

Climate Change and Indigenous Peoples: A Synthesis of Current Impacts and Experiences

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This synthesis of literature brings together research pertaining to the impacts of climate change on indigenous sovereignty, culture, health, and economies that are already being experienced by Alaska Native and American Indian tribes and other indigenous communities (including state recognized and unrecognized tribes) in the United States. This synthesis defines and describes the key frameworks informing indigenous understandings of climate change impacts and pathways for adaptation and mitigation, namely, **tribal sovereignty and self-determination, culture and cultural identity, and indigenous community health indicators.**

Current Climate Impacts affecting Indigenous Communities in the U.S.

Public Health: Climate change has wide-ranging health impacts including increases in modern diseases and obesity associated with loss of traditional foods and medicine, infectious disease, contamination, temperature and precipitation extremes, extreme weather, decreased air quality, loss of infrastructure and services, and extreme weather events.

Mental Health: Climate change is associated with increased rates of mood and anxiety disorders, increases of strong emotional responses, and loss of connections to homeland and social networks. Indigenous communities are particularly vulnerable to mental health impacts because of the importance of place. Many tribes experience historical grief associated with loss of homelands, traditional way of life, and colonialism, which may be worsened by climate change.

Food Security and Traditional Foods: Traditional foods, like game, fish, and wild and cultivated crops, are vital for sustenance, economic, medicinal, cultural, and community health practices. Climate variation destabilizes food security by impacting the availability and access, contamination, storage, and confidence in the safety of traditional foods.

Water Resources: For many indigenous communities, water is considered to be sacred and has religious and cultural significance. Water is central to tribal economies, supporting agriculture, energy production, fisheries, grazing, towns, and communities. Water is also central to tribal culture, providing habitat native species that are important for food, medicines, and rituals. Cozzetto et al. (2013) identify five impacts of climate change on American Indian and Alaskan Native water resources: tribal sovereignty and water rights, water supply and management, culturally important species, ranching and agriculture, soil quality.

Terrestrial Resources: Climate change is associated with increasing forest disturbances like insect and pathogen outbreaks, invasive species, wildfires, and extreme events like droughts, high winds, ice storms, hurricanes, and landslides induced by storms. Changes to terrestrial ecosystems threaten access to culturally important tribal resources and have the potential to threaten tribal sovereignty.

Climate-related Disasters: Climate change impacts are causing tribes in the contiguous US and Alaska to consider relocation of off traditional and tribal lands. As erosion, flooding sea level rise, and permafrost thaw makes coastlines and riverine increasingly instable; communities have limited options for relocation. There is currently no national framework to deal with the relocation of tribal communities and forced relocation is compounded by the current lack of governance mechanisms and funds to support the communities.

Community Infrastructure: Community infrastructure is vulnerable to landscape hazards including permafrost thaw, coastal erosion, and, flooding. Climate change is impacting, or projected to impact, water infrastructure and services, transportation, communication infrastructure, shelter, and energy.

Oil and Gas Industry: Indigenous populations are also experiencing environmental change associated with development practices, including industry, manufacturing, and natural resource extraction. Many of these practices are profit-driven and consume resources in unsustainable ways that threaten indigenous lands and resources.

Tribal Approaches to Climate Change: Adaptation and Mitigation

Some tribes are already exploring, developing, and implementing adaptation and mitigation plans to address the impacts of climate change. Indigenous communities are responding to climate change through: research collaborations, information campaigns, restoration efforts, and public awareness. The resilience of indigenous communities is strengthened when indigenous peoples shape climate policies, are included in natural resource management, strengthen tribal economies, and engage in sustainable development.

Federal Adaptation Policies and Governance: Federal, state, and local policy has a significant role in supporting or undermining the adaptive capacity of indigenous communities. The ability for many indigenous communities to respond to climate change is influenced by federal funding and the government-to-government relationship.

Traditional knowledge and adaptation: Traditional knowledges impact how indigenous communities understand climate change impacts and develop adaptation strategies. Traditional knowledges can make substantial contributions to the assessment of climate change impacts and identifying potential solutions for adaptation. Traditional knowledges can inform climate action by recognizing changes, developing adaptation strategies, and implementation sustainable land management practices.

Mitigation: While the impacts of climate change cannot be reversed, climate change mitigation offers opportunity for tribes to confront the disproportionate impacts of climate change on indigenous communities, slow the rate of climate change, and reduce climate change impacts. Many indigenous declarations on climate change in the United States and internationally strongly suggest that adaptation strategies must come hand in hand with mitigation to generate benefits from multiple pathways.

Barriers and limitations to addressing current impacts: Tribal involvement is lacking on federal climate change committees, working groups, and initiatives, leaving tribal perspectives and concerns unvoiced in this federal dialogue. Many reports rely on the publication of peer-reviewed literature and do not take into account perspective of indigenous traditional knowledges and oral traditions. Tribal adaptation is largely dependent on federal funding that is vulnerable to political and economic contexts

Solutions and best practices: Potential solutions for increasing the resilience of indigenous communities include increasing indigenous participation in climate change initiatives. Indigenous perspectives and traditional knowledges must guide climate change assessment and adaptation in order to develop culturally appropriate strategies. The perspectives and knowledges of indigenous communities serve also serve as an invaluable source of knowledge for climate change adaptation and mitigation strategies nation-wide. One avenue for increased indigenous participation in the National Climate Assessment (NCA) process.