



SCIENCE • ADAPTATION • MITIGATION • COMMUNICATION

Feeling Vulnerable? It Might be Time for an Assessment...

Understanding the Vulnerability of Park Resources to Climate Change

A key to climate change adaptation is developing the science-based foundation that park managers need to make informed decisions. Vulnerability assessments (VAs) help to build this foundation by identifying resources at risk and the factors that make them vulnerable. The Climate Change Response Program has engaged NPS staff and partners to develop VA pilot projects across the country and training to help managers create effective adaptation strategies.

Vulnerability assessments can be conducted for species, communities, ecosystems, landscapes or cultural resources, and VAs range in complexity from quick and simple to lengthy and complex. About half of the projects funded under the 2010 Servicewide Comprehensive Call for climate change represent different types of vulnerability assessments. The assessments will be conducted at sites across the country, and at species to ecosystem scales.

A vulnerability assessment focusing on Badlands NP has just begun. It will provide an in-depth assessment of climate change vulnerabilities of natural, cultural, and paleontological resources in the park and help develop, test, and document

methods and approaches that can be reused elsewhere. An interdisciplinary team will use existing scientific information to characterize the resilience of Badlands resources to climate variations, define geographic and topical scopes of key resource indicators, project changes, and evaluate potential impacts important to resource management.

The NPS has also been engaged with a consortium of federal and state agencies, NGOs, and academic partners that has produced a guidebook on VAs. The consortium is now developing training curriculum for staff that want to design, contract, or conduct VAs. The guidebook will be published and be available this month and training is planned to begin next spring.

The NPS will continue to work with many partners to develop VA guidance and training, support on-the-ground projects, and share learning that provides managers with the best available adaptation tools and the knowledge to use them. For more information, contact: John_Gross@nps.gov



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Above: A man hanging out in a doorway of a sinking cement building in Lake Superior. Don't let this be you!

Monthly Climate Change Webinar Series

2nd Thursday of every month
2:00 pm - 3:30 pm EDT

Note: November's webinar will be held on the second Wednesday, since Thursday is a federal holiday.

Next Webinar: Nov 10th, 2010

November's presentation titled, "*Defended by Poets: The Role of Art in Communicating Climate Change in Our National Parks*" will be based upon a symposium presented at the American Association for the Advancement of Science's annual meeting in June of 2010.

Presenters include: Will Elder, Golden Gate NRA, Will George, Lewis and Clark NHP, Linda Hilligoss, Science & Learning Center at Crater Lake NP and Southern Oregon University, Michael Liang, North Cascades NP & North Coast and Cascades Science Learning Network, and Dr. James A. Lutz, College of the Environment, University of Washington.

A recording of the webinar can be found at:

<http://nrpcsharepoint/climatechange/communication/Web%20Seminars/Forms/AllItems.aspx>

The Climate Change Response Program can be found on the web at: <http://www.nps.gov/climatechange>

We are also on InsideNPS at: <http://inside.nps.gov/waso/waso.cfm?prg=125&lv=2>

Climate Change Implementation Plan Now Underway

The Climate Change Response Program and the Climate Change Working Groups are beginning the development of an Implementation Plan for parks, regions and national offices that will springboard off the Climate Change Response Strategy. There are ample ways to get involved, from helping brainstorm ideas for the goals and objectives in the strategy to reviewing interim and final products. The Working Groups, along with the project manager and the contractor helping create the Plan, are beginning work in November of FY11 and expect it to be completed by the end of this fiscal year.

If you are interested in participating or lending your voice to this effort, please contact the project manager: Shelly_Clubb@nps.gov

Or the Working Group Leads:

Angie_Richman@nps.gov (Communication)
Cat_Hawkins-Hoffman@nps.gov (Adaptation)
Patrick_Gonzalez@nps.gov (Science)

Call for Abstracts for Park Science Climate Change Issue



Park Science, the Service's journal for integrating research and resource management, is planning for its spring edition, which will explore climate change science applications to park management.

Editor Jeff Selleck is now accepting abstracts/proposals for the special issue and encourages broad participation by NPS staff and partners. Abstracts/proposals are due by November 24th and should be sent to the editor for consideration. Please send to: Jeff_Selleck@nps.gov

Workshop Summary

NPS personnel from Glacier National Park and the WASO office participated in the Remarkable Beyond Borders: Shaping the Future of the Crown of the Continent Conference at Waterton Lakes National Park, the first in a series of four annual conferences to be hosted by the Roundtable of the Crown of the Continent. The purpose of the Roundtable and this conference was to provide a multi-stakeholder forum to exchange ideas, build relationships, identify shared values and interests and facilitate working relationships amongst biologists, managers and conservationists working to conserve this unique, cross-border landscape. Tanya Shenk represented the NPS in a panel of policy leaders from the US and Canadian federal land management agencies. The panel presented

information to connect local, sub-regional and regional conservation and stewardship efforts in the Crown with federal activities focused on landscape scale approaches to conservation and resource management for this area.

Contact: Tanya_Shenk@nps.gov

CCRP Featured Staff

Amanda Schramm joins the CCRP team this November as a Science Writer and Planner. Amanda comes from the Pacific West Regional Office, where she was an Outdoor Recreation Planner.



Amanda worked on climate change issues for western parks as part of the General Management Plan process. She will support our scenario planning efforts, and will revise and maintain the bioregional climate change science summaries or "Talking Points" for resource managers and interpreters. Amanda's background includes work in planning, outreach, communications, and environmental compliance. She is looking forward to trading in her galoshes for snow boots and getting her Vitamin D from the sun instead of from a bottle.



CLIMATE Friendly PARKS

Climate Friendly Parks Update

The CFP program welcomed four new member parks into the program during the month of October. Congratulations to Devil's Postpile NM, Death Valley NP, Fort Vancouver NHS and Grand Canyon NP for taking the initiative to reduce your carbon footprints and implement sustainability and climate change education into your operations and outreach efforts! In the Intermountain Region, all 72 parks recently finalized Climate Leadership in Parks (CLIP) tool greenhouse gas inventories, making it the second region to complete inventories at all applicable facilities. The National Capital Region kicked off a set of four Climate Action Planning (CAP) workshops with the National Mall on November 2-3, with the goal of bringing four parks into the program by the end of FY11.

In addition the CFP just launched their new program webpage at: <http://www.nps.gov/climate-friendlyparks>

Contact: Julie_Corby@nps.gov

Youth Conserving Energy

As part of the focus on youth programs, climate change, and sustainability, Valley Forge National Historical Park launched the Northeast Region, Youth Conservation Corps (YCC) - Energy Conservation Corps (ECC) Pilot Program. The YCC participants work with staff from the divisions of maintenance and interpretation in parks where they were assigned, providing energy audits and weatherization, as well as energy conservation presentations and outreach to park visitors. This is the first year for the program and the first of its kind. The pilot program involved six young adults from the Philadelphia area.

Program participants spent two weeks attending training at the Energy Coordinating Agency (ECA), a nonprofit corporation whose mission is to help people save energy and to promote a sustainable and socially equitable energy future for all in the Philadelphia region.

Participants learned about building science, weatherization and energy audits. They then took these skills and performed basic weatherization projects on buildings at Valley Forge NP, Hopewell Furnace NHS, and Independence NHP. They were then given the opportunity to visit Hampton NHS and Fort McHenry NM and Historic Shrine to see first hand how geothermal principals and other new-age conservation methods and alternative energy sources are being used to conserve energy in historic structures.

These young adults also provided the visiting public information on energy efforts that they can do in their own homes to reduce energy consumption in order to preserve resources for the future and reduce environmental pollution. Outreach

programs were conducted at a local state park, area zoos, partner organizations, and corporate stewards such as REI and The North Face stores.

Nathan Gilbert, a member of the YCC-ECC Team, says that the program's training taught him how to do energy audits in homes which he found valuable. "It was surprising just how much air can leak through a small crack surrounding a window. These small leaks can add up, making your heating and cooling system work harder which adds up to a big cost with your energy bills" Nathan stated.

For more information on this program, including photos and videos, visit the Energy Conservation Corps's blog at: <http://www.npsenergyconservationcorps.blogspot.com/>



Dennis Walsh and John Mentzer installing insulation in an old barn at Valley Forge NHP that has been retrofitted into a garage and gym.

Upcoming Workshops & Meetings

The annual meeting of the National Association for Interpretation will host several sessions on Climate change in Las Vegas, NV on November 16-20, 2010.

<http://www.interpnet.com/workshop/>

The American Geophysical Union Fall meeting will be held in San Francisco, CA on December 13-17, 2010.

<http://www.agu.org/meetings/fm10/>

There is still space available for the February CCRP scenario planning workshop focused on Western Mountains, AridLands, and Pacific Islands in Denver, CO on February 8-10, 2011.

<http://www.nps.gov/climateexchange/adaptationplanning.cfm>

The biennial George Wright Society Conference on Parks, Protected Areas, and Cultural Sites titled, "Rethinking Protected Areas in a Changing World" will be held in New Orleans, LA on March 14-18, 2011.

<http://www.georgewright.org/gws2011>

The American Geophysical Union hosts the "Chapman Conference on Climates, Past Landscapes and Civilizations," in Santa Fe, NM on March 21-25, 2011.

<http://www.agu.org/meetings/chapman/2010/ecall/>

The University of Alaska hosts the "Classrooms for Climate: A Symposium on the Changing Chugach, Northern Ecosystems, and the Implications for Science and Society," in Anchorage, AK on May 2-7, 2011.

<http://www.uaa.alaska.edu/classroomsforclimate/index.cfm>

Southeast Region's newsletter, *The Green Gazette*

The NPS Southeast Region's environmental compliance and sustainability newsletter is designed to improve communication on "green" topics across the region. Its contents will include other parks' projects and plans, Regional and WASO-based initiatives funded through the Environmental Management Program, calendar dates, environmental management system and sustainable practices report results, technical articles, and greening guidance that can be used at the parks and at home. To learn more about this newsletter, contact: Brian_Cook@nps.gov

Yellowstone's *Greenstone* Newsletter

Yellowstone National Park is in the second year of sharing sustainable successes through their Greenstone newsletter. The quarterly newsletter is a product of the park's environmental management team and highlights park projects and ethics that reduce carbon footprint and set an example to visitors. This summer the park opened its first Gold LEED certified building. The Old Faithful Visitor Education Center will use 1/3 less energy than comparable buildings; this and other environmental successes are highlighted for the public inside. To learn more about this newsletter, contact: Nancy_Patterson@nps.gov

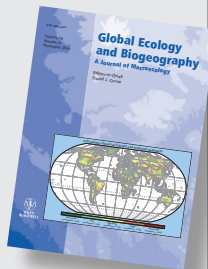
Useful Resources Related to Climate Change

The Essential Principles of Climate Science presents important information for individuals and communities to understand Earth's climate, impacts of climate change, and approaches for adapting and mitigating change. Principles in the guide can serve as discussion starters or launching points for scientific inquiry. The guide can also serve educators who teach climate science as part of their science curricula. It can be found at: <http://www.climatescience.gov/Library/Literacy/>



EPA's *Climate Change Indicators in the United States* is a great way to understand how to interpret important indicators to better understand climate change. The report presents 24 indicators, each describing trends related to the causes and effects of climate change. It focuses primarily on the United States, but in some cases global trends are presented to provide context or a basis for comparison. It can be found at: <http://www.epa.gov/climatechange/indicators.html>

Three new publications were recently released by NPS Climate Change Scientist Patrick Gonzlaez on vulnerability of ecosystems and adaptation measures for resource managers. For pdf versions of these publications, contact: Patrick_Gonzalez@nps.gov



A Critical Habitat for Declining Whitebark Pine

Yosemite National Park, home to one of the healthiest whitebark pine populations, could become a potential refuge to a declining tree species affected elsewhere by the exotic white pine blister rust pathogen, mountain pine beetle outbreaks, and climate change. In mid-July, the U.S. Fish & Wildlife Service moved ahead with a one-year study to assess listing whitebark pine (*Pinus albicaulis*) as a threatened or endangered species under the Endangered Species Act. Uncommon for a tree to receive such a high federal status, whitebark pine is a major component of upper subalpine forests from northwestern Canada south to the Sierra Nevada and east to the Central and Northern Rocky Mountains. The Southern Sierra is the one region in the species' entire range where it is relatively stable. In Yosemite, it grows at the top of the tree line, often in stunted krummholz stands, such as Parker Pass and Tioga

Pass. It grows on cold, windswept sites, environments often too harsh for other species to thrive. The only North American member of the "stone pines," whitebark pine depends entirely upon Clark's nutcracker for dispersal of its large, wingless seeds. Whitebark pine acts as both a foundation and keystone species in high-elevation forest communities by regulating ecosystem processes, community composition and dynamics, and by influencing regional biodiversity.

For more information visit: <http://www.fws.gov/mountain-prairie/species/plants/whitebarkpine/>

Or visit the Whitebark Pine Ecosystem Foundation at: <http://whitebarkfound.org/>
Contact: Scott_Gediman@nps.gov,
Or Niki_Nicholas@nps.gov

Apostle Islands NL Hires Climate Change Educator

Apostle Islands National Lakeshore (APIS) is enhancing its commitment to sustainable park operations and the Climate Friendly Parks program with the addition of Monica Magari as a new climate change educator in the park's Division of Interpretation and Education. The year-long position at APIS was made possible through a generous regional climate change response grant from the Great Lakes Restoration Initiative. Magari will spend the next year focusing on educational and outreach opportunities at APIS and in the Great Lakes Region to help protect the region's valuable natural and cultural resources in the face of global change. Lake Superior is a place of exceptional natural beauty, key coastal ecological systems and rich cultural significance. Climate change may have diverse detrimental impacts, ranging from loss of Ojibwe traditions, to the invasion of non-native species and further degradation of major coastal ecosystems. Magari will work on projects to build and maintain a holistic approach to climate change education, communication, adaptation and mitigation strategies. She will network extensively with local environmental organizations, tribal organizations, schools, colleges, and government agencies active in the region. She will also work closely with the park's cultural educator and natural resources staff and assume a leadership role with the park's Green Team. Potential projects include a variety of interdisciplinary educational and outreach initiatives in the park and in local communities, focusing on the interdependence of Native Ojibwe culture to the natural systems of the Great Lakes, both of which face significant challenges due, in part, to a changing climate. Magari comes to APIS most recently from Denali National Park & Preserve

where she worked for two seasons as an interpretive park ranger. Magari has a B.S. from the University of New Hampshire in environmental conservation and an M.A. from Tufts University in Urban and Environmental Policy & Planning, with a concentration in planning for sustainability in local governments.
Contact: Monica_Magari@nps.gov



More Information

This newsletter is a monthly forum to share the latest news of NPS efforts to manage our parks in a changing climate.

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Comments, Submissions:
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