National Indian Health Board

Climate Change & Tribes: Exploring Current Impacts and Future Predictions for America's First People

January 14, 2019

Imagine a world where one Arctic summer per decade is too warm to support the sea ice that helps maintain our global ecosystem and environment, directly impacting the people and animals of these far north communities. A world where coral reefs, once bustling with the rich diversity of sea life, have all but completely disappeared from the oceans. A world where mass global migration from tropical areas leads to a drastic population increase in cooler parts of the world. A new **report**, released in October 2018 by the Intergovernmental Panel on Climate Change (IPCC), predicts that this barren world will be reality if global temperatures continue rising by just 2°C (3.6°F), compared to temperatures from pre-industrial times.

The world is already halfway there – data from 2017 indicates that earth's temperature has already risen by a full 1°C (1.8°F). In the United States, climate change is already impacting health in a variety of ways. Air pollution, rising temperatures, higher levels of pollen, and longer pollen seasons are leading to more severe and frequent respiratory problems including allergies and asthma. Climate change can also lead to extreme weather events such as floods, droughts, and wildfires, which can destroy homes and livelihoods, damage nutritious food supplies, and reduce access to safe drinking water. As climate change progresses, communities worldwide are experiencing harmful changes to their environments. Although climate change will impact all people worldwide, especially as temperatures continue to rise, it is important to recognize that America's first people are often the first and most severely affected by these harmful environmental impacts, although they have contributed to climate damage the least. In fact, for thousands of years, American Indians and Alaska Natives (AI/ANs) have demonstrated tremendous respect for the planet, living in harmony with their environments and taking only what they needed from the earth for their physical, cultural, and spiritual purposes.

Tribal communities can be particularly vulnerable to the health effects associated with climate change for a variety of reasons. There are already existing and pronounced health disparities in Native communities that can lead to the health impacts from environmental damage being much more severe. For example, AI/AN people suffer from much higher rates of chronic lower respiratory diseases. When air quality decreases, our people are much more vulnerable to dangerous asthma attacks and other acute respiratory disorders. Health effects can also be exacerbated by other types of systemic inequities. An underfunded Indian health care system makes environmental damage more devastating to Tribal communities – the Indian Health Service

is currently estimated to be funded at less than 50% of need. Health impacts from environmental damage create an even greater need for health care, adding pressure to an already over-burdened health system. Many Tribal communities are also plagued by poverty, high jobless rates, and isolation in remote rural areas, increasing their vulnerability to harm and reducing their options for alternate solutions.

Sometimes the impacts are indirect, but equally damaging. For example, AI/AN have higher rates of type-2 diabetes, with more than 50% of adults in some AI/AN communities diagnosed with diabetes. Traditional foods are one of the successful approaches to prevent or manage diabetes. Unfortunately, damage to the environment almost always harms traditional food practices, taking away an extremely important tool to challenge this health disparity. Many AI/AN people live in rural areas or on reservations with limited access to healthy foods besides traditional sources of nourishment and may already experience significant health disparities related to diet. Tribes unable to access their healthy, native foods may be left to rely on highly processed and unhealthy foods, contributing to poor health outcomes. Purchasing food can also be prohibitively expensive for many AI/AN people due to poverty and high rates of unemployment on many reservations. Nearly one quarter of AI/AN families already live below the poverty line (1).

Groceries in the Arctic can be particularly expensive

Traditional foods are not only healthy and cost-effective, but can also provide cultural and emotional benefits for community members. In the Village of Wainwright, in Northern Alaska – as in many rural northern villages – the range of groceries available is generally limited, many options are expensive, and the available food is frequently unhealthy and highly processed. With few opportunities for full-time employment in remote villages, families may have few options to purchase nutritious food, particularly at such a high cost. Subsistence activities can be important, not only for food security, but also for recreation and cultural activities as well as spirituality and cultural identity. “Hunting and sharing food is not just a way to meet your basic needs, but is part of the fabric of social life,” explains Dr. Kirmayer, director of McGill University’s social and transcultural psychiatry unit, quoted in a 2017 New York Times article (2). “You can find another way to get your calories, but in so doing, you may be losing companionship, solidarity and your sense of self,” he continues, adding that traditional food is closely connected to mental wellbeing and an indigenous “ecocentric” conception of self where “the food ‘becomes you.’” Unfortunately, unpredictable environmental conditions in the Arctic are leading to safety challenges with participating in traditional hunting and gathering activities. In Alaska and across the nation, climate change is causing seasonal shifts and changes in growing cycles and animal migration patterns change, affecting gathering techniques and schedules.

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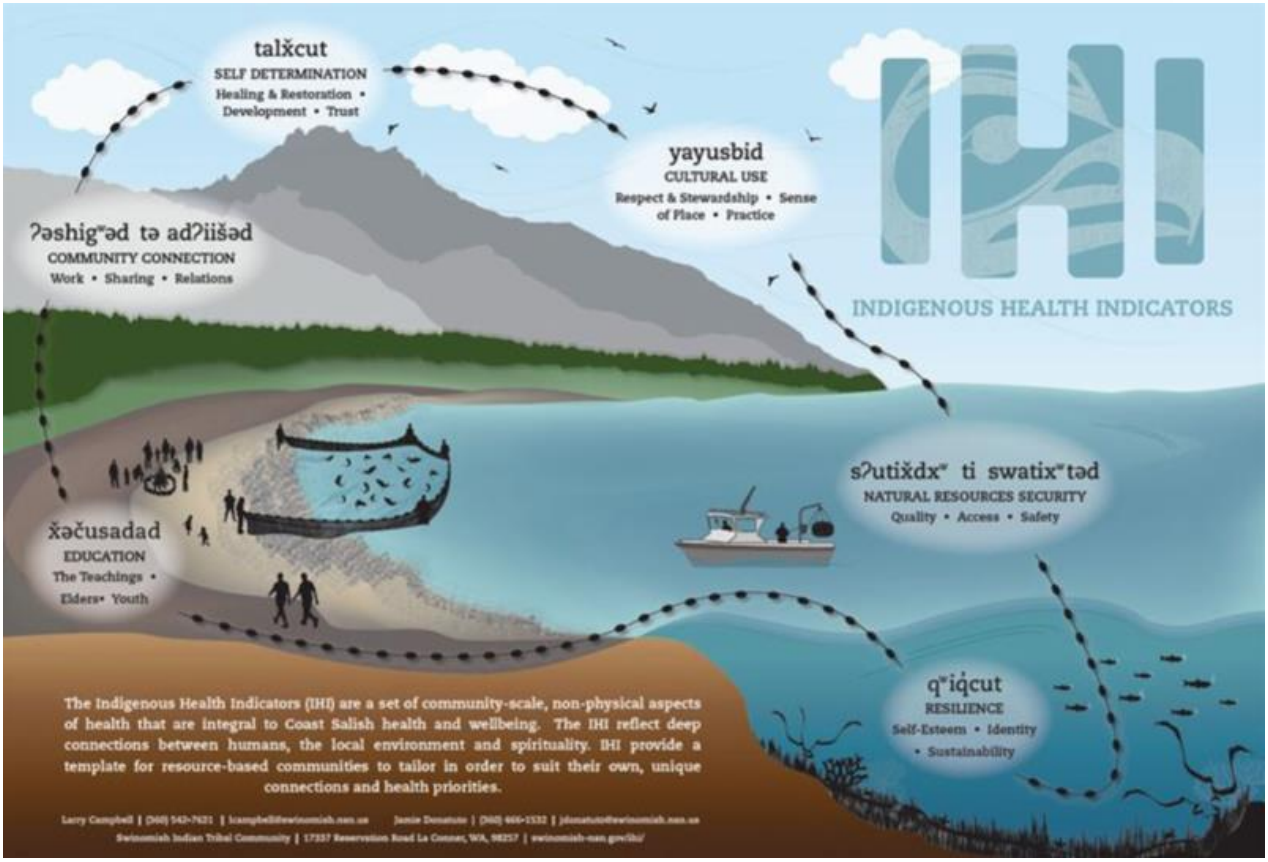
Examples of traditional foods include clams, whale (whale skull pictured), and cloudberries

There are other special considerations for the Arctic's unique communities, which are warming twice as fast as the rest of the planet. Eighty-six percent of Alaska Native villages are at risk of climate-related damage such as flooding and erosion, and 31 villages meet the criteria for long-term relocation (3) – which would essentially make their residents internally displaced persons and take away the homelands where their ancestors have lived since time immemorial as a result of climate change. Additionally, Alaska Native people traditionally store food in permafrost ice cellars buried in the ground, but the warming Arctic can make this less safe or reliable. In communities with no roads in or out, changing weather patterns can also upend traditional means of transport, leading to isolation and requiring alternate methods of transportation which can lead to unintentional injury or death as well as mental harms such as isolation, depression, stress, anxiety, suicidal ideation, substance abuse, and domestic violence (4).

Permafrost ice cellar in Alaska

It is also important to recognize that AI/AN people generally define health more holistically than non-Native counterparts. Environmental damage causes significant harm not only to health but also to general wellbeing, including damage to homes, cultural sites, and sources of income/subsistence for AI/AN people and their traditional ways of life. The Swinomish Indian Tribal Community serves as an example. They have defined health using non-physiologic factors including sense of place, self-esteem, and identity. Consequently, health suffers not only when Tribal people experience physical problems, but also when they are deprived of their connection to the lands, cultures, and traditions of their people. While discussing air quality pollution and loss of vegetation, as well as observing overall human impacts on nature, Cecelia Mix, a young woman from Gila River Indian Community, said frankly of a future ravaged by climate change, "Who wants to live in that world?"



Swinomish indigenous health indicators - image provided by Swinomish

Although mental health and stress are recognized impacts of climate change (5), these aspects of health and their cumulative effects do not always get the recognition they deserve. “A flood happens, or a Hurricane Katrina happens, and people say, ‘Oh, that makes sense that people are traumatized,’” Labrador Institute of Memorial University’s public health researcher Dr. Cunsolo said, noting that when people “are exposed to this ongoing environmental stress, day after day, month after month, that has a tremendous impact" (6). Demonstrating this point, the same article states that an indigenous woman told Dr. Cunsolo’s researchers that the isolating effects of climate change “made her feel like her spirit was dying.”

Water is another example that has both physiological and non-physiological health components. Water is traditionally sacred for many AI/AN people and serves as the lifeblood of healthy land and people – providing drinking water, fish, support for animals and plants, and a living link to the people’s spirituality and culture. However, more than 13 percent of Tribal homes do not have access to safe water to drink, arising from factors such as poor infrastructure, underfunding for Tribal communities, and challenges with Tribal maintenance (7). Warmer temperatures can decrease water levels, change precipitation patterns, and impact the species that are used by Tribes for food or other needs. Pollution and contamination (including bacterial) also affect water and human health. Water is key for Tribes to follow traditional practices which benefit their physical, mental, and spiritual health. Unfortunately, climate change can cause issues such as draught, flooding, storm surges, and mold.

Climate has had an historical impact on Native people. The Salt River Pima-Maricopa Indian Community in Arizona is made up of two groups of people – one of which, the Maricopa, call themselves "people who live toward the water" (8) because water was so important to their lives and ability to survive and sustain themselves in the hot, dry deserts of the southwest. However, Euro-American settlers began redirecting water away from these Tribes as early as the mid-late 1800s, causing Tribes in the area to lose access to the water that had sustained their healthy lifestyles. Shortly after, diabetes became increasingly prevalent until the Arizona Pima had the highest recorded rate of diabetes (9). Although other factors may play a role in their high rates of disease, these Tribes had lived healthy lifestyles for thousands of years until they lost access to their water supply. Their shift away from traditional lifestyles grew out of environmental change that directly correlated with the rise of diabetes and obesity, robbing the indigenous people of their health, relationship with the land, and way of life. This example shows how changes to traditional environments and resources can dramatically damage Native communities.

The Karuk Tribe in northern California is another Tribe experiencing harmful modern-day effects, including worsening and more frequent episodes of lightening and wildfire – and, as their Eco-Cultural Resource Management Plan states, "Fire affects the plants, which affect the water, which affects the fish, which affect terrestrial plants and animals, all of which the Karuk rely on for cultural perpetuity" (10). Long before the concept of One Health became a buzzword in scientific and academic communities, indigenous people have recognized connections between the health of animals, humans, and the environment.

All of these examples show ways that climate change is impacting Tribal communities. Unfortunately, the United States government and the global community at large are taking insufficient action to address and mitigate climate change's harmful effects. The IPCC report released in October, for the United Nations Framework on Climate Change (UNFCCC), emphasizes the importance of keeping global temperatures from rising no higher than 1.5°C (2.7°F) above pre-industrial temperatures. "Every extra bit of warming matters, especially since warming of 1.5°C or higher increases the risk associated with long-lasting or irreversible changes, such as the loss of some ecosystems," Hans-Otto Pörtner, Co-Chair of IPCC Working Group II, is quoted in the IPCC press release (11). Preventing the rising temperatures from escalating to 2°C (3.6°F), the report states, could prevent a 10cm rise in sea levels and prevent coral reefs from being lost forever, as well as make the difference between an Arctic summer without sea ice once per century vs. once per decade. Unfortunately, although some actions have been taken worldwide, limiting global warming to these more optimistic thresholds would necessitate a global expansion and hastening of adopting "rapid and far-reaching" changes. A New York Times summary article calls these changes "almost politically impossible," particularly considering current leadership and policy trends in countries like the United States and Brazil (12). The article explains that the carbon tax required to meet these goals would have to be up to 110 times higher than the Obama administration's price and up to 786 times higher

than the Trump administration's current tax – and these numbers apply only for the year 2030, in order to allow the world time for gradual change before increasing the tax up to nearly 4000 times what it is currently.

Climate change is real. It is happening now, and AI/AN people are witnessing it as they are among those impacted first. Polar bears have become the face of climate change, but we need to start recognizing the human impact, particularly the disparate effects climate change has on America's first people. However, despite current challenges and looming threats, indigenous communities have proven tremendous resilience and expressed hope for the future. Swinomish Elder Larry Campbell stated, "We have been here for more 10,000 years and we will be here for 10,000 more." To make this happen, the time to take action is now.

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