United States Environmental Protection Agency

Climate Change and the Health of Indigenous Populations

Understanding the threats that climate change poses to human health can help us work together to lower risks and be prepared. Climate change threatens human health, including mental health, and access to clean air, safe drinking water, nutritious food, and shelter. Everyone is affected by climate change at some point in their lives. Some people are more affected by climate change than others because of factors like where they live; their age, health, income, and occupation; and how they go about their day-to-day life.

Indigenous communities and tribes are diverse and span the United States. While each community and tribe is unique, many share characteristics that can affect their ability to prepare for, respond to, and cope with the impacts of climate change on health. These include:

- living in rural areas or places most affected by climate change (like communities along the coast)
- relying on surrounding environment and natural resources for food, cultural practices, and income
- coping with higher levels of existing health risks when compared to other groups
- having high rates of uninsured individuals, who have difficulty accessing quality health care
- living in isolated or low income communities with limited access to healthcare services

Climate change threatens **food, water, air, infrastructure, and cultural identity** in different ways depending on where you live. The following pages provide examples of how Indigenous people across the United States are vulnerable to climate change.

What is climate change and why does it matter for health?

We've all heard of it, but what exactly is climate change? Greenhouse gases act like a blanket around Earth, trapping energy in the atmosphere. Human activities, especially burning fossil fuels for energy, increase the amount of greenhouse gases in our atmosphere and cause the climate to warm. **Climate** is the typical or average weather for an area. **Climate change** is any change in average weather that lasts for a long period of time, like warming temperatures. Climate change affects the food we eat, the air we breathe, and the water we drink. It also leads to extreme weather events, like flooding, droughts, and wildfires. All of these impacts affect human health.

There are steps tribal communities can take to protect themselves from these impacts. For example, Indigenous people have worked in regional networks, collaborated with scientists and academics, and leveraged Federal resources to limit vulnerabilities and build greater community resilience. Together, these actions can help to limit the negative effects of climate change on health.

TRIBAL HEALTH RISKS ACROSS THE NATION

FOOD

Climate change will make it harder for tribes to access safe and nutritious food, including traditional foods important to many tribes' cultural practices. Some examples of health risks to tribes include:

- In the **Upper Great Lakes Region**, already declining wild rice harvests in **Ojibwe** communities may be further affected by the impacts of rising temperatures and changing precipitation patterns on rice-growing conditions in lakes and rivers.
- Many Indigenous people along the **West and Gulf Coasts** rely on fish and shellfish for food, livelihoods, and certain ceremonial or cultural practices. Higher sea surface temperatures increase the risk that certain fish and shellfish will become contaminated with mercury, harmful algal toxins, or naturally-occurring bacteria.
- For many **Alaska Native** communities, rising temperatures and permafrost thaw threaten traditional methods of safe food storage in ice cellars or ice houses, and increase risk of food contamination. Climate change may also affect the abundance and nutritional quality of local Alaskan berries that are an important part of traditional diets.

WATER

Many tribes already lack access to safe drinking water and wastewater treatment in their communities. Climate change is expected to increase health risks associated with water quality problems like contamination and may reduce availability of water, particularly during droughts. Some examples of health risks to tribes include:

- Existing water quality problems on the **Fort Apache reservation** in **Arizona** have been associated with diarrhea and stomach issues in children. Rising temperatures and more frequent and intense rain can cause more harmful bacteria, viruses, and algae to grow in water supplies. People—especially children—who swim in, play in, or drink this water can become ill if exposed to contaminated water.
- Many remote tribal households, primarily in **western Alaska Native Villages** and the **Navajo Nation**, do not have adequate drinking water and wastewater treatment infrastructure, increasing the risk of contaminated water diseases like diarrhea. American Indian/Alaska Native infants are more likely to be hospitalized with diarrhea than other infants in the U.S.

AIR

Climate change is expected to increase health risks associated with poor air quality, worsening asthma, allergies, chronic obstructive pulmonary disorder (COPD) and other respiratory conditions. In Indigenous populations, rates of these illnesses are higher than those of other racial and ethnic groups. Some examples of health risks to tribes include:

- Tribal communities like the **Navajo Nation** in the **Southwestern United States**, especially in **Arizona and New Mexico**, face existing problems with polluted air from blowing dust. The Southwest will have more intense droughts as a result of climate change, increasing the potential for wind erosion to cause soil dust to become airborne.
- Changing weather patterns and more intense and frequent wildfires can raise the amount of pollution, dust, smoke, and pollen in the air. Projected increases in large wildfires threaten air quality for tribes in **Alaska** and the western United States, like the **Confederated Salish and Kootenai** in **Montana**.

ROADS, BUILDINGS, AND LAND

Climate change threatens property, roads, buildings, and other infrastructure, especially in tribal communities that are already dealing with poor infrastructure. Increasing frequency or intensity of extreme weather events can damage electricity, water, communication, and transportation systems, which are important to maintaining access to health care and emergency response services. Some examples of health risks to tribes include:

- Rural areas often have limited transportation options. The **Navajo Nation** on the **Colorado Plateau** face existing problems with roads blocked by migrating sand dunes, which can be caused, in part, by droughts and rising temperatures.
- In **Alaska**, as permafrost thaws into mud, it causes damage to roads, highways, and runways, and results in millions of dollars beyond what would otherwise be spent per year in repairs.
- Transportation systems and infrastructure in rural areas are particularly vulnerable to risks from flooding and rising sea levels. The people of several **Alaskan Villages**— including **Newtok, Shishmaref, and Kivalina**—are facing relocation due to rising sea levels and coastal erosion.

Of the 5.2 million American Indians and Alaska Natives registered in the U.S. Census, approximately 1.1 million live on or near reservations or Native lands, located mostly in the Northwest, Southwest, Great Plains, and Alaska.

http://nca2014.globalchange.gov/report/sectors/indigenous-peoples

Climate Change and Culture

The impacts of climate change are not limited to physical health. By affecting the environment and natural resources of tribal communities, climate change also threatens the cultural identities of Indigenous people. As plants and animals used in traditional practices or sacred ceremonies become less available, tribal culture and ways of life can be greatly affected. Medicinal plants are also at risk, which may change the way traditional healing is practiced. In addition, many Indigenous people, especially students and young professionals seeking education and employment opportunities, have been moving away from their rural communities and reservations to urban areas. This relocation may disrupt the social fabric of the community and the sharing of traditional knowledge and oral history. Climate change, and its impact on natural resources central to tribal tradition and culture, acts on top of existing stressors like youth relocation to further challenge traditional ways of life.

An Urban Perspective

Though climate change is an important concern from coast to coast, different areas are affected in different ways. Understanding which climate change impacts are most likely to threaten an area can help communities plan for risks and adapt to changes. For example, many Indigenous people live in urban communities and some reservations are located near or in large metropolitan areas. For example, many Indigenous people live in cities, and some reservations are located near or in large urban areas, like the Salt River Pima-Maricopa Indian Community in the metropolitan Phoenix area. Climate change is expected to make air pollution worse, especially in already polluted places like cities. Sea level rise caused by climate change also threatens coastal cities and communities. The "Learn More" section at the end of this fact sheet provides resources that give more information about risks, potential impacts, vulnerabilities, ways to adapt to a changing climate, and steps to protect the health of those in tribal communities.

This fact sheet is based on "The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment." To explore the full report, go to:

https://health2016.globalchange.gov

Learn More

Climate Change: Human Health
https://www3.epa.gov/climatechange/impacts/health.html

Climate Change: What You Can Do
https://www3.epa.gov/climatechange/wycd/

Environmental Protection in Indian Country
https://www.epa.gov/tribal

Indigenous Peoples, Lands, and Resources
http://nca2014.globalchange.gov/report/sectors/indigenous-peoples

U.S. Climate Resilience Toolkit: Tribal Nations
https://toolkit.climate.gov/topics/tribal-nations

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