



Native Waters on Arid Lands

Tribal Summit Report: November 9-10, 2016

Native Waters on Arid Lands (NWAL; <http://nativewaters-aridlands.com>) seeks to enhance climate resiliency of tribal communities of the Great Basin and American Southwest by building the capacity to develop and implement reservation-wide plans, policies and practices in support of sustainable agriculture and water management. During the course of this five-year (2015-2020) project, researchers, extension experts and members of tribal communities meet annually at a Tribal Summit to share information related to climate change, climate adaptation, agriculture, water resources, and other topics. The following report describes highlights of the second annual Tribal Summit, which was held on November 9-10, 2016 at the South Point Hotel Casino in Las Vegas, Nevada.

Speakers at this year's Summit included representatives from the Agua Caliente Band of Cahulla Indians, Ute Indian Tribe, Gila River Indian Community, Yerington Paiute Tribe, Pyramid Lake Paiute Tribe, Duck Valley Shoshone-Paiute Tribe, Jicarilla Apache Tribe, Colorado River Indian Tribes, Hopi Tribe, White Mountain Apache Nation, Pueblo of Zuni, Navajo Nation, the Salt River Maricopa Indian Community, and the Cheyenne River Sioux. Other speakers came from agencies and universities including the U.S. Geological Survey (USGS), Bureau of Indian Affairs (BIA), the Institute for Tribal Environmental Professionals (ITEP), Native American Rights Fund (NARF), First Americans Land Grant Consortium (FALCON), Salish Kootenai College, the University of Arizona, the University of Nevada, Reno and Ohio University. Summit attendees came from communities and reservations located across Arizona, Nevada, Colorado, California, New Mexico, Utah, South Dakota, Montana, Wisconsin, Georgia, and Ohio to share in two days of workshops and talks. More than 100 people were in attendance.

Wednesday, November 9 (Day One)

Preconference Breakout Session: BIA Climate Program, Training Opportunities and Tribal Climate Resilience Examples in Arid Environments

On the first day of the Tribal Summit, a preconference workshop introduced attendees to the range climate planning and adaptation resources that are available to tribes, including climate projections, programs, trainings, and other opportunities. NWAL team member Michael Dettinger presented climate change projections for temperature and precipitation for nine Indian reservations in the Great Basin and Southwestern US (Colorado River, Duck Valley, Gila River, Hopi, Navajo Nation, Pyramid Lake Paiute, Uintah and Ouray, Walker Lake, and Zuni reservations). His projections, which are constructed using 15 climate models and two emissions scenarios, extend through the year 2100 and show increases in temperature at all nine reservations, changes in precipitation that vary by location (wetter in northern locations/drier in southern locations), and increases in precipitation extremes (floods and droughts).

John Mosley and Joe Jojola from the Bureau of Indian Affairs (BIA) presented an overview of BIA climate programs, and shared examples of grants that have been given to various tribes for use in climate change studies or climate adaptation planning. The BIA operates the Tribal Climate Resilience Program (TCRP), which provides tribes with funding for trainings and adaptation projects, technical support, and youth engagement programs. The BIA also administers the Tribal Climate Resilience Resource Guide, an online hub of information on trainings, funding, planning and other resources that are available for tribes on the web.

Nicki Cooley and Karen Cozetto from the Institute for Tribal Environmental Professionals (ITEP) discussed methods for creating climate change mitigation and adaptation plans. They presented an overview of ITEP's adaptation planning process, and shared resources that tribes can use to create their own assessments and adaptation plans. Session attendees were then asked to share their own experiences with climate planning and adaptation.

WEB RESOURCES

- BIA Tribal Climate Resilience Program (TCRP): <http://bia.gov/WhoWeAre/BIA/climatechange/>
- BIA Tribal Climate Resilience Resource Guide <https://toolkit.climate.gov/tribal/>
- ITEP Tribes and Climate Change website: <http://www7.nau.edu/itep/main/tcc/Home/>
- ITEP Adaptation Planning Toolkit: <http://www7.nau.edu/itep/main/tcc/Resources/adaptation>
- US Climate Resilience Toolkit (NOAA): <https://toolkit.climate.gov/#steps>

Opening Blessing & Tribal Water Rights

The 2016 Tribal Summit formally opened with a blessing from Clayton Honyumptewa of the Hopi Tribe, and an overview of tribal water rights by Heather Whiteman Runs Him. Whiteman Runs Him is a staff attorney for the Native American Rights Fund in Boulder, CO, and discussed foundational cases in tribal water rights, approaches for quantifying rights, emerging issues, and case studies from different reservations. In order to plan for the future, tribes need to know that water will be available, said Whiteman Runs Him. Tribes can quantify their water rights through adjudication/litigation, or through settlements, which tend to be more flexible. In addition to ensuring water of sufficient quantity to meet the needs of tribes, water quality is also an issue of great importance. Whiteman Runs Him believes that the international trend toward recognizing a human right to clean drinking water can be a powerful advocacy tool for tribes in the future.

Breakout Session 1: Groundwater and Surface Water Relationships Affecting Reservation Environments

The first breakout session, led by NWAL team members Staci Emm and Vicki Hebb, explored historical and present-day challenges related to water rights and water quality on tribal reservations. Some presenters discussed ongoing legal disputes related to groundwater and surface water rights, and methods for quantifying those rights. For others, problems related to pollution and chemical contamination of water sources were of more immediate concern.

Tom Davis, Chief Planning and Development Officer for the Agua Caliente Band of Cahulla Indians (Palm Springs, CA) provided background on an ongoing water rights dispute in which the Agua Caliente tribe wants to use their federally reserved water rights to access and help manage local groundwater.

Although the tribe holds federally reserved water rights, these rights have not historically been applied to groundwater, and the tribe has had to buy water from local water agencies. Bart Powaukee, Water Quality Coordinator for the Ute Indian Tribe in Fort Duchesne, UT, spoke about water resources and oil and gas production on Ute tribal lands, including pipelines that run close to river corridors. Drinking water on the reservation comes primarily from groundwater, and water quality testing shows presence of arsenic, uranium and other contaminants. Ginny Hatch (Environmental Director) and Dietrick McGinnis (Consultant) from the Yerington Paiute Tribe in Yerington, NV also spoke about groundwater contamination issues. In Yerington, a plume from the nearby Anaconda Mine polluted the tribe's groundwater with uranium, arsenic, selenium and other contaminants, creating management challenges.

Breakout Session 2: Invigorating Tribal Economies through Innovative Water Resource Use

The second breakout session, moderated by NWAL team members Loretta Singletary and Bonnie Colby, explored ways in which tribes are strengthening their economies through innovative water resource use. Speakers Mervin Wright (Pyramid Lake Paiute Tribe), Reggie Premo (Duck Vally Shoshone-Paiute Tribe), Wainwright Velarde (Jicarilla Apache Tribe) and Amanda Bererra (Colorado River Indian Tribes) provided examples of innovative water use on tribal lands, which included fisheries projects, water leases, and improved water conveyance/delivery structures for agriculture. One key theme that emerged from this session was that is important for tribes to secure and quantify their water rights in order to effectively manage water resources to invigorate tribal economies.

Thursday, November 10 (Day 2)

Tribal Colleges and Universities (TCU) Programs and Internships

The second day of the Tribal Summit began with presentations from Virgil Dupuis (Salish Kootenai College) and John Phillips (FALCON) about Tribal Colleges and Universities (TCU) programs, and an overview of the internships and opportunities that are available to students who are interested in hydrology, water resources, range management and other disciplines.

Tribal Colleges and Universities are tribally chartered schools attended primarily by Native American students, and governed by a Native American Board of Regents. There are currently 37 TCU institutions in the US, operating in 16 states. Top areas of study include natural resources, business, health and wellness, and youth development. One opportunity available to students is the NWAL/TCU internship program, in which students are paired with NWAL research partners to do collaborative research. Salary support and stipends are available for faculty and students in the internship program.

WEB RESOURCES

- Tribal Colleges and Universities (from US Department of Education website):
<http://sites.ed.gov/whiaiane/tribes-tcus/tribal-colleges-and-universities/>
- First Americans Land-Grant Consortium (FALCON):
<https://portalcentral.aihec.org/falcon/Pages/default.aspx>

Breakout Session 3: Tribal Rangeland and Livestock Conservation Practices

The third breakout session, moderated by NWAL team members Trent Teegerstrom and Matt Livingston, focused on successes, challenges, barriers, and solutions for sustaining and expanding economically viable agricultural production and ranching on tribal lands. Presenters Jinwon Seo (Duck Valley Shoshone-Paiute Tribe), Calvert Curley (Bureau of Indian Affairs – Navajo Region), Robinson Honani (Hopi Tribe) and Sisto Hernandez (Mountain Apache Nation) discussed challenges faced on their reservations such as land tenure issues, rangeland habitat degradation, and funding cuts. To deal with these challenges, ranchers and land managers are exploring solutions such as habitat conservation measures, water pipelines, livestock associations, livestock inventories, impoundments for capturing feral and escaped animals, range management plans, a traditional fisheries recovery project, and more.

Breakout Session 4: Traditional Knowledge and Ecology

The fourth breakout session, led by NWAL team members Beverly Ramsey and Karletta Chief, explored best practices in Native American agriculture for climate resiliency that incorporates traditional knowledge. The Pueblo Farming Project team illustrated the use of traditional knowledge to identify ideal farming sites in southwestern Colorado to grow Hopi-held drought-resistant corn, and are using computer aided re-constructed agricultural indices to increase climate resiliency. The Black Mesa Water Coalition explained that climate resiliency in agricultural practices is a decolonized perspective to land management that emphasizes food sovereignty and supporting the engagement of elders and youth to pass traditional knowledge. The Zuni Project discussed decades old effective riparian agriculture centered around the matriarch of a grandmother and network of extended family and the forcing of ethnocentric European patriarchal values of single unit homes and that the revitalization of traditional agricultural practices for climate resiliency is embedded in culture and family. Finally, the Salt River Pima Maricopa Indian Community Garden gave a brief presentation on ancient Dry Farming Practices, utilized by the Hohokam in central and southern Arizona. The presentation highlighted how they are using their Ancestors techniques to address modern landscaping and agricultural needs, by adapting traditional knowledge to make it applicable for today.

WEB RESOURCES

- Pueblo Farming Project: <http://www.crowcanyon.org/index.php/pueblo-farming-project>
- Black Mesa Water Coalition: <http://www.blackmesawatercoalition.org/>
- Salt River Pima Maricopa Indian Community Garden: <http://www.srpmic-nsn.gov/government/culturalresources/garden.asp>

Dakota Access Pipeline: Saving Our Water for Future Generations

In Thursday's lunchtime talk, Chairman Harold Frazier of the Cheyenne River Sioux Tribe (Eagle Butte, South Dakota) spoke about ongoing opposition to the Dakota Access Pipeline at the Standing Rock Reservation in North Dakota, and the potential impacts to sacred grounds and water resources.

Synthesis Session: Key Takeaways

A final synthesis session led by *Native Waters* team member Derek Kauneckis of Ohio University asked participants to share insights regarding key takeaways from the Tribal Summit. Seven common needs and themes emerged.

- 1) To plan for climate resilience in the future, it is important to **protect resource rights**. It is difficult to plan for the future without knowing what will be yours. Types of resource rights discussed during this conference included: Treaty Rights; Water rights and quantification; Cultural resource rights associated with water, land and resources; Grazing rights and water use; Right to avoid harm/risk/pollution; New rights – Intellectual property to plant species and cultural resources.
- 2) To better consolidate and share resources, **cross-tribe cooperation and coordination are needed**. For example, tribes can cooperate and coordinate when collecting data for climate scenarios, ecological data on long terms and short term changes, hydrological data on river basin systems/groundwater. They can also coordinate for grant-writing support, workshops on climate planning, and education program design.
- 3) There is a need for **innovation and new ways of doing things**. It is sometimes possible to integrate traditional knowledge with modern technology, to find old ways of doing new things. We should see traditional knowledge as part of that common knowledge heritage available, and protect and nurture its survival. Examples of innovation discussed during the Tribal Summit included ways to use water resources differently, scheduling fisheries water allocations, tourism, boating, and use of new irrigation technologies.
- 4) Traditional knowledge and modern scientific knowledge present different ways of knowing the world: how do you best combine and utilize traditional knowledge and scientific data in ways that are oriented toward the future and knowledgeable and respectful of the past?
- 5) There is a need to **localize** better application of science for tribal needs. We heard exceptional stories of successful partnerships built on REAL partnerships and collaborations.
- 6) We need to find ways to **respect** each other, and communicate across professions, sciences, generations, and different communities.
- 7) **Involving the youth** is an important challenge. We must develop new ways to improve **education** toward respecting different ways of knowing the natural world, while being educated in new ways in formal scientific disciplines. We must look for new ways to educate that are more respectful of our shared human heritages.

Closing blessing

The Summit closed with a blessing from Robinson Honani of the Hopi Tribe.