

Presentation by:

Joe Hostler

Yurok Tribe Environmental
Program-(YTEP)

NCAI 14th Annual Tribal
Leader/Scholar Forum

Sparks, NV

June 26th, 2019

Yurok Tribe Climate Change Adaptation Plan for Water & Aquatic Resources 2014-2018

AIR TEMPS (July daily max)



DOWN RIVER
(DEL NORTE COUNTY)
1950–2004: 67 °F
2100: 70–73 °F



UPRIVER
(HUMBOLDT COUNTY)
1950–2004: 72 °F
2100: 76–79 °F

WATER TEMPERATURES



LOWER KLAMATH RIVER
MEAN DECADEAL WATER
TEMPERATURES
1961–2009: baseline
2061: 1.8–4.1 °F

HEAVIER DOWNPOURS



NORTHERN CALIFORNIA
1 IN 20 YEAR EVENT
1950–2004: baseline
2100: 3–4 times as often

SEA LEVEL RISE



NORTH OF CAPE
MENDOCINO
2000: baseline
2100: +2.4–4.7 feet

OCEAN pH



GLOBALLY
1994: 8.1 pH
2100: 7.7–7.8 pH
100–150% increase
in relative acidity

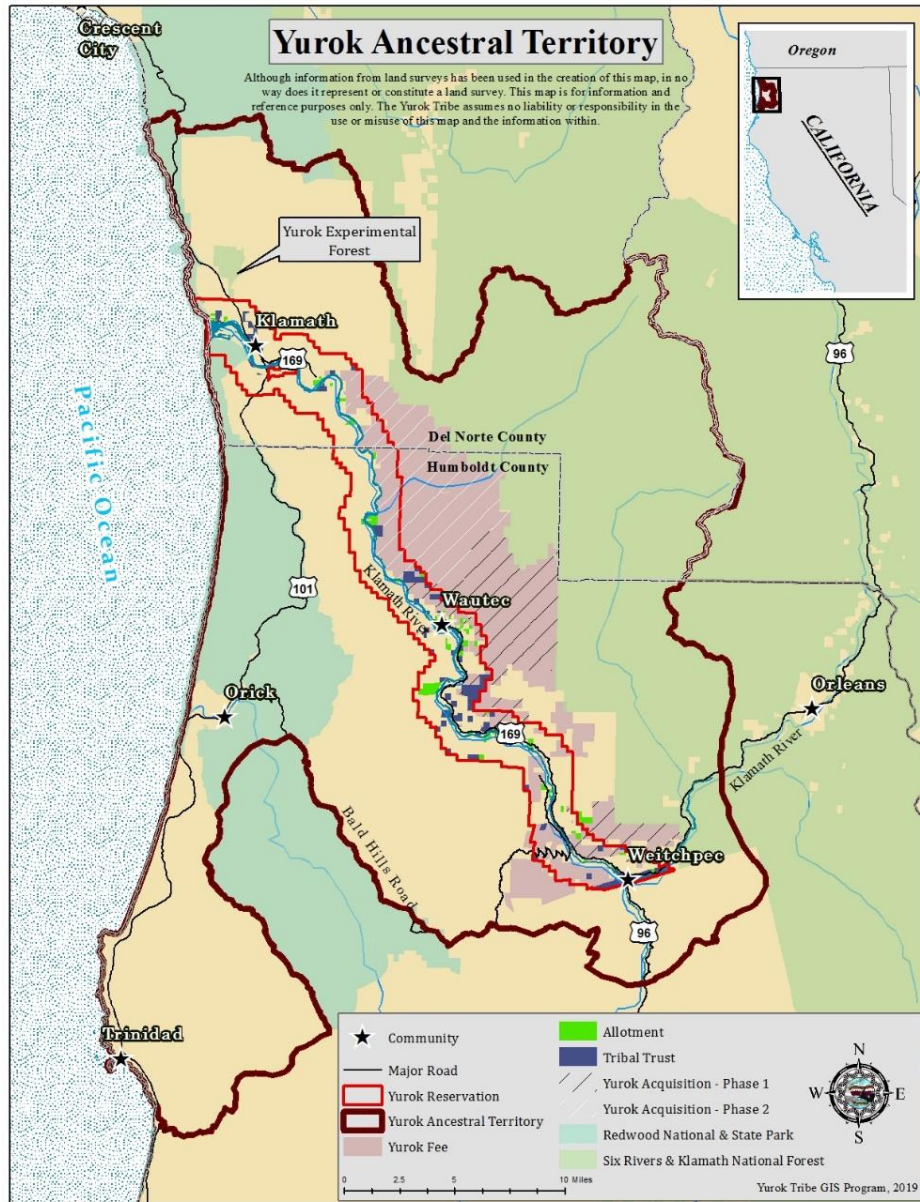
FIRES



NORTHERN CALIFORNIA
1961–1990: baseline
2085: at least twice
as much area burned

Expected Local Climate Change in
Yurok Territory





Tribal Background

Yurok People:

Pueleek-laa

(River Yurok)

Ner'er-nerh

(Coastal Yurok)

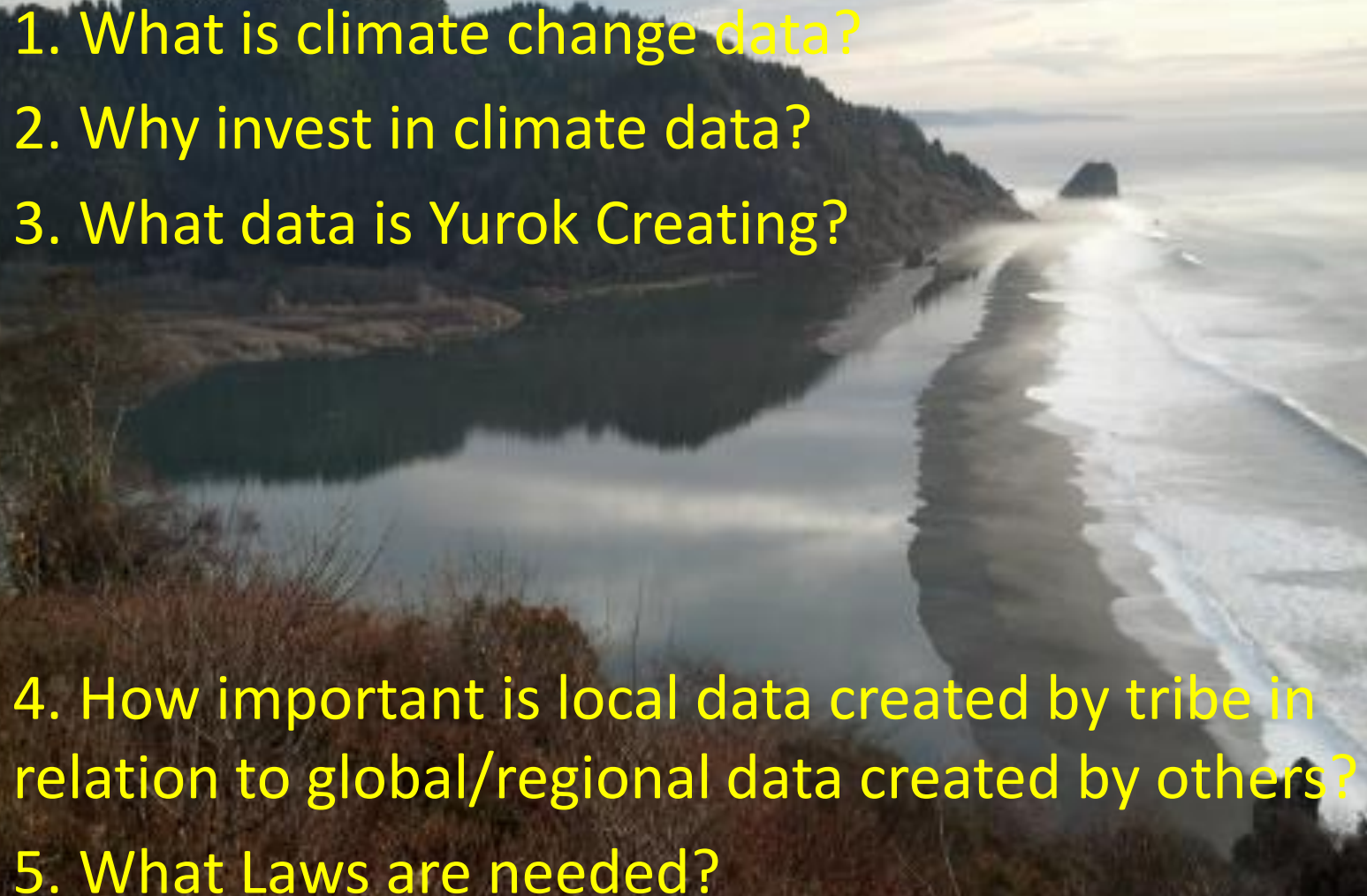
California's largest Tribe. Nearly 6,300 members

Yurok Indian Reservation is 1 mile each side of the lower 46 Miles of the Klamath River. = 56,000 acres.

Recently acquired 47,000 ac of fee land adjacent to YIR.

Paying loans with Carbon Sequestration dollars.

Overview

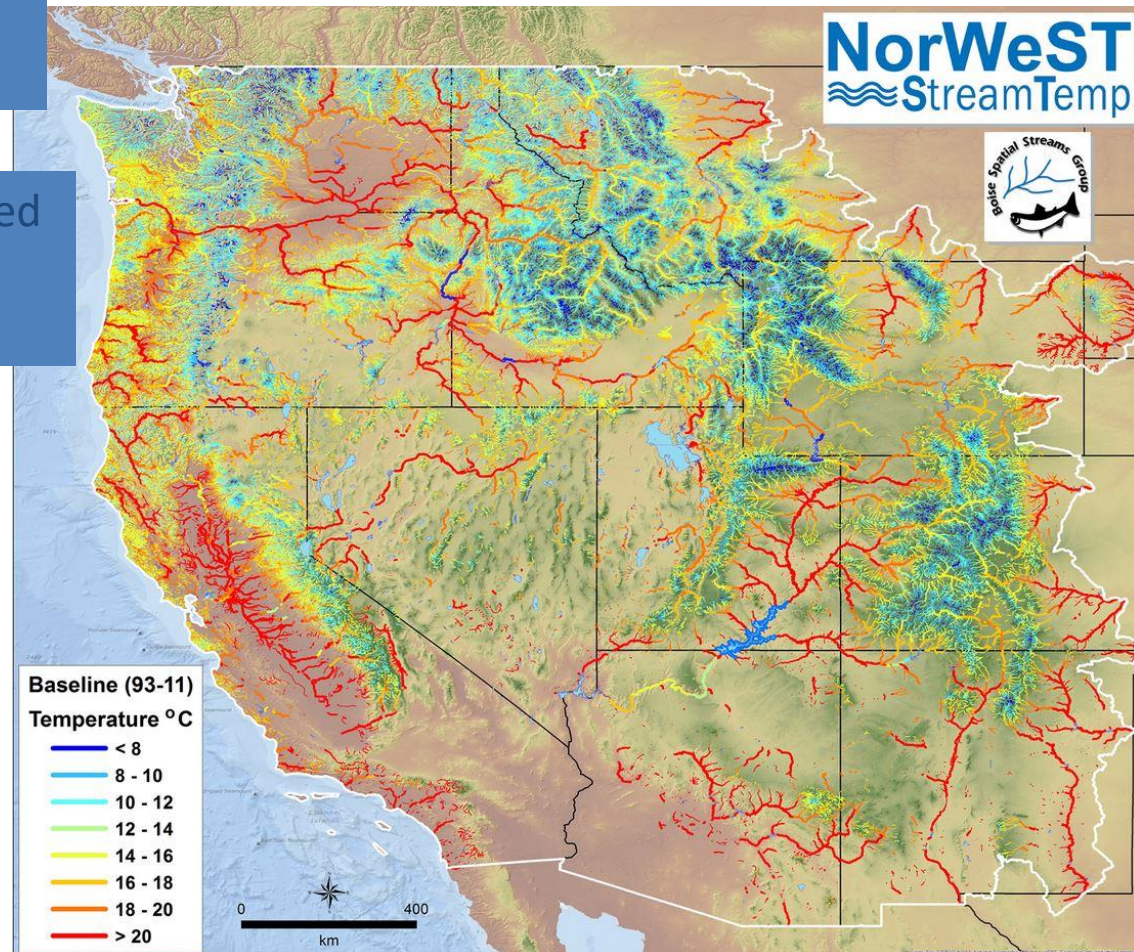
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1. What is climate change data?
 2. Why invest in climate data?
 3. What data is Yurok Creating?
 4. How important is local data created by tribe in relation to global/regional data created by others?
 5. What Laws are needed?

1. What is Climate Change Data?

A main concept of Climate Change is Time

Climate Change response typically falls into two categories:
“Mitigation” and “Adaptation”.

Adaptation refers to measures designed to reduce the vulnerability of systems to the effects of Climate Change



2. Why invest in climate change data?



“You’re either at the table
or on the menu”

-unknown

MEETINGS COVERAGE

GENERAL ASSEMBLY >

GA/12131

SEVENTY-THIRD SESSION, HIGH-LEVEL MEETING ON CLIMATE AND SUSTAINABLE DEVELOPMENT (AM & PM) 28 MARCH 2019

Only 11 Years Left to Prevent Irreversible Damage from Climate Change, Speakers Warn during General Assembly High-Level Meeting

Data issues Limited Capacity

Tribal created data ideal

Traditional Ecological Knowledge (TEK) reflects cultural values but risks exist

Western Knowledge Tribal input into other’s data improves their data sets

Federal

State

Universities

Global

3. What data is Yurok Collecting



Identifying, Assessing and Adapting to Climate Change Impacts to Yurok Water and Aquatic Resources, Food Security and Tribal Health

- **1. Collect data on surface water temperature, flow & conditions**
- **2. Monitor mussels for toxins (Paralytic Shellfish Poisoning , PSP)**
- **3. Assess impacts on water resources, key subsistence foods, Yurok food security, and tribal member health**
- **4. Engage the tribal community and departments in adaptation planning for Yurok water and aquatic resources.**
- **5. Develop a web-based Yurok Environmental Observer Network to identify and track climate change impacts**

TEK Incorporations

Info from 10 elder interviews
Sought Informed & Prior consent
from both:

Elders/Family
Tribal Council

"In the old days we used to visit more. Now we don't, we think we don't have time to. Once you do that you take away from that community ...It's something we should try to get back."

—Bertha Peters

Elder Interviews 2014

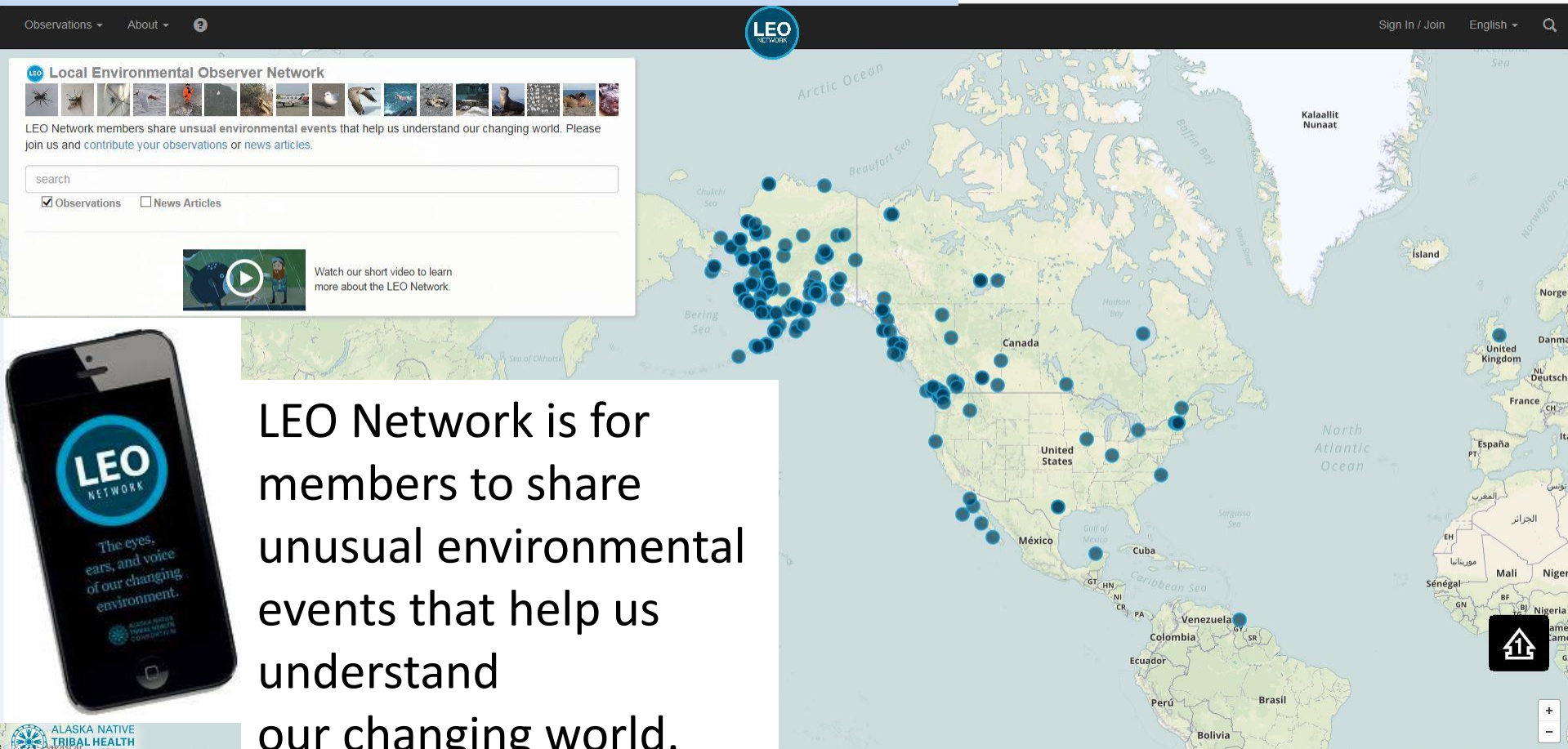
**"Worry about the Water.
Water is Life. Focus on water
and the rest will follow." - Yurok
Elder**

"Communicating with the elders. Never put that off. Never say you're going to do something, talk to an elder tomorrow because it might be too late. So ask questions, when your grandfathers, great-grandfathers are still around. Get those questions, write them down, tape them, take pictures. Just be respectful to them and ask them what they witnessed. What it's like for them. That's the best teacher right there. Yeah Grandmother, Grandfather."

—Axel Lindgren III,
Elder Interviews 2014

4. Importance of Local Data created by Tribes

<https://leonetwork.org>



The screenshot displays the LEO Network website interface. At the top, there's a navigation bar with 'Observations', 'About', and a help icon. The main header features the LEO Network logo and a sign-in/join button. Below the header, a sidebar on the left contains a search bar, checkboxes for 'Observations' (checked) and 'News Articles', and a video player with a play button. The main content area shows a map of North America and parts of Europe, with numerous blue dots indicating observation locations. The map includes labels for various regions like Canada, United States, Mexico, and the Arctic Ocean. A small inset image of a smartphone shows the LEO Network app interface with the text 'The eyes, ears, and voice of our changing environment.'

LEO Network is for members to share unusual environmental events that help us understand our changing world.

LEO Network Yurok Hub

← → ↻

http://www.leonetwork.org/en/posts/show/DA762377-2C7E-4f... Shellfish Health and Safety ...

File Edit View Favorites Tools Help

Observations ▾ About ?

LEO NETWORK

Sign In / Join English ▾

PROJECTS SHELLFISH HEALTH AND SAFETY


WATCH

APR 22, 2016

Shellfish Health and Safety

INVERTEBRATES

HEALTH



Location: Northern California Coast. Humboldt & Del Norte County. Focus on Yurok Ancestral lands.

Description: The project includes observations, analysis and advisories about shellfish and shellfish safety in particular related to harmful algae and other sources of marine or human illness.

Background: Yurok Tribe Environmental Program has been monitoring levels of PSP in shellfish for the past four years. Tribal staff collect samples monthly that are analyzed at the California State Environmental Lab for PSP and domoic acid. **Domoic acid** is a potent neurotoxin that can accumulate in shellfish, other invertebrates and sometimes fish. It causes illness and sometimes death in a variety of birds and marine mammals that consume affected organisms. At low levels, domoic acid exposure can cause nausea, diarrhea and dizziness in humans. At higher levels, it can cause persistent short-term memory loss, seizures and can in some cases be fatal. **Paralytic Shellfish Poisoning (PSP)** is a serious illness caused by eating shellfish contaminated with dinoflagellate algae that produce harmful toxins. Some of these toxins are 1,000 times more potent

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View on Map

WATCH




Dungeness crab (*Metacarcinus magister*) vulnerable to domoic acid contamination
Klamath, California, United States
NOV 7, 2016

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Recreational Razor Clam Fishery Closed in Humboldt and Del Norte Counties
Klamath, California, United States
JUN 7, 2016


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Marine Mussels Clean of PSP (Toxins)
Klamath, California, United States
APR 22, 2016

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Add Comment




Joe Hostler
May 17, 2018

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Send Comment



Guidelines for Considering Traditional Knowledges in Climate Change Initiatives

[Home](#) [CTKW](#) [Guidelines](#) [Primer](#) [About](#) [Resources](#) [Discussion Forum](#)

[Guidelines for Considering Traditional Knowledges \(TKs\) in Climate Change Initiatives](#) is a publication intended to be an informational resource for tribes, agencies, and organizations across the United States interested in understanding TKs in the context of climate change.

The Third National Climate Assessment issued in May 2014 contained a chapter dedicated to the impact of climate change on tribal peoples. In light of the increasing recognition of the significance of traditional knowledges (TKs) in relation to climate change, a self-organized, informal group of indigenous persons, staff of indigenous governments and organizations, and experts with experience working with issues concerning traditional knowledges (The Climate and Traditional Knowledges Workgroup – CTKW), felt compelled to develop a framework to increase understanding of issues relating to access and protection of TKs in climate initiatives and interactions between holders of TKs and non-tribal partners. The Guidelines were originally developed to inform the Department of Interior's Advisory Committee on Climate Change and Natural Resource Science (ACCCNRS) and the North Pacific Landscape Conservation Cooperative in May 2014. The CTKW developed these Guidelines through a collaborative effort with funding support from individual tribal governments, the North Pacific Landscape Conservation Cooperative, the Northwest Climate Science Center and the USDA Forest Service Pacific Northwest Research Station.

*** Neither these guidelines nor this website are places to share Traditional Knowledges. Instead, they are places to build an understanding of how Traditional Knowledges may inform climate change initiatives and the risks to tribes and knowledge holders that may come from sharing Traditional Knowledges. This website will not accept submissions of primary Traditional Knowledges, and is not a place for Traditional Knowledges to be exchanged.*

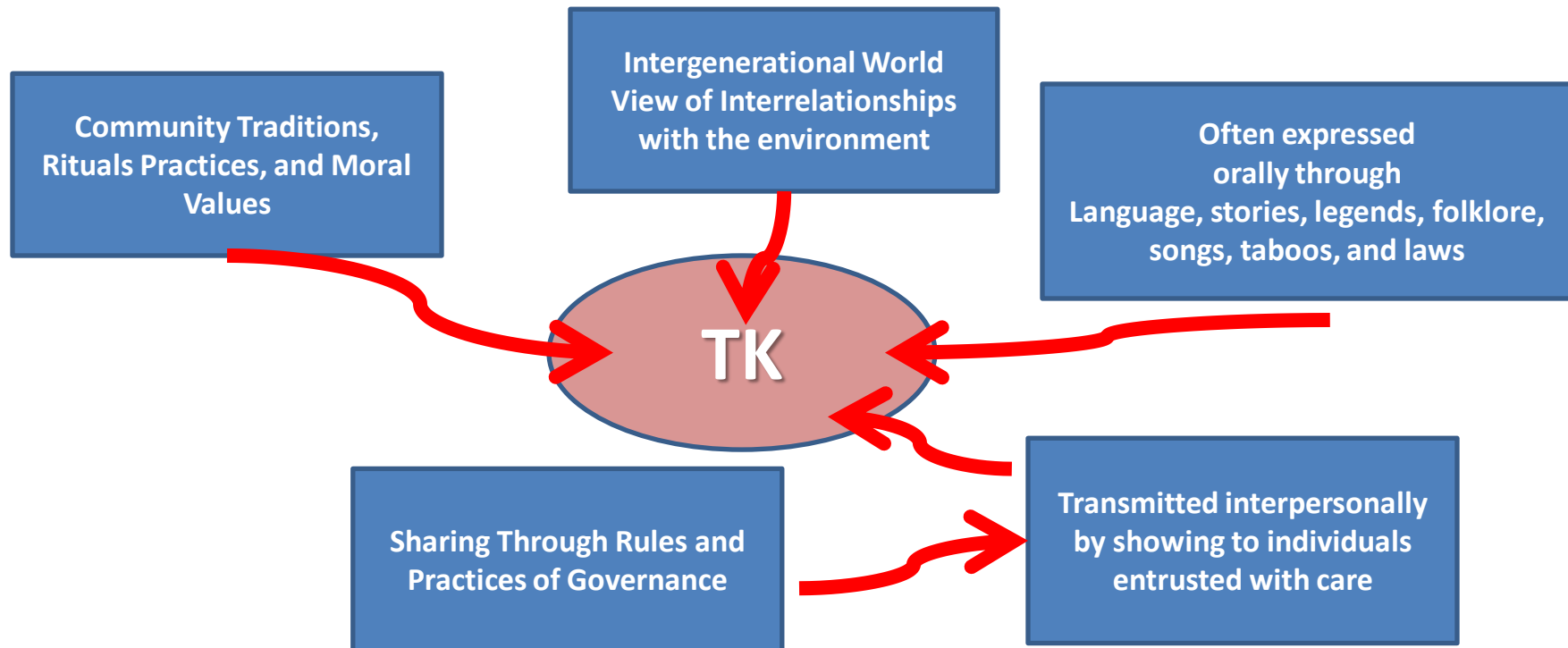
Citation: Climate and Traditional Knowledges Workgroup (CTKW). 2014. Guidelines for Considering Traditional Knowledges in Climate Change Initiatives. <https://climatetkw.wordpress.com>.

Download a brochure about the guidelines here: [TKs_Guidelines_brochure](#)

<https://climatetkw.wordpress.com>

What are Traditional Knowledges?

- Knowledge or Knowledges?
- Knowledge Systems



TK

Sharing



Credit: Preston Hardison
Tulalip Tribes

5. What laws are needed?

TK's protocols

- ✓ How a tribe wishes to be contacted
- ✓ Who owns research outcomes
- ✓ Tribal control over what gets published
- ✓ Recognition and Remuneration to elders
- ✓ Acknowledgement
- ✓ Restrictions on uses
 - customary law, collective ownership
- ✓ “contracting into custom”
- ✓ Restrictions on transfers
- ✓ Checkpoints for changes in use
- ✓ Ongoing responsibilities for consultation, negotiation,
monitoring, reporting

Credit: Preston Hardison

Tulalip Tribes



Wo-hlklaw'
Thank you



Joe Hostler

Yurok Tribe Environmental Program
(YTEP)

jhostler@yuroktribe.nsn.us

(707)482-1822 x1010

www.yuroktribe.org