

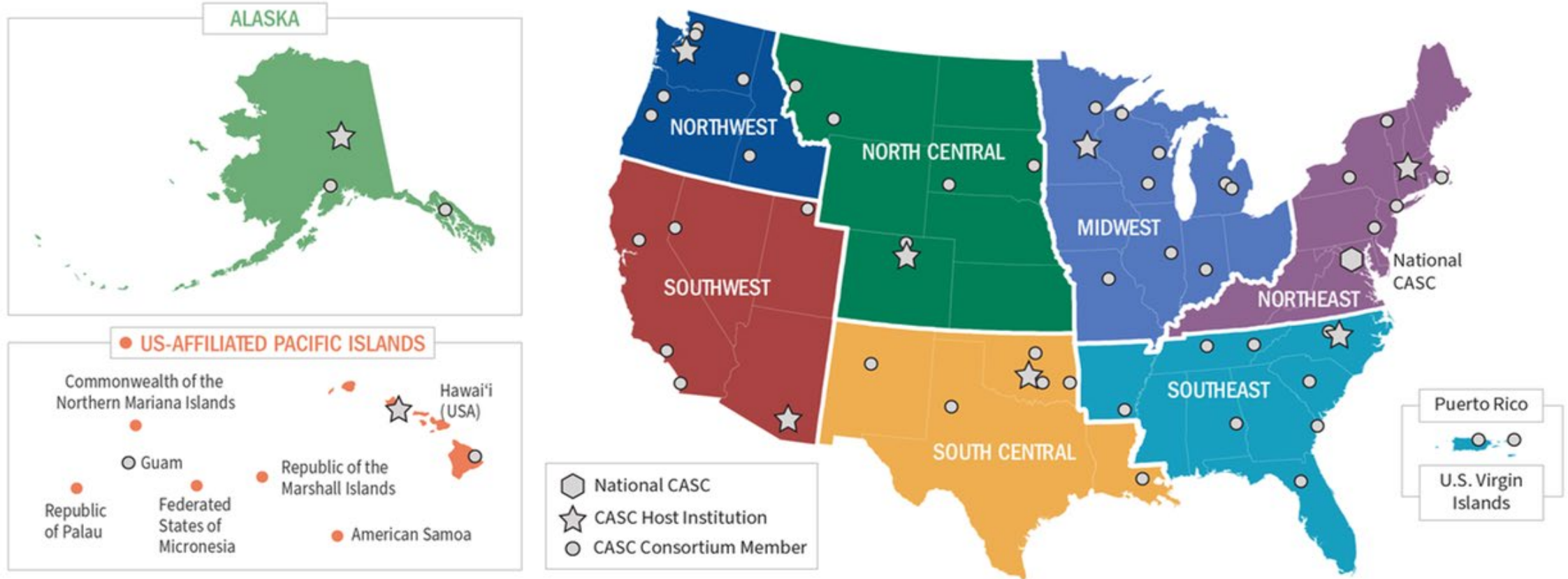
A scenic landscape featuring a coastline with waves, a road, and mountains in the background. The foreground is dominated by dense, green and yellowish-brown coastal vegetation. A paved road curves along the right side of the frame. In the distance, a range of mountains stretches across the horizon under a clear sky.

# Real-world applications of Climate Adaptation & Resilience



# Climate Adaptation Science Center (CASC) Regions

The CASCs collaborate across boundaries to address shared ecosystems, watersheds, and landscapes



# Southwest & South Central Tribal Climate Resilience Liaisons

*Cynthia Naha & Anissa McKenna  
Jake Palazzi & Chelsey Begay*

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## Bureau of Indian Affairs – Tribal Climate Resilience Program

- Technical and financial assistance
- Access to scientific resources

## Multiregional network of Tribal Climate Resilience Liaisons

- Assisting Tribes, Tribal organizations and Tribal colleges and universities (TCUs) in addressing science-based needs with resources available at the DOI's Climate Adaptation Science Centers (CASCs)
- Facilitating research, linking Tribal needs to available resources and coordination trainings, workshop, forums and exchanges



# Cynthia Naha, Senior Tribal Climate Resilience Liaison

Hello, my name is Cynthia Naha, I am enrolled member of the Hopi Tribe and is Tewa and Ihanktowan Dakota Oyate and currently reside in my traditional homes of my Tewa people, here in Santa Fe, NM.

Over the past 20 years, I have worked in the Environmental Protection and Natural Resources field for several different Tribes and Pueblos located in Arizona, California, and New Mexico. Currently, I am the Director the Environment Department for Picuris Pueblo and the former Director of the Natural Resources Department for Santo Domingo Pueblo, both are federally recognized tribes in NM.

My position is with the American Indian Higher Education Consortium (AIHEC)/Southwest Climate Adaptation Science Center (SW CASC) as a Senior Tribal Climate Resilience Liaison.



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Climate Adaptation  
Science Center

# Anissa McKenna, Assistant Tribal Climate Resilience Liaison

Hello, my name is Anissa McKenna. I am an enrolled member of the Pascua Yaqui Tribe and I reside in Tucson, AZ, the ancestral homelands of the Tohono O'odham people.

A deep love for the land led me to complete a B.S. and M.S. in Environmental Science at the University of Arizona. My Master's research focused on understanding the human health implications of arsenic contamination resulting from uncapped mine tailings.

Currently, I serve as the Assistant Southwest Tribal Resilience Liaison for the American Indian Higher Education Consortium and the Southwest Climate Adaptation Science Center. In this role I work to connect Tribes, Tribal organizations, and Tribal colleges & universities with resources related to climate change and climate resilience.



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# Climate Adaptation & Resilience Recap

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**Adaptation:** The process of adjusting to an actual or expected environmental change and its effects in a way that seeks to moderate harm or exploit beneficial opportunities.

**Resilience:** The ability to prepare for threats and hazards, adapt to changing conditions, and withstand and recover rapidly from adverse conditions and disruptions.

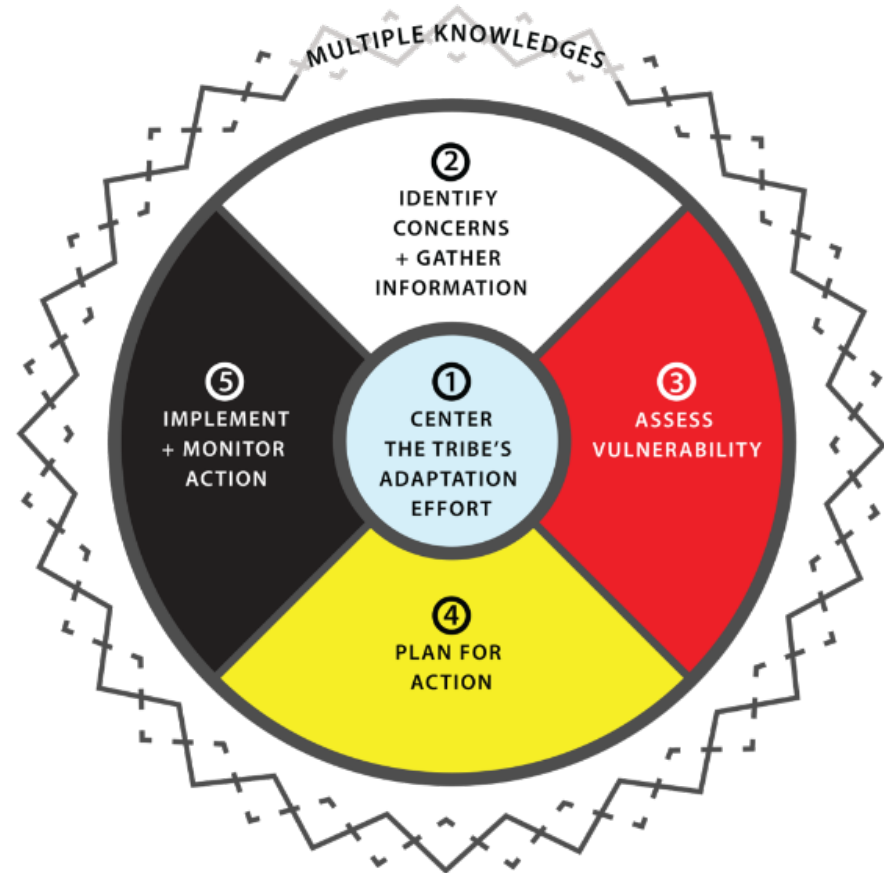
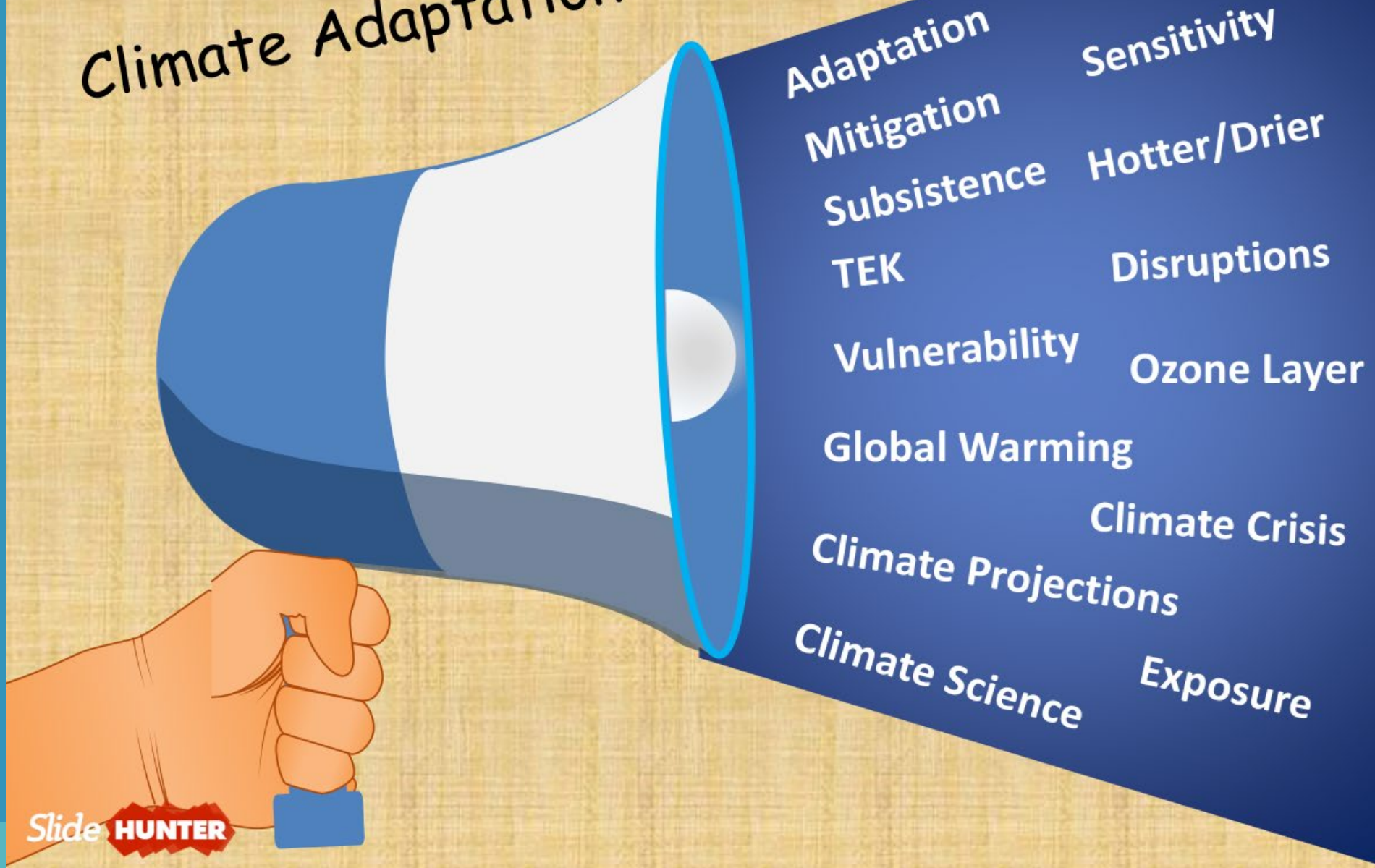


Photo credit: Tribal Climate Adaptation Guidebook

# Climate Adaptation



Adaptation

Sensitivity

Mitigation

Hotter/Drier

Subsistence

Disruptions

TEK

Vulnerability

Ozone Layer

Global Warming

Climate Crisis

Climate Projections

Climate Science

Exposure

# Rangeland & Agricultural Management - Drought & Increased Temperatures

## USDA- NRCS Conservation Stewardship Program (CSP)

### Improvement of grazing conditions

- Rest & Rotation Demonstration Project – Santo Domingo Pueblo

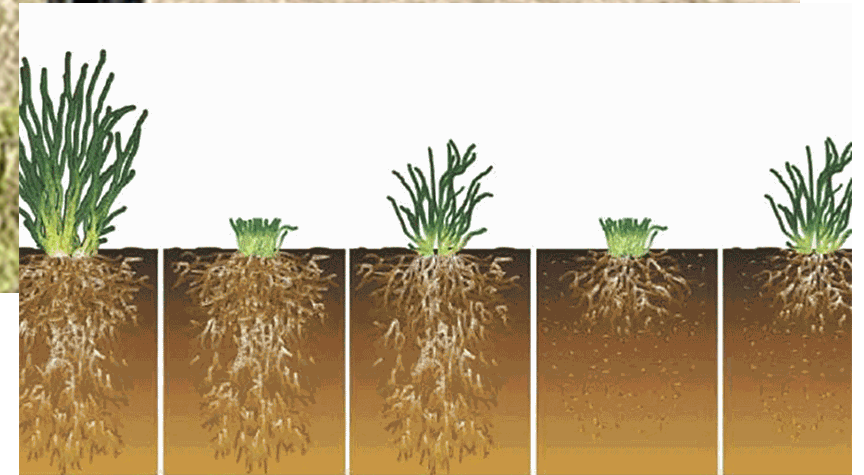
### Increase crop resiliency

- Establishing cover crops

### Development of wildlife habitat

- Improvement of soils and vegetation
- Rainwater Catchments

<https://www.nrcs.usda.gov/programs-initiatives/csp-conservation-stewardship-program>





# Resilience Terminology



Strength

Community

Flexibility

Lasting

Moving Forward

Adaptability

Protection

Perseverance

Safeguarding

Sustainable

Prayer & Ceremony

Change

Endurance

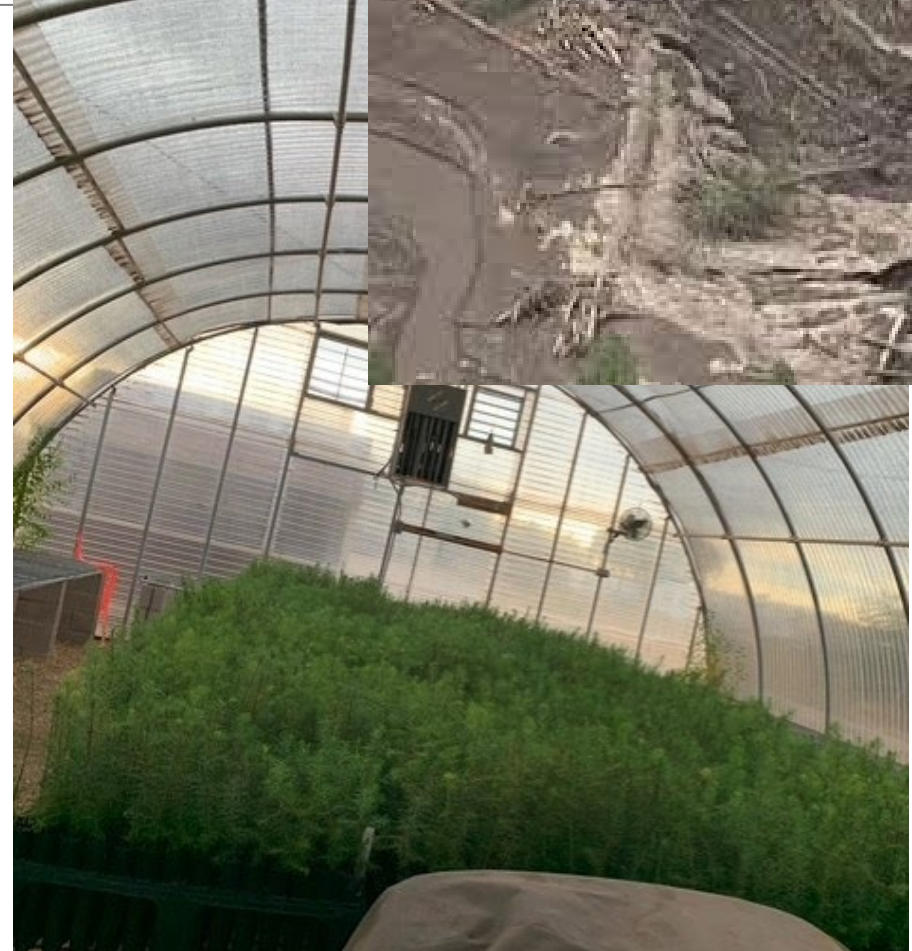
# Catastrophic Wildfire & Re-building Forestry Resilience

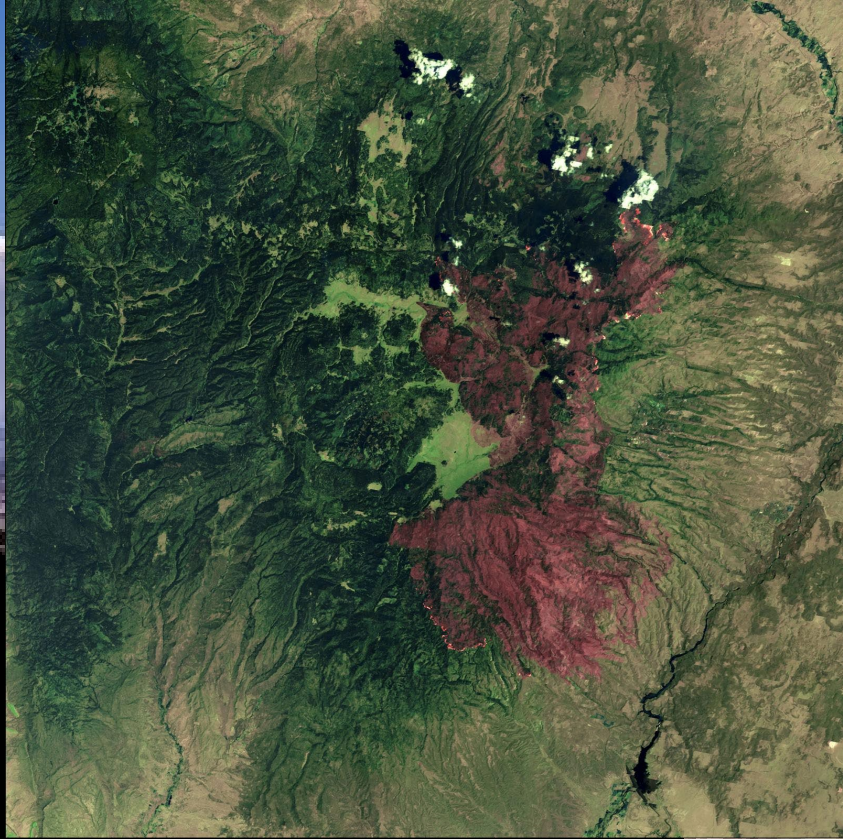
## Trees, Water, and People & Tribes

- 2018-2021 - Santo Domingo Pueblo Reforestation Projects

## Bureau of Indian Affairs

- Forestry Development
- Hazardous Fuels Reduction
- Reserved Treaty Rights Lands







# Cultural Burning

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Cultural burning is the practice of intentionally setting controlled fires to manage the land. It's been used by California's Indigenous peoples for thousands of years.

The practice is being restored in California to help with climate change.

<https://www.swcasc.arizona.edu/traditional-burning>

[https://www.youtube.com/watch?time\\_continue=12&v=i6kKwsc.arizona.edu%2F&source\\_ve\\_path=MTM5MTE3LDI4NjY2](https://www.youtube.com/watch?time_continue=12&v=i6kKwsc.arizona.edu%2F&source_ve_path=MTM5MTE3LDI4NjY2)



This information brief summarizes and synthesizes the current state of knowledge regarding cultural burning, from research funded by the Southwest Climate Adaptation Science Center (SW CASC). SW CASC works to coordinate and collaborate with users and providers of climate information to ensure that the research pursued by CASC-affiliated scientists results in tools, techniques, and actionable information to inform robust decision-making by resource managers, policy makers, and other stakeholders. Additional cultural burning resources can be found here: <https://www.swcasc.arizona.edu/tribal-related-projects>.

Cultural burning is the intentional use of fire by Indigenous people to benefit local ecosystems and lifeways. Through years of application, Indigenous peoples accumulated knowledge and understanding of the benefits of fire, such as removing dead plant material, rejuvenating plant growth and abundance, increasing wildlife richness and abundance, decreasing forest density, and reducing risk for high severity wildfires. Other Indigenous use and benefit include clearing land for farming, hunting strategies, and reducing the risk of catastrophic fires for cultural and traditional purposes.

Cultural burning has influenced the landscapes of the Southwest from time immemorial, especially near Indigenous seasonal homes and along travel corridors. Indigenous peoples have developed a deep understanding of the natural world and the many species that compose an ecosystem. Indigenous people learned to live with fire. This knowledge comes from generations of trial and error. Through repeated application, Indigenous peoples attained the knowledge to strengthen their relationship with the land and with fire.



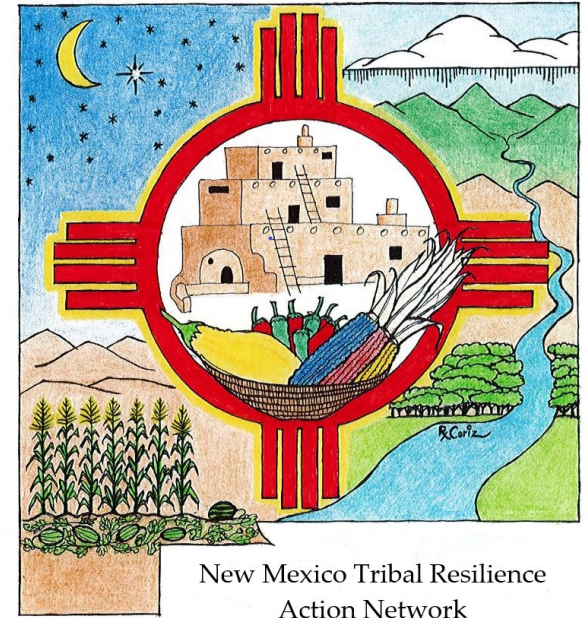
# Building Climate Adaptation & Resilience for Your Tribe

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# New Mexico Tribal Resilience Action Network ( NM TRAN)

[https://drive.google.com/file/d/1MSDPBgnVivR6gUtWQH\\_N2qczOco\\_xur8/view?usp=sharing](https://drive.google.com/file/d/1MSDPBgnVivR6gUtWQH_N2qczOco_xur8/view?usp=sharing)

- Digital story on NM TRAN - who we are and our focus (3 minutes)
- Current Objectives:
  - Phase I of the Southwest Tribal Climate Adaptation Menu (SWTCAM) - resources guide for Tribes, Pueblos and Native Nations and Indigenous Communities - building partnerships
  - Phase II - awarded a Bureau of Indian Affairs Tribal Climate Resilience FY2023 grant
  - Working towards a 501 C3 Non-profit by 2026
- Interested in being a part of NM TRAN





## **Stewardship in Action Field Workshop**

*Rising from Ashes: A Tribe's Nature-based Approach to Watershed Restoration*

A Virtual Professional Development Training Opportunity

natural  
areas  
ASSOCIATION

By collaborating with federal agencies and other partners to incorporate Indigenous Knowledge into the recovery planning process, the Santa Clara Pueblo is working to achieve long-term, sustainable resiliency of the watershed.

<https://www.youtube.com/watch?v=tM5vORtWWgl&t=2s>



Please join us for the rest of the webinar series



# Tribal Climate Resilience Webinar Series

FEBRUARY – AUGUST, 2025

1 hour virtual meetings  
1st Tuesday of each month at 11am PT

**Register now!**



Photo Credit: SW CASC

## Webinar Series for Tribal Environmental & Natural Resources Professionals

[Click here to register for one or all sessions: https://bit.ly/TribalWebinars](https://bit.ly/TribalWebinars)

Feb.  
4th

### Introduction to the SW CASC and Climate Change

- What is the SW CASC?
- Overview of next 6 webinars

March  
4th

### What is Climate Adaptation and Resilience?

- Basics of climate adaptation & resilience
- Real-world applications of these concepts

April  
1st

### How To - Scoping Climate Adaptation Efforts

- Where to start?
- What to consider?

May  
6th

### How To - Creating Vulnerability Assessments

- Identifying what is vulnerable to climate impacts
- Incorporating Indigenous & Western Science

June  
3rd

### How To - Creating Climate Adaptation Plans

- Creating dynamic, actionable plans
- Incorporating disaster/hazard mitigation planning

July  
1st

### Climate Resilience Funding

- Overview of federal funding available
- Best practices in applying funding

August  
5th

### Tribal Climate Resilience Success Stories

- What is working for Tribes?
- Resources for success

Questions? Email Cynthia Naha - [cnaha@aihec.org](mailto:cnaha@aihec.org) or Anissa McKenna - [amckenna@aihec.org](mailto:amckenna@aihec.org)

Learn more about the SW CASC at [swcasc.arizona.edu](http://swcasc.arizona.edu)  
& the SC CASC at [southcentralclimate.org](http://southcentralclimate.org)

# Thank you!

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Please feel free to get in touch with us with any questions:

**Cynthia Naha**

*Senior Southwest Tribal Climate Resilience Liaison*

[cnaha@aihec.org](mailto:cnaha@aihec.org)

**Anissa McKenna**

*Assistant Southwest Tribal Climate Resilience Liaison*

[amckenna@aihec.org](mailto:amckenna@aihec.org)



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Visit the [SW CASC website](#)  
for more Tribal climate  
resilience resources,  
events, research, and  
information!

