



# Great Northern LCC

## Activities & Accomplishments

# 2012

The Great Northern landscape contains diverse ecosystems such as the high elevation alpine meadows of the Rocky Mountains. Photo credit: Stephen Torbit.

*A landscape that sustains its diverse natural systems to support healthy and connected populations of fish, wildlife, and plants; sustains traditional land uses and cultural history; and supports robust communities.*

**The Great Northern Landscape Conservation Cooperative** is a voluntary network of partners working to address common landscape conservation goals. We work together to identify commonalities among our efforts and build consensus to enact a regional approach to landscape conservation. We work across boundaries and jurisdictions, and share data, science, and capacity to achieve common goals.

This report summarizes our 2012 activities and accomplishments aimed at enhancing individual and collective partner implementation of landscape-level conservation. Through information sharing, capacity building, effective analysis and decision support, and collaborative networks, we are creating efficiencies and reducing the challenges of working in complex ecological and jurisdictional systems.



*The Great Northern LCC encompasses a bi-national North American landscape. This landscape spans interior British Columbia and portions of Alberta in Canada, and extends from eastern Washington and northeastern Oregon across north and central Idaho into western Montana and Wyoming. It includes the major river systems and basins, high alpine peaks, rolling plateaus, and deep canyons of the northern Rocky Mountains and Columbia Plateau.*



## LEADERSHIP AND COORDINATION

### ■ Steering Committee and Advisory Team

The Great Northern Landscape Conservation Cooperative (GNLCC) Steering Committee, comprising 28 member organizations, met face-to-face twice in 2012: in May, hosted by the British Columbia Ministry of Forest, Lands and Natural Resources Operations, in Kamloops, British Columbia, and in September, hosted by the State of Wyoming, in Jackson, Wyoming. The meetings focused on refining the Governance Charter, approving the Strategic Conservation Framework, approving the Communications Strategy, and allocating science funding. Meetings also provided an opportunity for discussion about program alignment (for example, about a strategic approach to the Land and Water Conservation Fund) and invited scientists and managers to present their work on landscape-scale projects. These in-person meetings were augmented with conference calls.

The GNLCC Advisory Team had one in-person meeting, focused on developing a final draft of the Strategic Framework, at Chico Hot Springs, Montana, February 2012. This meeting included some members of the Steering Committee and of the Partner Forum Regional Leadership Teams. The Advisory Team had monthly conference calls and several ad-hoc calls to conduct GNLCC business. Organizational structure and guidelines for operations have been in place since the Governance Charter was adopted in December 2010.

### ■ Partner Forums

Partner Forums are groups of conservation practitioners and partnerships that share landscape conservation challenges in an ecogeographic context. Through a self structured process, field-level managers, scientists, and key conservation constituents are identifying priority conservation information or scientific needs falling under the scope of the Great Northern LCC goals and conservation targets. The Partner Forums have been busy coalescing partnerships and identifying conservation and management actions, and they welcome your involvement!

Forum eco-geographic areas:

- » Rocky Mountain Partner Forum
- » Sage-Steppe Partner Forum
- » Cascadia Partner Forum
- » Columbia Basin Partner Forum

Connect with a forum at:  
[greatnorthernlcc.org/partner-forums](http://greatnorthernlcc.org/partner-forums)

## ■ Strategic Conservation Framework

The GNLCC Strategic Conservation Framework was approved by the steering committee at the fall 2012 meeting. The framework guides priority setting for annual work plans over a five- to ten-year time period. The framework provides the foundation for specific research and technical actions, institutional collaboration, and the application of ecological information, including future additions through GNLCC Partner Forums.

The landscape goals and conservation targets identified in the framework are based on research with conservation partners and ongoing landscape-scaled initiatives. We collected and reviewed over 50 documents that may be relevant to the Great Northern LCC and conducted nearly 60 interviews with members of the Steering Committee, Advisory Team, and Partner Forum representatives. The conservation targets, ecosystem processes, ecosystems or habitats, and species or focal resources provide a common focus for organizations to move toward a collective landscape vision using specific ecological outcomes within the GNLCC.

[View the Strategic Framework and Governance documents and Steering Committee and Advisory Team meeting information: greatnorthernlcc.org/business](http://greatnorthernlcc.org/business)

## PROGRAM ALIGNMENT

To create efficiencies and reduce the challenges of working in complex ecological and jurisdictional systems, GNLCC staff has focused on aligning programs from different agencies, organizations, and initiatives in 2012. Highlights of these efforts include:

- » Leading the Interagency Connectivity Team (Action Item 6) and the Connecting Public and Private Lands Team (Action Item 3) of the America's Great Outdoors Initiative Crown of the Continent focal area proposal.
- » Continued support to the U.S. Forest Service sponsored Southern Crown Cooperative Forest Land Restoration Project Pilot for second year and further engagement with new Cooperative Forest Land Restoration pilot areas identified in fiscal year 2012.
- » Serving on the Assessment Management Teams for Bureau of Land Management Middle Rockies and Wyoming Basins Rapid Ecoregional Assessments.
- » Serving on the Stakeholder Advisory Group for both the North Central and Northwest Climate Science Centers (CSC); Reviewed 107 statements of interest and proposals for both CSCs. Assisted the North Central CSC to discuss, write, and edit their five year strategic plan.

### Steering Committee Member Organizations



- » Supporting a pilot project to develop a strategic approach to conservation planning and design for the National Wildlife Refuge System in the Columbia Basin. We expect this approach to be transferable to other National Wildlife Refuge Systems.
- » Alignment of Intermountain West Joint Venture and GNLCC strategic framework as well as continued funding to the partnership-driven Grid-based Bird Monitoring program to expand bird conservation partnerships to Montana and Idaho.
- » Collaborating with USGS Northern Rocky Mountain Science Center to share office space, administrative staff, computing resources, outreach activities, GIS assistance, and technical expertise in fish and wildlife ecology as well as climate change science.
- » Provided guidance and technical assistance to Fish and Wildlife Service in developing the Inter-LCC Greater Sage-Grouse project.
- » Led the National Integrated Data Management Network project that serves both GNLCC and the LCC Network by defining the digital interoperability road map for partner-based large landscape conservation.

## DEMONSTRATION PROJECTS

### ■ Landscape Assessment Demonstration Project

The Great Northern Landscape Assessment Demonstration Project, initiated to improve inter-project coordination, avoid duplication, and to the greatest extent possible leverage efforts to compile information, identify data gaps, assure data quality, and be consistent in data format and standards, moved into Phase II in 2012. Phase II was devised at a February 24 workshop by the Demonstration Project Team and includes four goals:

- » Support the WGA project to map areas to facilitate range migrations and persistence in climate refugia for a wide range of climate-sensitive, dispersal-limited species by identifying (a) topographically complex climatic refugia; (b) riparian climate corridors; and (c) climate gradient corridors.
- » Using the Conservation Registry as a visualization tool for the Great Northern Landscape Conservation Cooperative to answer the question “Who is doing what where?”
- » Support a science coordinator position for the Heart of the Rockies Conservation Land Trust to bridge the gap between coarse-grained connectivity models and on-the-ground projects.

- » Support development of State Crucial Habitat Assessment Tools (CHATs).

Accomplishments of the Demonstration Partners include Wyoming launching the WISDOM CHAT in 2012; The Bureau of Land Management working toward completion of the Middle Rockies and Wyoming Basins Rapid Ecoregional Assessment; Montana continuing to improve the web-based Crucial Areas Planning System (CAPS), including piloting a connectivity layer; the U.S. Forest Service developing, through the Climate Impacts Group at the University of Washington, a downscaled climate projection summary for the northern Rockies; and the Western Governors’ Association continuing to work toward a December 2013 deadline for a west-wide Crucial Habitat Assessment Tool (CHAT), Landscape Integrity and Connectivity Tool, and public viewer.

### ■ North Fork of the Flathead River Basin Demonstration Project

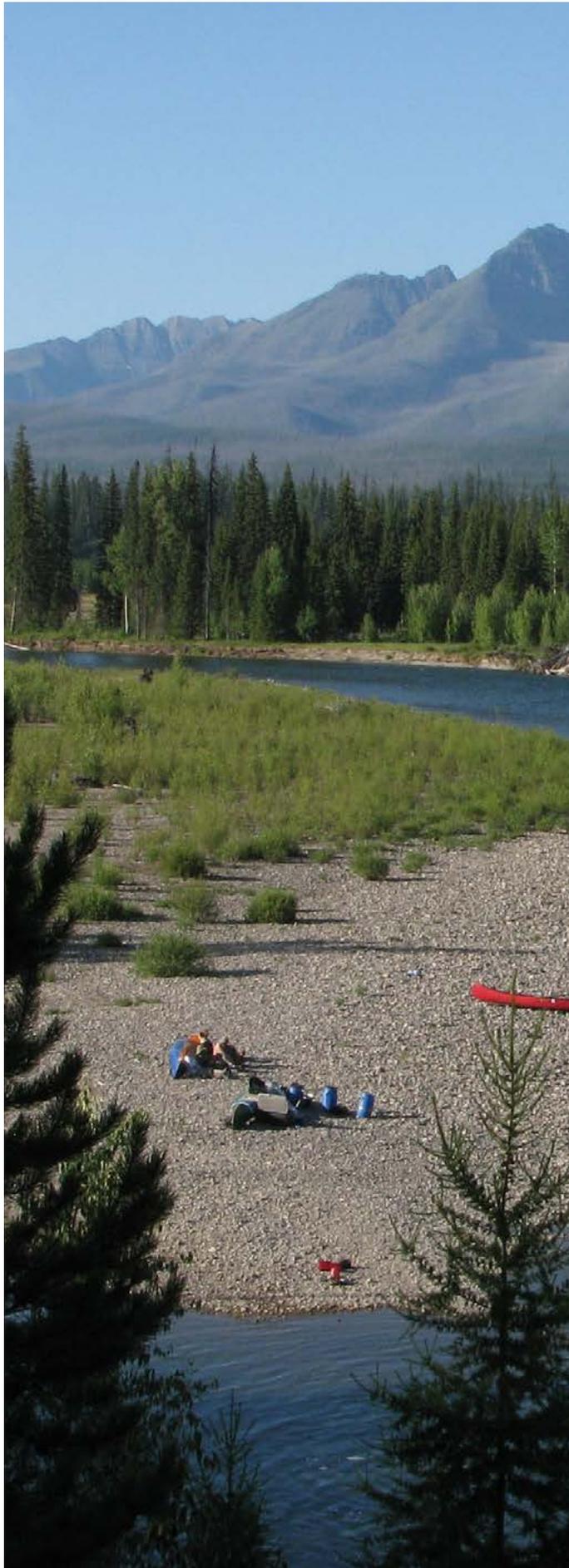
In February 2010, governments of British Columbia and Montana signed a Memorandum of Understanding that recognizes the high value of natural resources in the North Fork of the Flathead River Basin and outlines a framework for the signatories to work together with US and Canada Federal, State and Provincial, and Tribal and First Nation partners on environmental protection, climate action, and renewable and low carbon energy.

This memorandum addresses two decades of negotiations over impacts of potential mining and oil and gas development. The GNLCC is:

- » Supporting an executive-level working group among the Department of Interior, Department of Agriculture, State of Montana, Canadian Federal government, and the Province of British Columbia to facilitate and promote commitments of the Memorandum of Understanding.
- » Supporting the study Predicting the Effects of Climate Change on Aquatic Ecosystems, a pilot aquatic vulnerability assessment in the Flathead River System.
- » Coordinating an adaptation strategy for climate and landscape stressors among technical representatives of the Memorandum of Understanding working group that will provide guidelines for adaptation actions and conservation efforts that the conservation community can use for transboundary coordination on important resource issues beginning with aquatics.

### ■ Inter-Landscape Conservation Cooperative Sage-Grouse Demonstration Project

From the LCC Program outset it was recognized that landscape scale issues can cross LCC boundaries. Wildlife



ranges and ecosystem distributions are impossible to fully delineate because they exist as gradients, not discrete units. Though LCCs are administratively autonomous, there are many good reasons for them to function as a seamless network. The FWS Office of Science Applications supports this need by 'holding back' funds to support needed inter-LCC science and capacity support.

In 2012, funds were targeted to support an inter-LCC sage-grouse data synthesis and analysis project involving Plains and Prairie Potholes, Southern Rockies, Great Basin, and Great Northern LCCs and our primary partner, the Western Association of Fish and Wildlife Agencies (WAFWA). The project is beginning in the spring of 2013 but much of the groundwork began in 2012. The early work ensured the project was funded and set the stage for a burgeoning partnership. Multiple conference calls were held to frame the proposal and several drafts were developed with input from Sean Finn and Rick Sojda, GNLCC co-Science Coordinators.

Following funding approval, additional conversations ironed out how the project would be structured and administered. This culminated in a presentation to the WAFWA Sage-grouse Executive Oversight Committee who signed on as official partners in the fall of 2012. Science planning is now underway. The project is integrally tied to LC MAP (see below) which will be used as the data hub for all science delivery and strives to strengthen our collective effort to provide needed science to managers ahead of the 2015 sage-grouse listing decision. More information will be available on the GNLCC website.

## SCIENCE AND DECISION SUPPORT

### ■ Support for Landscape Science

From 2010 to 2012, GNLCC funded 30 on-the-ground projects, committing over \$2.4 million to our conservation partners to improve our science knowledge, evaluate and improve management practices, and realize better coordination across the region. Funding has led to the delivery of over 300 products, including over 250 novel GIS data layers. GNLCC is funding several iconic science programs that will both deliver novel, foundational data to scientists and provide well-vetted guidance and tools to managers to support their critical decision processes. Examples include:

Our partners, led by the U.S. Forest Service's Boise Aquatics Lab, are generating a regional Stream Temperature Model based on an assemblage of 45 million data points spanning 5 states. The models, which project stream temperature trends through the

The GNLCC works cooperatively and collaboratively to improve the effectiveness of each partner organizations large scale landscape conservation programs and efforts.

next 60 years, will vastly improve our collective ability to plan for and manage temperature-sensitive fish species and other aquatic and riparian resources.

[View the details online at:  
greatnorthernlcc.org/features/streamtemp-database](http://greatnorthernlcc.org/features/streamtemp-database)

The Washington Department of Fish and Wildlife and over 30 partner organizations are working on a project to generate multiscale habitat connectivity data for Washington state. This project serves as a model for partner-driven conservation planning and it delivers high-quality maps and data for managers at a statewide or district-level.

[View the details online at:  
greatnorthernlcc.org/features/washington-connectivity-group](http://greatnorthernlcc.org/features/washington-connectivity-group)

Information products are delivered through the GNLCC website and spatial data are available through LC MAP. A complete list of projects can be found at the link below, along with an analysis of meta-information summarizing data, models and tools deliverables.

[View the details online at:  
greatnorthernlcc.org/supported-science-projects](http://greatnorthernlcc.org/supported-science-projects)

In 2012, two Climate Science Centers committed more than \$500,000 to climate science projects directly benefiting GNLCC partners. In 2011, GNLCC funds were augmented by \$339,000 from the Northwest Climate Science Center for climate focused projects deemed a high priority by the Steering Committee and the Climate Science Centers.

## ■ Decision Support and Data Integration

The Great Northern Landscape Conservation Management and Analysis Portal, LC MAP, provides a collaborative virtual workspace allowing partners of the GNLCC to securely share, access, and analyze common datasets and information to further coordinate research, management, and resource conservation. LC MAP was developed by GNLCC with the express intent of being a scalable tool that supports inter-organizational data management in a highly secure, easy-to-access manner. The value of that scalability was proven in 2012 as 5 additional LCCs (making 10 total) adopted LC MAP as their primary data vehicle. In addition, the inter-LCC Sage-grouse Project has placed LC MAP as the focus of coordinated data synthesis and analysis supporting sage-grouse research and conservation. LC MAP supports large landscape conservation by:

- » Advancing project-level research and modeling by providing a secure virtual workspace where multiple partners can discover, assess, edit, analyze, and model common data themes in near real-time.
- » Facilitating data mining and discovery from the internet.
- » Functioning as a secure repository where GNLCC partners can safely store their data, custom-control access, and



Photo credits: Canadian Lynx, NPS; Sage-Grouse, FWS; Yellowstone Cutthroat Trout, Fish Eye Guy Photography

manage meta-data using customized, intuitive data documentation tools.

- » Taking advantage of the powerful geospatial analysis capabilities of ArcGIS 10 and its broad array of extensions. The LC MAP user community has grown to 213 members working on collaborative projects. Discussions are underway with other LCCs about how LC MAP might serve their needs.

[View details of LC MAP, including how to apply for an account:  
greatnorthernlcc.org/lcmap](http://greatnorthernlcc.org/lcmap)

## OUTREACH AND COMMUNICATIONS

To effectively reach diverse and geographically dispersed audiences, the GNLCC steering committee developed and approved an outreach and communications plan in 2012. The GNLCC reaches people by presenting information to groups on site and through webinars, hosting workshops

and meetings, and disseminating information using online communication tools. We strive to enhance individual and collective partner implementation of landscape-level conservation. Through information sharing, capacity building, effective analysis and decision-support tools, and collaborative networks—we are creating efficiencies and reducing the challenges of working in complex ecological systems.

## ■ Communication Goals

- » Goal 1 - Build and foster engagement in the GNLCC by increasing awareness and understanding of the role and value to collaborative landscape conservation.
- » Goal 2 - Improve the exchange of knowledge and dissemination of science-based information, tools, and products to advance collaborative landscape conservation.
- » Goal 3 - Increase opportunities to leverage funding and align existing programs and initiatives to enhance collaborative landscape conservation.
- » Goal 4 - Build and foster engagement with Tribes and First Nations in collaborative landscape conservation.

## ■ Workshops

- » Hosted the Advisory Team in a workshop to compose a final draft of the GNLCC Strategic Framework, February 22-23, 2012, Chico Hot Springs, Montana.
- » Hosted the Demonstration Team workshop to develop Phase II of the Demonstration Project, February 24, 2012, Bozeman, Montana.
- » Supported the Climate Change Vulnerability workshop for Greater Yellowstone National Parks, July 30, 2012.
- » Hosted the Flathead Basin Vulnerability Workshop, September 5, 2012, Hungry Horse, Montana.
- » Supported the 11th Biennial Scientific Conference on the Greater Yellowstone Ecosystem, Greater Yellowstone in Transition: Linking Science and Decision Making, October 8-10, 2012, Yellowstone National Park, Wyoming.
- » Supported the 3rd Annual Pacific Northwest Climate Science Conference, October 1-2, 2012, Boise, Idaho.

## ■ Presentations

Throughout the year, GNLCC staff met frequently with organizations and agencies interested in learning how the GNLCC operates and opportunities for collaboration. Presentation formats included webinars, speaking engagements, briefings, and field tours. Key presentations include:

- » *The Great Northern Landscape Conservation Cooperative: A*

*Collective Vision for our Landscape* was presented as part of the University of Montana's Center for Natural Resources and Environmental Policy lecture series, Missoula, February 2012.

- » *LC MAP: The Landscape Conservation Management and Analysis Portal* was presented multiple times to internal and external audiences (i.e., North Pacific LCC, North Atlantic LCC) throughout 2012. One significant presentation on LC MAP was given to the WAFWA Sage-grouse Executive Oversight Committee at the Association of Fish and Wildlife Agencies annual Meeting in Hilton Head, South Carolina, September 2012.
- » *Working with Partners to Mitigate the Effects of Climate Change*. Abstract and invited presentation at The Montana Native Plant Society Conference, Helena, Montana, February 2012.
- » *Connecting Connectivity: Using Landscape Conservation Cooperatives as a Platform to Connect Projects Across Organizations and Spatial Scales*. Abstract and invited presentation at The Wildlife Society Conference, Portland, Oregon, October 2013.
- » *Networking for Data Delivery: A Model for the 21st Century*, invited presentation at Biodiversity without Borders, Portland, Oregon, April 2012.

## ■ Science Webinars

Recipients of our science funding, our staff, and invited presenters conducted 15 webinars in fiscal year 2012. These online learning sessions helped us share scientific findings and project progression. On average, 39 individuals attended GNLCC-hosted webinars. The webinars are recorded and placed on our YouTube channel which has more than 2,700 views and 31 videos.

View our YouTube channel at:  
[www.youtube.com/GreatNorthernLCC](http://www.youtube.com/GreatNorthernLCC)

GNLCC webinars covered a variety of topics including strategies and tools for assessing and managing climate change effects on terrestrial and aquatic ecosystems; science-based vegetation, wildlife, and aquatic monitoring programs; cross-boundary science and management partnerships; and the economic and social science underpinnings of landscape conservation. A few of the webinars we hosted in 2012 include:

- » De Fragmenting the West: Providing Adaptive Options for Grizzly Bears to Respond to Climate Change
- » New Models for Stream Ecosystems
- » Climate Change Vulnerability Assessment in the Pacific Northwest

## ■ Website and Newsletter

The GNLCC website was launched in 2011 and in 2012 it received more than 4,800 unique visitors. Our website features an online directory to landscape initiatives and organizations, simple databases for supported science projects, webinars links, meetings information, and operational documents. The GNLCC newsletter is electronically disseminated to over 900 subscribers through MailChimp, a free e-mail service provider. In 2012, subscribers received two newsletters and more than 16 e-mail updates or webinar announcements.

## NEW FACES IN 2012



■ Ron Lodgepole,  
Summer intern  
Cooperator, Hopa Mountain



■ Matt Heller  
Information Systems Administrator  
Bozeman, Montana



■ Ivy Allen  
Communication Specialist  
Lakewood, Colorado

## Great Northern LCC Coordinators

Yvette Converse, Coordinator  
406.994.7486  
Yvette\_Converse@fws.gov

Tom Olliff, Coordinator  
406.994.7920  
Tom\_Olliff@nps.gov

Madeline Maley, British Columbia Coordinator  
250.828.4444  
Madeline.Maley@gov.bc.ca

Sean Finn, Science Coordinator  
208.426.2697  
Sean\_Finn@fws.gov

Rick Sojda, Science Coordinator  
406.994.6556  
sojda@usgs.gov

## Great Northern LCC Support Staff

Matt Heller, Information Systems Administrator  
406.994.7333  
matthew\_heller@fws.gov

Ivy Allen, Communication Specialist  
303.236.4574  
Ivy\_Allen@fws.gov

Mary McFadzen, Communications Coordinator  
406.582.0530  
mmcfadzen@montana.edu

Nina Chambers, Special Projects  
406.333.2228  
nchambers@bresnan.net

Gary Tabor, Special Projects  
406.586.8082  
wildcatalyst@gmail.com



LANDSCAPE CONSERVATION  
COOPERATIVES

[greatnorthernlcc.org](http://greatnorthernlcc.org)

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Great Northern  
LANDSCAPE CONSERVATION COOPERATIVE