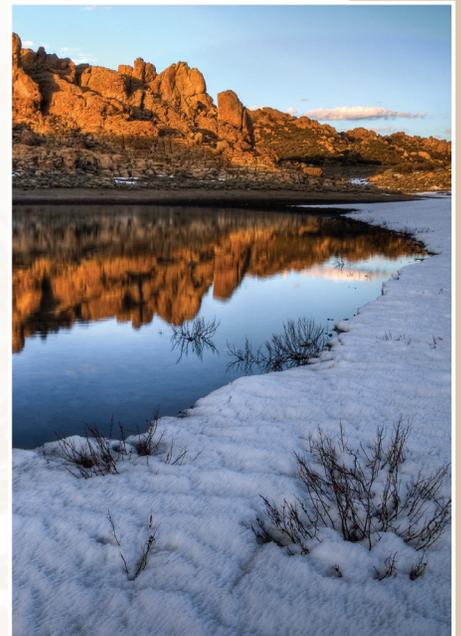




# Great Basin

LANDSCAPE CONSERVATION COOPERATIVE



photos courtesy of Brian Beffort

## Annual Highlights 2012

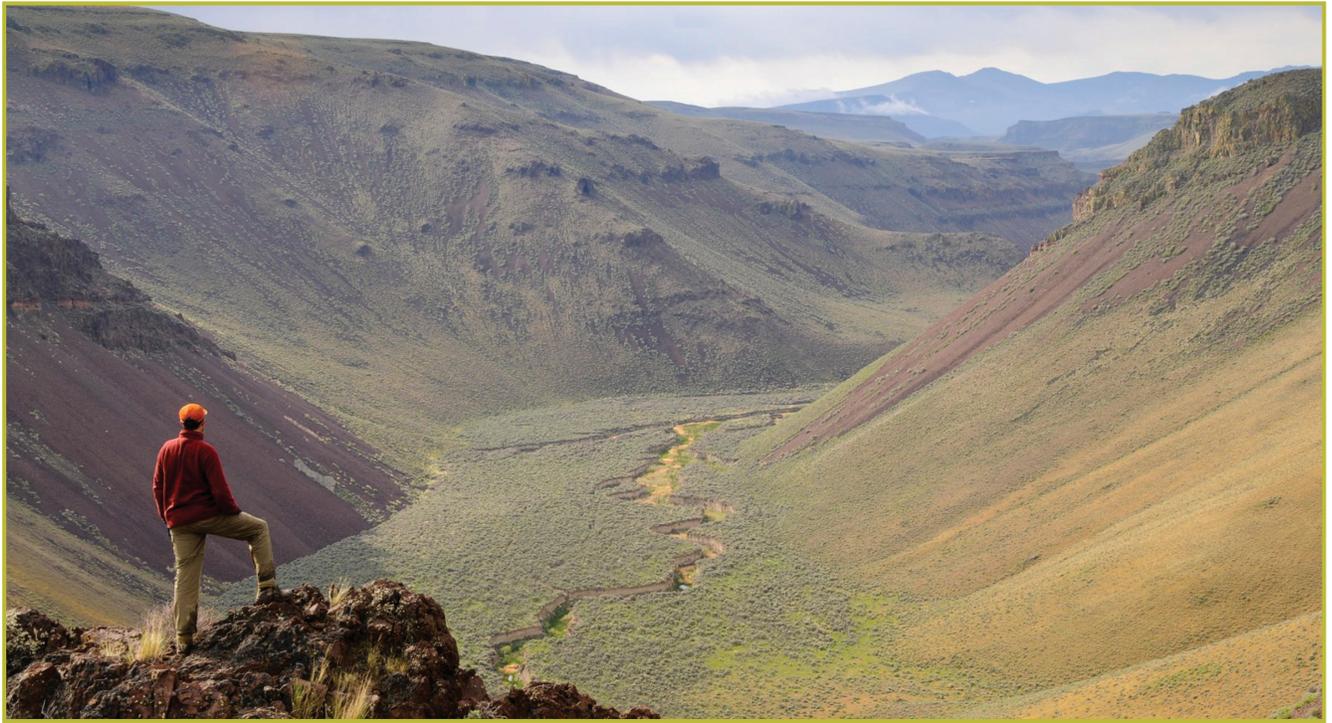


photo courtesy of Brian Beffort

## About the GBLCC

The Great Basin Landscape Conservation Cooperative (LCC) is one of 22 LCCs nationwide established by the Department of the Interior (DOI) to better integrate science and management to address climate change and related issues. The Great Basin LCC is a self-directed partnership between bureaus and others involved in natural resource management and conservation.

## What does the Great Basin LCC do?

In broad terms, the Great Basin LCC helps link and integrate science information providers with resource managers and science users; brings additional DOI resources to bear on landscape-scale conservation issues and opportunities; and helps to apply science and facilitate coordination on a wide range of efforts to respond to climate change, invasive species, wildfires, human development and other stressors across the Great Basin. The Great Basin LCC is currently developing science and traditional ecological knowledge priorities that will meet the objectives of the Great Basin LCC goals and objectives. The LCC does not replace existing organizations already accomplishing conservation work in the Great Basin, rather the aim is to facilitate, enhance and inform that work.

## Mission

The Great Basin Landscape Conservation Cooperative enhances understanding of the effects of changing climate and other natural and human impacts across the region and promotes the coordination of science-based actions to enable human and natural communities to respond and adapt to those conditions.

## Goals

- Provide leadership and a framework linking science and management to address shared ecological, climate, and social and economic issues across the basin.
- Focus science and management actions to sustain natural resources in the context of changing environmental conditions.
- Enhance collaboration to integrate science and management among Great Basin LCC partners particularly as related to climate change and other landscape-scale change agents.
- Promote communication and education.

## Highlights from 2012

- Dr. Matt Germino, Great Basin LCC Research Ecologist, received funding to the following to conduct projects in the Great Basin:
  - The Northwest Climate Science Center (CSC) funded a study on sagebrush in the Great Basin. The project is evaluating the application of climate science as it relates to assessing the vulnerability of sagebrush ecosystems and habitat, in terms of their resistance to environmental change and human-related resilience in restoration.
  - USDA National Institute for Food and Agriculture (NIFA) rangeland grant for weather effects on soil stability following wildfire for post fire management treatments.
- Dr. Germino and his students at Boise State University set up a large landscape-scale study to evaluate climate effects on post-fire vegetation recovery, in the Birds of Prey National Conservation Area. Warming and rainout treatments were installed in five of the 2012 wildfires there, along within unburned areas, working with a wide range of university and agency collaborators.
- The Great Basin LCC developed a communications plan in 2012 with the objective of creating awareness and enthusiasm, imparting knowledge, sharing our values, and stimulating a desire to partner with the GBLCC.
- Dr. Todd Hopkins and Dr. Mike Collopy, UNR, received a grant from the Joint Fire Science Program for a conference titled, “The Great Basin Consortium 3: A Landscape under Fire.”



## Great Basin LCC Steering Committee

The Great Basin LCC Steering Committee is made up of agencies, non-governmental organizations, tribal and state representatives from the five-state Great Basin region. Since 2011, the Steering Committee has worked to finalize and adopt a Great Basin LCC charter; identify issue-based working groups; select a Leadership team; and set priorities for the Great Basin LCC. The Leadership team is composed of a Chair, Vice Chair and Past Chair, with rotating terms.

In January 2012, the Steering Committee identified priorities for the year, including: coordination of conservation science surrounding sage-dependent species and habitats; build upon the BLM's Rapid Ecoregional Assessments (REA) efforts; and facilitate information transfer of cheat-grass die-off study outcomes.

## Great Basin LCC Staff



Linda Kelly  
Coordinator



Dr. Todd Hopkins  
Science Coordinator



Dr. Matt Germino  
Research Ecologist

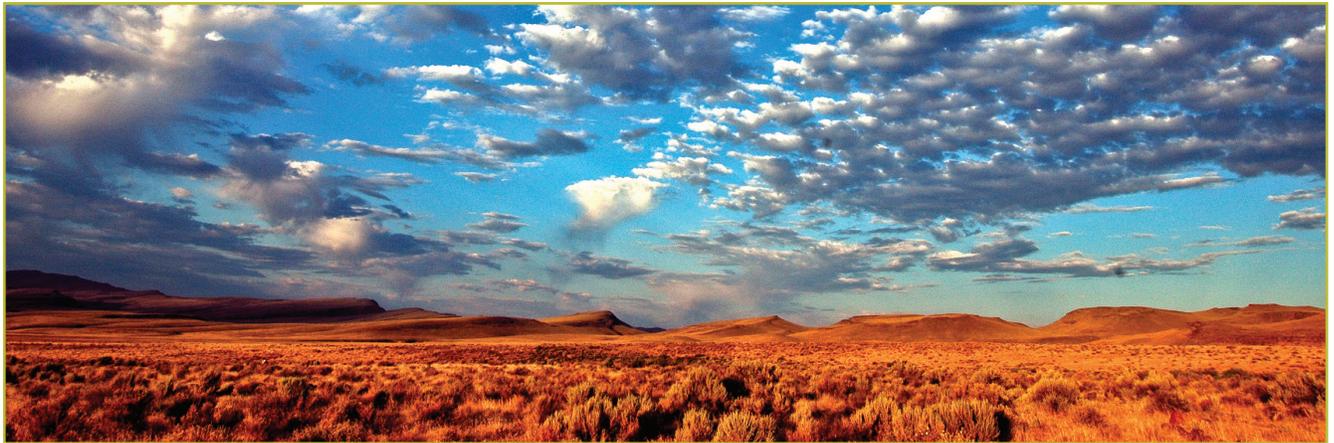


photo courtesy of Kurt Kuznicki

## Additional Climate Science Center-Funded Projects within the Great Basin

Great Basin LCC staff work closely with the Northwest and Southwest Climate Science Centers to:

- relay management needs of resource managers to their scientists
- help craft their request for proposals
- serve as reviewers for proposals
- provide results of climate research to the field

## From the Northwest Climate Science Center

<http://www.doi.gov/csc/northwest/index.cfm>

- Contribution of landscape characteristics and vegetation shifts from global climate change to long-term viability of greater sage-grouse.  
*Lead Principal Investigator (PI): Steven Knick (FY11).*
- Modeling effects of climate change on cheatgrass die-off areas in the Northern Great Basin.  
*Lead PI: Bruce Wylie (FY11).*
- Disentangling the effects of climate and landscape change on bird population trends in the Western U.S. and Canada.  
*Lead PI: Matthew Betts (FY11).*
- Toward next generation downscaling for hydrologic prediction in the Pacific Northwest (using Multivariate Adaptive Constructed Analogs - Variable Infiltration).  
*Lead PI: Dennis Lettenmaier. (FY11).*
- Uncertainty and extreme events in future climate and hydrologic projections for the Pacific Northwest: Providing a basis for vulnerability and

core/corridor assessments.

*Lead PI: Jeremy Littell. (FY11).*

- Sagebrush ecosystems in a changing climate.  
*Lead PI: Matt Germino. (FY12).*
- Integrated scenarios of climate, hydrology, and vegetation for the Northwest (Jointly funded with the Pacific Northwest Climate Impacts Research Consortium).  
*Lead PI: Phil Mote. (FY12).*
- Climate, land management and future wildlife habitat in the Pacific Northwest.  
*Lead PI: Emilie Henderson. (FY12).*

## From the Southwest Climate Science Center

<http://www.swcsc.arizona.edu/>

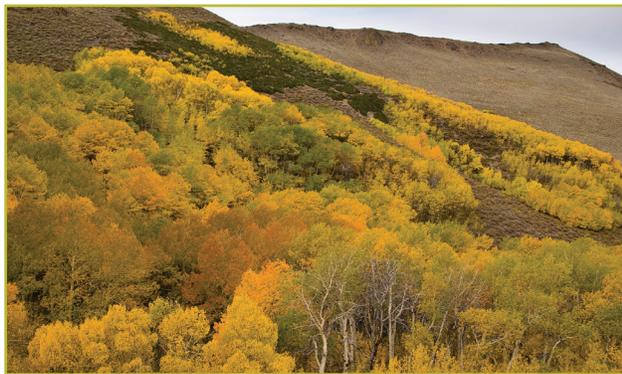
- Climate change vulnerability of Native Americans in the Southwest.  
*Lead PI: Karletta Chief. (FY12).*
- Downscaled climate and hydrologic response for California and the Great Basin.  
*Lead PI: Lorraine Flint. (FY12).*
- Climate change vulnerabilities and adaptation strategies to wildfire in the southwestern United States.  
*Lead PI: Mark W. Schwartz. (FY12).*

## Publications, Presentations and Outreach

Dr. Matt Germino produced eight peer-reviewed journal articles in 2012 on plant-soil-climate relationships in upland landscapes of the western US, with a focus on fire effects and experimental evidence for climate effects.

### Selected Staff Publications

- Moyes A, Germino MJ, Castanha C, Kueppers L. (2012). Warming and the dependence of limber pine (*Pinus flexilis*) establishment on summer soil moisture within and above its current elevation range. *Oecologia* 171: 271-282
- Sankey J, Germino MJ, Sankey T, Hoover A (2012) Fire effects on the spatial patterning of soil properties in sagebrush steppe, USA: Meta-analysis. *International Journal of Wildland Fire* 21:545 – 556



photos courtesy of Brian Beffort

- Dr. Todd Hopkins, Science Coordinator, was a contributing author to the “Adaptive Management: The U.S. Department of Interior Applications Guide”. The guide provides natural resource managers with tools to address the complexities and uncertainties of natural resource management under challenging conditions such as climate change. The guide includes case studies ranging from river flow management and protecting migratory birds to siting renewable energy projects, drawn from four areas important to the DOI and its partners: climate change, water resources, energy and human impacts on the landscape. The Applications Guide is available for download at <http://www.doi.gov/ppa/upload/DOI-Adaptive-Management-Applications-Guide.pdf>.

## Getting Connected

Great Basin LCC staff supported a number of conferences and meetings, discussing and promoting the Great Basin LCC and its initiatives—a few of highlights:

### Presentations

Linda Kelly and Dr. Todd Hopkins gave more than 25 presentations to 1,500 people on the Great Basin LCC this year. Some highlights include presentations to:

- The Western Regional Partnership
- The Western Working Group of the Partners in Flight Program
- the Great Basin Native Plant Selection and Increase Project
- the Tahoe Science Consortium
- the Idaho and Nevada BLM Leadership Teams

Dr. Matt Germino gave a keynote address at the National Science Foundation western states EPSCOR meeting on the role of the Great Basin LCC and federal collaborative initiatives.

The GBLCC participated in the development of the National Landscape Conservation System strategic plan in Nevada and presented on the GBLCC at the NLCS workshop in Albuquerque, New Mexico. A great deal of interest in the LCCs was expressed by managers and resource specialists throughout the country, specifically about how they could tap into the LCC community.



## Great Basin Climate Forum: 2012 Outlook

In partnership with the Desert Research Institute and the California Nevada Applications Program, the GBLCC launched a one day series for public and private land owners, resource professionals and interested individuals who are involved in resource management in the Great Basin. Three forums were held – two in Reno, NV and one in Klamath Falls, OR, highlighting topics and discussions summarizing the current climate conditions in the Great Basin. One of the goals was to provide resource managers timely and relevant information about current climate conditions and to support near term management decisions. Those who couldn't participate in person had the opportunity to participate via webinar. The graph below highlights participant responses to using climate-related information in management decisions.



photos courtesy of Brian Beffort

Comments gleaned from the exit survey cards from all three Climate Forums:

*“I’ve been to two Forums, and found them both very informative.”*

*“Excellent Forum, I learned a lot, and it was well worth my time.”*

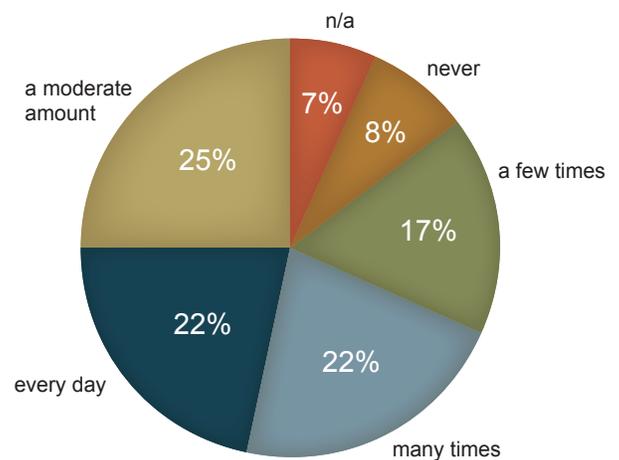
*“I will ensure that my agency will participate and attend all future Climate Forums and I strongly encourage you to continue these forums.”*

*“The Forum was a great experience to learn about the issues and to connect with other environmental professionals.”*

*“I am always interested in applied climate information and I enjoyed the mix of presentations and the afternoon exercise”*

*“Beyond the high quality of the presentations, the opportunity for networking was very valuable.”*

### How many times a month do you use climate or weather related information in management decisions?



## Climate Forum Co-sponsors



## Great Basin LCC Staff and Partners

Linda Kelly, Coordinator  
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Dr. Todd Hopkins, Science Coordinator  
todd\_hopkins@fws.gov

Dr. Matt Germino, Research Ecologist  
mgermino@usgs.gov

### Steering Committee Member Organizations

Bureau of Land Management  
California Department of Fish and Game  
Duckwater Shoshone Tribe  
Eastern Nevada Landscape Coalition  
Farm Service Agency USDA  
Great Basin Cooperative Ecosystem Studies Unit (GBCESU)  
Great Basin Environmental Program (GBEP)  
Great Basin Research and Management Partnership (GBRMP)

Great Basin Water Network  
Lahontan Audubon Society  
Natural Resources Conservation Service  
Nevada Association of Counties  
Nevada Department of Wildlife  
Nevada Mining Association  
PacifiCorp  
Paiute Indian Tribe of Utah  
Partnership for National Trails  
Public Lands Council  
State of Utah  
The Nature Conservancy  
US Fish and Wildlife Service  
US Forest Service  
US Geological Survey

