Tribes/First Nations Climate Summit Proceedings - December 2017

Executive Summary

On December 13-14, 2017, over 150 members of the region's Tribes and First Nations gathered in Northern Washington for a unique and important event. They came together to assess progress that has been made understanding and preparing for the many ways in which our rapidly changing environment affects traditional ways of life.

This 2-day event focused on four main topics -- traditional knowledges, cultural and subsistence resources, planning to support community resiliency, and policy issues. On traditional knowledges, the discussion covered many aspects of how indigenous knowledges are shaping climate change collaborations, and ways to ensure appropriate protocols are upheld and knowledges are protected. Several case studies and guides were examined to explore the range of methodological approaches for gathering, protecting, and applying traditional knowledges in ways that protect and advance priorities of indigenous communities. Next, the forum examined a number of cultural and subsistence vulnerability studies that provide insights on what the future might hold for a variety of plants, animals, places, and cultures that are important to indigenous communities. Discussion also included additional changes people are observing across the landscape, and tools for documenting change.

Tribes and First Nations have shown real leadership developing and implementing adaptation plans that lay out strategies to adapt to (and guide) these changing conditions in ways that support continued resiliency and maintain traditional cultures and values. On this topic, several examples were provided from Alaska, British Columbia, Washington, Oregon and Northern California. The aim was to 1) identify best practices, approaches, scales for vulnerability assessments and adaptation planning; 2) develop strategies for implementation actions derived from adaptation planning; and 3) discuss available resources and future needs to support planning.

Lastly, the participants had conversations on ways to maintain momentum of this work within the ever-changing policy and budget environments. In addition to these four topics, the participants enjoyed a series of 15 "lightning talks" which highlighted a variety of studies, tools, resources, and collaborative processes available to assist ongoing work on climate adaptation and resiliency planning.

The agenda included a number of keynote addresses and insights from tribal leadership within the northwest and beyond. Regional leadership speakers included Theresa Sheldon and Terry Williams, Tulalip Tribe; Fawn Sharp, President of Quinault Indian Nation; Brian Cladoosby, Chairman of the Swinomish Tribe; Kyle Whyte, Potawatomi Nation; Sonny McHalsie, Sto:lo First Nations; Joe Hostler, Yurok Tribe; Eric Morrison, Alaska Native Brotherhood; David Redhorse, BIA; Don Sampson, Affiliated Tribes of Northwest Indians; and many more.

The forum was supported by the Tulalip Tribes, the North Pacific Landscape Conservation Cooperative (NPLCC), BIA's NW Regional Office, the Affiliated Tribes of Northwest Indians, and the University of Oregon's PNW Tribal Climate Change Network. Additional information about this event, as well as the final reports, can be found at http://atnitribes.org/climatechange/events/. Many thanks to the tribal leadership of the NPLCC and the NPLCC Steering Committee for envisioning the need for this summit and providing support to help make it a success.

This document is a synthesis of the notes taken during the plenary sessions and breakouts during the Summit. The notes are intended to provide the perspectives of and suggestions made by the participants at the Summit and to provide specific ideas on moving forward with collective actions among tribes and First Nations to address climate change. Note-takers took over 50 pages of raw notes, and there are undoubtedly omissions in this synthesis. If you have key messages and recommendations that you would like to see added to this document, please email don@seventhgenerationllc.com or kathy@uoregon.edu.

Opportunities for Collective Action

The following actions were identified from discussions of gaps and needs for each of the four themes of the Summit.

Traditional Knowledges

Place-based traditional knowledges have developed through peoples' relationships and experiences on the land and are critical to understanding how "natural" environments function, how they have been maintained and nurtured, and highlight the problems and disconnects in our environments today.

- Traditional knowledges have "a place in the circle" in understanding and managing lands that is different from, but no less important than, western scientific knowledge and should inform scientific study, management policies and practices.
- Tribes and First Nations should adopt their own specific guidelines and protocols for using traditional knowledges in any project, study or other collaborative effort. Guidelines should include a review protocol to approve methods for projects involving traditional knowledge, which includes data sharing agreements and Freedom of Information Act consideration for government projects, and enforcement measures if guidelines are not followed.
- Traditional land use practices, stemming from traditional knowledge, should be brought back into contemporary land use management policy to develop resilient ecosystems, restore important habitats and protect important cultural sites and values.
- Collaborative projects with tribes can engage traditional knowledges to develop understandings of baseline conditions to better identify and addresses environmental changes that are observed today, including changes in phenology and in important species populations .
- Traditional knowledges must be protected from misuse, cultural appropriation and commodification as has often occurred when traditional knowledge has been shared.
- Traditional knowledges can foster a holistic understanding of natural environments that includes role and responsibility of humans, but also the role in healthy environments in human social and spiritual well-being.
- Careful sharing of Traditional Knowledges can help the spread awareness of traditional knowledges, but can also begin to shift broader societal values to incorporate respect, responsibility and reciprocity to all human and nonhuman relations.
- Transmission of Traditional Knowledge is critical to a thriving culture.
    - Focus on youth engagement including the development of curricula in classrooms, both on and off contemporary tribal lands
    - Strengthening the presence of indigenous placenames throughout all lands
    - Development of social and physical infrastructure that encourages people to gather in communities to share knowledge.
    - Strengthening indigenous languages to share concepts that may not translate well into western languages.

Cultural and Subsistence Resources

Tribes and First Nations have been experiencing change on their lands from time immemorial to the present day. Through this long and unprecedented tenure on the land, many are observing ecological systems in great flux including impacts to important spirit foods seen in struggling native salmon populations, increased incidence of paralytic shellfish poisoning, reduction of quantity and quality of roots, berries and other medicinal and sustenance plants, increase in non-native and invasive species, as well as shifting seasonal conditions that affect traditional gathering calendars and the peoples' ability to tend to the land.

- Traditional land use and management practices can be brought back to managing lands through co-management of lands and resources, involvement in regional regulatory processes and updates, and introducing flexibility in institutional calendars and leave policies to provide time for traditional gathering, tending and monitoring.

- Tribes and First Nations will continue to spearhead and engage in environmental and resources studies to understand changes and plan for a resilient future, such as studies in tribal carbon footprints, sea level rise, ocean acidification, cultural heritage sites, monitoring environmental change and vulnerability assessments.
- Tribes and First Nations can work across regulatory borders to share knowledge across scales from the tribe to the region; to illustrate "big-picture" changes across the region through time; and to collaborate and share resources and expertise in order to build on each other's work and find synergies across the region.
- Environmental education centered on youth should be extended beyond the classroom and embraced in families and communities on the land to ensure traditional knowledge and practice can thrive. Tribes and First Nations will continue to innovate educational methods including culture camps, curricula, elder and youth programs, and developing educational calendars and leave policies that allow families to engage in traditional gathering, tending and monitoring.
- Tribes and communities are building on traditional knowledge of land and plants by planting gardens that include first foods and medicinal plants; and by developing native plant nurseries to propagate important plants for use in ceremonies, meals, medicines, ecological and habitat restoration, as well as highway projects, as way to reindigenize the landscape.

Plans and Actions for Resiliency

***Planning and assessment**:*

- The process for developing and implementing climate change vulnerability assessments and adaptation plans must be adaptive to meet individual tribal needs. These plans and resources should be created to be living and dynamic materials that are reflective of the changing stages tribes are at in addressing climate change.
- There must be direct funding and capacity building so that tribes can engage in developing and implmenting plans and actions for climate resiliency.
- Promote collaboration and leverage resources to ensure long-term sustainability and implementation of climate resiliency efforts.

***Youth engagement**:*

- Work with youth on climate action.
- Youth engagement, outreach, and education is critical in developing plans and actions for climate resiliency.
- Hold a conference dedicated to youth engagement and education on climate change.
- Social media is an important platform for outreach and education for tribal youth.

Tribal Member and Leadership Engagement:

- Engage and build capacity for tribal members, tribal leaders, and tribal staff to address climate change.
- Factor climate change into a broad set of issues that tribes are working throughout tribal departments so that cultural, social, economic, and environmental programs are all addressing climate change.

Tribal Climate Change Policy

- Ensure that tribes have a permanent role in decision making about climate change policy in regional, national and international forums.
- Identify the policy opportunities that may help to generate revenue from the regulation of greenhouse gas emissions (through carbon taxes, cap and trade, etc.) that would support tribal climate change adaptation measures.
- Tribes must take an active role in improving social and environmental standards in technology and industry, and specifically in understanding the risks to tribes in relationship to certain industries (e.g., mining).

Tribes/First Nations Climate Summit Proceedings - Table of Contents

Executive Summary 1
Session Summaries, Key Messages and Recommendations 5
Day 1 Opening Plenary 5
Session Summary: 5
Key Messages: 5
Traditional Knowledges Plenary and Breakout Sessions 5
Session Summary: 6
Plenary Remarks 6
Breakout Key Messages 7
1. How can traditional knowledge be used appropriately to advance tribal interest in resource management decisions? 7
2. Are traditional knowledges being protected? 7
3. Where are the gaps or needs? 8
Recommendations 8
Day 1 Lunch Keynote: National Climate Assessment 9
Summary of Issues 9
Key Messages: 9
Cultural & Subsistence Resources Plenary and Breakout Sessions 11
Session Summary: 11
Breakout Summaries 11
Have culturally significant foods or resources “first foods”, been impacted in your area? 12
How and why are those foods or resources important to you and your people? 12
Recommendations: What, if anything, are you doing to preserve, protect, and perpetuate these foods/Resources? 13
Day 2 Opening Plenary 14
Session Summary: 14
Plans and Actions for Resiliency 14
Session Summary 14
Key Messages 14
Recommendations: 15
Day 2 Lunch Keynote: Ambassador (ret.) Keith Harper, Cherokee Nation 16
Session Summary 16
Policy Plenary 17
Session Summary: 17
Key Messages 17
Appendix 1: Resources and Links 19
Appendix 2: Poster Session Abstracts 20

Session Summaries, Key Messages and Recommendations

Day 1 Opening Plenary

Session Summary:
Don Sampson, ATNI Climate Change Project Director. Don Sampson welcomed participants to the First Tribes and First Nations Climate Summit, recognized tribal leaders in attendance at the Summit, and thanked the organizers and leadership committee for the Summit. Welcomes and Invocation were given by: Theresa Sheldon, Secretary, Tulalip Tribe Board of Directors & 2nd Vice President, ATNI Executive Board; Leonard Forsman, Chairman Suquamish Tribe & President, ATNI Executive Board and Eric Morrison, President, Alaska Native Brotherhood. The Keynote was given by Fawn Sharp, President, Quinault Indian Nation.

Key Messages:
- *"What happens to the earth happens to us." - Plenary Speaker*

Tribal Councilwoman Sheldon opened her remarks by recognizing that the indigenous peoples have been at the forefront of climate change. She emphasized the role that each individual has to address these issues and encouraged participants to take the opportunity to take this information home and share with tribal leaders and tribal members. Chairman Forsman emphasized the urgent nature of climate change and high stakes efforts it will take to save tribal homelands from the effects of climate change. He noted that in Washington DC, the Administration is focusing on the term resiliency, but he recognized the work tribes are engaged in to address climate change is having an impact and that we must continue investing in climate change adaptation and addressing the impacts. Chairman Forsman emphasized the importance of native voices in these issues and to keep telling our stories. Eric Morrison expressed his gratitude to Tulalip Tribe. He focused on the importance of tribal knowledge about cultural and traditional ways of life in understanding and responding to climate change.

President Sharp spoke of the significant effort tribes in the Northwest and across the country is making to bring the conversation about climate change to state and national policy makers. She focused her remarks on the future as so much of the challenge of climate change stems from decades of inaction. President Sharp stated that climate change is the most significant challenge facing our generation, and that the knowledges to harness these challenges are within Indian Country. President Sharp spoke of the traditional teachings, traditional knowledges, traditional ecological knowledge, and truths that are needed to bring into the fold of tribal decision making. Other key messages that President Sharp shared:
- "We are effective because our science is not for sale and can't be bent to meet political agendas."
- Challenge people to consider what are those things that we are doing today to solve this crisis ten years from now? What are the strategic investments you are challenging your staff to make? What made the difference? How strategic are they to align the investments in climate mitigation and adaptation with the science that we have? Bear down and understand the problems and issues from the scientists.
- "We aren't just advocating for our interests for humanity. It's not just about us. Let's not forget the teachings from the salmon swimming up the river. That is our teaching. The salmon cannot make the journey – it's our responsibility to protect and defend and advocate for the sacred animals, the ecosystems, all things are connected."
- "In the absence of state and national policy, it's with us. Tribal Nations can occupy the leadership void. The solutions are within Indian Country!"

Traditional Knowledges Plenary and Breakout Sessions

Session Summary:

The purpose of the Session was to understand how traditional knowledges are shaping climate change collaborations and to ensure appropriate protocols are upheld and knowledges are protected, review a range of methodological approaches, and discuss outcomes and gap by reviewing case studies. The session focused on a review of how the Guidelines for Considering Traditional Knowledges in Climate Change Initiatives are being used in studies involving traditional knowledges, examining how tribes are developing protocols for traditional knowledges and highlighting opportunities for synergy with traditional knowledge and western knowledge systems. Speakers included:

- **Kyle Whyte**, (Potawatomi), Michigan State University: "Guidelines for Considering Traditional Knowledges in Climate Change Initiatives"
- **Sonny McHalsie**, Sto:lo First Nations: "First Nations Traditional Knowledge"
- **Joe Hostler**, Yurok Tribe: "Yurok Traditional Knowledge and Climate Change: Some Safeguards and Things to Consider when using Traditional Knowledge."

The Breakout Sessions asked the following questions:

1. *How can traditional knowledge be used to appropriately to advance tribal interest in resource management decisions?*
2. *Are traditional knowledges being protected?*
3. *Where are the gaps or needs?*

Plenary Remarks

Kyle Whyte spoke about the Guidelines for Considering Traditional Knowledges in Climate Change Initiatives, offers guidelines for tribes, agencies, organizations on organizing collaborative agreements and relationships involving TKs and principles for engagement. Some of his key messages included:

- "The topic of climate change is not new. We've been developing our knowledge systems and scientific understanding for decades."
- "When working with tribes, researchers must understand that they are actually building institutions of mutual accountability."
- "Tribes take leadership today to maintain existing knowledge systems."

Sonny McHalsie shared stories and oral history from his culture. He said these stories are considered when managing resources. Some of his key messages included:

- *"We have always lived here."* Complex relationship with land and resources, reinforced by linguistics. Aspects of culture and history that provides connection to land and responsibility to care for it.
- Take care of everything – and the way we were with everything. Remember the future generations.
- Our knowledge helps us deal with climate change. We are survivors. We all have our own oral histories, floods, famine, epidemics. We survived. Water temps, air quality, winds, salmon, fish declines. Want information to be helpful.
- "linguists say the longer people have lived in an area, the more complex their language becomes."
- "this is our land, we'll take care of everything that belongs to us. That is not only an expression of land and titles, but also of our stewardship.

Joe Hostler, Yurok Tribe spoke about the Yurok Elder Interview Project on Traditional Ecological Knowledge. Yurok tribal climate change efforts include an adaptation plan, vulnerability assessment, land management planning. Community scoping under previous climate change grant funding identified TEK as a top research priority. Some of his key messages included:

- Yurok TEK is based upon a fundamental principle of respect. Respect for all living things. Traditional knowledge is based on respect and trust is important
- "Who owns the knowledge? Is it the tribal government, the families, the knowledge-keeper? We came to the conclusion that the tribe is the front door."

- NPLCC has required substantive involvement with tribal/first nations. Purpose of the grant was to demonstrate how TEK can be integrated with NPLCC and to ID unmet information needs of Tribes and first nations regarding how natural and cultural resources may be affected by Climate Change. Sensitivity regarding Tribal/ first nations knowledge:

As a witness to the plenary, Patty reflected on the importance of asking what is taking place, did they do it in a good way? *"It honored us all as Native peoples. It will impact my 13 grandchildren."*

- *"We've always been resilient."*
- "Summit attendees are the gifts under this long house – you need to come together and wrap together with a cedar rope it will not break. Love one another and stand together. Thanks to the warriors at the table and those doing the good work. We need them as much as we need songs and dances."

Breakout Key Messages

1. How can traditional knowledge be used appropriately to advance tribal interest in resource management decisions?

- Tribes need to use our histories and stabilize statistics to be able to accurately carry out planning
- "We need to consider watersheds and the natural boundaries. From Glaciers down to the bay, every species has a function. TK brings back the knowledge of those systems to try and restore."
- "Our science is equal to western science, and we know that it should be upheld the same."
- As phenology, or the timing of seasonal phenomena (e.g. when plants sprout), is changing for important cultural resources, traditional knowledge can help in assessing and documenting changes through time.
- Learn and teach place names to help understand relationships to place across an Indigenous landscape, especially for youth.
- Need to involve tribes early in projects and need to incorporate youth.
- Tribal liaisons to government agencies, academic institutions, or nonprofits, can help in communicating tribal interests.
- Knowledge of first foods and how they are changing.
- It is important to have traditional knowledge protections in writing, especially concerning Freedom of Information Act (FOIA) and government contracts.
- Traditional knowledge can be the driving force that ties together many different efforts in learning about and protecting natural resources.
- Traditional knowledge can advance tribal interests in resource management by challenging US Government policies and actions.
- Educating youth is another way of using and strengthening TEK. One community offered Tribal Civics class. Another Tribe had a two week tribal youth exchange program. Educational need, youth and children in traditional knowledge and non-Native community…at a young age – youth camps for Native and non-Native students – both will be leaders. Strengthen and educate those around us.

2. Are traditional knowledges being protected?

- Do we have things in place to protect that knowledge and do we want that?
- Tribal institutional review boards
- As the elders pass, how is that being passed down to the youth?
- Keep our stories in our home lands
- Youth engagement
- "Tribes can drive these conversations… we want people to start making these shifts. It's about making these statements and having tribes control that" – tribal control in directing the decisions.
- "We want them to learn something from these stories but we don't want them to take the stories themselves".
- Sensitive sites are being revealed as tribes work on natural resource projects, and exposed to increased visitation from a public uneducated in and unfamiliar with traditional harvesting practices and values,

resulting in degradation of valuable resources. These are sites that have been regularly visited and cared for by Indigenous peoples resulting in a healthy and vibrant populations that are now at risk.

- There are often few recourses for enforcement of traditional knowledge protections on non-tribally held lands.
- Responsibility to environment/natural resources/non-human species needs to developed within the value systems of the broader society, to enable better relationships to land.
- Academic and government agency communities that work with Tribes and First Nations need to educate themselves to be aware of traditional knowledge guidelines to prevent misuse or appropriation of knowledge. It is not just the Tribes responsibility. There needs to be pro-active policies in non-native organizations.
- The Traditional Knowledges Guidelines need to be promoted as a tool for different non-native communities to become responsive to needs of Traditional Knowledge holders.

3. Where are the gaps or needs?

- "Every tribe needs to have their own guidelines"
- "There could be a strong and significant marriage between TEK that we have and the rights we have with in our reserve jurisdiction, and expanding into traditional territory that the state might come to an agreement on"
- "TK related to physical and spiritual health/wellness are not yet fully integrated into the discussion of environmental degradation and climate change impacts."
- We need Data-sharing protection agreements. Who owns and who can access the data. Need for more relationship building between tribal and non-tribal entities.
- Building relationships and understanding of the culture. Looking at the long-term. "How can this benefit the tribe and make this a partnership?" Collaboratively.
- Governmental IRB and also tribal IRB – making sure we have enough time to review BOTH of those.
- We can bridge gaps with TK by sharing stories along with western science – there is a connection TEK and western science. We just have to learn how to translate it.
- The gap or need is implementing this information. We have both TEK and western science – we need something actionable besides just collecting the knowledge.
- We need Connections between youth and elders – telling stories and keeping them engaged, together, and recording them. Collecting all this "data" and information. But struggling with what goes public and what we keep to ourselves, especially if we are thinking about a museum. Struggling with appropriate collection of data.
- Rising voices – examples of how to engage TEK.
- Need to develop a way to reach out to those who are exploiting the resources
- Need to instill a respect for the earth within broader society.
- There is a need to develop ways to protect sensitive sites and include enforcement measures. This needs to be in writing when developing new contracts or natural resource project work.
- Need to develop trust between traditional knowledge holders and those working with them, to ensure traditional knowledges will be protected and appropriately engaged with.
- Treaty rights need to be incorporated where applicable.

Recommendations

- *"Take something from the story but not the story itself."*
- Promote Data Sharing Agreements
    - what the tribes want
    - who owns and can access the data
    - need for more relationship building between tribal and non-tribal entities

- Create Transparency and education for public agencies engaging in partnership with tribes
- Youth/elder engagement in sharing of traditional knowledges

Day 1 Lunch Keynote: National Climate Assessment

Summary of Issues

The draft of the 4th National Climate Assessment is open for public review through January 31, 2018. Speakers included Kyle Whyte, Potawatomi Tribe, 4th National Climate Assessment (NCA) – Indigenous Peoples Chapter, and Gabrielle Roesch-McNally, NW Climate Hub and Mike Chang, Makah Tribe discussing the Northwest Chapter of the 4th NCA.

PNW Native people have been looked to from across the U.S. as leaders on climate change work and other impacts; their leadership on treaty rights at risk, how to adapt to environmental change, and other initiatives. There are tremendous mentors here in the PNW. This talk is the short version of the usual NCA4 talk. The current version of NCA is part of the global us climate change program. The purpose is to increase preparedness on climate change in the US; provide guidance to people doing policy and law. NCA4 is up for public comment now. Comments are to be provided on line – https://review.globalchange.gov/

Key Messages:

- How to adapt to changing ecosystems is not a new challenge for indigenous peoples. Tribes have been adapting to environmental change caused by or accelerated by human actions; how to honor and develop new kinship and relationships with plants and animal as you and they move; how to adapt to change and respectfully move from one place to another.

- Tribes have been vulnerable to climate change for some time dealing with U.S. colonialism and interactions with U.S. and Canada. Woodland structures have been changed from timber harvesting; pollution brought into the Great Lakes; where you can fish and what you can fish impacted; relocations to other lands; political change.

- Legacy is we have always been thinking about climate change and how to adapt; indigenous languages are verb-based; we have seasonal traditions.

- Important components of the Indigenous Peoples chapter focus on tribal livelihoods and economies at risk from climate change, issues related to treaty rights and tribal jurisdictions; and tribal culture, health and well-being are at risk; physical and mental health. Approaches for addressing climate change must be interdisciplinary and across everything. There are challenges and opportunities along the path to sustainable, culturally appropriate tribal adaptation.

The Northwest chapter included a diverse set of authors from around the region and used 2015 for a set of case examples of climate-related impacts and scenarios. Key messages focus on the 4th NCA Northwest Chapter include:

- Northwest's diverse natural resources and the ways that proactive management can increase the resilience of natural resources and economies.
- Valued aspects of Northwest heritage and quality of life including the natural environment, wildlife, outdoor recreation, and Tribal cultures—
- Existing water, transportation, and energy infrastructure that already face challenges from flooding, landslides, drought, wildfire, and heat waves.
- The ability of regional social and healthcare systems to be responsive in the event of climate-related hazards

- Communities that will experience the first, and most significant effects of climate change, including Tribal and Indigenous peoples, the economically disadvantaged, and those most dependent on natural resources for their livelihoods.

All of the speakers emphasized the importance of going online and providing comments. Authors have to address all comments and they want this to be best report as possible. The Indigenous peoples chapter is only 6 pages. Important to also provide comments elsewhere in the document (regional and sectoral chapters) since impacts to Native people identified there as well.

Q&A Discussion:
Q: How do chapters relate to treaty rights? **A:** Important to recognize that all things are related: treaty rights, cultural values, land rights. A certain amount of vetting will occur about what is included in print in response to comments; comments are where recognition can be made - need to recognize the relationship of FN and Tribes with the nation's states.

Comment: Continual issue when tribes are seeking funding opportunities - they want to be able to cite as much as they can. Important to use this chapter as a reference. It should be cited by tribal leaders and lawyers about what is included in treaty rights claims.

Comment: There are competing regulations. One or two places may be fixed but more permits are being issued so you can never catch up when looking at recovery. Important to first focus on the concept of harmonization; second, review what that means; then take step 3 and start implementation.

Public Review Process. The public draft of Volume II of NCA4, *Climate Change Impacts, Risks, and Adaptation in the United States*, is now available for public review and comment. USGCRP's Review and Comment system for the Third Order Draft of NCA4 Vol. II can be accessed HERE. The Indigenous Peoples Chapter of the 4th National Climate Assessment includes a link to an interactive mapping application that will continue to record new resilience actions as Tribes and Partners wish to report them to assist others in learning from their example. To report ***IP Resilience Actions Map*** issues or add new actions, use the **NCA IP Actions Map Feedback Form**.

- BIA NCA Tribal Resilience page: https://www.bia.gov/bia/ots/tribal-resilience-program/nca
- Interactive Map of Tribal Climate Resilience Actions: https://www.bia.gov/bia/ots/tribal-resilience-program/nca/
- Indigenous Peoples Resilience Map: Feedback Form

Cultural & Subsistence Resources Plenary and Breakout Sessions

Session Summary:

Mike Durglo, Salish-Kootenai Tribe, and Jeff Hetrick, Chugach Regional Resources Commission served as co-moderators of the cultural and subsistence resources plenary. The purpose of the session was to examine cultural and subsistence resource studies that have been completed and learn what changes people are observing, and review new tools for documenting change. The session focused on highlighting important cultural resources that warrant further study and assessment, examining how natural resource changes are affecting community well-being, and assessing timing mismatches with shifting resource availability, traditional harvest time, etc. Develop awareness of needed changes in policy. **Speakers included:**

- Janson Wong, Lower Fraser Fisheries Alliance: "Climate Impacts on the Fraser River"
- Mike Durglo, Salish-Kootenai Tribe: "Salish Kootenai Climate Assessment and Adaptation Plan"
- Micah McCarty, Makah Tribe: "Climate Assessment and Ocean Impacts"
- Erica Mitchell, Alaska Native Tribal Health Consortium: "Local Environmental Observer Network"
- Gerald Wagner**,** Blackfeet Nation: "Blackfeet Nation Climate Impacts"

Breakout Summaries

Have culturally significant foods or resources "first foods", been impacted in your area? "We all know the answer is *yes*, but how so?". Some of the priority species the group identified included salmon, berries, roots, and traditional/medicinal plants. Climate changes have severely impacted these resources and contribute to wildfire, harmful algal blooms, limited access to traditional foods, and an increase in invasive species. This spurred a conversation about how to "protect, preserve, and restore" native plant species. There was disagreement around whether the answer is to begin seed saving and gene studies on native plant resilience or if the answer lies in looking at the larger picture of how multiple species, plant, animal, and fish, interact with one another. Looking at the entire ecosystem, tribes might find more success than trying to restore each species individually. Conversely, there is economic benefit to creating native plant nurseries because highway restoration projects and other landscaping relies on purchasing seeds and starts from the tribe.

Another topic that arose was about engaging youth in the continuation of gathering traditional foods. Western/public school curriculum does not support customary gathering patterns. Especially as weather patterns change gathering seasons, it becomes more difficult to plan for those changes. Tribal charter schools can bridge the gap between generations by creating curriculum that provides education on traditional foods and makes time for children to gather with their families. Our education should support our traditions.

Culturally significant foods are being reduced, becoming scarce or shifting range, or are ready at different times, some, like razor clams are poisonous and causing death. Climate changes are causing changes in hydration patterns. Changing weather is changing hunting practices. Fish collapse is having an impact on food resource and community health and wellness. In 18 months small community had a suicide epidemic with 12 deaths. Community links it to a loss of purpose and ability to contribute to family.

Tribal communities are making changes in the home – breastfeeding. Everything needs to be taken out of institutions and put into our circle. Communities are developing community gardens and planting in areas where foods previously had bad feelings. Co management strategies and partnerships are making it possible to access foods beyond reservation. Some Tribes acknowledge they do not have borders and continue to protect resources in Canada and support Tribes there.

There is a need to focus on self sufficiency and not rely on agencies to provide for families.

Have culturally significant foods or resources "first foods", been impacted in your area?

- Oregon – do a lot of gathering of first foods. It is very dry – the roots are coming in early but they are not lasting very long. Growing soon… then they're gone. They are much smaller than usual. Like they used to. It takes a lot more time to gather not as many. These areas were traditionally burned – but they got away from that – but now they are back to integrating the burning. There is also a noticeable lack of sweetness.
- The fishing seasons have been getting harder and harder – 2015 sockeye year – warm waters in the Puget Sound. The fish weren't coming into the water in the Sound. Fishermen were going bankrupt.
- Plant die-offs in central Alaska – early warmth but then another freeze.
- No orcas in the San Juan Islands – seeing die offs in the populations. Why is it a concern? Because a main issue is starvation – the Chinook populations are not plentiful enough, and warmer waters, vessel traffic concern.
- Inadequate management of the fish pens – the pens broke loose releasing an undetermined amount of farmed Atlantic salmon.
- Compounding stressors
- Paralytic shellfish poisoning
- HABs (harmful algal blooms)
- Pesticide release into the environment
- Impacts to water quality.
- What to do? Citizen science and observations to bring to tribes and western entities.
- Seaweed – change in abundance and quality.
- Ketchikan – having to travel farther and farther to live and eat traditional foods.
- Cod and ling-cod eggs are no longer in places they used to be (near Hoh).
- Flounder is no longer found where it used to be for the last 40 years (near Hoh).
- Smelt, Razor clams, salmon and other fish are all affected.
- Salmon berries and wild strawberries are greatly reduced from before (Olympic Peninsula).
- Without cold winters to limit moth populations, they are impacting blueberries (Alaska)
- Huckleberries are dwindling (Yakama)
- There have been many fisheries closures this year because there are not enough fish.
- Increased abundance of Sardine populations
- Water temperatures in rivers and in ocean are impacting salmon, bull trout, steelhead and other fish species.
- Elk in coastal BC are staying in the lowlands for longer periods of time.
- Halibut fisheries allocations have been decreased by half.
- Sea star wasting
- Moose population in Alaska is increasing as accumulated snow decreases through winter season.

How and why are those foods or resources important to you and your people?

- Traditional harvesting, hunting, fishing, traditional practices…. They were different. They need to come back. Take only what you need.
- Access to many species is culturally important for ceremonial use.
- Many species are economically important, e.g. salmon.
- Many species are important, their value to culture goes beyond ceremonial use, but includes sustaining everyday relationships to our relatives.
- Communities have a real reliance on first foods for healthful sustenance, especially in communities without access to affordable grocery stores.
- Tribes and First Nations manage landscapes and resources through active harvesting. Taking this management out of the landscape has resulted in resource decline.

- There is a scarcity of resources relative to those who want access to them, resulting in management conflict. Exercising treaty rights is essential to maintaining Indigenous natural resource management.

Recommendations: What, if anything, are you doing to preserve, protect, and perpetuate these foods/Resources?

- Practice and do native traditions as a way of slowing the implications on these resources.
- Cook aquaculture – owned the net pens that collapsed. They are major corporations doing major things – we can wind up on the receiving end.
- Stressor: non-native corporations.
- Join together to support each other.
- Get rid of fish farms
- Restore spawning habitat
- Learn how to be more political than we want to be. And in order to win this game, we're going to have to have the data.
- *Native peoples have a voice*
- Stop the mining.
- Tribal youth engagement
- Reduce Greenhouse gases
- Bringing back traditional ceremonies that relate to whatever we're speaking about
- *Demand accountability* from those causing climate change
- address Non-point source pollution
- Save old growth trees
- A sea level rise study, focusing on impacts to shellfish in near shore spawning zones. Youth are involved in the data collection to increase scientific literacy. One end product will be a map that can inclusively communicate impacts to the land and community and will show which land types are most resilient to climate change, such as natural beach versus an armored shore.
- A cultural heritage inventory along shorelines, to document valuable cultural sites and resources in areas susceptible to sea level rise.
- Environmental education for the youth that involves getting out and interacting with the environment, incorporating ecological and cultural principles, to develop holistic relationships to landscape.
- Reminding federal agencies of their trust responsibilities to Tribes.
- Aggressive invasive plant identification and removal programs on Tribal lands (Olympic Peninsula).
- Pooling resources among tribes, sharing information and developing a spirit of collaboration.
- Continually updating and revisiting planning documents for a "Living Climate Change Plan" that is responsive to a changing environment, changing knowledge of the environment and current political climates.
- Monitoring and data gathering efforts on stream conditions, harvests, etc.
- Focusing on storm water management in communities to accommodate projections of increased flows and runoff.
- Developing regional collaborations to enable learning across Tribes and First Nations, to keep up momentum and foster creative and effective partnerships and alliances at a level above an individual Tribe or First Nation.
- Developing strategies to detect species in decline to enable protection measures before they become "endangered" or "threatened".
- Creating climate projection maps that assist communities in planning for a climate changed future – precipitation, fire, vegetation, temperature, etc. (Tribal Support Desk at UW Climate Impact Group).
- Getting involved with regional regulatory updates, such as long-term shoreline management plans or the Columbia River treaty renegotiation.

- Simultaneously working on different scales – focusing on the small, local, Tribal scale, while not losing focus on the big regional picture.
- Conducting an emissions inventory at the Tribes/First Nations level, to monitor carbon footprint, enabling responsive measures to reduce impact to climate change where possible.

Day 2 Opening Plenary

Session Summary:
Day 2 of the Tribes and First Nations Climate Summit opened with an invocation, opening remarks and keynote speakers, including:

- Don Sampson, ATNI Climate Change Coordinator
- Invocation
- Brian Cladoosby, Chairman, Swinomish Tribe
- David Redhorse, Natural Resources Division Chief, BIA Northwest Regional Office

Plans and Actions for Resiliency

Session Summary
Co-moderators for this session were Kenneth Weitzel, Central Council of Tlingit and Haida Indian Tribes, and Kathy Lynn, Pacific NW Tribal Climate Network. The session purpose was to examine the challenges and opportunities in adaptation and resiliency, and keep progressive work in moving forward, review vulnerability assessments and climate adaptation planning in tribal and first nations communities and work towards implementing adaptation measures. Session speakers focused on identifying best practices, approaches, scales for vulnerability assessments and adaptation planning, developing strategies for implementation derived from adaptation planning and identifying available resources to support planning. Speakers included:

- Kenneth Weitzel, Central Council of Tlingit and Haida Indian Tribes: "A Tlingit & Haida Template for Climate Change Adaptation Planning in Southeast Alaska."
- Scott Hauser, Upper Snake River Tribes Foundation: "Upper Snake River Tribes Foundation's Vulnerability Assessment and Adaptation Planning Processes."
- Jamie Donatuto, Swinomish Indian Tribal Community: "Evaluating Health as a Basis for Climate Change Planning and Resiliency."
- Michael Chang, Climate Adaptation Specialist, Makah Tribe and Haley Kennard, Makah Tribal Office of Marine Affairs: "Makah Tribe's Climate Adaptation Plan and Community Engagement Process" Office of Marine Affairs: "Makah Tribe's Climate Adaptation Plan and Community Engagement Process"

Questions for the breakout discussions included:

1. What are the best practices and approaches for developing tribal climate vulnerability assessments and adaptation plans?
2. What are the most effective strategies for implementing adaptation plans and actions?
3. What are the most significant needs your tribe has now in building resilience and adapting to climate change?

Key Messages
Planning and assessment models: Participants recognized the importance of starting with tribal core values. Many noted that prescribed ways of conducting vulnerability assessments and adaptation plans are not always adaptive enough for tribal needs. Climate change assessments and plans need to be adaptive, living documents. All participants agreed that the biggest needs are in funding and capacity building. There are examples and templates/approaches already available that are good to use. Examples shown during the Summit are very helpful. Need to build on existing tools to fill gaps and incorporate other ways/information (example lack of

looking at insects, human health). Tribes have unique approaches and needs, already great diversity. Available tools are good but adaptation of tools needed since tribes not homogenous.

Youth engagement: Many of the participants spoke to the importance of youth engagement, outreach, and education. Some suggested there would be value in a conference dedicated to youth engagement and education on climate change. Participants noted that social media as an important platform for outreach and education for tribal youth. The western education model is not necessarily a compatible model for native communities, native students and traditional culture. Washington has adopted statewide curriculum on tribal sovereignty: "*Since Time Immemorial: Tribal Sovereignty in Washington State.*" Oregon is also considering a bill mandating curicullum on tribal history and sovereibnty in the current legislative session. These kinds of required curriculum could be used to bridge engagemetn in environmental issues and climate change in connections with tribal history and sovereignty. Examples of youth engagement include tribal youth councils developing clean energy programs, having a science fair on renewable energy, the Suquamish Ocean Acidification curriculum model

Tribal Member and Leadership Engagement: There is a need to further engage and build capacity of tribal members and tribal leaders, as well as tribal staff working in departments that should be addressing climate change. For example, some tribal forestry departments have been working on climate change efforts, but others need more education about how forestry relates to climate change. Very important to engage the community and get input from community members. Some Climate adaptation plans look like they are written by scientists for scientists. Important to involve everyone in the community in developing the plan so implementation will be useful to them. Some Tribes are doing outreach through communication departments and newsletters and engaging youth in labor intensive camps. It is important and necessary to acknowledge social problems and include those in plan. It is essential to factor social issues into resiliency plans and to tie people and the environment together, include, incorporate, Native science and livelihood.

Implementation

- *"Our plan is collecting dust."* Outreach and education has to be ongoing and the tricky part is building the capacity with all the other things tribes are working on. Keeping people engaged and keep people discussing what we're doing. There is a need for technical support and policy support.
- Need for collaboration and leveraging resources

Other key messages:

- "Developing the plan is the easy part, implementation is difficult."
- "Preparing to be adaptable means providing our youth the tools to be able to act when things are happening."
- "The western education model is not compatible with traditional culture. Native kids should not be in the classroom, they should be in the tribe. Elders really have something, and comparatively, public school teachers have nothing."
- "Our plans need to be living documents. Developing the plan is the easy part, implementation is difficult."
- *"If you don't integrate holistically it may be challenging to maintain progress."*
- "Acknowledge how indigenous science is valid, acknowledge the great foundation of work we are standing on – of our ancestors."

Recommendations:

- Work with youth on climate action
- Host a conference/summit on tribal youth engagement/education and climate change.

Day 2 Lunch Keynote: Ambassador (ret.) Keith Harper, Cherokee Nation

Session Summary

Ambassador Harper gave a keynote focused on "Tribal Engagement in National Climate Change Initiatives." Ambassador Harper thanked Summit participants to everyone sharing wisdom and actions to addressing climate change. PNW tribes have been the leaders in this area for a long time along with sister communities in AK; leadership continues to national level as well. There are no more important issues facing our communities, children, grandchildren than climate change. If we fail to address it, it will affect everyone. It is already affecting people in Indian Country and across the globe. Ambassador Harper suggested there is a need to take a comprehensive approach on multiple levels – local, national, and international, and specifically in collaborating when addressing carbon emissions. He shared three initiatives that tribes can consider involvement in:

We Are Still In - **https://www.wearestillin.com/**

"We Are Still In is the broadest cross-section of the U.S. economy ever assembled in pursuit of climate action. Over 2,500 leaders strong and growing, We Are Still In shows the world that leaders from across America's state houses, city halls, board rooms, and college campuses stand by the Paris Agreement and are committed to meeting its goals."

Gov. Brown's Global Climate Action Summit - https://globalclimateactionsummit.org/. In July, 2017, Gov. Brown announced that California is hosting a summit to address the critical issue of climate change. It will be held in Sept 12-14, 2018 in San Francisco. Intent is to prepare for 2018 UN Climate Change Conference or "COP 24"; to jumpstart U.S efforts; to increase commitments and investments in communities; provide different levels of commitments. Participation by others to provide innovative approaches. Innovation is key. Climate action needs investment. There will be resources for tribes. Too often in the past tribes have not participated equally. This is different – tribes will be involved at the highest level.

America's pledge – https://www.americaspledgeonclimate.com/. ""America's Pledge" is spearheaded by Former New York Mayor and UN Special Envoy Michael Bloomberg and California Governor Jerry Brown, working in parallel with We Are Still In to compile and tally the climate actions of states, cities, colleges, businesses, and other local actors across the entire U.S. economy." Based on proposition that key stakeholders reject that economy and climate change goals can't go together.

Policy Plenary

Session Summary:
The purpose of this session focused on developing strategies to navigate within the current political environment; identify opportunities to sustain climate change study; build capacity and strengthen regional networks to facilitate policy objectives; and move towards project implementation on the path to resiliency. Speakers spoke about mapping strategies for tribes and first nations to continue and sustain climate change studies and adaptation work that is resilient to federal level changes and building capacity and strengthening regional networks to facilitate policy objectives. Speakers included:

- Fawn Sharp, President, Quinault Indian Nation: "Tribal Policy Considerations for the Washington State Carbon Tax Policy"
- Carina Miller, Tribal Council Warm Springs Tribe: "Oregon Cap, Trade, and Reinvest legislation and Tribal policy issues and opportunities" Transboundary Resources Management: First Nations and Tribes working on climate impacts.
- Terry Williams, Tulalip Tribe: "Puget Sound Partnership as a model framework for institutionalizing long-term policy to promote climate adaptation and salmon habitat protection."
- Chairman Vernon Finley, Confederated Salish & Kootenai Tribes
- Richard Peterson, Central Council of Tlingit & Haida Indian Tribes: Transboundary climate change impacts and resource management including mining issues

Key Messages
President Sharp opened the plenary with a talk on Tribal Policy Considerations for the Washington State Carbon Tax Policy. Her comments included the following:

- The potential for a carbon tax to generate revenue, as well as a process that would ensure tribes are at the table and not included as an afterthought.
- If we stand on principles and rights but are also held accountable, then the revenue that we anticipated will be significant. While revenues could be significant, they cannot solve every problem that we are facing, therefore we must have a vision to understand where money must be funded.
- The key to solving this global crisis does lie in Indian country
- The voice of the people and democratic process is the only path, and tribal nations have led way

Carina Miller presented on the ATNI Resolution on Tribal Carbon Credits as a Trust Resource. The Affiliated Tribes of Northwest Indians will review the attached draft resolution on Tribal Carbon Credits as a Trust Resource at the ATNI Winter Convention January 22-25, 2017 in Portland, Oregon. This resolution states that one of ATNI's member tribes, *"the Confederated Tribes of the Warm Springs Reservation of Oregon has entered the "carbon sequestration" market by participating in the California Cap and Trade Program based on the Warm Springs Tribe's Improved Forestry Management Project,"* and resolves that "*ATNI adopts the position of the Warm Springs Tribe that revenue from the sale of carbon offset credits directly derived from management of tribal forests are entitled to treatment by the U.S. Department of Interior as "trust funds" as defined by 25 CFR Section 115;"* and that *"ATNI hereby respectfully but strongly urges the U.S. Department of Interior to expressly state the Department's acceptance of revenue from the sale of Warm Springs and other tribal carbon offset credits as "trust funds" eligible for deposit in tribal trust accounts."* ATNI is requesting review of this resolution and consideration for adoption prior to the Winter Convention.

Chairman Finley and President Peterson both spoke about transboundary issues and the need to address these risks (sustainable and inclusive development). Topics included:

- In order to improve social and environmental standards, tribal governments have to take a more active role in promoting environmental standards – both business practices and best technologies that can be applied to industry as well as community and international standards

- Seek both national and international dialogue
- Capacity to build intertribal efforts in mining industry; we need better assement of what those risks are in order to have a more sustainable development
- Link between extraction and climate change serves as larger debate for climate resilence where there needs to be assessment between risks and environmental effects of society.
- Seeking data that points to environmental baseline and sources for issues
- Funding for sustained studies
- Permanent role in decision making (tribes recognized and be able to participate in policy making)

Appendix 1: Resources and Links

- Affiliated Tribes of Northwest Indians: http://www.atnitribes.org/
    - ATNI Climate Change Page: http://atnitribes.org/climatechange/
    - Tribal and First Nations Summit PowerPoint Presentations:
    - Tribal and First Nations Summit Speaker Bios: http://atnitribes.org/climatechange/wp-content/uploads/2017/12/T_FNForum.COMBINEDBIOS.pdf
- 4th National Climate Assessment. https://review.globalchange.gov/
    - BIA NCA Tribal Resilience page: https://www.bia.gov/bia/ots/tribal-resilience-program/nca
    - Interactive Map of Tribal Climate Resilience Actions: https://www.bia.gov/bia/ots/tribal-resilience-program/nca/
    - Indigenous Peoples Resilience Map: Feedback Form
- Guidelines for Considering Traditional Knowledges (TKs) in Climate Change Initiatives
- Indigenous Climate Change & Climate Justice Teaching Materials & Advanced Bibliography
- Tribal Climate Change Guide
- Pacific Northwest Tribal Climate Change Project
- BIA Tribal Climate Resilience Program
- BIA Tribal Climate Resilience Resource Guide
- Institute for Tribal Environmental Professionals(ITEP) Tribes and Climate Change Program
- Columbia River Intertribal Fish Commission
- Northwest Indian Fisheries Commission
- Alaska Native Tribal Health Consortium LEO Network
- U.S. Climate Resilience Toolkit
- Northwest Climate Science Center
- North Pacific LCC
- Great Basin LCC
- Great Northern LCC
- USDA Climate Hubs
- Northwest Climate Hub
- EPA Climate Change Programs
- Climate Adaptation Knowledge Exchange
- USDA Forest Service Climate Change Resource Center
- ITEP Newsletter
- ITEP Tribes and Climate Change Calendar
- NW Climate Magazine
- NW CSC Calendar
- North Pacific LCC Calendar
- We Are Still In
- Global Climate Action Summit
- America's pledge

Appendix 2: Poster Session Abstracts

Presenter: Maggie Sanders, Nisqually Indian Tribe and University of Washington
Poster Title: Creating a tribally-based toolkit to encourage community-driven resilience planning
Abstract: This project is a tribally-based collaboration between indigenous researchers from the University of Washington and several sovereign tribal nations to develop a climate science and native health toolkit and to better understand indigenous notions of resilience. The goals of this toolkit are to illustrate the most recent climate health research, highlight local human and environmental impacts, define resiliency from a local tribal perspective, and identify community-driven adaptation strategies. In a community-based adaptation gathering we discuss: What makes tribal communities more resilient to the impacts of climate change? There were four parts to these workshops. First, we began with an opening prayer led by local community leaders. This was followed by presentations about climate science, local adaptation strategies, and climate and native health. Next, participants discussed resiliency and their concerns in groups. Finally, participants gathered in a talking circle to discuss priorities and action plans toward building resiliency. In this tool, native pedagogies, native ways of knowing and western science were used together as equally valued knowledge systems. Tribal members, leaders and scholars partnered in the design, planning, and execution of this project. An outcome of this work is a scalable climate science communication and education toolkit that can be used by a number of tribes to promote knowledge about climate change and to build capacity. This toolkit includes a protocol detailing how to host a community gathering to discuss tribal-based climate adaptation and two presentation modules about climate science, health, tribal rights and sovereignty. This project will contribute to our understanding about resiliency among tribes and encourage community empowerment.

Presenters: Amelia Marchand and Joaquin J. Marchand, Colville Confederated Tribes
Poster Title: Planning for Holistic Health in Changing Climate
Abstract: As impacts of climate change are being felt in rural reservation communities, the connection to traditional lands, waterways and cultural practices are reigniting to support environmental justice, address health disparities and adapt the modern food system. A multidisciplinary team of professionals ranging from the fields of health and environmental regulation to Native language preservation are collaborating to strengthen cultural values, food sovereignty, and create a holistic approach toward adapting to climate change.

Presenter: Joel Green, Hoh Indian Tribe
Poster Title: The Importance of Tributary Streams as Cold Water Refuge for Salmon in a Warming Climate: an Example from the Hoh River Watershed
Abstract: The members of the Hoh Tribe have been fishing for salmon in the Hoh River for thousands of years. But now, both the people and the salmon face the new challenge of climate change, which brings with it warmer water in the river. As salmon are adapted for life in cold water, this is a problem. In 2015-2017, we recorded water temperature in both the river and in tributary streams flowing into the Hoh River from June through mid-September, using temperature loggers that recorded temperature at 15 minute intervals throughout the summer. The river furthest downstream was the warmest of locations we monitored, with 6 weeks in 2016 when the daily maximum temperatures were mostly above 63.5˚F, which is too warm for healthful rearing and migration of salmon and trout. However, in seven creeks flowing into the Lower Hoh River, the water temperature never exceeded 63. 5˚F, and in five of these, water temperature never exceeded 60.8 ˚F, the upper limit for Core Summer Salmonid Habitat according to Washington Water Quality Standards. These tributary streams are providing a place for the salmon to go when the river is too warm. We found the temperatures in the river were warmest in the mid to late afternoon, but cooler during the night and in the mornings. Upstream migrating salmon and steelhead may swim in the river during the night and early morning, and find cold-water refuge in the tributary streams during the hot afternoons. Our research points out the importance of keeping those creeks cool for the salmon, and the importance of trees growing along the creeks in providing shade to keep the streams cool.

Meade Krosby, University of Washington
Poster Title: Building Tribal Capacity for Climate Change Vulnerability Assessment
Abstract: The future well-being of tribal communities relies on effectively anticipating and responding to climate impacts on natural and cultural resources. And yet, many tribes face difficulties initiating and completing the critical first step of the climate adaptation planning process: an assessment of locally-specific climate risks that accounts for the unique priorities, values, and concerns of individual tribes. We describe a current project designed to support climate change vulnerability assessment activities by Northwest and Great Basin tribes. The primary objectives of the project are to: 1) make the vulnerability assessment process more accessible to tribal staff by providing online guidance materials targeted to tribal needs and capacities; 2) address the demand for decision-relevant climate data by providing downscaled climate data and climate change summaries for tribes; and 3) support tribal staff through the vulnerability assessment process via workshops and webinars to provide training on the use of project resources and datasets, and by staffing a Tribal Climate Technical Support Desk to provide rapid response to questions about the vulnerability assessment process. We are conducting this effort in close consultation with tribal partners, and working with existing tribal knowledge-sharing networks to connect project resources to a broad range of tribal communities.

Presenter: Meghan Dalton, Oregon Climate Change Research Institute
Poster Title: Seeking Input on a Tribally-Focused Climate Change Adaptation Guidebook
Abstract: Changes in the climate and natural environment are uniquely and disproportionately affecting the culture, lifeways, sovereignty, community health, and economies of American Indian and Native Alaskan Tribes. Yet, since time immemorial tribes have maintained a cultural tradition on the landscape, demonstrating a high degree of resilience in the facing of changing environmental and social conditions. Many tribes are already building resilience to climate change through adaptation planning. There are many guidebooks designed to support work on climate change adaptation and to provide frameworks that all communities can use. However, most existing guidebooks do not consider the unique tribal context and culture. We are developing a tribally-focused climate change adaptation guidebook that aims to identify opportunities for combining multiple perspectives, including Traditional Knowledges, in the planning process, to build on the experience and lessons learned from previous tribal and non-tribal adaptation efforts, and to present climate adaptation planning in the context of tribal priorities. In order to create a better guidebook, we invite tribes and organizations working with tribes to review a pre-release version of the guidebook and contribute experiences and lessons learned.

Presenter: Michael Case, Case Research, LLC - University of Washington
Poster Title: Assessing climate change impacts to vegetation, fire, and ecosystem services for tribal lands in the Pacific Northwest
Abstract: Climate change has already led to significant changes in species composition, phenology, biotic interactions, and disturbance regimes in western North America. Native Americans may be highly vulnerable to these changes because they rely heavily on ecosystem services, including traditional foods, hunting, timber production, non-timber forest resources, ranching quality, agricultural suitability, cultural resources, among others. Native Americans are also culturally tied to the historical landscape and recognize many places that are sacred and outside tribal reservation boundaries. In response to the potential impacts, we applied an integrated assessment and identified changes to vegetation, fire, and ecosystem services across tribal lands and sacred places throughout the Pacific Northwest. Specifically, we applied a dynamic general vegetation model (DGVM) across Washington and Oregon and summarized projected changes in climate, vegetation, and fire. Our results show substantial changes in some vegetation types (such as subalpine forests and shrub steppe) due to climate change and fire. We then created a crosswalk that links specific species and ecosystem services that are valued by tribes with DGVM simulated vegetation types. We demonstrate how these changes will impact economically and culturally important ecosystem services for tribes. Surprisingly some first foods and medicinal plants may increase in suitable habitat whereas arid-land species and grazing quality are projected to decline. We

demonstrate how this information will be used in partnership with tribal organizations to help inform resource management and adaptation planning.

Presenter: Chas Jones, NW CSC / ATNI
Poster Title: NW Climate Science Center Resources for Building Tribal Resilience
Abstract: The Northwest Climate Science Center (NW CSC) tribal liaison seeks to learn about the resources that are important to tribes, how those resource may be at risk, what projects would improve tribal resilience, and how the NW CSC can promote the success of tribal projects. In 2017, a grant from the B.I.A. allowed the Affiliated Tribes of Northwest Indians to hire a tribal liaison to work with the NW CSC to increase tribal capacity in the PNW to respond to climate impacts. The NW CSC provides tribal resource managers and other stakeholders with actionable science that helps to increase the resilience and adaptive capacity of tribes in the NW. With information about tribal priorities, the liaison can connect tribes to resources available through the CSC and other resources. In this presentation, the NW CSC tribal liaison will discuss the efforts of the CSC and the liaison, and the CSC resources available to help build tribal resilience. Grants from the B.I.A.'s Tribal Resilience Program has provided funding for tribal liaisons to be established in each of the eight regional CSC's.

Presenter: Holly Barton, Southwest Climate Science Center
Poster Title: Fourth National Climate Assessment
Abstract: Providing information on the Fourth National Climate Assessment (NCA4) chapter on Indigenous Peoples, Northwest and Southwest regions. We will discuss the NCA4 public review process and how to provide feedback.

Presenter: Dr. Cynthia West, USDA Forest Service
Poster Title: Climate, Drought and Citizen Science with Tribes
Abstract: In 2017, the Forest Service developed an online Drought Gallery that includes maps, GIS layers, fact sheets, and other resources for tribes, natural resource specialists, managers, GIS specialists, and the public. The gallery harnesses Esri's ArcGIS Online technology to deliver a collection of vibrant mapping content based on scientific climate and drought data. The drought gallery is both a data repository and communication toolkit to inform and educate stakeholders about drought and its impacts on natural resources. The gallery provides tools for analyzing current and projected changes in stream temperature, streamflow, and snowpack. Tribes, citizen scientists and others may use the drought gallery as a one-stop shop for drought-related information and includes maps and data, stories, photos, text and videos. One key outcome of the gallery is the provision of a singular resource for credible and citable drought-related data for partners involved in land management planning and is a living repository, and may be modified or supplemented, as new information becomes available. This tool may be helpful to Tribes in their planning and monitoring activities by providing a standard set of data to consistently address questions on climate and drought to better adapt on-the-ground actions to a changing environment.
Presenter: Linda Kruger, USDA Forest Service - PNWRS Juneau Forestry Lab
Poster Title: Impacts of submerging and emerging shorelines on biota and subsistence lifestyles
Abstract: Collaborating with Tribal communities as research partners is important in order to achieve research that is responsive to Tribal needs and contributes to the growing body of scientific knowledge. This study presents findings from work with Tribes in Southeast and Prince William Sound Alaska.

Presenter: Holly Prendeville and Gabrielle Roesch-McNally, Northwest Climate Hub
Poster Title: The USDA Northwest Climate Hub Engaging Tribes
Abstract: The Northwest Climate Hub is part of the Department of Agriculture's Climate Hub network. In the Northwest, we serve natural resource managers and tribes in Oregon, Washington, Idaho and Alaska. The Climate Hubs link USDA research and program agencies in their regional delivery of timely and authoritative tools and information to agricultural producers, ranchers, forest landowners and other tribal natural resource professionals. The mission of the Climate Hubs is to develop and deliver science-based, region-specific

information and technologies, with USDA agencies and partners, to agricultural and natural resource managers, including tribal partners, that enable climate-informed decision-making, and to provide access to assistance to implement those decisions. This is in alignment with the USDA mission to provide leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on sound public policy, the best available science, and efficient management. In the Northwest, we are supporting a number of projects in our region that are both directly and indirectly serving tribal interests. We highlight a number of Northwest Climate Hub efforts of interest to tribes, including a Climate Resource Guide that is being developed as a national resource. This guide provides detailed information on all USDA funding and technical resources currently available to tribes that may assist them with adapting to and mitigating for climate change. This resource will eventually be available online in a searchable format but attendees at the Tribal Climate Summit will get a first look at the product.

Presenter: Janet Prevéy, USDA Forest Service
Poster Title: How does climate influence ranges of berry- and nut-producing native northwestern shrubs?
Abstract: Berry- and nut-producing shrubs of the Pacific Northwest are important in many ways. They are an important food source for foraging wildlife and pollinators, are culturally important as components of traditional tribal diets, and are also harvested for recreational and commercial use. In this project, we are developing information on how climate change will impact the ranges of ecologically and culturally important northwestern shrubs, including salal, hazelnut and several species of huckleberry. Accurate mapping of current ranges of shrubs is one way to understand the relationship between climate variables and shrub distributions. Current range maps, however, only indicate if a species is present in a county or state (such as in the USDA NRCS Plants Database) and plant guides only describe the environments where it may be found. More accurate maps of current ranges will act as the starting point to help managers understand how climate change is likely to affect the location (range) and timing of berry and nut production of widely distributed shrub species. The first step in this process is the collation of currently available data sources including herbarium specimens and vegetation assessments completed as part of forest inventories (such as Forest Inventory and Analysis plots) and research or monitoring plots (research natural areas and ecology plots). Using presence/absence data from all these data sources in conjunction with climate information will allow us to develop more detailed plant range maps than those currently available and can be used to develop future range maps based on projected changes in climate. This information could then be used to help managers determine priorities for competing projects, evaluate vulnerabilities of species of interest, or identify if new areas might need to be developed for traditional or commercial use.

Presenter: Melanie Hess, North Pacific Landscape Conservation Cooperative
Poster Title: Tribal Engagement in the Pacific Northwest Coast Conservation Blueprint
Abstract: The Pacific Northwest Coast Conservation Blueprint project is working to develop a collaborative, landscape-scale blueprint in the Lower Columbia River and adjacent coastal regions of Oregon and Washington to align conservation efforts in the region to achieve landscape-scale goals in response to impacts such as climate change, and regional population growth. The Columbia Coast contains a rich diversity of natural and cultural resources managed by a complex array of tribal sovereign nations, federal/state/local agencies, non-government conservation organizations, landowners, stakeholders and others. Tribes, in particular, have demonstrated leadership and vision in addressing impacts to lands and resources in the region, and have important treaty rights, co-management authority, traditional knowledge, technical expertise, and operational capacity. Tribal insight into landscape processes, cultural values and management will be an important aspect of a holistic and effective conservation blueprint. We are continuing to seek tribal engagement during this iterative and collaborative process to ensure tribal visions and voices are included in the development of the conservation strategies, and so we respectfully ask for and welcome your feedback.

Presenter: Dave Johnson, Bureau of Land Management
Poster Title: Tribal Participation on Public Lands

Abstract: The Bureau of Land Management (BLM) is the largest lands and resources management agency in the United States. Public lands and minerals under agency jurisdiction include 245 million acres of surface estate and 700 million acres of federal mineral estate. Natural and cultural resources abound on public lands as do issues and opportunities for stewardship. Given that all public lands are, ultimately, ceded tribal lands, tribes may be interested in working with the BLM to advance tribal interests. This poster presents a map of public lands in Oregon and Washington and highlights some of the resources and issues BLM is responsible for. In consideration of the recently-released guidance on tribal relations (BLM 1780 Manual & Handbook), this poster invites tribal leaders to consider potential projects of tribal interest in collaborative partnership with the agency.

Presenter: Ralph Perona, Neptune and Company
Poster Title: Data to Decisions for Climate Resilience: Socio-ecological Challenges in the Yakima River Basin.
Abstract: From 2015 - 2016, Northwest Indian College, the Tulalip Tribes, and the American Indian Higher Education Consortium collaborated in formulating the concepts for a prototype Tribal Lands Collaboratory (TLC). The TLC was used to explore how web-based collaboration technologies can be used to study the impacts of climate change on the tightly linked timings of salmonberry ripening, Swainson's thrush singing, and the return of salmon. In the fall of 2017, Neptune extended the TLC approach by initiating and leading a small experimental effort called "Data to Decisions for Climate Resilience" (D2D). D2D is co-sponsored by the US Global Change Research Program's National Climate Assessment network and the Federation of Earth Science Information Partners. The objectives of D2D included building a set of openly web-accessible concept maps to document climate adaptation planning methods, including a set of methodologies called "Structured Decision Making". To initiate D2D, we studied the challenges of the Yakama Nations' salmon harvests set against a complex landscape of socio-ecological actors in the Yakima River Basin. In this poster, we broadly describe the scope of D2D, which remains an experimental work-in-progress.

Presenter: Chelsea Kovalcsik, Chugach Regional Resources Commission
Poster Title: Climate Change and Traditional Food Resources in the Chugach Region, Alaska
Abstract: Chugach Regional Resources Commission (CRRC) is currently conducting a traditional food assessment throughout the Chugach region. Part of the goal of this assessment is to gain a baseline of indigenous knowledge on current food-source patterns due to environmental implications (i.e. climate change and ocean acidification). Issues Tribal members face are a changing marine and terrestrial environment where traditional foods gathered in the forest and on the beaches near the villages are no longer available. Foods pivotal to diets have increased threats due to anthropogenic activities, thus causing increased stress on member Tribes and a heightened sense of food insecurity. Tribes are having to rely heavily on western diets from grocery stores at high prices as opposed to traditional ways. Subsistence means more than collecting food from the land, it is quite literally a way of life; it is a way for to connect with family, community members, elders, and culture. A loss of traditional foods prevents member Tribes from connecting with one another and creates a separation between member Tribes and their respective cultural practices. The disconnect in their communities is staggering, in particular, among youth. A local statement is “when the tide is out, the table is set”. This opportunity is currently lost and when this loss occurs so does the loss of culture which can have negative effects on psyche. While traditional foods may restore physical health, they are also central to cultural and spiritual traditions. Salmon, shellfish, berries, seals, sea lions and certain bird species are just a few food sources survey respondents are noticing a distinct difference in behavior, location or availability when compared to years of previous indigenous knowledge. Tribal members are seeing, firsthand, a decline in many aquatic and terrestrial animals and a change in their way of life.

Presenter: Michael Chang, Makah Tribe
Poster Title: Makah Tribe's Climate Adaptation Plan and Community Engagement Process
Abstract: The Makah Tribe views climate change as one of the biggest threats to their natural resources, threatening their livelihoods, economy, and culture. As part of their work towards climate adaptation and planning, the Makah Tribal Council and tribal natural resource managers prioritized early community outreach

and engagement efforts in order to accomplish three goals: continually update and inform the tribal community about the Tribe's climate adaptation efforts; gather community input and priorities for the Makah Climate Adaptation Plan; and provide a series of educational events to inform the tribal community about projected climate change impacts to our resources. Our first community climate event, the Makah Climate Change Awareness Dinner, was held on February 8, 2017. At this event, we provided an overview of the Makah Tribe's Climate Vulnerability Assessment and administered an initial climate survey that gathered information regarding community members' observed environmental changes, knowledge about climate change and impacts, and any concerns and priorities to include in the Tribe's adaptation plan. This presentation presents our framework for incorporating community engagement in climate adaptation planning, the preliminary results of our community survey, and lays out the next steps that the Makah Tribe is pursuing towards climate adaptation planning.

Presenter: Scott Hauser, Upper Snake River Tribes Foundation
Poster Title: Upper Snake River Climate Change Vulnerability Assessment
Abstract: The climate around the Upper Snake River is changing. Climate change impacts to natural resources have the potential to affect tribal members' culture, spirituality, and lifeways. Upper Snake River Tribes (USRT) Foundation's member tribes have already noticed shifts in species and habitats driven by increasing temperatures and changing precipitation patterns. To better understand these changes, USRT and the Burns Paiute Tribe, Fort McDermitt Paiute-Shoshone Tribe, Shoshone-Bannock Tribes of the Fort Hall Reservation, and Shoshone-Paiute Tribes of the Duck Valley Reservation collaborated with Adaptation International, the Climate Impacts Group (University of Washington), and the Oregon Climate Change Research Institute (Oregon State University) to complete a climate change vulnerability assessment. This collaborative assessment expressly considered the species, habitats, and resources that are important and valuable to USRT member tribes.

Presenter: Jen Syrowitz, Audobon Society Washington
Poster Title: Creating a Climate for Action
Abstract: According to a 2016 poll by the Yale Program on Climate Change Communication, 60% of people in Washington state are concerned about global warming and yet only 38% admit to discussing the issue at least occasionally (Howe, P., Mildenberger, M., Marlon, J.R., and Leiserowitz, A., "Geographic variation in opinions on climate change at state and local scales in the USA," Nature Climate Change. DOI: 10.1038/nclimate2583). One hypothesis for this discrepancy is the political polarization of a non-political issue that affects everyone; no one is excluded from the threat-multiplying impacts of climate change. Particularly during periods of distrust and suspicion in public discourse, there is a need to create safe space in communities, to unite non-partisan voices, to de-politicize the issue, and to discuss bi-partisan policy solutions that will remain durable through Republican and Democratic governments. Audubon is an authentically bipartisan conservation organization whose national membership identifies as 52% liberal and 48% conservative. Using birds as a non-partisan vessel by which to discuss the issue of climate change, we advocate for bi-partisan climate policies that are politically viable and long-lasting. Local polling suggests Washingtonians are hungry for climate action. But is the political climate available to effect change? In order to successfully pass effective climate change legislation, i.e. act on climate, we must create a climate for action. Audubon has the vision, the science, the messenger (birds), and the bipartisan grassroots network by which to engage communities, allies, and perceived adversaries on a path to climate action.