Water Research: Adapting with Tribal Water Needs

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Tribal Consultation

Goals of Tribal Consultation

- Develop government-to-government relationships
- Understands the authority sovereign tribes hold
- Committed to comply in accordance to tribal laws, codes, and regulations
- A relationship of good faith consultation between university and tribal leadership
- The set-up of ongoing relationship development through communication

Development Plans  Seek Consent  Consultation
Indige-FEWSS

- Indigenous Food, Energy & Water Security and Sovereignty
- To develop a diverse workforce with intercultural awareness and Food-Energy-Water Security (FEWS) expertise to address FEWS challenges in Indigenous communities.
- Bringing FEWS training to Native American undergraduates and technicians on the Navajo Nation.
Indige-FEWSS COVID-19 Response

- Navajo COVID-19 Water Needs Mapping
  - Led by Dr. Karletta Chief
- Off-grid Water Purification Units
  - Led by Dr. Vicky Karanikola
- Investigating linkages between arsenic exposure, diabetes, and COVID-19 infections and risks on the Navajo Nation
  - Led by Dr. Stephanie Carroll

“Our community-based work with Diné College over the past 3 years on FEWS challenges prepared us to respond quickly to COVID-19 challenges facing the Navajo Nation.”

- Dr. Karletta Chief
This work is dedicated to the Navajo people overcoming the impacts of COVID-19 and honors their resiliency.
Drought Severity Evaluation Tool

Project Team:
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DSET Website Link
https://app.climateengine.org/dset
Relationship Building

- A collaboration of thought
- Understanding the needs of the community
- Listening to learn
DSET Overview

- NASA Western Water Applications Office (WWAO)
- Co-developed with the Navajo Nation Division of Water Resources (N.N. DWR), and the Desert Research Institute (DRI)
Navajo Rain Gauge Data

Satellite Data

Modeled Data and Drought Indices

Drought Severity Evaluation Tool
DSET Capabilities

Easy to use interface

On-the-fly maps and times series
Navajo Nation Drought Severity Evaluation Tool

Introductory Video
Looking to the Future

Continuing Navajo Nation collaboration
- Capacity building
- Continued DSET training
- Looking to build more partnerships on the Navajo Nation
- Student internships
- OpenET case-study
- Use OpenET for consumptive water use estimates
- Use remote sensing to support end-user needs

OpenET Project Now Underway
THANK YOU