Pacific Northwest Tribal Climate Change Project
DRAFT Meeting Notes – Wednesday, April 15, 2015

Call Participants:
• Shayleene Allen, Klamath Tribes
• Lucas Bair, Spokane Tribe
• Arwen Bird, NW Climate Science Center
• Kathy Ferger, Natural Resources Conservation Service
• Nora Ferm, Cascadia Consulting
• Richard George Yakama Nation
• Laura Gephart, Columbia River Intertribal Fish Commission
• Larry Gilbertson, Quinault Indian Nation
• Oliver Grah, Nooksack Tribe
• Jill Hardiman, USGS
• Ida Hildebrand, Chugach Regional Resources Commission
• Jennie Hoffman, USDA Forest Service
• Carolyn Kelly, Quinault Indian Nation
• Julie Koebel, Natural Resources Conservation Service
• Linda Kruger, USDA Forest Service
• Gerald Lewis, Yakama Nation
• Kathy Lynn, University of Oregon

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Upcoming PNW Tribal Climate Change Network Conference Call Dates
• 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 Pacific
• Call-in #: 1-888-858-2144
• Pass code: 5064716

PNW Tribal Climate Change Network – April 15, 2015 Meeting Notes
Discussion Topics

2015 Drought Information
Julie Koeberle and Scott Oviatt with the USDA Natural Resource Conservation Service shared current data on snowpack and drought in Oregon. They shared information about the NRCS Oregon Snow Survey website, which provides up-to-date information on the state of snowpack across the state. Currently, the state is experiencing record low snowpack, and water shortages are expected this summer. Three quarters of sites monitored this year were at record lows, and more than a third were completely snow free. Although snowpack across the NW is at record lows, precipitation is about normal. This is because changes in temperature, not in precipitation, are driving loss of snowpack. Below are additional resources, each with a brief explanation:

- Oregon Basin Outlook Report, which details stream flow in basins across Oregon State.
- Map of snowpack conditions across the Western US, found at: http://www.wcc.nrcs.usda.gov/ftpref/gis/images/west_sweepctnormal_update.png
- Drought monitor for the US: http://droughtmonitor.unl.edu/
- NOAA’s National Weather Service Climate Prediction Center, which provides long term weather outlooks: http://www.cpc.ncep.noaa.gov/
- Oregon State Water Resources Department information on current drought declarations in Oregon. This website includes information about rules and regulations for declaring droughts, federal and state assistance, and drought mitigation tools: http://www.oregon.gov/owrd/pages/wr/drought.aspx#Current_Conditions_in_Oregon
- Washington State Department of Ecology information on current drought declarations in Washington. This website includes information on existing droughts, rules and regulations, and assistance for areas affected by drought: http://www.ecy.wa.gov/drought/

Following their presentation, there was a discussion about how drought conditions are officially declared or determined. There was also a discussion about what drought resources exist specific for tribes. Scott shared that there are committees of national drought monitors who meet to determine which areas should be classified as suffering from a drought. From these technical groups, US drought maps are designated. Droughts are determined by climate and socio-economic conditions. These recommendations are passed along to policymakers (e.g. governors), who declares droughts. After this process, counties and local governments can apply for drought assistance. Julie, Scott and Kathy are researching resources available to tribes suffering from a drought, and avenues for tribes to apply for assistance. At present, Julie and Scott were able to offer the following resources:

- This FEMA document provides detail on how tribes can apply for assistance when suffering from droughts: https://www.fema.gov/consultation-disaster-declaration-process-tribes/summary-comments-first-draft-tribal-declarations
- Cody Knutson at the National Drought Mitigation Center and University of Nebraska prepared a presentation “Lessons Learned from Tribal Drought Planning,” which shares information about existing limitations and opportunities for drought planning in Native communities. The presentation relies on insights gained from a Tribal Drought Planning Workshop held in 2004 and on a case study with the Hualapai Tribe.
Tribal Access to and Use of Climate Data: Choosing and Using Climate-Change Scenarios for Ecological-Impact Assessments and Conservation Decisions - Summary of key points and discussion on using climate data in tribal climate change assessments and adaptation plans. (Guillaume Mauger, Climate Impacts Group)

Guillaume summarized an academic paper aimed at helping tribal environmental professionals determine how to best use climate data. His summary is part of an ongoing discussion on the network about how to make climate data more available and useful to tribes for climate initiatives. (A related presentation is available at: https://www.youtube.com/watch?v=ggV3hJSdjo8.)

Guillaume noted that a main challenge for people trying to decipher data is that there is so much data out there. This paper attempts to give a path forward for those working on tribal climate change assessments as they attempt to decipher which data is useful to their work. The paper proposes that as projections move further into the future, and as global data is applied to local projections, that it becomes more uncertain. Balancing between uncertainty of information and benefits of modeling is one problem addressed by the paper. The paper also presents a three-step process for deciding which data to pursue: 1) develop a conceptual model of impact and variables, 2) determine appropriate scale and 3) determine decision context (e.g. likelihoods, worst-case scenarios, time horizon, and other policy considerations). This process requires managers who are familiar with impacts and vulnerability on the ground, scientists who can determine appropriate scales for data, and policymakers who understand decision contexts. Finally, Guillaume discussed how the paper includes a decision-tree for using data. This tree relies on yes/no questions to give guidance about what data will be useful in different contexts.

Following Guillaume's summary, the network participants asked questions and discussed the issues of climate data and accessibility. Kathy asked people currently working for tribes to describe how accessible data has been for them as they address climate. Oliver Grash shared that data from University of Washington’s Climate Impacts Group (CIG) has been made available to him by working with researchers at Western Washington University who also use CIG data. They are using quantitative modeling from Western Washington University which relies on CIG data in order to quantify hydrologic change and see how these changes impact salmon on the Nooksack River.

Cynthia asked about existing directories in the Northwest for connecting climate scientists with tribes. Guillaume stated that CIG’s goal is to function as a directory for tribes and others who are trying to network with scientists. Kathy noted that a directory or more organized information about who tribes can contact would be very useful. Kathy will include this on the agenda for the next call and find out if there are any existing resources to build on or adapt for tribes.

General Updates

2015 Tribal Cooperative Landscape Conservation Program - Request for Proposals due April 24, 2015

The Tribal Cooperative Landscape Conservation Program will provide funding to support tribal projects to address climate change adaptation and ocean and coastal management planning. In FY 2015, $8 million will be available for tribes to implement projects that address climate change impacts through vulnerability analysis, adaption planning, and increased monitoring cycles for climate change management, as well as to projects that ensure ocean and coastal resource health, resiliency, community safety and economic security for present and future generations. For more information:

- [http://www.indianaffairs.gov/WhoWeAre/BIA/OTS/NaturalResources/climatechange/index.htm](http://www.indianaffairs.gov/WhoWeAre/BIA/OTS/NaturalResources/climatechange/index.htm)
2015 NW CSC Climate Boot Camp
This year’s camp is hosted by the University of Washington and will run from August 16th – 21st at Pack Forest Conference Center in Eatonville, WA. The curriculum for this year’s camp will delve into Adaptation on the Wildland-Urban Interface. There are currently five spots set aside for tribal members and staff. The application deadline is April 6th and applications will be reviewed on a competitive basis for a limited number of slots. Registration is $650 and includes lodging. For more information and to obtain a copy of the brochure and application, contact Arwen Bird, CBC Coordinator (e: birda@uw.edu, p: 503.318.5104). If you are interested in attending, but the cost is prohibitive, please contact Arwen. Deadline extended to May 13th, 2015.

National Adaptation Forum Tribal Climate Change Track
The National Adaptation Forum will take place in St. Louis, MO from May 12-14, 2015. The National Adaptation Forum gathers the adaptation community to foster knowledge exchange, innovation and mutual support for a better tomorrow. As part of the 2nd National Adaptation Forum, there are several panels focused on tribal issues. Please see the list of panels included on the tribal climate change track at the NAF here: http://www.indianaffairs.gov/cs/groups/webteam/documents/document/idc1-029779.pdf.

Tribal Health Resources—BIA Compilation of Useful Health Resource for Tribal Communities
In observance of National Health Week, the BIA has compiled resources pertaining to Native peoples’ health, including health in the face of climate change:

- **Alaska Native Tribal Health Consortium (ANTHC) Center for Climate and Health**: Climate change is having significant effects on the lives of Arctic people, including the types of injury and disease, food resources, and health infrastructure such as water systems. In 2008 with growing alarm about climate change, the Alaska Native Tribal Health Consortium (ANTHC - the statewide arm of the tribal health system in Alaska) formed a Center for Climate and Health, the first in the nation. The purpose was to raise awareness about climate change effects and to help communities adapt in healthy ways.

- **ANTHC Local Environmental Observers (LEO) Network**: Recognizing the need to provide on-going tracking of climate change impacts and to connect communities with technical resources, ANTHC established the Local Environmental Observer (LEO) Network. LEO members post observations about unusual environmental change along with analysis of the implications, and response actions. LEO managers then connect the observer with technical experts located in agencies or academic institutions. The observations and consultations are posted on public Google maps and shared throughout the network and through public outreach to help raise awareness about emerging environmental and health issues. You can learn more by visiting the LEO website.

- **National Institute of Environmental Health Services (NIEHS) Climate Change and Human Health Program**
  NIEHS Environmental Health Perspectives Climate Change and Health: A Native American Perspective: In 2010, Bob Weinhold wrote this article on the challenges of Climate and Health for Native Americans despite their often "lower-impact" ways of living contributing less to the problem.

- **Center for Disease Control (CDC) Climate and Health Program**: CDC's Climate and Health Program is helping state, tribal, local, and territorial health departments prepare for the specific health impacts of climate change that their communities will face.

- **The Tribal Advisory Committee (TAC)** advises CDC/ATSDR on policy issues and broad strategies that may significantly affect American Indian/Alaska Native communities. http://www.atsdr.cdc.gov/

- **National Institutes of Health, MedLinePlus Health Information for You: Climate Change**—Find links, overviews, multi-media, children's and teenager's resources, etc. from federal agencies and non-governmental websites. http://www.nlm.nih.gov/medlineplus/climatechange.html

- **EPA Climate Impacts on Human Health**: The U.S. Environmental Protection Agency (EPA) provides information on both the impacts of climate change on human health and adaptation examples nationwide as part of the agency's comprehensive effort to focus on climate change impacts and adapting to change. The impacts of climate change on health will depend on many factors. These factors include the effectiveness of a community's public health and safety systems to address or prepare for the risk and the behavior, age, gender, and economic status of individuals affected. Impacts will likely vary by region, the sensitivity of populations, the extent and length of exposure to climate change impacts, and society's ability to adapt to change.
Berry Risk Mapping and Modeling of Native and Exotic Defoliators in Alaska—Summary of NPLCC Webinar

Chugachmuit Forestry Research Manager Nathan Lojewski presented research on geometrid moth defoliation in Chugachmuit region, and described possible adaptation routes for the community. Focused on the community at Port Graham, AK on the Kenai Peninsula, the presentation described how geometrid moth outbreaks are impacting berry resources. Geometrid moths are defoliators who experience population booms in regular cycles (i.e. outbreaks). Given the subsistence lifestyle of the Chugachmuit community at Port Graham, this has been a major concern—berry resources have dwindled over the last four years. Nathan described how warming temperatures have correlated with a spread in geometrid moths; there is concern in the community that climate change will bring regular geometrid moth outbreaks. In response, the community has begun planning to create additional, productive berry habitat. The webinar was recorded, and is available here: http://northpacificlcc.org/Webinars

Webinar: Nooksack Tribe Vulnerability Assessment and Adaption Planning for the Nooksack River.

Oliver Grah shared that the Nooksack Tribe is sponsoring a webinar to discuss their vulnerability assessment and adaptation plan for the south fork of the Nooksack River. This webinar will discuss what work has been done on the plan so far, including data collection on stream temperatures, and issues surrounding the River’s 303(d) listing. This webinar will also address tribal treaty resource issues in the context of climate impacts on a temperature impaired rivers. Kathy will send information on how to register for the webinar as soon as it is available.

Bureau of Indian Affairs Climate Change Program - Climate Science Coordinator - Applications due April 27, 2015

The BIA Climate Change Program, Climate Science Coordinator shall serve as the Bureau expert and staff authority on climate change science and principle coordinator of collaborative research, analysis, knowledge-sharing and capacity building, providing leadership and guidance in support of the Department of Interior’s response to the climate change challenge for Tribal Nations and Alaska Natives. Position to be located in Washington, D.C. See link for more details: https://www.usajobs.gov/GetJob/ViewDetails/398925400?share=email.

BIA Water Resources Technician Training Program - Opportunity for Native American High School Students

The Bureau of Indian Affairs, Office of Trust Services is now accepting applications from Native American high school graduates interested in the BIA Water Resources Technician Training Program. Please distribute to your contacts or high school students graduates that may be interested in attending the FY-15 Summer program. To download the flyer, click here: http://www.indianaglink.com/wp-content/uploads/2015/03/2015-Announcement-edits-by-OTS-3-18-2015-1.pdf.

Nominations for ACCCNRS Membership: Nominations are being accepted for membership on the federal Advisory Committee on Climate Change and Natural Resource Science (ACCCNRS). Written nominations must be received by June 1, 2015. ACCCNRS advises the Secretary of the Interior on the operations of NCCWSC and the Climate Science Centers. Click here for more information: https://nccwsc.usgs.gov/acccnrs.

Draft USGCRP Climate and Health Assessment - Request for Comments. The U.S. Global Change Research Program has announced the 60-day public comment period for the draft report: The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. The draft report assesses the observed and projected impacts of climate change on human health in the United States, with a particular focus on where impacts can be quantified. This draft assessment was developed by the Interagency Group on Climate Change and Human Health, a USGCRP working group, as part of the sustained National Climate Assessment and as called for under the President’s Climate Action Plan. Each chapter of the draft assessment summarizes the scientific literature on specific climate change-related health outcomes or exposures important to health. The draft assessment and information on submitting comments are available at: http://www.globalchange.gov/health-assessment. All comments must be submitted to the website by 12:00pm EDT on June 8, 2015.
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

April 17, 2015. 7th Annual Northwest Environmental Health Conference, Portland, OR

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. Information and registration is available at: https://www.eventbrite.com/e/3rd-annual-spatial-modeling-workshop-registration-14636384821.

To mark Earth Week and the 5th Anniversary of the BP Deepwater Horizon Oil Disaster, you are invited to join events that will feature a short screening of award-winning documentary film, "Can't Stop the Water", and a discussion with Chief Albert Naquin (Isle de Jean Charles Tribe) and Bob Gough (Intertribal Council on Utility Policy) about one of the first coastal indigenous groups to relocate in modern times due to extreme environmental changes. Please come enjoy an engaging conversation, learning experience, and special refreshments brought in from the Louisiana bayou country! More information is available here: http://www.eesi.org/files/042015_tribalresilience_notice.pdf.

• Sunday, April 19 at 4pm: The Corner Store, 9th St. and South Carolina Ave, SE, Washington, DC
• Monday, April 20 at 3pm: 628 Dirksen Senate Office Building, Capitol Hill, Washington, DC. Congressional briefing, What if the Water Can't be Stopped: Tribal Resilience Plans in an Age of Sea Level Rise. Live webcast (connection permitting) will be streamed at: www.eesi.org/livecast.
• Tuesday, April 21 at 7pm: The Old Pine Street Church, 412 Pine St., Philadelphia
• Wednesday, April 22 at 1:30pm and 7:00pm: John Jay College, 524 W 59th St., New York City

April 29-30, 2105. 5th Prince of Wales Mining Symposium. Klawock, AK.
For more information, please visit this link: http://kasaan.org/miningsymposium_home.html

April 30, 10-11 am PDT. Webinar: Community-Based Sea Level Rise Projections with Ian Miller of Washington Sea Grant. Ecosystem-Based Management Tools Network webinar.
Washington Sea Grant has partnered with the Jamestown S'Klallam Tribe and Adaptation International to develop local sea level rise projections and sea level scenario maps for the Jamestown S'Klallam community. The assessments are being used to identify tribal areas or resources that are particularly vulnerable to sea level rise and priority adaptation actions and are already being integrated into long-term community planning. This webinar will present a process for developing community-based sea level rise projections and facilitating their use. Learn more about the project at www.jamestowntribe.org/programs/nrs/nrs_climchg.htm and https://attendee.gotowebinar.com/register/8828061687758184449

May 1, 2015. 2nd Annual Transboundary Conference. Klawock. AK.
More information at: http://kasaan.org/miningsymposium_home.html

May 4-7, Denver, CO. Meeting: 2015 Tribal Energy Program Review.
DOE Tribal Energy Program review will include an overview of the Tribal Energy Program and a series of presentations by tribes exploring or deploying weatherization, energy efficiency, and renewable energy technologies across the nation. Because human capacity is a focus of the Tribal Energy Program, attendees will also learn about our internship program and hear directly from young and inspiring Native American students about their experiences and summer projects.
http://apps1.eere.energy.gov/tribalenergy/program_review_meetings.cfm

General information about the Forum can be found here: http://nationaladaptationforum.org/. The BIA Climate Change page includes a link to the panels included in the Tribal Climate Change Track at: http://www.indianaffairs.gov/cs/groups/webteam/documents/document/idc1-029779.pdf.

May 19, 2-4 PM PDT. Webinar. Nooksack Tribe Vulnerability Assessment and Adaption Planning for the Nooksack River. Information coming soon!
Nooksack Tribe is sponsoring a webinar to discuss their vulnerability assessment and adaptation plan for the south fork of the Nooksack River. This webinar will discuss what work has been done on the plan so far, including data collection on stream temperatures, and issues surrounding the River’s 303(d) listing. This webinar will also address tribal treaty resource issues in the context of climate impacts on a temperature impaired rivers.

May 19-21, 2015. National Tribal Forum on Air Quality. Battle Creek, MI.
The Institute for Tribal Environmental Professionals (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 (NTF). All tribal environmental professionals, US EPA representatives, and members of national or local organizations with interests in air quality and climate change issues in Indian Country are encouraged to attend. There will be panels with climate change tracks at the Forum. http://www4.nau.edu/itep/conferences/confr_ntf.asp


This webinar is one of a series co-sponsored by the NOAA Sectoral Applications Research Program (SARP), US National Integrated Drought Information System (NIDIS), Water Research Foundation, Water Environment Federation (WEF), Water Environment Research Foundation (WERF), American Water Works Association (AWWA), the Association of Metropolitan Water Agencies (AMWA) and EPA’s Climate Ready Water Utility Initiative.

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Hosted by the Coquille Indian Tribe. [http://www.itcnet.org/get_involved/annual_symposium.html](http://www.itcnet.org/get_involved/annual_symposium.html)


June 16-18, 2015. **ITEP Climate Change Adaptation Planning.** Bishop, CA. For more information, please see: [http://www4.nau.edu/itep/climatechange/tcc_trainings.asp](http://www4.nau.edu/itep/climatechange/tcc_trainings.asp)

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 (NCAR). The workshop will occur in collaboration with the Engineering for Climate Extremes Partnership, which aims to improve methods of incorporating resilience and cultural values explicitly in future planning programs. [http://www2.mmm.ucar.edu/projects/RisingVoices/](http://www2.mmm.ucar.edu/projects/RisingVoices/)

November 4-5, 2015. **Sixth Annual Pacific Northwest Climate Science Conference.** Coeur d’Alene, ID. The PNW Climate Science Conference annually brings together more than 250 researchers and practitioners from around the region to discuss scientific results, challenges, and solutions related to the impacts of climate on people, natural resources, and infrastructure in the Pacific Northwest. It is the region’s premier opportunity for a cross-disciplinary exchange of knowledge and ideas about regional climate, climate impacts, and climate adaptation science and practice.

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

- ITEP Tribes and Climate Change Newsletter
- PNW Tribal Climate Change Project and Funding Guide
- 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
- Columbia River Intertribal Fish Commission Climate Change Resources
- CakeX.org Calendar of Events: [http://cakex.org/community/events](http://cakex.org/community/events).