

**Pacific Northwest Tribal Climate Change Project
DRAFT Meeting Notes – Wednesday, February 18, 2015**

Call Participants:

- Alicia Bell-Sheetter, USDA Forest Service
- Arwen Bird, NW Climate Science Center
- Kathy Ferge, National Resources Conservation Service
- Megan Flier, Confederated Tribes of Grand Ronde
- Rodney Frey, University of Idaho
- Laura Gephart, Columbia River Intertribal Fish Commission
- Eliza Ghitis, NW Indians Fisheries Commission
- Oliver Grah, Nooksack Indian Tribe
- Jennifer Hanlon, Central Council of Tlingit and Haida
- Preston Hardison, Tulalip Tribes
- Samantha Chisolm Hatfield, Oregon State University
- Lisa Hayward NW Climate Science Center
- Ida Hildebrand, Chugach Regional Resources Commission
- Tim Holbert, Multnomah County Health
- Susan Hummel, USDA Forest Service
- Carolyn Kelly, Quinault Indian Nation
- Linda Kruger, USDA Forest Service
- Siena Lopez-Johnston, Bonneville Power Administration
- Kathy Lynn, University of Oregon
- Guillaume Mauger, UW Climate Impacts Group
- Don Motanic, Intertribal Timber Council
- Melissa Poe, Washington Sea Grant
- Cynthia Rossi, Point no Point Treaty Council
- Jonalee Squeochs, Yakama Indian Nation
- Steve Todd, Suquamish Tribe
- Carson Viles, University of Oregon
- Sue Wotkyns, Institute for Tribal Environmental Professionals

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Upcoming PNW Tribal Climate Change Network Conference Call Dates

- March 18, 2015
 - April 15, 2015
 - May 20, 2015
 - June 17, 2015
 - July 15, 2015
 - August 19, 2015
 - September 16, 2015
 - October 21, 2015
 - November 18, 2015
 - December 16, 2015
- Call-in Information:*
Call Time: 10:00 am - 11:30 Pacific
Call-in #: 1-888-858-2144
Pass code: 5064716

Discussion Topics

Blended ecological research suggests role for traditional knowledge in forest management (*Susan Hummel, USDA Forest Service PNW Research Station*)

A study by scientists with the USDA Forest Service Pacific Northwest and Southwest Research Stations, in cooperation with expert weavers from the Grand Ronde, Karuk, Siletz, and Yakama tribes, demonstrated that traditional ecological knowledge (TEK) about good sites for harvesting beargrass (*X. tenax*) practices can be “crosswalked” with scientific ecological knowledge (SEK). The study sought to learn what forest conditions relate to harvest site quality of beargrass for tribal basketry, as this information is useful to foresters when management objectives include sustaining culturally important plant populations. During the summer of 2012, weavers and researchers visited 72 plots on national forests in California, Oregon, and Washington. On each plot the weavers classified the site as good, marginal, or poor according to their personal observations and harvesting experience. Forest Service staff measured variables likely to affect beargrass leaf quality, such as the number and diameter of all trees; amount and size of dead, down wood; and the color of beargrass leaves. Analysis of the field data revealed statistically significant differences in good and poor harvest sites across the three states and the two weaving styles represented. Beargrass having the desirable green color were associated with larger, but fewer trees and lower volumes of coarse woody debris. Information is available on the PNW Research Station [website](#), in a [brochure](#) or by contacting Susan Hummel at shummel@fs.fed.us.

The study aimed to better understand what conditions promote beargrass growth that is good for tribal gathering. Susan emphasized that project drew on input from expert tribal weavers and managers. The tribal weavers were given the agency to determine quality of sites without being asked for additional information about how they came to their conclusions, or what they would use their conclusions for. Frank Lake and Susan gathered additional quantitative data on beargrass sites for the study. This data was examined by the weavers through a process called “member checking,” a method of vetting data through project partner input.

Susan presented her research as an example of respectful, mutually-beneficial research between traditional knowledge holders and scientists. Susan noted that a topic of interest was that access related to the quality of gathering material sites, and this may be an area for future research. Susan also noted that one problem many weavers found with the methods was the expectation that weavers would be able to go to a site and look at only one plant to perform an analysis—in the future Susan would like to expand on this idea and find a way to develop integrated assessments.

Susan noted that the study was not directly focused on climate change. However, the results from Susan’s research demonstrate an opportunity to bring together traditional knowledge and scientific knowledge. The research relies on volunteers who know things being willing to share time and information. This same approach can be used to collaborate and better understand climate impacts.

Climate science: regional and global projects and tribal access to and use of data (*Guillaume Mauger, UW Climate Impacts Group*)

During the January Network call, there were a number of questions about tribal access to climate data, and how well global and regional models can inform tribal vulnerability assessments at a local scale. Guillaume, Kathy, Phil Mote (with the Oregon Climate Change Research Institute), Laura Gephart and

Eliza Ghitis exchanged emails and over the last few weeks to formulate a strategy to present information and facilitate dialogue about these issues with the Tribal Climate Change Network. As a first step, Guillaume offered to share information about existing climate data, and opportunities and limitations related to climate modeling. A summary of his presentation and links to resources he presented follow:

- Global modeling of CO₂ emissions depends on hypothesizing plausible scenarios. However, these scenarios are very uncertain. This is the most basic level/explanation of modeling. These models give low-resolution information that provides guidelines for considering future impacts. General information about risks helps to set management strategies on an effective path.
- Guillaume described the process of downscaling data, in which coarse-scale data is tailored to fit finer-scale resolutions. Global models are coarse-scale (50-150 mile grid squares). This does not allow for many topographic features to be accounted for. Downscaling relates large-scale models to the local scale. Two main methods are used to downscale models: statistical and dynamical. Guillaume explained that *statistical downscaling* uses empirical relationships derived by comparing the large-scale fields from global models to local-scale weather variations taken from observations (e.g., a surface weather station). *Dynamical downscaling* uses a global model to drive a physically-based regional climate model (RCM), implemented at finer spatial scales. Another way of saying this is that the global model is used to set the conditions at the RCM boundary, which the RCM uses to simulate the climate within its domain. Guillaume's shared concern with using data from global models at a regional scale because data may look great, neat, etc., but that such data can be less useful for individual communities.

Guillaume encouraged people to be discriminating in deciding what kind of climate models to use, and for what purpose. Resources Guillaume shared during his presentation and in response to follow-up questions included:

- Regional averages for the Pacific Northwest: PDFs shared during the call are included in [State of Knowledge Report - Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers – Figure 5.1 – Temperature Change](#).
- Global climate models ([liveMAGICC](#), [US DOT Climate Modeling Tools](#))
- Statistical downscaling ([University of Idaho MACA Statistical Downscaling Method](#))
- Dynamical downscaling (<http://climateprediction.net>, [TERRA-PNW](#), [UW Climate Impacts Group](#))
- Washington Wildlife Habitat Connectivity Working Group: [An Evaluation of the Utility of Fine-Scale, Downscaled Climate Projections for Connectivity Conservation Planning in Washington](#)
- Choosing and Using Climate-Change Scenarios for Ecological-Impact Assessments and Conservation Decisions: <http://onlinelibrary.wiley.com/doi/10.1111/cobi.12163/full>
- Resources in Alaska:
 - Scenarios Network for Alaska and Arctic Planning: <https://www.snap.uaf.edu/>
 - Alaska Climate Science Center - Temperature and Precipitation Projections: <https://csc.alaska.edu/resource/temperature-and-precipitation-projections-arctic-lcc>.
- Models related to ocean chemistry:
 - Washington Ocean Acidification Center: [UW College of Environment](#)
 - JISAO Seasonal Coastal Ocean Production of the Ecosystem: <http://www.nanoos.org/products/j-scope/home.php>

One participant asked what kind of information is available on how climate change may impact hydrologic patterns and stream temperature regimes in rain-dominant/groundwater-fed watersheds. Guillaume noted that while snowpack reduction has garnered a lot of attention, stream temperature impacts are more likely to be felt by low-elevation streams, which rely on rainfall and groundwater. A

recent study (Estimates of Twenty-First-Century Flood Risk in the Pacific Northwest Based on Regional Climate Model Simulations) is here: <http://journals.ametsoc.org/doi/abs/10.1175/JHM-D-13-0137.1> Guillaume concluded his presentation with comments about interest in understanding what kind of individualized tribal data and information needs there are, particularly given limited resources, staff, and availability for specialized training. It would also be helpful to know if there are any areas of commonality where certain kinds of resources and information could be useful to tribes throughout the region. We will continue a dialogue about tribal access to and use of climate data during our March call. One area of focus may be on presenting examples of how tribes in the region are currently using climate data and projections. Please email any questions or suggestions for further discussion on this topic to kathy@uoregon.edu. You can also contact Guillaume about his presentation at: gmauger@uw.edu.

General Updates

ATNI Tribal Leaders Summit on Climate Change

The Affiliated Tribes of Northwest Indians is hosting a Tribal Leaders Summit on Climate Change on March 10-11, 2015 in Portland, Oregon. The purpose of the Summit is:

- To convene ATNI Tribal Leaders to discuss Climate Change Impacts
- To Share Tribal Strategies, Plans, Policy on Climate Change, Energy, and Carbon Emissions
- To Discuss Regional, National, and International Policy on Climate Change
- To Discuss Tribal Needs and Funding Opportunities
- To Identify Strategies to Promote and Protect Tribal Sovereignty and Tribal Resources
- To Discuss the opportunity to develop a NW Tribal Action Plan on Climate Change

For more information, visit: <http://www.atnitribes.org/>. To register, click [here](#). Contact: Don Sampson, Executive Director. Institute for Tribal Government and ATNI Climate Change Project Coordinator, Don@Seventhgenerationllc.com.

Federal Climate Change Adaptation Plans

In October 2014, the White House released the final versions of Climate Change Adaptation Plans for federal departments and agencies. Links to the federal climate plans are available are here: www.performance.gov/node/3406/view?view=public#supporting-info. Kathy shared a framework for reviewing the plans that includes the following categories:

- Policies and Goals
- Climate risk and vulnerability
- Science and communication
- Trust Responsibility
- Tribal Treaty Rights
- Government-to-Government
- Tribal Consultation
- Traditional Knowledge
- Cultural Resources
- Coordination and Partnerships
- Specific Agency Actions

Goals of reviewing these plans include illustrating the ways in which federal climate change adaptation plans are addressing tribal issues as well as gaps that may exist. Carson is currently reviewing these plans and will have an update during the March call.

NOAA Fisheries Climate Science Strategy available for public comment through 3/31/2015

The NOAA Fisheries [draft Climate Science Strategy \(NCSS\)](#) is designed to increase the production, delivery, and use of climate-related information to marine and coastal resource managers, resource users and others at regional to national scales. Changes in ocean ecosystems are impacting the nation's valuable living marine resources and the people, businesses and communities that depend on them. To fulfill its mission to sustain marine resources and their environments for the benefit of the nation, NOAA

Fisheries and partners need additional information and tools to track, project and effectively respond to changing climate and ocean conditions. The draft Strategy is part of a proactive approach to collect and provide information on changing climate and ocean conditions to resource managers and affected sectors. It responds to existing mandates and other drivers such as the [Presidents National Climate Action Plan](#) and the [National Fish, Wildlife and Plants Climate Adaptation Strategy](#) that call for increased information to better prepare for and respond to climate-related impacts on the nation's valuable natural resources and resource-dependent sectors. Written comments are being accepted from 1/21/2015 through 3/31/2015. To submit comments online, [click here](#). Carson noted that currently, the report has minimal information about tribes, and no information specific to Alaska Native peoples and that this comment period is an opportunity to increase consideration of tribal issues in the report.

ITEP video [Adapting to Change](#)

The Institute for Tribal Environmental Professionals (ITEP) produced the video [Adapting to Change](#) with assistance from Jeremy Scott, a graduate student in Northern Arizona University's School of Communication. The filming occurred at ITEP's Climate Change Adaptation training in September 2014 in Portland, OR. The film highlights climate change impacts on tribes and their resources in the Pacific Northwest and Alaska, adaptation, and the training. The video and the training were made possible with funding support from the USDA Forest Service PNW Research Station. <http://vimeo.com/118150835>

[ITEP Webinar series](#)

The Institute for Tribal Environmental Professionals is coordinating a webinar series focused on climate change adaptation as part of a collaborative project with the USDA Forest Service Pacific Northwest Research Station and the PNW Tribal Climate Change Project. This webinar series follows an early set of webinars on climate change adaptation planning, a September climate change adaptation training workshop in Portland, Oregon. The preliminary list of webinars and presenters is listed here:

- Webinar 3: February 23, 10-11:15 a.m. PST. [Climate Adaptation for Fisheries: Two projects by the Columbia River Inter-Tribal Fish Commission](#). *Presenters:* Bob Heinith, David Graves, and Shawn Narum, Columbia River Inter-Tribal Fish Commission.
- Webinar 4: February 25, 2015, 10:00 - 11:15 a.m. PST. [Climate Change Funding and Technical Resources For Tribes](#). *Presenters:* Kathy Lynn, PNW Tribal Climate Change Project and Sue Wotkyns, Institute for Tribal Environmental Professionals.

ITEP webinars and registration information is available here:

http://www4.nau.edu/itep/climatechange/tcc_webinars.asp

National Adaptation Forum Registration and Travel Support Applications

2015 has arrived and the National Adaptation Forum is just around the corner. [Early Bird Registration](#) is available to receive discounted rates. Early Bird Registration ends on February 28th. Due to a handful of generous sponsors, travel support to attend the National Adaptation Forum is now available for a limited number of participants. Learn more about this opportunity, including how to apply, by visiting the [Travel Support](#) page on the [Forum](#) website. Applications for travel support are due on **February 28, 2015**. Sue Wotkyns mentioned that a number of tribal sessions have been accepted into the conference and encouraged those interested in attending to register early and apply for travel funds.

New ITEP Tribal Climate Change Fact Sheets

The Institute for Tribal Environmental produces 2-page fact sheets that focus on climate change impacts, adaptation strategies, and other relevant topics. They may be used in outreach with tribal government staff, leadership and communities. Two recent fact sheets focus on climate change mitigation and solid

waste and climate change and human health and are attached below. Other fact sheets are available at: http://www4.nau.edu/tribalclimatechange/resources/res_factsheets.asp.

Regional and National Tribal Climate Change Resources, Newsletters, and Event Calendars

- [ITEP Tribes and Climate Change Newsletter](#)
- [NW CSC](#) and [NPLCC Northwest Climate Digest](#); [NW CSC Calendar](#)
- [USDA Climate Hubs](#)
- [EPA's Stormwater Calculator](#)
- [EPA's Climate Resilience Evaluation and Awareness Tool](#)
- Climate Resilience Toolkit here: <http://toolkit.climate.gov/tools>

Climate Change and Indigenous Peoples Conference

The University of Oregon hosted the [3rd Annual Climate Change and Indigenous Peoples Conference](#) in December 2014. Patricia Cochran, Executive Director of the Alaska Native Science Commission served as the keynote speaker. Wisdom of the Elders recorded her talk, which is available here:

<http://vimeo.com/114802182>. Student presentations and research abstracts are available here: <http://ccip.uoregon.edu/2014-student-abstracts/>.

Tribal Climate Change Funding Guide

We frequently update the tribal funding guide. The Funding Guide is intended to provide up-to-date information on grants and programs that may assist tribes in addressing climate change through a broad range of sectors. Recently, the guide has been expanded to include existing tribal climate change adaptation plans in the US. Email kathy@uoregon.edu if you have any information to add to the guide. To access the funding guide, please visit <http://envs.uoregon.edu/tribal-climate/>

Upcoming Events

February 23, 2015, 10:00-11:15 Pacific. [ITEP Webinar: Columbia River Inter-Tribal Fish Commission \(CRITFC\) Climate Impacts and Adaptation Projects](#)

Part 1 – Climate Change Impacts on Columbia River Treaty Tribe's Resources

Presenters: David Graves, Columbia River Inter-Tribal Fish Commission (CRITFC), and Bob Heinith, technical consultant for CRITFC. *Part 2 – Adaptation of Salmonids to Climate Change*

Presenter: Shawn Narum, Columbia River Inter-Tribal Fish Commission (CRITFC). Please register here: <https://attendee.gotowebinar.com/register/8043789937499597826>.

February 25, 2015, 10:00 - 11:15 a.m. Pacific. [ITEP Webinar: Climate Change Funding and Technical Resources for Tribes](#)

Presenters: Kathy Lynn, Project Coordinator, Tribal Climate Change Project, Environmental Studies Program, University of Oregon, and Sue Wotkyns, Climate Change Program Manager, Institute for Tribal Environmental Professionals, Northern Arizona University. Please register here: <https://attendee.gotowebinar.com/register/4786137095427859202>.

February 25, 2015. 11 am Pacific. Webinar: Regional Socio-Economic Vulnerability

Assessment: Understanding the Impacts of Climate-Related Changes in Forests and Grasslands in the U.S. Northwest.

This webinar will be presented by *Michael Hand (USDA Forest Service Rocky Mountain Research Station), Paige Fischer (University of Michigan), and Tim Frazier and Joseph Reber (University of Idaho)*. The *Social Vulnerability Webinar Series* is sponsored by the USDA Forest Service Rocky Mountain Research Station and the University of Montana. For more information visit:

<http://www.fs.fed.us/rmrs/webinar-series/social-vulnerability/> or [Register here](#).

March 4, 2015. Tribal Leader Forum on Climate Preparedness - Tribal Energy Systems: Climate Preparedness and Resiliency. Hosted by the US Department of Energy Office of Indian Energy. The forum will take place from 9 a.m.–5:45 p.m. at the Thunder Valley Casino Resort in Lincoln, California. [View the agenda here](#). Click here to [RSVP by February 23](#).

March 10 - 11, 2015. ATNI Tribal Leaders Summit on Climate Change, Portland Oregon
For more information, contact Don Sampson, Executive Director, Institute for Tribal Government & ATNI Climate Change Project Coordinator. Don@Seventhgenerationllc.com.

March 14-15, 2015. Indigenous Peoples' Climate Change Working Group Meeting, Albuquerque, NM
Hosted by Southwestern Indian Polytechnic Institute. For more information, contact: [Kiksapa Consulting](#)

March 23-25, 2015. Geoscience Alliance Conference, Portland, OR.
This year's conference addresses "A Changing Climate's Effects on Rivers, Estuaries, Oceans, First Foods and Tribal Health." Registration is currently open [online](#).

April 14, 2015. NPLCC-funded workshop: Using Beaver to Restore Streams. Juneau, AK

April 20-22, 2015, 3rd Annual Spatial Statistical Stream Network Models training workshop, Boise, ID
A new class of spatial statistical network model (SSNM) for data on stream networks has recently been developed & free software is available for implementing the models. [Click here for more information](#).

April 28-30, 2015. ITEP Tribal Climate Change Adaptation Planning Workshop. Offered by the Institute for Tribal Environmental Professionals and the Great Basin Landscape Conservation Cooperative and co-hosted by the Shoshone-Bannock Tribes. This training is open to tribal members and tribal natural resource professionals. More information and registration will be available at: http://www4.nau.edu/itep/climatechange/tcc_trainings.asp.

May 12-15, 2015. 2nd National Adaptation Forum. St. Louis, MO.

May 19-21, 2015. National Tribal Forum on Air Quality. Battle Creek, MI. ITEP, the National Tribal Air Association (NTAA), and the Nottawaseppi Huron Band of the Potawatomi invite you to attend the 16th Annual National Tribal Forum on Air Quality. http://www4.nau.edu/itep/conferences/conf_nmf.asp

May 20-22, 2015. 2015 Native American Fish and Wildlife Society National Conference. Juneau, AK
<http://www.nafws.org/events/national-conference>

June 8-11, 2015. Thirty-Ninth Annual National Indian Timber Symposium. North Bend, OR.
Hosted by the Coquille Indian Tribe. http://www.itcnet.org/get_involved/annual_symposium.html

June 9-10, 2015. Indigenous Perspectives on Sustainable Water Practices. Chandler, AZ. Hosted by the Water Resources Resource Center. More information: <http://wrrc.arizona.edu/conf-2015>

June 29-July 1, 2015. Rising Voices 3 Workshop. Boulder, CO.

Rising Voices 3 workshop will have the theme of Learning and Doing: Education and Adaptation through Diverse Ways of Knowing and be held at the National Center for Atmospheric Research. <http://www2.mmm.ucar.edu/projects/RisingVoices/>