilateral agreement recognizes that the Porcupine caribou herd regularly migrates across the international boundary between Canada and the United States and that the herd should be conserved according to ecological principles emphasizing the importance of conserving habitat, including calving, post-calving, migration, wintering, and insect relief habitat.

The main objectives of the agreement are to conserve the herd and its habitat through international cooperation and coordination so that the risk of irreversible damage or long-term adverse effects as a result of use of caribou or their habitat is minimized, and to ensure opportunities for customary and traditional uses of the Porcupine caribou herd.

The agreement set up the International Porcupine Caribou Board, composed of delegated representatives from both countries that give advice and recommendations to the countries on the conservation and management of the herd. The IPCB, in turn, set up the Porcupine Caribou Technical Committee, composed of biologists from each country to advise them in their recommendations. Refuge staff participate on the PCTC.

This agreement was signed by the United States on July 17, 1987, in Ottawa, Canada, and entered into force in this country upon signing (United Nations 2004).

A.1.1.4 Yukon River Salmon Agreement

On January 28, 1985, the United States and Canada signed the Pacific Salmon Treaty to prevent over-fishing, provide for optimum production, and ensure that both countries receive benefits equal to the production of salmon originating in their waters. The treaty was revised in 1999 to renew the parties’ long-term fishing agreements, and in 2002, the treaty was amended to include the Yukon River Salmon Agreement.

Salmon that originate in the Canadian portion of the Yukon River drainage are a shared resource between the Yukon Territory (Canada) and Alaska (U.S.). Yukon River Chinook and chum salmon have some of the longest migratory journeys in the world and are prized for

their size and oil content. The people along the river and its tributaries depend on this resource for food, as well as for social, ceremonial, recreational, and economic purposes. Due to sharp declines of Canadian-origin Yukon River salmon populations, the two countries negotiated a cooperative management arrangement for these resources. The agreement outlines steps to ensure the sustainability of Canadian-origin, Yukon River salmon stocks and fisheries through conservation, management practices, stock rebuilding, harvest sharing, research, and habitat protection. In Arctic Refuge, salmon that occur in and/or migrate through in the Porcupine River are subject to the terms of the agreement. Other Yukon River tributaries in Arctic Refuge with salmon include the Coleen and Sheenjek Rivers.

The agreement is implemented through the Yukon River Panel, an international body of 12 members, equal parts American and Canadian, that advise managers of Yukon River fisheries concerning restoration, conservation, and coordinated management.

A.1.2 National Guidance

A.1.2.1 National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee (Refuge Administration Act)

This act serves as the “organic act” for the National Wildlife Refuge System (Refuge System). The act, as amended, consolidated the various categories of lands administered by the Secretary of the Interior (Secretary) through the Service into a single, national system. The act establishes a unifying mission for the Refuge System, a process for determining compatible uses of refuges, and a requirement for preparing comprehensive conservation plans. This act states, first and foremost, that the mission of the Refuge System be focused singularly on wildlife conservation.

This act identifies six priority wildlife-dependent recreation uses, clarifies the Secretary’s authority to accept donations of money for land acquisition, and places restrictions on the transfer, exchange, or other disposal of lands within the Refuge System. Most importantly, this act reinforces and expands the “compatibility standard” of the Refuge Recreation Act. The Refuge Administration Act authorizes the Secretary, under such regulations as he may prescribe, to “permit the use of any area within the [Refuge] System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible with the major purposes for which such areas were established.”

A.1.2.2 Refuge Recreation Act of 1962, as amended, 16 U.S.C. 460k-4

This act requires that any recreational use of areas in the Refuge System be “compatible” with the primary purpose(s) for which the area was acquired or established. It also requires that sufficient funding be available for the development, operation, and maintenance of recreational uses that are not directly related to the area’s primary purpose(s).

A.1.2.3 Alaska Native Claims Settlement Act of 1971

This act (ANCSA) provides for “a fair and just settlement of all claims by Natives and Native groups of Alaska, based on aboriginal land claims.” The law provided for grants of land and

money and the establishment of Native corporations to maintain the economic affairs of Native organizations. In exchange for this settlement, all aboriginal titles and claims, including fishing and hunting rights, were extinguished. Section 17(d)(2)(A) provided the basis for the enactment of ANILCA. Under Section 22(g), refuge lands conveyed to village corporations remain subject to the laws and regulations governing use and development of the refuge. This section only applies to lands which were designated as refuge lands at the time ANCSA was passed. Section 17(b) of the Act provided for public easement across Native lands for access to Federal lands.

A.1.2.4 Alaska National Interest Lands Conservation Act of 1980, as amended, 16 U.S.C. 140hh-3233, 43 U.S.C. 1602-1784, Public Law 96-487

In addition to amending ANCSA, the Alaska Statehood Act, the Wild and Scenic Rivers Act, and modifying portions of the Wilderness Act as it applies to lands in Alaska, this act (ANILCA) expanded the Federal conservation unit system throughout the State by adding or expanding national parks, refuges, forests, designated wilderness areas, and designated wild and scenic rivers. ANILCA identifies the purposes of the Refuge, defines provisions for planning and management, and authorizes studies and programs related to wildlife and wildland resources, subsistence opportunities, and recreational and economic uses (such as oil and gas exploration and development, access, and transportation and utility systems). Section 1317 of ANILCA requires that all refuge lands that were not designated as wilderness to be reviewed as to their suitability for wilderness designation.

Title VIII of ANILCA authorizes the State of Alaska to regulate subsistence uses on Federal public lands if several requirements are met. The State managed statewide subsistence harvests until late 1989, when the Alaska Supreme Court ruled that the rural residency preference required by Federal law violated the Alaska Constitution. Despite repeated efforts, the State has not amended its constitution to bring its regulatory framework back into compliance with ANILCA.

The Federal government began managing subsistence hunting, trapping, and fishing on Alaska's Federal public lands in July of 1990. For the purposes of Federal subsistence management, public lands include lands managed by the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, and the U.S. Forest Service; non-navigable waters on these lands; and some navigable and marine waters. On October 1, 1999, management authority of the Federal Subsistence Board was extended to include navigable water within and adjacent to exterior boundaries of Federal conservation units, in which the United States has an interest by virtue of the reserved water rights doctrine.

The board establishes regulations for the harvest of fish and wildlife for subsistence purposes by qualified rural residents on Federal public lands in Alaska. The Federal process involves substantial public input. Individuals and organizations submit proposals for regulations to the board that are reviewed by the Federal Subsistence Regional Advisory Councils (e.g., the North Slope Subsistence Regional Advisory Council, the Eastern Interior Alaska Subsistence Regional Advisory Council). The regional councils, which are composed of local citizens, make recommendations on proposals to the board. Federal subsistence staff also advise the board on regulatory proposals, providing data and analyses from local Federal managers and Alaska Department of Fish and Game (ADFG) biologists.

The State's recreational, commercial, personal use, and subsistence regulations continue to apply on all Federal lands unless superseded by Federal subsistence regulations. However, the board may establish Federal regulations to provide for use only by eligible rural residents in order to protect the ANILCA Title VIII preference for local rural users or to protect a wildlife population or fishery.

A.1.2.5 Wilderness Act of 1964

This act establishes the National Wilderness Preservation System, provides the framework for designation by Congress of new units to the system, and prescribes policy for management of designated wilderness areas. Section 702(3) designated approximately eight million acres of wilderness in Arctic Refuge, and Section 707 says that except as otherwise expressly provided for in ANILCA, wilderness areas designated under ANILCA shall be administered in accordance with the Wilderness Act. Section 1317 of ANILCA requires the "review, as to their suitability or nonsuitability for preservation as wilderness, all land within... units of the National Wildlife Refuge System in Alaska not designated as wilderness by this Act..."

A.1.2.6 The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) Public Law 90-542, approved October 2, 1968, (82 Stat. 906)

This act establishes a National Wild and Scenic Rivers System (NWSRS) and prescribes the methods and standards through which additional rivers may be identified and added to the system. Rivers in the NWSRS have outstanding, scenic, recreational, geologic, fish and wildlife, historic, cultural, or other values, and are managed in a way that protects these values for present and future generations. Rivers are classified as wild, scenic, or recreational, and hunting and fishing are permitted in components of the system under applicable Federal and State laws. Section 5(d)(1) requires that in all planning by Federal agencies for the use and development of water and related land resources, consideration be given to potential wild, scenic, and recreation rivers. This Revised Plan considers potential wild, scenic, and recreational rivers within Arctic Refuge, and ANILCA provides direction for management of designated rivers. Under ANILCA, portions of the Sheenjek, Ivishak, and Wind Rivers in Arctic Refuge were designated as wild rivers and included in the NWSRS.



A.1.2.7 Marine Mammal Protection Act of 1972, as amended; (16 U.S.C. 1361-1421h; 50 CFR 13, 18, 216, and 229 as amended)

This act established a Federal responsibility for conservation of marine mammals. Management of walrus and polar bears is vested in the Department of the Interior. The act established a moratorium on the taking and importation of marine mammals and products made from them. Alaska Natives who take marine mammals for subsistence purposes, however, were exempt from the moratorium. This act has a direct effect on Refuge management decisions within our responsibility, such as managing visitor use effects upon individual animals. For example, for polar bears, Refuge responsibilities to satisfy the intent of both the Marine Mammal Protection Act and the Endangered Species Act are outlined in the Service's Polar Bear Interaction Guidelines (Service 2010a) and Polar Bear Viewing Guidelines (Service 2010b).

A.1.2.8 Endangered Species Act of 1973, as amended; Public Law 93-205; (16 U.S.C. 1531-1544, et seq., as amended)

This act provides for the conservation of threatened and endangered species of fish, wildlife, and plants by Federal action and by encouraging the establishment of State programs. Among its provisions, the act authorizes the determination and listing of endangered and threatened species and habitat critical to those species; prohibits authorized taking, possession, sale, transport, etc., of endangered species; provides authority to acquire land for the conservation of listed species with land and water conservation funds; and authorizes the assessment of civil and criminal penalties for violating the act or implementing regulations.

Section 7 of the act requires Federal agencies to ensure that any action authorized, funded, or carried out by them does not jeopardize the continued existence of listed species or modify their critical habitat. Currently threatened or endangered species known to occur on Arctic Refuge include the polar bear, bowhead whale, Steller's eider, and spectacled eider. See Appendix B for Section 7 consultations.

A.1.2.9 Magnuson-Stevens Fishery Conservation and Management Act of 1996, Public Law 94-265, as amended by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act, Public Law 109-479 (16 U.S.C. 1801-1884)

The Magnuson-Stevens Fishery Conservation and Management Act is the primary law governing marine fisheries management in Federal waters of the United States. Among other things, it aids development of the domestic fishing industry by phasing out foreign fishing, managing the fisheries, and promoting conservation. The act was originally enacted as the Fishery Conservation and Management Act of 1976 and has been amended multiple times, most notably in 1996 and 2007. The 1996 amendments focused on rebuilding over-fished fisheries, protecting essential fish habitat, and reducing bycatch. The 2007 amendments mandate the use of annual catch limits and accountability measures to end over-fishing provides for widespread market-based fishery management through limited access privilege programs, and calls for increased international cooperation.

The Magnuson-Stevens Fishery Conservation and Management Act requires all Federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect essential fish habitat. See Appendix B for essential fish habitat consultation.

A.1.2.10 National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321-4347, and the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA, 40 CFR 1500-1508

The National Environmental Policy Act (NEPA) is the basic national charter for protection of the environment. The procedural provisions in Council on Environmental Quality (CEQ) regulations require Federal agencies to integrate the NEPA process with other planning at the earliest possible time whenever taking a major Federal action that may significantly affect the human environment so as to provide a systematic interdisciplinary approach. NEPA also requires Federal agencies to identify and analyze the environmental effects of their actions; describe appropriate alternatives to the proposal; involve affected State and Federal agencies, tribal governments, and the affected public in the planning and decision-making process; and fully integrate all proposals that might have an impact on the environment with the provisions of NEPA (40 CFR 1501.2). Implementation of any one of the alternatives in this Plan for managing Arctic Refuge is such an action. Therefore, this planning process is subject to NEPA requirements.

A.1.2.11 Federal Water Pollution Control Act of 1972, as amended by The Clean Water Act of 1977, Public Law 95-217; (33 U.S.C. 1251-1387, et seq., as amended; 33 CFR 320 ff; 40 CFR 15, 100-400, 220-233, 400-471)

This act regulates the discharge of pollutants into waters of the United States. The act protects fish and wildlife, establishes operation permits for all major sources of water pollution, and limits the discharge of pollutants or toxins into water. The act makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under the Clean Water Act.

A.1.2.12 Coastal Zone Management Act of 1972

The Federal Coastal Zone Management Act was passed in 1972 in recognition of the increasing and conflicting uses that were causing irreparable harm to biological and physical systems associated with coastal areas. The act directs states to complete comprehensive coastal management programs or plans. Once a state's plan receives Federal approval, this law mandates that Federal actions, such as Arctic Refuge's Revised Plan, be consistent with that State's coastal management program.

A.1.2.13 Antiquities Act (16 U.S.C. 431-433); Archaeological Resources Protection Act of 1979, Public Law 96-95; (16 U.S.C. 470as, et seq., as amended; 43 CFR 50-58); and the National Historic Preservation Act of 1966, (Public Law 89-665; 16 U.S.C. 470 et seq., as amended)

These laws make reference to cultural resources or govern the management of cultural resources on Federal lands. The various historic preservation laws, in general, do the following:

- Vest ownership of historic and prehistoric properties and of materials collected from such sites with the State and Federal government.
- Protect archeological and historic sites from unauthorized disturbance and prescribe penalties for individuals who damage (or collect from) such sites.
- Provide for issuing permits to qualified individuals and institutions to conduct scientific research.
- Mandate the inventory and evaluation of all sites on government owned and managed lands. The inventory is the responsibility of the individual Federal agency involved.
- Require that all projects with State or Federal involvement be conducted in such a way as to protect any significant cultural resources that may be present. This includes, but is not limited to, the performance of archeological surveys, site evaluations, and, if necessary, mitigation of adverse impacts to such resources.

A.2 Policy Guidance

Programmatic guidance and policy documents provide additional direction for the management of national wildlife refuges throughout the Refuge System. While it is not practical to provide information about all of these documents in this Plan, they are critical to management of the Refuge. This section summarizes key policies.

A.2.1 Wildlife Dependent Recreation Policy 605 FW 1-7

The National Wildlife Refuge System Improvement Act of 1997 states that "compatible wildlife-dependent recreation is a legitimate and appropriate general public use of the [Refuge] System." The overarching goal of the Service's wildlife-dependent recreation policy is to enhance wildlife-dependent recreation opportunities and access to quality visitor experiences on refuges while managing refuges to conserve fish, wildlife, plants, and their habitats.

A.2.2 Biological Integrity, Diversity, and Environmental Health 601 FW 3

The biological integrity, diversity, and environmental health policy is an additional directive for refuge managers to follow while achieving refuge purpose(s) and the Refuge System mission. It provides for the consideration and protection of the broad spectrum of fish, wildlife, and habitat resources found on refuges and associated ecosystems. It also provides refuge managers with an evaluation process to analyze their refuge and recommend the best management direction to prevent further degradation of environmental conditions and, where appropriate and in concert with refuge purposes and System mission, restore lost or severely degraded components.

A.2.3 Appropriate Refuge Uses 603 FW 1

The National Wildlife Refuge System Improvement Act of 1997 identified six priority wildlife-dependent recreation uses: hunting, fishing, wildlife observation and photography, environmental education, and interpretation. With the exception of these six uses, and with the exception of the taking of fish and wildlife under State regulations, the refuge manager follows the Service's Appropriate Refuge Uses policy to decide if a new or existing use is an appropriate refuge use. If an existing use is not appropriate, the refuge manager will eliminate or modify the use. If a new use is not appropriate, the refuge manager will deny the use.

A.2.4 Compatibility 603 FW 2

A compatible use is a proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the national wildlife refuge. The refuge manager will not initiate or permit a new use of a national wildlife refuge or expand, renew, or extend an existing use of a refuge unless the refuge manager has determined the use is a compatible use.

A.2.5 Wilderness Stewardship Policy 610 FW 1-5

The Service's Wilderness Stewardship Policy provides an overview and foundation for implementing the Wilderness Act and the National Wildlife Refuge System Administration Act of 1966, as amended. The policy covers land management planning for Congressionally designated wilderness and addresses how to administer wilderness in Alaska in light of ANILCA.

A.2.6 Refuge Planning 602 FW 1

The Refuge Planning Policy provides guidance for refuge planning, including the comprehensive conservation planning process and step-down management planning.

A.2.7 Comprehensive Conservation Planning 602 FW 3

Comprehensive conservation planning is a systematic decision making process founded on principles of sound fish and wildlife management and available science, and consistent with legal mandates and other policies, guidelines, and planning documents. The Service's planning policy provides guidance, step-by-step direction, and establishes minimum requirements for all comprehensive conservation plans.

A.3 Programmatic Guidance

Programmatic guidance developed by the Alaska Region, the Service, or the Department of the Interior provides additional direction for the management of the Refuge System. Much of the management direction described in Chapter 2, and throughout this Plan, is influenced by general guidance from the programs and policies described in the next sections.

Several of these documents provide guidance that directs the Service to use an ecosystem approach, in which the integrity of the entire ecosystem and its processes are considered when managing the refuges. This broad-scale approach requires close collaboration with others in the form of effective landscape-level partnerships and coordinated efforts to address climate change. We provide a brief description of ecosystem management in the context of partnering and summarize the influential programs, strategies, and national and regional management plans that were reviewed during the development of this Plan.

A.3.1 Ecosystem Management and Conservation Partnerships

An ecosystem approach to refuge management was initiated by the Refuge System Improvement Act. The Service recognizes the complex and interconnected relationships that are present within ecosystems and across landscapes and that ecosystems may not be confined within the boundaries of a refuge, a state, or even the nation. The Service also recognizes that people and their socio-cultural and economic systems are important components of ecosystems. Therefore, working with people in conservation partnerships and other collaborative efforts is necessary in applying ecosystem management.

Creating and maintaining conservation partnerships across entire landscapes is crucial for reaching the goal of ecosystem management because fish, wildlife, and their habitats are not constrained by the administrative boundaries of specific protected areas. Without physical barriers, and with available habitat, fish and wildlife will freely move through ownerships and management jurisdictions. In the face of accelerating climate change and other environmental stressors, some species may shift their ranges into different ecosystems and political or administrative jurisdictions.



Conservation of biological diversity on refuge lands and outside refuge boundaries is an ambitious but fundamental goal of the Service's ecosystem approach to management. Through its refuge-specific, regional, national, and international programs, the Service contributes to the conservation of biological diversity by directly protecting habitats and managing for the recovery of fish and wildlife populations that are threatened or endangered. The Service also restores habitats, conducts environmental clean ups, monitors ecological integrity, and provides technical assistance to private landowners. The Service has learned that it cannot work alone to accomplish these efforts because conservation of biological diversity requires coordination among many public agencies, private organizations, landowners, and citizens across different landscapes, societies, and cultures.

A.3.2 Landscape Conservation Cooperatives

Two decades of ecosystem management, combined with the realities of accelerating climate change, have made it clear to the Service that conservation must be coordinated on a landscape-level basis. In September 2009, the Department of the Interior issued Secretarial Order No. 3289 (amended February 2010) to address the impacts of climate change on the nation's waters, lands, and other natural and cultural resources. Section 3(c) of the order states: "Interior bureaus and agencies, guided by the Energy and Climate Change Council, will work to stimulate the development of a network of collaborative 'Landscape Conservation Cooperatives'. These cooperatives ... will work interactively with the relevant DOI Climate Science Center(s) and help coordinate adaptation efforts [in response to climate change] in the region."

A Landscape Conservation Cooperative (LCC) is an applied conservation partnership that provides scientific and technical support for conservation at a landscape scale. The fundamental role of the LCC is to help address conservation science needs within a broad geographic area such as the entire range of a species, population, or groups of species of fish or wildlife. Although the LCC concept was initially motivated by climate change, the role of these partnerships is to help improve the collective ability of the conservation community to address a wide variety of environmental stressors and conservation challenges within entire landscapes, including management response to climate change.

Implementing the LCC concept includes bringing partners together to identify what they can collectively agree on in terms of conservation interests and science needs. Then, the partners will work toward collectively addressing those interests and needs. The intent of LCC partnerships is to accomplish a conservation mission that no single agency or organization could accomplish alone.

A.3.3 National Management Plans

Nature is not constrained by the administrative boundaries that are used to determine ownership or management of specific areas of land. Without physical barriers, and with available habitat, fish and wildlife will freely roam through lands and waters regardless of ownership or management. To ensure the conservation of the many species that migrate over political and administrative lines, there are several national efforts designed to monitor and protect these species. These plans were reviewed during the revision of the Arctic Refuge Plan to ensure that the revised management direction is consistent with these national conservation plans.

A.3.3.1 Strategic Habitat Conservation

The Strategic Habitat Conservation report (U.S. Geological Survey and Service 2006) and technical implementation handbook (Service 2008) combine to create a framework rooted in the principles of adaptive natural resource management. Adaptive management incorporates new information learned from research and monitoring into future management actions. Strategic Habitat Conservation provides a guiding tool for setting and achieving conservation objectives at multiple scales based on the best available information, data, and ecological models.

Implementation of Strategic Habitat Conservation involves the integration of four elements that occur in an adaptive management feedback loop. These are biological planning, conservation design, delivery of conservation actions, and monitoring and research. Information learned from implementing Strategic Habitat Conservation is used to help a refuge determine what contribution(s) it can make for meeting conservation priorities at the landscape level. Project leaders and planning teams consider Strategic Habitat Conservation together with other Federal policies and guidance when developing goals and objectives for refuge comprehensive conservation plans.

A.3.3.2 Strategic Plan for Responding to Accelerating Climate Change

In 2010, the Service completed a strategic plan for responding to the effects of accelerating climate (Service 2010c). The primary purpose of the Service's strategic plan is to provide a vision and direction for the agency by defining its role within the context of the larger conservation community as both the Service and the larger community respond to global climate change on a landscape-level basis. Another key component of the Service's strategic plan is close coordination with the regional Climate Science Centers that are being established by the U.S. Geological Survey and other Department of the Interior agencies as they implement Secretarial Order No. 3289, as amended.

Rooted in the mission of the Service, the strategic plan outlines goals, objectives, and actions organized under three major strategies: adaptation, mitigation, and engagement. Adaptation is helping fish, wildlife, and their habitats adapt to climate change. The Service's strategic plan establishes applied science partnerships for conservation (i.e., LCCs) through the adaptation section of the document. Mitigation is reducing levels of greenhouse gasses in the earth's atmosphere. Engagement is reaching out to and communicating with existing partners and others to join forces with them in seeking solutions to the challenges and threats to fish and wildlife conservation posed by climate change. Project leaders and planning teams consider these strategies, together with other Federal policies and guidance, when developing goals and objectives for refuge comprehensive conservation plans.

A.3.3.3 Centennial Legacy

Between 2000 and 2003, in preparation for the 100th anniversary of the Refuge System, the Service planned numerous events and developed a number of publications to mark the centennial. The planning was in response to the National Wildlife Refuge Centennial Act of November 1, 2000. The celebration was intended to serve as a vision to provide resources for the Refuge System over the next 100 years. Materials developed for the centennial and

beyond prioritized and addressed the Refuge System's most pressing needs in three main categories: essential staff, mission-critical projects, and major maintenance.

A.3.3.4 North American Waterfowl Management Plan

The North American Waterfowl Management Plan is dedicated to the recovery of waterfowl populations through the restoration and management of wetland ecosystems (NAWMP Committee 2004). The North American Waterfowl Management Plan seeks to conserve biological diversity in the western hemisphere, integrate wildlife conservation with sustainable economic development, and promote partnerships of public and private agencies, organizations, and individuals for conservation. Canada, the United States, and Mexico are committed to this ongoing continental effort and have formed an international partnership to identify priority waterfowl habitats and to establish goals and objectives for the management of waterfowl populations and habitats. Arctic Refuge provides important breeding and migration habitat for a variety of waterfowl from throughout North America.

A.3.3.5 Partners in Flight Bird Conservation Plans

Partners in Flight is a cooperative effort among Federal, State, and local government agencies; philanthropic foundations; professional organizations; conservation groups; industry; universities; and private individuals. Partners in Flight was created in 1990 in response to growing concerns about declines in the populations of many landbird species and to emphasize the conservation of birds not covered by existing conservation initiatives. Bird conservation plans are developed in each region to identify species and habitats most in need of conservation, to establish objectives and strategies to meet those needs, and to implement plans and monitor progress on them.

A.3.3.6 United States Shorebird Conservation Plan

The U.S. Shorebird Conservation Plan (Brown et al. 2001) seeks to stabilize populations of all shorebirds that are in decline because of factors affecting habitat in the United States. At a regional level, the plan's goal is to ensure that shorebird habitat is available in adequate quantity and quality to support shorebird populations in each region. Ultimately, the goal of the Shorebird Conservation Plan is to restore and maintain shorebird populations throughout the Western Hemisphere through an international partnership. Arctic Refuge provides important breeding and staging habitats for a variety of shorebirds.

A.3.3.7 North American Waterbird Conservation Plan

The North American Waterbird Conservation Plan (Kushlan et al. 2002) is the product of an independent partnership of individuals and institutions having interest and responsibility for conservation of waterbirds and their habitats in the Americas. The partnership, called Waterbirds of the Americas, was created to “support a vision in which the distribution, diversity, and abundance of populations and habitats of breeding, migratory, and non-breeding waterbirds are sustained or restored throughout the lands and waters of North America, Central America, and the Caribbean.” Their plan “provides a continental-scale framework for the conservation and management of 210 species of waterbirds...in 29 nations throughout North America...” Over thirty species of migratory waterbirds have been recorded on Arctic Refuge, and 18 of these species are regular breeders. Included are such diverse groups as loons, gulls, seabirds, and cranes.

A.3.4 Regional Management Plans

In addition to considering national conservation plans, this Revised Plan must consider the management of neighboring lands by reviewing regional conservation plans and other land management goals of the region. Regional plans, goals, and objectives from other programs were reviewed to understand how the Arctic Refuge can contribute to the goals for conservation within the State or local region. This list is not intended to be comprehensive, but it demonstrates some of the major regional plans that were reviewed during the development of this Plan.



A.3.4.1 Alaska Interagency Wildland Fire Management Plan

Interagency fire management plans for 13 geographic areas of the State were prepared between 1982 and 1988 to provide a coordinated and cost-effective approach to fire management on all lands in Alaska. In 1998, an amendment was produced called the Alaska Interagency Wildland Fire Management Plan (AIWFMP). This amendment consolidated the original 13 plans into a single document and provided land managers, land owners, and fire suppression organizations a single reference for interagency fire management operational information. The amended plan also incorporated operational changes that occurred since the inception of the statewide fire management planning effort. In 2010, the AIWFMP was updated again in response to public requests for more information regarding Alaskan fire management practices (Bureau of Land Management 2010). The 2010 revision clarifies interagency guidelines, policies, and operational direction for responses to wildland fires, and brings terminology up to date. The purpose of the plan is to be the interagency reference for wildland fire operational information and to promote a cooperative, consistent, cost-effective, interagency approach to wildland fire management in Alaska. While the plan does not supersede individual agency policies and requirements, it is intended that unit-specific fire management plans (such as the Arctic Refuge Fire Management Plan) be used in conjunction with the interagency plan.

A.3.4.2 Landbird Conservation Plan for Alaska Biogeographic Regions

Continental and local declines in numerous bird populations have lead to concern for the future of migratory and resident bird species. The Landbird Conservation Plan for Alaska Biogeographic Regions (Boreal Partners in Flight Working Group 1999) was developed through the Partners in Flight national initiative in recognition of the need for a coordinated, cooperative conservation initiative focusing on nongame landbirds. It provides conservation priorities and objectives for landbirds in each region of Alaska. Arctic Refuge contributes to this plan through a variety of inventory and monitoring studies of landbirds within the Refuge.

A.3.4.3 Alaska Shorebird Conservation Plan

Over 70 species of shorebirds have been recorded in Alaska, representing one-third of the world's shorebird species (Alaska Shorebird Group 2008). Shorebirds worldwide have suffered dramatic population declines in the past decade. The Alaska Shorebird Conservation Plan (Alaska Plan) is one of 11 regional plans associated with the U.S. Shorebird Conservation Plan. The Alaska Plan identifies shorebird species of concern in Alaska and provides goals, objectives, and conservation priorities for shorebird conservation throughout the State. The Alaska Plan also provides a new framework for building a conservation strategy in a landscape context. The four major components to the conservation strategy are research, population monitoring, habitat management, and education and outreach. The overall goal of the plan is to keep shorebirds and their habitats well distributed not only across the Alaska landscape, but also throughout regions used by these populations during other phases of their annual cycle. Additionally, the "Program for Regional and International Shorebird Monitoring" (PRISM) Boreal Committee is presently investigating techniques for monitoring shorebirds in the boreal forest. Arctic Refuge supports several species that are showing declines throughout the North American continent, including American golden plover, buff-breasted sandpiper,

solitary sandpiper, dunlin, and upland sandpiper. The Boreal PRISM program is presently in its development phase and has yet to be implemented in Alaska.

A.3.4.4 Utility Corridor Resource Management Plan

The Utility Corridor Resource Management Plan is a long range comprehensive management plan that directs Bureau of Land Management (BLM) management of the approximately 6.1 million acres of BLM lands within the corridor through which the Dalton Highway and Trans-Alaska Pipeline pass. The Utility Corridor, which was established by Public Land Order (PLO) 5150 on December 30, 1971, is an essential component of the national oil and gas transportation system (BLM 1989). The plan identifies special management areas and development nodes in the utility corridor, and describes provisions for appropriate uses and protections for valuable resources. Included in the plan is the Galbraith Lake Area of Critical Environmental Concern that is directly adjacent to the western boundary of Arctic Refuge. The 1989 plan, which provided management guidance for 20 years, is scheduled to be revised by BLM; however, a timeline for the revision has not yet been set.

A.3.4.5 Dalton Highway Recreation Management Plan

The Dalton Highway Recreation Management Area includes those public lands adjacent to the Dalton Highway from the Yukon River, north to a point near the confluence of the Sagavanirktok and Ivishak Rivers, approximately 60 miles south of Prudhoe Bay, Alaska. The 1989 Utility Corridor Resource Management Plan (see Section A.3.4.4) established the boundaries of the plan area, which includes lands adjacent to the western boundary of Arctic Refuge.

The Bureau of Land Management completed the Dalton Highway Recreation Area Management Plan (1991) because of increasing public interest and use of the Dalton Highway after the highway was opened to the public in 1981. The plan divides the recreation management area into zones according to the recreation opportunity spectrum, and it establishes recreation management objectives for the zones within the utility corridor. Issues addressed in the plan include information and interpretive services, facility development, resource manipulation and rehabilitation, and Dalton Highway Recreation Management Area administration.

A.3.4.6 Dalton Highway Scenic Byway Corridor Partnership Plan

The Dalton Highway Scenic Byway Corridor Partnership Plan (ADNR) 2010) provides a comprehensive evaluation of the intrinsic qualities of the byway and intends to guide management, protection, and enhancement of those qualities over time. The plan is directed towards discussing the primary concerns and challenges associated with living and operating in the corridor. The plan also acknowledges issues and concerns associated with managing the byway; provides a descriptive overview of the route; summarizes road and transportation characteristics, such as traffic volumes, accident statistics, and signage; assesses current and future visitation; and provides a framework that will help local byway organizations succeed in reaching their stated vision, goals, and objectives. Arctic Refuge staff participated on the advisory committee for the Byway Corridor Partnership Plan.

A.3.4.7 Strategy for Conserving Alaska's Diverse Wildlife and Fish Resources

The Alaska Department of Fish and Game (ADFG) published a strategic plan for Alaska fish and wildlife in 2006 (ADFG 2006). It serves as the State's comprehensive wildlife conservation strategy and focuses on nongame species. The goal of the strategy is to conserve the diversity of Alaska's wildlife and fish resources, focusing on species with the largest need for conservation interventions. The strategy was designed with the intent to integrate new conservation actions and strategies with existing State wildlife management and research programs to build upon earlier successes. The strategy outlines the conservation needs of hundreds of species and many species assemblages, highlighting a growing need in the State for initial inventorying studies for lesser known species. The strategy also provides detailed natural history information and specific and measurable objectives for species conservation in Alaska.

A.3.4.8 Alaska Natural Heritage Program

This program was established in 1989 by The Nature Conservancy; in 1993, it became part of the University of Alaska Anchorage, residing in the College of Arts and Sciences. The Alaska Natural Heritage Program is Alaska's clearinghouse for information on plant and animal species of conservation concern, natural communities of conservation concern, and invasive non-native plant species. The information is collected, validated, and distributed; and assistance is provided to natural resource managers and others in applying it effectively. The program has developed a biological conservation database that is linked to similar programs in all 50 states, most Canadian provinces, and many Latin American countries.



Photo by Dave Prestipino

A.4 References cited

- Alaska Department of Fish and Game [ADFG]. 2006. Our wealth maintained: A strategy for conserving Alaska's diverse wildlife and fish resources. Alaska Department of Fish and Game, Juneau, Alaska, USA.
- Alaska Department of Natural Resources [ADNR]. 2010. Dalton Highway scenic byway corridor partnership plan. Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Interpretation and Education Unit, Anchorage, Alaska, USA.
- Alaska Shorebird Working Group. 2008. Alaska shorebird conservation plan. Version II. Alaska Shorebird Group, Anchorage, Alaska, USA.
- Bureau of Land Management [BLM]. 1989. Proposed resource management plan and final environmental impact statement for the utility corridor planning area, Arctic Area, Alaska. BLM-AK-PT90-002-1610-060, Arctic District Office, Fairbanks, Alaska, USA.
- Bureau of Land Management [BLM]. 1991. Recreation area management plan: Dalton Highway. BLM-AK-PT92-003A-1610-060, Arctic District Office, Fairbanks, Alaska, USA.
- Bureau of Land Management [BLM]. 2010. Alaska interagency wildland fire management plan. Bureau of Land Management, Alaska Fire Service, Fort Wainwright, Alaska, USA.
- Boreal Partners in Flight Working Group. 1999. Landbird conservation plan for Alaska biogeographic regions. Version I. U.S. Fish and Wildlife Service, Anchorage, Alaska, USA.
- Brown, S., C. Hickey, B. Harrington, and R. Gill, editors. 2001. The U.S. Shorebird Conservation Plan, Second edition. Manomet Center for Conservation Sciences, Manomet, Massachusetts, USA.
- International Union for the Conservation of Nature, Species Survival Commission, Polar Bear Specialist Group [IUCN]. 2009. Agreement on the conservation of polar bears. <<http://pbsg.npolar.no/en/agreements/agreement1973.html>>. Accessed 1 February 2011.
- Kushlan, J. A., M. J. Steinkamp, K. C. Parsons, J. Capp, M. Acosta Cruz, M. Coulter, I. Davidson, L. Dickson, N. Edelson, R. Elliot, R. M. Erwin, S. Hatch, S. Kress, R. Milko, S. Miller, K. Mills, R. Paul, R. Phillips, J. E. Saliva, B. Sydeman, J. Trapp, J. Wheeler, and K. Wohl. 2002. Waterbird Conservation for the Americas: The North American Waterbird Conservation Plan. Version I. Waterbird Conservation for the Americas, Washington, D.C., USA.
- North American Waterfowl Management Plan, Plan Committee [NAWMP Committee]. 2004. North American Waterfowl Management Plan 2004. Strategic Guidance: Strengthening the Biological Foundation. Canadian Wildlife Service, U.S. Fish and Wildlife Service, and Secretaria de Medio Ambiente y Recursos Naturales.

- Pacific Salmon Commission. 2009. Treaty between the government of Canada and the government of the United States of America concerning pacific salmon. <<http://www.psc.org/pubs/treaty.pdf>>. Accessed 16 February 2011.
- U.S. Fish and Wildlife Service [Service]. 2008. Strategic habitat conservation handbook: A guide to implementing the technical elements of strategic habitat conservation. Version I. Report from the National Technical Assessment Team, February 11, 2008.
- U.S. Fish and Wildlife Service [Service]. 2010a. Polar bear viewing guidelines on the Arctic National Wildlife Refuge, Alaska. Revision Feb 2010. Unpublished material, U.S. Fish and Wildlife Service, Anchorage, Alaska, USA.
- U.S. Fish and Wildlife Service [Service]. 2010b. Arctic National Wildlife Refuge polar bear interaction guidelines. Unpublished material, U.S. Fish and Wildlife Service, Anchorage, Alaska, USA.
- U.S. Fish and Wildlife Service [Service]. 2010c. Rising to the challenge: Strategic plan for responding to accelerating climate change. U.S. Fish and Wildlife Service, Washington, D.C., USA
- U.S. Fish and Wildlife Service [Service]. 2011. Digest of Federal Resource Laws. <<http://www.fws.gov/laws/lawsdigest/treaties.htm#list>>. Accessed 16 February 2011.
- U.S. Geological Survey and U.S. Fish and Wildlife Service [Service]. 2006. Strategic habitat conservation: Final report from the National Ecological Assessment Team.
- United Nations. 2004. Agreement between the Government of the United States of America and the Government of Canada on the conservation of the Porcupine caribou herd. Pages 267-271 *in* Treaty Series: Treaties and International Agreements Registered or Filed and Recorded with the Secretariat of the United Nations. Volume 2174, I-38202.