

Great Basin Landscape Conservation Cooperative



Introduction

Landscape Conservation Cooperatives (LCCs) are self-directed conservation partnerships among the U.S. Fish and Wildlife Service (Service), the United States Geological Survey, other federal agencies, States, Tribes, nongovernmental organizations, and others to address the challenges of climate change in an integrated fashion across broad areas. LCCs provide scientific and technical support for landscape-scale conservation in an adaptive management framework that emphasizes science-based biological planning, conservation design, research, inventory and monitoring. The products that LCCs develop help to inform and improve conservation delivery efforts on the ground.

Climate change is the greatest environmental and conservation challenge of the 21st century. The impacts of climate change exacerbate existing stressors on our fish and wildlife resources. Climate change brings physical changes that include increasing temperatures, altered precipitation patterns, longer and more frequent droughts, and increased flood frequency. These physical effects will lead to biological impacts such as changes in the distribution of plants and animals, new species invasions, disease outbreaks, disrupted food webs, and ultimately, increased species extinctions. Dealing with these challenges will require an unprecedented level of collaboration between public and private conservation interests.

Conservation Need in the Great Basin LCC

Great Basin habitats support a wide diversity of trust resources. Dominated by high altitude desert, the region includes large areas of sagebrush that support populations of pronghorn, pygmy rabbit, sage-grouse, sage sparrow, and sage thrasher. Woodlands of juniper and pine support elk, mule deer, small mammals, and migratory birds. Stands of aspen and other riparian vegetation provide essential breeding habitat for migratory birds while the region's rivers and streams sup-



The Great Basin faces significant challenges due to climate change, invasive species, and other conservation threats. Photo by Glenn Stevens

port a variety of native fish such as the Bonneville Cutthroat Trout, Lahontan Cutthroat Trout, mottled sculpin, and speckled dace. All of these habitats will be affected in some way by climate change.

In the Great Basin, scientists expect climate change to lead to more frequent wildfires, more rapid spread of invasive plant species such as cheat grass and tall whitetop, and shifts in the geographic distributions of native plants and animals. These shifts will not occur uniformly and ecological relationships that have developed over thousands of years are likely to be disrupted.

Managing in the face of climate change impacts will be very challenging. The Great Basin LCC provides a critical bridge that links science and management to effectively address these challenges.

Partnerships

The Service will continue working in cooperation with other federal agencies, States, Tribes, nongovernmental organizations, conservation partnerships, and other entities using a coordinated approach. The Great Basin region already has partnerships underway that capitalize on landscape-scale biological planning and conservation design, including the Intermountain West Joint Venture, Great Basin Restoration Initiative, and Desert Fish Habitat Partnership, among others. The Nature Conservancy, Cooperative Sagebrush Initiative, and Great Basin Environmental Program, and others are also actively involved in planning efforts. Regionally-based climate change research programs are underway, including those sponsored by the Great Basin Research and Management Partnership, Great Basin Cooperative Ecosystem Studies Unit, USDA Forest Service, and the United States Geological Survey.

Great Basin LCC Framework

In establishing the Great Basin LCC, the Service will work with partners to create a framework for integrating climate science and conservation management. This effort will be coordinated with other climate change efforts in the region and be set up in a manner that will facilitate the identification of needs, capacities and gaps.

We will link our efforts to deliver conservation on the ground with those partners who bring additional science capacity to biological planning, conservation design and the design of monitoring, research and evaluations.

A steering committee with representation from our partners will guide the activities of the LCC and define LCC priorities.

LCC Products and Outcomes

The Great Basin LCC will provide products and services that:

- Support natural resource management decision making;
- Assist partners and the Service in identifying immediate time-critical needs for managing fish and wildlife resources;
- Develop explicit and measurable biological objectives to guide conservation design and delivery;
- Apply downscaled climate models and landscape scales to predict effects on fish, wildlife, plants and their habitats;
- Develop landscape level analyses to support corridor conservation and protection;
- Monitor habitat instabilities from invasive species threats and from native species range expansions;
- Provide analyses to inform coordinated fish and wildlife response strategies, including public outreach;
- Design and evaluate short- and long-term wildlife adaptation approaches;
- Identify high priority research and technology needs;
- Conduct risk and vulnerability assessments to identify the most sensitive species, habitats and ecological functions to focus conservation efforts;
- Develop information to define factors affecting species recovery under future climate scenarios;
- Design protocols and methodologies best suited to evaluating the success of conservation strategies, objectives and actions; and
- Identify areas of converging climate and non-climate stressors.



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