

# Engaging a Climate Ready Agency

*From Dave Cleaves, Forest Service Climate Change Advisor*



FEBRUARY 29, 2012

In honor of leap year, we are leaping over Dave's essay section and getting right to all of the details of climate change related research, management activities, and communications in the Forest Service. If you have something to share, see submission details in the last section of this update. We'll spread the news so we can learn from each other as we all work to bring climate change knowledge into our organizational expectations and actions.

Don't miss an issue! Previous editions of the updates are posted on the [Climate Change Advisor's website](#). Sign up for our climate change [listserv](#) and we'll send emails to announce when a new update is available on the website. You can also direct partners to this website so they can sign up for the listserv. For partners, abbreviations used in this update are explained at the end.

## FROM THE WASHINGTON OFFICE

### National Partners Dialogue

Dave Cleaves and FS R&D ADC Deanna Stouder represented the FS at the National Partners Dialogue for the National Climate Change and Wildlife Science Center and DOI Climate Science Centers in Washington, DC, November 30 and December 1, 2011. Convened by the Ecological Society of America, The Wildlife Society, and the Meridian Institute, the meeting included representatives from Federal and state agencies, LCCs, Indian tribes/tribal organizations, nongovernmental partners, industry, and academia. The meeting was an opportunity to review progress made since the 2008-2009 series of national and regional workshops provided the basic architecture for the NCCWSC and CSCs. The report prepared for USGS by the convenors is available [online \(pdf\)](#).

### FS climate change information on the intranet

Check out the [Climate Change intranet site](#) for news, contact information, briefing papers, and more related to the FS climate change response. And be sure to check out the [Climate Change And...](#) section for topics such as environmental justice, landscape-scale conservation, risk management, extreme weather and NEPA & planning. Our newest topic (coming soon) will feature information on the All Stations coordinated approach to tribes and climate change research.

### Climate Change presentations on the O drive

Climate change coordinators around the country have been contributing their powerpoint presentations to our O drive at O:\OfficeOfTheChief\ClimateChange\Project\CCPresentations. Although only the coordinators have write access to this folder, any FS user can copy these files for their own use. If you have a climate change related presentation or slides that you want to contribute, but don't have write access, please send to Cathy Dowd at [cdowd@fs.fed.us](mailto:cdowd@fs.fed.us). We are also keeping archived copies of NPS webinars (see more under Other Events and Opportunities section of this update) on the O drive at O:\OfficeOfTheChief\ClimateChange\Project\NPSwebinars.

## Climate Change Advisor Outlook calendar of events

Use the FS-Climate Change Advisor Outlook calendar to see and post upcoming climate change related events. Everyone in FS has read/write access. Here's how you open it: from your calendar window in outlook, right click on My Calendars (on the left hand side of the window) and Add Calendar, From Address Book. Search for FS-Climate Change Advisor, click Calendar, and OK. After you've opened it once, it should stay on the list of My Calendars so you can easily turn it on or off. You can drag and drop events between your own calendar and the advisor's calendar if you have both calendars open in the window. If you want to add an event to the advisor's calendar, create the event on your own calendar and drag and drop it onto the advisor's calendar.

## FROM THE FIELD

### Climate Change Tree and Bird Atlases webinar

Anantha Prasad of NRS and Stephen Matthews of Ohio State University are presenters on the National Conservation Training Center webinar, Climate Change Tree and Bird Atlases: Tools for evaluating the impact of climate change on tree and bird species habitats in the eastern United States, on March 14, 1:00-2:30 pm EST. This webinar explores the broad scale environmental factors that influence where species occur on the landscape and how climate change can impact species habitats. It will provide you with an opportunity to explore the [Tree and Bird Climate Change Atlas](#), which contains a wealth of information about 134 tree and 147 bird species of the eastern U.S. The atlas provides a detailed look at how the habitats for tree and bird species may respond in a changing climate. This webinar will include 1) an introduction to our multi-stage modelling effort; 2) a thorough overview of the Climate Atlas web site and all of its useful components. [Register online](#).

### Training in Advanced Climate Change Topics (TACCT)

The week-long TACCT course (April 2-6, 2012 in Madison, WI) will help federal employees gain an enhanced knowledge of climate change science, ecosystem response and adaptation, and greenhouse gas mitigation principles. Participants will also hone communication skills and begin developing a climate change outreach event for educational purposes. Registration is free. Contact Maria Janowiak at [mjanowiak02@fs.fed.us](mailto:mjanowiak02@fs.fed.us).

### Forest and Grassland Carbon in North America short course

The new online short course *Forest and Grassland Carbon in North America* aims to provide public and private land managers with information on the science, management, and policy of forest and grassland carbon. Course topics are divided into three themes: the carbon cycle and the role of ecosystems, carbon and wildland management, and carbon assessments and markets. The course will be available on DVD as a General Technical Report, published by NRS; pre-order by visiting the [website](#).

### Online science magazine from SRS

[CompassLive](#) is the new online science magazine of SRS. Sign up on the website to receive weekly emails that feature the latest information on work SRS is doing across 13 Southern states, including "Science You Can Use" fact sheets and articles that provide direct assistance to land managers. Recent articles describe how SRS researchers have teamed up with USGS to provide a better understanding of climate effects on freshwater fish and water quality and quantity in the region.

## Shared Landscapes Initiative launches adaptation demonstration

The [Northern Institute of Applied Climate Science](#) is expanding their collaboration with the Chequamegon-Nicolet National Forest to work at a landscape-scale with other landowners. A demonstration of climate change adaptation is under development among a variety of local landowners, forest managers, and others in an area within the Bad River Watershed near the Chequamegon National Forest and Mellen, WI. It will provide real-world examples of forest management activities that enhance the ability of forests to cope with changing conditions, while achieving management goals. The [Shared Landscapes Initiative](#), a partnership group developed as part of the [Northwoods Climate Change Response Framework](#), held a workshop in February with over 70 participants from federal, state, and county government agencies as well as non-governmental organizations, educational institutions, tribes, and industry groups.

## Integrating science into forest planning

Members of the RMRS Science Application & Integration (SA&I) program and forest planners with the Coconino National Forest recently embarked on an effort to engage RMRS scientists in a review of the Coconino's Revised Forest Plan. The Coconino is interested in feedback from RMRS on how proposed changes to the Forest Plan, including recommendations for three additional Research Natural Areas, would improve or inhibit the ability of the research community to operate on the National Forest. Scientists from RMRS's Fort Collins, Albuquerque, and Flagstaff labs and the Coconino's Deputy Forest Supervisor participated in a VTC discussion in December and are planning a second, broader dialogue on integrating science into forest planning. SA&I is working with the Southwest Region to determine if this model and dialogue will work with other national forests in the Southwest as they embark on forest plan revisions over the next several years. To hear the recorded discussion, please contact Megan Matonis ([mmatonis@fs.fed.us](mailto:mmatonis@fs.fed.us)).

## RMRS collaboration on the Flathead Indian Reservation

RMRS, in conjunction with the Confederated Salish and Kootenai Tribes' Forestry Department and the University of Leeds (UK), are about to embark on a pilot project to support forest planning that addresses climate change uncertainty on the Flathead Indian Reservation. According to RMRS's [Alan Watson](#), the project incorporates knowledge and opinions of current reservation residents and tribal natural resource managers about how the landscape has changed over time, the causes of those changes, and challenges to achieving desired future conditions. More details are in the [Char-Koosta News](#).

## NRS and Tribal partnerships on climate change

NRS's Marla Emery has teamed up with University of Maine professors John Daigle and Darren Ranco (both members of the Penobscot Indian Nation) with the Wabanaki tribes of Maine to facilitate a planning process that addresses climate change implications for tribes and other stakeholders in the region. This is one of three NRS projects bringing together tribal natural resource managers, tribal members, and other stakeholders to plan and manage for potential climate change impacts. Collaborative work with SUNY College of Environmental Science and Forestry Professor Robin Kimmerer (Citizen Potawatomi Nation) and the Haudenosaunee (Iroquois) Environmental Task Force will assess opportunities for climate change mitigation and adaptation related to forest stewardship in tribal communities. Dr. Emery and FPL's Michael Dockry also partner with the College of Menominee Nation, which examines Menominee perspectives on climate change. All studies support work by Native students.

## Tribal Climate Change Project

The Tribal Climate Change Project is a collaborative project between the University of Oregon Environmental Studies Program and PNW that aims to understand the needs, lessons learned, and opportunities to work with Tribes on climate change. The three key goals include tribal adaptation and mitigation planning; management of off-reservation resources; and tribal consultation in the context of climate change. This project is part of the Forest Service 2010 Coordinated Approach to Tribal Climate Change Research. Visit the [website](#) for more information.

## North Cascadia Adaptation Partnership (NCAP)

On January 30-31, [NCAP](#) convened its final workshop, one of eight that addressed education, vulnerability assessment, and adaptation options for north-central Washington state. This workshop focused on wildlife, and workshop participants identified potential vulnerabilities of animal species and habitats, as well as adaptation strategies and tactics. Participants included resource managers from Mt. Baker-Snoqualmie National Forest, Okanogan-Wenatchee National Forest, North Cascades National Park, and Mount Rainier National Park, as well as stakeholders from other agencies, tribes, and NGOs. With the workshop phase of NCAP now complete, PNW scientists, University of Washington scientists, and national forest and park managers are compiling scientific data and documentation from all workshops to develop a final assessment for the North Cascades region; the report will be completed in summer 2012.

## Climate Change Response Framework's new website

This [new website](#) was designed to enhance collaboration, communication, and information sharing across the eastern United States, where three Climate Change Response Framework projects covering National Forests and surrounding lands are currently in development. Framework projects bring together partners from many agencies and organizations to respond to climate change. The website was designed specifically with these partnerships in mind. Templates for [partner pages](#) have been created for many partners, who are encouraged to contact the Coordinator for their Framework region to make changes and add content. Partners can submit a photo or logo for their organization, 2) a link to their organization's website, 3) text to describe their interactions and activities in the Framework, 4) text to describe their broader climate change activities and perspectives, and 5) several additional photos or graphics to support the text. Questions about the Framework website or any of the Framework projects can be directed to the appropriate Coordinator through the website's [Contact page](#).

## OTHER EVENTS AND OPPORTUNITIES

### National Park Service climate change webinars

The National Park Service is hosting a webinar March 8 at 2 pm EST on Climate Change in America's National Parks: Climate Science and Changing Cultures in the Great Lakes. This webinar will feature Dr. Laura Hansen, Chief Scientist and Executive Director of EcoAdapt, who will provide an overview of climate science in the Great Lakes. She will be followed by Neil Howk, Assistant Chief of Resource Education at Apostle Islands NL, who will give an example of how parks are communicating this science and impacts to Great Lakes indigenous cultures through an interpretive exhibit. The Climate Change in America's National Parks Webinar Series is presented by the NPS Climate Change Response Program to connect NPS staff, other federal agencies, and partners with experts in climate change research. The series takes place at 2:00 PM EST every second Thursday of the month. For more

information, contact Melanie Wood, [melanie\\_wood@nps.gov](mailto:melanie_wood@nps.gov), 970-267-2198. For archived copies of the webinars go to O:\OfficeOfTheChief\ClimateChange\Project\NPSwebinars (internal FS only).

### **Climate Change Vulnerability Assessment course**

Based on the Scanning the Conservation Horizon guidebook, this course is designed to guide resource managers in identifying which species or habitats are likely to be most strongly affected by projected changes and understanding why these resources are likely to be vulnerable. Registration is open to all applicants through the FWS's National Conservation Training Center. Upcoming courses are March 20-22 (Fort Collins, CO), April 10-12 (Phoenix, AZ), and June 19-21 (Shepherdstown, WV). Please check the [website](#) for details as space availability and fees vary or contact Michelle Haynes at [michelle.haynes@fws.gov](mailto:michelle.haynes@fws.gov) or 304-876-7652.

### **2012 National Tribal Forum on Air Quality**

Co-sponsored by the Institute for Tribal Environmental Professionals (ITEP) and the National Tribal Air Association in partnership with the EPA, the forum on May 22-24, in Tulsa, OK, will include both plenary and breakout sessions. Proposals for presentations in the areas of Ambient Air Quality, Indoor Air Quality, and Climate Change are encouraged. Tribal leaders, environmental staff, scientists, policy developers, and representatives from tribal colleges, universities, federal, state, and local agencies, and other interested parties involved in research or projects that pertain to air quality or climate change are invited to submit an abstract of their presentation by February 1. More information will be available on the [ITEP website](#) soon.

### **Adaptation Futures**

Co-hosted and convened by the University of Arizona and by UNEP's Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA), the [conference](#) focuses on adaptation to climate variability and change. The conference in Tucson, AZ, May 29-31, will bring together researchers, policy makers, and practitioners from developed and developing countries to share insights into the challenges and opportunities that adaptation presents. It will showcase cutting-edge research from around the world, focusing on themes of equity and risk, learning, capacity building, methodology, adaptation finance and investment, and ecosystem based adaptation approaches. It will explore practical adaptation policies and approaches, and share strategies for decision making from the international to the local scale.

### **Climate Change Adaptation Planning**

The Institute for Tribal Environmental Professional is offering their Climate Change Adaptation Planning course June 5-7, 2012, hosted by the Oneida Tribe of Indians of Wisconsin (Green Bay, WI). Tribal environmental and natural resource professionals in the Great Lakes and eastern US are encouraged to participate. The [pre-registration form](#) will be available in March.

## **CLIMATE CHANGE RESOURCE CENTER (CCRC)**

### **CCRC Adds New Paper on Biodiversity and Climate Change**

A newly updated CCRC Topic Page explores the subject of [Biodiversity](#). The page outlines how climate change is affecting biodiversity and by extension ecosystem processes and functions. It also discusses general management strategies for maintaining biodiversity under uncertain future climates. Each

Topic Page provides a summary on an issue in addition to related reading, web resources, and research in the subject area. Please explore the new page and contact the CCRC production team with any questions or feedback: [ccrc@fs.fed.us](mailto:ccrc@fs.fed.us).

## RECOMMENDED READING

### **Responding to climate change in National Forests: A guidebook for developing adaptation options.**

*David Peterson, Constance Millar, Linda Joyce, Michael Furniss, Jessica Halofsky, Ronald Neilson, and Toni Lyn Morelli*

National forests are required to take significant steps to incorporate climate change in management and planning, including the development of options that facilitate adaptation of natural resources to potentially deleterious effects of an altered climate. Despite uncertainties about the timing and magnitude of climate change effects, sufficient information exists to begin the adaptation process, a form of risk management. This guidebook ([PNW-GTR-855](#)) contains science-based principles, processes, and tools necessary to assist with developing adaptation options for national forest lands.

### **Articles on sudden aspen decline (SAD)**

Effects and etiology of sudden aspen decline in southwestern Colorado, USA

*James Worrall, Suzanne Marchetti, Leanne Egeland, Roy Mask, Thomas Eager, and Brian Howell*

Secondary insects and diseases contribute to sudden aspen decline in southwestern Colorado, USA

*Suzanne Marchetti, James Worrall, and Thomas Eager*

The [effects and etiology paper](#) describes the effects of SAD on aspen stands, their regeneration, and their roots; identifies the site and stand factors that lead to SAD; and provides evidence to suggest that the warm drought of 2002 was a primary inciting factor for SAD in southwestern Colorado. The [secondary insects and diseases paper](#) discusses how the outbreak of secondary agents increased the rate of mortality in aspen stands that were already affected by predisposing and inciting factors.

### **U.S. National Forests adapt to climate change through Science-Management partnerships**

*Jeremy Littell, David Peterson, Constance Millar, Kathy O'Halloran*

Resource managers at local administrative units (e.g. national forests) have a strong interest in understanding the effects of climate change on resources, have demonstrated grass-roots leadership on this issue, and are anxious to undertake the job of adapting to those changes. It is unclear, however, what methods will facilitate the necessary co-development of knowledge between scientists and managers to achieve such a development of effective local solutions. This [paper](#) describes science-management collaborations that were used to develop adaptation options for Olympic and Tahoe National Forests, general strategic approaches that can be used to guide successful adaptation, and specific adaptation options that can be implemented in planning and on-the-ground applications.

### **Climate change on the Shoshone National Forest, Wyoming: a synthesis of past climate, climate projections, and ecosystem implications**

*Janine Rice, Andrew Tredennick, and Linda Joyce*

The Shoshone National Forest has experienced and adapted to changes in climate for many millennia, and is currently experiencing a warming trend that is expected to accelerate in the next century. Climate change directly and indirectly affects the Shoshone's high-elevation, mountainous terrain that supports unique and sometimes rare ecological components. Several vulnerable and very responsive

resources and processes on the Shoshone could interact to produce unforeseeable or undesirable ecosystem changes, highlighting the need to identify potential resource vulnerabilities and develop adaptation pathways and flexibility in resource management options. The objective of this report ([RMRS-GTR-264](#)) is to synthesize the current understanding of the paleo and historical climate of the Shoshone as a reference point, determine what future climates may look like, and what the effects of future climate may be on natural resources. This information allows for the identification of vulnerabilities and information gaps, thereby aiding the development of adaptation tools and strategies.

### **Linking Indigenous and Scientific Knowledge of Climate Change**

*Clarence Alexander, Nora Bynum, Elizabeth Johnson, Ursula King, Tero Mustonen, Peter Neofotis, Noel Oettlé, Cynthia Rosenzweig, Chie Sakakibara, Vyacheslav Shadrin, Marta Vicarelli, Jon Waterhouse and Brian Weeks*

This [paper](#) explore the connections among indigenous climate-related narratives, documented temperature changes, and climate change impact studies from the scientific literature and proposes a framework for enhancing synthesis of these indigenous narratives of observed climate change with global assessments. Improving ways of understanding such connections is critical as the Intergovernmental Panel on Climate Change Fifth Assessment Report process proceeds.

## **FOREST SERVICE ABBREVIATIONS**

More and more of our readers are not FS'ers, so here's a list of abbreviations we use:

ADC = Associate Deputy Chief  
FPL = Forest Products Laboratory  
FS = Forest Service  
NIACS = Northern Institute of Applied Climate Science  
NRS = Northern Research Station  
PNW = Pacific Northwest Research Station  
PSW = Pacific Southwest Research Station  
R&D = Forest Service Research & Development  
RMRS = Rocky Mountain Research Station  
SRS = Southern Research Station

## **SUBMISSIONS**

Please send your submissions on Forest Service climate change related activities to Cathy Dowd: [cdowd@fs.fed.us](mailto:cdowd@fs.fed.us). It's most helpful to have a short description with a web link to more information.

Contact information for the Climate Change Advisor's Office is on our [Intranet](#) site. Here you will also find materials like the National Roadmap for Responding to Climate Change, the Performance Scorecard, and Scorecard guidance.