

# COORDINATING REGIONAL SUPPORT FOR NATURAL RESOURCE MANAGEMENT IN A CHANGING ENVIRONMENT



Climate and weather variability affect a broad array of risks (such as drought, floods, changing growing seasons, and many others) that must be addressed by decision makers, including families, farmers, ranchers, foresters, state and tribal natural resource professionals, city managers, businesses, and others. Risks are not limited to a single region or scale, so to meet the information needs of decision makers, federal agencies must closely coordinate within the federal family as well as with state, local, and tribal entities. For example, impacts on water resources affect many different decision makers across the country, requiring action and engagement across many governing jurisdictions and scientific disciplines. Coordination is a vital part of ensuring that federally supported science and risk management efforts address needs, preparation, and responses in integrated ways to best meet the needs of the public.

Federal agencies are increasingly supporting science and operational programs that provide context-specific data, information, and tools for decision makers to improve practices and make risk management and adaptation decisions that are climate- and weather-sensitive. These programs rely on partnerships involving scientists, practitioners, and decision makers to identify and refine science needs and with local officials and experts to ensure effective implementation. Federal agencies are eager to ensure that the communities and networks that we serve have sustained and reliable access within their region, to the expertise and information needed to engage in this important work. Four key, partnership-driven regional science and information programs are working to ensure this continued support:

**Regional Climate Hubs (USDA)** package and deliver information capitalizing on USDA Service Centers, Forest Service Threat Centers and partnerships, such as Cooperative Extension and the Climate Change Response Frameworks. This information enables farmers, ranchers, and forest landowners to adapt to the impacts of climate change and weather variability and to promote agriculture/forestry production sustainability and health. ([www.usda.gov/climatehubs](http://www.usda.gov/climatehubs))

**Landscape Conservation Cooperatives (DOI/FWS/multiple partners)** are management-science partnerships composed of states, tribes, federal agencies, non-governmental organizations, universities, and others. LCCs provide a forum to define shared objectives, develop spatially-explicit strategies, and provide scientific and technical decision support to foster landscapes capable of sustaining natural and cultural resources for current and future generations. (<http://lccnetwork.org>)

**Regional Integrated Sciences and Assessments (NOAA/multiple partners)**

build knowledge, expertise, and ability of decision makers to prepare for and adapt to climate and weather variability. RISA teams work with a diverse range of sectors (e.g. public health) as a research engine for partnership-driven science. RISAs partner with other facets of NOAA's regional climate efforts including the Regional Climate Service Directors, who help link people to expertise and data; the Regional Climate Centers, which house operational data and services, and offices of the National Weather Service. ([climate.noaa.gov/risa](http://climate.noaa.gov/risa))

**Climate Science Centers (DOI/USGS)**

are joint federal-university partnerships that provide natural and cultural resource managers (federal, state, tribal, local, public/private) with the scientific tools and information they need to understand and manage for climate-related risks and vulnerabilities to natural and cultural resources. ([www.doi.gov/csc/index.cfm](http://www.doi.gov/csc/index.cfm))

# HOW WE COORDINATE



Western Water Assessment RISA works with the North Central CSC on a joint project with The Nature Conservancy in Colorado. Here, participants work to restore sagebrush habitat using information drawn from future climate scenarios.

Photo credit: Betsy Neeley, TNC

Naturally, some technical expertise within these programs overlaps, but each is targeted directly to stakeholders associated with the respective agencies. Designing agency programs to support mission-relevant partnerships helps ensure that each group obtains information in the form and at the level of detail and complexity appropriate to their decisions and activities. By linking federal efforts in a region, users can benefit from integrated scientific information, drawing on the expertise of scientists and users from multiple backgrounds.

CSCs, RISAs, LCCs, and Hubs have and will continue to interact in both formal and informal ways at the national, regional, and project level. Regular exchange builds trust, understanding, and appreciation for the capabilities of science and the pressure of real world challenges. Thus, informal dialogue and engagement are critical to our ongoing coordination.

National and regional program leaders—working with emerging regional network partners and decision makers—identify and address common needs across sectors and best practices for information sharing. Such efforts include establishing greater consistency across communication products, and periodic program coordination meetings.

This growing interagency coordination will allow communities, land managers, and state and local governments to know where they should go for comprehensive climate information and expertise to allow them to recognize opportunities, and to prepare for and respond to risks.

## Scientific collaboration is ensured through:

- Co-location of and institutional arrangements between centers
- Collaborative, jointly funded projects and joint requests for proposals
- Cross-membership on technical panels and committees
- Extensive integration and sharing of data, results and project information

## Coordinated engagement is ensured through:

- Shared membership on stakeholder committees
- Encouraging joint priority setting across regional programs
- Clear and consistent communications about where to go for expertise and data
- Continued interaction with national efforts such as the National Fish, Wildlife, and Plants Climate Adaptation Strategy Joint Implementation Working Group and Climate Change and Water Working Group, and existing regional partnerships and organizations

# REGIONAL COLLABORATION CASE STUDIES



Central Plains Experimental Range, Nunn, Colorado.  
Photo Credit: Justin Derner, USDA

## Managing Drought Risk on the Ranch

The Northern Plains states are facing emerging risks and working to enhance resilience across sectors. To work with stakeholders to address these impacts and risks, resources in climate service activities across different federal government departments have been mobilized in the form of a regional climate response collaborative in the Northern Plains via Northern Plains Regional Climate Hub (NPRCH), the Western Water Assessment (WWA) RISA team, and North Central Climate Science Center (NCCSC). This Collaborative developed the Managing Drought Risk on the Ranch project, which seeks to support adaptive grazing management during drought and other short- and long-term climate variations that affect grassland production, ecology, and the economics of livestock production. Interdisciplinary researchers will build and test risk and decision models for both research and application to address impacts and provide management tools. The Managing Drought Risk on the Ranch project takes advantage of several resources focused on climate of the central and northern Great Plains/Rocky Mountains to make the link between existing and enhanced data and the decisions that producers make under conditions of climate and market uncertainty. Each entity brings a different set of expertise, tools, and stakeholders to the table. NPRCH and the USDA Agricultural Research Service have developed drought tools for producers across the West, aimed at helping them make better decisions in the face of drought. DOI's North Central Climate Science Center brings ecological science and modeling to bear on the problem of managing grasslands during droughts. And the Western Water Assessment brings climate science and decision analysis together to bear on the challenges faced by ranchers during droughts to help identify and manage tradeoffs and options. This groundbreaking project for a growing collaboration among WWA RISA, NCCSC and the NPRCH will provide usable information to managers, ranchers, and scientists who face increased pressures and the need to plan for climate impacts.

# REGIONAL COLLABORATION CASE STUDIES



## Integrated Scenarios of the Future Northwest Environment

Resource managers in the Pacific Northwest face a range of probable future climate changes and need up-to-date information and guidance on how to respond. Integrated Scenarios of the Future Northwest Environment (Integrated Scenarios) was a collaborative venture, developed to do just that. The project brought together scientists from five separate Pacific Northwest climate research organizations including the Pacific Northwest Climate Impacts Research Consortium (CIRC) RISA team and the Northwest Climate Science Center (NW CSC). Funding for Integrated Scenarios came from RISA, the Climate Science Centers, and the U.S. Department of Agriculture. The project's goal was to explain what the latest climate science says about the Northwest's future climate, vegetation, and hydrology. To do this, project leaders brought together regional climate scientists, hydrologists, and ecologists to model future scenarios for the Pacific Northwest. Project scientists then worked closely with Pacific Northwest resource managers and other stakeholders, providing guidance to help apply the project's results to specific management goals. To further the reach of Integrated Scenarios, project scientists took the additional step of building a series of web-based tools that allow users to visualize changes in climate, hydrology, and vegetation across the Pacific Northwest's varied landscapes. Downloadable datasets are also available online, and NW CSC worked with the North Pacific Landscape Conservative Cooperative to demonstrate how these scenarios could be made available to conservation practitioners, via the LCC's Conservation Planning Atlas. ([nplcc.databasin.org](http://nplcc.databasin.org))



## Southeast Conservation Adaptation Strategy

The dramatic changes sweeping the Southeastern United States — such as urbanization, competition for water resources, extreme weather events, sea level rise, and climate change — pose unprecedented challenges for sustaining natural and cultural resources. In an effort to unite the conservation community and prepare for these challenges, the Southeastern Association of Fish & Wildlife Agencies (SEAFWA) Directors initiated the Southeast Conservation Adaptation Strategy (SECAS) in 2011. Participating federal agencies include the Department of the Interior, the National Oceanic and Atmospheric Administration, the Department of Agriculture, the Department of Defense, the Environmental Protection Agency, the Department of Transportation, and the Federal Emergency Management Agency. The technical and collaborative capacity for this unique effort is being provided through the Southeast and Caribbean Landscape Conservation Cooperatives (LCCs), the Southeast Aquatic Resources Partnership, and the Southeast Climate Science Center. In October 2016, SECAS achieved a major milestone with the release of Version 1.0 of an integrated conservation blueprint for the Southeast and Caribbean. This blueprint stitches together the conservation and restoration priorities in the region into one unifying map that can be shared by regional planners, highway departments, developers, businesses, and conservation professionals. By providing regional context for local decisions, it will help organizations with different goals find opportunities to align their efforts to protect fish and wildlife habitat, improve quality of life for people, safeguard life and property, and develop strong economies. In keeping with a model of continual improvement, SECAS partners will be reaching out to involve additional stakeholders in refining and implementing the blueprint. More information on SECAS can be found online at [secassoutheast.org](http://secassoutheast.org).