American Public Health Association - Webinar
Climate Justice Changes Health: Local, Tribal, Global & Generational

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*Bringing together research & science
in partnership with the Native community*

[www.nativescience.org](http://www.nativescience.org)
[www.nativeknowledge.org](http://www.nativeknowledge.org)
US Global Change Research Program

GCRA Mandate:
“To provide for development and coordination of a comprehensive and integrated United States Research Program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change.”

Produced by the U.S. Global Change Research Program; every 4 years
Climate change poses particular threats to Indigenous Peoples’ health, well-being, and ways of life.

- Threatened access to traditional foods
- Significant decrease in water quality & quantity
- Declining sea ice
- Human health & livelihood hazards
- Infrastructure damage
- Thawing permafrost
- Relocation
Background about tribes

• 566 federally recognized tribes; other indigenous groups
• 5.2 million American Indians and Alaska Natives
• 56 million acres in lower 48; in AK, 44 million acres held by Alaska Native Corporations
• Reservations – most are small, often remote or isolated
• Adverse socioeconomic conditions – extreme poverty, substandard housing, health/community services, food, infrastructure, transportation, education, employment, plus high cost of fuels
• Close relationships with land and environment - stewards
Traditional Knowledge – Our Way of Life

• Language, ceremonies, cultures, practices and food sources evolved in places. Wisdom and knowledge of native people reside in songs, dances, art, language, music.
• People, plants and animals are relatives, not resources.
• Method of recording historic weather and climate variability and impacts.
• TK can inform indigenous and non-indigenous understanding of climate impacts and adaptation strategies, but there must be clear protection of TK.
• TK is threatened by loss of elders (knowledge keepers), language, culture and cultural identities, ceremonies, sense of place, all our relations.
Dr. Oscar Kawagley

**SURFACE CULTURE**
- fine arts
- storytelling
- drumming
- subsistence
- dancing
- games
- cooking
- dress

**FOLK CULTURE**
- weather forecasting
- animal behavior
- navigation skills
- observation skills
- pattern recognition
- seasonal changes/cycles
- edible plants / medical knowledge
- star knowledge / constellations
- language / terminology/concepts
- counting / measurement / estimation
- clothing design/insulation
- tools /
- technology
- building design/materials
- transportation
- genealogy
- waste disposal
- fire/heating/cooking
- hunting / fishing / trapping
- weapons

**DEEP CULTURE**

AND MUCH, MUCH MORE . . .
Native Ways of Knowing Contribute to Understanding the Ecosystem

Qualitative understanding of:

1) How cultures are sustained in extreme climates
2) How/when/where to access subsistence foods
3) Daily and seasonal weather patterns
4) Sustainable food harvesting techniques and strategies
5) Wildlife biology and behavior patterns
6) How to adapt to climatic changes
7) Complex natural interrelationships
8) Abnormal natural phenomena in the context of long time periods
9) Qualitative historical knowledge and information of the natural world
Impacts of Climate Change

Health

Sea Ice
Erosion

Permafrost
Relocation

- CC impacts forcing relocation of entire tribal communities in AK, Louisiana, Pacific islands, other coastal locations
- Coastal AK Native Villages
- Decreased sea ice, thawing permafrost, increased storm intensity → erosion. Loss of basic necessities and infrastructure
  - Relocation impeded by existing federal and state statutes and regulations, absence of authority and governance structure to facilitate relocation
2003 US government report found 3 communities seeking to relocate in Alaska and 184 other communities are being affected by flooding and erosion.

2009 US government report found 12 seeking to relocate. Now more than 30.
Alaska Native Science Commission & University of Alaska Fairbanks
Community Partnership for Self Reliance & Sustainability
Rights, Resilience and Community-Based Adaptation

- Alaska Institute for Justice, ANSC, NOAA Project
- Design a Relocation Governance Framework that Protects Human Rights

- Sharing expertise among communities
- Strengthening partnerships between Tribes, State and Federal government
- Designing social-ecological monitoring tools: Sea ice conditions - Permafrost melting - Shoreline erosion - Flooding & storm surge heights - Health & well-being
- Integrating traditional knowledge and western science
- Learning about resources that help communities respond to flooding, erosion, and permafrost melting
ALASKA NATIVE PERSPECTIVES ON EARTH AND CLIMATE

TRADITIONAL WAYS OF KNOWING
Spirit
Air
Fire
Water
Earth

EARTH AS A SYSTEM
Atmosphere
Biosphere
Cryosphere
Hydrosphere
Lithosphere

Lesson Plans and Student Activities
As the environmental, economic, and political consequences of climate change are felt in Alaska, the Arctic, and throughout the world, we have much to learn from both the traditional knowledge of Native peoples and ongoing scientific research. These two methods of observing nature and solving the challenges of survival can provide complementary perspectives on these issues. This collection looks at Alaska’s unique geography and the impact of development and climate change using both of these tools, and features Alaska Native scientists who are working toward solutions.

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http://www.teachersdomain.org/special/ean/
Local Environmental Observer (LEO) Network

Northern communities are changing due to environmental impacts, climate change and development. Monitoring the environment is important for understanding the risks and benefits and for adaptation. The LEOs are the eyes, ears and voice of environmental change in our communities.

We are tribal professionals who apply traditional knowledge, western science and technology to document unusual plants and wildlife, extreme weather, erosion, flooding, droughts, wildfire and other events that can threaten food security, water security and community health. Checkout our LEO monthly maps, and other links to learn more. To view the LEO Observations Dataset, click here.
Guidelines for Considering Traditional Knowledges in Climate Change Initiatives
Climate and Traditional Knowledges Workgroup
http://climatetkw.wordpress.com

• **Guideline 1.** Understand key concepts and definitions related to TKs.

• **Guideline 2.** Recognize that indigenous peoples and holders of TKs have a right NOT to participate in federal interactions around TKs.

• **Guideline 3.** Understand and communicate risks for indigenous peoples and holders of TKs.

• **Guideline 4.** Establish an institutional interface between indigenous peoples, TK holders, and government for clear, transparent and culturally appropriate terms-of-reference, particularly through the development of formal research agreements.

• **Guideline 5.** Provide training for federal agency staff working with indigenous peoples on initiatives involving TKs.

• **Guideline 6.** Provide specific directions to all agency staff, researchers and non-indigenous entities to ensure that protections for TKs requested by tribes and knowledge holders are upheld.

• **Guideline 7.** Recognize the role of multiple knowledge systems.

• **Guideline 8.** Develop guidelines for review of grant proposals that recognize the value of TKs, while ensuring protections for TKs, indigenous peoples, and holders of TKs.
IPCCSD – Indigenous Peoples’ Global Network on Climate Change and Sustainable Development

• Indigenous Peoples’ Global Summit on Climate Change
• Anchorage Declaration 2009
• Secretariat – Philippines
HOPE FOR OUR FUTURE GENERATIONS