

Arctic Landscape Conservation Cooperative

Purpose

The Arctic Landscape Conservation Cooperative (Arctic LCC) will facilitate conservation planning and inform resource management actions to address landscape-scale issues, particularly those associated with climate change. During the last half-century, northern Alaska has been one of the most rapidly warming regions on earth. Changes already observed in arctic terrestrial landscapes include rapidly eroding shorelines, melting ground ice, and increased shrub growth at high latitudes. Resource managers are increasingly challenged to anticipate the effects of climate-associated habitat change, and incorporate that understanding into conservation planning. The complexity of understanding and responding to broad-scale habitat change demands a collaborative effort that closely links science and conservation.

The Arctic LCC is a self-directed conservation partnership among the federal, state, and local government agencies, Tribes, nongovernmental organizations, academic institutions and other entities operating within Arctic Alaska and northern Canada. Partner agencies are beginning to consider how to share expertise and capacity to achieve common landscape conservation goals. The Arctic LCC will leverage funds, expertise and technology to provide the scientific and technical support necessary for maintaining abundant, diverse and healthy populations of fish, wildlife and plants across the Arctic. The Arctic LCC will be one cooperative in a national, and ultimately international, network.

Geography

The geographic scope of the Arctic LCC includes the Arctic Plains and Mountains Bird Conservation Region, which



Caribou on the 1002 Area of the Arctic Refuge coastal plain, with Brooks Range Mountains in the background. USFWS

encompasses Arctic Alaska and Canada, and extends into adjacent marine areas of the Beaufort and Chukchi seas. Within Alaska, the Arctic LCC encompasses three ecoregions: the rugged slopes and valleys of the Brooks Mountain Range, the rolling hills and plateaus of the Arctic Foothills, and the broad Arctic Coastal Plain, with its vast wetlands and abundant lakes. The Coastal Plain contains one of the largest blocks of sedge wetland in the circumpolar Arctic (one-quarter of global distribution).

Priority Species and Habitats

The Arctic provides breeding grounds for millions of birds (more than 100 species), including species that breed nowhere else in the U.S., and provides habitat for listed species (Steller's and spectacled eiders, polar bear), candidate species (yellow-billed loon and Kittlitz's murrelet), and species of conservation concern including walrus and Pacific black brant. The cultural identity of Alaska Natives and Arctic rural residents is closely tied to their environment and subsistence harvest continues to provide a large portion of the food consumed in Arctic communi-

ties. Important subsistence resources include marine mammals, caribou, fish, and waterfowl – climate change is already affecting access to some of these species.

Conservation Benefits

The Arctic LCC will coordinate the discussion among multiple partners to collaboratively identify shared conservation goals and prioritize the science and information needs required to achieve those goals. The USFWS budget to support science projects in 2010 was \$1 million for projects focusing on landscape change modeling, improved understanding of hydrologic and coastal processes, and improved access to geospatial data. This kind of information will help managers better understand how habitat quality and quantity may change and how fish and wildlife populations may respond, and will inform the management decisions that ensure sustained access to these resources for both consumptive and non-consumptive uses.

Organization and Partnerships

The Arctic LCC will function through a

multi-tiered structure of at-large partners, a core LCC staff, and a Steering Committee of cooperating agencies and organizations that provide decision-making and oversight functions. The Arctic LCC Steering Committee will collectively determine the final structure of the partnership. This partnership structure is ideal for leveraging existing science and technical expertise of partner organizations in conservation planning, ensuring broad input into science products, and facilitating coordination of individual conservation efforts toward achieving common goals.

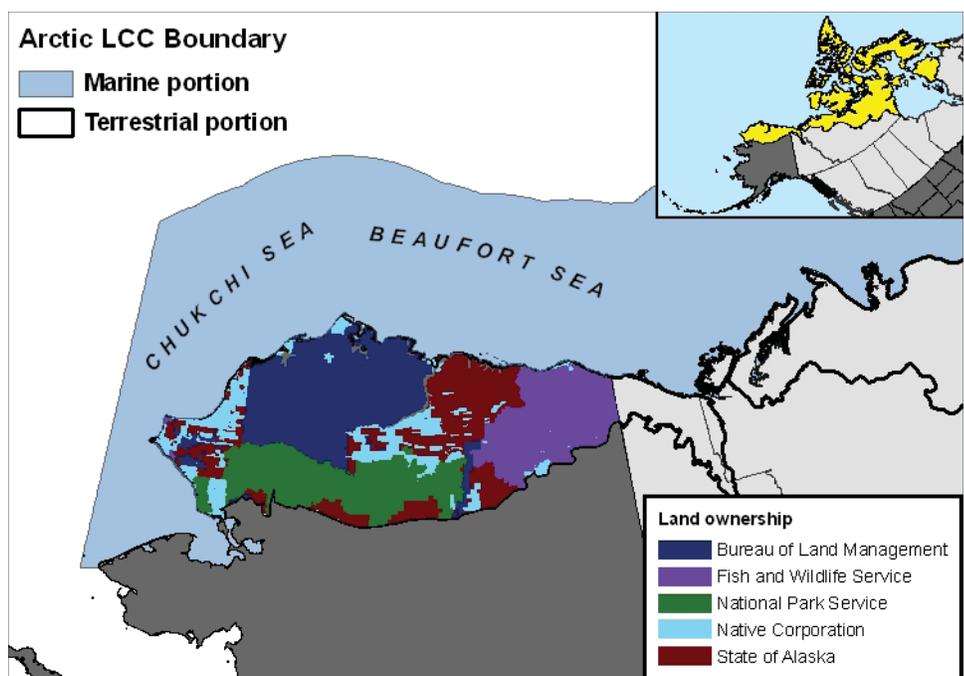
The Arctic LCC has already engaged with numerous State and Federal agencies and NGOs. At this point in its development, partners which make up the Arctic LCC Steering Committee include: National Park Service, Bureau of Land Management, Fish and Wildlife Service, U.S. Geological Survey, Minerals Management Service, and the Alaska Department of Fish and Game. Partner composition will likely evolve over time as conservation needs across the geographic area change.

The Arctic LCC will work closely with National Oceanic Atmospheric Administration's Climate Service for Alaska and the Department of Interior's Climate Science Center for Alaska (administered by USGS) to incorporate the most up-to-date climate data and products and climate change impact science into conservation planning, design and delivery. The Alaska Climate Change Executive Roundtable, a coalition of senior executives from federal and state land and resource management agencies, provide management perspective, oversight, and direction to ensure a well-integrated and efficient implementation of the emerging climate science and landscape conservation tools in Alaska.

Capacity

The USFWS will support several key core staff positions beginning in 2010 including:

- Cooperative Coordinator, who will focus on partnership development and support.



Land ownership in the Alaska portion of the Arctic LCC, and geographic extent of the Arctic LCC (inset).

- Science Coordinator, who will be responsible for coordinating LCC science needs with federal, state and non-governmental organizations' science professionals. The Service has selected Philip Martin as the Arctic LCC Science Coordinator.
 - Geospatial Analyst
 - Data Manager
- In addition, the USFWS will focus new staff resources it will acquire over the next several months through the National Wildlife Refuge System Inventory and Monitoring Program within the Arctic LCC. USGS will hire 2 LCC staff members in 2010 including a hydrologist. Additional staff will be added in the future depending upon identified needs and partner capacities. Other capacities may include remote sensing and image processing specialist, population and habitat modelers, biometrician, spatial statistician, conservation geneticist, and Web designer/manager.

Next Steps

In 2010, the LCC will focus on developing foundational science that addresses the physical and ecological processes by which climate change will affect species and habitats. This information will be critical to the vulnerability assessments that will guide conservation design and delivery. Vegetation change, coastal processes, water availability/hydrology,

and changes in prey availability have been identified as topics of high interest.

In addition, the LCC will act to improve quality and availability of natural resource data in spatially-linked digital databases. The LCC partners will identify digital data layers that will meet the needs of managers for modeling and research, and work with partners to locate and/or create the datasets and make them available from web-accessible data portals.

To solidify the partnership, over the next 6 months to 1 year, the Arctic LCC will:

- Work with the Alaska Climate Change Executive Roundtable to build a durable governance framework.
- Develop and implement a process for identifying science needs for 2011 and beyond.
- Refine conservation goals and objectives.

Contacts

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