



Engaging a Climate Ready Agency

From Dave Cleaves, Forest Service Climate Change Advisor

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WELCOME

The results are IN! No, not about the Red Sox winning the World Series but the 2013 Forest Service Climate Change Performance Scorecard results. This month’s update features an essay from the Climate Change Advisor’s Office on the 2013 Climate Change Performance Scorecard Results and narratives of how national forest and grassland units have been improving their readiness to respond to climate change.

The update is designed to inform you about Forest Service activities that are linked to our changing climate as we all work to bring climate change knowledge into our organizational expectations and actions. Please continue to share the details of your climate change related research, management activities, and communications. Submission details are included in the last section of the update. Enjoy!

MESSAGE FROM CCAO

Climate Change Performance Scorecard 2013 Progress Assessment

It’s report card season here in the Climate Change Advisor’s Office! The National Forests and Grasslands recently completed their third annual Scorecard assessment. For those who aren’t familiar, the Climate Change Performance Scorecard is a way for each national forest and grassland to measure its progress from 2011-2015 by describing accomplishments toward a “yes” answer to ten questions in four dimensions – organizational capacity, engagement, adaptation, and mitigation.

The ten questions about *employee education, designated climate change coordinators, program guidance, science and management partnerships, other partnerships, assessing vulnerability, adaptation actions, monitoring, carbon assessment and stewardship and sustainable operations* are designed to improve our readiness to respond to climate change. By 2015, each unit is expected to answer yes to at least seven of the scorecard questions, with at least one yes in each dimension. Great news is that forty-nine percent of units already met this expectation by 2013!!

Of the 113 administrative units, 55 units reported that they have achieved the target of 7/10 yes answers (up from 40 in 2012). Very close to meeting this target are an additional 27 units. The majority of units have appointed a climate change coordinator (96 percent) and developed science management partnerships (88 percent) and external partnerships (85 percent) to respond to climate change. Majority of units are also making progress towards achieving sustainable operations requirements (80 percent) and are conducting adaptation actions that reduce the vulnerability of resources to climate change (66 percent). Employee education on climate change has been provided by 65 percent of units. Nearly as many report assessing the vulnerability of key resources to climate change (60 percent) and just over half report incorporating climate change into program guidance (54 percent). More than one third of units conduct monitoring to track climate change impacts and the effectiveness of adaptation actions (37 percent). Fewer units have developed carbon assessments (18 percent).

(continued on page 2)

MESSAGE FROM CCAO [continued from page 1]

Below you will find some highlights from the scorecard narratives that illustrate how units are building climate change response into our Forest Service mission.

- ◆ *Element 1 – Employee Education:* All of us contribute to the FS mission. We must therefore understand the basics of climate change and how it impacts forest and grasslands to be able to better incorporate it into existing and new activities.

All employees at the **Beaverhead-Deerlodge National Forest** (R1) were required to watch the National Academy of Sciences “Climate Change: Lines of Evidence” 30 minutes presentation. The presentation gives an excellent overview of the basic science behind climate change. Also, the Forest, through the Greater Yellowstone Coordinating Committee (GYCC) has set employee education as a priority for its Climate Change Adaptation Subcommittee. In 2013, the subcommittee with the help of Jessica Haas, RMRS Missoula, completed a draft “Climate Change 101” presentation covering the basics of climate change and the changes seen to date with specific Greater Yellowstone area examples.

- ◆ *Element 3 – Program Guidance:* This element asks units if they have written guidance for integrating climate change into existing programs. Responding to climate change should be about building climate change considerations and activities into existing programs and not about adding a new one.

The Forest Leadership Team in the **Gifford Pinchot National Forest** (R6) approved the 2012 Gifford Pinchot Climate Change Action Plan and shared it with the Pacific Northwest Regional Office. The plan outlines that program managers should highlight regional direction on incorporating aspects of climate change into individual programs. This includes considering potential climate change impacts in project-level planning and treatment design and using regional climate change vulnerability tools to inform amounts and types of restoration needed in priority watersheds.

- ◆ *Element 4 – Science and Management Partnerships:* Actively engaging with scientists and scientific organizations will improve one’s ability to respond to climate change and ensure decisions, science, and technology are being developed to fill management needs.

The **Ouachita National Forest** (R8) has been working for over 10 years with Arkansas Tech University to monitor fish passage at creek crossings. The Forest has been modifying these crossings in an effort to make them more fish passage compatible, thus enabling resiliency to the effects of climate change.

We hope this has given you a taste of what’s been happening at the field level. Stay tuned as our future updates will highlight the remaining scorecard elements and narratives. As you can see, most units have made considerable progress since we first began documenting the progress three years back. While a lot of work still remains, the units are on the right path to bring climate change consideration into programs and on-the-ground activities. As always, we encourage you all to contact us with any suggestions, concerns, or updates.

It looks like we’re on our way to achieving that A in a few short years! Let’s keep working towards becoming a ‘Climate-Ready’ Agency.

CCAO Staff

FROM THE FIELD

Baseline Assessment of Forest Carbon Stocks Including Harvested Wood Products for All Regions

The Climate Change Advisor's Office has funded and facilitated work by Research & Development to develop a carbon assessment framework and delivery of carbon information for every NFS unit. This framework is designed to deliver mid- to broad level forest carbon stock and flux information on NFS lands. The framework's first component provides baseline carbon stocks and trends for seven different forest ecosystem carbon pools for the period 1990 – 2013 and provides estimates of carbon stored in harvested wood products. This directly supports NFS units in making measurable progress on Climate Change Performance Scorecard Element 9 (Carbon Assessment), while simultaneously meeting assessment requirements of the 2012 Planning Rule. Reports can be found on the O: Drive at <O:\OfficeOfTheChief\ClimateChange\Program\Carbon\CarbonAssessmentsNFS>. Contact Greg Kujawa with any questions: gkuja-wa@fs.fed.us.

Schwarzenegger cited for work on climate change, named honorary US Forest Service ranger

Former California governor Arnold Schwarzenegger received a U.S. Forest Service badge and jacket during a special ceremony in Washington, D.C., naming him an Honorary Forest Ranger for his work on climate change issues. Schwarzenegger said the honor "truly touches my heart" and expressed high praise for the agency and highlighted his respect for the thousands of Forest Service firefighters, especially as climate change effects have contributed to hotter, longer fire seasons. Read more [here](#).

Shared Beringia Heritage Conference in Anadyr, Russia

Wayne Owen (Director, R10) attended the Shared Beringia Heritage Conference in Anadyr, Russia in late September. This is a bi-annual international conference that began as an effort to foster a climate of mutual understanding and cooperation between the United States and Russia. The conference brings together the Native peoples of Alaska and Chukotka, Russian and American scholars, researchers, environmentalists, and representatives of government and non-government organizations to promote the study, interpretation, and enjoyment of the Beringia region. This year's conference focused on climate change, natural resources, anthropology, and arctic travel and tourism. The climate change presentations focused on changes to arctic vegetation, the distribution of wildlife species, and the effect on traditional cultures. Images and stories about climate change were shared by native Chukchi villagers that emphasized the rate of change currently being observed and the impact on traditional ways of life.

Urban Forestry Climate Change Response Framework Launched

The Northern Institute of Applied Climate Science and partners at the US Forest Service, Morton Arboretum, Field Museum, Chicago Botanic Garden, and Chicago Wilderness are in the beginning stages of a new project that will focus on adapting urban forestry practices to climate change. Vulnerability assessments, adaptation strategies, and on-the-ground demonstrations will be developed using the Chicago metropolitan area as a pilot. For more information or to be involved, contact [Leslie Brandt](#).

Climate change modeling

John Kim, Raymond Drapek and colleagues from the PNW Research Station and WWETAC simulated ecosystem response to climate change in the USA and Canada at a 5 arc-minute grid resolution using the MC1 dynamic global vegetation model and nine CMIP3 future climate projections as input. They evaluated model skill and the extent of projected climate change, and created a combined score to identify areas to prioritize for research and management. A synopsis, including maps, are here: <http://inferno.fsl.orst.edu/characterizing-vegetation-model-skill-and-uncertainty/>. Kim and Drapek will be presenting this work at the upcoming American Geophysical Union 2013 Fall Meeting, and are developing it into a paper.

Project CAPTURE Targets Risky Forest Threats

Several threats, most importantly climate change and insect and disease infestation, will increase the risk that forest trees could experience population or species-level extinction. However, differences in species traits could drive varying responses to these threats. **Kevin Potter**, North Carolina State University cooperating researcher with the *Eastern Forest Environmental Threat Assessment Center*, is leading the three-year Project CAPTURE (Conservation Assessment and Prioritization of Forest Trees Under Risk of Extirpation) to determine which forest tree species to target for monitoring, management, and conservation. These activities will be critical for the Forest Service and other state and federal agencies.

FROM THE FIELD (continued)

ClimateChangeLive!

The Climate Change Advisor's Office is a co-sponsor of WO Conservation Education's newest distance learning adventure, ClimateChangeLIVE! The Forest Service and partner, Prince Williams Network, join 22 partners in this project, resulting in a precedence-setting collection of climate education resources! ClimateChangeLIVE is a FREE distance learning adventure that will bring climate learning to middle and high school teachers and students through a series of webcasts, webinars, online climate education resources, and grants for school action projects. To register and to find a great collection of science-based resources and programs aligned to national science education standards, to go <http://ClimateChangeLIVE.org>.

A series of webinars throughout the 2013-14 school year will help teachers with educational resources and tips for teaching about climate change. Two webcasts for middle and high school students in March 2014 will educate, engage, and inspire students to be part of the climate change solution! The webcasts will be interactive, educating students on the science behind climate change and inspiring them to take action. Please share this info with your teacher networks!

OTHER EVENTS & OPPORTUNITIES

First Friday All Climate Change Talks (FFACCTs)

November 1, 11 am ET. **Susan Loeb**, PhD, Southern Research Station research ecologist, will discuss climate change effects on endangered bat colonies. More details on the [FFACCTs website](#).

Webinar: Ocean Acidification: Perceptions, Risks and Uncertainties

November 5, 10 – 11 AM. One NOAA Science Seminars. Commercial and subsistence fisheries in Alaska are located in seas projected to experience rapid transitions in pH caused by ocean acidification (OA). Many of the marine organisms that are affected by OA contribute substantially to the state's commercial activities as well as the gross domestic product of the United States. Here, we describe the current patterns of dependence on marine resources within the state that could be negatively impacted by OA and current community characteristics to determine the risk to Alaska's fishery sector. Our analysis showed that regions in southeast and southwest Alaska that are highly reliant on fishery harvests and have relatively lower income and employment alternatives face the highest risk.

To determine public awareness of this threat we conducted a statewide survey to examine the variables that influence the perceptions of the risk associated with OA. We then used this information to determine if and how individuals react to the current degree of OA in different regions. These results can be used to prepare individuals, communities, and the Alaska fishing industry for future changes in ocean chemistry. Register [here](#).

Webinar: Impacts of Sea Level Rise on National Parks

November 14, 1 pm ET. Climate change and sea level rise will challenge National Park efforts to protect natural and cultural resources and to provide visitor access and recreational opportunities. Learn how several national parks are addressing these challenges: collecting baseline data on archaeological sites that are vulnerable to rising water levels and associated

changes in biological activity and visitor use; incorporating barrier island processes into long-term development plans including visitor facilities; and engaging in a regional multi-agency effort to restore coastal areas impacted by a major hurricane. Webinar co-hosted by the NOAA National MPA Center, MPA News, OpenChannels.org, and EcoAdapt. Register [here](#).

ITEP training: Climate Change in Alaska

November 14-15, Anchorage, AK. Part of the Alaska Conference on Environmental Management. This workshop is intended for tribal environmental and natural resource professionals who will be working with their tribe to address climate change impacts. One of the first things to do is start the climate change conversation with your tribal leadership and community-what climate change is and how it is impacting the tribe. This workshop provides an overview of the basics of climate change and up-to-date information about climate change impacts in Alaska. Participants will receive a powerpoint presentation that they can modify and use for giving climate change presentations to their tribal leadership and community. During the workshop, participants will practice giving the presentation. www4.nau.edu/itep/climatechange/

Conference: Behavior, Energy and Climate Change (BECC) Conference

Nov 18-20, Sacramento, CA. This conference focuses on understanding human behavior and decision-making with respect to energy usage, greenhouse gas emissions, climate change, and sustainability. <http://beccconference.org/>

American Geophysical Union's 46th Annual Fall Meeting

December 9 – 13. San Francisco. Includes numerous climate science, policy and communications presentations. More information [here](#).

OTHER EVENTS & OPPORTUNITIES (continued)

Webinar: Climate Scenarios and Vulnerabilities in the Aleutian and Bering Sea Islands

December 10, 10 am AKDT. Hosted by Alaska Center for Climate Assessment and Policy. Presenter: John Walsh (UAF) and Nick Bond (NOAA) in association with the Alaska Climate Science Center. John Walsh and Nick Bond will discuss work assessing the vulnerabilities of key resources and ecosystem services across future climate scenarios in the Aleutian and Bering Sea Islands region. Register [here](#).

Missouri Forest Adaptation Planning and Practices

The Northern Institute of Applied Climate Science and the Forest Service will be offering another session of Forest Adaptation Planning and Practices (FAPP) February 4-5 prior to the [Missouri Natural Resources Conference](#). FAPP is an active, hands-on training to help natural resources managers incorporate climate change considerations into their own real-world forest management projects. The training uses information and tools developed through the Climate Change Response Framework, including [Forest Adaptation Resources: Climate Change Tools and Approaches for Land Managers](#). More details [here](#).

CLIMATE CHANGE RESOURCE CENTER

Learn at your own pace about forest and grassland carbon science & management

Last year, the CCRC published a short course on forest and grassland carbon, [available online](#) and on [DVD](#). Designed primarily for land managers, the course includes fifteen brief presentations by experts on carbon science, management, and policy. The course is meant to be flexible –watch five minutes of a presentation and return to it when you have time, navigating through by using the table of contents. Topics range from forest carbon trends in the U.S., to management options for carbon sequestration, to forest carbon market basics for the private landowner. Take a few minutes today to see if there is something that might interest you!

ADDITIONAL ONLINE TOOLS

New tool on socioeconomics and climate change

The Graham Institute at the University of Michigan, the Great Lakes Adaptation Assessment for Cities, and Headwaters Economics have collaborated to release an interactive online map for the Great Lakes Region. [Socioeconomics and Climate Change in the Great Lakes Region](#) presents users with a county-by-county depiction of indicators related to economics, infrastructure, and vulnerable human populations. Summary maps also show trends related to climate-vulnerable economic sectors, infrastructure spending, and health-related climate vulnerability across the entire region. This sort of information can be used to identify key needs and develop adaptation strategies related to socioeconomic issues.

RECOMMENDED READINGS

Potential for evolutionary responses to climate change – evidence from tree populations

Alberto, F.J., Aitken, S.N., Alia, R., Gonzalez-Martinez, S.C., Hanninen, H., Kremer, A., Lefevre, F., Lenormand, T., Yeaman, S., Whetten, R. & Savolainen, O.

Using data from 250 years of common garden experiments, researchers conclude that we can expect the greatest adaptive response to climate change to occur when populations are large, have high genetic variability, selection is strong, and there is ecological opportunity for establishment of better adapted genotypes. Study [here](#).

Using scenarios to explore climate change: a handbook for practitioners

National Park Service

This handbook describes the five-step process for developing multivariate climate change scenarios taught by the Global Business Network during a series of training workshops hosted by the National Park Service in 2010 and 2011. The authors created this guide as a reference for workshop participants who possess some familiarity with scenario planning. The process featured in this manual is not a definitive method for building climate change scenarios, since many valid methods exist to develop climate change scenarios. The technique presented here is just one effective and proven approach. July 2013. Read it [here](#).

RECOMMENDED READINGS (continued)

Climate change and North American rangelands: assessment of mitigation and adaptation strategies

Joyce, L., Briske, D., Brown, J., Polley, H., McCarl, B. & Bailey, D. Recent climatic trends and climate model projections indicate that climate change will modify rangeland ecosystem functions and the services and livelihoods that they provision. Recent history has demonstrated that climatic variability has a strong influence on both ecological and social components of rangeland systems and that these systems possess substantial capacity to adapt to climatic variability. Specific objectives of this synthesis are to: 1) evaluate options to mitigate greenhouse gas emissions and future climate change; 2) survey actions that individuals, enterprises, and social organizations can use to adapt to climate change; and 3) assess options for system transformation when adaptation is no longer sufficient to contend with climate change. Mitigation for carbon sequestration does not appear economically viable, given the small and highly variable carbon dioxide fluxes of rangeland ecosystems and the high transaction costs that would be incurred. In contrast, adaptation strategies are numerous and provide a means to manage risks associated with climate change. Many adaptations represent "no regrets" actions because their implementation can be justified without emphasis on pending climate change. Social-ecological systems in which adaptation is insufficient to counter the adverse consequences of climate change might undergo transformative change to produce alternative ecosystem services, production enterprises, and livelihoods. Study [here](#).

Climate and carbon: aligning prices and policies

Organization for Economic Co-Operation and Development This [report](#) brings together lessons learned from analysis on carbon pricing and climate policies. A key component of this approach is putting an explicit price on every tonne of CO₂ emitted. Explicit pricing instruments, however, may not cover all sources of emissions and will often need to be complemented by other policies that effectively put an implicit price on emissions. Carbon pricing mechanisms must be mutually supportive, cost-effective, and sustainable in order to inspire confidence to invest in technologies and infrastructure that shift production and consumption decisions towards low-carbon choices. In addition, tax exemptions and fossil-fuel subsidies that undermine the transition towards zero carbon solutions must be reformed. Finally, the report highlights the issues of competitiveness, distributional impacts and communication as key elements in implementing climate policy reform.

Consequences of climate change for biotic disturbances in North American forests

Weed, A.S., Ayres, M.P. & Hicke, J.

About one third of North America is forested. These forests are of incalculable value to human society in terms of harvested resources and ecosystem services and are sensitive to disturbance regimes. Epidemics of forest insects and diseases are the dominant sources of disturbance to North American forests.

Here we review current understanding of climatic effects on the abundance of forest insects and diseases in North America, and of the ecological and socioeconomic impacts of biotic disturbances. We identify 27 insects (6 nonindigenous) and 22 diseases (9 nonindigenous) that are notable agents of disturbance in North American forests. The distribution and abundance of forest insects and pathogens respond rapidly to climatic variation due to their physiological sensitivity to temperature, high mobility, short generation times, and high reproductive potential. Additionally, climate affects tree defenses, tree tolerance, and community interactions involving enemies, competitors, and mutualists of insects and diseases. Recent research affirms the importance of milder winters, warmer growing seasons, and changes in moisture availability to the occurrence of biotic disturbances. Predictions from the first US National Climate Assessment of expansions in forest disturbances from climate change have been upheld - in some cases more rapidly and dramatically than expected. Clear examples are offered by recent epidemics of spruce beetles in Alaska, mountain pine beetle in high-elevation five-needle pine forests of the Rocky Mountains, and southern pine beetle in the New Jersey Pinelands. Pathogens are less studied with respect to climate but some are facilitated by warmer and wetter summer conditions. Study [here](#).

Recent declines of *Populus tremuloides* in North America linked to climate

Worrall, J., Rehfeldt, G., Hamann, A., Hogg, E., Marchetti, S., Michaelian, M. & Gray, L.

Populus tremuloides (trembling aspen) recently experienced extensive crown thinning, branch dieback, and mortality across North America. To investigate the role of climate, we developed a range-wide bioclimate model that characterizes climatic factors controlling distribution of aspen. We also examined indices of moisture stress, insect defoliation and other factors as potential causes of the decline. Historic climate records show that most decline regions experienced exceptionally severe drought preceding the recent episodes. The bioclimate model, driven primarily by maximum summer temperatures and April–September precipitation, shows that decline tended to occur in marginally suitable habitat, and that climatic suitability decreased markedly in the period leading up to decline in almost all decline regions. Other factors, notably multi-year defoliation by tent caterpillars (*Malacosoma* spp.) and stem damage by fungi and insects, also play a substantial role in decline episodes, and may amplify or prolong the impacts of moisture stress on aspen over large areas. Many severely affected stands have poor regeneration potential, raising concerns that increasing aridity could ultimately lead to widespread loss of aspen forest cover. The analysis indicates that exceptional droughts were a major cause of the decline episodes, especially in the drier regions, and that aspen is sensitive to drought in much of its range. Coupling the bioclimate model with climate projections suggests that we should expect substantial loss of suitable habitat within the current distribution, especially in the USA and Mexico. Study [here](#).

RECOMMENDED READINGS (continued)

Understanding relationships among abundance, extirpation, and climate at ecoregional scales

Beever, E., Dobrowski, S., Long, J., Mynsberg, A. & Piekielek, N. Recent research on mountain-dwelling species has illustrated changes in species' distributional patterns in response to climate change. Abundance of a species will likely provide an earlier warning indicator of change than will occupancy, yet relationships between abundance and climatic factors have received less attention. We tested whether predictors of counts of American pikas (*Ochotona princeps*) during surveys from the Great Basin region in 1994–1999 and 2003–2008 differed between the two periods. Additionally, we tested whether various modeled aspects of ecohydrology better predicted relative density than did average annual precipitation, and whether risk of site-wide extirpation predicted subsequent population counts of pikas. We observed several patterns of change in pika abundance at range edges that likely constitute early warnings of distributional shifts. Predictors of pika abundance differed strongly between the survey periods, as did pika extirpation patterns previously reported from this region. Additionally, maximum snowpack and growing-season precipitation resulted in better-supported models than those using average annual precipitation, and constituted two of the top three predictors of pika density in the 2000s surveys (affecting pikas perhaps via vegetation). Unexpectedly, we found that extirpation risk positively predicted subsequent population size. Our results emphasize the need to clarify mechanisms underlying biotic responses to recent climate change at organism-relevant scales, to inform management and conservation strategies for species of concern. Study [here](#).

Watering the forest for the trees: an emerging priority for managing water in forest landscapes

Grant, G., Tague, C. & Allen, C.

Widespread threats to forests resulting from drought stress are prompting a re-evaluation of priorities for water management on forest lands. In contrast to the widely held view that forest management should emphasize providing water for downstream uses, researchers argue that maintaining forest health in the context of a changing climate may require focusing on the forests themselves and on strategies to reduce their vulnerability to increasing water stress. Management strategies would need to be tailored to specific landscapes but could include thinning, planting and selecting for drought-tolerant species, irrigating, and making more water available to plants for transpiration. Hydrologic modeling reveals that specific management actions could reduce tree mortality due to drought stress. Adopting water conservation for vegetation as a priority for managing water on forested lands would represent a fundamental change in perspective and potentially involve trade-offs with other downstream uses of water. Study [here](#).

Climate change and North American rangelands: trends, projections and implications

Polley, H., Briske, D., Morgan, J., Wolter, K., Bailey, D. & Brown, J.

The ecological consequences of climate change will vary substantially among ecoregions because of regional differences in antecedent environmental conditions; the rate and magnitude of change in the primary climate change drivers, including elevated carbon dioxide (CO₂), warming and precipitation modification; and nonadditive effects among climate drivers. Elevated atmospheric CO₂ will directly stimulate plant growth and reduce negative effects of drying in a warmer climate by increasing plant water use efficiency; however, the CO₂ effect is mediated by environmental conditions, especially soil water availability. Warming and drying are anticipated to reduce soil water availability, net primary productivity, and other ecosystem processes in the southern Great Plains, the Southwest, and northern Mexico, but warmer and generally wetter conditions will likely enhance these processes in the northern Plains and southern Canada. The Northwest will warm considerably, but annual precipitation is projected to change little despite a large decrease in summer precipitation. Reduced winter snowpack and earlier snowmelt will affect hydrology and riparian systems in the Northwest. Specific consequences of climate change will be numerous and varied and include modifications to forage quantity and quality and livestock production systems, soil C content, fire regimes, livestock metabolism, and plant community composition and species distributions, including range contraction and expansion of invasive species. Recent trends and model projections indicate continued directional change and increasing variability in climate that will substantially affect the provision of ecosystem services on North American rangelands. Study [here](#).

ABBREVIATIONS

CCAO = Climate Change Advisor's Office
NFS = National Forest System
NIACS = Northern Institute of Applied Climate Science
PNW = Pacific Northwest Station
WWETAC = Western Wildland Environmental Threat Assessment Center
FFACCTs = First Friday All Climate Change Talks
ITEP = Institute for Tribal Environmental Professionals
NOAA = National Oceanic Atmospheric Administration
FAPP = Forest Adaptation Planning and Practices
CO2 = Carbon dioxide
C = Carbon
CCRC = Climate Change Resource Center
RMRS = Rocky Mountain Research Station
FS = Forest Service

SUBMISSIONS

Please send your submissions on Forest Service climate change related activities to Karen Dante: skdante@fs.fed.us by COB November 22nd. It's most helpful to have a short description with a web link to more information.

Share your great work by contributing your PowerPoint presentations to our O drive -
O:\OfficeOfTheChief\ClimateChange\Project\CCPresentations.
If you have a climate change related presentation or slides that you want to contribute, but don't have write access, please send to [Karen Dante](#).

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