RETHINKING RESILIENCE

Toward Holistic Approaches to Drought Management on Tribal Lands in the Upper Columbia and Missouri River Basins

A Synthesis of the Workshop for Building Drought Resilience in a Changing Climate with Upper Columbia and Missouri Basin Tribes
September 26-28, 2023 Polson, Montana

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Preface

The National Oceanic and Atmospheric Administration's National Integrated Drought Information System (NOAA NIDIS) has been a leading coordinator of drought monitoring, forecasting, planning, and research for nearly two decades. Its mission is to improve the nation's capacity to proactively manage drought-related risks by providing those affected with the best available information and resources to assess the potential for drought and to better prepare for, mitigate, and respond to the effects of drought. As a part of this mission, NIDIS works with partners and stakeholders at federal, tribal, state, and local levels across the country.

To ensure the inclusion of indigenous perspectives in the implementation of NIDIS, the program launched a Tribal Drought Engagement initiative in January 2019 in collaboration with the Masters of the Environment Program at the University of Colorado Boulder. This initiative, which was focused on the Missouri River Basin and Midwest Drought Early Warning System (DEWS) regions, aimed to strengthen relationships with tribal natural resource managers to more effectively deliver timely and relevant drought information. The resulting development of the *NIDIS Tribal Drought Engagement Strategy* defined overarching, guiding principles of engagement, as well as a framework outlining potential drought-focused engagement activities to be implemented in the years ahead.

NIDIS has taken many steps to advance the Strategy since it was released including hiring a Tribal Engagement Coordinator, offering two *Coping with Drought: Building Tribal Drought Resilience* grant competitions totaling $4.5 million, and refining Drought.gov's information resources to better serve Tribal Nations. To further build off of these investments, NIDIS convened the Workshop for Building Drought Resilience in a Changing Climate with Upper Columbia and Missouri Basin Tribes in September 2023. The workshop was an opportunity to explore pressing needs related to building drought resilience, and these discussions turned to larger issues and barriers that Tribal Nations face.

The following synthesis, therefore, captures a range of best practices and opportunities that Tribal Nations, Tribal Colleges and Universities (TCUs), and their partners identified to strengthen engagement and action around drought resilience. The first section, *Workshop Process and Best Practices,* serves as a resource for current and future partners of Tribal Nations and TCUs, and provides detailed descriptions of key activities that contributed to the workshop's success. The second, *Workshop Outcomes and Opportunities,* provides a discussion of key messages that emerged from a series of solution- and topic-oriented sessions at the two-and-a-half-day event. Our hope is that this synthesis helps to continue conversations and strengthen relationships among the many partners, colleagues, friends, and relatives that participated in the workshop, and that, ultimately, it can be used to further support resilience efforts both within and outside the Upper Columbia and Missouri River Basins.

Tribal Nations in the Upper Columbia[1] and Missouri River Basins are situated in one of the most climatologically variable regions in North America. Having lived in and around this region since time immemorial, Native Americans have experienced a wide range of extreme weather and climate events over millennia. This long history with the land allowed Tribal Nations to build resilience to the variable and extreme climate of the region through knowledge and practices that have been passed down through generations.

Over the last several hundred years, however, as Native Americans were displaced and forced to assimilate into Western culture, much of this knowledge was lost or suppressed. Native Americans who were relocated to unfamiliar or marginalized lands found themselves in a position where they had to start over. The trauma from these tremendous losses – of people, land, and culture – continue to impact tribal well-being to this day. Other factors, like a changing climate, are also affecting tribal well-being. Tribal Nations and Indigenous Peoples are on the frontlines, having already experienced severe impacts (Cozzetto et al. 2021). Consequently, their livelihoods and economies are at great risk (Whyte et al. 2023).

Addressing Drought in the Upper Columbia and Missouri River Basins

Figure 1: Intertribal organizations and alliances are uniquely positioned to help facilitate collaborations between Tribal Nations and potential partners. Doug Crow Ghost, Chairman of the Great Plains Tribal Water Alliance, speaks at the workshop about the activities of the alliance and its member Tribal Nations. Credit: Crystal Stiles

Drought is one part of the many challenges Tribal Nations face in terms of changing climate. Although drought and other associated climate extremes are not uncommon in the Upper Columbia and Missouri River Basins, recent drought events have been particularly severe and impactful. For instance, in an assessment of drought conditions that began in 2020 in the U.S. Northern Plains and Canadian Prairies, drought and extreme heat caused economic losses totaling in the billions of dollars, with wide-reaching impacts to agriculture, cultural resources and practices, ecosystems, energy, human health, and water resources (Environment and Climate Change Canada 2021; NOAA NCEI 2022; Umphlett et al. 2022). Neighboring areas of the U.S. and Canada have also been impacted by drought, with a recent study indicating that portions of western North America, which includes some parts of the workshop region, have been in the midst of the most severe megadrought recorded in the past 1,200 years (Williams et al. 2022)

1 For the purposes of this workshop, the Upper Columbia River Basin includes the following sub-basins: Kootenai-Pend Oreille-Spokane, Lower Snake, Middle Snake, Upper Columbia, and Upper Snake. This region was selected after focused discussions with the planning committee's local team. See **map on page 5** for more information.

Continuing to build and maintain resilience to drought events like these, particularly in a changing climate, has been a focus for Tribal Nations and Indigenous Peoples locally and across the world. Recent tribally-led partnerships in the Upper Columbia and Missouri River Basins have focused on developing climate and drought plans, conducting drought vulnerability assessments, and enhancing drought early warning through increased climate and drought monitoring on tribal lands. This has been achieved through the individual and collaborative work of Tribal Nations, Tribal Colleges and Universities (TCUs), and intertribal organizations and alliances (**Figure 1**). NIDIS and other local, state, regional, and national partners have worked alongside Tribal Nations and TCUs on a number of these efforts throughout the years.

Tribal Nations, TCUs, and intertribal organizations and alliances all throughout the region have been working on climate and drought resilience projects in recent years. Although not exhaustive, the following list highlights the range of work that has been or is currently being undertaken.

Building Adaptive Capacity in Tribal Communities of the Missouri River Basin to Manage Drought and Climate Extremes: A Case Study from the Wind River Indian Reservation
This publication from the Journal of Indigenous Research discusses lessons learned from engagement on a co-production project between the High Plains Regional Climate Center, the Eastern Shoshone and Northern Arapaho Tribes, and several partners. Funding source: NOAA NIDIS

Decision Dashboard for Climate and Drought Monitoring for EPA Region 7 Tribal Nations
This dashboard was developed as part of a project led by the Sac and Fox Nation of Missouri in Kansas and Nebraska, which also included a series of climate- and data-related workshops for the nine Tribal Nations in EPA Region 7. Funding source: Bureau of Indian Affairs (BIA) Tribal Climate Resilience (TCR) Annual Awards Program

Developing a Drought Early Warning System and Indices for the Confederated Tribes of the Umatilla Indian Reservation
The Confederated Tribes of the Umatilla Indian Reservation and partners are expanding monitoring and developing a culturally-relevant drought early warning system across the reservation. Funding source: NOAA NIDIS Coping with Drought Research Competition

Developing Drought Adaptation Plans for the Flandreau Santee Sioux Tribe, Oglala Sioux Tribe, Rosebud Sioux Tribe, and Standing Rock Sioux Tribe
Four Tribal Nations that are members of the Great Plains Tribal Water Alliance partnered to collectively develop drought adaptation plans for their respective reservations. Funding source: BIA TCR Annual Awards Program

Weather in the Native Tongue: Preservation of the Written and Spoken Lakota Language via Everyday Weather on the Web
Data and information from all South Dakota mesonet stations are now available in both English and Lakota. Funding source: South Dakota State University Wokini Initiative

Native Drought Resilience: Confederated Salish & Kootenai Tribes (CSKT) Actions for Climate-Drought Adaptation
In collaboration with the University of Montana and partners, the CSKT are expanding monitoring, hosting climate-drought data bootcamps, and developing story maps of Native climate resilience. Funding source: NOAA NIDIS Coping with Drought Research Competition

ResilienceMT: Building Resilience in Montana's Rural and Tribal Communities
The University of Montana partnered with the Blackfeet Nation, Fort Belknap Indian Community, and communities in the Bitterroot Valley to support climate resilience through the use of a mobile, interactive educational exhibit. Funding source: NOAA Environmental Literacy Program

Wetlands to Combat Drought: Strengthening Drought Preparedness on the Coeur d'Alene Reservation through Wetland Restoration and Monitoring
In order to build tribal capacity around drought resilience, the Coeur d'Alene Tribe and Clemson University partnered to restore wetlands that provide habitat for culturally-important flora and fauna. Funding source: NOAA NIDIS Coping with Drought Research Competition

Figure 2: Workshop participants at the Kwataqnuk Resort & Casino in Polson, Montana. Credit: Jessica Martinez

Workshop and Synthesis Approach

To better integrate indigenous perspectives into the creation of a national drought early warning system (NOAA NIDIS 2022), NIDIS follows the "Guiding Principles of Engagement" outlined in the *NIDIS Tribal Drought Engagement Strategy,* hereafter referred to as the Strategy. This Strategy was co-developed with Tribal Nations and TCUs in and around the Missouri River Basin and Midwest Drought Early Warning Systems (DEWS) regions, but is utilized in other regions as well. Building off the current and previous work of Tribal Nations, as well as the Strategy, the Workshop for Building Drought Resilience in a Changing Climate with Upper Columbia and Missouri Basin Tribes was convened in September 2023 in Polson, Montana with an overarching goal to strengthen relationships between Tribal Nations, TCUs, and their partners across the region. The workshop was also an opportunity for NIDIS to realize many of the aims of the Strategy by maintaining relationships and collaborations with Tribal Nations who were involved in its development, and to get updates on their drought-related priorities since its release in 2020.

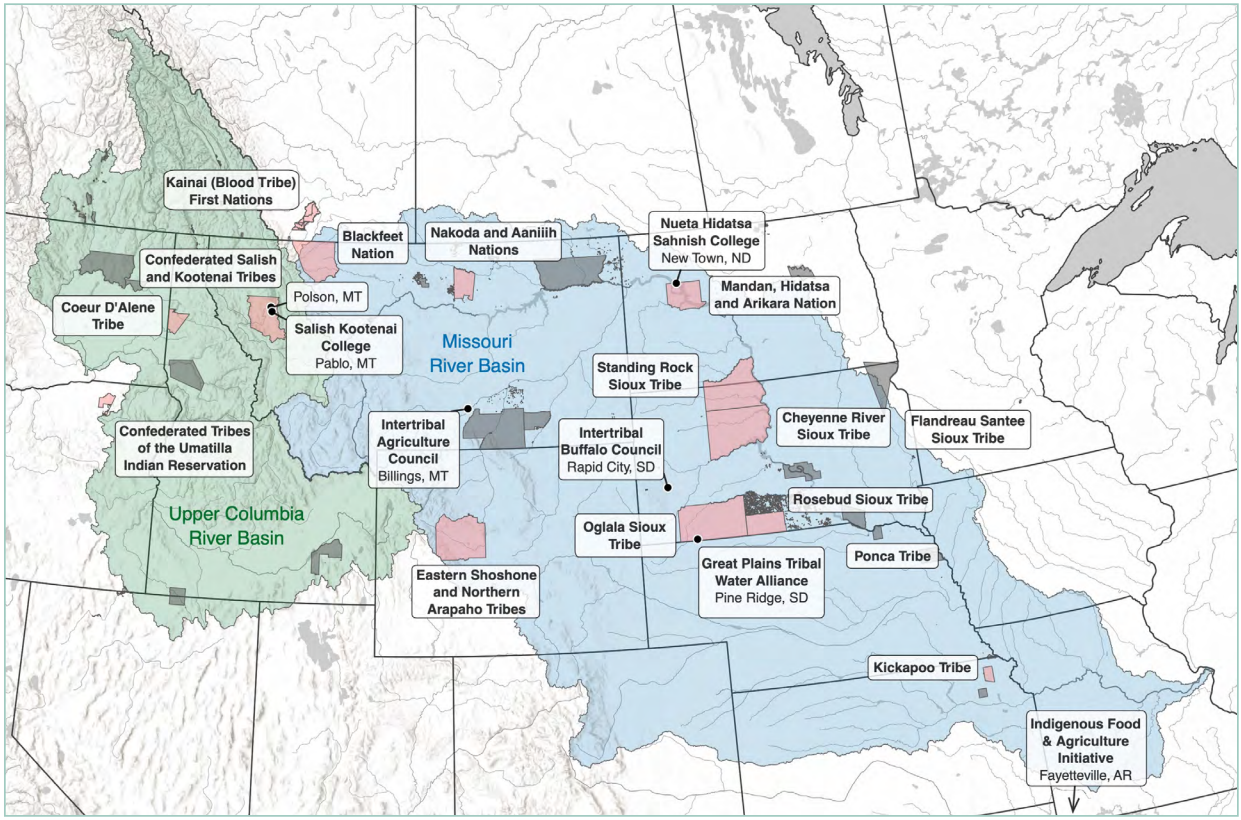
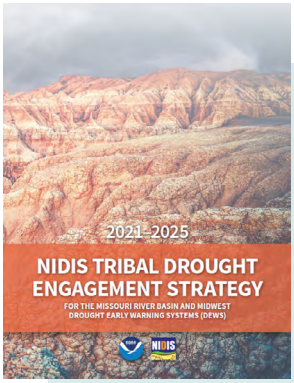


Figure 3: Tribal Nations, TCUs, and intertribal organizations from across the two basins were represented at the workshop. Credit: Montana Climate Office



The NIDIS ***Tribal Drought Engagement Strategy for the Missouri River Basin and Midwest Drought Early Warning Systems (DEWS)*** was released in 2020 after a year-long tribal drought engagement initiative with tribal resource managers from both regions. The Strategy consists of two key parts—the Guiding Principles of Engagement and Key Outcomes and Activities—both of which were instrumental to the development and delivery of this workshop.

Guiding Principles of Engagement:

- Respecting Tribal Sovereignty
- Ensuring Trust and Reciprocity
- Ensuring DEWS Are Culturally Appropriate and Useful for Tribal Nations

This two-and-a-half-day workshop was co-organized and sponsored by NIDIS and the Confederated Salish and Kootenai Tribes (CSKT), with support from several workshop committees. In total, over 100 people, including representation from Tribal Nations, intertribal organizations, and TCUs, attended the workshop and engaged in rich discussion about the successes and challenges of building and maintaining resilience to drought on tribal lands (**Figure 2** and **Figure 3**). Sensitive issues such as the perpetuation of historic traumas, the importance of tribal sovereignty, and the interplay between Indigenous and Western Knowledges were intertwined throughout these discussions, revealing just how imperative it is to approach the strengthening of drought resilience on tribal lands within the context of larger issues that deserve further dialogue. A full list of participants is available in **Appendix A**.

As a way to continue these discussions and further the aims of the workshop, NIDIS and partners have produced this two-part synthesis that focuses on best practices and opportunities that Tribal Nations, TCUs, and their partners identified to strengthen engagement and action around drought resilience. The first part, *Workshop Process and Best Practices,* is a resource primarily for current and future partners of Tribal Nations and TCUs. It provides detailed descriptions of key activities that contributed to the workshop's success. The second, *Workshop Outcomes and Opportunities,* provides a discussion of key messages and potential next steps that emerged from participants over the course of the event.

About NIDIS

The National Oceanic and Atmospheric Administration's (NOAA's) National Integrated Drought Information System (NIDIS) program was established by Congress in 2006 (Public Law 109-430) and reauthorized in 2014 and 2019. NIDIS has an interagency mandate to coordinate and integrate drought research, building upon existing federal, tribal, state, and local partnerships in support of creating a national drought early warning information system.

Mission

To maximize the nation's ability to proactively manage drought-related risks, by providing those affected with the best available information and resources to assess the potential for drought and to better prepare for, mitigate, and respond to the effects of drought. Toward that end, NIDIS will create a drought early warning system for the nation.

Unique Role of NIDIS

1	***Convening and Coordination*** **Partnerships, consultations, networks, workshops, etc.**
2	***Delivering Information*** **drought.gov, drought status updates, communications, etc.**
3	***Advancing and Integrating Research into Action*** **Applied research, products development, assessments**

NIDIS is led by NOAA and is housed within the Office of Oceanic and Atmospheric Research's Climate Program Office.

"When we gather and build new relationships, we create a responsibility to take on the work together."

JAMES RATTLING LEAF, SR., WOLAKOTA LAB LLC

Recent federal funding has offered significant opportunities to advance tribal engagement; however, not all organizations seeking to work with Tribal Nations have the relevant experience or knowledge to engage with them in successful ways. Even those with ample experience can continue to learn.

This Workshop Process and Best Practices section was developed as a starting point for organizations seeking to engage, or more deeply engage, with Tribal Nations and TCUs. It provides an in-depth look at some of the more unique aspects of our planning process, along with best practices. Learning from and implementing the best practices from this workshop, along with applying the Guiding Principles of Engagement from the Strategy, can help reduce the burdens placed on Tribal Nations through more streamlined and thoughtful approaches to engagement. It is recognized, however, that federal programs are structured differently and have varying levels of flexibility, and these best practices may not be as feasible for some to implement as others.

The workshop took approximately seven months to plan. Planning the workshop required a great deal of coordination, thoughtful collaboration, and intentional communication in order to ensure its success.

The process can be broken down into four main activities:

1. Forming Workshop Committees
2. Managing Complex Logistics
3. Designing and Executing the Workshop
4. Sustaining Engagement to Reinforce Trusted Relationships

Best Practices: Successfully Integrating Indigenous Knowledge

Asking permission before using or interpreting Indigenous Knowledge and giving credit where it is due. This is to ensure that this knowledge is protected and utilized correctly.

Acknowledging the role and value of diverse knowledges.

Asking culturally relevant and respectful questions.

Ensuring the collection of Indigenous Knowledge is carried out ethically and is not shared for profit.

Adapted from Bamford et al. 2020.

Forming Workshop Committees

Many dedicated individuals were integral to the planning and execution of the workshop. Four key groups, in particular, were essential to the success of the workshop: the workshop leaders, the logistics team, the planning committee, and the local team. Each of these groups had various roles and responsibilities, as outlined below.

Figure 4: Employing Multiple Knowledge Systems
Credit: NOAA/NIDIS, Fiona Martin

- **Workshop Leaders:** The NIDIS Tribal Engagement Coordinator and the NIDIS tribal advisor led the development, planning, and execution of the workshop. The tribal coordinator served as the central point of contact for workshop planning and execution. The tribal advisor was especially critical in identifying key people to serve on the planning committee, and as an indigenous person, he identified important cultural considerations throughout the planning process.

- **Logistics Team:** The University Corporation for Atmospheric Research (UCAR) provided logistics services to support the workshop, enabling the other teams to focus on workshop content. UCAR helped manage many of the behind-the-scenes tasks, such ss booking the venue, ordering catering, and hosting the workshop webpage and registration site (CPAESS 2023). The logistics team also handled travel requests, which included arranging hotel rooms and air and ground transportation for many of the participants and speakers.

- **Planning Committee:** A planning committee formed approximately 3 months ahead of the workshop and consisted of 14 participants representing Tribal Nations and intertribal organizations, TCUs, non-tribal academic institutions, and federal and state agencies. This group met weekly from June through September to collaboratively create the workshop agenda and discuss potential speakers and participants. The group ensured the agenda aligned with the workshop objectives and facilitated action toward the expected outcomes. Most importantly, the planning committee helped ensure that the agenda was culturally appropriate and useful for all participating Tribal Nations and TCUs.

Best Practice: Forming a planning committee that is a reflection of the workshop's intended audience allows for a wide range of ideas and perspectives to be considered throughout the planning process. Inviting tribal participation early on and in all stages of the planning process helps to ensure reciprocity.

- **Local Team:** A subset of the planning committee, consisting of individuals from in and around the Flathead Indian Reservation, where the workshop was held, also helped provide logistical support and, more importantly, a local perspective. This local team was integral in providing "boots on the ground" knowledge of the workshop meeting spaces, hotel and restaurant options, as well as ground and air transportation. The local team also helped ensure that the workshop was culturally appropriate, making recommendations for the opening ceremony, field trip, and the invitation of local Native artists to set up at the evening reception.

Best Practice: As James Rattling Leaf, Sr. has said, "Every tribe has a drought story to tell." And, every tribe has its own way of telling it. One way to ensure that your workshop respects

local customs and traditions is through the involvement of a local team whose members can help guide the development of opening and closing ceremonies, invite local elders and council members to participate, and make recommendations for cultural exchange activities. Like the planning committee, be sure to involve the local team early in the planning process.

Figure 5: The Flathead Indian Reservation is home to the Bitterroot Salish, Kootenai, and Pend d'Oreille tribes. Prior to the creation of the reservation, through the Hellgate Treaty of 1855, these tribes held territory primarily in what is now called western Montana, but also in British Columbia, Idaho, and Wyoming. Much of Flathead Lake, as seen here at sunrise, is located within the reservation boundaries and is the largest freshwater lake in the western U.S. In 2023, Flathead Lake levels reached historic lows due to drought and a quickly melting snowpack. Credit: Molly Woloszyn

Managing Complex Logistics

From the start, it was important to co-host the workshop with a Tribal Nation and to hold it on tribal lands (Figure 5). The NIDIS tribal advisor coordinated this arrangement with a close partner from CSKT.

- **Best Practice:** When planning a workshop or meeting with Tribal Nations and TCUs, it is important to hold these events on tribal lands, when possible. This may require additional resources, so site selection should occur early in the planning process. For instance, tribal lands are often situated in rural areas, which require both air and ground transportation for participants.

- **Best Practice:** Holding events on tribal lands helps to establish and build trusted relationships, while also enhancing cultural exchange. Additional planning time may be required due to limited options for accommodations and local events. Adequate funds should be in place to accommodate multiple modes of transportation and additional travel days, if needed.

NIDIS allocated a significant portion of the workshop budget toward funding participant travel, to ensure this was not a barrier to attendance. Funding was prioritized for the planning committee, speakers, facilitators, and tribal participants.

- **Best Practice:** Workshop organizers are encouraged to plan for a range of funding needs early in the process. For instance, honoraria for facilitators and speakers were not initially budgeted for in this workshop, but will be considered in the future. Offering honoraria helps acknowledge the extra time and energy it takes to prepare a presentation or facilitate a session at your workshop.

UCAR handled travel arrangements and reimbursements for those participants whom NIDIS funded to attend the workshop. Adjustments to policies were required to fully accommodate travelers' needs.

- **Best Practice:** Flexibility in travel policies is highly recommended, particularly due to the unique cultural needs of Tribal Nations.

Designing and Executing the Workshop

In line with the Guiding Principles of Engagement from the Strategy (see page 5), great care was taken in the workshop design and execution. Key considerations are outlined below. The full agenda may be found in **Appendix B**.

Overall Workshop Considerations

A large portion of the workshop was tribally-led. The first day was largely dedicated to tribally-focused perspectives and projects, and the working sessions were facilitated or co-facilitated by tribal participants.

- **Best Practice:** Ensure tribal voices are heard by providing ample opportunities for tribally-led presentations and dialogue. Lead with tribal voices on the first day to set the tone for the workshop and give tribal participants ample time to share their perspectives.

- **Best Practice:** Include local knowledge holders, as well as experienced facilitators with intercultural skills, to help ensure that proper protocols and engagement principles are followed during the workshop.

Extended breaks, an evening reception, and a field trip were incorporated into the agenda to provide numerous opportunities for networking and relationship building.

- **Best Practice:** Do not underestimate the time that is necessary to build relationships based on trust. Schedule informal gatherings in addition to breaks between sessions. Long breaks help ensure that, even when sessions run long, ample time is available to interact. Based on responses to a post-workshop evaluation, even more time could have been incorporated into the breaks.

Specific Sessions

- **Opening Ceremony:** The opening ceremony was recommended and subsequently coordinated by the local CSKT team member. This consisted of the posting of the colors by the Mission Valley Honor Guard, a ceremony by the Buckshot Drummers, an opening by an elder, and a welcome message by a CSKT Tribal Council representative.

  - **Best Practice:** Coordinate the opening ceremony with the hosting Tribal Nation and allow them to plan it. Honoraria may be provided to those who participate in the opening ceremony.

Figure 6: Discussions at the Partners Fair. Credit: Molly Woloszyn

- **Lightning Talks and Partners Fair:** There was only one session focused solely on the partners of Tribal Nations and TCUs, such as federal and state agencies, non-tribal academic institutions, and non-governmental and private sector organizations. The purpose of the session was to share information on the partners' tribally-relevant programs and

funding opportunities. The format consisted of five-minute lightning talks followed by a "partners fair" where each partner had a table for sharing information that could help support Tribal Nations in building drought resilience, while tribal participants discussed their drought information needs with the partners (Figure 6). Based on feedback from workshop participants, the lightning talk-partners fair format was well received.

Best Practice: While it is important to include partners of Tribal Nations and TCUs in the workshop conversations, it is recommended that they receive limited time on the agenda so that the workshop remains tribally-focused. The lightning talk format provided the opportunity for all workshop participants to receive an introduction to each of the topics, while also limiting the time spent on partner presentations.

Figure 7: Working session participants discuss ways to streamline drought and climate-related planning initiatives. Credit: Molly Woloszyn

- **Working Sessions & Large Group Report-out:** The working sessions and report-out provided space for both small and large group discussions focused on broad solutions and specific actions that could increase resilience to drought on tribal lands (Figure 7). This format was based on feedback from Tribal Nations and TCU representatives who expressed interest in having action-oriented conversations that can spur future work. Potential working session topics were crafted by the planning committee. Only the most relevant topics were discussed at the workshop, through a selection process on the workshop registration form.

Best Practice: Set aside extra time to develop and refine working session topics. Allowing participants to express their interest in the working session topics ahead of time helps ensure that the most relevant and pressing topics are discussed. Having tribally-led working sessions had pros and cons - not all facilitators were able to fully participate because they were leading the discussions.

- **Working Lunches:** Working lunches were arranged to provide an opportunity to dig deeper into selected topic areas. The first day's working lunch was a presentation on the legal and political barriers to progress on building drought resilience on tribal lands, while the second day's working lunch was a panel discussion with tribal farmers and ranchers on their perspectives on drought, how they are responding to it, and what they need to be more resilient. These topics were selected by members of the planning committee.

Best Practice: Carefully consider the balance between sessions and breaks when creating the agenda. Based on feedback from the workshop participants, the working lunches were very well received. However, some noted that the lunch breaks could have been used for networking and relationship building.

- **Next Steps:** The next steps session at the end of the workshop focused on discussions in two main areas:
    1. near-term activities to follow the workshop

Figure 8: The Confederated Salish and Kootenai Tribes manage the nearly 19,000 acre Bison Range, located on the Flathead Indian Reservation between Polson and Missoula. The Bison Range was established in 1908 by the U.S. Federal Government, but in 2022 the CSKT fully took over management of the Bison Range. Credit: Crystal Stiles

2. information to be communicated from the workshop and how it would be presented

- **Best Practice:** Although next steps sessions are common components of workshops, they should be used as a foundation for future work, which builds trust and demonstrates a willingness to follow through.

- **Cultural Exchange:** At the end of the workshop, participants were given the opportunity to tour the CSKT Bison Range and learn more about its history and management techniques (**Figure 8**). The field trip was coordinated by the local team and consisted of two components: a discussion on the Bison Range's history and management techniques led by Bison Range staff, and a visit to the mesonet station on the Bison Range with a discussion led by staff from the Montana Climate Office (**Figure 9**).

- **Best Practice:** Incorporate field trips or other hands-on activities into tribally-focused workshops when possible. Learning experiences such as interactive field trips, especially on tribal lands, are critical to understanding tribal issues and ways of life. They provide the opportunity for an enriched cultural experience that cannot be replicated in a typical workshop setting.

Figure 9: Dr. Kyle Bocinsky explains how the Montana Climate Office worked closely with Bison Range staff to ensure cultural resources were protected and that minimal disruption to the environment occurred before, during, and after station installation.
Credit: Natalie Umphlett

Sustaining Engagement to Reinforce Trusted Relationships

Since the workshop ended, NIDIS staff have ensured that engagement has continued through a number of key activities. Immediate post-workshop activities included:

1. Sending a thank you letter to the CSKT Tribal Council Chairman for co-hosting the workshop (see **Appendix C**);
2. Developing internal briefing materials that outlined key takeaways from the five working sessions;
3. Convening the federal partners who attended to discuss workshop outcomes and relevant follow-up needed;
4. Communicating with workshop participants on follow-up activities.

NIDIS also disseminated a news article about the workshop to a wide audience through its *Tribal Engagement* and *Dry Times* email newsletters (NOAA NIDIS 2023). Medium-term activities included the creation of this synthesis, which underwent multiple rounds of review by NIDIS staff, as well as workshop facilitators, speakers, and participants. Long-term activities, as outlined in the following section, will continue to be carried out into the future.

Best Practice: Sustained, regular engagements following the workshop between the workshop leaders, committees, and participants help to strengthen trusted relationships and ensure continuity in pursuit of drought resilience goals.

"The workshop was an extraordinary experience in learning various ways, methods, and resources to address drought. I walked away with greater confidence in developing a tribally-relevant drought early warning system. I highly recommend a repeat of the workshop."

KATE ELY, UMATILLA BASIN HYDROLOGIST
CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

During the workshop, nearly one full day was dedicated to exploring solutions to challenges and opportunities that increase resilience to drought on tribal lands. This process was broken into two main components: an afternoon of working sessions, and a morning report-out session, followed by a large group discussion.

The purpose of the working sessions was to have Tribal Nations, TCUs, and their partners hold solution- and topic-oriented discussions that consider both Indigenous and Western Knowledge systems to address the greatest challenges Tribal Nations face as they continue to strengthen drought resilience. The sessions were tribally-led, and participants identified both short- and long-term actions and resources needed.

In total, five working sessions were formed around a set of predetermined topics, which were developed in consultation with the planning committee and through feedback from workshop participants using the workshop registration form, including:

- Increasing Drought and Climate Change Research/Teaching/Outreach Capacity with TCUs
- Building Capacity and Identifying Technical Climate-Related Funding Opportunities
- Enhancing Drought Monitoring
- Streamlining Drought and Climate-Related Planning Efforts & Managing Water During Drought
- Determining Best Practices for Collecting and Documenting Drought Impacts

Discussions on data sovereignty and Indigenous Knowledge were integrated throughout the working sessions. The following summarizes

Figure 10: "I think for me the big takeaway was that we are experiencing drought and other climate-related changes that we have not seen before, and this is the 'new normal.' We definitely need to do better at collaborating and working together to both prepare and respond to these changes."
Michael Durglo, Jr.
Tribal Historic Preservation Department Head, CSKT
Credit: Molly Woloszyn

key messages and opportunities identified by the participants and facilitators from these five working sessions. These help lay the framework for the collective actions that could be taken by NIDIS and partners, in collaboration with Tribal Nations and TCUs.

Figure 11: An unexpected connection was made at the workshop when NIDIS staff member Molly Woloszyn got the chance to meet Pend d'Oreille elder Stephen Small Salmon, who grew up knowing Molly's grandmother and great-grandfather.

In-person meetings are essential to establishing and building lasting relationships. The climate and drought community is relatively small, with many partners and tribal members working together for a number of years. In many cases, these working relationships have grown into friendships. Credit: Molly Woloszyn

Build Mutual Respect and Understanding

Key Messages: *Building trusted relationships is foundational to any engagement with Tribal Nations and TCUs. Relationships can be built and maintained internally among tribal citizens, as well as externally between individual Tribal Nations or between Tribal Nations, TCUs, and tribal and non-tribal agencies/organizations. Increasing cultural intelligence and awareness must happen concurrently with, or prior to, any drought-related work to help build mutual respect and understanding. All Tribal Nations are unique in that they have different histories, customs, and protocols.*

OPPORTUNITIES

Acknowledge the intergenerational trauma created by current and historical federal and state policies and focus on healing

Provide cultural sensitivity training to all federal employees.

Cultivate a rich culture of communication

Honor tribal sovereignty via coordinated government-to-government engagements at all levels. Have policy leaders regularly sit together with Tribal Nations to share experiences. Develop program-to-program and person-to-person relationships (Figure 11). Allow space for mistakes, but work through them together.

Fulfill commitments

Establish and evaluate Memorandums of Agreement (MOAs) and Memorandums of Understanding (MOUs) with Tribal Nations and TCUs to ensure these arrangements are being utilized to their full potential. Assess and evaluate agency strategies to ensure that actions are leading to desired outcomes.

Respect tribal sovereignty

Follow tribal data sovereignty policy and procedures if they exist, and if they do not currently exist, assist in their development. Co-develop Indigenous Knowledge programs and policies with Tribal Nations. Work together to revise agency standards to help meet the needs of Tribal Nations. Incorporate indigenous practices into federal programs.

Adjust Federal Funding Procedures

Key Messages: *Tribal Nations and TCUs are often understaffed and overwhelmed by the number of funding opportunities available, and encounter barriers such as unique, complicated grant application processes and lack of capacity and technical assistance for developing proposals. Greater coordination across federal agencies to avoid duplicative requests and streamline information would be helpful in alleviating this stress. Future funding mechanisms must be flexible, with a focus on funding that is stable, action-oriented, and supports self-determination.*

OPPORTUNITIES

Establish consistent funding processes

To ensure that federal funding and support programs effectively address the needs of Tribal Nations, application procedures and compliance expectations must be simplified and standardized across federal agencies. Federal support must be administered using funding mechanisms that recognize Tribal Nations' sovereignty and support self-determination (e.g., Public Law 93-638, the **Indian Self-Determination and Education Assistance Act**). Ensure federal staff have the capacity to process and distribute new funding to Tribal Nations, TCUs, and intertribal organizations and alliances in a timely manner.

Create more flexible application processes for grant-making procedures

Establish rolling competition application periods and longer grant cycles. Allow additional funds to be added to awarded grants, if needed. Non-competitive grants could ensure every community has the opportunity to build climate resilience programs.

Move toward a participatory grant-making approach

Encourage Tribal Nations and TCUs to provide guidance on the funding and technical assistance services that would best support program success. Provide support for technical assistance in grant writing. Allow federal, academic, or other agency staff to assist Tribal Nations with proposals.

Break down silos

Improve communication and coordination between different departments within tribal governments to specifically increase awareness of new grant opportunities.

Invest in Tribal Workforce

Key Messages: *Many Tribal Nations and TCUs are overburdened and have limited capacity to develop and implement climate and drought resilience proposals. Furthermore, existing resources are often allocated to address other, higher-priority socio-economic issues. Investing in the tribal workforce at multiple levels can help build long-term resilience to extremes.*

OPPORTUNITIES

Increase and retain tribal representation

Investments in the tribal workforce should go beyond recruitment efforts and should focus on supporting and retaining tribal workforce members within federal agencies. Invite tribal colleagues to serve on committees and grant panels, as well as give presentations at meetings.

Support educational opportunities

Provide long-term support for TCU faculty and student salaries through grant programs; capacity building grants are essential for TCUs to build staffing and infrastructure. Develop clear paths for TCU students to take on climate issues by recruiting them for internship positions, which may lead to future employment. Involve youth in climate-related projects.

Take the long view

Be persistent—culture shifts within federal agencies will take time. Provide more funding

specifically for hiring staff within tribal governments, TCUs, and/or intertribal organizations and alliances for multiple years so that they can more easily implement funded climate and drought plans, as well as projects within those plans. Provide funding for the establishment of Tribal Climate Resilience Departments for continuity and long-term focus.

Enhance Drought Monitoring

Key Messages: *Drought monitoring must be explored through a holistic lens that encompasses culture, landscapes, and ecosystems. Individual Tribal Nations should determine what is important to monitor and how these monitoring data are used and distributed.*

OPPORTUNITIES

Take a holistic approach
Develop drought indicators for Tribal Nations that are place-based and culturally specific. Expand monitoring efforts to include culturally important plants and animals, and how their populations and ranges shift over time. Involve TCUs and tribal workforce in research.

Respect tribal data sovereignty
Tribal Nations have sovereign authority to administer the collection, ownership, and application of their own data. When reporting on or about Tribal Nations, it is vital to meaningfully partner and consult with tribal leaders on the analysis and interpretation of the data.

Invest in long-term, comprehensive funding
Provide resources for state of the art drought monitoring programs that go beyond the initial equipment and installation, including ongoing operations and maintenance, upgrades, and staff time. Monitoring should take place in multiple locations to account for different ecosystems on tribal lands.

Improve communication and outreach
Increase outreach on national drought assessment products, including the U.S. Drought Monitor map, and associated funding and/or relief programs. Encourage and support greater routine participation by Tribal Nations in the weekly assessment of drought conditions for the development of the U.S. Drought Monitor map.

Knowledge Needs Identified During Working Sessions

Cultural mentoring for youth
- Indigenous drought management practices
  - –Knowledge of the history of the land is key to success
- Plant identification

Climatological studies to understand long-term and seasonal changes
- Place-based impacts require different analyses of monitoring data; timing is important

Satellite and remotely sensed data for monitoring of invasive species
- As drought intensifies, invasives can spread aggressively

Updated rangeland and fenceline inventories

Frost-depth monitoring for infrastructure issues

Share Drought Resilience Stories

Key Messages: Indigenous practices for reducing drought impacts have been highly successful. Several Tribal Nations have developed climate and drought plans to increase resilience. Greater communication and cooperation between Tribal Nations, TCUs, and federal and state agencies about these practices and planning efforts could build trust and ensure reciprocity.

OPPORTUNITIES

Foster relationship-building
Build communities of practice among Tribal Nations within the Upper Columbia and Missouri River Basins around drought resilience.

Celebrate and share success
Identify drought resilience stories from Tribal Nations that include planning, implementation, and management actions. Share stories via a community of practice, websites, newsletters, in-person/virtual meetings, and social media.

Build upon current efforts
Develop federal funding mechanisms to maintain and expand successful drought resilience projects on tribal lands.

Examples of indigenous drought management practices from the Blackfeet Climate Adaptation Plan include beaver mimicry, snow fencing, regenerative grazing, and traditional harvesting and prescribed burning.

Beaver mimicry or beaver dam analogs (BDA) is a process used for increasing natural water storage and restoring wetlands. During drought, the Blackfeet Nation faces significant impacts to waterways, wildlife, and cultural species, so they are building infrastructure that mimics beaver dams. This will help prepare for warming temperatures, more frequent flooding, and reduced late-summer streamflows driven by a changing climate.

Snow fencing is a biocultural water holding practice to enhance groundwater and soil health priorities. The Blackfeet Nation is strategically placing snow fences to adapt to changes in wind speed and direction.

Regenerative grazing creates a longer period of rest between grazing events, which allows for more carbon sequestration in soils. The Blackfeet Nation calls this process bison mimicry, where they are shifting from traditional grazing practices and using no-till-drill practices.

Traditional harvesting and prescribed burning are soil amendment processes that create a healthier landscape. These place-based, climate-smart practices stem from Piikani ways of knowing, and help the Blackfeet Nation adapt to the impacts of a changing climate and drought.

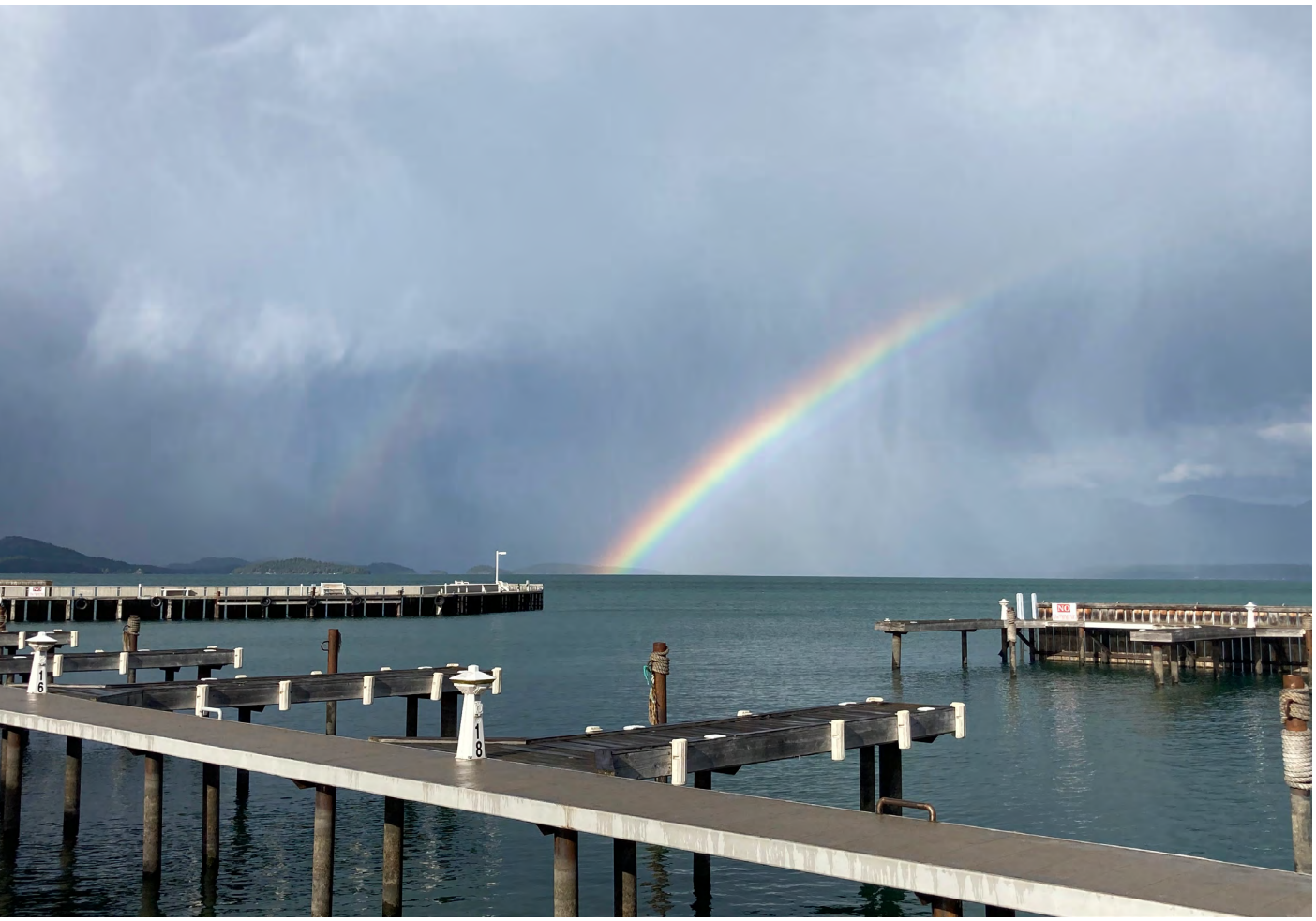
*For more information on these climate-smart practices, visit the **Piikani Lodge Health Institute** website or the **Blackfeet Climate Change** website.*

"Let us put our minds together and see what life we can make for our children."

SITTING BULL, HUNKPAPA LAKOTA

Closing Remarks

This workshop was exhilarating, challenging, and inspiring. Many of the outcomes and recommendations were related to overarching issues Tribal Nations face in working with non-tribal partners, and the message was loud and clear—there is still much more to do on engagement, communication, and reciprocity with Tribal Nations. It is our intention that these conversations will be ongoing and that we will work with Tribal Nations, TCUs, and partners to build upon the key messages and opportunities that emerged from the workshop. We can make meaningful progress toward supporting tribal drought resilience if we keep our minds and hearts open to listening to and learning from our indigenous colleagues, friends, and relatives.



Flathead Lake with double rainbow. Credit: Natalie Umphlett

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Workshop for Building Drought Resilience in a Changing Climate with Upper Columbia and Missouri Basin Tribes

SEPTEMBER 26-28, 2023
KWATAQNUK RESORT AND CASINO | POLSON, MT

Workshop Objectives:

Provide a forum for Tribal Nations and Tribal Colleges and Universities (TCUs) in the Upper Columbia and Missouri Basins to share successes, challenges, opportunities, and ideas for managing current and future drought in the context of a changing climate and associated climate extremes.

Bring Tribal Nations, TCUs, and their partners together to discuss best practices for communicating and collaborating on projects and responding to funding opportunities that address current and future drought.

Discuss high-priority data and information needs and gaps to inform NOAA-NIDIS's Tribal Drought Engagement Strategy and other efforts to support tribal drought resilience in the Upper Columbia and Missouri Basins.

Expected Outcomes:

Strengthen communication networks among Tribal Nations and TCUs in the Upper Columbia and Missouri Basins to further information exchange and ideas on how to prepare for, mitigate, and respond to drought.

Identify solutions for enhancing communication with Tribal Nations and TCUs to increase awareness of funding opportunities.

Enumerate tangible, high-priority next steps to address pressing drought information needs.

Note: In the context of this workshop, "partners" refers to those who collaborate with or are interested in collaborating with Tribal Nations and/or TCUs on climate-related work: e.g., federal/state agencies, non-tribal academic institutions, NGOs, private sector organizations, etc.

TUESDAY, SEPTEMBER 26, 2023		
Time (MT)	**Session**	**Who**
7:30 AM	Registration + Continental Breakfast (provided)	
Session I: Welcome! Session purpose: To welcome participants, provide background on NIDIS and the workshop goals, and get to know each other. Moderator: Crystal Stiles, NOAA National Integrated Drought Information System (NIDIS) Location: Michel/Victor Room		
8:30 AM	Opening Ceremony	Posting of Colors Mission Valley Honor Guard Drum Eagle Pass Drum Group Elder Opening Stephen Small Salmon Welcome from the Confederated Salish and Kootenai Tribes (CSKT) Tribal Council Carole Lankford, CSKT Tribal Council Representative
9:00 AM	Introduction from NIDIS and Workshop Goals	Crystal Stiles Tribal Engagement Coordinator, NOAA NIDIS Richard (Rick) Spinrad Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator (recorded remarks) Veva Deheza Director, NOAA NIDIS (recorded remarks) James Rattling Leaf, Sr. Principal, Wolakota Lab LLC
9:30 AM	Icebreaker Activity	James Rattling Leaf, Sr. Principal, Wolakota Lab LLC
10:00 AM	Break (snacks/drinks provided)	

TUESDAY, SEPTEMBER 26, 2023, CONTINUED		
Session II: Drought in the Upper Columbia and Missouri Basins Session purpose: To share and discuss the latest science, information, and knowledge on past, current, and future drought episodes in these basins. Moderator: Doug Kluck, NOAA National Centers for Environmental Information Location: Michel/Victor Room		
10:30 AM	Drought at the Missouri and Columbia Headwaters: Forest, Fishery, and Water Resource Impacts on Drought on the Flathead Reservation	Michael Durglo, Jr. Tribal Historic Preservation Department Head, CSKT Brian Lipscomb CEO, Energy Keepers, Inc.
11:00 AM	First Foods First in a Columbia Basin Drought Early Warning System	Kate Ely Umatilla Basin Hydrologist, Confederated Tribes of the Umatilla Indian Reservation
11:30 AM	Native Waters in the Great Plains: Protecting and Preserving Tribal Water Rights to Enhance Drought Resilience	Doug Crow Ghost Department of Water Resources Director, Standing Rock Sioux Tribe and Great Plains Tribal Water Alliance Board Member
12:00 PM	Drought in a Changing World: The Past, Present, and Future of Drought Adaptation and Resilience in the Columbia and Missouri River Basins	Kyle Bocinsky Director of Climate Extension, Montana Climate Office, University of Montana
12:30 PM	Working Lunch (provided) Moderator and Speaker: Maranda Compton, President, Lepwe Discussion: Legal and political barriers to progress on building drought resilience on tribal lands Location: Michel/Victor Room	
Session III: Successes, Challenges, and Opportunities for Managing Drought on Tribal Lands in the Upper Columbia and Missouri Basins Session purpose: To have Tribal Nations share their knowledge and experiences with managing drought and associated climate extremes on their lands to promote learning and generate new ideas. Discussion will be included. Moderator: James Rattling Leaf, Sr., Wolakota Lab LLC Location: Michel/Victor Room		
1:30 PM	Interweaving Traditional Knowledge and Mainstream Science to Enhance Long-Term Climate and Drought Resilience on Tribal Lands	Maureen McCarthy Research Professor, Desert Research Institute and Montana Climate Office, University of Montana

TUESDAY, SEPTEMBER 26, 2023, CONTINUED		
1:50 PM	Sicangu Climate Center	Paula Antoine Director, Sicangu Oyate Land Office
2:10 PM	Wetlands to Enhance Drought Resilience on the Coeur d'Alene Reservation	Mažeika Patricio Sullivan Director and Professor, Baruch Institute of Coastal Ecology and Forest Science, Clemson University
2:30 PM	Oglala Sioux Tribe's Drought Adaptation Plan	Reno Red Cloud Director of Water Resources Department, Oglala Sioux Tribe
2:50 PM	Break (snacks/drinks provided)	
3:20 PM	Drought Impacts to Cultural Sites and Resources	Michael Durglo, Jr. Tribal Historic Preservation Department Head, CSKT
3:40 PM	Blackfoot Confederacy Native Trout Recovery Project	Elliot Fox Consultant, Blackfoot Confederacy Tribal Council and Member of the Kainai First Nation in Canada
4:00 PM	Nueta Hidatsa Sahnish College's Food and Water Sovereignty Initiatives	Ruth Plenty Sweet Grass-She Kills Director of Food Sovereignty, Nueta Hidatsa Sahnish College
4:20 PM	The Missouri River and Indigenous Placemaking	Paige Johnson Native Climate Data Fellow and Graduate Student, University of Montana
4:40 PM	Closing Comments and Setting the Stage for Day 2	James Rattling Leaf, Sr. Principal, Wolakota Lab LLC
5:00 PM	Adjourn for the Day	
5:00 PM	Evening Reception (light hors d'oeuvres & non-alcoholic drinks provided) Location: Michel/Victor Room	

WEDNESDAY, SEPTEMBER 27, 2023		
Time (MT)	Session	Who
8:00 AM	Continental Breakfast (provided)	
8:30 AM	Welcome Day 2 and Charge for the Day Location: Michel/Victor Room	James Rattling Leaf, Sr. Principal, Wolakota Lab LLC
Session IV: Support from Partners of Tribal Nations and TCUs: Drought and Climate-Related Programs, Tools and Resources, Funding Opportunities, and Technical Capacity Session purpose: For current and future partners of Tribal Nations and TCUs to share information that supports tribes in their efforts to increase their resilience to drought and climate change, and to provide an opportunity for Tribal Nations to discuss their drought information needs with partners. Moderator: Crystal Stiles, NOAA NIDIS Location: Michel/Victor Room		
9:00 AM	Federal Emergency Management Agency (FEMA) Grant Funding (Recorded presentation)	Nicole Edwards Tribal Mitigation Specialist, FEMA Region VIII Logan Sand Senior Community Planner, FEMA Region VIII
9:05 AM	Rapid Response to Extreme Weather Funding Opportunity through the U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) (Recorded presentation)	Ashley Mueller National Program Leader, Institute of Youth, Family, and Community, USDA NIFA Amy Ganguli National Program Leader, Institute of Bioenergy, Climate, and Environment, USDA NIFA
9:10 AM	USDA Farm Services Agency (FSA) Drought Relief Programs	Les Rispens Farm Programs Director in Montana, USDA FSA
9:15 AM	Bureau of Indian Affairs (BIA) Tribal Climate Resilience Funding and Resources	Matt Laramie Regional Coordinator, BIA Branch of Tribal Climate Resilience
9:20 AM	U.S. Bureau of Reclamation (BOR) Drought Mitigation Funding	Jessica Asbill-Case Native American Affairs Advisor, BOR
9:25 AM	NIDIS Coping with Drought: Building Tribal Drought Resilience Funding	Britt Parker Regional Drought Information Coordinator, NOAA NIDIS

WEDNESDAY, SEPTEMBER 27, 2023, CONTINUED		
9:30 AM	U.S. Environmental Protection Agency (EPA) Bipartisan Infrastructure Law/Inflation Reduction Act Programs The Environmental Justice Thriving Communities Technical Assistance Centers (TCTAC) Program	Andrew Wynne Senior Advisor for Climate Change, U.S. EPA Region 7
9:40 AM	Impact of Multidecadal Wet and Dry Climate Cycles on Forest Disturbances across the Conterminous U.S., 2000-2022	Joel Egan Forest Health Monitoring Coordinator, R1/R4 State, Private and Tribal Forestry, U.S. Forest Service
9:45 AM	Tribal Drought Planning	Mary Baker Resiliency Strategist, JEO Consulting Group
9:50 AM	National Drought Mitigation Center (NDMC) Tribal Assistance	Cody Knutson Planning Coordinator, NDMC, University of Nebraska-Lincoln
9:55 AM	Upper Missouri River Basin Soil Moisture and Plains Snow Monitoring Build-Out	Catherine Wiechmann UMRB Network Program Coordinator, University of Montana
10:00 AM	Upper Missouri River Basin Soil Moisture and Plains Snow Monitoring Data Value Study	Marina Skumanich National Coordinated Soil Moisture Monitoring Network Program Specialist, NOAA NIDIS
10:05 AM	Climate-Smart Tools for Tribal Soil Climate Analysis Network (TSCAN) and SCAN	Natalie Umphlett Climatologist, Northeast Regional Climate Center, Cornell University
10:10 AM	Community Collaborative Rain, Hail and Snow (CoCoRaHS) Network	Noah Newman Education Coordinator, CoCoRaHS, Colorado State University
10:15 AM	Partners Fair Overview	Crystal Stiles Tribal Engagement Coordinator, NOAA NIDIS
10:20 AM	Break (snacks/drinks provided)	

WEDNESDAY, SEPTEMBER 27, 2023, CONTINUED		
10:50 AM	Partners Fair and Tools Cafe Location: Banquet Foyer and Alexander Room	Intertribal Agriculture Council Bureau of Indian Affairs National Aeronautics and Space Administration NOAA National Integrated Drought Information System NOAA National Weather Service U.S. Army Corps of Engineers U.S. Bureau of Reclamation U.S. Department of Agriculture U.S. Environmental Protection Agency U.S. Forest Service U.S. Geological Survey High Plains Regional Climate Center Northeast Regional Climate Center Western Regional Climate Center National Drought Mitigation Center JEO Consulting Group Community Collaborative Rain, Hail and Snow (CoCoRaHS) Network State Mesonets University Corporation for Atmospheric Research COMET
12:15 PM	Working Lunch (provided) Moderator: Vicki Hebb, Native Climate Tribal Ag Fellow, University of Nevada, Reno Location: Michel/Victor Room	
	Discussion: Tribal farmers and ranchers talk drought - what's happening, how they are responding, and what they need to be more resilient	Thomas Peters, Technical Services Assistant, Intertribal Buffalo Council Ehakela Cummings, Buffalo SeedKeepers Crew Member, Intertribal Buffalo Council Marlene Werk, Technical Assistance Specialist, Intertribal Agriculture Council Rocky Mountain Region Beau LaSalle, Natural Resources Program Specialist, Intertribal Agriculture Council Kole Fitzpatrick, Loan Officer, Akiptan

WEDNESDAY, SEPTEMBER 27, 2023, CONTINUED

Session V: Finding Solutions: Addressing Challenges and Opportunities to Increase Tribal Resilience to Drought across the Upper Columbia and Missouri Basins

Session purpose: To hold solution- and topic-oriented working sessions with Tribal Nations, TCUs, and their partners that integrate Indigenous and Western knowledge systems to address the greatest challenges Tribal Nations face as they continue to strengthen drought resilience. Discussions on data sovereignty and Indigenous Knowledge/Traditional Ecological Knowledge will be integrated throughout the working sessions. These working sessions will be tribally-led and participants will develop a road map that identifies the specific short-term and long-term actions and resources needed to take meaningful steps toward addressing these challenges.

Location: Two working sessions will be held in the Michel/Victor Room, while the other three sessions will be held in the Alexander, Koostahtah, and Charlo Rooms. Working session locations will be determined the day before.

1:15 PM	**Working Session Topics**	**Facilitators**
	Increasing drought and climate change research and capacity with Tribal Colleges and Universities Notetaker: Britt Parker Regional Drought Information Coordinator, NOAA NIDIS	Ruth Plenty Sweet Grass-She Kills Director of Food Sovereignty, Nueta Hidatsa Sahnish College Virgil Dupuis Extension Director, Salish Kootenai College
	Building capacity and identifying technical assistance to apply for drought and climate-related funding opportunities Notetaker: Marina Skumanich National Coordinated Soil Moisture Monitoring Network Program Specialist, NOAA NIDIS	Matt Laramie Regional Coordinator, BIA Branch of Tribal Climate Resilience Kynser Wahwahsuck Tribal Climate Resilience Liaison, Great Plains Tribal Water Alliance
	Enhancing drought monitoring Notetaker: Natalie Umphlett Climatologist, Northeast Regional Climate Center, Cornell University	James Rattling Leaf, Sr. Principal, Wolakota Lab LLC Kyle Bocinsky Director of Climate Extension, Montana Climate Office, University of Montana
	Streamlining drought and climate-related planning efforts and managing water during drought Notetaker: Molly Woloszyn Regional Drought Information Coordinator, NOAA NIDIS	Paula Antoine Director, Sicangu Oyate Land Office Cody Knutson Planning Coordinator, NDMC, University of Nebraska-Lincoln

WEDNESDAY, SEPTEMBER 27, 2023, CONTINUED		
	Determining best practices for collecting and documenting drought impacts Notetaker: Crystal Stiles Tribal Engagement Coordinator, NOAA NIDIS	Vicki Hebb Native Climate Tribal Ag Fellow, University of Nevada, Reno Termaine Edmo Climate Change Coordinator, Blackfeet Nation
2:45 PM	Break (snacks/drinks provided)	
3:15 PM	Working sessions continued	
4:15 PM	Closing Comments and Setting the Stage for Day 3 Location: Michel/Victor Room	James Rattling Leaf, Sr. Principal, Wolakota Lab LLC
4:30 PM	Adjourn for the Day	

THURSDAY, SEPTEMBER 28, 2023		
Time (MT)	Session	Who
8:00 AM	Continental Breakfast (provided)	
8:30 AM	Welcome Day 3 and Charge for the Day Location: Michel/Victor Room	James Rattling Leaf, Sr. Principal, Wolakota Lab LLC
Session VI: Final Discussion and Next Steps Session purpose: To have leaders report out from their working sessions, facilitate discussion as a whole group on working session outcomes, and identify tangible next steps for NIDIS and partners on how to best support the solutions identified during these working sessions. Moderator: Molly Woloszyn, NOAA NIDIS Location: Michel/Victor Room		
9:00 AM	TCU Session Report Out & Discussion	Working session designee
9:20 AM	Technical Assistance Session Report Out & Discussion	Working session designee
9:40 AM	Monitoring Session Report Out & Discussion	Working session designee
10:00 AM	Break (snacks/drinks provided) - Fill out workshop evaluations	
10:30 AM	Planning Session Report Out & Discussion	Working session designee
10:50 AM	Impacts Session Report Out & Discussion	Working session designee
11:10 AM	Discussion and Next Steps	Crystal Stiles Tribal Engagement Coordinator, NOAA NIDIS Natalie Umphlett Climatologist, Northeast Regional Climate Center, Cornell University
12:00 PM	Workshop Adjourns - Lunch (provided - boxed lunches)	
1:30 PM	Field Trip: Tour of Confederated Salish and Kootenai Tribes Bison Range, Visitor Center, and Mesonet Station, 58355 Bison Range Road | Moiese, MT The formal portion of the tour will end at 3:00 PM but attendees can stay longer if desired.	

A big thank you from NIDIS to the meeting planning team!
Confederated Salish and Kootenai Tribes; Wolakota Lab LLC; Montana Climate Office; Desert Research Institute; NOAA National Centers for Environmental Information; Northeast Regional Climate Center; Bureau of Indian Affairs; North Central Climate Adaptation Science Center/Great Plains Tribal Water Alliance; Nueta Hidatsa Sahnish College; Oglala Sioux Tribe; National Drought Mitigation Center

CPAESS

We would also like to thank the University Corporation for Atmospheric Research (UCAR)/ Cooperative Programs for the Advancement of Earth System Science (CPAESS) for coordinating logistical and travel support for the workshop.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Oceanic and Atmospheric Research
Earth System Research Laboratory
325 Broadway – David Skaggs Research Center
Boulder, Colorado 80305-3337

October 20, 2023

42487 Complex Blvd.
Pablo, Montana 59855

Dear Chairman McDonald:

I am writing to express my deepest appreciation for allowing NOAA's National Integrated Drought Information System (NIDIS) to co-host the Workshop for Building Drought Resilience in a Changing Climate with Upper Columbia and Missouri Basin Tribes with the Confederated Salish and Kootenai Tribes at the Kwataqnuk Resort & Casino from September 26-28. Sixteen tribal nations from the Upper Columbia and Missouri River Basins were represented at the workshop. Also in attendance were numerous Federal agency representatives as well as Montana state government officials, Tribal Colleges and Universities and other academic institutions, and the private sector. Attendees acknowledged sharing meaningful conversations about important topics around drought resilience on tribal lands. However, what they identified as especially valuable was the mutually shared desire to deepen relationships and continue collaboration on this important work. At NIDIS we are taking the lead on several next steps that include convening the federal partners who attended the workshop to take action on concerns identified, as well as outcomes that will move this important work forward.

We believe the success of this workshop is in large part owed to our amazing workshop planning committee, which included CSKT's Tribal Historic Preservation Department Head, Michael Durglo, Jr. Mike was instrumental in coordinating local activities that enriched the workshop experience, such as the opening ceremony (which was especially enjoyable with remarks from elder Stephen Small Salmon) and the trip to the CSKT Bison Range. We look forward to continued collaboration with Mike, the tribal nations in the Upper Columbia and Missouri River Basins, and their partners to further support drought resilience on tribal lands.

Sincerely,

Genoveva Deheza

Veva Deheza
Executive Director
National Drought Information System (NIDIS)
National Oceanic and Atmospheric Administration
Boulder, CO

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HAVE QUESTIONS ABOUT THE REPORT? PLEASE CONTACT DR. CRYSTAL STILES, CRYSTAL.STILES@NOAA.GOV