



GREAT NORTHERN LANDSCAPE CONSERVATION COOPERATIVE

Volume 1, Issue 2

Winter 2011

GNLCC Hires Permanent Coordinator & Science Coordinator



Yvette Converse has been selected as the Coordinator of the GNLCC. She has been the Interim Coordinator of the GNLCC since July 2009. Prior to that, she was the Assistant Director of the Bozeman Fish Technology Center and has been with the USFWS

since 1999.

Yvette has more than 15 years professional experience in conservation with an emphasis in aquatic ecology, ESA, river management and research coordination. She received her Masters degree in Aquatic Ecology and Watershed Science from Utah State University studying endangered humpback chub habitat in the Grand Canyon. She worked for the State of Utah as a native aquatic biologist for 3 years and also worked as geomorphologist and fish biologist in for Bio-West Inc.



Sean Finn has been selected as a Science Coordinator for the GNLCC. Since 2001, Sean has served as an Ecologist for the USGS, working on the Core Spatial Analysis team for the 2004 Sage Grouse Conservation Assessment, the team that initiated the

SAGEMAP GIS data portal, and as the information management lead for the Great Basin Integrated Landscape Monitoring Project and the Great Basin Research Management Partnership. Sean received a B.S. in Wildlife Management from Humboldt State University in 1992 and a M.S. in Raptor Biology from Boise State University in 2000. Sean will remain stationed in Boise and emphasize conservation and management issues in the Columbia Basin portion of GNLCC.

GNLCC Receives Science Support Through new USGS Hires and Cooperative Agreements

Dr. Erik Beever, USGS Ecologist, specializes in wildlife and conservation biology associated with understanding the interactions of the effects of climate change, land management actions, and conservation reserve design. Erik recently studied feral horses in the Great Basin and American pika throughout the West.

Dr. Kathi Irvine, USGS Statistician, specializes in spatial statistics, especially applied to the design of broad scale inventory and monitoring programs like those in the National Park System and the National Wildlife Refuge System. She excels in application of Bayesian graphical models to ecological questions.

Dr. Greg Pederson, USGS Ecologist, specializes in paleoclimatology, recently studying the Northern Rockies. Greg's research currently focuses on historic snowpack reconstructions, developing tools for

analyzing long term climate trends, and applying both to understanding montane hydrology.

Mary McFadsen is working with GNLCC under a cooperative agreement with MSU Big Sky Initiative to create a directory of [organizations, landscape initiatives and long-term monitoring](#) projects in the GNLCC.

Emily Wellington, a student at MSU, has joined GNLCC through Spring 2011 as the NPS Climate Change Intern under a cooperative agreement with the National Council for Science and the Environment. Emily will be working on a variety of projects.

This new staff joins NPS Coordinator Tom Olliff, USGS Science Coordinator Rick Sodja, USGS Communications Team Suzanna Carrithers and Leslie Allen and USGS Spatial Analyst Tara Chesley-Preston in supporting the GNLCC.

GNLCC Project Spotlight—Landscape Connectivity in Washington State

The ability to travel between habitats is essential for the long-term survival of many wildlife species. Habitat connectivity ensures that animals are able to locate food, breed, migrate between seasonal habitats, and respond to environmental changes such as wildfires, drought, and flooding. Connectivity is also vital to important ecological processes such as seed dispersal and nutrient cycling.

However, human-induced pressures from transportation corridors, agriculture, and development have fragmented wildlife habitats and populations across the country. In an effort to proactively address these issues, a variety of conservation stakeholders formed the [Washington Wildlife Habitat Connectivity Working Group](#) (WHCWG). A voluntary public-private partnership between state and federal agencies, universities, tribes, and non-governmental organizations, the WHCWG's mission is: *"Promoting the long-term viability of wildlife populations in Washington State through a science-based, collaborative approach that identifies opportunities and priorities to conserve and restore habitat connectivity."*

To achieve this goal, members of the WHCWG launched the [Washington Connected Landscapes Project](#) (WCLP). The foundation of this project is a series of statewide scientific analyses that explore connectivity issues for current landscape conditions in Washington, as well as models for projected future conditions that incorporate variables such as climate change. These studies have produced linkage network maps, which demonstrate areas of suitable habitat for the studies' 16 focal species, as well as landscape linkages connecting these

habitats.

Although human activities are greatly impacted by state and national borders, neither landscapes nor animals observe these invisible boundaries. Appropriately, the WCLP analysis studies wildlife connectivity from a regional perspective, including neighboring areas in Oregon, Idaho, and British Columbia. This methodology ensures the study results will provide resource managers in the affected states and provinces with a standardized data platform from which to base their conservation plans.

Beyond highlighting suitable habitat and associated linkages for these species, the studies also identified obstacles to wildlife movement. Of particular concern are major highway systems in Washington. Interstates 5 and 90, for example, not only divide animal habitat and inhibit species migration but also increase the likelihood of human-animal encounters and conflicts. The [Washington State Department of Transportation](#), a member of the WHCWG, is using the analyses to inform their decision to implement structures that will enable wildlife to safely cross these structures (e.g., fencing, enlarged culverts, and wildlife overpasses).

The WCLP is funded, in part, by a grant from the [Great Northern Landscape Conservation Cooperative](#) (GNLCC), which has supported landscape connectivity work in the past. One such project, ["Document Fine Scale Linkage Areas and Conservation Delivery in the Northern Rockies of U.S. and Canada,"](#) shares many similarities with the WCLP, including the mapping of barriers to animal movement, such as highways, agriculture, and development.



The view along SR-20 North Cascades Scenic Byway outside of Winthrop, WA. Courtesy of Washington State Tourism.

"Funding landscape connectivity projects is a high priority for the Service and our partners in the Great Northern LCC," said Stephen Guertin, Chairperson of the GNLCC and Regional Director of the U.S. Fish and Wildlife Service, [Mountain-Prairie region](#). "Projects such as the WCLP provide wildlife managers and other decision makers with a science-based framework for addressing the many impacts of climate change and habitat fragmentation. Armed with this knowledge, resource managers can make informed decisions that will allow for continued development and economic growth, while preserving our nation's wildlife resources."

Learn more about this project at the [April 6th Webinar!](#)

Why Landscape Conservation Cooperatives?

If you are asking ‘what is a Landscape Conservation Cooperative’ and ‘why do we need them’, you are not alone. The Department of Interior’s LCCs are relatively new, started in the fall of 2009. LCCs propose a new way of doing the business of conservation, but the roots have evolved through a shift in the 20th century ‘conservation paradigm.’ This refers to the way society values the land and views the need for conservation over the last century. The shift has been from a ‘utilitarian’ perspective of resource use to a ‘conservation ethic’ based on ecosystem and landscape science. Theory behind landscape conservation is at the foundation of this shift. Recall the debates in the literature about patch dynamics, sources and sinks, and landscape reserves. Over time, the response from the conservation community has been programs that embrace science-based, landscape-scaled conservation.

Paralleling this shift in the conservation paradigm, recent technological advances have increased opportunities for information exchange and changed the standard of what we should know and accomplish. Technology in communications through internet, email and cell phones; in data management through increased transmission capacity; and in the sophistication of geospatial and ecological information and modeling capacity has created an expectation: we have the ability, now provide the answers.

This convergence of landscape theory and advances in technology led conservation organizations (government and non-government alike) to create new programs focused on working together and sharing information across large landscapes that transect geographic, political and jurisdictional boundaries (See [Large Landscape Conservation: A Strategic Framework for Policy and Action, Lincoln Institute, May 2010](#)). This is not achieved in a day. To shift how we do business and how we interact, institutionally and programmatically, is challenging and at times, frustrating. Consider the diversity of missions and goals, as well as the policy and operational differences, not just within governments, but among them and with the private sector.

The challenge begins with a collective vision for landscape conservation and a shared information base that each organization can use to guide their individual management decisions. Landscape Conservation Cooperatives are intended to be the partnership, the forum, and the network to promote and facilitate this collective vision and shared information base. Through this foundation, organizations can align for better collaboration, increased leveraging of funds and, in the end, greater effectiveness. Through developing a collective vision for landscape conservation, we are investing in a landscape legacy for sustainable lands, wildlife and resources and cultural heritage that retain the diversity of values important to our future.

Climate Science Centers

There are two new U.S. Department of Interior funded Climate Science Centers (CSC) within the Great Northern Landscape Conservation Cooperative. These university-led consortiums will have scientific staff, work closely with university researchers, and develop active graduate and post-doctoral programs to investigate all aspects of climate change and the ecological effects of that change. They will be key partners in addressing the science needs of the GNLCC. Many of the details remain to be developed, and the GNLCC will be represented on the planning and scientific teams leading the CSCs. The Northwest CSC is being led by Oregon State University in close collaboration with the University of Washington and the University of Idaho. Yvette Converse, Tom Olliff, and Sean Finn recently attended the first meeting of the consortium and returned enthusiastic about the possibilities. The North Central CSC is lead by Colorado State University and also includes Montana State University, the University of Montana, the University of Wyoming, the University of Colorado, Colorado School

of Mines, Iowa State University, the University of Nebraska, and Kansas State University. Rick Sojda and Greg Watson represented the LCC at the consortium’s recent meeting, where Sojda made a presentation to the consortium regarding the science needs of the GNLCC. Sojda is truly excited about how the CSCs and LCCs will work together. “I see a tight collaboration. Let me give you an example. Think about trumpeter swans that winter on rivers in the Tri-State Area where Wyoming, Idaho, and Montana come together. The CSC can provide projections of how our warming climate might change ice cover and associated submergents that comprise much wintering habitat. The state fish and wildlife agencies, US Fish and Wildlife Service, and the Pacific Flyway Council might provide survey numbers of swans. And, the GNLCC can provide discussion forum and the adaptive management capability to evaluate the effect of a changing climate on achieving flyway population objectives for swans.”

GNLCC Calendar

February 23

[GNLCC Brown Bag Seminar/
Webinar](#)

Dr. Clint Muhlfeld
Bozeman, MT

March 7-8

Advisory Team Meeting
Spokane, WA

April 6

[GNLCC Brown Bag Seminar/
Webinar](#)
[Washington Wildlife Habitat
Connectivity Working Group](#)

April 13-14

Steering Committee Meeting
Hosted by Confederated
Tribes of the Umatilla
Pendleton, OR

Regional Events

February 28 - March 1

[Workshop: Understanding and
Adapting To Climate Change
in Aquatic Ecosystems at
Landscape and River Basin
Scales](#)

Boise, ID

April 4

[Living on the Edge:
Integrating science into the
management of range-margin
populations](#)

Cody, WY

Webinar Series Begins February 23!

Join Drs. F. Richard Hauer and Clint Muhlfeld for their presentation: The Flathead Wild - A Riverscape Undergoing Tremendous Change.

Invasive species, habitat destruction, and climate change pose serious threats to aquatic ecosystems worldwide. The Transboundary Flathead Basin in Montana (USA) and British Columbia (Canada) hosts one of the most diverse and unique aquatic ecosystems in North America. Despite these tremendous ecological values, this riverscape is undergoing tremendous change. Drs. Hauer and Muhlfeld will discuss the ongoing threats facing aquatic resources in the Transboundary Flathead, their aquatics research aimed to inform conservation and management programs, and why there is hope that the ecological integrity of this shared system will be preserved for future generations.

Time: 12 p.m. - 1 p.m. MST

[Click here to visit the Webinar website](#)

Conference Line: 1-866-795-8047

Pass Code: 6972717#



The Transboundary Flathead River

Photo courtesy of G. Lenz

Regional Partnership Forums

Partnership (Eco) Forums are an engagement of conservation practitioners and partnerships that share landscape conservation challenges in an eco-geographic context. Through a partner-driven process, field-level managers, scientists and key conservation constituents will identify priority conservation needs for GNLCC flagship priorities and subsequent informational or science needs. This information will guide a long-term strategy and annual workplans as well as providing input and feed-back on utility and application of landscape science, tools and information.

Partnership (Eco) Forums also provide a means to engage the partnership network (a more diverse and directly knowledgeable constituent) on specific conservation needs that will inform and support an adaptive management approach to landscape conservation.

The GNLCC will provide support and loose structure for Forums to develop for 3 broadly defined eco-typic areas: Columbia Basin, Rocky Mountain and Sage-Steppe. Eco-typic areas are ecologically relevant geographies within the Great Northern area that share similar ecological processes or systems and related landscape issues. They are considered a community of conservation practitioners that share common conservation needs at a landscape scale.

A Leadership Team, composed of local science and management conservation experts and leaders recommended by Forum and SC members, will guide each individual forum. The GNLCC will be represented by a Staff member or an Advisory Team or Steering Committee member. The Forum focus will be guided by the collective vision for landscape conservation and related flagship priorities as identified by partners of the GNLCC. Neighboring LCCs will be encouraged to engage at the appropriate juncture to provide cross LCC coordination.

If all mankind were to disappear, the world would regenerate back to the rich state of equilibrium that existed ten thousand years ago. If insects were to vanish, the environment would collapse into chaos. - E. O. Wilson

GNLCC Landscape Assessment and Decision Support System Demonstration Project

As technology has increased the ability to exchange and use information, the opportunity to collaborate increases, especially when ecological, administrative, and political boundaries overlap. The Great Northern Steering Committee recognized such an opportunity to collaborate among the [Western Governors' Association](#) (WGA) efforts to develop pilot projects for compatible, landscape-scale Decision Support System (DSS). The [U.S. Department of Interior's \(DOI\) Landscape Conservation Cooperatives](#) (LCC), [BLM Rapid Eco-regional Assessments](#) (REA), the [Integrated Resource and Protection Strategy](#) (IRPS) of the U.S. Forest Service's Northern Region and the [Heart of the Rockies Initiative High Divide Project](#) have initiated a [Demonstration Project](#) to: 1) work across jurisdictions and boundaries and 2) improve the use and dissemination of landscape assessment information for decision making.

The WGA DSS efforts, including the Idaho-Montana Divide and the Wyoming Interagency Spatial Database, will be used by states to identify fish and wildlife crucial habitats and wildlife linkages and corridors; REAs are intended to synthesize natural resource data to develop an all-lands synthesis and assessment to assist the BLM in de-

cision making; and the IRPS will support the U.S. Forest Service with land management decision making. The LCC provides a coordinating framework for support of science and information that informs a collective vision for landscape conservation in the face of landscape stressors.

A collaborative team initiated the Demonstration Project at a November 17 meeting in Idaho Falls. Currently, the team is working on a Project Agreement that will set the stage for implementation, including: (a) Identifying project values, cross-project values, and associated datasets required/desired; (b) Identifying common fish and wildlife species and determining data availability and methodologies for distribution models and corridors/linkages; (c) Developing trans-boundary data layers with regional compatibility related to fish, wildlife, habitats, change agents, and risk assessment models; (e) Incorporating climate change and other landscape level information and assessments; (f) Identifying gaps in data, assessments, or other decision support elements that may be filled as updates occur and information is refined; (g) Defining how data will be compiled and integrated among overlapping efforts for maximum benefit.

DEMONSTRATION PROJECT PARTNERS



- BLM Middle Rockies Rapid Ecological Assessment
- USFS Integrated Restoration and Protection Strategy
- WGA, IDFG and MTFWP Idaho-Montana Divide DSS Pilot
- WGA and WGFD Interagency Spatial Database Pilot
- Heart of the Rockies High Divide Project



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Partners for Conservation: The Wyoming Landscape Conservation Initiative

The [Wyoming Landscape Conservation Initiative](#) (WLCI) is a long-term, science-based effort to assess, conserve and enhance fish and wildlife habitats while facilitating responsible development. The partnership formally includes local, state and federal agencies, with support provided by various other organizations that have a stake in conservation. The WLCI is developing a conservation action plan based on scientific information, the interests of supporting organizations, and areas that provide the greatest value to wildlife.

The WLCI area fits almost entirely within the GNLCC area and in Southwest Wyoming includes significant amounts of sage steppe habitat, which is one of the three major ecotype areas for the GNLCC. The WLCI is structured to gather information and apply it to conservation. However, additional resources are required to achieve the full vision of integrating science and management at the landscape scale. The WLCI collaborates with the GNLCC to strengthen comprehension and analysis of landscape scale information to improve conservation efforts. This works by leveraging funds, improving information sharing, and building on mutual goals. The WLCI has also agreed to be a lead organization for the GNLCC Sage Steppe regional forum.

How to get involved

- Contact a [Steering Committee](#) member from your organization.
- Contact a member of the GNLCC Staff or [Advisory Team](#).
- Submit items for the Spring newsletter by email to [Leslie Allen](#). Deadline is March 31.
- Present your GNLCC sponsored project at a Webinar. Contact [Suzanna Carrithers](#) for more information.

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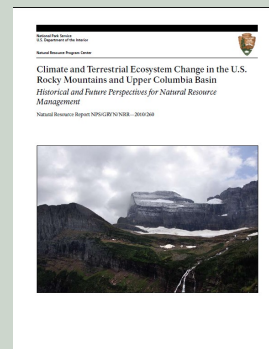
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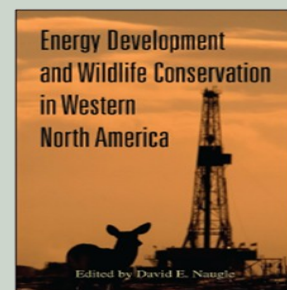
<http://nrmssc.usgs.gov/gnlcc>

What's New?

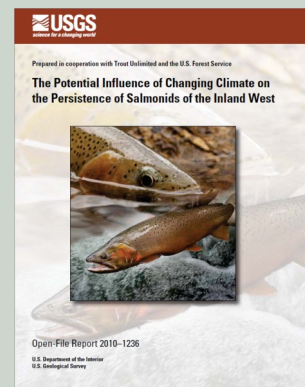
Click on the thumbnail images of the reports to view or download them.



[The McWethy, et. al. 2010 climate change in the Northern Rockies report.](#)



[Edited by Dr. David Naugle with 25 contributors and a foreword by Mark Boyce](#)



[The Potential Influence of Changing Climate of the Persistence of Salmonids in the Inland West by A.L. Haak, et al.](#)