

**Pacific Northwest Tribal Climate Change Project  
DRAFT Meeting Notes – Wednesday, January 15, 2014**

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**Call Participants**

- Mike Cox, EPA
- Julia Doumbia, BPA
- Marla Emery, USFS Northern Research Station
- Chris Farley, USFS
- Mary Fauci, Nez Perce Tribe
- Kathy Ferge, Natural Resource Cons. Service
- Cristina Gonzalez-Maddox, ITEP
- George Hart, Navy Region NW
- Amanda Kelly, BPA
- Carolyn Kelly, Quinault Indian Nation
- Linda Kruger, USFS PNW Research Station
- Amanda Lopez, Wisdom of the Elders
- Siena Lopez-Johnston, BPA
- Paul McCollum, Port Gamble S’Klallam Tribe
- Patricia Tillmann, NWF
- Kathy Lynn, University of Oregon
- John Mankowski, NPLCC
- Gary Morishima, Advisor to Quinault Indian Nation and ITC
- Melissa Poe, NOAA WA Sea Grant
- Tiffany Strohbin, Fair River Band
- Twa-le Swan, Spokane Tribe
- Steve Todd, Suquamish Tribe
- Timi Vann, NOAA
- Kirsten Vinyeta, University of Oregon
- Paul Williams, Suquamish Tribe
- Sue Wotkyns, ITEP

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**Upcoming PNW Tribal Climate Change Network Conference Call Dates**

- February 19, 2014
  - March 19, 2014
  - April 16, 2014
  - May 21, 2014
  - June 18, 2014
  - July 16, 2014
  - August 20, 2014
  - September 17, 2014
  - October 15, 2014
  - November 19, 2014
  - December 17, 2014
- Call-in Information:*  
Call Time: 10:00 am - 11:30 Pacific  
Call-in #: 1-888-858-2144  
Pass code: 5064716

### **DOI Climate Change Advisory Committee - Guidelines for Considering Traditional Knowledges in Climate Change Initiatives**

A draft of guidelines for considering traditional knowledges in climate change initiatives is underdevelopment and will be presented by Gary Morishima and Ann-Marie Chischilly to the tribal work group of the DOI Climate Change Advisory Committee this month. This document seeks to provide a set of guidelines and principles for both agencies and tribes who are considering the incorporation of traditional knowledges in climate change initiatives. Its purpose is to serve as a resource that informs tribes and agencies of the potential benefits, as well as the potential risks involved in bringing traditional knowledges into these initiatives. Contributors include Preston Hardison, Gary Morishima, Ann Marie Chischilly, Kyle Whyte, Kathy Lynn and a number of others. The draft is a work-in-progress and we will be seeking comments and input in the coming months. Questions can be directed to: [kathy@uoregon.edu](mailto:kathy@uoregon.edu).

### **Request for Input on PNW Tribal Climate Change Training and Webinars**

The Institute for Tribal Environmental Professionals (ITEP) at Northern Arizona University, the University of Oregon Environmental Studies Program, and the US Forest Service Pacific Northwest Research Station are collaborating on a training and webinars for Pacific Northwest tribes in 2014 and 2015. This collaboration aims to expand tribal capacity for climate change adaptation planning and implementation. The collaborating partners are seeking input from the Pacific Northwest Tribal Climate Change Network to refine the focus and content of the training and webinars. Initial plans are for the first webinar series to highlight climate change impacts of greatest concern to Pacific Northwest tribes. The classroom training (location and dates TBD) would build upon a Climate Change Adaptation Planning workshop that ITEP will offer in the Puget Sound area in the spring of 2014, and might include a focus on implementing adaptation plans. The second webinar series would then focus on tribal climate change adaptation strategies. In an effort to ensure that the webinar series and training encompass the types of information and resources that will be most useful to Pacific Northwest tribes, project collaborators are seeking input from tribal leaders and staff in the region.

By completing this [survey](#), tribal leaders and staff interested in participating can help us to ensure that their needs will be met during the aforementioned training opportunities. We encourage [tribal leaders and staff from tribes and intertribal organizations in the Pacific Northwest Region](#) to take a few minutes to complete this survey. To access the [survey](#), go to: [https://docs.google.com/forms/d/18dIhV3FyfebISiJ\\_Zzdjur-TKaD9Y3pms1O2utV3aeA/viewform](https://docs.google.com/forms/d/18dIhV3FyfebISiJ_Zzdjur-TKaD9Y3pms1O2utV3aeA/viewform). Please complete the survey by **Friday, January 17**. If you have any questions, please contact Sue Wotkyns with the Institute for Tribal Environmental Professionals at [Susan.Wotkyns@nau.edu](mailto:Susan.Wotkyns@nau.edu) or Kathy Lynn at [kathy@uoregon.edu](mailto:kathy@uoregon.edu).

### **Ocean Acidification Curriculum**

Paul Williams with the Suquamish Tribe gave an overview of ongoing work to develop school curricula about ocean acidification. For this project, educators, scientists, and citizens are working together to provide high quality ocean acidification (OA) materials in the hands of teachers and into K-12 classrooms. Paul emphasized the need to develop curricula for all students starting at an early age. He also emphasized the importance of getting kids interested in the sciences at an early age. Paul and others are in the process of creating an online ocean acidification curriculum collection to share materials such as curricula, hands-on activities, videos, and websites about OA and related topics.

**Paul asks Network participants to help by sending your favorite, most useful ocean acidification materials to [OACC@suquamish.nsn.us](mailto:OACC@suquamish.nsn.us).** (You can send attachments or web links. It would be helpful if you could include a short summary and brief comments regarding challenges and highlights. Paul and others are also interested in learning about materials you are currently developing.)

The online resource collection will be organized according to the following seven learning targets, developed by science teachers to address the central question “How is the shifting carbon cycle impacting ocean systems?”

- Explore the cycle that carbon travels as it transforms the energy of the sun into the fuel of life. What are the biotic and abiotic forces that move carbon through its oceanic cycles?
- Identify the main reservoirs of carbon, how carbon flows among them and over what time scales. Evaluate evidence to identify the rate of change in atmospheric temperature and CO<sub>2</sub> and the contribution of human activity to that change.
- Investigate how aquatic organisms respond to changing abiotic conditions (temperature, CO<sub>2</sub>, and O<sub>2</sub>).
- Investigate how aquatic ecosystems respond to changing abiotic conditions (temperature, CO<sub>2</sub>, and O<sub>2</sub>).
- Explore the potential impacts of increasing carbon to your region. Which biotic and abiotic factors could impact environmental conditions in your region?
- Identify the services provided by the aquatic ecosystem to human communities in your region. How will changes in ocean pH, temperature and sea level impact the ability of the ecosystem to continue to provide those services to your community? How will ecosystem services in other global regions be impacted? How will impacts to those communities impact your local community?
- Identify and create solutions to carbon impacts. What actions are others taking in your area? Which actions best suit your interests: research to find solutions, implementing existing solutions, civic engagement, education, what else?

Gary Morishima asked whether Paul and his team would be interested on also receiving information related to methane, in addition to carbon. Paul stated that they would welcome curriculum materials related to methane as well. A discussion also ensued later in the call about the potential use of interactive maps in the curriculum. Patricia Tillmann informed Paul that NWF has been developing a pilot of an interactive map describing climate change impacts and solutions relevant to given geographic areas. The pilot should be ready by middle of the year. Patricia indicated she would send Paul information outlining how they are developing the maps and how they are customizing their information to accommodate their target audience. \*\*If you are interested in participating in the review and assessment process of these curricula, please contact: Paul Williams, Shellfish Biologist, Suquamish Tribe Fisheries Department, (360) 434-7432, [pwilliams@suquamish.nsn.us](mailto:pwilliams@suquamish.nsn.us).

### **USFS Native Peoples and Climate Change Research Program**

Marla Emery, USFS Northern Research Station provided an overview of some of the initiatives unfolding nationally through the USFS Peoples and Climate Change Research Program. In 2010, Forest Service R&D began a nationwide project to better understand the impacts of climate change and the management options available to Tribes and native groups related to this disturbance. Forest Service research stations and field labs have created regional science-manager networks and portfolio studies on specific Tribal and Native groups and their climate change-related needs. In addition to the work being done in the Pacific Northwest by the US Forest Service Pacific Northwest Research Station and the Tribal Climate Change Project, other regional initiatives include:

- **Pacific Southwest Research Station (Northern California)**—*Karuk Tribe and University of California-Berkeley Collaborative*  
The Forest Service is developing research that responds to tribal community concerns, including food security, wildland fire, fuels, fisheries management, and enhancement of traditional foods such as acorns, nuts, and berries. Current UC Berkeley-led food security research efforts include the Karuk, Yurok, and Klamath Tribes. It is also supporting the Karuk Tribe's Eco-Cultural Resource Management Plan.
- **Pacific Southwest Research Station (Hawaii)**— Collaboration with the National Museum of the American Indian on Aloha 'ina: Hawai'i in the World, an exhibit exploring native Hawaiian culture, environments, and lessons for a changing climate (cosponsored with the Northern Research Station) and Culture and Conservation in Hawai'i and the Pacific, a workshop to bring together practitioners of traditional science and culture and western science to develop new tools and strategies for conservation in a changing world.
- **Rocky Mountain Research Station (Arizona and New Mexico)**— Joint venture agreement with the Institute for Tribal Environmental Professionals. Research objectives include identifying tribal climate change efforts in Arizona and New Mexico, assessing tribal research information needs and developing strategies to meet those needs. Accomplishments include formation of the Southwest Tribal Climate Change Network, and climate change trainings and resources for the southwest region.
- **Rocky Mountain Research Station (Aldo Leopold Wilderness Research Institute)**— Research Joint Venture Agreement with the Confederated Salish & Kootenai Tribes for research on climate change uncertainty in forest and fire management plan revision.

To find out more about current efforts, and for access to all of the brochures outlining the various USDA Forest Service Research Station's initiatives related to Native communities and climate change, please visit: <http://www.fs.fed.us/research/tribal-engagement/climate-change.php>. Marla also mentioned the development of the [USDA Climate Change Hubs](#).

### **USDA Forest Service Research and Development Tribal Engagement Roadmap**

Linda Kruger and Chris Farley provided an overview of the USDA Forest Service Research and Development Roadmap. The U.S. Forest Service Tribal Engagement Roadmap (Roadmap) outlines an agenda for USDA's Forest Service Research and Development deputy area regarding services to and engagement with American Indians, Alaskan Natives, Pacific Islanders, and other indigenous peoples.

#### **R&D Tribal Engagement Roadmap Objectives and Actions:**

Below are the six R&D specific objectives (associated actions are detailed in the Roadmap document) that R&D will strive to advance in support of the agency's Tribal Relations goals. In the detailed Roadmap, accompanying each Objective, are indicative examples of actions already being undertaken by R&D, which will serve as examples and models for advancing similar work in the future. Taken as whole, the breadth of USFS R&D engagement with Tribes should provide both Tribal and USFS leaders and staff access to the best available science and other knowledge in order to sustain the health and productivity of our nations' forests and grasslands for this and future generations.

1. Build new and enhance existing partnerships with Tribes, Indigenous and Native Groups, Tribal colleges, Tribal communities and Intertribal Organizations.
2. Institutionalization of Tribal Trust responsibilities and engagement within USFS Research and Development.
3. Increase and advance Tribal and indigenous values, knowledge and perspectives within USFS Research and Development, including both operational and research activities.
4. Network and coordinate within R&D and across Deputy Areas to increase Agency and R&D program efficacy.
5. Through a collaborative and participatory approach with tribes and tribal organizations, advance research on topics of joint interest such as:
  - Climate change
  - Fire science and management
  - Fish and wildlife
  - Forest management
  - Forest products and utilization
  - Non-timber forest products
  - Restoration
  - Social vulnerability
  - Sustainability
  - Traditional ecological knowledge
  - Water and watershed protection
6. Develop and deploy research and technologies to support tribal decision-making on natural resources issues.

Forest Service R&D would like to hear from the Tribes and learn what is important about our research efforts to them. For more information on the roadmap, visit: <http://www.fs.fed.us/research/tribal-engagement/roadmap.php>. The tribal consultation period for the Roadmap is January 10-May 11. A listening session/webinar/conference call with Washington Office Leadership and Staff on the Roadmap will be held on February 13th at 2:30 pm ET.

- **Date/Time:** Thursday, February 13, 2014 at 2:30 pm ET
- **LiveMeeting URL:** <https://www.livemeeting.com/cc/usda/join?id=NFJ5RS&role=attend>
- **Phone:** 1-888-844-9904
- **Participant Code:** 2701759#

For more information, please contact Chris Farley at [cfarley@fs.fed.us](mailto:cfarley@fs.fed.us). You can also contact Linda Kruger, the tribal liaison in Oregon Washington and Alaska. She can be contacted by phone (907-586-7814) or email [lkruger@fs.fed.us](mailto:lkruger@fs.fed.us).

### **Northwest Forest Plan - 20-Year Monitoring Report on the Effectiveness of Federal-Tribal Relations**

Under the Northwest Forest Plan, there is a requirement to monitor the state of Federal-Tribal relationships as exercised during the implementation of Plan actions and initiatives. Monitoring takes place every five years and culminates in a report, the last of which took place at the 15-year mark (1994-

2008) and was published in 2011. The 20-year monitoring effort is scheduled to occur in 2014, and is relevant to federally recognized tribes with lands, tribal headquarters, and/or treaty rights falling within Northwest Forest Plan boundaries in Washington, Oregon, and Northern California. If you have questions or comments regarding the upcoming monitoring, please contact Kathy ([kathy@uoregon.edu](mailto:kathy@uoregon.edu)). To find out more about the Northwest Forest Plan's tribal effectiveness monitoring, or to download the 15-year monitoring report, please visit the following link: <http://www.reo.gov/monitoring/reports/15yr-report/tribal/index.shtml>

## **General Updates**

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### ***EPA Tribal Environmental Research—2013 Tribal Synthesis Report***

The U.S. Environmental Protection Agency (EPA) is releasing a report summarizing the accomplishments and impacts of more than a decade of supporting Tribal Environmental Research. Since its inception, EPA's Science to Achieve Results (STAR) Tribal Research grant and fellowship program funded 10 STAR grants for tribal environmental health research, many of which were conducted on tribal lands by researchers and collaborators from tribal community colleges and universities. STAR researchers worked in partnership with tribal communities to better understand and manage toxic chemicals, and other risks that can affect tribal traditional lifestyle, health, and well-being. EPA's tribal research grants can be categorized by five themes:

- Cultural practices, language and traditional ecological knowledge.
- Subsistence foods and water resources.
- Community-based participatory research (CBPR) and community outreach and education.
- Risk assessment and incorporating sensitive populations.
- Impacts on regulations and management plans.

To find out more about the EPA's Tribal Environmental Research, related funding opportunities, or to access the 2013 Tribal Synthesis Report, please visit the following link:

<http://www.epa.gov/ncer/tribalresearch/>

### ***Upcoming climate change trainings, webinars and events ([NPLCC Monthly Climate Digest](#))***

The NPLCC's Monthly Climate Digest is a useful source to find out about upcoming climate change trainings, webinars, and events, as well as a place to find climate change-related resources and publications. This monthly digest is NPLCC's way of increasing access to climate change information important to natural and cultural resource managers throughout the North Pacific LCC region. To access the digest, please visit the following link:

<http://us5.campaign-archive2.com/?u=145bdf3c2e41f0d6cbce9a374&id=3a67545563>

### ***Northwest Climate Science Center***

The Northwest Climate Science Center (NW CSC) awarded nearly \$1.3 million to universities and other partners for research to guide resource managers in planning how to help species and ecosystems adapt to climate change. The NW CSC will fund seven new projects and continue funding eight projects from previous years. Most of the new projects focus on the effects of climate on resources of cultural significance to tribes. While the emphasis is on Northwest tribes, the NW CSC has built a partnership with the Alaska CSC and the North Pacific Landscape Conservation Cooperative to fund projects that benefit Native Americans in both regions. This underscores the NW CSC pledge to provide enhanced services to the Native American community at large and to engage in collaborative partnerships that leverage limited resources and address shared priorities. <http://www.doi.gov/csc/northwest/news/interior->

[announces-new-2013-climate-science-center-research-projects.cfm](#). The NW CSC also recently announced the release of the NW CSC Annual Report for Fiscal Year 2013 (October 1, 2012 – September 30, 2013). The Annual Report highlights major accomplishments in FY13 for the NW CSC in each of the five core service areas (Executive, Science, Data, Communications, and Education and Training) described in the NW CSC Strategic Plan. <http://www.doi.gov/csc/northwest/news/nw-csc-annual-report-for-fy13-released.cfm>

[Plan now to move people and infrastructure, including roads, out of harm's way](#)

Article by Ron Allen, tribal Chairman-CEO of the Jamestown S'Klallam Tribe in Washington. Peninsula Daily News, © 2013 Black Press Ltd./Sound Publishing Inc., 1/3/14.

Indian Country Today Article: <http://indiancountrytodaymedianetwork.com/2013/12/27/conversation-karen-diver-native-appointee-presidential-climate-change-task-force-152848>

***BIA Grants To Boost Tribal Preparedness and Resilience to Climate Change***

The Department of the Interior's Bureau of Indian Affairs announced today that it has awarded more than \$600,000 in grants to 18 tribes or tribal consortiums to support them in addressing the challenges of climate change as part of the President's Climate Action Plan to reduce carbon pollution, move the economy toward clean energy sources and prepare communities for the impacts of climate change.

To read further, please visit: <http://www.redlakenationnews.com/story/2014/01/15/news/bia-grants-will-boost-tribal-preparedness-and-resilience-to-climate-change/19354.html>

***New NPLCC Report—Climate Change Effects and Adaptation Approaches for Terrestrial Ecosystems, Habitats, and Species***

The report prepared by National Wildlife Federation, [Climate Change Effects and Adaptation Approaches for Terrestrial Ecosystems, Habitats, and Species](#), is now available. Funded by the NPLCC in 2012, this report is the third and final report about climate change effects on marine and coastal, freshwater, and terrestrial ecosystems in the geographic extent of the NPLCC. The reports provide a compilation of the scientific literature for the NPLCC. A document with the combined executive summaries for the three reports is available [here](#). The full marine and coastal and the freshwater reports are available on the NPLCC website resources page. The next step is to synthesize the content in these reports in an interactive web-based map of climate change effects and related adaptation options for fish, wildlife, and ecosystems in the NPLCC region. The map is chiefly an educational and communications tool. A pilot of the map with information on hydrologic changes is under development and will be available in early- to mid-2014.

***Updates to the Tribal Climate Change Profiles and funding guide***

We are frequently adding new tribal profiles and updating the [tribal funding guide](#). Tribal profiles can be accessed through the [Institute for Tribal Environmental Professionals](#) or the [PNW Tribal Climate Change Project](#). New profiles include:

- Tulalip Tribes: Shoring up a Damaged Ecosystem: [http://www4.nau.edu/tribalclimatechange/tribes/northwest\\_tulalip.asp](http://www4.nau.edu/tribalclimatechange/tribes/northwest_tulalip.asp)
- Safeguarding Indigenous Knowledge: [http://www4.nau.edu/tribalclimatechange/tribes/tdk\\_safegrdik.asp](http://www4.nau.edu/tribalclimatechange/tribes/tdk_safegrdik.asp)
- National Adaptation Forum 2013: A Dynamic Tribal Presence: [http://www4.nau.edu/tribalclimatechange/tribes/national\\_adaptforum.asp](http://www4.nau.edu/tribalclimatechange/tribes/national_adaptforum.asp)
- Confederated Salish and Kootenai Tribes: Climate Change Strategic Plan: [http://www4.nau.edu/tribalclimatechange/tribes/northwest\\_kootenai.asp](http://www4.nau.edu/tribalclimatechange/tribes/northwest_kootenai.asp)
- Jamestown S'Klallam Climate Change Vulnerability Assessment and Adaptation

Plan: [http://www4.nau.edu/tribalclimatechange/tribes/northwest\\_skallam.asp](http://www4.nau.edu/tribalclimatechange/tribes/northwest_skallam.asp)

### **Turn Down the Heat Online Course**

This free online course is available at Coursera.

Length: 4 weeks, starting January 27

3-5 hours of work/week

<https://www.coursera.org/course/warmerworld>

Under current pledges and commitments, the world is likely to reach 4°C degree warming by the end of the century and 2°C warming as early as 2040. This Massive Open Online Course (MOOC) brings together renowned scientists to provide a synthesis of the most recent scientific evidence and presents an analysis of likely impacts and risks, with a focus on developing countries. It chronicles already observed changes in the climate system and their impacts, through the increase in carbon dioxide emissions, corresponding temperature increases and melting of glaciers and sea ice, and changes in precipitation patterns. This course also offers projections for the 21st century for droughts, heat waves and sea-level rise, with implications for food and water security, as well as possible impacts on agriculture, water availability, ecosystems and human health. This MOOC presents an analysis of the likely impacts of a 4°C warming trajectory and stresses the need for decision makers and communities to take a serious look at their adaptation choices, while also signaling the urgency for mitigation action. Participants will also be introduced to the risks of triggering non-linearity, and tipping elements, such as the disintegration of the West Antarctic ice sheet and large-scale Amazon dieback. The course ends with a discussion of the main policy choices needed to prevent warming above 2°C.