

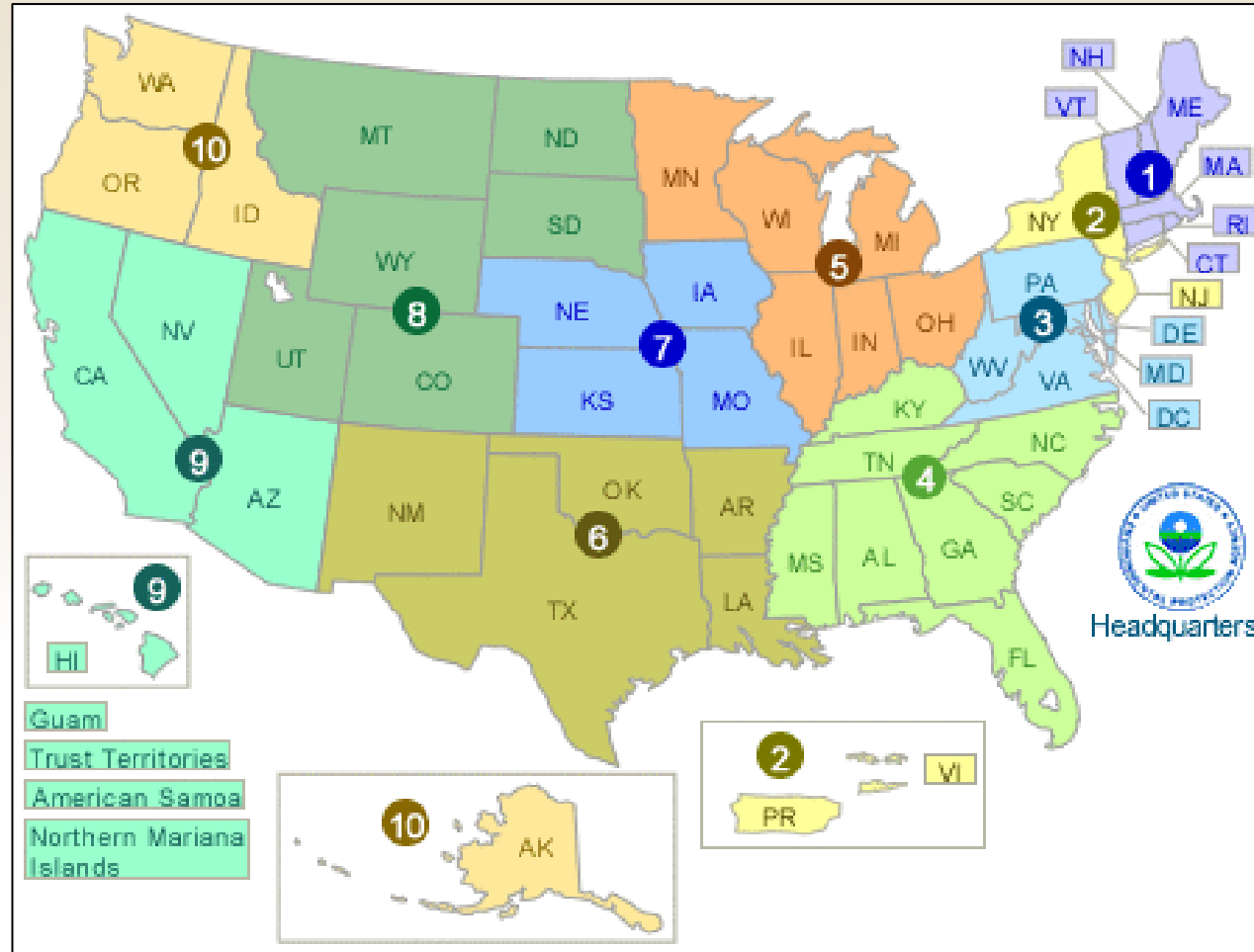
Integrating Climate Resilience and Hazard Mitigation in Tribal NPS Work

Webinar #4

May 4, 2023

2 – 4pm Eastern

Poll #1: What EPA Region are you in?

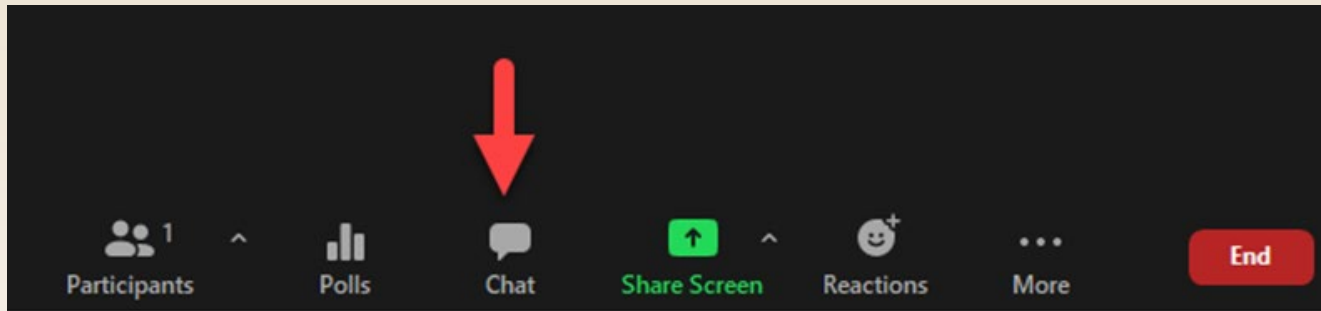


Poll #2:

How long have you been working in Tribal water quality programs?

- Less than one year
- 1-4 years
- 5-10 years
- Over 10 years
- Since Hector was a pup/ since the last ice age/ a very long time

Training Webinar Logistics



- **To ask a question:** Please type your question in the Chat box. We will take questions after presentations.
- **Technical difficulties:** If you are having technical difficulties, please send a message through the Chat to Gabby Vinyard, ERG (host) or email gabby.vinyard@erg.com
- **Evaluation:** Please complete the survey evaluation at the end of the training.

Upcoming Tribal NPS Training Webinars

5. Implementing On-the-Ground Tribal NPS Projects. Thurs, May 25
6. Addressing Agricultural NPS Pollution: Key Partners & Strategies. Thurs, June 22.

*All webinars will be 2-4pm Eastern

Zoom registration links also available at <https://www.epa.gov/nps/tribal-nps-resources-and-training>



Webinar Agenda

- **Greetings and Introductions**
- **FEMA Presentation on the Tribal Hazard Mitigation Planning Program**
- **Presentation on Climate Information and Resources**
- **Tribal Presentations**
- **Participant Discussion**
- **Summary and Next Training Session**

Climate Resilience and NPS Management

- Impacts of climate change and natural hazards/disaster events affect public health/safety and water resources
- Rising temperature, frequent/intense storm events, changes in precipitation and flow can exacerbate NPS issues
- Nature-based practices can achieve climate resilience and water quality co-benefits
- Opportunity to integrate natural hazard mitigation/emergency management and water quality planning efforts and expand partnerships

Poll #3: Does your Tribe have a Hazard Mitigation Plan (HMP)?

- Yes
- Yes, but it has lapsed
- No
- Don't know
- What's a Hazard Mitigation Plan?

Poll #4: Do you know who your FEMA Regional Tribal Liaison is?

- Yes
- No
- Didn't know there was one

Mitigation Planning and Implementation

Katie Baum, R8 BRIC Technical Assistance Lead

May 4, 2023



FEMA

Hazard Mitigation Planning:

Advancing Community Resilience and Understanding Risk

What is Hazard Mitigation



Mitigation: Elevating a home by the river



Mitigation: Acquiring a property



Mitigation: Adopting a Building code



Preparedness and Response: Purchasing a Police Command Vehicle

Sustained activities that reduce or eliminate risks in the long term.

Short-term and response solutions.



FEMA

Planning with and for the Whole Community



Hazard Mitigation Planning

- Saves lives and reduces risk from future disasters.
- Helps the whole community make risk-informed decisions.
- Helps states and communities adapt to climate change.
- Helps direct mitigation resources to the places that need them the most.
- Grows the capacity for faster disaster recovery.



FEMA



Tribal Multi-Hazard Mitigation Plan

2020 Update

Chippewa Cree Tribe of
the Rocky Boy's Indian
Reservation

North Central, Montana

December 2020



TETRA TECH



Approved Plans are a Prerequisite for Many Grants



Building Resilient
Infrastructure and
Communities (BRIC)



Flood Mitigation
Assistance (FMA)



Hazard Mitigation
Grant Program (HMGP)



Rehabilitation of High
Hazard Potential Dams
(HHPD)



Fire Mitigation Assistance
Grants (FMAG)



Safeguarding Tomorrow
Revolving Loan Fund
(New!)



FEMA

Tribal Hazard Mitigation Planning



WETLAND RESTORATION AND PROTECTION

Restoring and protecting wetlands can improve water quality and reduce flooding. Healthy wetlands filter, absorb, and slow runoff.

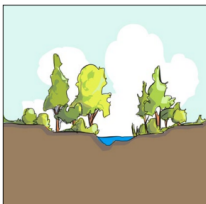
Wetlands also sustain healthy ecosystems by recharging groundwater and providing habitat for fish and wildlife.



STORMWATER PARKS

Stormwater parks are recreational spaces that are designed to flood during extreme events and to withstand flooding.

By storing and treating floodwaters, stormwater parks can reduce flooding elsewhere and improve water quality.



FLOODPLAIN RESTORATION

Undisturbed floodplains help keep waterways healthy by storing floodwaters, reducing erosion, filtering water pollution, and providing habitat.

Floodplain restoration rebuilds some of these natural functions by reconnecting the floodplain to its waterway.

Remember! Even after your Tribal plan is approved, the planning process continues through implementation of your mitigation strategy. In addition, your plan must be updated every five years to maintain eligibility for certain FEMA grants.

Keep track of progress.

Observe and record progress in implementing your mitigation program using a defined method and schedule.

Develop an action plan.

Prioritize your actions and develop the details to assist with implementation.

Develop the strategy.

Keeping in mind your risks and your capabilities, identify your Tribe's mitigation goals and actions.

Review your current capability to mitigate the impacts.

Inventory your Tribe's plans, policies, and programs that could be used to protect your community.

Describe your community.

Describe the planning area, Tribal assets, and any unique characteristics of your Tribe.

Identify your hazards.

Figure out what natural hazards could occur in your planning area.

Explain impacts that hazards can have on the community.

Describe what the natural hazards could do to your people, property, and land and determine the Tribe's biggest hazard concerns.

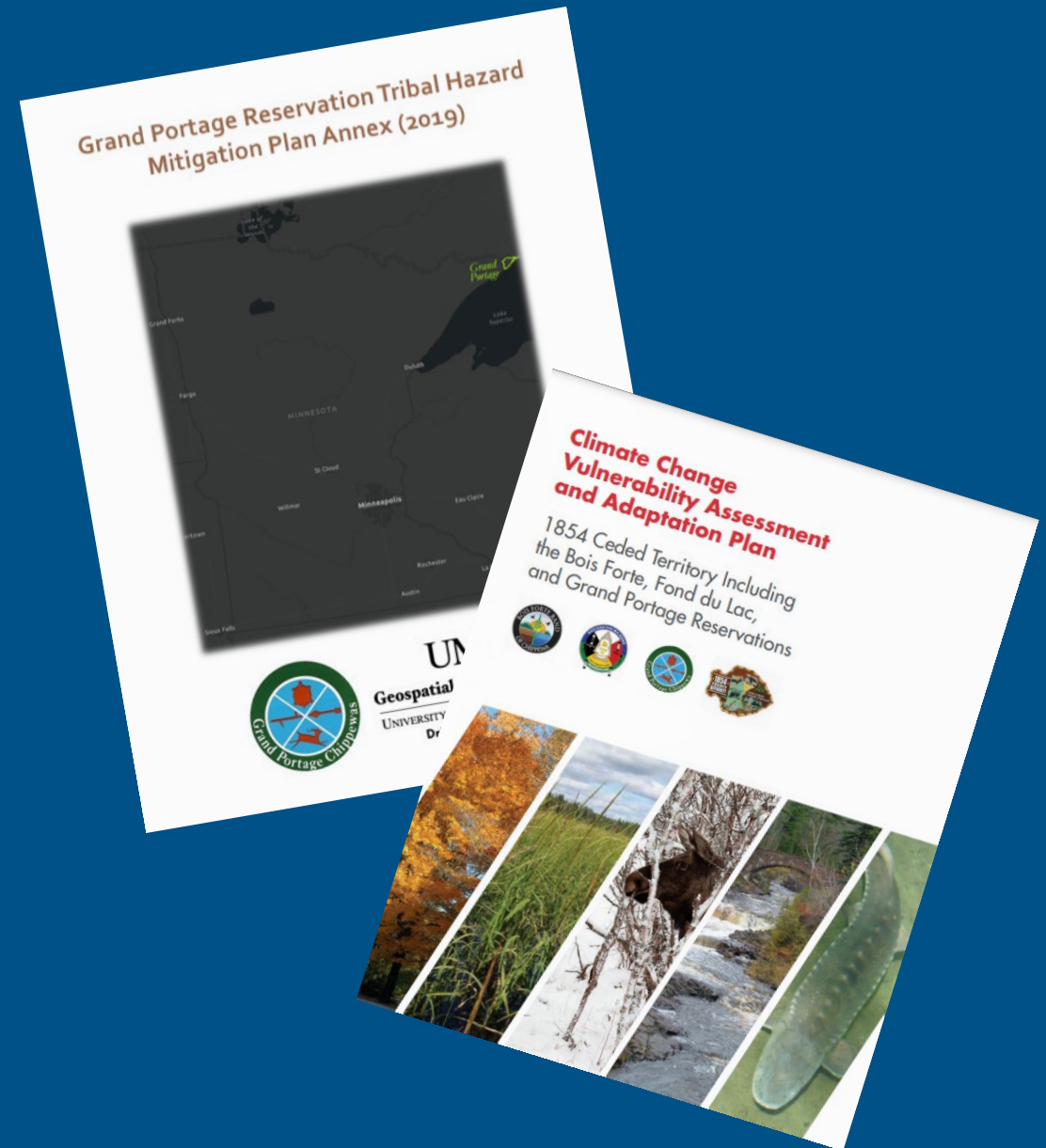


FEMA

Success Story: Grand Portage Band of Lake Superior Chippewa

Key Takeaways:

- Use multiple plans to assess risk and develop flood hazard mitigation goals.
- Rely on a variety of funding sources and build relationships with many partners.
- Natural and cultural resource protection is a critical component of hazard mitigation.



FEMA

Coming Soon: Tribal Mitigation Planning Policy Update

FEMA updates its policies to keep plans relevant and current...



FEMA

FEMA Funding and Resources

Approved Plans are a Prerequisite for Many Grants



Building Resilient
Infrastructure and
Communities (BRIC)



Flood Mitigation
Assistance (FMA)



Hazard Mitigation
Grant Program (HMGP)



Rehabilitation of High
Hazard Potential Dams
(HHPD)



Fire Mitigation Assistance
Grants (FMAG)

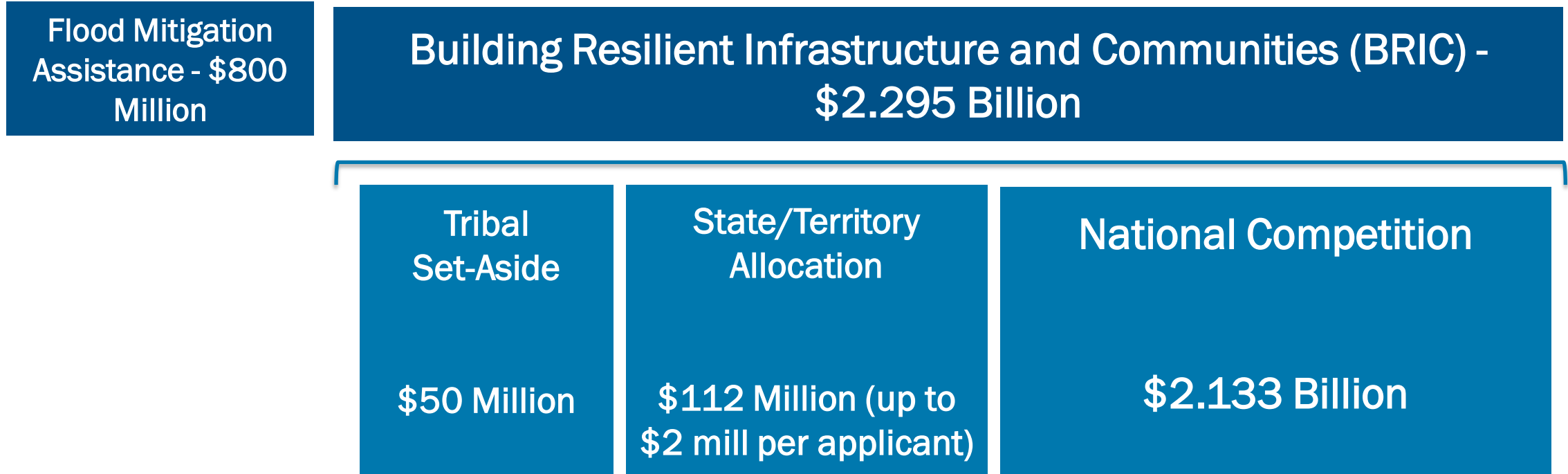


Safeguarding Tomorrow
Revolving Loan Fund
(New!)



FEMA

Fiscal Year (FY) 2022 Hazard Mitigation Annual Grants



Justice40 Initiative – 40% of environmental justice investments to disadvantaged communities



FEMA



FY22 BRIC Priorities

- Incentivize natural hazard risk reduction activities that mitigate risk to public infrastructure and **disadvantaged communities** as referenced in EO 14008 - Tackling the Climate Crisis at Home and Abroad.
- **Incorporate nature-based solutions**, including those designed to reduce carbon emissions.
- Enhance **climate resilience and adaptation**.
- Increase funding for the **adoption and enforcement of the latest published editions of building codes**.
- BRIC encourages mitigation projects that meet multiple program priorities.

BRIC Direct Technical Assistance (DTA)

Full, wide ranging support to communities that may not have the resources to begin climate resilience planning and project solution design on their own

[BRIC Direct Technical Assistance | FEMA.gov](https://www.fema.gov/bric-direct-technical-assistance)



FEMA

DTA Case Study: Pauma Band of Luiseño Indians

Key Takeaways:

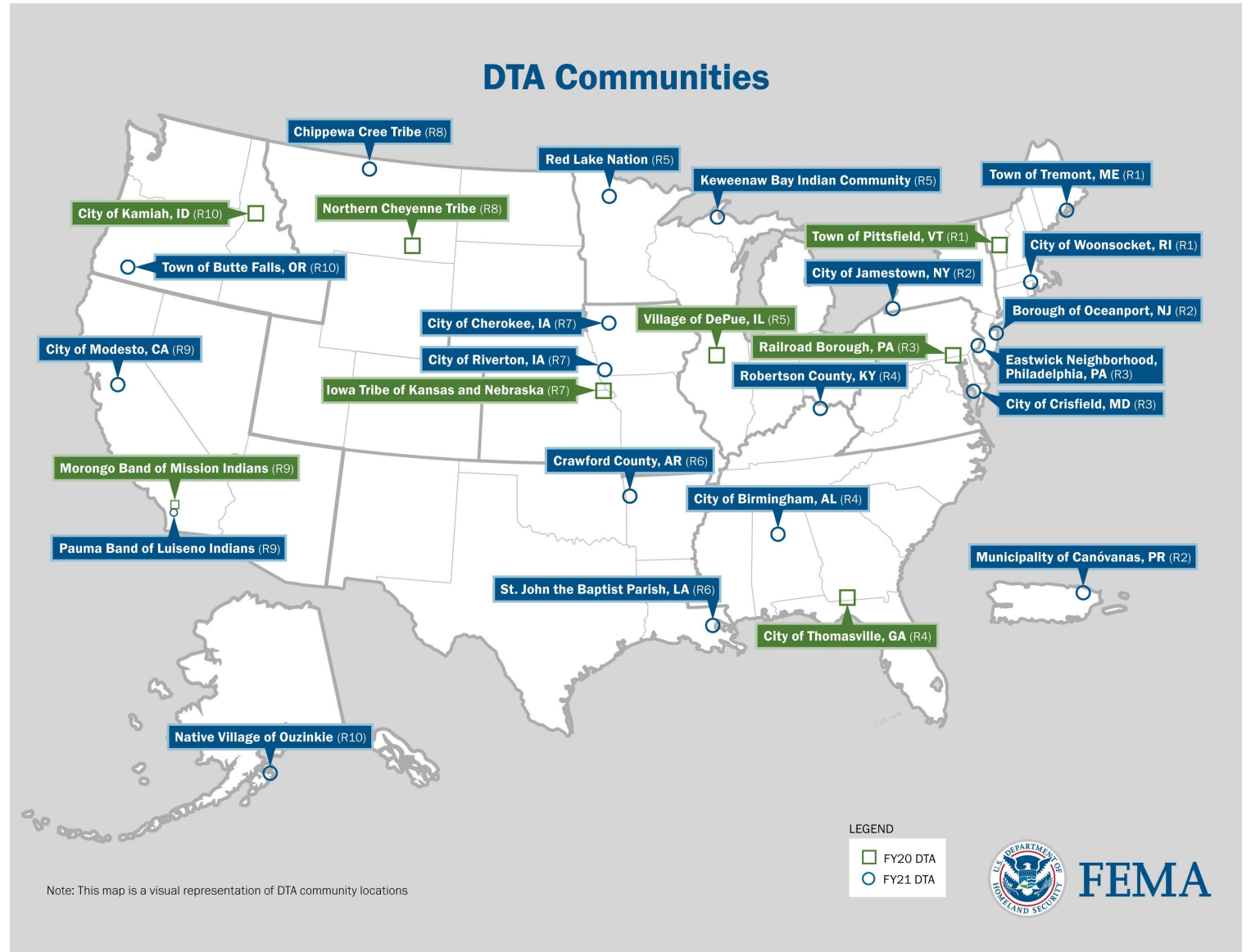
- BRIC DTA is supporting the Tribal Nation in updating their existing hazard mitigation plan, including providing additional technical data to support the risk assessment and vulnerability analysis.
- Facilitated 3-day workshop to support the planning process.



FEMA

BRIC Direct Technical Assistance (DTA)

- FEMA is transforming BRIC DTA to a more flexible, customer-focused format to support more communities.
- In future years, FEMA plans on having a rolling submission period to continuously offer communities access to this assistance.



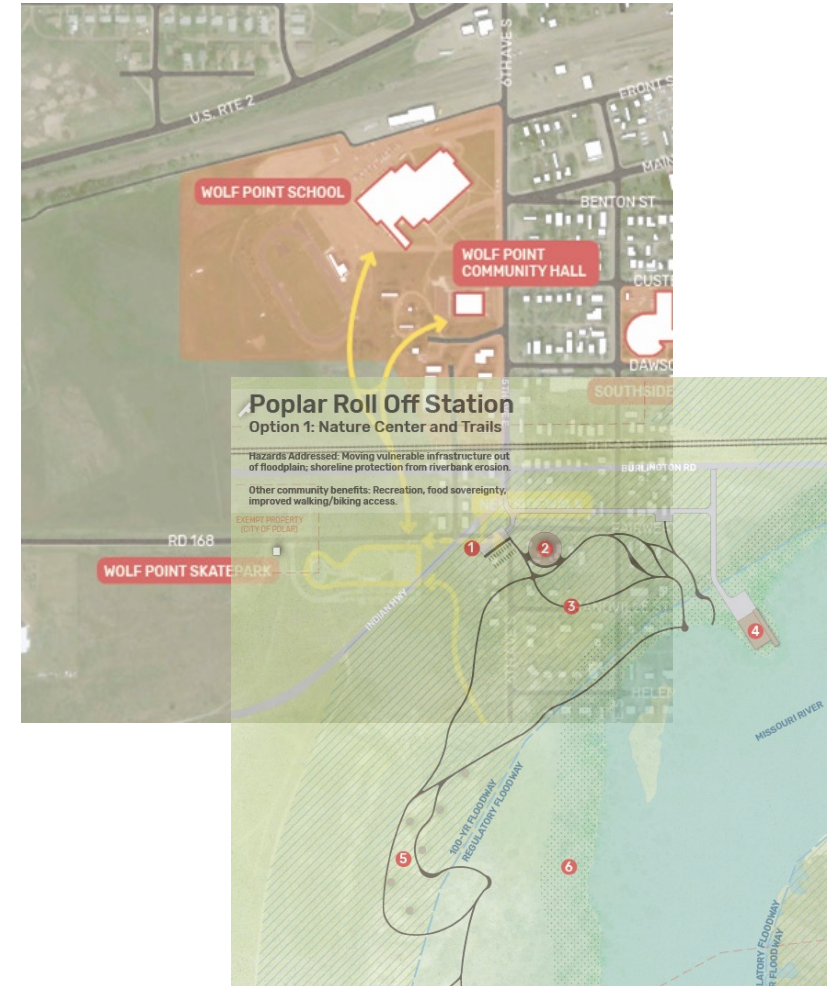
Enhancing Partnerships to Advance Tribal Resilience



FEMA, EPA, and Fort Peck Pilot Partnership

Key Takeaways:

- FEMA, EPA, and Fort Peck Pilot Partnership Project
- Updating the Fort Peck Tribal Hazard Mitigation Plan to incorporate climate science and projections for increasing risks, cultural knowledge, and including resilient site redesigns of significant community locations to include in the mitigation strategy.
- Includes a Brownfields grant to clean and relocate a dump site near the Missouri River and write a disaster debris management plan that will be an annex to the HMP.



Example Site Designs for Fort Peck HMP



FEMA

Thank you!

Nicole Edwards
Tribal Hazard Mitigation Specialist
Nicole.edwards@fema.dhs.gov

Katie Baum
BRIC Technical Assistance Team Lead
Katherine.baum@fema.dhs.gov



FEMA

slido



Which federal agencies have you collaborated with to support your climate change, resiliency and hazard mitigation work?


ⓘ Start presenting to display the poll results on this slide.



Grant Resources for Tribal Climate Action

Climate Resilience and Hazard Mitigation in
Tribal NPS Work
May 4, 2023

Kathy Lynn
Pacific Northwest Tribal Climate Change Project

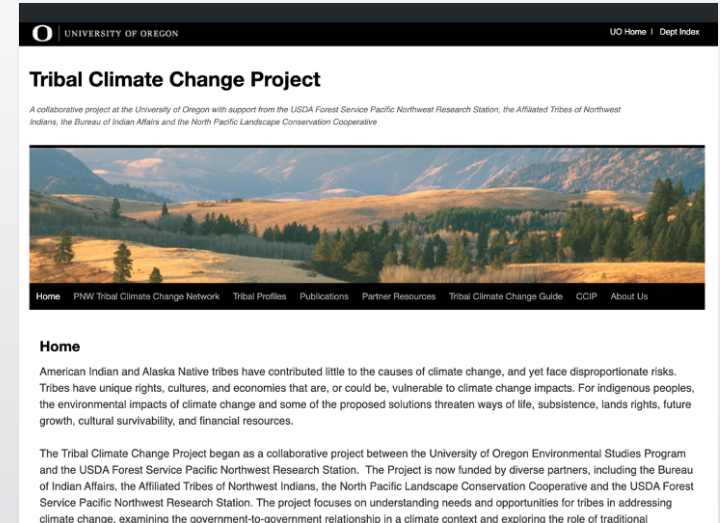


Grant Resources for Tribal Climate Action

- Organizational Resources
- Upcoming Grant Opportunities
- Funding Trackers

PNW Tribal Climate Change Project

- Building an understanding the impacts of climate change on tribal culture and sovereignty
- Fostering opportunities for tribes to engage in regional and national climate initiatives.
- Tribal Climate Change Resources
 - Pacific Northwest Tribal Climate Change Project:
<http://tribalclimate.uoregon.edu/>
 - Online Tribal Climate Change Guide:
<http://tribalclimateguide.uoregon.edu/>



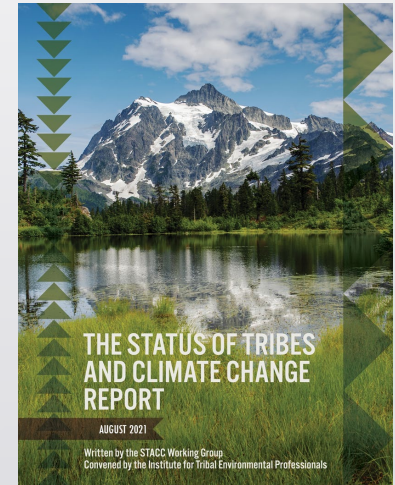
ATNI Climate Resilience Program



- Technical Assistance & Training for Tribes
 - Grant Writing
 - Climate Adaption, Mitigation & Action Training
 - Listening Sessions
- Climate-Relevant Convenings
 - 5th National Tribal Leaders Climate Summit, November 2022 in Spokane, WA
 - NW Tribal Clean Energy Summit, June 2023 in Tulalip, WA
 - WA Tribal Climate Camp, August 2023 in Olympic National Park, WA
- Policy Forums
 - ATNI Mid-Year Convention, May 2023 in Coeur d'Alene, ID
 - NCAI Mid-Year Convention, June 2023 in Prior Lake, MN
- <https://atntribes.org/climatechange/>

Institute for Tribal Environmental Professionals

- Tribes and Climate Change Program
<http://www7.nau.edu/itep/main/tcc/>
- Trainings and Events
- Tribal Profiles
- The Status of Tribes and Climate Change Report (STACC)



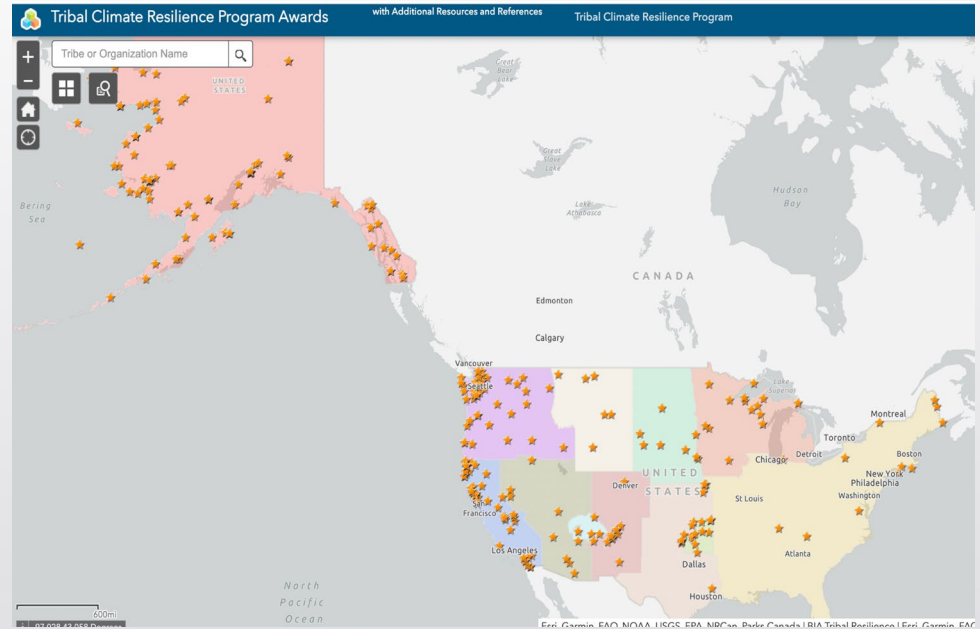
Bureau of Indian Affairs - Tribal Climate Resilience Grants

Annual Awards Program:

Example Funding Categories from FY 2022

- Climate Adaptation
- Ocean and Coastal Management
- Relocation, Managed Retreat, or Protect-in-Place
- Internships and Youth Engagement

<https://www.bia.gov/service/tcr-annual-awards-program>



Climate Pollution Reduction Grants (CPRG) Program: Planning Grants for Tribes and Territories

Agency: Environmental Protection Agency

Deadline: June 15, 2023

Description: The Climate Pollution Reduction Grants (CPRG) program will provide grants to states, local governments, tribes, and territories to develop and implement plans for reducing greenhouse gas emissions and other harmful air pollution. This two-staged grant program provides funding of \$250 million for noncompetitive planning grants, and \$4.6 billion for competitive implementation grants.

Link: <https://www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants>

Pollution Prevention Grant: Environmental Justice Through Safer and More Sustainable Products

Agency: Environmental Protection Agency

Deadline: June 20, 2023

Description: The purpose of the Pollution Prevention Grant: Environmental Justice Through Safer and more Sustainable Products is to provide pollution prevention (P2) technical assistance to businesses (e.g., information, training, expert advice) in order to improve human health and the environment in disadvantaged communities by increasing the supply, demand and use of safer and more sustainable products.

Link: <https://www.epa.gov/p2/pollution-prevention-grant-environmental-justice-through-safer-and-more-sustainable-products>

Links to Funding Trackers

- Inflation Reduction Act Tracker: <https://iratracker.org/>
- Environmental Defense Fund: <https://www.edf.org/our-work/inflation-reduction-act-tracker>
- Climate Portal:
<https://climateprogramportal.org/>
- Tribal Climate Change Guide:
<https://tribalclimateguide.uoregon.edu/>

Bipartisan Infrastructure Law guidebook

The Guidebook is intended to:

- Help state, local, Tribal and territorial governments unlock the benefits from the historic investments in our nation's infrastructure.
- A one-stop-shop on the law and contains the most comprehensive information to date on the more than 375 programs included in the [Bipartisan Infrastructure Law](#).

===== PRESIDENT JOE BIDEN =====
**BUILDING A
BETTER AMERICA**
===== BUILD.GOV =====

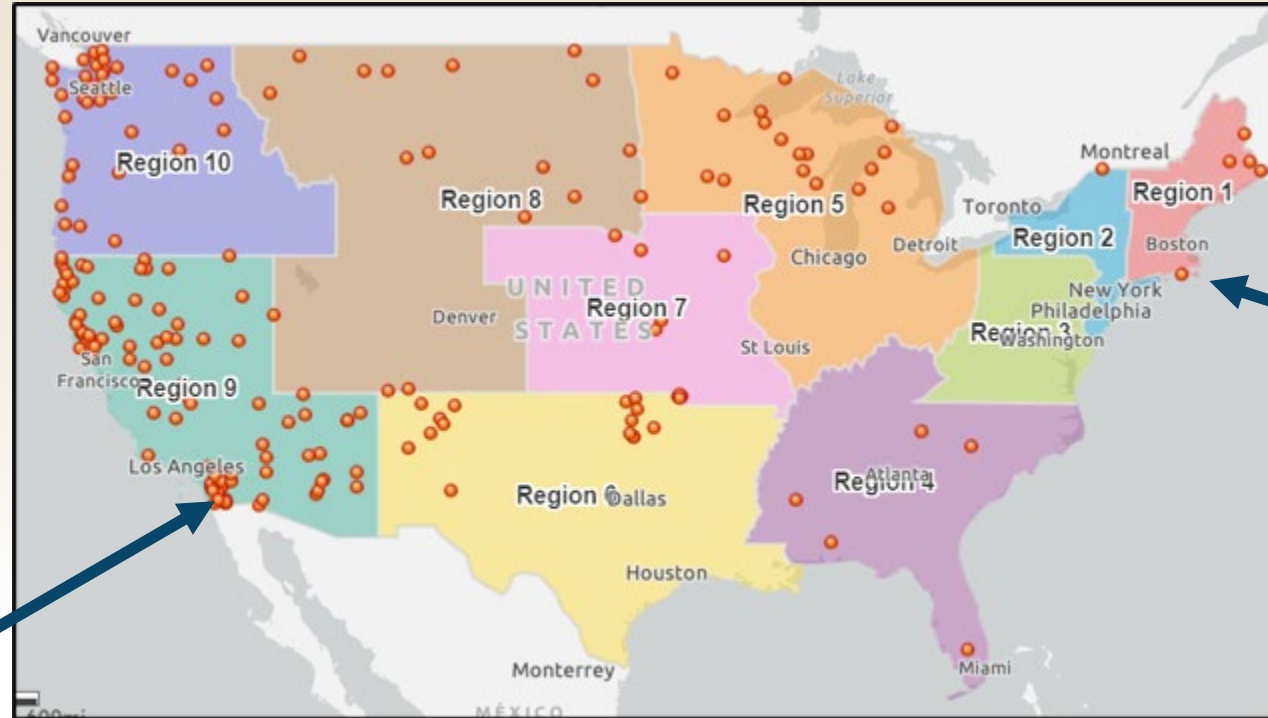
**A GUIDEBOOK TO THE
BIPARTISAN INFRASTRUCTURE LAW
FOR STATE, LOCAL, TRIBAL, AND
TERRITORIAL GOVERNMENTS, AND
OTHER PARTNERS**

For more information:

- Subscribe to the PNW Tribal Climate Change Network's Bulletin:
<https://tribalclimate.uoregon.edu/network/>
- Subscribe to the ATNI Climate Resilience Newsletter: <https://atntribes.org/climatechange/>
- Subscribe to the ITEP Climate Change Newsletter:
https://www7.nau.edu/itep/main/About/itep_Newsletters#cc
- Online Tribal Climate Change Guide: <http://tribalclimateguide.uoregon.edu/>

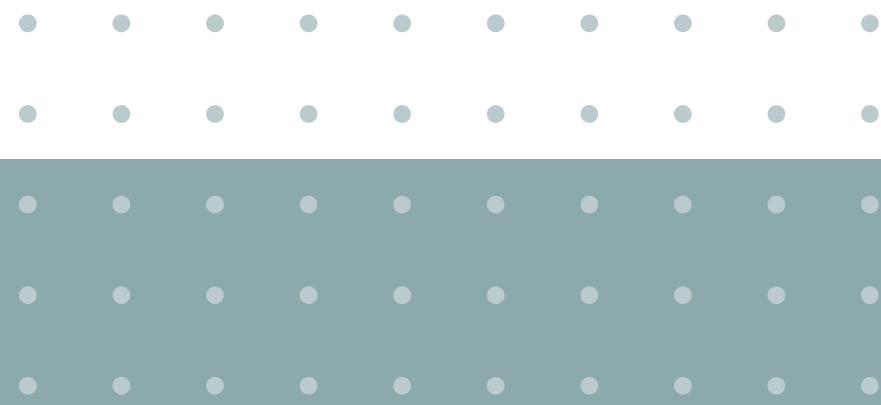
- **Contact:** Kathy Lynn, TCCP Coordinator
kathy@uoregon.edu

Tribal Presentations



Heidi Brow
Pala Band of
Mission
Indians

Beckie Finn
Wampanoag
Tribe of Gay
Head
(Aquinnah)



Tribal Case Study:

TRIBAL NPS & CLIMATE WORK

Heidi Brow

Pala Band of Mission Indians

*How to incorporate climate resilience & hazard mitigation
planning into your Tribal NPS Program*



PALA BAND OF MISSION INDIANS

RESERVATION ESTABLISHED 1875



photo: Pala Reservation, 1905 – the main track into the village; the San Luis Rey River is on the right.

Tribal Population

Pop. ~ 1,300 people
land base: 16,000 acres
San Diego County, CA.

Water Source

groundwater = sole water source
semi-arid region / Mediterranean climate
28 stream miles – mostly ephemeral



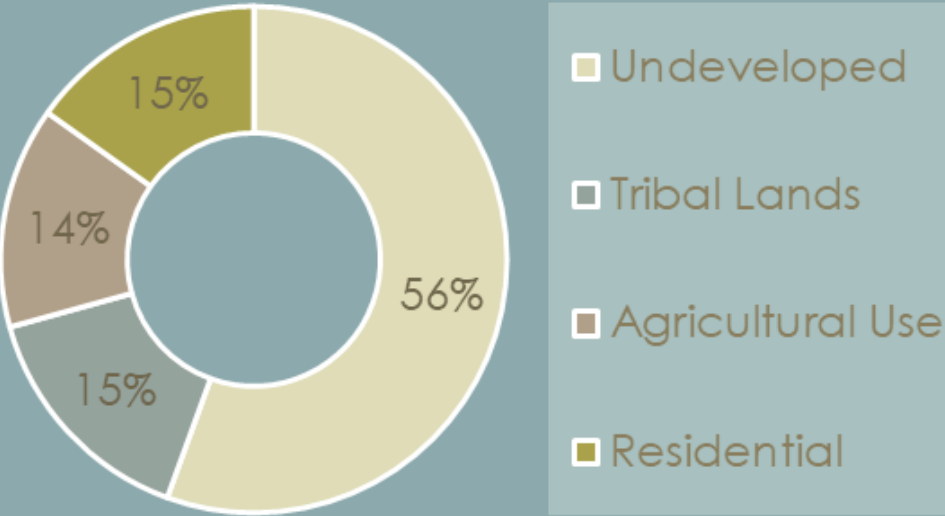
PALA BAND OF MISSION INDIANS

8 Tribes in our Watershed

Pala
Pauma
Rincon
La Jolla
San Pasqual
Los Coyotes
Santa Ysabel
San Luis Rey Band (no reservation)

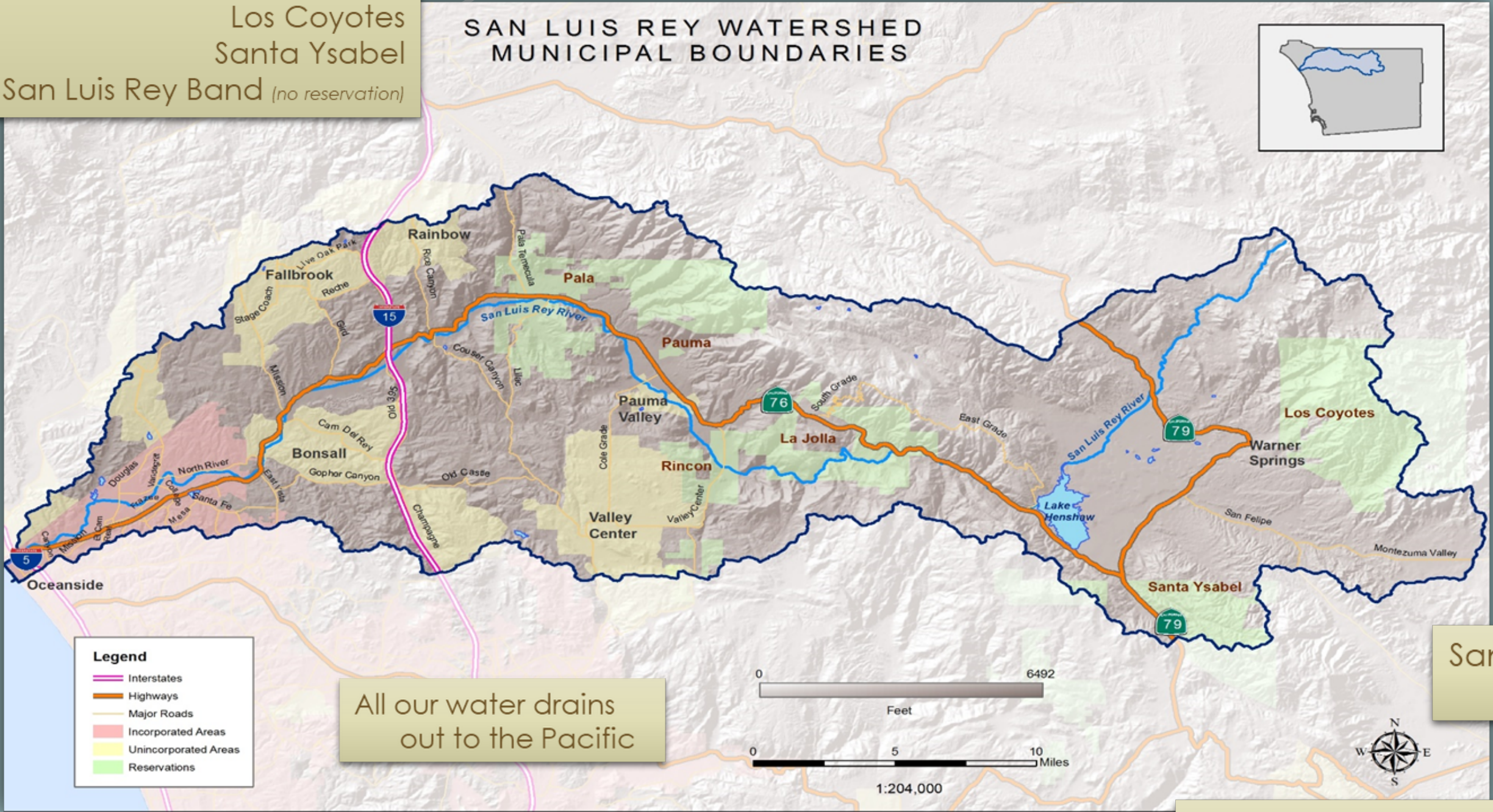
SLR Watershed is 562
square miles
(358,400 acres)

Percent of Land



Issues of Concern:

Bacteria, nutrients, salts
Groundwater extraction
Hydromodification
Septic systems / rural area



All our water drains
out to the Pacific

San Luis Rey River is
55 miles long

Precipitation Range
10 to 45 inches/year

Elevation Range
Sea Level to 6,535 feet

map: The San Luis Rey Watershed. Northern San Diego County, California

Pala's

CLIMATE PLANNING

The Pala Environmental Department (PED) has been working on studying how climate change will impact our reservation, developing a number of plans and building partnerships along the way. Here are just a few.

CLIMATE VULNERABILITY STUDY

REPORT IDENTIFIES WHAT
RESOURCES/SECTORS ARE
VULNERABLE TO CLIMATE
CHANGE IMPACTS

*ELEVATED TEMPS, WILDFIRE, DROUGHT,
STORMS & FLOODING*

CLIMATE ADAPTATION PLAN

REPORT IDENTIFIES
ACTIONABLE ITEMS TO HELP
PALA PREPARE FOR THOSE
IMPACTS

PRE-DISASTER MITIGATION PLAN

[FUNDED BY FEMA]

PARTNERSHIP: CLIMATE SCIENCE ALLIANCE

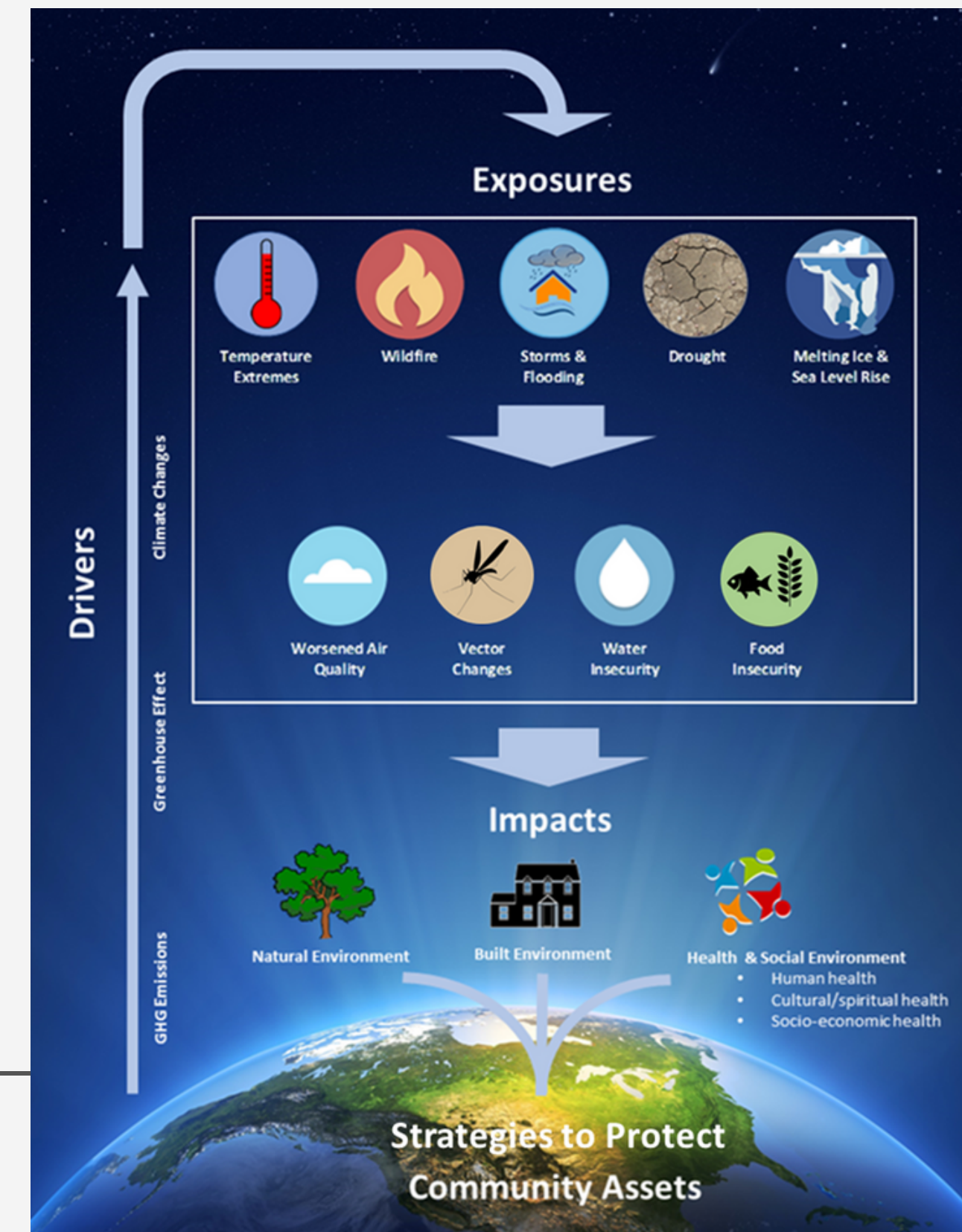
TRIBAL WORKING GROUP
LOCAL CLIMATE STUDIES
YOUTH SCIENCE OUTREACH

Pala's CLIMATE IMPACTS

Many of the Climate Change impacts that Pala identified, are also issues that cause Non Point Source Pollution on our reservation, or are directly exacerbated by

ELEVATED TEMPS	WILDFIRE	DROUGHT	STORMS & FLOODING
exacerbate drought	more wildfires & increased intensity	dries / compacts soil	changes in precip. (volume & intensity)
increases evapotranspiration	drought stressor	reduces water quantity	more erosion
reduced water supply	dries soil & removes vegetation	reduced vegetation / riparian corridors	water quality issues
	increases erosion		

Climate Change **IMPACTS** Identified at Pala



Pala's

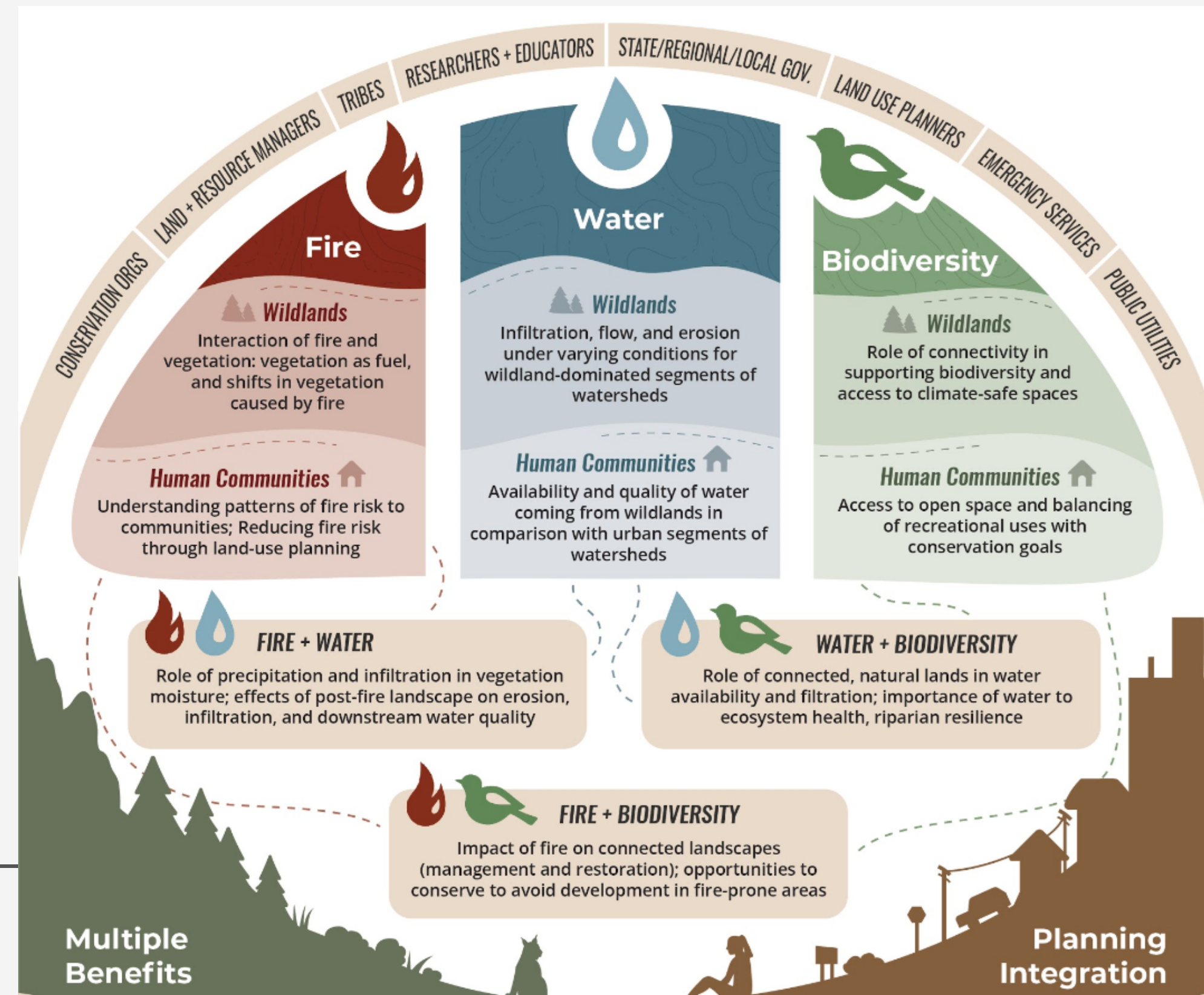
CLIMATE SOLUTIONS

NATURE BASED SOLUTIONS APPROACH

- Actions that protect & sustainably manage or restore natural/modified ecosystems
- Benefits both people & nature
- ID's benefits that come from healthy ecosystems
- Addresses societal challenges
- Targets major challenges (eg - *climate change, disaster risk reduction, food & water security, biodiversity loss, human health*)

EXAMPLES:


green roof, rain gardens & rainwater harvesting, constructed wetlands, floodplain re-connections, vegetated strips/greenways, permeable pavement, etc.







USING CLIMATE TO GUIDE NPS WORK

Some examples of actions identified in Pala's Climate Change Adaptation Plan









Increase urban forestry, trees, landscapes and other green infrastructure to reduce stormwater runoff and increase heat resilience and tree canopy. Expansion and management of Pala's natural infrastructure such as healthy watersheds and soils can build local resilience by improving soil water-holding capacity and reducing flooding and erosion. PED is working with Tribal Services and Housing using grant funds to complete this strategy on an ongoing basis. Recent accomplishments include: habitat restoration, invasive plant abatement, and soil stabilization projects. PEDs will pursue additional grant funds to expand and complete this strategy.

Exposures Addressed	     
Impacts Addressed	  

Develop and implement policies, plans, and projects to preserve or restore wetlands and floodplain connectivity, re-plant deforested riparian zones, and establish buffers along rivers and streams to reduce flooding, runoff, and erosion. These measures can also increase habitat diversity and population resilience. PED is working with the Pala Casino and the Tribal Services and Utilities Departments using a combination of grant and tribal funds to continuously expand this strategy over the next 20 years. Recent accomplishments include new storage tanks in 2018.

Exposures Addressed	 
Impacts Addressed	  



Complete habitat restoration projects and removal of invasive species, with an emphasis on ecosystem function and threatened and culturally important species. Utilize traditional knowledges where possible. PED is using a combination of grant funds to conduct this strategy on an ongoing basis. Recent accomplishments include invasive species removal within the bed and banks of the San Luis Rey River.

Exposures Addressed	       
Impacts Addressed	

Implement pilot program to harvest rainwater. PED is working with Housing and the Pala Seniors Department using EPA funds to expand and complete this strategy by 2023.

Exposures Addressed	    
Impacts Addressed	 

Install or upgrade sewage system (phase out septic, expand wastewater treatment capacity). The Utilities Department is working with Pala Casino, Tribal Housing, and PED using EPA and Indian Health Service funds to complete this strategy by 2029.

Exposures Addressed	  
Impacts Addressed	  

Once in Pala's Climate Change Adaptation Plan, we can apply for climate funding to implement these.

USING CLIMATE TO GUIDE NPS WORK

FEMA / TRUJILLO CREEK PROJECT

- **ORIGINAL PROBLEM**: Creek jumped out of its bank & now runs through shooting range & a neighborhood
- **ISSUE**: erosion; lead/sediment transport (shooting range); flooding/water pollutants (neighborhood)
- **NPS POLLUTANTS**: sediment, lead
- **SOLUTION**: re-engineer streambank & provide erosion control. project noted in climate plans.
- **FUNDING**: [tentatively] FEMA BRIC Grant

NUMEROUS \$ SOURCES / HABITAT RESTORATION

- **ORIGINAL PROBLEM**: invasive plant species & lack of floodplain connectivity/riparian corridor
- **ISSUE**: NPS issues from invasive plants; dust, erosion/sediment transport from lack of vegetation; reduced surface water retention capacity
- **NPS POLLUTANTS**: sediment/TDS, high salts
- **SOLUTION**: remove/treat invasive plants; re-vegetate riparian area & restore habitat and floodplain corridor
- **FUNDING**: [many funding sources] BIA Adaptation Planning Grants; USFWS Tribal Wildlife Grant; EPA's CWA 319 NPS grant; America the Beautiful (applied, not yet funded); California Coastal Conservation Wildfire Resilience Program

POTENTIAL FUNDING SOURCES

US EPA



CWA 319 NPS - Base & Competitive Grants

Wetlands Program Development Grants

BIA



BIA Water Resource Program: We've used for both water (NPS) related work & climate work.

BIA Tribal Climate Resilience (TCR) Program: Covers climate adaptation planning, capacity building (e.g. Pala's Climate Vulnerability Assessment & Adaptation Plans).

<https://www.bia.gov/bia/ots/tribal-climate-resilience-program>

FEMA



FEMA

FEMA's Hazard Mitigation Grant Program

Building Resilient Infrastructure & Communities (BRIC)

Flood Mitigation Assistance (FMA)

NIHB



National Indian Health Board (NIHB) - Climate Ready Tribal Resources: This group has adaptation planning grants available.

RESOURCES & PARTNERSHIPS

BOR – BUREAU OF RECLAMATION

Only open to Tribes in the Western States.

WaterSMART Drought Programs: Many different drought-related grants/funding & technical assistance resources for tribes.

<https://www.usbr.gov/watersmart/>

**Drought Response Program - Resiliency Program
Applied Science
Drought Contingency Planning**



NOAA/NIDIS DROUGHT GROUP

National Integrated Drought Information System (NIDIS) Program.
This group works on all manner of drought related monitoring, forecasting, planning, etc. They have so many great tools/resources/partnerships.

Sign up for their newsletter or monthly webinars!
<https://www.drought.gov/about>

GOVERNMENT AGENCIES

Many agencies have technical assistance programs, in addition to funding.



CLIMATE SCIENCE ALLIANCE

PARTNERSHIPS W/ NON-PROFITS & UNIVERSITIES



THANK YOU

Have any questions?



Heidi Brow

Pala Band of Mission Indians
hbrow@palatribe.com



Climate-Related Resources

Tribal Climate Health Project: <https://tribalclimatehealth.org/>

Pala Environmental Department's Climate Change Page (examples of our outreach materials & our climate change adaptation plan):
<http://ped.palatribe.com/climate-change/>

National Indian Health Board – Climate Ready Tribes: http://www.nihb.org/public_health/climate_ready_tribes.php

Institute for Tribal Environmental Professionals – Tribes & Climate Change Program: <http://www7.nau.edu/itep/main/tcc/>

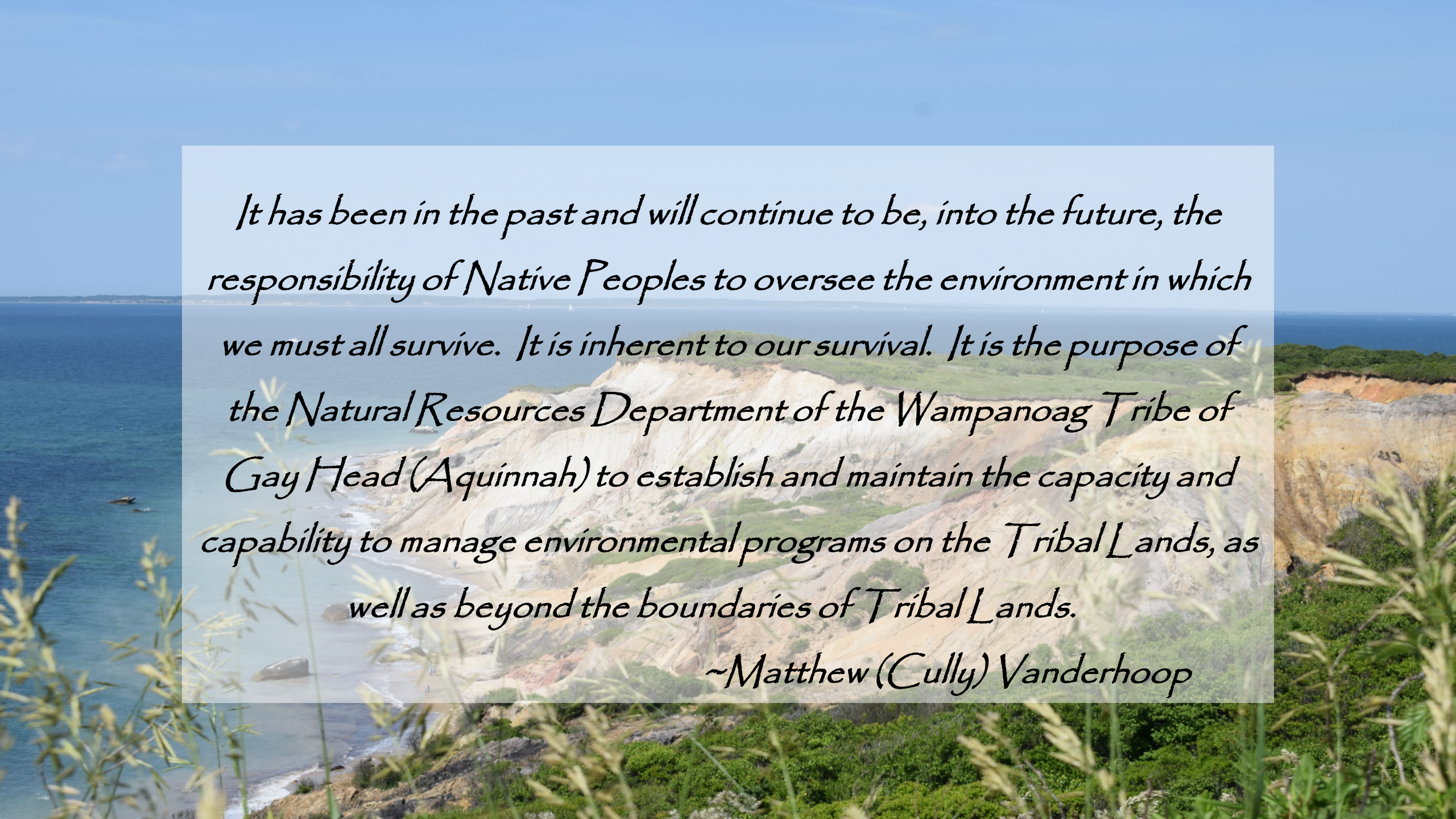
USGS – Southwest Climate Adaptation Science Center (CASC): https://www.usgs.gov/programs/climate-adaptation-science-centers/southwest-casc?qt-science_support_page_related_con=3#qt-science_support_page_related_con

CDC's Building Resilience Against Climate Effects (BRACE) Framework: <https://www.cdc.gov/climateandhealth/BRACE.htm>



Wampanoag Tribe of Gay Head (Aquinnah)

**Nature-Based Approaches for Climate
Resilience**



It has been in the past and will continue to be, into the future, the responsibility of Native Peoples to oversee the environment in which we must all survive. It is inherent to our survival. It is the purpose of the Natural Resources Department of the Wampanoag Tribe of Gay Head (Aquinnah) to establish and maintain the capacity and capability to manage environmental programs on the Tribal Lands, as well as beyond the boundaries of Tribal Lands.

~Matthew (Cully) Vanderhoop



Hurricane Sandy Restoration Projects

Hurricane Sandy devastated the Northern Shores in Aquinnah. The impacts to Lobsterville and West Basin beaches, and the dunes in what is known as the Common Lands are still clearly evident today. The storm washed away large portions of beach front dunes which provide wind and water protections to the delicate bog and wetland ecosystems that lay just on the other side. Sandy also destroyed public access routes to the cranberry bogs, the boat launch point, and to major fishing locations. Since the passing of Hurricane Sandy the Natural Resources Department has been working to bolster protections for the wetlands and to try and reinforce the remaining dunes.



Menemsha Dredge/Lobsterville Restoration



Replanting Beach Grass

- The Natural Resources Department, with funding in part from National Fish and Wildlife Foundation (NFWF) has been replanting beach grasses in the dune system to bring back structure, stabilization, and protection. The root of beach grass helps hold sand together to keep the dunes from shifting and the sand from easily blowing/washing away.
- Community outreach event where the island community is invited to assist in planting/restoration efforts
- Currently nearly 109,000 sq feet of beachgrass has been planted or over 140,000 stems of grass have been planted





Progress: September 2016



Progress: September 2022



Eel Grass Restoration

Research and pilot programs to restore eelgrass (*Zostera marina*)

Menemsha Pond has experienced a significant decline in eelgrass over the past 30 years which is still not yet fully understood

- Coastal fisheries rely on eelgrass as a breeding ground and nursery for many finfish and shellfish including bay scallops
- Eelgrass beds stabilize coastal sediments, modify currents, trap fine grained suspended particles, and filter toxic metals and nutrient pollution.

Standard and alternative planting methods have been used including biodegradable grids ceramic weights in addition to hand transplanting



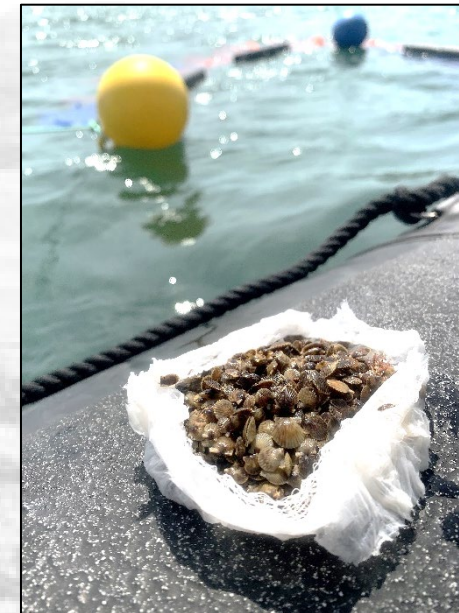
Bay Scallop Restoration

Initially as part of a Tribal Wildlife Grant, The Tribe has been involved with the propagation of bay scallops (*Argopecten irradians*) within Menemsha Pond in response to a drastic decline in this sustenance resource.

The Tribe receives bay scallop “seed” each year from a hatchery for population enhancement within Menemsha Pond.

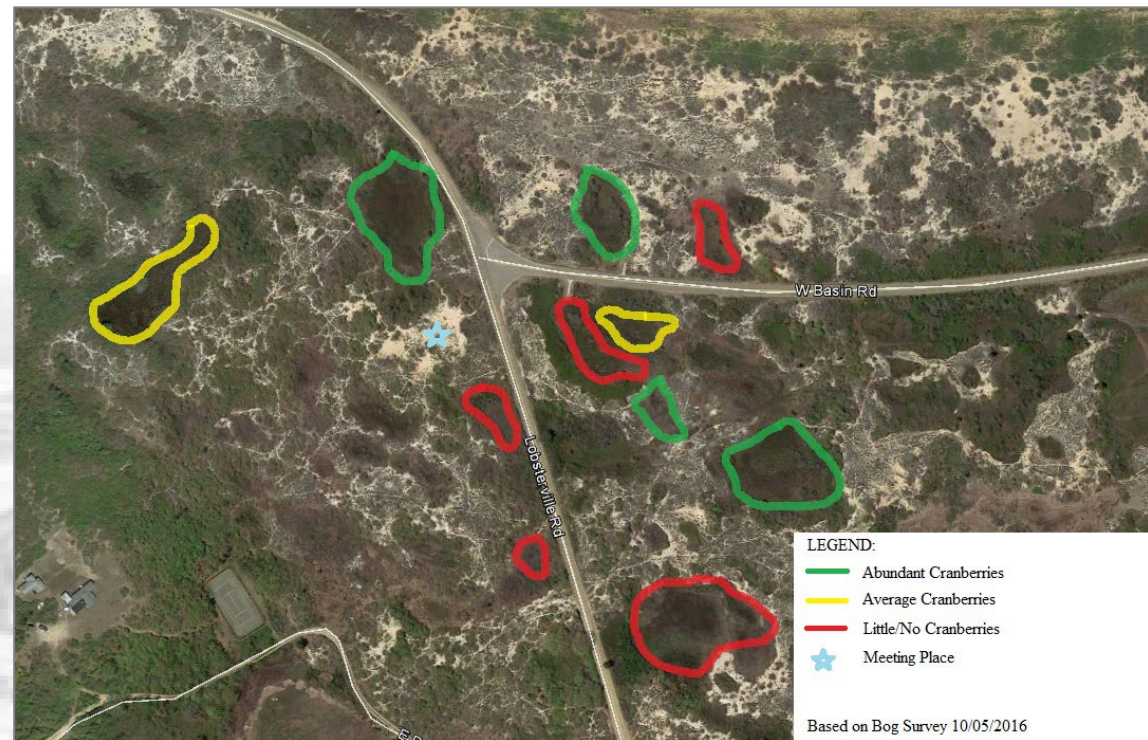
These scallops are grown in spat bags and hung from floating lines, where they provide a safe environment for the scallops to grow, out of the reach of predators.

When the scallops mature (juvenile), to about the size of a quarter, they are released into a protected sanctuary site within the pond that is prohibited to shellfishing.



Wild Cranberries and a Changing Bog Structure

The Wampanoag Tribe of Gay Head (Aquinnah) has historically and contemporaneously relied on the annual harvest of wild cranberries to help supplement its traditional culture and food supply. Over the last several years the Natural Resources Department has observed a decline in the amount of fruit produced by the natural bogs in the Aquinnah Common Lands. While some of the decline could possibly be attributed to human interaction, much of the decline can be traced to changes in the weather and the storms produced by changing weather patterns. The bogs have been inundated with salt from storm surges produced by major storms such as Hurricane Sandy and Winter Storm Juno just in past few years alone.

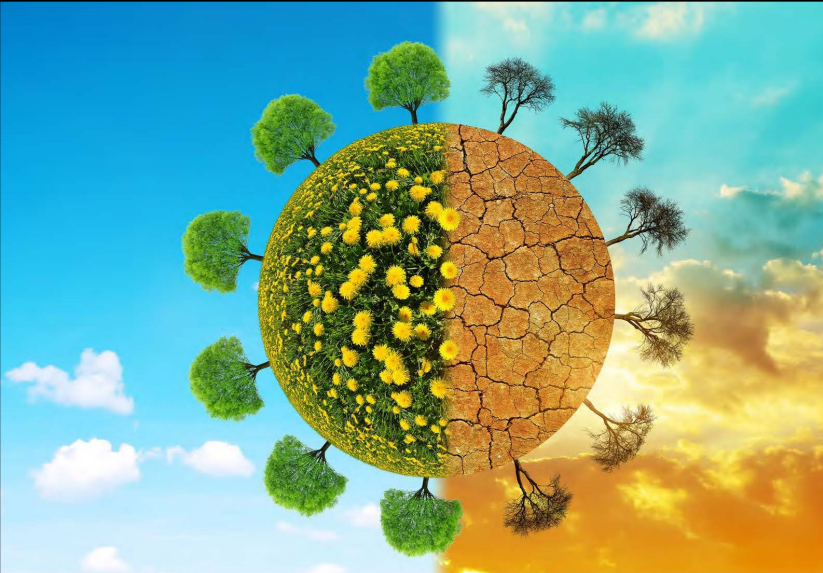


Wild Cranberries and a Changing Bog Structure



Community support and communication – Climate Adaptation Planning

- Tribal listening sessions, the first of which was held 7/14/21
- Social media!
- Surveys



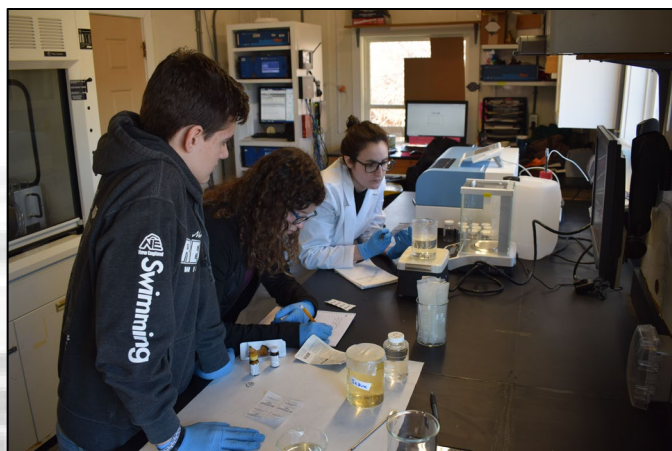
Tribal Listening Session for the Climate Change Adaptation Plan
Wednesday, July 14th, 2021 5:30 PM via Zoom

The NRD continues to move forward with the creation of the Tribal Climate Adaptation Plan. Beckie Finn and Durwood Vanderhoop have been part of the island-wide Climate Resilience Committee (CRC) to keep in touch with what is going on locally. Liz Durkee, the new Climate Coordinator for the Martha's Vineyard Commission, has been putting together a series of listening sessions for various stakeholders across the island, including towns, libraries, business communities, and the Council on Aging. She wants to add a listening session for us, to discuss Tribal concerns as well. In speaking with Bettina Washington about this, we feel that this is a great opportunity to have your voices and concerns heard on this topic and would really appreciate your time and feedback. We have scheduled the Tribal Listening Session for July 14th at 5:30 PM.

Community Outreach



Annual Earth Day Beach Cleanup



Students in the lab preparing a mercury in fish tissue project for the High School Science Fair

- Assisting with lesson planning for Tribal Youth in conjunction with the education department
- Youth involvement in Natural Resources Department



Outreach education with children from local schools using the YSI



Ranger Manning presenting to the After School Program on Veteran's Day

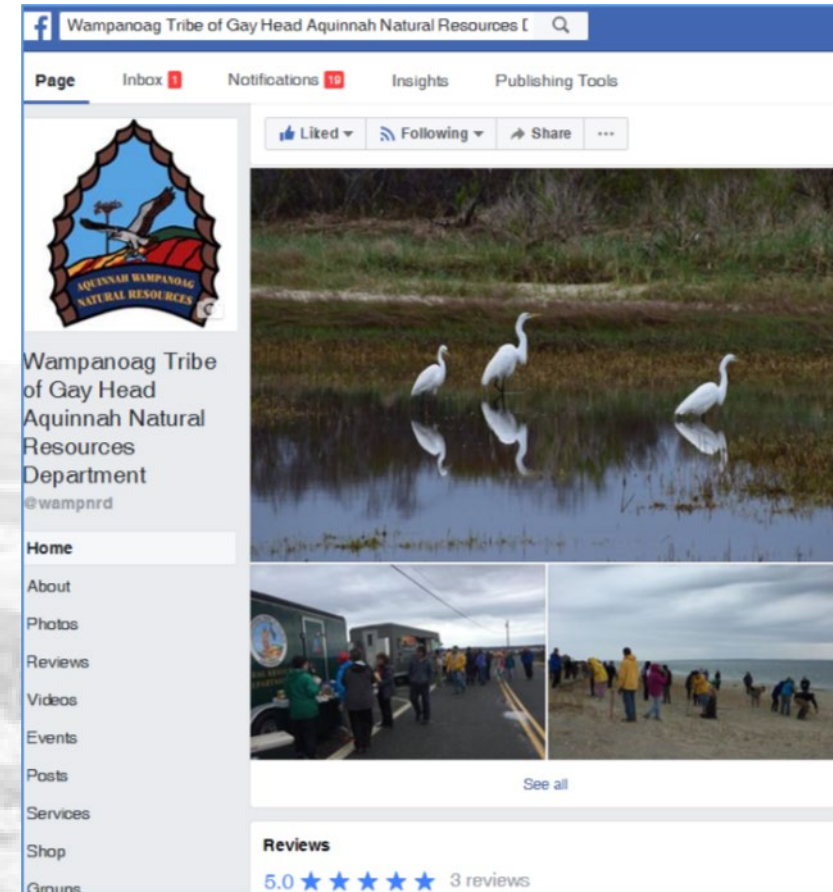
Community support and communication

<http://www.wampanoagtribe-nsn.gov>

<https://wampanoagtribe-nsn.gov/naturalresourcedepartment>

<https://www.facebook.com/wampnrd/>

<https://www.facebook.com/wampnrd/videos/>



Outreach

- Kiosk at the Cliffs – presentations on Tribal programs to educate the public
- Presentations and sponsorships at local and regional Environmental Forums (workshops and conferences) and Powwow
- Partner with other Island entities on climate adaptation and hazard mitigation planning
- Partnerships with town of Aquinnah on emergency management planning and adaptation planning
- To do: Develop a communications strategy

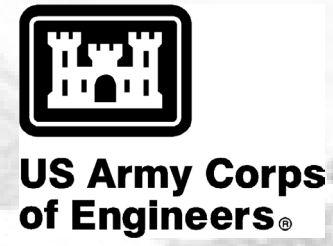


Projects designed to seek grant or program funding

- FEMA hazard mitigation plan and vulnerability assessment – recently completed
- 319 Non-point source pollution assessment and plan – recently completed
- Fire Management Plan – needs to be updated
- Pesticide management plan – recently updated
- Solid waste plan – recently updated
- BIA Climate Planning grant

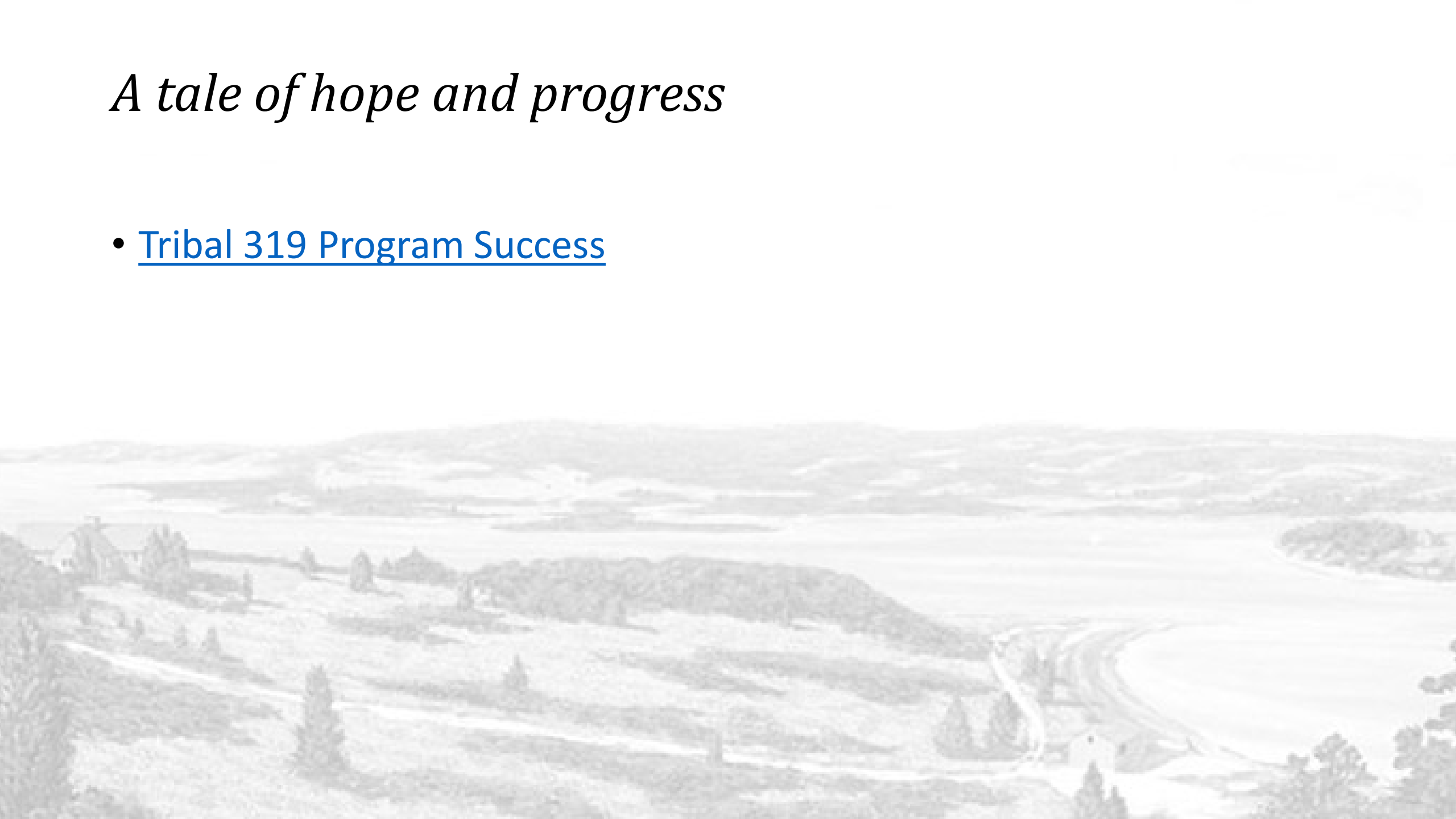
Future funding potential

- FEMA Hazard Mitigation Plan and Vulnerability Assessment
 - More eligible to apply for implementation funding when challenges arise
- 319 Non-point Source Pollution Assessment and Plan
 - Apply for 319 competitive funding
 - RFP to help build more robust engineering plans and conduct assessments for landscape design, smart-growth planning, and policy development on wetland protection and non-point source pollution issues
- BIA endangered species aquatic grant
 - Applied for additional funding for phase 2
- ***Makes it easier to be competitive in applying for implementation grants***



A tale of hope and progress

- [Tribal 319 Program Success](#)



Break-out Instructions and Discussion Questions

- You will automatically be moved to your randomized breakout room. The breakout session will last approximately 30 minutes and will *not* be recorded.
 - Based on the panel discussion, do you have thoughts on how you might integrate your water quality plans with your hazard mitigation plans?
 - What funding sources have you been able to use? Any tips or advice about securing funding?

For more information about EPA's Tribal NPS Program

Tribal NPS Program Web Page:

<https://www.epa.gov/nps/tribal-nonpoint-source-program>

EPA Region	Coordinator
HQ	Steve Epting Margot Buckelew
1	Bessie Wright
2	Aimee Boucher
3	Jason Challandes
4	Sharon Brown
5	Janette Marsh
6	Sam Reynolds
7	Ann D'Alfonso
8	Erika Larsen
9	Howard Kahan Larry Maurin
10	Krista Mendelman

Thank You!

5. [Implementing On-the-Ground Tribal NPS Projects](#). Thurs, May 25.
6. [Addressing Agricultural NPS Pollution: Key Partners & Strategies](#). Thurs, June 22.

*All webinars will be 2-4pm Eastern

Zoom registration links also available at <https://www.epa.gov/nps/tribal-nps-resources-and-training>

