INDIGENOUS PEOPLE *and* AIR POLLUTION *in the United States*

A REPORT FROM THE NATIONAL TRIBAL AIR ASSOCIATION AND MOMS CLEAN AIR FORCE

The total number of Indigenous people in the United States is between 2.5 and 6 million, of which 20% live on Tribal lands or in Alaska Native villages. There are 574 federally recognized Tribes, but this number does not account for the total number of Indigenous groups in the US.[1] Historically the US government has made systematic efforts to disrupt Indigenous communities, and there are many Indigenous communities with deep history that remain unrecognized by the US government.[2]

The United States removed many Indigenous people from their ancestral lands and violated treaties with Tribes. Indigenous people have experienced desecration of their sacred sites in efforts to demoralize and disband their communities. Indigenous communities are disproportionately impacted by pipelines, mines, waste incinerators, and other polluting industries that poison the air and water.

Tribal lands remain despite this history. For example, the Navajo Nation's reservation is approximately the size of West Virginia. The Tohono O'odham Nation includes 62 miles of the international border with Mexico and with 2.7 million acres total, the Tohono O'odham Reservation is larger than Rhode Island and Delaware combined. San Diego County, California, has more Indian Reservations than any other county in the United States, with 18 separate and sovereign land bases.

WHAT DOES INDIGENOUS MEAN?

We use the term *Indigenous* in this document to refer to the descendants of the people who lived in North America before 1492.

Others may use the terms *American Indian*, *Native American*, and *Alaska Native*.

CULTURAL PERSPECTIVES

Indigenous peoples have unique cultural perspectives; therefore, no one can speak on behalf of all Indigenous people.

However, the worldview of many Indigenous people holds the health of the land, water, and air as inseparable from the health of the people. This is due to the subsistence lifestyle that many Native people lead, as well as their commitment to maintaining cultural practices such as hunting, fishing, gathering, and ceremony.

For example, the Fond du Lac Band of Lake Superior Chippewa recognizes the many links between wild rice and their health, including cultural identity, social relations, health, physical activity, and economic livelihood.[3]

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AIR POLLUTION IN TRIBAL COMMUNITIES

Air pollution is responsible for tens of thousands of deaths in the US each year. Pollutants such as ground-level ozone (smog), nitrogen oxides, sulfur oxides, and particulate matter cause harm to respiratory and cardiovascular systems and increase the risk of cognitive problems and mental health issues. Air pollution is also linked to diabetes and reproductive harm (preterm delivery, low birth weight, and infertility).

Air pollution is a major environmental health problem in Indigenous communities.

Generations of systemic abuses of Indigenous people have led, in many places, to chronic poverty, poor health care, substandard housing, and inadequate protection from sources of pollution. Indigenous adults and children have higher rates of many diseases linked to air pollution exposure, including asthma, diabetes, heart disease, and chronic obstructive pulmonary disorder (COPD). An emerging air quality threat for Indigenous people is climate change. Wildfires are an increasing concern to air quality. As the climate changes, hotter temperatures and drier conditions can trigger catastrophic wildfires on and near Tribal lands.

Diesel pollution is a known human carcinogen and a pollutant of special concern for Indigenous people. Indigenous communities often rely on old or "legacy" fleets of diesel vehicles, generators, and other equipment that produce high levels of diesel emissions, contributing to poor air quality.

In addition to outdoor air pollution, indoor air pollution is also a major issue for many Indigenous people. Common indoor pollutants include allergens, radon, particulate matter, secondhand smoke, carbon monoxide, and excessive moisture. Some common sources of indoor air pollution include poor housing quality, lack of electricity, and inadequate ventilation.[4]

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NTAA estimates that 200 methane and/or coal power plants are within 50 miles of tribal lands. Living near power plants may expose people to higher levels of air pollution.[5] In addition, Indigenous communities on Tribal lands may be disproportionately burdened by air pollution from the oil and gas industry. An analysis of population data and oil and gas facility information for three tribal groups on whose lands there is significant oil and gas production—Fort Berthold Indian Reservation in North Dakota, Navajo Nation (Utah and New Mexico only), and Uintah-Ouray (Northern Ute) in Utah—showed that Indigenous people are far more likely to live within a half-mile of oil and gas facilities compared to the total population in the encompassing state. This may increase Indigenous communities' exposure to volatile organic compounds and nitrogen oxides, which combine to form ozone smog and toxic air pollutants, such as benzene, formaldehyde, and acetaldehyde.[6]

CLIMATE CHANGE

Climate change poses particular threats to ways of life and health of Indigenous families in every region of the US.[7] Climate change is contributing to the loss of Indigenous cultures and Indigenous knowledge systems, and it is forcing the relocation of Indigenous communities. The Village of Newtok, in coastal Alaska, is one of the first Indigenous communities to have to relocate because of climate change. In 2019, Newtok began a process that the village has been planning for decades: a move to safer ground, with the founding of Mertarvik—a whole new village. Thawing permafrost and increasing erosion had already claimed a square mile of the village's land at the juncture of the Ninglick River and the Bering Sea. This long planned move will be complete in 2023, when the community of Newtok will be left to the encroaching ocean.[8]

Climate change threatens Indigenous lifestyles.

Some examples include decreasing food security, endangering culturally significant flora and fauna and forcing them toward extinction, increasing the risk of extreme weather events, and endangering public health. Additionally, climate change exacerbates air pollution because warmer air is conducive to the creation of ground-level ozone, or smog.

Indigenous communities are taking action to prevent worsening climate change and to adapt to changes caused by climate change. The Swinomish Tribe, located in coastal Washington State, created an ambitious climate adaptation plan in 2010. The plan focuses on the overall well-being of the community and is centered on restoring habitat that is essential for "first foods" such as salmon and clams. The Tribe has made progress in restoring wetlands and cooled salmon streams by planting trees for shade.[9]

AIR POLLUTION AND NATIVE PLANTS

The burning of fossil fuels gives rise to harmful air pollutants including sulfur dioxide, nitrogen oxides, ground-level ozone, and peroxyacetyl nitrate, which can harm native plants, including medicinal plants, crops, and trees. Ground-level ozone is responsible for up to 90% of air pollution injury to plants. Ozone inhibits plant growth and plant development and causes decreases in crop yield.

Watermelon, squash, pinto beans, tobacco, soybeans, cantaloupe, muskmelon, alfalfa, sweet corn, gourds, peaches, and strawberries are some of the crops more susceptible to air pollution damage.[10] Many Indigenous communities rely on these plants.

Air pollution harms native ecosystems, interfering with wild food and medicinal plants.

Needled evergreens in Maryland are experiencing yellowing of needle tips and tip burning due to ozone pollution.[11] For Indigenous peoples, these impacts may interfere with cultural practices and traditional lifeways, in addition to causing economic harms. The cost to Indigenous lifeways from the loss or diminishment of culturally significant species due to the impacts of ozone or other pollutants is immeasurable.

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PUBLIC HEALTH DISPARITIES

By almost any measure, public health among Indigenous people lags behind public health among other groups. The life expectancy of Indigenous people is five years shorter than it is for other Americans; Indigenous people die at higher rates from a range of causes including liver disease, diabetes, and respiratory diseases.[12] Health disparities are rampant and reflect centuries of genocide, persecution, discrimination, and neglect. Unfortunately, air pollution causes or exacerbates almost all of the major health disparities experienced by Indigenous people, making it even more urgent to improve air quality on tribal lands.

ASTHMA

Indigenous children suffer from asthma at much greater rates compared to other American children. 13% of Indigenous children have asthma, compared with 8.6% of children of non-Indigenous descent.[13] High rates of poverty and inadequate access to health care compound the impact that asthma has on Indigenous children.[14] Air pollution is a well-established trigger of asthma attacks. It can cause the development of asthma and interfere with lung growth.

DIABETES

Diabetes was quite uncommon in Indigenous communities until the last century. As communities have adopted new lifestyles and eating habits that aren't based on traditional foods, diabetes has become a common cause of illness, death, and disability.[15] Now, Indigenous people are more likely than members of any other population group in the US to have diabetes. Indigenous people are 2.5 times more likely than non-Hispanic whites to die from diabetes.[16] Air pollution can increase the risk of developing diabetes.

Indigenous people are standing up for the health of their communities.

They are creating effective diabetes prevention and management programs based on encouraging a return to subsistence lifestyles. For example, the Standing Rock Sioux Tribe is reclaiming cultural knowledge and traditions to promote health and prevent Type 2 diabetes in North and South Dakota.[17]

HEART DISEASE

Heart disease rates are about 50% higher among Indigenous people in the US compared to their white counterparts. More than one-third of Indigenous deaths attributed to cardiovascular disease occur before age 65.[18] Air pollution increases the risk of heart disease and other cardiovascular conditions. Heart disease and diabetes have similar risk factors, and some Tribal public health centers are encouraging traditional foods and activities to help prevent heart disease.

COVID AND INDIGENOUS PEOPLE

Owing in part to the marginalization and socioeconomic status of Indigenous people, the spread of COVID-19 has put many communities at greater risk. Many homes on the Navajo Nation lack running water for proper handwashing, have no electricity, and lack Internet service to learn about public health measures. In Indigenous communities, many people also live in multigenerational housing, putting families and elders at risk. COVID mortality among Indigenous people is 1.8 times that of white people.[19] Emerging research suggests that air pollution increases the risk of death from COVID.[20]

REPRODUCTIVE HEALTH

Reproductive health is worse among Indigenous people. Indigenous women have higher rates of teenage pregnancy, an increased likelihood of late or no prenatal care, and higher rates of alcohol and tobacco use. Their infants are at greater risk of preterm birth, mortality, and sudden infant death syndrome than infants in the general population.[21] Air pollution can increase the risk of preterm birth and low birth weight.

DISABILITIES AND BIRTH DEFECTS

According to the US Census, 24% of American Indians and Alaska Natives have a disability, compared to 19% of the general population.[22]

Birth defects are structural changes present at birth that can impact nearly any body part. Indigenous people experience a significantly higher occurrence of several birth defects, including cleft palate, ear defects, and encephalocele, which is a defect of the skull and brain.[23] Air pollution is associated with an increased risk of congenital abnormalities.[24] Many Tribes and Indigenous organizations offer culturally relevant support to children and adults with disabilities, often with a focus on thriving while living independently.

TRIBES EXPRESSING SOVEREIGNTY THROUGH AIR PROGRAMS AS A SOLUTION

Tribal governments play an important role in controlling and reducing air pollution by developing Tribal air programs that seek to advance air quality management policies and programs, consistent with the needs, interests, and unique legal status of American Indian Tribes and Alaska Natives. Tribes are important partners with federal, state, and local agencies to protect ambient and indoor air quality and to mitigate climate change.

As the number of federally recognized Tribes continues to grow, Tribal air programs should grow as well. According to EPA's 1984 Indian Policy, the EPA supports the role of Tribal governments and will "pursue the principle of Indian 'self-government'" and "work directly with Tribal governments on a 'government-to-government' basis." Upholding the 1984 Indian Policy [25] is of utmost importance. As Tribes grow their air programs, EPA should expand training for Tribes on how to obtain Treatment as a State (TAS) status. TAS authorizes a Tribe's treatment in a manner similar to a state for administering air quality programs. TAS status promotes tribal sovereignty and qualifies a Tribe to be treated as an "affected state" when operating permits are issued. This ensures that Tribes receive notice when neighboring states issue permits to facilities that may impact air quality on Tribal lands.[26]

Indigenous communities are predominantly impacted by pollution beyond their homelands—often by neighboring governments. This called transboundary pollution. It is therefore crucial that Indigenous communities have the ability to review and comment on permits, rules, and regulations governing the creation of transboundary pollution.

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The National Tribal Air Association advances air quality management policies and programs, consistent with the needs, interests, and unique legal status of American Indian Tribes and Alaska Natives. NTAA was founded in 2002 and is one of the nation's largest Tribal membership organizations with over 150 member Tribes. The NTAA is governed by an Executive Committee comprised of elected representatives from each EPA region and Alaska. Currently, NTAA is staffed by Northern Arizona University's Institute for Tribal Environmental Professionals.
www.ntaatribalair.org

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Moms Clean Air Force is a community of over 1,000,000 moms and dads united against air pollution—including the urgent crisis of our changing climate—to protect our children's health. We fight for Justice in Every Breath, recognizing the importance of equitable solutions in addressing air pollution and climate change. Our mission is to protect children from air pollution and climate change. We envision a safe, stable, and equitable future where all children breathe clean air.
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