



CALS – Cooperative Extension

“Tribal Water in Arizona”

08-11-2016

By Karletta Chief, Extension Specialist

Department of Soil, Water, & Environmental Sciences



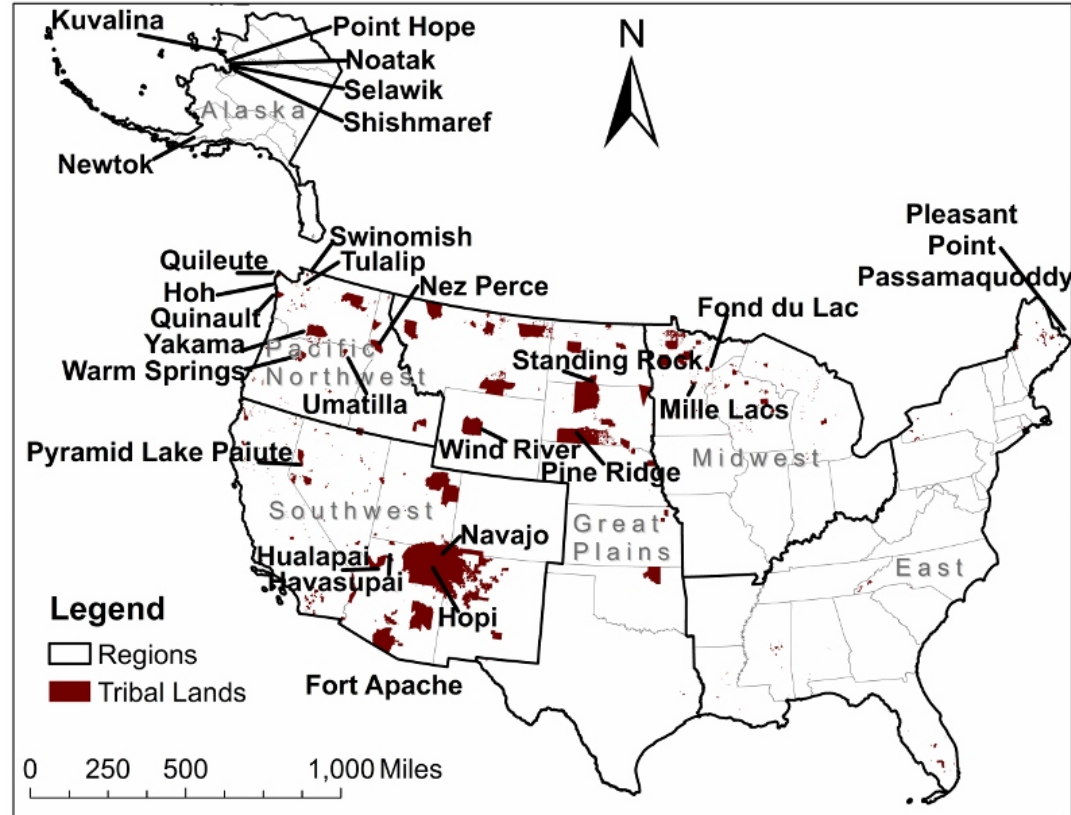
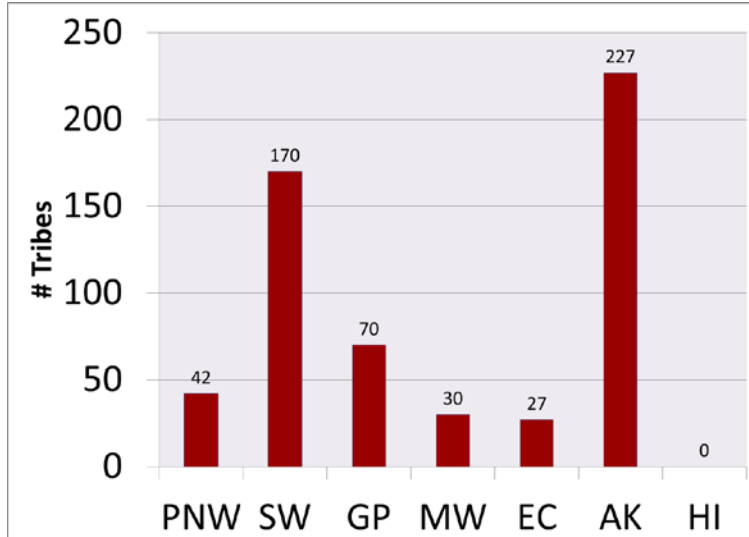
My Extension Programs

- Water management and policy
- Mining and environmental impacts
- Tribal watershed hydrology



567 Federally Recognized Tribes

- Sovereign Nations
- Reservations, communities, pueblos, rancherias, colonies etc. and allotments, acquired lands



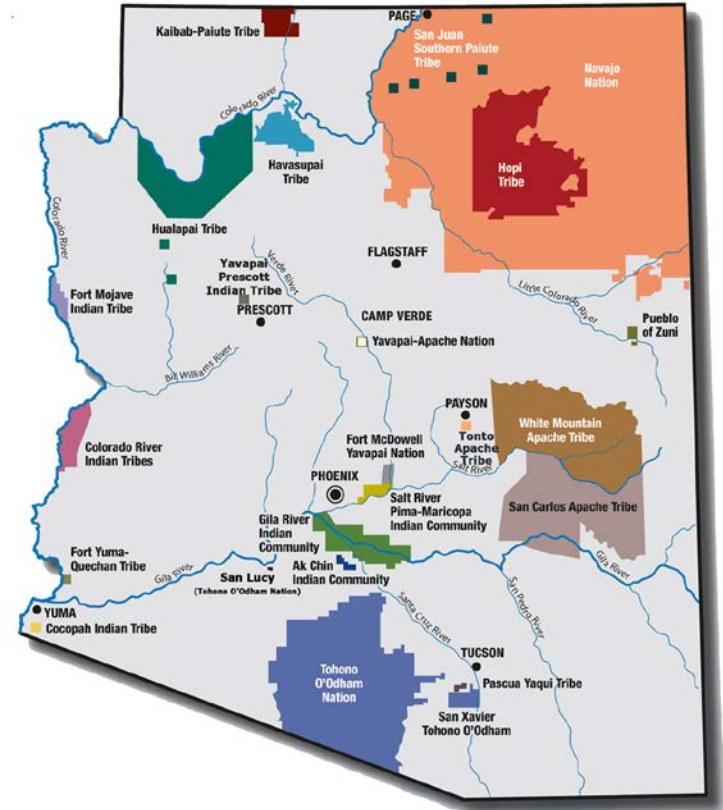
Native Americans & Alaskan Natives

- 5.4 million in the U.S.
- ~2% of the total U.S. Pop
- Rapid Growth: Increasing by 39 percent since 2000
- By percentage: 19% of Alaskan residents
- State: California and Oklahoma
- Counties: LA County in CA, Maricopa County in AZ, and McKinley county in AZ
- Cities: New York, LA, and Phoenix



Arizona Tribes

- 1 Ak Chin Indian Community
- 2 Cocopah Tribe
- 3 Fort McDowell Yavapai Nation
- 4 Gila River Indian Community
- 5 Havasupai Tribe
- 6 Hopi Tribe
- 7 Hualapai Indian Tribe
- 8 Kaibab Band of Paiute Indians
- 9 Pascua Yaqui Tribe
- 10 Salt River Pima-Maricopa Indian Community
- 11 San Carlos Apache Tribe
- 12 San Juan Southern Paiute Tribe
- 13 Tohono O'odham Nation
- 14 Tonto Apache Tribe
- 15 White Mountain Apache Tribe
- 16 Yavapai-Apache Nation
- 17 Yavapai-Prescott Indian Tribe
- 18 Colorado River Indian Tribes of AZ & CA
- 19 Fort Mojave Indian Tribe of AZ, CA, & NV
- 20 Navajo Nation of AZ, NM, & UT
- 21 Quechan Tribe of CA & AZ
- 22 Zuni Tribe of AZ & NM



Source: <http://www.azlibrary.gov/arizona-almanac>

Tribal Sovereign Rights

Treaty Rights

- ~60 of 567 tribes retained rights to some off-reservation lands and resources.
- Others attempting to re-gain rights.
- Example: grazing rights on USFS, gathering rights (plants, fish), gravesites protection, ceremonial sites protection and use.

Reserved Water Rights

- State prior appropriation doctrines
 - Usually applies to federal lands.
- 1908 Winters vs. US– “Winters Doctrine”
 - ...sufficient water was implicitly reserved to fulfill the purposes for which the reservation was established...
 - Quantity determined by i.e., PIA duty test.

Socio-economic Factors

- 69% of Native communities <2,000 people
- 78% live in rural areas
- Median household income is \$33,379 (36% below national average)
- 29.3% below poverty level
- 49% unemployment rate
- 9% of homes lack safe water



Environmental Connection

- Have a culture, tradition, and self-identity based on the land and sacred places
- Water/environment is sacred
- Cultural and religious practices based on the environment
- Livelihoods and cultural resources based on environment



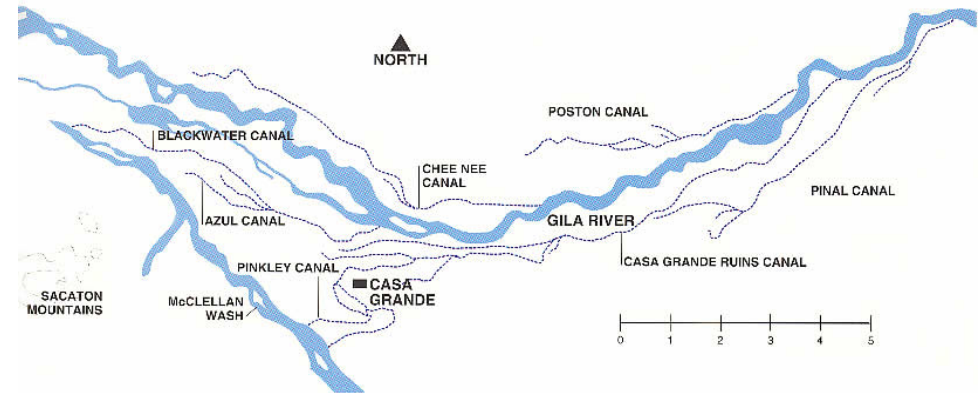
Diverse Tribes!

- Tribes are diverse with different languages and cultures
- Best not to generalize or make assumptions
- Engage each tribe as a new partner
- Sharing only a few examples here...



Hohokam

- Ancient ancestors of Akimel O'odham and Tohono O'odham
- Only culture in North America to rely on irrigation canals to water their crops
- Irrigation system supported largest population in the Southwest by AD 1300
- Sophisticated irrigation system in the Lower Salt and Middle Gila Rivers that rivaled those of Near East, Egypt, and China
- Cultivated cotton, tobacco, maize, beans, squash



Gila River Tribe


- 2004-received rights to 600,000 AFY of water
- CAP delivers 311,800 AFY (~100 Tempe Town Lakes)
- Enough to serve 3 million people
- Largest Indian Water Settlement
- Almost all water for ag instead of leasing to cities
- Restore ag culture and Gila River with riparian areas
- By 2029: Plans to build or refurbish 1,700 miles of canals to irrigate 100,000 acres




Construction work continues on the concrete lining of the Southside canal.




Faustine De Los Angeles irrigates an alfalfa field at Gila River Farms.


A banner featuring a landscape of a river, reeds, and mountains under a blue sky. The text "COLORADO RIVER INDIAN TRIBES" is overlaid in white on a dark blue background. To the right of the text are four circular icons: a geometric star pattern, a canoe on water, a sun over water, and a geometric star pattern.

COLORADO RIVER INDIAN TRIBES

- CRIT reservation created in 1865 for “Indians of the Colorado River and its tributaries”
 - Originally for Mohave and Chemehuevi but Hopi and Navajo were relocated there
 - Stretches along Colorado River on AZ and CA side
 - 90 miles of shoreline
 - 300,000 acres of land with the river as the focal point and lifeblood
- 
- A solid red triangle pointing upwards, located at the bottom center of the slide.

A banner for the Colorado River Indian Tribes. The top part shows a landscape with a river, reeds, and mountains under a blue sky. Below the landscape, the text "COLORADO RIVER INDIAN TRIBES" is written in white capital letters on a dark blue background. To the right of the text are four circular symbols: a star with red and blue points, a canoe with a paddle, a sun with rays, and a star with white points.

COLORADO RIVER INDIAN TRIBES

- Agriculture is primary economic activity
 - Riparian mesquite trees used for food to cooking
 - CRIT strong farming and ag industry
 - Growing cotton, alfalfa, grains, melons, seed crops, guayule, and sorghum
 - 84,500 acres cultivated + 50,000 acres available
 - Senior water rights to 717,000 AF of Colorado R.
 - Almost 1/3 of total allotment for AZ
 - Water diverted for farms throughout Parker Valley
- 
- A solid red triangle pointing upwards, located at the bottom center of the slide.

Hopi

- Farming to Hopi is a way of life since time immemorial
- Significant part of Hopi culture
- Hopi Survival through subsistence type agriculture
- Integral to community development
- Teaches morals/values



Barriers to Hopi Farming

- No Land Title
- No Business Plan because crops are mainly used for subsistence
- No Capital/Low Income
- No Collateral
- FSA and NRCS Contracts and Loan Applications to cumbersome or hard to understand.



Traditional Agriculture

- Spiral mounds
- Native seeds
- Digging Stick
- K-8 Ag Curriculum



Salt River Pima-Maricopa
Indian Community, Arizona



Inter-tribal Agriculture Council

- Works on behalf of individual Indian producers and tribal enterprises
- IAC is most respected voice within Indian communities and government circles on agriculture policies and programs
- Provide a unified effort to promote positive change in Indian Ag for the benefit of Native Americans farmers and ranchers
 - Assist tribes in learning about USDA programs
 - Assist USDA in effective communication with tribes
- Prior to 1987, American Indian agriculture was basically unheard of outside reservation boundaries.



Organizations

- UA Centers
- Karen Francis-Begay, Assistant to Vice President on Tribal Relations
- CAL Indian Ag Extension
- Indigenous Peoples Law & Policy
- Native Nations Institute
- Haury Native Nations Climate Adaptation Program
- American Indian Studies Program
- Native American Technical Office
- Intertribal Council of Arizona
- Southwest Indian Ag Assoc
- American Indian Higher Education Consortium
- American Indian Science & Engineering Society
- NOAA Rising Voices 3
- Society for the Advancement of Chicanos & Latinos
- ***And many more!***

Water Challenges

1. Process of defining tribal water rights
2. Lack of access to water
3. Effects of excessive use of water impacting water quantities on the reservation.
4. Water contamination from mining, industrial, and agricultural activities
5. Climate change and drought will amplify existing water challenges

Chief et al, In Press “Engaging Southwestern Tribes in Sustainable Water Resources Topics and Management”, Water.

Tribal Sovereignty & Research Practices

1. Tribes dictate researchers adhere to standards set by tribal governments.
2. Researchers must gain permission to conduct research on tribal lands or with tribal members.
 - Tribal IRB, tribal elected officials, etc.
 - Tribal elders, cultural bearers, grassroots, communities, etc.
3. Tribal rules on data ownership, use, and sharing (e.g. publication)
4. Acknowledge Traditional Knowledge and Decolonized Research Practices

Four Simple Rules

1. Ask about ethics of conducting research in each particular community
2. Do more listening than talking
3. Find and follow any and all tribal research rules or protocols
4. Give something back to the community in exchange for their cooperation with your research

Lomawaima, K.T. Tribal sovereigns: Reframing research in American Indian education. *Harv. Educ. Rev.* **2000**, 70, 1–23.

Tribal Participatory Research

Boundary Work

Adaptive Water Governance

Community Based Adaptation (CBA)

Indigenous Ecological Knowledge Engagement Structures

Fisher and Ball (2003)

Robinson and Wallington (2012)

Bark et al. (2012)

Ford et al. (2015)

Hill et al. (2012)

Application of participatory action research to a new context for tribal communities

Using scientific and indigenous knowledge to co-manage resources

A hybrid planning model that combines scientific, institutional, and social processes

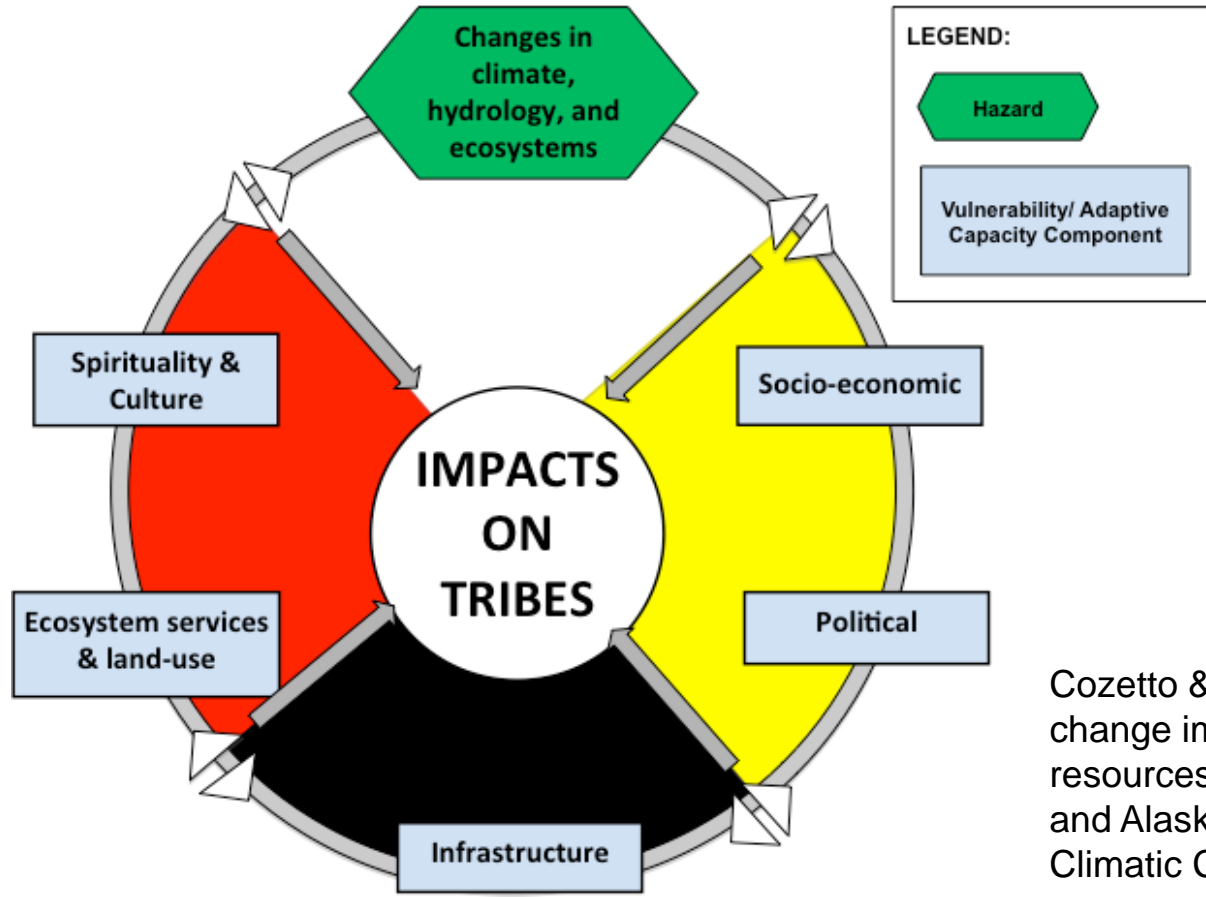
Community-led process based on communities' priorities, needs, knowledge, and capacities, which should empower people to plan for and cope with challenges

Indigenous Governed collaborations (IG), Indigenous-driven Co-Governance (ICoG), Agency-driven Co-Governance (ACoG), and Agency Governance (AG)

Four Simple Rules+

1. Ask about ethics of conducting research in each particular community
 - Cultural Sensitivity
2. Do more listening than talking
 - Community Driven Goals
3. Find and follow any and all tribal research rules or protocols
 - Tribal Oversight
 - Ongoing Communication
4. Give something back to the community in exchange for their cooperation with your research
 - Tribes own data
 - Reporting back

Hazard & Vulnerability



Cozetto & Chief, 2013 Climate change impacts on the water resources of American Indians and Alaska Natives in the U.S. Climatic Change.

Infrastructure



Ecosystem Services



Traditional Knowledge

- No universal definition exists
- Dynamic knowledge systems & lifeways referring to indigenous ways of knowing resulting from close relationship to the environment and developed over thousands of years.
- Commonly used terms:
 - Traditional Ecological Knowledge
 - Indigenous Knowledge
 - Indigenous Environmental Knowledge



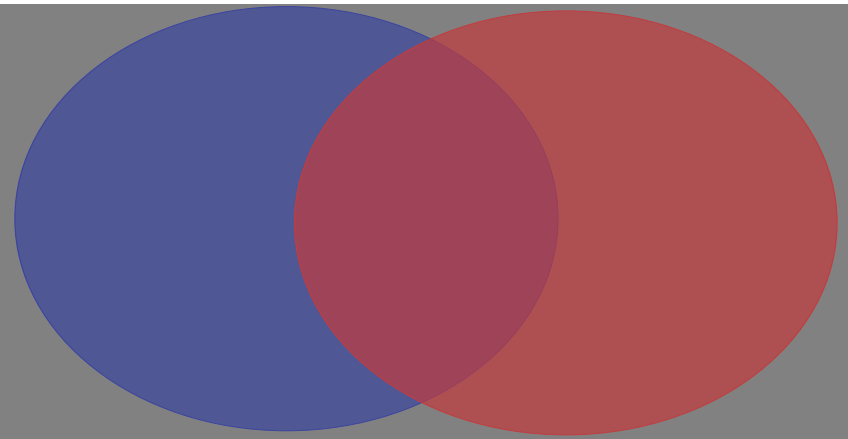
Guidelines for Considering Traditional Knowledges in Climate Change Initiatives

Version 1.0 – September 2014
Climate and Traditional Knowledges Workgroup (CTKW)

<http://climatetkw.wordpress.com>

Problem-Focused
Approach (TEK)

Holistic
Decision Making
(Ecology of TKs)

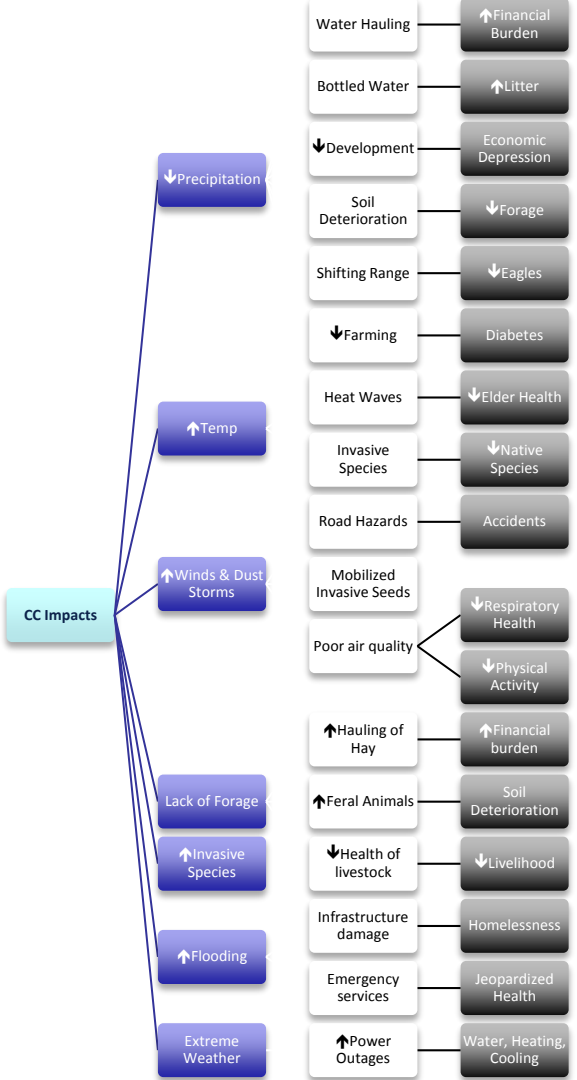


Observations from 73 Dine' elders

- Springs and Lakes drying up
- Rivers flowing less often
- Disappearance of Beavers, Cranes, Herons, Egrets, Eagles, Lizards
- Very few bees & locusts
- Until 1944, the ground stayed moist until July Monsoon season
- Until late 1970s there was enough water and people planted crops
- Disappearance of cottonwood trees, willows, ceremonial and medicinal plants



Navajo Nation DNR Climate Change Workshop Aug 2014



INDIGENOUS PERSPECTIVES ON SUSTAINABLE WATER PRACTICES



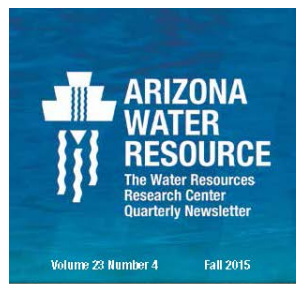
Water Resources Research Center
Annual Conference
Hosted in Partnership with
the Gila River Indian Community

June 9-10, 2015
Wild Horse Pass Hotel & Casino
5040 West Wild Horse Pass Road



Megdal, S.M.; Chief, K.; McLain, J.E.
Collaborative conference planning and continuing the dialogue. Public policy review column, *Arizona Water Resource*, 2015, 23, 1-15. Available online:

<https://wrrc.arizona.edu/feature/fall-awr-features-highlights-wrrc-2015-annual-conference->



Special Issue

Indigenous Perspectives on Sustainable Water Practices



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Publications

The Water Resources Research Center produces research reports, outreach materials, and regular publications, including the *Weekly Wave* e-news digest, the quarterly *Arizona Water Resource* newsletter and the *Arroyo*, an annual publication focusing on a single water topic of timely concern in Arizona. Sign up online to receive WRRRC newsletters, event updates and more at: wrrc.arizona.edu/subscribe.



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Tribal Advisory Committee member, Percy Deal, speaks during a question and answer period at the 2015 WRRRC Annual Conference. Source: John Polle

Conference Themes Emerge from a Program of Diverse Perspectives

by Marie-Blanche Roudaut, WRRC Graduate Outreach Assistant and Susanna Eden, WRRC

The Water Resources Research Center 2015 conference, *Indigenous Perspectives on Sustainable Water Practices*, brought together a unique diversity of perspectives to share experience and knowledge about indigenous water management and stewardship. More than 330 people attended the conference, representing six states, 49 cities, and 13 tribal nations. Thirty-three speakers with ties to Native American communities across the state presented a variety of viewpoints.

As participants spoke with passion from their different perspectives, several themes emerged. These themes included the importance of equal and respectful collaboration on water rights from the community and grassroots to the tribal government level, the meaning of sustainability for indigenous people, the lack of water for many tribal people, the importance of youth, and passing on traditional knowledge. The example of the struggles and successes of the Gila River Indian Community, or GRIC, was prominent. As hosts of the conference, the GRIC used the opportunity to celebrate the ten-year anniversary of the *Arizona Water*.

Continues on page 2

Conference Plants Seeds of Respectful Dialogue

by Governor Stephen Lewis, Gila River Indian Community

The Gila River Indian Community was honored to welcome participants of the conference, *Indigenous Perspectives on Sustainable Water Practices*, to our Community. This conference comes at a critical time for Arizona's Native people. Much has been accomplished, but much more needs to be done. Change has come because of the dedication of our leaders, past and present, and we owe them a debt of thanks. I learned from my mother and my father, Rod Lewis, the life lesson of community service, strength, to give back what you have to your people. We have a legacy to live up to from people like Richard Narva, governor at the time of the settlement, and John Echohawk, who fought along with my father and took cases to the Supreme Court. We also owe much to our elders, who are the moral and ethical fiber of our community.

A central theme for tribes was unfortunately loss in many areas: loss of land, culture, language, and human capacity. For the GRIC, it was the loss of our

Stories continued on page 16

Considering water for the environment

“The tribal view point is very different: only take what you need at that moment – water is a part of you, a life form. When talking about water for the environment, you have to put the blood in it.”



Mott Lacroix, et al. Roadmap for considering water for Arizona's natural areas. Water Resources Research Center

Dine' response to Gold King Mine Spill

1. What does the San Juan River mean to you?

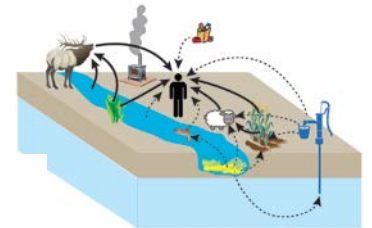
"The San Juan represents a male river in Diné culture. To me the river is a life giving force to the Diné people and ecosystems. It is the connector among SW tribes."

2. How has your daily life been affected by the Gold King Mine Spill?

"It affects my daily life because I think about it daily—I'm sad, angry, frustrated, and conflicted. Even though I don't live here or have livestock, farms, or a well—it is still sacred land + animals, still Navajo land, and still a worry we have thinking about our relations."

5. What are your goals and ambitions for the future of the San Juan river and communities?

"The future: we want to protect our river for our kids and so on. That hurts us when we first hear that the river was contaminated."





*“We need our own
data to
communicate to
the world our own
perspective on
our own crises
and trauma.”*

- Gold King Mine Teach-In

Conclusions

- Working with tribes requires significant trust-building & research protocols must be followed.
- Developing tribal research in water can be contentious.
- Developing partnerships with tribal programs is important but community level is critical.
- Although, goals may be developed to meet central tribal programs, it is important to change your program goals to meet the needs of the community.
- Having graduate students who are Native American really helps in supporting building that relationships.

A scenic view of a waterfall cascading over a rocky ledge into a pool of water, surrounded by lush green vegetation and a dirt path leading up to the falls. The background shows a rugged, layered rock formation.

Ahe'hee!

Thank you!