

Welcome to the **JANUARY** edition of the WDFW Climate News Digest. Here you will find highlights of climate change news, events and resources for WDFW staff. Feedback or suggestions for items to include in future editions are much appreciated – thanks to those who have sent links and references and please keep them coming! We are particularly interested in how you might be addressing climate change in your work, or perhaps participating in a planning process or on the ground project which is considering how to address climate change. Many thanks!

## WHAT'S HAPPENING AT WDFW?

*Selected projects, agency resources and initiatives*

### Habitat Sensitivity Assessments

WDFW and the National Wildlife Federation are sponsoring a series of workshops to assess the climate sensitivity of several habitat types in Washington. Workshops have so far been held for Forests and also for Arid Lands and Shrubsteppe. The next scheduled workshop will focus on Marine and Coastal systems on March 9<sup>th</sup>. Our goal is to assemble a focus group of folks with expertise and experience with specific marine and coastal habitats to generate a collective understanding of relative sensitivity to projected climate impacts. Results are being assembled by University of Washington staff and should be available in the next few months. The final workshop on Freshwater and Riparian systems will be scheduled for later spring or early summer. **Please be in touch with Lynn if you have not yet been contacted and are interested in participating.**

## UPCOMING EVENTS

**The Climate Refugia Workshop originally scheduled for January 20<sup>th</sup>** is in the process of being rescheduled.

Those of you who had signed up for that event will be contacted about the new date. ***Others who would like to participate please be in touch with Lynn.*** The 3 hour workshop is expected to include a short primer on climate adaptation strategies for natural resource conservation, highlighting the concepts of resistance, resilience and response, as well as the role of conserving refugia in an adaptation toolbox. Summaries of two recent projects will also be presented: A presentation by Meade Krosby of the UW on a statewide climate-gradient corridors analysis, and a presentation by Eric Mielbrecht and Jessi Kershner from EcoAdapt on a climate informed conservation blueprint for western Washington. Please be in touch if you would like more information.

### **Vulnerability Assessment on Water and Watersheds in National Forests; Webinars scheduled for January 26th, February 2nd | 12:00 noon EST (9 am PST)**

Earth scientists and biologists from 12 Pilot National Forests will present results from a pilot project developed to assess the relative vulnerability of water resources to climate-based hydrologic change. Representatives from 12 Forests in all 9 Forest Service Regions are scheduled to give a 20-minute presentation on the results of recently completed watershed vulnerability assessments. Each national forest presentation will demonstrate how available information was used to provide managers with a relative rating of water resource vulnerability to climate change and how the results of the assessments can be used to develop

recommendations on the responses each forest might take to best respond to predicted climate-based hydrologic change. Forests evaluated a variety of resource issues in their assessments, including numerous aquatic species, water diversions, and infrastructure.

<http://www.fs.fed.us/ccrc/livelearn/wva/>

## NEWS AND RESOURCES

### **The USFS Adaptation Guidebook for developing adaptation options is now available.**

Though designed to serve National Forest managers, this guidebook can be useful to any natural resource manager looking for practical ways to address climate change while carrying out management objectives. " There is no one 'recipe' for adapting to a warmer climate, but there are things that can be done to build resilience and help manage forests sustainably," said David L. Peterson, a research biologist with the station and the guidebook's lead author. "The adaptation guidebook provides a toolkit from which various tools can be selected, all based on current science. We expect the toolkit to evolve over time as we learn more about the effects of climate change and about which adaptation techniques are effective." Peterson developed the guidelines along with counterparts from the Forest Service's Pacific Northwest, Pacific Southwest, and Rocky Mountain Research Stations, with input from university scientists and national forest resource managers.

<http://www.fs.fed.us/pnw/news/2012/01/guidebook.shtml>

### **U.S. EPA Climate Ready Estuaries Program Posts 2011 Partner Projects Online**

From 2008 - 2011, the U.S. EPA Climate Ready Estuaries program provided targeted assistance to a small group of National Estuary Programs to identify climate change vulnerabilities, develop climate adaptation plans, and begin to implement selected actions within these plans. The details of the 2011 Climate Ready Estuaries partner projects have been posted online. To view these projects and to learn more about the Climate Ready Estuaries program, please visit:

<http://www.epa.gov/cre/explore.html>.

### **National Climate Adaptation Strategy for Fish, Wildlife and Plants now available for public comment.**

The Obama Administration this week released the first draft national strategy aimed at helping decision makers and resource managers prepare for and help reduce the impacts of climate change on species, ecosystems, and the people and economies that depend on them. The draft National Fish, Wildlife and Plants Climate Adaptation Strategy, available for public review and comment through March 5, 2012, can be found on the web at

[www.wildlifeadaptationstrategy.gov](http://www.wildlifeadaptationstrategy.gov). Note that WDFW Special Assistant Dave Brittell is one of four state agency representatives on the Steering Committee guiding development of the strategy.

## CLIMATE SCIENCE

### **Climate Change Impacts on Western Pacific Northwest Prairies and Savannas**

(partial abstract) -- This paper represents a collaboration by conservation practitioners, ecologists, and climate change scientists to provide specific guidance on local and regional adaptation strategies to climate change for conservation planning and restoration activities. Our geographic focus is the Willamette Valley-Puget Trough-Georgia Basin (WPG) ecoregion, comprised of valley lowlands formerly dominated by now-threatened prairies and oak savannas. We review climate model strengths and limitations, and summarize climate change projections and potential impacts on WPG prairies and oak savannas. We identify a set of six climate-smart strategies that do not require abandoning past management approaches but rather reorienting them towards a dynamic and uncertain future.

<http://www.bioone.org/doi/full/10.3955/046.085.0224>

### **Study Details how Reduced Mountain Snowfall Can Lead to Classic Ecological Cascade**

Climate change in the form of reduced snowfall in mountains is causing cascading shifts in mountainous plant and bird communities through the increased ability of elk to stay at high elevations over winter and consume plants, according to a study in *Nature Climate Change*. The U.S. Geological Survey and University of Montana study not only showed that the abundance of deciduous trees and their associated songbirds in mountainous Arizona have declined over the last 22 years as snowpack has declined, but it also experimentally demonstrated that declining snowfall indirectly affects plants and birds by enabling more winter browsing by elk. Increased winter browsing by elk results in trickle-down ecological effects such as lowering the quality of habitat for songbirds. "This study demonstrates that the indirect effects of climate on plant communities may be just as important as the effects of climate-change-induced mismatches between migrating birds and food abundance because plants, including trees, provide the habitat birds need to survive," Martin said. The study, "Climate impacts on bird and plant communities from altered animal-plant interactions," was published online on Jan. 8 in the journal *Nature Climate Change*.

<http://www.usgs.gov/newsroom/article.asp?ID=3069>

## **POLICY AND MANAGEMENT**

### **Ninth Circuit Finds Fish & Wildlife Failed to Adequately Account for Climate Impacts, Keeps Yellowstone Grizzlies on ESA List**

The Ninth Circuit Court of Appeals recently affirmed a Montana district court ruling that blocked the U.S. Fish & Wildlife Service (the "Service") from removing Yellowstone grizzly bears from the ESA's threatened species list. *Greater Yellowstone Coalition, Inc. v. Servheen*, --- F.3d ---, 2011 WL 5840646 (9th Cir. 2011). The opinion is noteworthy because it is based in large part on climate change impacts, and because the Court did not defer to the agency despite considerable scientific uncertainty. The Court vacated the Service's rule delisting the grizzly—resulting in the species' continued protection under the ESA—and sent the matter back to the Service for more review.

### **U.S. EPA Releases Report: *An Assessment of Decision-Making Processes: Evaluation of Where Land Protection Planning can Incorporate Climate Change Information***

This report, prepared by the Global Change Research Program (GCRP) in the National Center for

Environmental Assessment (NCEA) of the Office of Research and Development (ORD) at the U.S. EPA, is a review of decision-making processes of selected land protection programs. The goal of this report is to assess the feasibility of incorporating climate change impacts into the evaluation of these programs. The assessment revealed that there are several strategies that might be useful for incorporating climate change into decision making. As part of a portfolio of adaptation strategies, land protection may become more important for jurisdictions, particularly to ameliorate climate change impacts on watersheds and wildlife. To view the report, visit: <http://cfpub.epa.gov/ncea/global/recordisplay.cfm?deid=238091>. To view the Federal Register notice, visit: <http://www.gpo.gov/fdsys/pkg/FR-2011-09-22/html/2011-24365.htm>

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