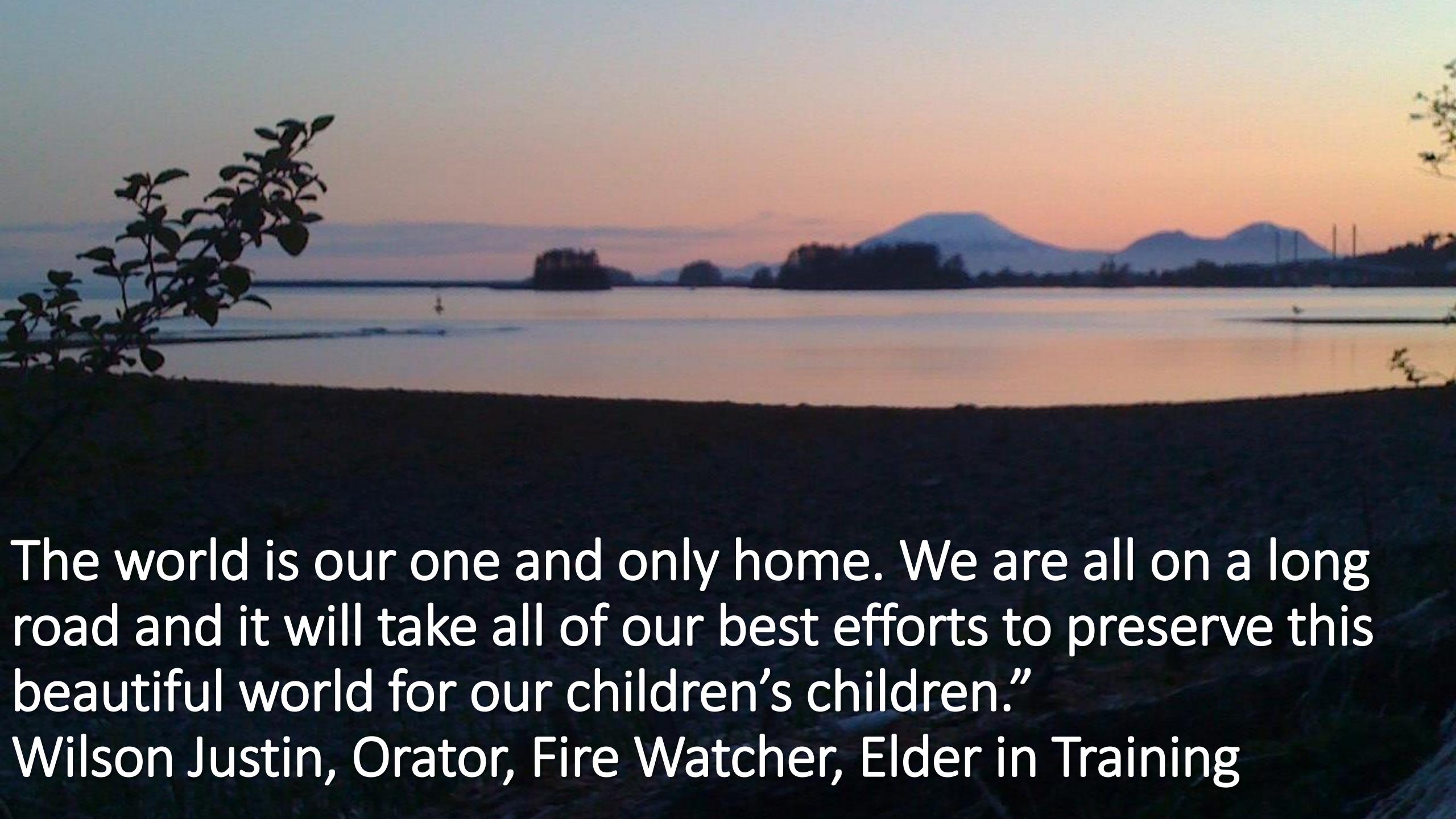


# Preparing for Climate Change

It's complicated.

Michelle Davis, US EPA  
Region 10 Tribal Coordinator



The world is our one and only home. We are all on a long road and it will take all of our best efforts to preserve this beautiful world for our children's children."

Wilson Justin, Orator, Fire Watcher, Elder in Training

# So, here we are.

- Federal programs are beginning to address climate change, especially vulnerability assessments and adaptation.
- Impacts are being seen now.
- Once programs are created to address local impacts, there will be many applicants.

# Kivalina Alaska





**Dauphin Island**

# How do you prepare?

- ❖ Remember who your people are.
- ❖ Look to the past, but start to plan for the future.
- ❖ Talk to Elders who remember where people used to hunt, fish, gather and live. Write down what you learn.

# Vision

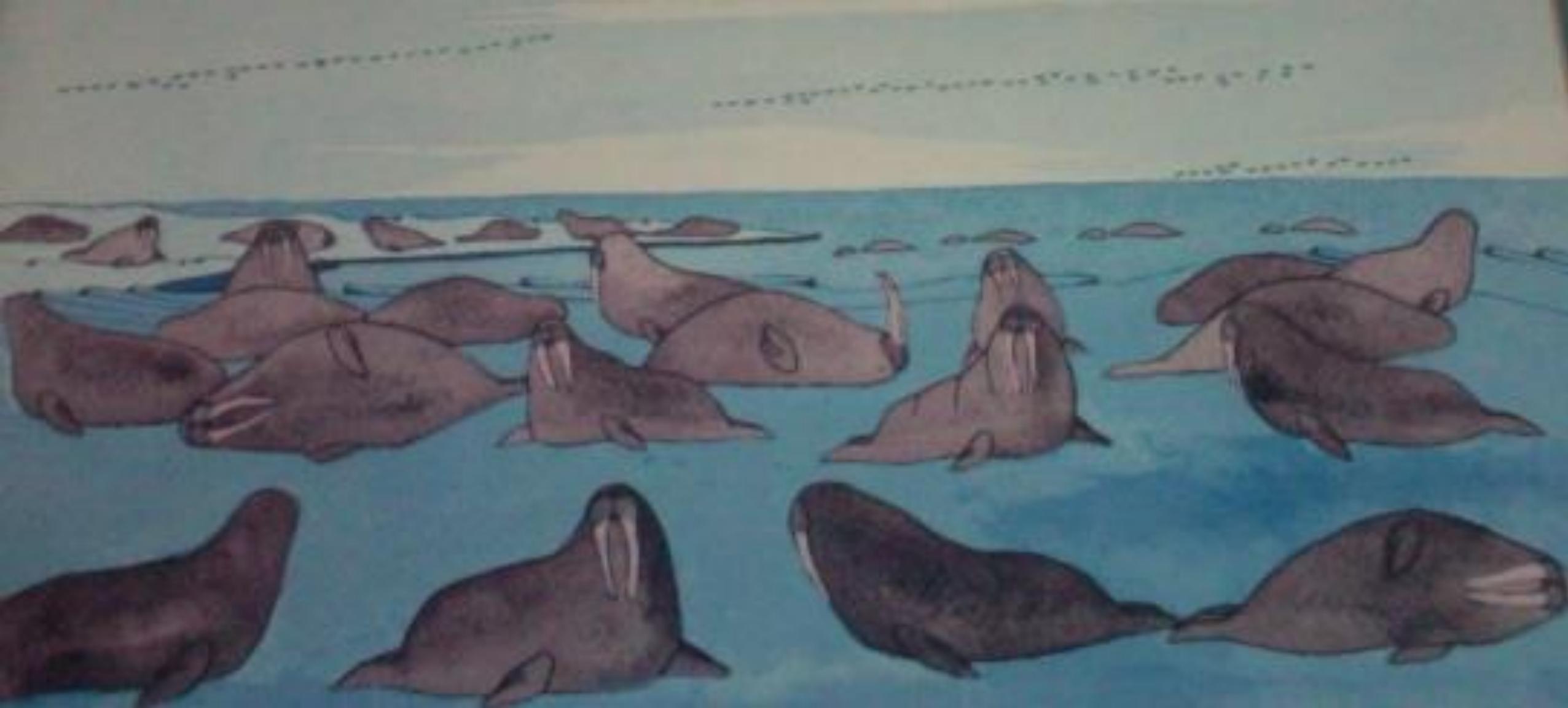
**A vision is a dream of what is possible. It is picture of what the Tribe wants to be and how it wants to look in the future.** Before starting climate change work, the planning team & tribal community members should develop a vision. For example, that all the children are healthy and have safe places to play, live and learn.

**Be daring.** You may not be able to achieve everything, but a vision gives focus and direction.

**All Tribal community members need to be invited to all stages of the visioning process.** Projects have stronger support if the community is fully involved. Encourage children, adults and elders to participate.

# “Imagine Yourselves Richly”

*Victoria Hykes Steere, Inupiaq, Professor, Alaska  
Pacific University, Known trouble maker.*



Painting by Ken Lisbourne

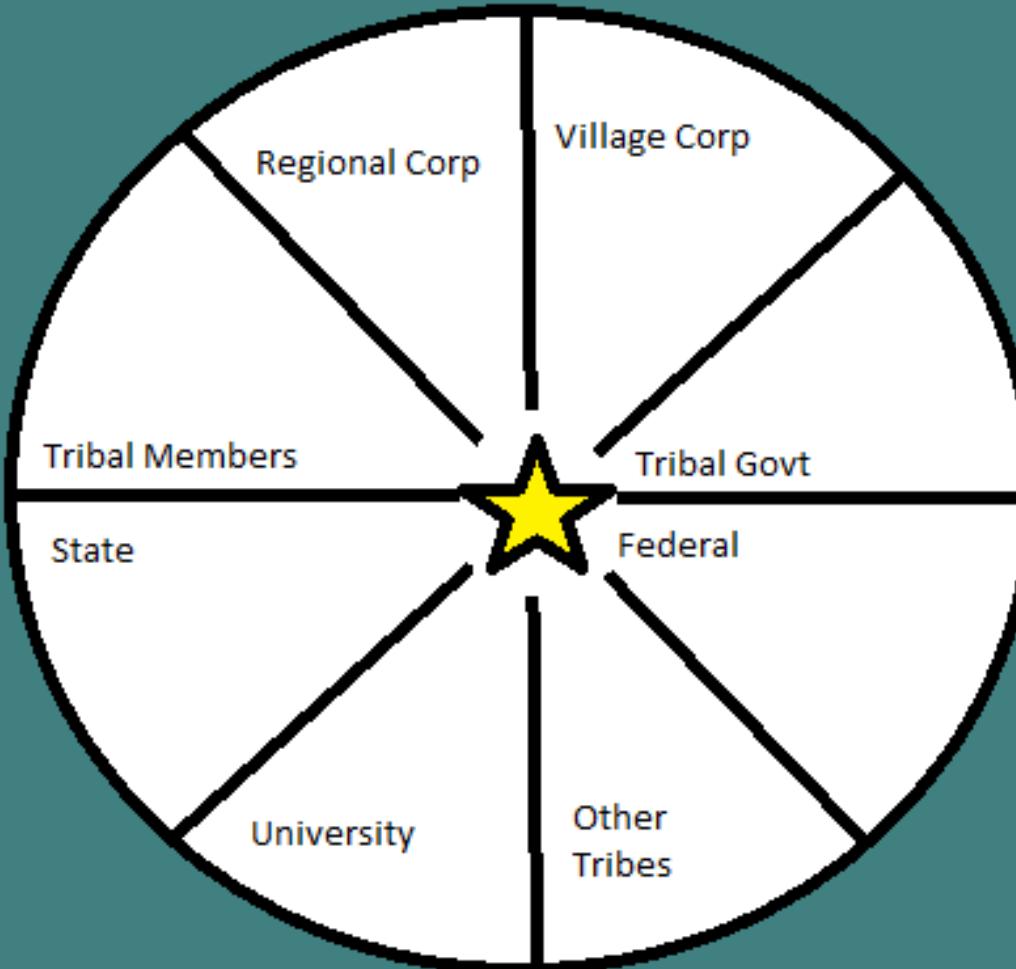
# Unique and yet shared

- ❖ The experience and impacts for each Tribe will be unique.
- ❖ Yet, there are common themes that will be shared.
  - Water
  - Safety and food security
  - Fire
  - Ecosystem changes

Look first at home.

Resources: <https://www.snap.uaf.edu/>

The image is a screenshot of the SNAP (Scenarios Network for Alaska + Arctic Planning) website. The header features a logo with a green mountain and a grey circle, followed by the word "SNAP" in large grey letters. To the right, the text "SCENARIOS NETWORK FOR ALASKA + ARCTIC PLANNING" is displayed. Below the header is a navigation bar with links: OUR WORK, DATA + TOOLS (which is currently selected and highlighted in grey), METHODS, PROJECTS, NEWS, and CONTACT. The main content area has a large background image of a satellite view of smoke from wildfires in Siberia. On the left, a white box contains the text: "Northern wildfires send a planetary warning". Below this, a paragraph describes the situation: "It's summer 2019, and the planet's far North is on fire. Smoke from millions of acres of burned forest drifts over communities across Alaska, Canada, and Siberia. Fires in these places are normal, but—as studies here at the University of Alaska show—they are also abnormal." A "Full story" link is provided. At the bottom of this box is a photo credit: "Photo: Smoke from wildfires in Siberia drifts east toward Canada and the U.S. on July 30, 2019. (NASA)". The "DATA + TOOLS" menu is expanded, listing various resources: Download SNAP Data, About Climate Data, Alaska Garden Helper, Community Charts, Community Permafrost Data, Daily Precipitation, Extreme Weather, Historical Sea Ice Atlas, Integrated Arctic Management, Modeled Sea Ice Coverage, NWT Climate Scenarios Explorer, Sea Ice and Wind, Wildfire in Alaska, and All Tools. The word "smoke" is overlaid in white on the satellite image.



# Adaptation Needs

- ❖ Education and Outreach
- ❖ Emergency Response
- ❖ Habitat Protection
- ❖ Flooding and Erosion
- ❖ Secure water sources
- ❖ Funding & grant writing
- ❖ New technologies

[https://climatetkw.files.wordpress.com/2014/09/tks\\_guidelines\\_v1.pdf](https://climatetkw.files.wordpress.com/2014/09/tks_guidelines_v1.pdf)

## **Guidelines for Considering Traditional Knowledges in Climate Change Initiatives**





# ETEPS & Erosion

- Many of the Tribes in R10 have named climate change as a priority in their ETEPS.
- Erosion is a significant issue.
  - **Tribes may use their GAP program to gather baseline data on erosion.**
  - This may require a QAPP unless you are working as part of a larger regional effort that has an approved QAPP.
  - Rapid erosion events may also be included in emergency response planning.
  - The State of Alaska has a useful publication that may be a good starting place.

# GAP guidance and capacity building to respond to climate change

- ❖ Vulnerability/Risk Assessments
- ❖ Climate Preparedness Program (building codes, zoning rules, emergency management)
- ❖ Education and Outreach programs
- ❖ Intergovernmental Partnerships
- ❖ Green building codes

# Capacity Indicators

Tribal climate change work with GAP will have capacity indicators, just as any other environmental issues the Tribe addresses.

**Climate Change is included with Air Quality Program Capacities**

## Examples of Climate Capacity Indicators

C.3.14 Tribe has developed a climate change vulnerability/risk assessment.

C.3.15 Tribe has developed a climate change preparedness/adaptation program (e.g., zoning rules and regulations; tax incentives; building codes/design standards; utility rates/fee setting; public safety rules and regulations; outreach and education; emergency management powers).

# Climate Outreach and Education

C.3.19 Tribe has established community outreach/education programs, including air quality advisory system (e.g., indoor air quality, radon, diesel emissions reduction, burn barrels, wood smoke, anti-idling, greenhouse gas and ozone-depleting substance reduction, **climate change**, and radiation hazards).



# Intergovernmental Partnerships

C.3.20 Tribe has established **intergovernmental partnerships** with federal, state, local, and tribal governments to address air quality issues, including **climate change**, and radiation hazards (e.g., memoranda of understanding, interagency agreements).

# Energy Efficiency Policies and Programs

C.3.17 Tribe has established energy efficiency policies and program(s) (e.g., building design standards/codes, ENERGY STAR initiatives for government operations and tribal housing).



# Air Toxics

C.3.18      Tribe has established an air toxics program

- capacity to: monitor for acid and mercury deposition;
- sample subsistence food sources to measure toxic accumulation;
- partner with other jurisdictions on assessment projects;
- communicate potential threats to community members;
- implement actions to reduce sources of air toxics pollution.



# Ensure Emergency Preparedness

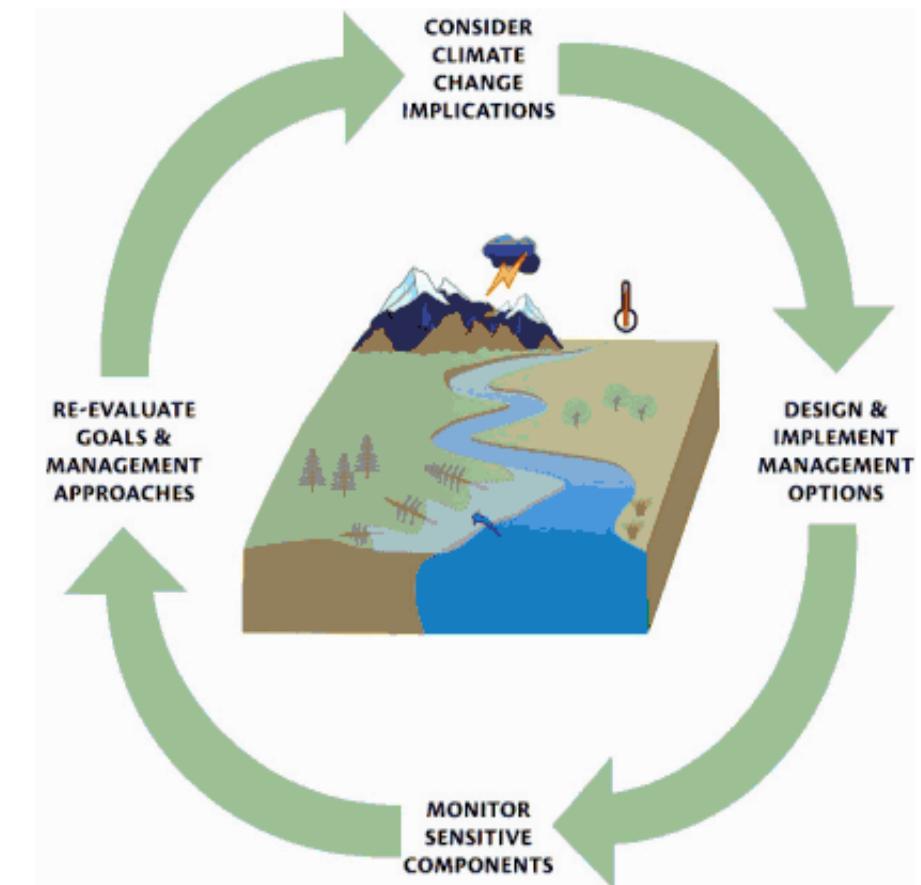
As the climate becomes more unpredictable, emergency preparedness becomes more crucial to Tribal safety and timely responses. **Enroll in one of FEMA's trainings for Tribal managers and leadership.** These trainings could lead to formation of Local Emergency Planning Committee which manages the organization and funding.

These courses include Continuity of Operations, Emergency Management Framework, Emergency Management Operations, Mitigation of Risk and Emergency Management Overview for Tribal Leaders.  
<https://training.fema.gov/tribal/>



# What can EPA do to assist Tribes to adapt to climate change?

- Model adaption plans that were effective.
- Further integration of TEK and LEOs.
- TEK + Western Science = EPA Climate Change Response



# Resource: Sample GAP Climate change workplan

<https://www.epa.gov/sites/production/files/2018-12/documents/r10-gap-tools-climate-change-workplan-template.pdf>

Work Plan Period: <u>Begin:</u> <u>End:</u>
<b>Work Plan Component:</b> Climate Change Adaptation Planning, emergency response emphasis
<b>Primary Capacity Area Developed:</b> C.3.14 Tribe has developed a climate change vulnerability/risk assessment. F.3.9 Tribe has established a program to conduct emergency response training and exercises for community members. C.3.19 Tribe has established community outreach/education programs, including air quality advisory system (e.g., climate change).
<b>Long-Term Outcome(s) (Changes in the Environment, Public Health, Behavior or Knowledge):</b> <ul style="list-style-type: none"><li>Assess potential environmental impacts and develop corresponding adaptation strategies.</li><li>Build Tribal environmental capacity to prepare for climate change impacts through assessment and planning.</li></ul>
<b>Intermediate Outcome(s) (this work plan period):</b> <ul style="list-style-type: none"><li>Tribal Council and Tribal members will better understand potential impacts to human health and the environment from climate change in their region.</li><li>Tribe will increase its capacity to participate in emergency response programs.</li><li>Tribal environmental program will have the required plans and assessments to access other state and federal programs.</li><li>Tribe will be able to assess and protect ecosystem and watershed and ecosystem health.</li></ul>



# Michelle Davis

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907 271-3434

# EPA's National Tribal Science Council

The Tribal Science Council is a forum for interaction between Tribal and Agency representatives to work collaboratively on environmental science issues.

The Tribal Science Council is committed to the development of sound scientific approaches to meet the needs of Tribes.

Adv

 EPA United States Environmental Protection Agency

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Science in Indian Country

## Science in Indian Country



*Building bridges between Tribal and EPA programs by collaborating on priority tribal science issues.*

**Key Links**

- [Tribal Science Council](#)
- [Tribal-FERST](#)
- [National Tribal Science Priorities](#)
- [Events & Meeting Minutes](#)

# Funding: <http://envs.uoregon.edu/tribal-climate/>



## Tribal Climate Change Guide

The Tribal Climate Change Guide is part of the Pacific Northwest Tribal Climate Change Project. For more information, visit: <http://tribalclimate.uoregon.edu/>. If you would like to add to or an guide, please complete this [google form](#). *If you have additions or suggestions for this website, please email [kathy@uoregon.edu](mailto:kathy@uoregon.edu)!*

[Funding](#)[Tribal Adaptation Plans](#)[Tribal Climate Resources](#)[Climate Programs](#)[Scientists](#)[Publications](#)[Health](#)[Climate Education](#)[Disaster Resources](#)[Jobs](#)[Events](#)

## Funding

*The Tribal Climate Change Funding Guide is intended to provide up-to-date information on grants, programs and plans that may assist tribes in addressing climate change through a broad r this guide regularly, so please check back often. If you have questions or updates for this guide, email: [kathy@uoregon.edu](mailto:kathy@uoregon.edu). Please note that for entries that are [accepting applications co](#) column will list "12/31/2017" as the grant deadline. This ensures that those grants will appear immediately after those grants with a set deadline.*

**Search by Keyword****Geography**

Title	Organization	Grant Deadline	Description	Category	Funding Amount
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# Restoration

- Will help to bring back resiliency to traditional land and waters.
- May help with ecosystem preservation.
- Some Tribes are using restoration and reforestation to participate in carbon sequestration efforts.
- Healthy marine ecosystems may be essential to providing some protections against ocean acidification.