

The Great Northern Landscape Conservation Cooperative



The U.S. Fish and Wildlife Service (FWS) and U.S. Geologic Survey (USGS) are working together to develop scientific capacity to address climate change and other stressors to wildlife species and habitats in an integrated fashion within the Northern Rockies and Columbia Basin - the "Great Northern Landscape Conservation Cooperative" (GNLCC).

Partnerships

GNLCC will include a variety of science and management partners. It will complement many existing conservation partnerships such as the Interagency Grizzly Bear Committee, Columbia Basin Federal Caucus, Western Governors' Association Wildlife Corridors Initiative, Columbia Basin Fish and Wildlife Program, and the Intermountain West Joint Venture. These landscape-level conservation partnerships have a long and successful history and consist of FWS, USGS, National Park Service, Bureau of Land Management, Bureau of Reclamation, U.S. Forest Service, U.S. Army Corps of Engineers, Bonneville Power Authority, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA), Native American tribes, the States of Oregon, Washington, Montana, Idaho, Wyoming, the Provinces of Alberta and British Columbia, and the nongovernmental community. Existing USGS Science Centers are integral to the GNLCC and include the Northern Rocky Mountain Science Center (Bozeman, MT), Western Fisheries Research Center (Seattle, WA), and Forest and Rangeland Ecosystem Science Center (Corvallis, OR). Other important research partners include university programs and the science centers and laboratories of the U.S. Forest Service, NOAA and EPA.

Conservation Opportunities in the Great Northern LCC

The habitats represented in this geographic region include sage/steppe ecosystems, high elevation mountain habitats, diverse wetland ecosystems, and important river basins (e.g., Columbia, Upper Missouri, Yellowstone). The area represents a diversity of plant and animal species that have important cultural significance to Native Americans

throughout the region. Unlike many areas of the country, the GNLCC represents a relatively intact habitat and species assemblages and important conservation and restoration opportunities (e.g., Glacier, North Cascades, Teton, and Yellowstone National Parks and numerous National Forests and Wilderness areas). Focal species in this area include anadromous fish such as bull trout, Pacific lamprey, salmon and steelhead, as well as grizzly bear, sage grouse, Columbia spotted frog, trumpeter swan, burrowing owl, and willow flycatcher.

Functions of the Great Northern LCC

The GNLCC will provide multiple science-support services to resource management practitioners to enhance landscape scale adaptive management. GNLCC will:

- Convene forums for the assessment of conservation needs and identification of key issues and decisions within the GNLCC;
- Collect and assimilate climate information to support vulnerability assessments for populations and



Above: the Rocky Mountain Front in northwestern Montana, site of one of the Service's leading-edge landscape conservation initiatives; below: the very rare Christ's paintbrush (*Castilleja christii*) blooms in early summer amidst a wash of color at Mt. Harrison, Idaho; both by USFWS.

habitats most susceptible to the impacts of climate change;

- Develop population/habitat models as necessary to enhance conservation delivery in response to climate change and other impacts to landscapes;
- Identify conservation delivery strategies;
- Jointly determine and address research needs for priority species / priority habitat conservation;

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- Provide decision support systems and tools that are accessible to partners and help define the conservation actions needed including how much and where;
- Support appropriate data sharing;
- Develop monitoring and evaluation protocols; and
- Leverage existing capacities and avoid inefficiencies and redundancy in landscape conservation and monitoring efforts.

Structure of the Great Northern

An LCC Steering Team that includes partner representatives will guide the implementation of the LCC effort. This team will guide partners in the identification of priority species and systems vulnerable to climate change and other stressors; develop and/or acquire scientific information to better understand these stressors and how to address them; and, develop conservation efforts to support the resilience of species dependent on these ecosystems.

We will use the identification of priority issues, as described above, and an evaluation of existing capacity and skills among partners to help determine the selection of complementary skill sets within the LCC. The GNLCC will be supported and staffed cooperatively with partners. FWS and USGS propose to provide leadership and significant financial and staff contributions, and recommend the LCC organization include several key positions:

- LCC coordinator
- Science and Technology Coordinators
- GIS and data manager
- Decision support/technology transfer
- Modeling capability in landscape and species/population
- Hydrologist/fluvial geomorphologist

Next Steps

In FY 2010, the GNLCC will build off of existing efforts, such as:

- Climate Change Collaboration (C3) – a group of 12 Federal Agencies – which could serve as an appropriate venue for GNLCC information exchange.

- Western Governors' Wildlife Council's development and implementation of regional decision support systems for wildlife habitats and corridors, contributing to provision of resilience in a changing environment.

- Downscaled hydrologic projections in the Northern Rockies and Columbia Basin, both performed by the Climate Impacts Group

at University of Washington to begin to determine appropriate adaptation efforts that managers should undertake.

- Applied research studies currently being conducted by the National Climate Change and Wildlife Science Center; to project climate-induced effects upon wildlife populations and habitats.
- Results of USGS/NOAA workshop on "Responding to Climate Variability and Change: A Prototype for Trans-boundary Assessment and Services in the Columbia Basin."

In addition, FWS and USGS, in concert with local conservation partners, will hold a series of workshops to identify other key science needs related to climate change that may be appropriate for the GNLCC's portfolio. Near-term deliverables in FY2010 will include:

- An assessment of existing programs, coalitions and science-management alliances within the Great Northern landscape.
- A commitment to collaborate and integrate, where feasible, agency and organization resources, capabilities and expertise to address landscape conservation.



- Identification of information and capacity gaps limiting collective abilities to provide landscape planning, species and habitat conservation, climate-related science and decision-support tools.
- Discussion with key administrators and managers within FWS and its partners to introduce the LCC concept and to get constructive feedback.
- Description of initial priority projects focused on landscape-scale conservation issues, to fund, implement and accomplish in FY2010

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