Stakeholder Advisory Committee Online Meeting
MEETING NOTES
May 6, 2021 | 1:00 – 3:00 PDT

Attendees

Tribes and Tribal Organizations
Affiliated Tribes of Northwest Indians – Chas Jones
Bureau of Indian Affairs – Keith Hatch, Coral Avery
Columbia River Inter-Tribal Fish Commission – Laura Gephart
Northwest Indian Fisheries Commission – Eliza Ghitis

Federal Agencies
National Oceanic and Atmospheric Association – Kevin Werner
USDA Natural Resources Conservation Service – Jolyne Lea
USDA Northwest Regional Climate Hub – Jessica Halofsky, Holly Prendeville
Bureau of Reclamation – David Denton, Scott Hoefer
Bureau of Land Management – Bruce Hollen
U.S. Fish and Wildlife Service – Sean Finn, Mike Hudson
U.S. Fish and Wildlife Service/Great Basin Landscape Conservation Cooperative - John Tull
U.S. Fish and Wildlife Service/North Pacific Landscape Conservation Cooperative – John Mankowski
U.S. Environmental Protection Agency – Linda Anderson-Carnahan
Northwest Climate Adaptation Science Center – Nicole DeCrappeo, Betsy Glenn, Elise Elliott-Smith, Clara Booker, Lindsey Thurman, Kris Metzger (USFWS/NW CASC)
U.S. Geological Survey – Jill Rolland

State Agencies
Washington Department of Fish & Wildlife – Lynn Helbrecht
Idaho Department of Fish and Game – Leona Svancara
Oregon Department of Fish and Wildlife – Davia Palmeri

Invited Speakers and Observers
Boise State University - Kendra Kaiser
Oregon State University – Jonny Armstrong
University of Washington – Meade Krosby, Amy Snover, Darcy Widmayer
Washington State University -Julie Padowski
North Central Climate Adaptation Science Center - Alisa Wade
Welcome, Introductions and Updates
- Reminders about SAC meeting purpose and funding opportunities

CASC Network Priorities Under the Biden Administration | Nicole DeCrappeo
- Different ways to fit into initiatives under Executive Order 14008
- DOI Secretarial Order 3399 – Dept-wide approach to the Climate Crisis
  o Work and approach of CASCs is well-suited to address new Administration’s priorities

FY21 Tribal and FY22 General Funding Opportunities | Betsy Glenn
FY21 Tribal Funding
- Ran in conjunction with SW CASC
- 4 NW CASC awards and 1 project co-funded with SW CASC in FY21
- Received 22 NW CASC statements of interest from 20 tribes (WA, OR, CA, ID)
  o Received submissions for a broad range of topics
  o Requested 9 full proposals

FY22 Funding Opportunity
- Jointly released across all CASCs w/ regional-specific topics
- Intent to award notices in September
- Included 2 of 6 management priorities (invasives and shrublands) and post-fire ecological transformation
- Received 41 Statements of Interest (SOI)
  o Numerous cross-CASC SOIs
  o 25 university PIs, 14 USGS PIs, 2 others
  o Requested 27 full proposals

Tribal Collaborations and Activities | Chas Jones & Coral Avery
- Formalizing internship program (starting this summer)
- Event planning
  o National Tribal Leadership Climate Summit (8 sessions so far)
  o Tribal Climate Camp – starting to plan in-person camp in Anchorage in October 2021 (1/2 tribes from NW, 1/2 tribes from AK)
  o Resources on ATNI’s website & social media
    ▪ Share lots of grant opportunities and recordings of events at Http://atnitribes.org/climatechange/ts, @atnitribes on both Facebook and Instagram
- Publications
  o 5th annual OR Climate Assessment Report, 2020
  o Status of Tribes and Climate Change, 2021 (coming soon!)
  o Hydrology and Earth System Sciences (Jones et al. 2021)
- Grant coaching
  o Tribal partners on BIA Tribal Climate Resilience Project
- Grant Reviewing
- Networking
  o Connecting experts seeking partners
NW CASC University Consortium Updates | Amy Snover

Year 4 fellows cohort
- We are starting to receive interim reports from our Year 4 fellows. A few highlights we've received so far:
  - Kelsey King at WSU is studying Fender's blue butterfly populations, combining her field data with historical observations of phenology – she is finding that the nectar community used by Fender's blue is changing
  - Michelle Audie, also from WSU, has been looking at declines in western red cedar, and will be combining field-based data and tree ring measurements to provide insights about site characteristics that sustain or degrade western red cedar growth and resilience to drought

Year 5 fellows cohort
- We accepted 13 new fellows for our year 5 cohort (1-BSU, 3-OSU, 2-UM, 4-UW, 2-WSU, 1 WWU) and many new advisors
- Research topics include marine heatwaves, stakeholder perspectives of culturally important species of the Blackfoot, community-based rangeland management system, etc.

Plans/timeline for next deep dive
- We are currently identifying managers, scientists, and tribal community members and representatives to join an expert advisory working group that will convene three times over the summer to support the state of the knowledge assessment on stream permanence under climate change
- In October we will have the Deep Dive event with ~100 invited scientists, managers, tribal community members and representatives and other relevant communities for an online, multi-day meeting to review the state of the knowledge and co-develop an actionable science agenda
- If people in the SAC would like to learn more or if they would like to attend, they can connect with Mary Ann or Betsy

Spring webinar series on cultural burning
- Spring 3-part webinar series on Tribal Perspectives on Cross-Cultural Fire Management, hosted in partnership with the U.S. Forest Service
- First webinar of our spring series on April 27. Dr. Frank Lake presented on Cultural Burning and Collaborative Fire Research and Management: Approaches for Thoughtfully Partnering with Tribes. We had a record registration number of 287 people, with 183 attending the webinar and many more asking for the recording
- The next webinar in our spring series is on Thursday, May 27 at 11 am PT - fire ecologist and tribal liaison Monique Wynecoop will present on Collaborative Fire Management Case Studies from the Colville National Forest
- Our last webinar in this series will be held in June - stay tuned for more info
- You can access recordings of our previous webinars and register for upcoming webinars on our Actionable Science Webinars webpage

NW CASC-Funded Science Presentation
How will cold-water fish survive in a warming future?
- Jonny's NW CASC research is combining big data on temperature and fish distributions to
understand current thermal needs of fish and where we will find these areas in the future
  - We know that there will be suitable temperatures in headwaters, which will act like refugia, but we have to think about downstream habitats as well

- **Big data challenges**
  - Fish data are usually collected from a single season, summer, creating a temporal bias
  - There can also be spatial bias, because areas that are easier to find fish are the ones being monitored more frequently (these areas tend to be upstream, since downstream habitats are harder to sample)
  - This leaves the question - do big data approaches capture how fish currently survive in naturally warm watersheds? Jonny is working to answer this question w/ grad students

- **Willamette River cutthroat trout distribution** – Hannah Barrett
  - Revealed how different sampling methods can give us different impressions of thermal niches
    - Electrofishing (showed fish in thermal refuges in cooler water) vs. radio tag survey (showed fish staying in main stem with higher temps)
  - Upper Klamath Basin in summer –
    - Fish in cooler tributaries surrounding the lake
  - Have started studying these fish year-around, revealing complexity around how fish use these habitats
    - Lakes are most-important habitat in April and October – full of forage fish
    - Seasonal energy budget – warm water pays the bills for adult trout
    - Seasonally warm habitats that we might overlook during the summer actually support adult fish in other seasons – and support tribes and fisheries
    - Redband use two different coldwater habitats (use coldwater springs to spawn)
  - What about juvenile redband trout – how do they survive in the summer?
    - Use small coldwater refuges in the floodplain
    - Use canyons in basin (warm) as long as they're turbulent and oxygenated – bubbles or springs
    - Is the “big cold” a stronghold (larger chunks of coldwater habitat)
      - Yes, but not for redband – for invasive brook trout and invasive brown trout that are eating juvenile redband trout
      - Hoping these places would be future habitat for chinook
      - Found redband trout around edges of these coldwater areas that are a little warmer
        - Might be the role of pathogens that are restraining invasives
        - Could help us identify range of temps to target for invasive species removals and restoration

**Takeaways**
- Big data climate adaptation can provide an overly narrow definition of refugia
- We still need empirical studies at different spatial and temporal scales
  - Example of how pathogens could help protect native species.
Questions
- Would you agree that it’s a time for action that ties in monitoring efforts to collect information? Priority areas tend to be least impaired areas on landscape. Urgent challenge is understanding what makes warm habitats tenable for fish.
- Is *ceratomyxa shasta* affecting invasive salmonids and not the redband? Redband trout are susceptible but only at high temperatures and dosages
- Do warmer habitats with fish have better-than-normal food supplies to help with the metabolic demands of warm water survival? That’s the million dollar question – area where conservation protections could be really helpful.

**Proposed CASC Training Initiatives**

CASC climate adaptation training overview | Elise Elliott-Smith, Kris Metzger
- Exploring training opportunities – under new administration, anticipating that we’ll have opportunities to expand our training

CASC climate training initiative
- Climate training initiative – teaming up with folks from across the network (Univ and USGS side) to conduct interviews and better understand training opportunities
- Want to take your concerns and needs to help make climate adaptation science more accessible

To get feedback from SAC members we conducted a poll and then had facilitated break out groups.

Results from the poll:

1. Do people in your agency/tribe have a need for the following climate trainings or workshops?

<table>
<thead>
<tr>
<th>Response</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Climate change basics/basics of climate modeling</td>
<td>52.9%</td>
</tr>
<tr>
<td>b. Information about climate data/models and other online data tools available in your region</td>
<td>76.5%</td>
</tr>
<tr>
<td>c. Climate Vulnerability Assessments</td>
<td>47.1%</td>
</tr>
<tr>
<td>d. Climate Adaptation Planning</td>
<td>76.5%</td>
</tr>
<tr>
<td>e. Co-production/ collaboration</td>
<td>35.3%</td>
</tr>
<tr>
<td>f. Other</td>
<td>17.6%</td>
</tr>
</tbody>
</table>

2. Do you have access to climate-related training through your agency/tribe?

<table>
<thead>
<tr>
<th>Response</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Yes, Climate 101-type trainings</td>
<td>52.9%</td>
</tr>
<tr>
<td>b. Yes, advanced climate adaptation trainings</td>
<td>35.3%</td>
</tr>
<tr>
<td>c. Yes, and we provide trainings to partners and others (i.e. stakeholders, members of the public, etc.)</td>
<td>35.3%</td>
</tr>
<tr>
<td>d. No</td>
<td>17.6%</td>
</tr>
</tbody>
</table>
3. How would you or others in your agency/tribe like these trainings delivered or in what format(s) would you be able to attend a training course?

<table>
<thead>
<tr>
<th>Response</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Delivered in-person by the NW CASC, within my state</td>
<td>70.6%</td>
</tr>
<tr>
<td>b. Delivered in-person by the NW CASC, and we could travel out-of-state (post-pandemic)</td>
<td>35.3%</td>
</tr>
<tr>
<td>c. Online live CASC trainings</td>
<td>82.4%</td>
</tr>
<tr>
<td>d. Online self-paced CASC trainings (videos and resource guides)</td>
<td>70.6%</td>
</tr>
</tbody>
</table>

4. Have you personally participated in any climate-related training?

<table>
<thead>
<tr>
<th>Response</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Yes, my agency/tribe has our own trainings</td>
<td>35.3%</td>
</tr>
<tr>
<td>b. Yes, through the NW CASC or other CASCs</td>
<td>11.8%</td>
</tr>
<tr>
<td>c. Yes, I’ve participated in trainings elsewhere</td>
<td>64.7%</td>
</tr>
<tr>
<td>d. No, I have not participated in a climate training</td>
<td>23.5%</td>
</tr>
</tbody>
</table>

**Breakout session goal:** To gather information on SAC members’ climate adaptation training needs to inform development and delivery of NW CASC training modules and courses

**How will we use this feedback?** We will use this initial feedback to develop an in-depth questionnaire about climate adaptation training needs and current offerings.

**Breakout room questions:**

1. Has your agency, department, tribe, or intertribal organization been “directed” to incorporate climate change information or climate adaptation into your everyday work?
   1. If yes, what kinds of information are you expected to use?
   2. If no, do you think this kind of directive will come in the near future?
2. What management applications do you need climate adaptation training for?
3. What climate adaptation training topics would be most useful for your agency, department, tribe, or intertribal organization?

Note: For more information on outcomes of breakout sessions please contact Elise Elliott-Smith (eelliott-smith@usgs.gov)

**Wrap up**

Introduce summer SAC meeting discussion on leveraging our climate adaptation efforts
As we settle in, please add to the chat your name, affiliation, and the social skill that you’ll need to brush up on when the pandemic is over.
NW CASC SAC meetings provide a forum for sharing and learning about natural and cultural resource management challenges, climate adaptation strategies, and climate-related activities and trainings.

SAC members’ input is used to shape the NW CASC’s 5-year science agendas, annual funding opportunities, and capacity-building initiatives.

These, in turn, help the NW CASC address SAC members’ climate adaptation challenges with targeted scientific information and products.
### SAC Meeting & Activity Cycle: Funding Opportunities

<table>
<thead>
<tr>
<th>Season</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td>Gather SAC input on management priorities and science gaps for funding opportunity</td>
</tr>
<tr>
<td>Spring</td>
<td>Gather SAC input on statements of interest and full proposals</td>
</tr>
<tr>
<td>Summer</td>
<td>Present new project portfolio</td>
</tr>
<tr>
<td>Fall</td>
<td>Share research findings and tools from completed projects</td>
</tr>
</tbody>
</table>
Today’s Objectives

1. Provide updates on the NW CASC’s ongoing and potential new lines of work under the Biden-Harris Administration

2. Solicit SAC members’ feedback on proposed CASC climate adaptation training initiatives
Meeting Agenda
1:00-2:00

- CASC network priorities under the Biden-Harris Administration
- FY21 tribal and FY22 general funding opportunities
- Tribal collaborations and activities
- NW CASC University Consortium updates
- Science presentation: *How will cold-water fish survive in a warming climate?*
Meeting Agenda
2:00-3:00

- Proposed CASC Training Initiatives
- Breakout groups!
- Wrap-up
CASC Network Priorities

- Executive Order 14008: *Tackling the Climate Crisis at Home and Abroad*
  - Government-wide approach to increase resilience to climate change impacts; conserve lands, waters, and biodiversity; and deliver environmental justice
  - Created a National Climate Task Force
  - Creation of Civilian Climate Corps: next gen conservation & resilience workers
  - Set goal of conserving 30% of U.S. lands and waters by 2030 (“30 by 30”)

“America the Beautiful” Initiative: Calls for a decade-long effort to support locally led and voluntary conservation and restoration efforts across public, private, and Tribal lands and waters to create jobs and strengthen the economy; tackle the climate and nature crises; and address inequitable access to the outdoors.
CASC Network Priorities

- DOI Secretarial Order 3399: *Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process*
  - Establishes a DOI Climate Task Force to support development and use of science to increase carbon sequestration, predict the effects of climate change on public lands and land uses, and assess and adopt measures to increase the resilience and adaptive capacity of public lands.
  - Task Force mission includes “working with individual States, Tribes, local governments, environmental justice communities, and other interested stakeholders.”

The work and approach of the CASCs is well-suited to addressing the administration’s priorities, and we anticipate that federal budget increases for climate science and adaptation will allow us to grow and expand...
CASC Network Priorities – Elevated emphasis and newer directions

- Justice, equity, diversity, and inclusion (JEDI)
- Working more closely with tribal partners
- Building resilience in urban human-natural systems
- Incorporating climate change into risk management frameworks
- Mitigation
- Climate “extension”
- Climate adaptation training
Recent efforts: Tribal relations

- Internships: Formalizing program
- Event planning:
  - National Tribal Leadership Climate Summit (all ages and youth events)
  - Tribal Climate Camps
- Publications:
  - 5th annual Oregon Climate Assessment Report (2020)
  - Status of Tribes and Climate Change (STACC 2021)
  - Hydrology and Earth System Sciences (Jones et al. 2021)
- Grant coaching (BIA TCRP)
- Grant reviewing
- Networking: Experts seeking tribal partners
Science for Managing NW Natural and Cultural Resources
NW CASC Science Agenda
Management Priorities

- Aquatic Resources
- At-Risk Species & Habitats
- Forest Ecosystems
- Shrubland Ecosystems
- Invasive Species & Diseases
- Working Lands & Waters
- Human Dimensions of Climate Adaptation
4 planned awards in FY21 + 1 Co-funded with SW CASC

22 NW CASC SOIs

- 20 Tribes: 12 – WA, 5 - OR, 2 - CA, 1 - ID

Invited 9 Full Proposals
NW CASC FY21 Tribal Funding Opportunity - SOI Submissions

Aquatic Resources, 13

At-risk Species and Habitats, 8

Forest Ecosystems, 6

Human Dimensions, 7

Invasive Species and Disease, 2

Shrubland Ecosystems, 1
**FY22 - Jointly released across all CASCs**

- **Statements of Interest** – Mar 15, 2021
- **Full Proposals** – Jul 23, 2021
- **Notification of Intent to Award** – Sep 6, 2021

**NW CASC Priorities**

- Invasive species/Disease
- Shrubland Ecosystems
- (Post fire) Ecosystem Transformation

**41 Statements of Interest (SOIs)**

- 25 University PIs; 14 USGS PIs; 2 Other
- Numerous Cross-CASC SOIs
- Requested funding (million):

<table>
<thead>
<tr>
<th></th>
<th>YR1</th>
<th>YR2</th>
<th>YR3</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$4.7</td>
<td>$4.2</td>
<td>$1.7</td>
<td>$11.3</td>
</tr>
</tbody>
</table>

**Requested 27 Full Proposals**

- 20 University PIs; 6 USGS PIs; 1 Other (USFS)
- Requested funding (million):

<table>
<thead>
<tr>
<th></th>
<th>YR1</th>
<th>YR2</th>
<th>YR3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$3.3</td>
<td>$3.0</td>
<td>$1.2</td>
<td>$7.5</td>
</tr>
</tbody>
</table>
NW CASC Management Priorities Addressed by FY22 SOIs

- Invasive Species and Diseases, 14
- Ecosystem transformation, 16
- Shrubland Ecosystems, 4
- Multiple priorities, 5
- Other, 2
5-minute break
CASC Climate Adaptation Training Initiatives

• Assess supply and demand
• Assess range of topics and delivery options
• We need your input!
Wrap-up and preparing for summer SAC meeting

- Climate adaptation training: Follow-up interviews
- Summer SAC meeting: Discuss how we can build on and leverage our collective climate adaptation efforts