National Tribal Air Association's

Status of Tribal Air Report

May 2018

PRESENTED AT THE NATIONAL TRIBAL FORUM ON AIR QUALITY HOSTED BY THE FOND DU LAC BAND OF LAKE SUPERIOR CHIPPEWA

The National Tribal Air Association is funded through a grant from the United States Environmental Protection Agency's Office of Air & Radiation (OAR)

Cover photo by Brian Borkholder

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NTAA Executive Committee

	Primary Representatives	Alternate Representatives
Region 1	Jan Paul Penobscot Indian Nation	
Region 2	Angela Benedict, Secretary Saint Regis Mohawk Tribe	
Region 4	Scott Hansen, Treasurer Catawba Indian Nation	Tiffany Lozada Poarch Band of Creek Indians
Region 5	Brandy Toft, Vice Chair Leech Lake Band of Ojibwe	Joy Wiecks Fond du Lac Band of Lake Superior Chippewa
Region 6	Craig Kreman Quapaw Tribe of Oklahoma	Jeremy Fincher Sac and Fox Nation
Region 7	Carol Kriebs Sac and Fox Nation of Missouri in Kansas and Nebraska	Billie Toledo Prairie Band Potawatomi Nation
Region 8	Randy Ashley Confederated Salish & Kootenai Tribes	Linda Weeks Reddoor Fort Peck Assiniboine-Sioux Tribes
Region 9	Wilfred J. Nabahe, Chairman Colorado River Indian Tribes	John C. Parada Augustine Band of Cahuilla Indians
Region 10	Maggie Sanders Nisqually Indian Tribe	Allie McLaughlin Quinault Indian Nation
Alaska	Mary Mullan Alaska Native Tribal Health Consortium	Ann Wyatt Klawock Cooperative Association

Table 1 NTAA Executive Committee

National Tribal Air Association

The National Tribal Air Association (NTAA) is a Tribal membership organization currently with 129 Member Tribes whose mission is to advance air quality management policies and programs consistent with the needs, interests, and unique legal status of federally recognized Tribes. The NTAA membership grows yearly; to become a member, please see www.ntaatribalair.org.

Additionally, the NTAA serves as a communication liaison and information conduit between Tribes, USEPA, and other federal agencies. The NTAA exists to assist Tribes in air quality policy

work while respecting and supporting Tribal sovereignty and the Tribes' rights to a government-to-government relationship with the federal government.

All federally recognized Tribes are eligible to become member Tribes of the NTAA. Tools, such as the policy response kits, developed by the NTAA are available online for download and are readily accessible by members of the public.

NTAA Goals

- To advocate for and advance the development of Tribal air policy for the protection of environmental, cultural, and economic interests at all levels of government (Tribal, federal, state, local, and international);
- To promote the development, funding, and capacity building of Tribal air management programs;
- To promote and facilitate air quality policy and technical information that may include research, scientific and/or medical studies;
- To advance the recognition and acceptance of Tribal sovereign authority by conducting effective communication with and outreach to state, local, federal and international agencies, and to the general public; and
- To encourage and support appropriate consultation of state, local, federal, and international agencies with all Tribal governments in accordance with Tribal structures and policies.

To learn more about the National Tribal Air Association, please visit: www.ntaatribalair.org and www.tribalairquality.org.

Members of the NTAA Executive Committee met with the Tribal Air Monitoring Support Center's Steering Committee, USEPA, NTAA, and ITEP staff at Northern Arizona University in September, 2017.

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Credits and Acknowledgments

The **2018 Status of Tribal Air Report** is the result of the dedicated work and contribution of many people, including Tribal representatives, organizations, and USEPA personnel. We thank everyone that contributed a story, data, valuable time, effort, and resources to making this project a success. We acknowledge and thank the NTAA Executive Committee Members, the NTAA STAR Work Group Members, NTAA Member Tribes, Institute of Tribal Environmental Professionals, and the Tribal Air Monitoring Support Center.

We thank Dr. David La Roche, NTAA Policy Advisory Committee member, for his narrative and budget analysis of the funding needs of Tribal Air Quality Programs. In addition, we appreciate the contributions of NTAA Policy Advisory Committee members Pilar Thomas and Bob Gruenig.

The following individuals contributed stories of their successes and challenges in operating Tribal Air Quality Programs, including shared stories of their work in addressing climate change impacts. NTAA appreciates their invaluable time and contribution: Kris Ray, Rob Roy, Frank Spurgeon, Kevin Greenleaf, Joy Wiecks, Brandy Toft, Nathan Kilger, Daniel Wiggins Jr., Chris Lee, Pat Ellsworth, Melinda Ronca-Battista, Carol Kriebs, Mike King, Tennille Begay, Sue Flensburg, Mary Schneider, Johna Boulafentis, Shaina White, Jay Littlewolf, Jason Walker, and Jeremy Fincher.

Furthermore, we thank the NTAA staff for their work in developing and publishing the Status of Tribal Air Report. In particular, we appreciate Andy Bessler, Dara Marks Marino, and Lorena Morris-Gonzali, as well as Elaine Wilson, formerly of NTAA.

NTAA wishes to thank its federal partner, the USEPA, in supporting the work and efforts of Tribal Air Quality Programs. Specifically, we would like to thank USEPA's Pat Childers, Laura McKelvey, James Payne, Regina Chappell, Lucita Valiere, Farshid Farsi, and all of USEPA's Regional Tribal Air Coordinators.

Welcome from NTAA Chairman

On behalf of the National Tribal Air Association's Executive Committee, I am pleased to present the 2018 Status of Tribal Air Report (STAR). As the NTAA Chairman and the representative of USEPA's Region 9 Tribal Caucus on the NTAA's Executive Committee, I work to ensure that NTAA helps to empower Tribes to protect and enhance the air that we all breathe.

The National Tribal Air Association was founded in 2002 with a grant from the USEPA's Office of Air and Radiation, with a mission 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 and improve ambient air quality and indoor air quality, and mitigate climate change. NTAA's family of member Tribes has grown to nearly 130 federally-recognized Tribes making NTAA one of the nation's largest Tribal membership organizations.

Each year, NTAA reaches out to not only NTAA member Tribes but all Tribes, seeking their stories of both success and struggle in protecting the air quality that impacts public health on and off Tribal lands. I hope this year's STAR clearly tells the story of the diverse Tribal communities' daily efforts to prevent premature death, asthma, heart attacks, and other health and environmental impacts from indoor and ambient air pollution with limited resources. Obviously, we hope this story provides direct proof that funding Tribal Air Quality Programs is critical to ensure better public health in Indian Country.

While Tribes have grown used to shifting priorities and shrinking budgets, air quality issues like indoor air quality and climate change remain serious threats to the health of Tribal community members. NTAA urges USEPA leadership to read the stories of Tribal communities within the 2018 STAR as they work to improve both indoor and ambient air quality as well as mitigate the causes of and adapt to a changing climate.

Under the umbrella of Cooperative Federalism, Tribes are important co-regulators that work in partnership with states and federal government to implement and enforce the Clean Air Act. The STAR demonstrates that adequate funding of Tribal Air Programs will ensure that a successful vision of Cooperative Federalism is achieved.

NTAA continues to assist Tribes' access to important air quality policy analyses, and advocate for air quality funding to support Tribes' ongoing work. Part of our work, as laid out in the 2018 STAR, is to help the reader understand the important role Tribes take in protecting public health. NTAA is honored to tell this story and will continue to advocate for Tribal Air Quality Programs into the future.

Sincerely,

Wilfred J. Nabahe, Chairman
National Tribal Air Association

Executive Summary

The NTAA is pleased to present the 2018 Status of Tribal Air Report (STAR) to Tribal Nations, the U.S. Environmental Protection Agency (USEPA), and to other federal agencies and interested parties. The 2018 STAR provides a national overview of Tribal Air Quality Programs for the new administration, tells stories from Indian Country of successful management of air quality in Indian Country, and highlights the many successes and challenges from Tribal Air Quality Programs around the U.S. The 2018 STAR also provides recommendations for USEPA and other federal agencies to ensure continued success of these programs.

Air quality assessments, including emissions inventory development and monitoring and managing air quality, are necessary to protect public health. Both ambient and indoor air pollution pose serious threats to human health and have been linked to an array of concerning health effects such as asthma, congestive heart failure, diabetes, and decreased cognitive function. Tribal communities are more vulnerable to air pollution impacts, and experience higher than average rates of diabetes, heart disease, and childhood asthma. In addition, Tribal communities are at higher risk of exposure to mercury and other air toxics due to traditional life ways, particularly subsistence practices.

Tribes are important co-regulators of air quality, working with federal, state, and local agencies to assess, monitor, and manage regional air quality. Tribal Air Quality Programs help save lives, play an important role in guiding federal air quality policies and participate in data-sharing programs that have led to a better understanding of regional air sheds. The NTAA supports Tribes in the development of these programs and facilitates their success through building capacity and partnerships.

Although Tribal Air Quality Programs have grown in number, annual federal funding has been reduced. As a result, more Tribes compete for less money, it is difficult for Tribes to obtain grant funding to establish new air programs, and existing programs are forced to make do with less. Given these circumstances, these programs operate with high levels of success. However, current funding levels cannot sustain – let alone grow – Tribal Air Quality Programs.

The 2018 STAR describes various successful projects with pressing challenges expressed by Tribal air quality management professionals. The following recommendations are presented for consideration by USEPA and other federal and state agencies. In addition, the NTAA Air Quality Budget Analysis (Appendix A) provides specific funding recommendations.

2018 STAR Summary of Recommendations

1. **Restore and increase funding to Tribal Air Quality Programs:** In NTAA's FY 2018 budget request to USEPA, NTAA proposed increases totaling $9.0 million, including funding for new and expanding programs, monitoring infrastructure, and a comprehensive needs assessment for Indian Country. Specific funding recommendations can be found in **Appendix A: NTAA Air Quality Budget Analysis**.

   Tribes recognize that air quality funding is limited, however, additional funding for Tribal Air Quality Programs must be made available to:

   - Restore funding for existing established Tribal Air Quality Programs to a minimum of the highest historical funding levels;
   - Provide funding for Tribes seeking to establish an air program of their own;
   - Create new funding streams targeted at addressing critical needs such as indoor air quality, and climate change mitigation and adaptation;
   - Provide new funding to Tribes to keep pace with the increased amount of work in permitting new sources and to review permits issued by states and USEPA;
   - Replace and repair aging air monitoring infrastructure.

2. **Restore support for air quality programs important to Indian Country:** In all of USEPA's directional documents, including USEPA's FY 2020 Strategic Plan and the President's Budget, there has been little to no indication of support for Tribal air priorities and programs. Of note, USEPA programs and budgets addressing indoor air quality (IAQ) and climate change are missing from both of those documents, and there is an indication of lowering the standards for many ambient air quality concerns. Eliminating grants and programs addressing indoor air quality and climate change fly in the face of the immediate and long-term support needed to improve the health of Tribal communities. The NTAA does not support this strategic and budgetary shift for Indian Country or for the rest of the Nation.
3. **Greater support for Alaska**: Alaska Native Tribes and Villages represent over 40% of federally recognized Tribes in the U.S. and due to their geographic location, bear significant burdens caused by air pollution and climate change. They require increased funding and assistance for air programs and climate change adaptation planning. Specific recommendations can be found in **Appendix A: NTAA Air Quality Budget Analysis.**
4. **Conduct air quality needs assessment**: Tribes recognize the need for a national comprehensive air quality needs assessment. NTAA invites the USEPA to partner with Tribes to conduct such an assessment in order for the federal government to gain a better understanding of the complex and unique issues Tribes face today. These issues can be as varied as the Tribes themselves, thus it is imperative to have a complete understanding of the true effects of air quality on Tribal health.
5. **Uphold Tribal sovereignty**: Federal agencies need to demonstrate their commitment to Tribal sovereignty through **(1)** appropriate allocation of funding for Tribal Air Quality Programs, **(2)** engage proactively in government-to-government consultation with Tribal

Nations, **(3)** uphold Trust Responsibility by developing and implementing air programs that are responsive to the individual needs of Tribes, and **(4)** respond to Tribal requests and recommendations in a timely manner.

6. **Facilitate partnerships**: Partnerships between Tribes, states, and other established air quality entities should be encouraged and funded, especially in the areas of ambient air monitoring, analysis, co-regulation of the NAAQS and other regulated pollutants, and indoor air quality assessments and remediation. More information on NTAA's existing partnerships are summarized in the **Tribal Air Programs Infographic found in Appendix G** within this 2018 STAR.

Acronyms

AI/AN	American Indian/Alaska Native
ALA	American Lung Association
ACA	Angoon Community Association
ANTHC	Alaska Native Tribal Health Consortium
AQ	Air Quality
AQCP	Air Quality Control Program
AQS	Air Quality System
ARA	Air Resource Advisor
BAM	Beta Attenuation Monitor
BIA	Bureau of Indian Affairs
CAA	Clean Air Act
CAAAC	Clean Air Act Advisory Committee
CASTNET	Clean Air Status and Trends Network
CDC	Center for Disease Control
CR	Continuing Resolution
CRD	Crop Residue Disposal
DERA	Diesel Emissions Reduction Act
DOJ	Department of Justice
EI	Emissions Inventory
FARR	Federal Air Rules for Reservations (for Region 10 only)
FIP	Federal Implementation Plan
FR	Federal Register
FTE	Fulltime Employee
HAP	Hazardous Air Pollutant
HEPA	High Efficiency Particulate Air
HHS	Health and Human Services
HUD	Housing and Urban Development
IAQ	Indoor Air Quality
IAQWG	Indoor Air Quality Work Group
IDEQ	Idaho Department of Environmental Quality
GAP	General Assistance Program
ICDBG	Indian Community Development Block Grant
ITEP	Institute for Tribal Environmental Professionals
KBIC	Keweenaw Bay Indian Community
MDEQ	Michigan Department of Environmental Quality
MNSR	Minor New Source Review
MOA	Memorandum of Agreement
MSTRS	Mobile Source Technical Review Subcommittee
NAA	Non-attainment Area
NAAQS	National Ambient Air Quality Standards
NADP	National Atmospheric Deposition Program

NEIEN	National Environmental Information Exchange Network
NGO	Non-Governmental Organization
NNEPA	Navajo Nation Environmental Protection Agency
NSR	New Source Review
NTAA	National Tribal Air Association
NTF	National Tribal Forum on Air Quality
OAQPS	Office of Air Planning and Standards
OAR	Office of Air and Radiation
ODEQ	Oklahoma Department of Environmental Quality
OECA	Office of Enforcement and Compliance Assurance
OITA	Office of International and Tribal Affairs
OTAQ	Office of Transportation and Air Quality
PBPN	Prairie Band Potawatomi Nation
PCB	Polychlorinated biphenyls
PM	Particulate matter
PSD	Prevention of Significant Deterioration
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
SEARHC	Southeast Alaska Regional Health Consortium
SNFOES	Sac and Fox Office of Environmental Services
SMP	Smoke Management Plan
STAG	State and Tribal Assistance Grant
STAR	Status of Tribal Air Report
TAMS	Tribal Air Monitoring Support Center
TAR	Tribal Authority Rule
TAS	Treatment in the Same Manner as a State
TEACH	Tribal Environmental Action for Children's Health
TIP	Tribal Implementation Plan
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
WHO	World Health Organization
ZEV	Zero Emission Vehicle

1 NTAA Briefing for the Current Administration on Tribal Air Quality Programs

The National Tribal Air Association (NTAA) has prepared this 2018 Status of Tribal Air Report (STAR) to brief the current federal administration on the status of Tribal Air Quality Programs and to help familiarize the administration with the priorities, challenges and successes of Tribal Air Quality Programs that play an important and crucial role in protecting public health.

NTAA was founded in 2002 with a grant from the U.S. Environmental Protection Agency Office of Air and Radiation, and continues to work with Tribes, states, and federal agencies to facilitate Tribal Air Quality Programs and protect air quality in Indian Country. Tribes are effective co-regulators of air quality and possess unique environmental knowledge that makes them important partners for agencies working to address pollution and climate change.

Statistics of American Indian Tribes and Alaska Natives

- 573 Federally recognized Tribes and Alaskan Natives with a population of approximately 1.9 million American Indian and Alaska Natives
- Trust lands represent approximately 55 million acres
- 52 Tribes have "Treatment as State" ("TAS") status under the Clean Air Act (CAA)
- 85 Tribes operate air monitoring sites
- Tribes or USEPA have issued 189 permits for major and minor sources of air pollution in Indian country
- 16 Tribes are implementing regulatory or permit programs in Indian country (5 TIPs and 1 Title V) and 10 Tribes with delegation of Federal programs
- Five Tribes have completed Class I designations

1.1 Tribal Consultation and Sovereignty

Since 1984, the USEPA's policy of working with Tribes has been based on close coordination and respect for Tribal self-determination and sovereignty. Consistent with USEPA's Policy for the Administration of Environmental Programs on Indian Reservations signed in 1984 by President Reagan and reaffirmed by every Administration since that time, this policy directs USEPA to work in close coordination with the Tribes and respect Tribal self-determination and sovereignty. Specifically, the USEPA's Policy for the Administration of Environmental Programs on Indian Reservations is as follows:

> *In carrying out our responsibilities on Indian reservations, the fundamental objective of the Environmental Protection Agency is to protect human health and the environment. The keynote of this effort will be to give special consideration to Tribal interests in making Agency policy,*

and to insure the close involvement of Tribal Governments in making decisions and managing environmental programs affecting reservation lands.

This policy has remained the cornerstone of the USEPA's approach to working with Indian Tribes and Tribal governments, and it was most recently reiterated in the USEPA's 2014 update to its consultation policy. The NTAA strongly supports this policy, and seeks to ensure that the USEPA continues to consult with Indian Tribes on the many decisions that affect reservation lands, including CAA regulations, permitting and enforcement, environmental justice, and program funding.

The NTAA encourages the USEPA to demonstrate its commitment to supporting Tribal sovereignty and self-determination, rather than providing a patchwork of diminishing funding streams, including the decrease in CAA funding and GAP grants. Since USEPA is the air quality regulatory authority on Tribal lands when Tribes are unable to implement air quality programs themselves, we request that the USEPA engage proactively in government-to-government consultation to uphold their trust responsibility, develop and implement air programs that are responsive to the needs of individual Tribes, and respond to Tribal requests and recommendations in a timely manner.

1.2 Funding and Resources

The USEPA currently provided approximately $11.5 million in funding to Indian Tribes under the Clean Air Act Sections 103 and 105 for air quality programs (see Table 2 below). Indian Tribes have limited revenue sources, so many either do not have an air quality program or rely solely on USEPA funds, which are crucial to Indian Tribes' ability to operate and maintain air quality programs on Tribal lands. As more and more Tribes seek to establish air quality programs, this funding level becomes even less sufficient. While funding for air quality programs has been reduced for several years, NTAA has consistently supported increased funding for Tribal Air Quality Programs to:

- Restore funding to at least the highest historical funding levels;
- Provide funding for Tribes seeking to establish an air program of their own;
- Create new funding streams targeted at addressing critical needs such as indoor air quality, and climate change mitigation and adaptation;
- Provide new funding to keep pace with increased new source permitting activity;
- Replace and repair aging air monitoring infrastructure.

Tribes that are initiating new air programs and nearly all the Tribes/Alaska Native Villages in Alaska rely solely on the Indian Environmental General Assistance Program (GAP) funding, which has also been relatively stagnant over the last 10 years. To cover all of their environmental programs with GAP funding forces tough choices for Tribal governments as to which of the worst challenges will be addressed. NTAA strongly supports an increase in GAP

base funding. Please see Appendix A: NTAA Air Quality Budget Analysis for additional details on funding required to adequately operate Tribal air quality programs.

As an USEPA Partnership organization, NTAA also encourages and facilitates partnerships between Tribes, the USEPA, and other air quality entities, including state and local governments. Funding and technical resources from the USEPA – especially for monitoring, analysis, co-regulation, and indoor air quality testing and remediation – are critical to supporting these efforts.

Table 2 State and Tribal Assistance Grant (STAG) Allocations for Fiscal Years 2012-2017

Region	2012	2013	2014	2015	2016	2017
1	$657,063	$613,577	$622,967	$621,504	$594,273	$576,217
2	$440,175	$424,265	$424,983	$417,874	$403,087	$394,068
4	$330,964	$312,481	$316,989	$313,173	$315,674	$327,356
5	$1,263,752	$1,145,597	$1,179,144	$1,226,435	$1,228,784	$1,233,135
6	$1,305,009	$1,174,439	$1,176,253	$1,181,133	$1,141,449	$1,137,346
7	$465,216	$434,188	$499,756	$524,625	$534,917	$534,741
8	$2,109,888	$2,002,337	$2,096,474	$2,070,039	$2,001,325	$1,975,617
9	$3,259,737	$2,933,750	$2,974,502	$2,885,487	$2,967,439	$2,916,567
10*	$2,657,197	$2,421,367	$2,466,932	$2,443,631	$2,464,053	$2,449,954
Total	**$12,489,000**	**$11,462,001**	**$11,758,000**	**$11,683,901**	**$11,651,001**	**$11,545,000**

* Includes Alaska

Table 2 State and Tribal Assistance Grant Allocations for Fiscal Years 2012-2017

1.3 Permitting and Regulation

Air Quality assessments, including emissions inventory development and monitoring, and managing air quality regulation on and near Tribal lands, is necessary to protect the public health of Tribal members. Tribal communities are more vulnerable to air pollution impacts, and experience higher than average rates of diabetes, heart disease, and childhood asthma. In addition, Tribal communities are at higher risk of exposure to mercury, uranium and other air toxics due to traditional lifeways, particularly subsistence practices.

Tribes pride themselves on being important co-regulators of air quality, working alongside federal, state, and local agencies to assess, monitor, and manage regional air quality. USEPA plays a crucial role as the primary air quality regulatory authority on Tribal lands working directly with Tribes to protect and manage air quality where Tribes have not assumed authority, including permitting and regulatory activities on Tribal lands. Tribes should be included to a greater extent in the oversight of permitting and regulatory activities off Tribal lands where Tribal land and the health of Tribal communities are at risk.

Some Tribes have delegated air programs pursuant to the Tribal Authority Rule (TAR) under the CAA, which delegates authority to Tribes to administer and enforce the CAA on Tribal

lands, including implementing Federal Implementation Plans (FIP). Under the TAS eligibility determination, Tribes may regulate sources through Tribal Implementation Plans, or through delegation of Federal rules and programs for many aspects of the CAA. Tribes may also develop or take delegation of permit programs for minor and major sources on their lands under Title I and Title V of the CAA. In addition, Tribes manage and operate voluntary programs such as the Diesel Emissions Reduction Act (DERA), radon testing and mitigation, indoor air quality, and others, to form a comprehensive suite of programs to protect public health in Tribal communities.

2 Why Tribal Air Quality Programs Matter to Public Health

Air quality assessments including monitoring air quality are a critical component of evaluating the public health and cultural resources on Tribal lands. Air pollutants are not bound by borders and many Tribes are forced to live with air pollutants that they played no role in creating. Further, many Tribes are unfairly burdened with air pollution resulting from dirty industrial sources such as mining or power generation projects within or near their borders. Economic development is certainly important for the livelihood of Tribes; however, it is important that development does not threaten the health of nearby communities.

Findings from the USEPA, Center for Disease Control (CDC), and World Health Organization (WHO), and a multitude of independent studies, show that both long and short-term exposure to poor air quality, including ambient and indoor air pollution, hazardous air pollutants, and mobile source pollutants, is linked to a wide variety of health concerns, such as those described in the diagram on Figure 1.

The health impacts of air pollution on many American Indian/Alaska Native (AI/AN) communities is magnified by such factors as the inability to receive quality medical care due to issues like cultural barriers and geographic isolation,[1] and spending more time in ambient and indoor environments than their non-AI/AN counterparts. Most AI/AN community members, including children and Tribal elders, spend a considerable amount of time outside gathering and using plants of cultural significance. Other communities, such as those located in Alaska, are forced to spend a significant amount of time indoors during the winter months. This normal lifestyle can foster heightened respiratory conditions such as asthma. Approximately 14.2% of AI/AN adults have asthma compared to 11.6% of non-Hispanic white adults and AI/AN children are 60% more likely to have asthma as non-Hispanic white children.[2] These are health figures which necessitate Tribal Air Quality Programs to engage in comprehensive air quality monitoring and management.

Tribal Air Quality Programs play an integral role in assessing and managing air quality in Indian country. In partnership with the USEPA, Tribal Air Quality Programs can identify and monitor air pollution problems and effectively focus site-specific mitigation efforts to reduce pollution and improve health, and to engage in enforcement against polluters when necessary.

[1] U.S. Department of Health and Human Services Office of Minority Health. Profile: American Indian/Alaska Native at https://www.minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=62 (last visited on March 24, 2017).
[2] U.S. Department of Health and Human Services Office of Minority Health. Asthma and American Indians/Alaska Natives at https://www.minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlID=30 (last visited on March 24, 2017).

Health Effects of Common Air Pollutants

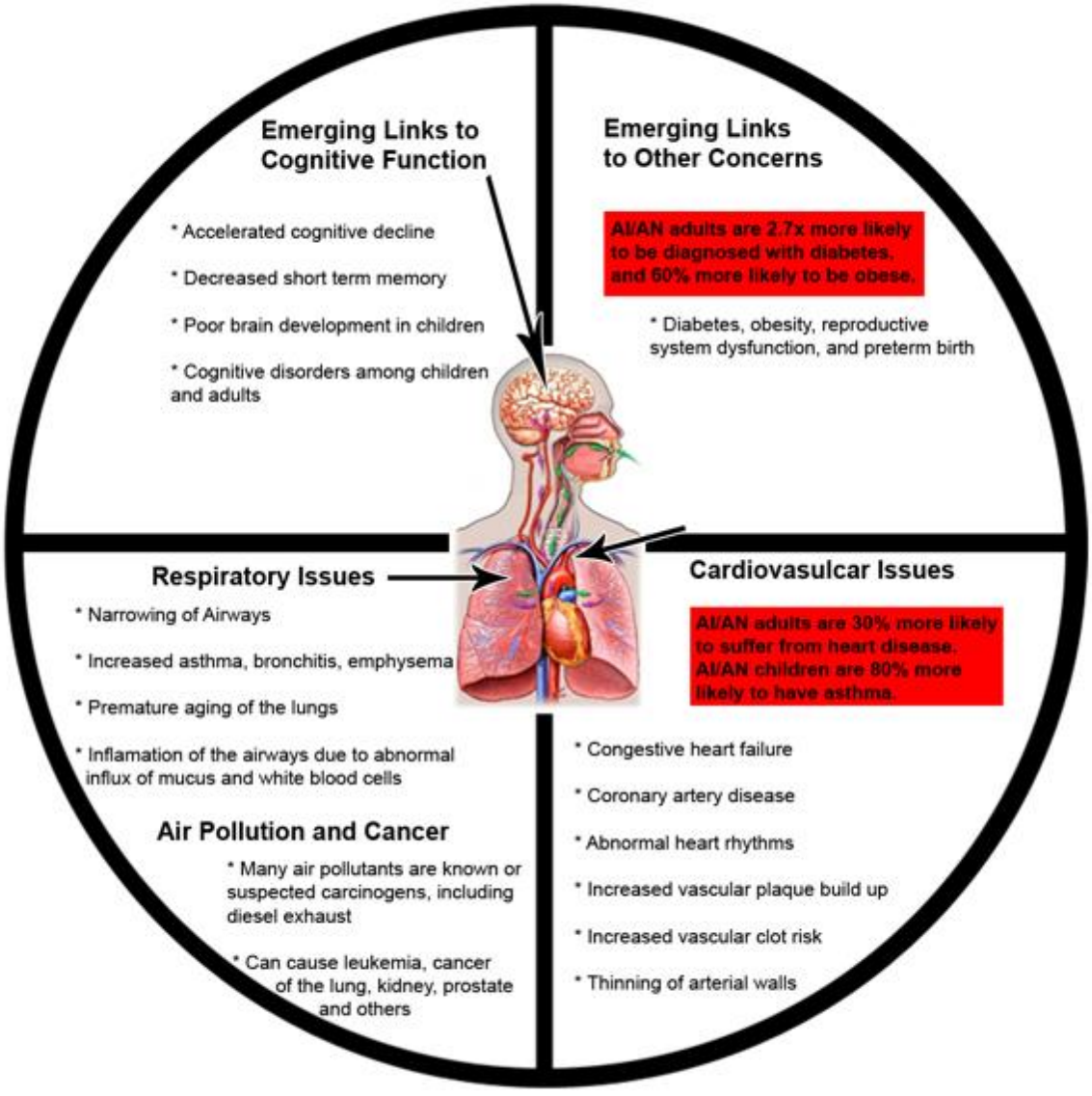

Figure 1 Health Effects of Common Air Pollutants

2.1 Ambient Air Quality

Ambient air is comprised mostly of nitrogen, oxygen, and other gases as well as a whole host of criteria[3] and hazardous air pollutants that vary in concentration as a function of proximity to air pollution sources, geographic location, and weather patterns. Tribal concerns regarding specific ambient air pollutants are as varied as the composition of the air itself and in many instances, dictated by the mix of sources of pollution that are proximal to Tribal lands. These pollutants are produced by many sources, including industry, forest fires, agriculture, and transportation.

Ambient air pollution is known by the USEPA, CDC, California Air Resources Board, and WHO, to cause a variety of health impacts and lead to missed school or work days, increased emergency room visits, hospitalizations, and premature deaths. Many studies have linked air pollutants to heart and lung disease. Further, recent studies have linked air pollutants to alarming health outcomes including obesity, diabetes, poor neurological development in children, and decreased cognitive function in adults. In particular, AI/AN adults are 1.6 and 2.7 times more likely to be obese and suffer from diabetes respectively than non-Hispanic white adults.[4]

A number of Tribal Air Quality Programs are engaged in national efforts to assess air quality, including the monitoring of air quality, which is helping them to understand air pollution trends and mitigate the health impacts of these trends locally and nationally. The Clean Air Status and Trends Network, or CASTNET, is a national monitoring network established to assess trends in atmospheric deposition that cause acid rain, ecological effects, and pollutant concentrations due to changes in the emissions of air pollutants.[5] Specifically, CASTNET measures ambient air concentrations of sulfur and nitrogen species and rural ozone concentrations.[6] Tribes play an important role in the CASTNET network with six monitoring sites located on the lands of the following Tribes: Cherokee Nation; Alabama-Coushatta Tribe of Texas; Santee Sioux Nation, Nebraska; Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas; Red Lake Band of Chippewa Indians, Minnesota; and Nez Perce Tribe.[7] Air Quality System provides monitoring data from states, Tribes, and others to track air quality over time. This system is used for regulatory and research purposes, and houses most of the data collected by Tribes. Air Data (https://www.epa.gov/outdoor-air-quality-data) is a website where Tribes and the public can locate monitors in their area and track trends over time. In

[3] Criteria pollutants are defined as those air pollutants that USEPA has developed National Ambient Air Quality Standards to protect public health and welfare. Ozone, PM, Lead, SO_2, NOx, CO

[4] National Health Statistics Report, Number 20. "Health Characteristics of the American Indian and Alaska Native Adult Population: United States, 2004-2008 (March 9, 2010) at https://www.cdc.gov/nchs/data/nhsr/nhsr020.pdf (last visited on March 24, 2017).

[5] U.S. Environmental Protection Agency. Clean Air Status and Trends Network (CASTNET) at https://www.epa.gov/castnet (last visited on March 24, 2017).

[6] *Id.*

[7] U.S. Environmental Protection Agency. Program Partners at https://www.epa.gov/castnet/program-partners (last visited on March 24, 2017).

addition, the AirNow system, developed in 1998 by USEPA, the National Oceanic and Atmospheric Administration, National Park Service, Tribal, state and local agencies, provides the public with easy access to more real time national air quality information.[8] The AirNow Air Quality Index informs the public about the existing air quality and the associated health effects of concern; and through a system of numbers and colors, helps people understand what actions that they can take in order to protect their health.[9] Twenty-seven Tribal partners are actively engaged in AirNow including the Leech Lake Band of Ojibwe, Lone Pine Paiute-Shoshone Tribe, and Quapaw Tribe of Indians.[10] More Tribes want and need to be involved in CASTNET and AirNow, but can only do so if they acquire additional federal funding support.

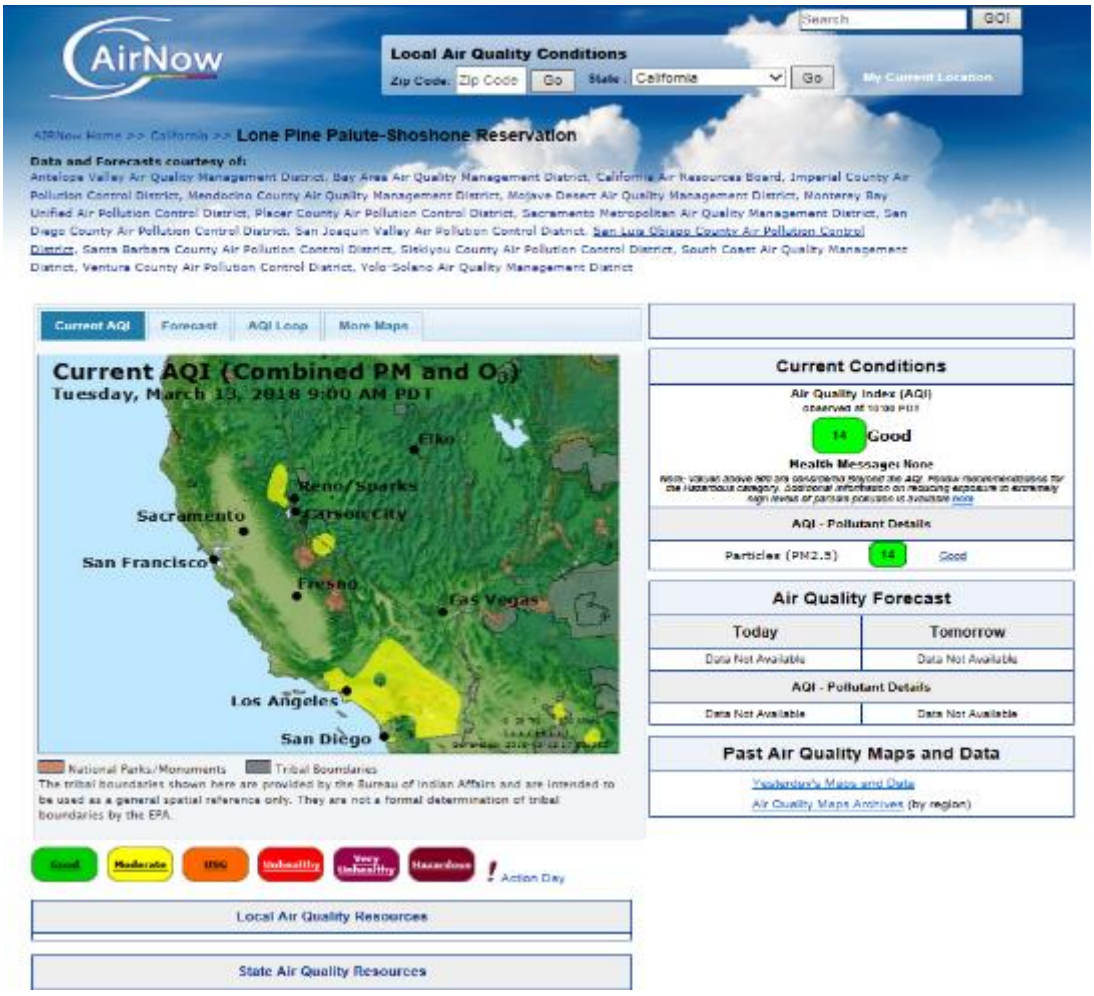

Figure 2 Lone Pine Paiute-Shoshone's AirNow

In addition to the AirNow site, there is another site that Tribes contribute to called AirNow-Tech. AirNow-Tech is a password-protected website for air quality data management analysis

[8] "About AirNow, The Air Quality Index" at https://airnow.gov/index.cfm?action=topics.about_airnow (last visited on March 24, 2017).
[9] Id.
[10] "Partners" at https://www.airnow.gov/index.cfm?action=airnow.partnerslist (last visited on March 24, 2017).

and decision support. AirNow-Tech is primarily used by the federal, state, Tribal, and local air quality organizations that provide data and forecasts to the AirNow system, as well as researchers and other air data users. It allows users to:

- Access monitoring site data, information, and polling status
- Analyze current and past air quality events and episodes
- Submit and analyze air quality forecasts
- Configure EnviroFlash email services for public dissemination of air quality forecasts
- View meteorological and air quality data
- Generate data reports
- Create GIS-based maps with air quality and meteorological conditions
- Sign up for the AirNow Notifier listserv

2.2 Indoor Air Quality

Much like ambient air quality, monitoring and maintaining indoor air quality (IAQ) plays a very important role in maintaining health within Tribal communities. Common indoor pollutants include allergens, radon, particulate matter, second-hand smoke, carbon monoxide, and excessive moisture which in many cases lead to mold growth. These are linked to a wide variety of health impacts that may cause symptoms immediately or years later. IAQ issues can vary widely depending on the season and region, meaning Tribes across North America face different challenges when mitigating the impacts from indoor air pollution at any given time.

While the pollutants and health impacts associated with IAQ are very similar to those of ambient air quality, the challenges to monitoring and maintaining IAQ are much different. Due to the large number of indoor environments that must be assessed, monitoring IAQ can be much more time and resource intensive than ambient air quality. Additionally, many Tribal communities have poor housing conditions that amplify indoor air quality problems.

Monitoring indoor air quality and maintaining healthy indoor environments is critically important. The USEPA has found that Americans spend as much as 90% of their time indoors, where levels of air pollutants are often 2, 5, or even 100 times higher than levels outside.[11] A recent study led by researchers at Harvard University compared the cognition of workers in conventional office buildings to their counterparts in well-ventilated buildings, and highlights the value of healthy indoor air quality. The researchers found that people working in conditions with better-than-average air quality showed "significantly higher cognitive

[11] U.S. Environmental Protection Agency. (2016). Air and Radiation: Basic Information. Retrieved from https://www3.epa.gov/air/basic.html.

function" and scored nearly 300% higher when tested for cognitive strategy and information usage.[12]

In 2017, the NTAA conducted the first National Indoor Air Quality Needs Assessment for Indian Country. The findings of this Needs Assessment were summarized in the 2017 STAR. An update on progress from the IAQ work group is included below in section 3.4 Indoor Air Quality.

2.3 Hazardous Air Pollutants (HAPs) and Mobile Sources

Hazardous air pollutants (HAPs) are known or suspected to cause serious health effects such as cancer, neurological problems, and birth defects. The USEPA lists 187 known toxic air pollutants including benzene, asbestos, mercury, and lead compounds. Humans can be exposed to hazardous air pollutants by breathing contaminated air, eating contaminated food (e.g., fish, meat, eggs, vegetables, etc.), drinking contaminated water, or simply coming into contact with contaminated soil, dust, or water. Some HAPs bioaccumulate, a process in which these toxins accumulate in body tissues. Humans can face long term impacts by ingesting even small amounts of toxins over long periods of time. This can be of particular concern for Tribes who may be more exposed due to subsistence and traditional life ways. The National Air Toxics Assessment (https://www.epa.gov/national-air-toxics-assessment) is a tool Tribes can use to determine if their area has the potential risk from certain air toxics.

Mobile source emissions are released by highway vehicles and non-road equipment and are known or suspected by the USEPA to cause cancer or other serious health outcomes. While mobile source emissions of air toxics have been reduced by about 50% since 1990, these emissions continue to pose hazards to human health. Diesel exhaust is of particular concern, classified by the USEPA as likely carcinogenic to humans, and was classified as a known human carcinogen by the WHO in 2012. This is of significant concern to Tribal communities that often rely on old or "legacy" fleets of diesel vehicles and equipment that produce high levels of air pollutants. Additionally, many low income communities, including Tribal communities, are in close proximity to roads, rail yards, and ports.

2.4 Climate Change

NTAA has a history of working on climate change issues and communicating the concerns of Tribes to the USEPA. In 2009, NTAA developed a report on the impacts of climate change in Indian Country after a request by then-Office of Air and Radiation Assistant Administrator, Gina McCarthy. As a result of work such as this, the USEPA released the Clean Power Plan Final Rule with the goal of reducing greenhouse gas emissions. This rule states: "Tribal communities whose health, economic well-being, and cultural traditions that depend upon

[12] Harvard T.H. Chan School of Public Health. (October, 2015). Green office environments linked with higher cognitive function scores. Retrieved from http://www.hsph.harvard.edu/news/press-releases/green-office-environments-linked-with-higher-cognitive-function-scores/.

the natural environment will likely be affected by the degradation of ecosystem goods and services associated with climate change."[13]

The consequences of climate change will endanger public health, both directly and indirectly. The USEPA's Endangerment Finding cites numerous health concerns associated with increased levels of atmospheric greenhouse gasses. The USEPA predicts that the negative effects of extreme hot days will outweigh the positive effects of less exposure to extreme cold, a scenario that will disproportionately impact poor communities that cannot afford or do not have access to air conditioning. Climate change will likely exacerbate ground-level ozone pollution as well as the many associated health impacts. Changes in temperature and precipitation patterns will increase risks associated with aeroallergens (i.e., pollen and mold) and vector-borne diseases. Finally, climate change is leading to more frequent extreme weather events, which have the potential to severely impact Tribes, depending on their preparedness and geographic location.[14] The negative health effects associated with climate change are especially damaging for vulnerable populations including the elderly, young children, and those individuals already in poor health.

Climate change threatens Tribal lifestyles by decreasing food security, endangering culturally significant flora and fauna and forcing them towards extinction, increasing the risk of extreme weather events, and endangering public health in general.

Long-term climate change and near-term weather variation are both leading to changes in biodiversity, abundance of important flora and fauna species, and seasonal changes that are impacting traditional hunting, foraging, and farming. Tribes and their members, in particular, are experiencing declines in health due to the loss of traditional food use caused by climate change.[15]

Longer summers and warmer winters in Alaska are causing sea ice to melt early and reducing Alaska Natives' ability to move around their region to hunt or gather. In the upper Midwest, moose and wild rice habitats are shifting with the changing climate, restricting their availability as a food resource. Changing temperature and precipitation patterns are permanently altering biomes across the Southwest, changing where many culturally significant plants can grow and even leading towards their extinction. Further, climate change

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[13] U.S. Environmental Protection Agency. (2009) USEPA's Endangerment Finding. Retrieved from http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf.

[14] http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf U.S. Environmental Protection Agency. (2009) USEPA's Endangerment Finding. Retrieved from http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf. U.S. Environmental Protection Agency. (2009) USEPA's Endangerment Finding. Retrieved from http://www3.epa.gov/climatechange/Downloads/endangerment/EndangermentFinding_Health.pdf.

[15] Kathy Lynn et. al, "The impacts of climate change on tribal traditional foods," Climate Change 120:545-556, 547 (2013) ("Obesity, diabetes and cancer, rare in communities living on a traditional diet, are now increasing health problems in tribes across the U.S").

is threatening food security based on subsistence agriculture, particularly in the West where a lack of rainfall has created long-term drought conditions.

A number of Tribes and Tribal organizations have committed significant resources to analyze the health effects of climate changes on Tribal communities. In particular, the Alaska Native Health Tribal Consortium (ANTHC) Center for Climate and Health has been conducting comprehensive community assessments for several Alaska Native Villages, such as the Native Village of Kivalina (Kivalina), focused on the impacts of climate change and related health effects.[16] For Kivalina, ANTHC has observed a rise in dust, smoke, and allergen levels along with health-related issues such as asthma, allergies, and other respiratory problems.[17] These levels and health-related issues have become most prominent during the summer months due to an increase in the number of hot and dry summers, lightning and wildfires, and trees and shrubs due to climate change.[18]

[16] "Climate Change Health Assessment." Center for Infectious Disease Research and Policy at http://www.cidrap.umn.edu/practice/climate-change-health-assessment (last visited on March 12, 2017).
[17] "Climate Change in Kivalina, Alaska, Strategies for Community Health." ANTHC Center for Climate and Health 21 (January 2011).

[18] Id. In the Northwest Arctic, more than 10.5 million acres burned between 1950 and 2007, including 24.1% of boreal forest and 9.2% of the tundra (Joly et al., 2009). In 2007, the largest tundra fires on record occurred on the North Slope, burning over 240,000 acres in a single season.

3 Tribal Stories in Managing Air Quality and Climate Change Effects

3.1 Tribal Air Quality Priorities, Challenges, and Successes by Region

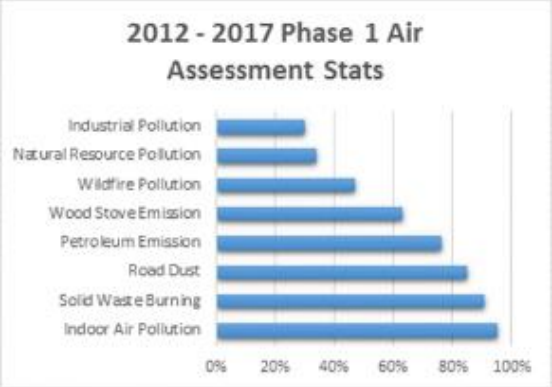
NTAA received stories from around Indian Country describing the priorities, successes, and challenges they have with managing air quality and the effects they are experiencing from climate change impacts to their communities and way of life. Several of those received are profiled below to help illustrate the status of Tribal Air Quality Programs around Indian Country. This section begins with priorities, successes, and challenges for each USEPA Region, followed by several in-depth stories organized by subject area. In addition, several Tribal air quality professionals are profiled in this 2018 STAR to highlight emerging and established professionals helping to build strong air quality programs, partnering with other entities in unique collaborations, and serving on Tribal air or environmental committees or organizations as representatives of their respective Tribes, and in some cases as a voice expressing the interests of Tribes.

Region 10 – 229 Tribes – Alaska

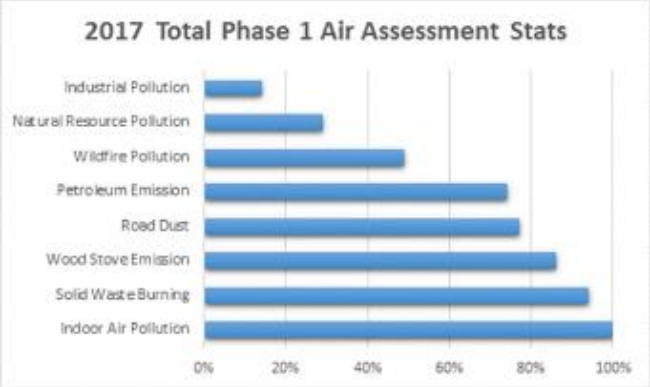
There are 229 federally recognized Tribes/Alaska Native Villages in Alaska, and 22 of them are NTAA member Tribes. The following list highlights some of the recent successes of Tribal Air Quality Programs in Alaska, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- The Alaska Native Tribal Health Consortium (ANTHC) Tribal Air Quality Program developed an *Alaska Tribal Air Quality: Phase 1 Assessment* tool to help Tribes understand and prioritize their air quality concerns. A total of 156 Phase 1 Assessments have been successfully completed by 107 Tribes statewide since 2012. Current cumulative data indicates that Indoor Air Pollution, Solid Waste Burning, and Road Dust are the top three (3) Tribally-identified air quality concerns in Alaska. Assessments completed in 2017 indicate that Wood Stove Emissions is now also a major concern for many communities.

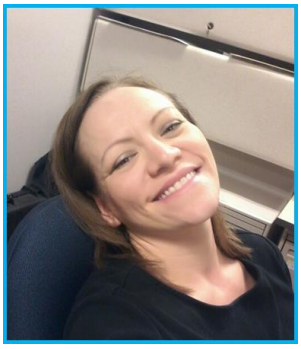


2012-2017 Alaska Tribal air quality priorities.



2017 Alaska Tribal air quality priorities.

- The Native Village of Ruby conducted a successful pilot dust mitigation project funded by the US Department of Transportation Federal Highways Program that involved applying two palliative products (dust suppressants), using lightweight equipment that can be flown in on small aircraft, and pre-and post-air quality monitoring. Partners on the project also included USEPA Region 10, the Alaska University Transportation Program, and the Alaska Department of Environmental Conservation;
- ANTHC continues to work with Tribes to identify communities with high rates of respiratory illness among children, including simple home modifications to improve indoor air quality;
- Aleknagik Traditional Council and project partners produced a series of videos to educate residents about simple steps to improve Indoor Air Quality and how to minimize risk from air pollution during wildfire episodes (see below in the Wood Smoke section for the article called Alaska's "Let's Clear the Air: Protect Yourself from Wildland Smoke" Videos for links to these videos);
- Since 2012, Bristol Bay Native Association has surveyed IAQ in 405 homes to assess the feasibility of wood heating system exchange programs and identify appropriate wood smoke reduction measures;
- Hoonah Indian Association successfully completed an indoor air quality study of particulate matter 2.5 (PM2.5) and carbon monoxide (CO). This study sought to quantify PM2.5 and CO in households and document underlying drivers of indoor air quality issues. Through the study they surveyed 65 homes, and a subset of those homes received a PM2.5 monitor and a CO monitor. Results showed that households with stoves greater than 20 years old had significantly higher emissions of PM2.5 than houses with stoves less than 20 years old. They also found a need for weatherization and ventilation upgrades.



Mary Mullan is the new NTAA EC Primary Representative for Alaska. Mary is an Alaska Native originally from the Village of Port Lions on Kodiak Island. She has been working on environmental issues in varying capacities for 4 years. Mary began her career as an IGAP Coordinator for the Village of Port Lions in 2014. In 2015, Mary moved to Anchorage and began working for the Alaska Native Tribal Health Consortium (ANTHC). She first worked in the IGAP Program at ANTHC and has since moved into the Tribal Air Quality Program. In her current position, Mary co-manages the ANTHC Tribal Air Quality sub-awards, and assists sub-awardees with their air quality projects through QAPP development, trainings, technical assistance, and site visits. Mary has also been involved in planning and participating in the quarterly Alaska Tribal Air Workgroup calls, where she hears directly from Tribes about their concerns. Her work with the ANTHC Tribal Air Quality Program has offered her a unique perspective of air quality issues across the different regions of the State of Alaska.

Ann Wyatt is the new NTAA EC Alternate Representative for Alaska. Ann has been the Environmental Coordinator for Klawock Cooperative Association for over 15 years. In her time in this capacity, Ann has written and successfully managed grants addressing air quality issues. She is always looking for new ways to help our Tribal membership have healthier indoor air quality at home and in the work place. She is also very concerned about ambient air quality and what we can do to address the concerns of things that might trigger asthma and respiratory illness while enjoying the beautiful outdoors. Ann also worked on an ANTHC Air Quality Mini-Grant, a Mold and Mildew Project for Klawock Tribal Residents, education and outreach, and handed out Air Matters Toolkits. She is currently working on another ANTHC Air Quality Mini-Grant on Bed Bug Prevention and Management and will be handing out Bed Bug Kits and education materials, to help people avoid using harsh chemicals that may cause an air quality issue and simultaneously reduce bed bug fecal matter.

Challenges and Priorities

- Funding presents the major challenge to Alaska Native Villages that are not eligible to receive federal monies designated for Tribes with Reservation lands. USEPA is not able to add new programs or provide special project funding because Tribal air grant funds have not increased since 2012;
- Many remote locations in rural Alaska need cost-effective roadway dust prevention and/or treatment to protect citizen health and safety;
- Landfill burning;
- Indoor air quality and weatherization;
- Wildfires;
- Wood smoke, smart burning practices;
- Radon;
- Climate change adaption;
- Fugitive dust from mining operations;
- Cruise ship emissions.

Region 10 – 43 Tribes – Idaho, Oregon, and Washington

There are 43 federally recognized Tribes in USEPA Region 10, and 13 of them are NTAA member Tribes; fifteen Tribes have Air Quality Programs. The following section highlights recent successes of Tribal Air Quality Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

The Concern

The Tribes realize USEPA has experienced reduced overall funding for several years. However, we feel that Tribal Air Quality Programs represent a better fiscal to health improvement investment than many other programs.

The Challenge

The stagnation and cuts in Tribal funding in the last 10 years means there have been reductions in ongoing programs and no funding for new Tribal Air Quality (AQ) programs.

Maggie McCarty Sanders is a direct descendent of the last whale hunter of the Makah nation. She received her Master's Degree in Public Administration with a concentration in Tribal Administration. For the past five years, her work has been with the Nisqually Indian Tribe's Natural Resources Department, where she works with Tribal colleges and universities on climate change, its impact on treaty trust resources, and engaging Tribal communities to become resilient in the face of climate change. She is Region 10's NTAA EC Primary Representative.

Allie McLaughlin is the Air Quality Program Coordinator for the Quinault Indian Nation. She began her position at the Nation on February 15, 2018. She is a graduate of the University of Idaho with a B.S. in Wildlife Resources and Management, and has worked in many different natural resource fields throughout her career including: fire, fisheries, wildlife, and outdoor and public education. Allie grew up all over the west coast and has lived in states as far north as Alaska, as far south as Texas, and as far east as Idaho and Montana. Her husband and she (and their furry companion, Buckshot), currently reside in Ocean Shores, Washington. She is an adventurer, educator, conservationist, naturalist, and avid outdoorswoman. Allie enjoys spending time with loved ones outside, especially hiking, trail running, gardening, hunting, and fishing. When not playing outside, she loves to cook and create art with family and friends. Allie is the new R10 NTAA EC Alternate Representative.

Tribes are supplementing environmental staff with Tribal money needed for health and youth programs. Small Tribal programs, which have been allowed only a partial fulltime employee (FTE) through USEPA funding, have now seen money reduced to unsustainable levels to the point where Tribes are eliminating environmental programs. Larger Tribes are losing experienced staff because of the need to reduce wage rates. Monitors funded in the early days of the programs (i.e., 2000-2010) are not being funded adequately to replace equipment. Education and outreach to Tribal members is one of the first program elements to suffer cutbacks, and choices have to be made between IAQ concerns, climate change mitigation, and ambient air quality programs.

The Need

- Funding
  - At a minimum, restoration to the highest pre-reduction levels for current programs (funding which USEPA used to get and allocate to the Tribes to establish AQ programs);
  - Tribal Monitoring program, Credentialed Inspector Program, Regional Partnership Organization (e.g., Western Regional Air Partnership), Federal Air Rules for Reservations (FARR) Revision, DERA, Toxics monitoring.
- IAQ
  - Increased funding stream, separate from the current grant program funding;
  - Allowed in all regional STAG Tribal applications;
  - Federal entities need to work out the means between themselves so Tribes can obtain funding through USEPA, from Housing and Urban Development/ Health and Human Service (HUD/HHS) funding, for IAQ tasks without having to apply for separate department grants.
- Climate Change
  - Separate funding stream, in addition to current grant program funding;
  - Federal entities need to work out the means for Tribes to obtain funding through USEPA, to use Bureau of Indian Affairs (BIA) funding, for climate

change tasks without having to apply for separate department grants.

- USEPA Staffing
    - Restore positions;
    - Cutbacks have nearly eliminated experienced staff to help Tribes with specific problems; Superfund sites, toxic source impacts, etc.;
    - Current USEPA staff turnover/position elimination has left remaining USEPA staff struggling to help Tribes.

Region 9 – 148 Tribes – Arizona, California, Hawaii, Nevada, American Samoa, Commonwealth of the Northern Mariana Islands, Guam, and Marshall Islands

There are 148 federally recognized Tribes in USEPA Region 9, and 27 of them are NTAA member Tribes. The following list highlights recent successes of Tribal Air Quality Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- The La Jolla Band was granted TAS status (see story below in the Tribal Consultation and Sovereignty section)
- The Morongo Band of Mission Indians received the Virgil Masayesva award in the category of Tribal Program Development (see story below in the TAMS section)
- The Navajo Nation successfully implemented a wood stove change-out program (see story below in the Wood Smoke section)

Challenges and Priorities

- Adequately fund and support existing established air programs, and support Tribes that want to create air programs. Regarding support terminology, USEPA identifies support as providing reference or options to other funding sources. With this in mind USEPA is currently having Tribes conduct activities such as Emission Inventories, Air Quality Assessments, Indoor Air Quality Assessments, and other activities allowed in GAP. The concern is that GAP is not an efficient source of funding to support some of these activities as USEPA GAP suggests that Tribes complete an emissions inventory by basically creating a list of emission sources and types of emissions. GAP does not fund activities necessary to collect data over an annual time period to conduct a true emission inventory which would be accompanied by an Air Quality Assessment and Air monitoring plan or strategy to justify the need for a CAA §103 Program which new Tribes are rarely funded;
- Provide funding to conduct baseline assessments which include air quality monitoring to evaluate air quality conditions that have potential to impact human health and the environment. The impacts from the exposed playa in the Salton Sea have the potential to affect local and regional areas. Baseline assessments for these types of monitoring

activities are not being approved in GAP funding. Adequate funding for monitoring and evaluating Particulate Matter (PM10) control measures for the exposed playa in the Salton Sea, and monitoring of toxic parameters should be included in this funding to identify trends over time and potential health impacts;
- Targeted funding and support for Tribes affected by new ozone standards;
- Targeted funding and support for Tribal indoor air programs;
- Retaining knowledgeable staff;
- The majority of air pollution sources are off Tribal lands.

Mike Natchees is a member of the Ute Indian Tribe and lives on the Uintah and Ouray Reservation near Fort Duchesne Utah. He has worked for the Ute Indian Tribe since 1998 in positions such as the Diabetes Prevention Program Director and also served as GAP Coordinator for the Tribe. He began work in the Ute Indian Tribe Air Quality Program in 2013 as Air Monitor Technician and provides oversight on the operation and maintenance of the Tribe's air stations on the Reservation. He is one of the new TAMS SC members.

Region 8 – 27 Tribes – Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming

There are 27 federally recognized Tribes in USEPA Region 8, and eight of them are NTAA member Tribes. The following list highlights recent successes of Tribal Air Quality Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- The Southern Ute Tribe has been doing a great job leading the way on administering the Tribe's USEPA approved Title V Operating Permit program (i.e., permitting, compliance, and enforcement);
- Scott Clow, Ute Mountain Ute, is the air lead for the National Tribal Caucus;
- Northwest Band Shoshone Nation submitted TAS for 105.

Challenges and Priorities

- Limited funding is the most significant challenge to Tribal Air Quality Programs in Region 8;
- Rebuilding relationships with the USEPA that have deteriorated in the wake of employee retirements and travel budget cuts;
- Continuing face to face regional meeting with all the Tribal Air Managers and USEPA personnel;
- Oil and gas development (has lessened since last year but is still an issue);
- Non-attainment for Northern Ute.

Jason S. Walker has been the Air Quality Manager for the Northwestern Band of the Shoshone Nation since 2001 after getting a CAA §103 award. The NWBSN completed an Emissions Inventory in 2003 that showed the need to monitor for Particulate Matter 2.5 and Ozone. The Washakie air station has been in operation since 2004 monitoring for Ozone on a year-round basis. A new bio diesel facility moved within a mile of the reservation and the air program will start monitoring for NOx in 2018 after the QAPP has been updated and approved. The Tribe applied for TAS in 2018 and looks to be able to comment on new and future facilities in the valley. Mr. Walker helps teach the TAS course with TAMS and has assisted other Tribes with their air quality programs. Mr. Walker has also been on his Tribal Council since 2006 and had the honor of serving as the Chairman for approximately 4 years. Mr. Walker has also served as the Utah Tribal Leaders chairman during his time as chairman, and has also served three terms on the Clean Air Act Advisory Council (CAAAC) with four other Tribes in the nation. Mr. Walker was honored to receive the Virgil Masayesva award in 2017 at the NTF in Tucson, AZ.

The Northern Cheyenne Tribe hired Jay Littlewolf on May 26, 1989, to be the air quality technician. Mr. Littlewolf received his Bachelor of Science degree from Montana State University in Film and Television Production. Mr. Littlewolf received his air quality training on the job and from the State of Montana, USEPA, CARB, air quality contractors, the coal fired power company, ITEP and various other state and federal agencies. Within two years, Mr. Littlewolf was promoted to Air Quality Administrator. Over the years, Mr. Littlewolf expanded the Air Quality Division (AQD) adding three USEPA §103 Grants that address visibility, mercury, and IAQ, with the existing §105 USEPA Grant, along with contracting with a major power company. Mr. Littlewolf hired Scott Williams in June 1996 as an air quality tech; he is responsible for the field work on the air monitors and does the work at the three air monitoring sites on the Reservation. In late 2016, the AQD passed the Northern Cheyenne Clean Air Act; the Tribe has submitted the documents to USEPA to expand the TAS/TIP for more enforcement capability. This is on track to be completed by the end of FY18. The Northern Cheyenne AQD was recognized at the NTF with the 2017 Virgil Masayesva Award for Excellence.

Region 7 – 9 Tribes - Iowa, Kansas, Missouri, and Nebraska

There are nine federally recognized Tribes in USEPA Region 7, and seven of them are NTAA member Tribes. The following list highlights recent successes of Tribal Air Quality Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Priorities

- Develop a Smoke Action Plan during burn season to increase public outreach and awareness, develop partnerships with local agencies, and contribute applicable components to ambient air monitoring (flagging);
- Update/complete Tribal needs assessment;
- Update Tribal Emissions Inventory;
- Conduct Advanced Indoor Air Quality Assessments with radon testing in all Tribally owned homes;
- Continue ambient air monitoring of PM2.5 with 75-100% completeness.

Successes

- Completed a Memorandum of Understanding with Tribal Housing Department to conduct Advanced IAQ Assessment and radon testing in Tribal homes;
- Completed and passed ambient air monitoring audit training.

Challenges

- Continue ambient air monitoring stations: there are challenges with staff turnover and continuous maintenance issues;
- Increase Healthy Home Assessments for Tribal Housing and community;
- Lack of sufficient funding, or decrease in funding opportunities;
- Need for greater USEPA support with ambient air monitoring issues.

Region 6 – 66 Tribes - Louisiana, Arkansas, Oklahoma, New Mexico, and Texas

There are 66 federally recognized Tribes in USEPA Region 6, and 21 of them are NTAA member Tribes. The following list highlights recent successes of Tribal Air Quality Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- Fifteen (15) tribes in R6 have §103 grants;
- In August 2017, the Quapaw Tribe of Oklahoma received notification from USEPA that it has been approved for Treatment in a Manner Similar to a State (TAS) under Section

301(d) of the Clean Air Act. R6 has four (4) Tribes currently with TAS: Kaw Nation, Cherokee Nation, Peoria Tribe, and the Quapaw Tribe;
- The Alabama-Coushatta Tribe of Texas received an USEPA Community Air Toxics Monitoring Project Grant. The project is for real-time monitoring of HAPs in the vicinity of oil and gas sites. The Tribe is working with the Houston Advanced Research Center to deploy the monitoring systems once a week for three years;
- Choctaw Nation's Environmental Office implemented two new Mercury Deposition Network (MDN) sites into its monitoring network. The MDN provides long-term record of total mercury (Hg) concentration and deposition in precipitation in the United States and Canada.

Challenges and Priorities

- Various Tribes in Oklahoma met with representatives of USEPA in December 2017, to discuss a State of Oklahoma request for delegative authority over the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) and its potential impacts to Tribal communities;
- Additional funds and continued development of Tribal Air Quality Programs, including ambient and indoor air quality;
- Jurisdictional issues in connection to TAS Applications;
- Additional educational opportunities in connection with Tribal Authority Rule, Clean Air Act Permitting, Technical System Audits, Indoor Air Home Assessments, and radon.

Region 5 – 35 Tribes, Michigan, Minnesota, Wisconsin, and Indiana

Vallen Cook is an Air Quality Specialist at the Grand Portage Band of Lake Superior Chippewa. He began his work with Grand Portage in 2015. Vallen has a M.A. degree in Tribal Administration and Governance from the University of Minnesota, Duluth. He is one of the new TAMS SC members.

There are 35 federally recognized Tribes in USEPA Region 5, and 20 of them are NTAA member Tribes. In 2017, 17 R5 Tribes received 103 and 105 funding from the USEPA and two Tribes received SIRG radon grants. As in past years, Tribal requests exceeded the available funds, meaning that these 17 Tribes only received partial funding. Three of these Region 5 Tribes are researching the feasibility of Tribal Implementation Plans (TIPs). One Tribe has Class I re-designation and two Tribes are in the "response to comments" stage of Class 1 re-designation. Another Tribe has plans to scope out Class I re-designation. Multiple other Tribes are evaluating Class I in their long range plans. Seven Region 5 Tribes currently have Treatment as a State (TAS) status. The following section highlights the top successes, priorities, and challenges for ensuring the continued success and future growth of these Region 5 Tribal Air Programs.

Successes

- The Tribal Air Resources Journal, an annual publication by Tribes in Region 5, is in its ninth year. The Journal highlights Tribal Air Quality achievements, challenges, setbacks, and successes and includes a section for each of the 35 Tribes in the Region. Please see the following link to access the 2017 Journal or Journals from previous years: http://www7.nau.edu/itep/main/ntaa/TribalAirResources/AirProgram/Resources/
- Region 5 currently has seven (7) Tribes with TAS status: Fond du Lac Band of Lake Superior Chippewa, Leech Lake Band of Ojibwe, Bad River Band of Lake Superior Chippewa, Forest County Potawatomi, Red Lake Band of Chippewa, Grand Portage Band of Lake Superior Chippewa, and the Mille Lacs Band of Ojibwe.
- R5 USEPA now notifies the Tribes in R5 of Title V permits reviewed or submitted to USEPA upon their receipt. This allows Tribal review and information sharing of these permits within the Tribal Areas of Interest.
- The State of Minnesota is working with Tribes monitoring in Minnesota to do air quality forecasting. Currently five (5) Tribes are issued forecasts. Tribal Nations are included on the State air alert maps and notifications issued and broadcasted.
- Many Tribal representatives in Region 5 serve on regional and national workgroups, such as the NTAA, the USEPA's Clean Air Act Advisory Committee (CAAAC), the TAMS Steering Committee (SC), the Conference of Radiation Control Program Directors, Inc., and the Air and Waste Management Association, and work with the Lake Michigan Air Directors' Consortium, the National Tribal Operations Committee, and the National Tribal Water Council, among others, to promote and advocate for R5 Tribes.

Priorities and Challenges

These priorities and challenges were identified by the Tribes in R5 via a Google document live form and a regional priority call. These reflect the top issues and concerns by R5 Tribes:

- Treaty Rights - Impacts of air quality in Ceded Territories - Concerns surrounding traditional fishing and gathering, and ensuring those resources are not compromised through contamination or pollution.
- Tribal Air Programs –
    - New Air Programs: Concerns with lack of resources to establish infrastructure, this takes time and resources which may be limited in the competitive grant process, and it is difficult to maintain capacity under current funding sources.
    - Existing Programs – Concerns with the inability to expand and/or maintain the high capacity of Tribal Air Programs due to stagnant funding, limited resources, and aging equipment.
- Funding and Technical Support via USEPA, other agencies, or other sources – Concerns with pending and future budget cuts which may hurt or limit the capacity of Tribal Air Programs.
- Mining Impacts:

- Metallic – ore, sulfides, nonferrous, cumulative effects - Concerns around air emissions from mining impacting cultural resources, such as mercury levels, wild rice, and human health.
- Non-metallic – Concerns with fracking and sand mining, which may be a much greater concern depending on the near future directions of the new federal administration. See the Nottawaseppi Huron Band of the Potawatomi story in the Hazardous Air Pollutants (HAP) and Mobile Sources section below.

- Mercury - production, deposition, impacts, and regulations; multi-media approach, monitoring and analysis – Awareness and concerns were addressed at the April 2017 R5 Tribal Mercury Workshop by the Tribes and for the Tribes in Region 5. Over 60 Tribal representatives from all media attended the workshop. As an outcome, the R5 Tribes have established a Regional Mercury Workgroup and are moving forward with help from the GIS department at the Fond du Lac Tribal and Community College.
- Climate Change - impacts, plans and resilience, adaptation, prevention, education - Impacts observed in southern Michigan: changing precipitation, increased heavier storms, tornado activity in late winter, decline in white cedar trees and paper birch trees - need to go farther north to locate these resources, increased pests in wild rice; Minnesota: weather (damaging wind events that damage wild rice), highly fluctuating river levels, erosion issues, high sediment loads, high rate of disease and pests, warmer winters, deer and moose populations declining. Challenges in adaptation include: lack of funding, limited administration and coordination. In light of the new administration's view of climate change, scope will include a "rebranding" of how to indirectly address climate change impacts utilizing pollution prevention, energy efficiency, and materials management. See the stories in the Climate Change section below called: Air Site Solar Pilot Project: Bad River Band of Lake Superior Chippewa, Little Traverse Bay Bands of Odawa Indians, and Oneida Tribe of Indians of Wisconsin.
- Use of Small Sensor Technology - Ensure use as a limited screening tool, not as primary method or correlation to NAAQS. Concerns regarding rapidly emerging technology outgrowing its own QA/QC and QAPPs procedures. Tribes are part of the research and development and eager to do so with the mindset that these will continue to develop, however to this point it is still unverified technology, which remains a big concern.
- Monitoring for Air Quality: Air toxics, PM, Ozone, Mercury, etc. - Data analysis support/assistance – Concerns with legacy monitors including cost and maintenance

Carma Huseby is the Air Quality Specialist for the Leech Lake Band of Ojibwe. She attended Bemidji State University where she received a Bachelor's of Science degree in Biology with a minor in chemistry. She has been working in the Air Quality field for 2 years. She is one of the new TAMS SC members.

of those monitors; particulate matter is high in certain areas due to agriculture and industry (e.g., concrete plants, Electric Generating Units). Lack of state or Tribal monitoring in some of these areas of concern. Overall lack of funding, infrastructure, and coordination limits progress; some rely on TAMS Center for support and technical assistance, others can use state assistance, and yet others still receive no assistance.

- Indoor Air Quality - funding, regulation, technical resources, and building science - Concerns include: moisture, mold/mildew issues, ventilation, radon, overall building operations. Limited funds identified for assessments and even less for mitigations. The absence of exposure limits or standards for most IAQ concerns hinders both funding and program implementation. See the story called Stockbridge-Munsee Community, A Band of Mohican Indians, in the IAQ section below.

- Tribal minor New Source Review (mNSR) – Source registration, identification, and permitting of sources. Tribes requesting more information on these sources and verification of EPA's list.

Region 4 – 6 Tribes - Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee

There are six federally recognized Tribes in USEPA Region 4, and four of them are NTAA member Tribes. The following list highlights recent successes, challenges, and priorities related to Tribal air quality in the region.

Successes

The Catawba Indian Nation's Ambient Air Program:

- Completed year 2 of ozone monitoring and data collection, utilized Tribal Data Toolbox to manage data and uploaded data to AQS;
- Received approval of PM 2.5 QAPP from Region 4 USEPA and worked with TAMS to conduct FRM/FEM PM 2.5 comparisons;
- Participated in Air Now for ozone and PM 2.5, one of seven sites listed in South Carolina, providing air quality information to the Catawba Nation and eastern York County;
- Working with USEPA Region 4 and applying for TAS for CAA 105;

- Developing an Ozone and PM 2.5 Advance "Path Forward" plan for Catawba Indian Nation.

The Catawba Indian Nation's Indoor Air Program:

- Continues to partner with ISWA Housing conducting IAQ walkthroughs, providing detailed findings and solutions to address IAQ issues in housing and Tribal Government buildings;
- Developing IPM plans for Tribal government buildings that focus on integrating IPM (pest proofing strategies) and IAQ and energy efficiency;
- Partnered with the American Lung Association (ALA) to implement the TEACH program in numerous homes with children with asthma to reduce "environmental triggers" that impact health and emergency room visits for children with asthma.

Challenges and Priorities

- Air Program development and TAS;
- Improving and monitoring indoor air quality;
- Climate change research and adaptation planning, incorporating traditional ecological knowledge into these efforts;
- Concern of increasing levels of dust pollution caused by drought;
- Hydraulic fracturing pollution.

Region 3 – 7 Tribes – Delaware, Maryland, Pennsylvania, Virginia, and West Virginia

There are now seven federally recognized Tribes in USEPA Region 3. Until earlier in 2018, there had been only one federally recognized Tribe, the Pamunkey Tribe of Virginia. The Pamunkey Tribe is now joined by other Virginia-based Tribes including the Chickahominy, the Eastern Chickahominy, the Upper Mattaponi, the Rappahannock, the Monacan, and the Nansemond. The recognition of these additional Tribes in Region 3 is an exciting development, and the NTAA looks forward to working with them. Federal recognition allows Tribes to apply for grants such as CAA Section 103 and 105, however, as many of the stories in this document and the budget analysis in Appendix A make clear, additional funding is needed for these Tribes to develop air quality programs.

Region 2 – 8 Tribes - New Jersey, New York, Puerto Rico, and US Virgin Islands

There are eight federally recognized Tribes in USEPA Region 2, and two of them are NTAA member Tribes. The following list highlights recent successes of Tribal Air Quality Programs in the Shinnecock Indian Nation, as well as several challenges they face for ensuring continued success and future growth of their air program.

Shinnecock Indian Nation Successes

- This past year, we participated in a training provided by Taylor Smoke (SRMT) and the American Lung Association, which allowed us to assist households with asthmatic children;
- We will partner with the Peconic Estuary Program to update our Climate Change Adaption Plan with USEPA's Climate Ready Estuaries Program funds. Using USEPA's Vulnerability Assessment Work Book, we will complete a new assessment. It has been 5 years since we drafted the original;
- We are fortunate to have a new staff member able to dedicate the time to travel and attend the ITEP Air Quality courses;
- We look forward to developing an Air Quality Program.

Steven D. Smith, II, joined the department 1 year ago as Shinnecock's Environmental Assistant. In addition to helping with the water quality and aquaculture program, he has taken on the task of helping the department develop an Air Quality Program. Steve has dedicated the time and effort to build his knowledge and skills through attending consecutive courses through ITEP. We look forward to increased education outreach opportunities to our community, because of his dedication.

Taylor Smoke is a Mohawk of Akwesasne and a member of the Wolf Clan. He is an Air Quality Technician with the Saint Regis Mohawk Tribe (USEPA Region 2) in the Environment Division. A graduate of the St. Lawrence College Environmental Technician Program (2015), he joined the air quality program as a Sampling Technician for the Dioxin in Dust Project in 2015. Taylor was recruited for multiple projects such as the TEACH Project with the American Lung Association of the Upper Midwest (ALAUM) to help families with children with asthma in Akwesasne. In 2017, he became a trainer for other Tribal communities. In contract with the ALAUM, four Tribal communities were visited and trained in identifying asthma triggers in the home. As the Air Technician, he manages an ambient air monitoring station which monitors for Ozone, PM 2.5, NOx, SO2, and heavy metals. Taylor has been married for three years and has a four-year-old son. Taylor boasts he is the 4th best lacrosse stringer in the world. He is one of the new TAMS SC members.

Shinnecock Indian Nation Challenges

- It was difficult to begin developing capacity on air quality because we have such a small staff;
- Educating and encouraging a few community members to break the old habits of outdoor burning;
- Invasive species and concerns increased sensitivity to foreign pollen.

Region 1 – 10 Tribes - Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

There are 10 federally recognized Tribes in USEPA Region 1, and three of them are NTAA member Tribes. The following list highlights recent successes of Tribal Air Quality Programs in this region, as well as several common challenges they face and priorities for ensuring continued success and future growth of these air programs.

Successes

- In the face of budget cuts, the Penobscot Nation's Air Program has managed to maintain its capacity by continuing to evolve state and federal partnerships.

Challenges and Priorities

- Indoor Air Quality for our Tribal citizens needs resources for air testing and short term monitoring for assessment. The work being done to include smaller, lower cost devices should be supported;
- Particulate matter and ozone-causing emission transport from out of state continue to be major concerns;
- Federal Trust Responsibility for Tribes must remain intact.

3.2 Tribal Consultation and Sovereignty

La Jolla's Air Program and TAS Success Story

The La Jolla Band of Luiseño Indians (Tribe) Air Program (Program) was established in 2006 with funding under the USEPA Indian General Assistance Program. The Tribe worked closely with the Pala Band of Mission Indians for three years to address air quality concerns on the La Jolla Indian Reservation. In 2007, La Jolla began conducting a PM2.5 air monitoring study with a Met One Instruments, E-BAM mobile monitoring station borrowed through Pala's shared equipment loan program. Soon after, the Tribe became concerned about the ongoing air quality designation process for PM2.5 and ozone. The Tribe began providing formal comments on the designation process, and based on the results of the aforementioned study, decided to develop a fulltime PM2.5 monitoring program. In 2008 the Tribe was awarded their first CAA §103 grant. Since the Program's inception, the Tribe has completed three emissions inventories, developed a PM2.5 and weather parameter monitoring program, conducted an ozone monitoring study on the Reservation in collaboration with the TAMS Center, become an active participant in local and national collaborative efforts and policy issues, is in the process of establishing a consolidated primary quality assurance organization (PQAO) with Tribes in Southern California, and has just been awarded Treatment in a Manner Similar to a State (TAS) for §105, §126(a), and §505(a) (2) of the Clean Air Act (CAA) by the USEPA.

What follows is a chronological summary of the Tribe's process to develop and submit a TAS application and ultimately be granted approval. It is hoped that by reading this summary you will gain some understanding of the process and learn more about some of the issues the Tribe faced along the way.

The Tribe had been discussing the possibility of attaining delegated authority with their Environmental Staff for quite some time. In early 2016, at the direction of Tribal Council, the La Jolla Environmental Department worked with Legal Counsel to put together a TAS application based on 40 CFR part 49 and Attachment G of the Strategy for Reviewing Tribal Eligibility Applications to Administer USEPA Regulatory Programs memorandum. The Tribe's USEPA CAA Project Officer (PO) was notified that the Tribe would be developing a TAS application and the PO suggested that the Tribe first develop and submit, for initial review, a draft application, the suggestion being that instead of submitting a final application that may need additional information or editing, submitting a draft would allow for review of all the relevant elements to ensure they met the USEPA requirements. This process turned out to be beneficial and likely saved time in formally submitting the final application and ensuring it was complete and accurate.

Upon completion of the application, it was reviewed and approved by Tribal Council to submit to the USEPA. On May 5, 2016, the Tribe formally submitted their TAS application to begin the review and approval process. This process includes developing and submitting an application, review by the USEPA, a 30 day public comment period, and the final TAS eligibility decision. During the initial review process, the USEPA found an issue regarding the jurisdiction aspect

of the Tribe's application and requested additional information. La Jolla is a Reservation with a piece of non-Tribally owned property located in the middle of the Reservation. According to the Tribal Authority Rule (TAR), Tribes with approved CAA programs have the authority over all air resources within the exterior boundaries of their Reservation. The Tribe's initial application discussed asserting jurisdiction over all non-Tribally owned fee land located within the exterior boundaries on the Reservation. What the Tribe later learned, after numerous discussions with Legal Counsel, the USEPA, and BIA, was that the exterior boundaries of any non-Tribal fee land located within the overall exterior boundary of the Reservation is also considered a Reservation exterior boundary. The USEPA notified the Tribe that asserting jurisdiction over non-Tribally owned fee land had never been attempted before and that the Tribe would have to clearly demonstrate the basis for doing so in their attorney letter and application. The Tribe specifically excluded that portion of land in the jurisdiction assertion portion of their application. The Tribe revised and formally submitted their TAS application on May 31, 2017.

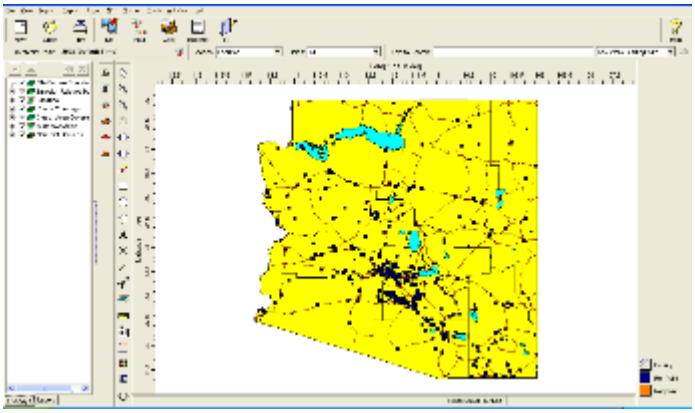
The Tribe's application underwent the aforementioned review and approval process with no comments received from the public and was placed into the internal USEPA review process. The USEPA deemed the application complete on August 15, 2017. The USEPA then had 90 days to either approve, deny, or request additional information. After more than 120 days had elapsed, the Tribe requested that the USEPA provide approval of the TAS status. The USEPA provided final approval and award of TAS to the Tribe on February 7, 2018. §105 will allow the Tribe to apply for and administer grants awarded under §105 of the CAA, §505(a) (2) allows the Tribe the opportunity to submit written recommendations as an "Affected State" on the Title V permit issuance of new major emissions sources that may negatively affect the Tribe's air quality, and §126 (a) allows for the Tribe to receive notice from the State regarding new construction of major emissions sources that may negatively affect the air quality on the Reservation. This status gives the Tribe delegated authority under the CAA to track adverse changes in air quality on the Reservation and better protect the health and welfare of its members and the environment.

3.3 Ambient Air Quality

Tribal Emissions Inventory Software Solution (TEISS)

This software, free to federally recognized Tribes and used by ~120 since 2004, is a package that incorporates emissions calculators, mapping, reports and charts, and extensive links and information explaining point, nonpoint (area), on-road and non-road emissions. The TEISS software can manage the emissions reported by nearby or surrounding jurisdictions such as counties, so that Tribes can evaluate whether those emissions should be included as potentially affecting their air quality, and provides functions for mapping and summarizing those emissions. In addition, TEISS includes calculators for estimating many common emission sources on reservations.

ITEP provides an intensive curriculum of online training courses in using TEISS as well as estimating emissions from sources not included in TEISS calculators. All Tribes, even the smallest, have sources whose emissions are not in the National Emissions Inventory (NEI) database. ITEP provides assistance in gathering activity data from sources such as those on Tribal land and not included in the NEI (for example, amount of gasoline sold at gas stations, cords of wood used in wood stoves, miles of unpaved road, gallons of propane purchased to heat community center, etc.). Then, our instructors assist Tribes in using these data to calculate emissions, and incorporate these estimates into their reports. Finally, ITEP spends considerable time assisting Tribes in reporting the emissions estimates, including formatting the data for upload into the NEI database.



Example map showing point sources; users can zoom in to include layers of roads, Tribal boundaries, topographical features, and other shape file layers.

The Saving of the TREX Network

In August 2017, the Tribes utilizing the TREX Network were informed that the Exchange Network Grant funding the TREX Network project was not renewed, and, so at the start of October 2017, the TREX Network would cease operating. At the request of the Tribes using the TREX Network, the Tribal Air Monitoring Support (TAMS) Center facilitated meetings between staff from the USEPA Office of Air and Radiation (OAR) and USEPA Office of Air Quality Planning and Standards (OAQPS) and the operators of the TREX Network (Sutron Corporation and NAU-ITEP) to determine a way to keep the network operating. Through cooperation from all involved, the operators agreed to continue providing support and service for the TREX Network at their own expense pending location of funding resources for the TREX Network. Fortunately, funding was found and will cover the current operation for two years (FY2018 and FY2019). The funding was provided to the NAU ITEP through a supplemental grant to an existing USEPA Tribal air quality support grant. The TAMS Center continues to provide updates to the TREX Network member Tribes as well as facilitate calls for the Tribes to discuss new exchange network grant proposals.

TREX stands for the TRibal Environmental eXchange Network and is a server based network utilizing the LEADS ("Leading Environmental Analysis Display System") software developed by the Sutron Corporation. The LEADS Software allows the TREX member Tribes to make reports to AQS, WQX, AIRNow, and a hosted TREX-Net website (http://trexwww55.ucc.edu/). The goal of the TREX-Network is to help Tribes across the United States that are starting programs or already have programs actively conducting air and/or water quality monitoring activities, with a platform to collect, analyze, and submit data to the USEPA. TREX-Network assists these Tribes by providing a streamlined approach to data retrieval, validation, and

submission to national databases (e.g. AIRNow, AQS, WQX) while also providing Air Quality Index (AQI) reporting for local observations.

3.4 Indoor Air Quality

The NTAA Indoor Air Quality Work Group

The NTAA IAQ Work Group had several areas of accomplishments and progress this year.

Work Group Tasks
In May 2017, during the NTFAQ in Tucson, Arizona, the NTAA IAQ Work Group held a breakout session with Tribal participants. During the session, NTAA staff posed several questions regarding future work of the IAQ Work Group. The NTAA staff facilitated small group discussions and participants provided responses to each question. The questions posed were as follows:

1. *What to do now with the results of the National Needs Assessment of Indoor Air Quality for Indian Country?*
2. *How can the IAQ Work Group help secure funding for IAQ work?*
3. *What other specific actions should the IAQ Work Group take?*

There were a variety of ideas provided for each question. However, in order to narrow the scope, the most common responses to each question were considered and the IAQ Work Group made the determination to follow through on those particular tasks; an Action Plan was developed to help guide the work of each task.

- *Task 1: Get the report into the hands of health clinics, federal agencies, Tribal leaders, etc.;*
- *Task 2: Identify and compile all possible funding streams and create funding toolkit;*
- *Task 3: Analyze IAQ Needs Assessment by region.*

As the year progressed, it became evident that the IAQ work tasks 1 and 3 were closely related so by December 2017, the tasks were combined as Task 1. NTAA staff have begun the process for analyzing the Needs Assessment by region; once that is complete the Work Group will determine the next steps in distributing the results to health clinics, federal agencies, and Tribal leaders.

Partnership Opportunity
In order to complete Task 2, the NTAA Indoor Air Quality (IAQ) Work Group has initiated a partnership with the Tribal Healthy Homes Network (THHN). In 2018, THHN, under the direction of the NTAA IAQ Work Group, will help develop a strategic roadmap for funding and protection of Tribal indoor environments. Specifically, THHN will expand the utility of their 2017 Tribal Guide to IAQ Financing, by: 1) compiling detailed information on each of the grant

programs in the guide, including the degree of competitiveness and examples of successful Tribal grant proposals; and 2) providing a supplement to the guide that provides region-specific guidance and region-specific contacts. THHN will coordinate with and obtain data from the primary agencies that fund Tribal IAQ work, including USEPA, HUD, USDA, BIA, and DOE.

Methamphetamines and IAQ Webinar

In October 2017, the NTAA IAQ Work Group hosted a successful webinar with 95 people participating. The speakers were Kameron Thorne of Apple Environmental and Justin Pederson with the FBI Drug Task Force. The NTAA IAQ Work Group asked Mr. Thorne to do a training session at the 2018 National Tribal Forum on Air Quality (NTFAQ) as well as a session in the IAQ track. There were great questions and participation during the webinar.

The video from the webinar is posted on the NTAA IAQ webpage along with follow up information and helpful links to guidance documents (http://www7.nau.edu/itep/main/ntaa/IAQ/Index/).

National Radon Action Plan

The National Radon Action Plan (http://www.radonleaders.org/sites/default/files/NRAP Guide_2015_FINAL.PDF): A Strategy for Saving Lives (NRAP) sets out strategies to drive the changes needed to reduce exposure to radon. The national effort underway seeks to prevent 3,200 lung cancer deaths annually by 2020 by reducing high radon levels in five million homes, apartments, schools, and childcare centers. Strategies include requiring radon testing and reduction systems as a standard practice in housing finance and insurance programs, and institutionalizing radon risk reduction through building code requirements. The partnership includes three federal departments and agencies and ten national organizations, including the NTAA. The NTAA representatives are Billie Toledo of the Prairie Band of Potawatomi and Brandy Toft of the Leech Lake Band of Ojibwe.

The strategies in NRAP reflect the strongest potential to effectively reduce radon risk through institutionalizing risk reduction. The coalition of NRAP members have formed committees to execute all strategies, with a particular focus on those strategies most likely to result in systems change. Among the recent efforts: USEPA proposing changes to include radon resistant new construction in the international standards for building codes; non-governmental organizations (NGOs) working to develop webinars to share information with housing finance underwriters on radon risk reduction; NGOs working to identify philanthropies and foundations for outreach on including radon in funded projects; and several agencies working on studies exploring how radon can be part of or is affected by weatherization projects.

Stockbridge-Munsee Community, A Band of Mohican Indians

In this past year the Tribe has had many indoor air quality challenges. Our Tribal office was closed for days with mold affecting the health of employees, followed by mitigation of the structure. Radon monitoring continues and many homes & buildings are above the USEPA standard of 4.0 pCi/l. Renewed efforts to identify potential problems before they affect employee health are underway. Pictured here is a radon exhaust fan & the manometer indicating proper operation installed on a Tribal office.

This past year with Tribal employees becoming ill when they report to work, needing to leave buildings due to the poor quality of indoor air, and the need to close the building entirely, has driven home the importance of the issues of air quality, indoors and outdoors. The Stockbridge-Munsee Tribe will finalize an Indoor Air Quality Program in 2018. This will include investigations and suggested remediation techniques on mold, asbestos and radon in homes and government buildings. The Indian Environmental General Assistance Program Act (GAP) funding is critical to this effort. Currently we do not have an Air Program funded by specific air grants. The Tribal Council has requested a radon program be written and a green building program be drafted as part of the Tribal strategic plan. We will also be proactive and propose updates to the Tribal Air Pollution Control Law before outdoor wood boilers become an issue. There are a few minor air pollution sources on the Reservation, electric generators and a gas station, and assistance to register these in the USEPA database has been offered.

Putting the Heat on Bed Bugs in Alaska

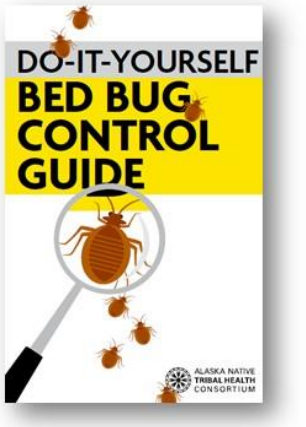
BBAHC Toolkit

The Bristol Bay Area Health Corporation's (BBAHC) Environmental Health Program has received increased requests for assistance with pest management, especially bed bugs. In response, BBAHC, with input from the Tanana Chiefs Conference, applied for and received a two year grant from the US Environmental Protection Agency. The grant was designed to identify and implement practical solutions for addressing bed bug infestations in rural Alaska. BBAHC Environmental Health Specialist, Jennifer Skarada, was the lead on this project and facilitated a statewide bed bug advisory board. The primary goal was to bring experts together from around the state to share experience and knowledge while building a framework for practical bed bug mitigating strategies in rural communities. Grant

funds were used to provide bed bug "toolkits" containing eradications supplies for homeowners and bed bug "hot boxes" for non-chemical treatment methods of household items such as furniture.

This effort was recognized by the Alaska Public Health Association (APHA) during their Annual Meeting in January. During the meeting, Ms. Skarada and the bed bug advisory board received ALPHA's "Alaska Community Service Award for Health". This is a prestigious award and a superior effort getting bed bugs recognized as a public health issue. The award nomination included the following project highlights:

- Improve the efficacy of bed bug eradication efforts, and prevention of the misuse of harmful chemical pesticides;
- Developed practical strategies for rural Alaskans affected by bed bugs through the collaboration of regional public health professionals, private pest managements firms, health educators and federal agency representatives;
- Advocacy for state approval and registration of a new low-toxicity pesticide;
- Utilized the core principles of modern public health framework to develop best-practice strategies for applying Integrative Pest Management approach to addressing bed bugs in rural Alaskan communities.



Although BBAHC's two-year grant from the USEPA to address bed bugs in rural Alaska is complete, education and outreach is ongoing. Many regional Tribal Health Organizations across the state continue to field calls from concerned Alaskans about bed bugs. In response to the ongoing widespread occurrence of bed bug infestations, the Alaska Native Tribal Health Consortium (ANTHC) created a Do-It-Yourself Bed Bug Control Guide to help provide this essential education. This guide incorporates the best-practice strategies identified by the bed bug advisory board, with an end-goal of curbing the misuse of pesticides. ANTHC's DIY Bed Bug Control Guide can be found here (https://anthc.org/wp-content/uploads/2018/02/Bed-Bug-Control-Booklet_WEB.pdf).

Please contact BBAHC's Environmental Health Program at 907-842-3396 or toll free at 1-888-792-2242 and ANTHC at 907-729-3430, if you have questions about managing bed bugs.

3.5 Hazardous Air Pollutants (HAPs) and Mobile Sources

Volkswagen Environmental Mitigation Trust and Tribes

The U.S. government and Volkswagen (VW) resolved allegations that VW violated the Clean Air Act by selling approximately 590,000 vehicles equipped with defeat devices. As part of this settlement, VW is required to provide $2.7 billion for the 2.0-liter violating vehicles and $225 million for the 3.0-liter violating vehicles into an Environmental Mitigation Trust to fully

remediate the amount of excess NOx emissions from the illegal vehicles. The trust will be administered by Wilmington Trust. Specific provisions of the trust may be found in the Environmental Mitigation Trust Agreement for Indian Tribe Beneficiaries.

States, Puerto Rico, the District of Columbia, and **federally recognized Indian tribes and Alaska Native Villages** (referred to as "tribal entities" throughout this document) may become beneficiaries to the trust. Tribal entities become beneficiaries when they submit their Certification for Beneficiary Status (available in Appendix D-3 of the trust agreement) along with their Beneficiary Eligible Mitigation Action Certification (available in Appendix D-4 of the trust agreement). Appendix D-1B provides an allocation of funds into the Tribal Allocation Subaccount of approximately $55 million. Appendix D-2 provides a list of Eligible Mitigation Actions (EMAs) that beneficiaries can implement.

EMAs 1-9 may be implemented directly by a beneficiary; eligibility determinations and funding requests under EMAs 1-9 will be handled exclusively by the beneficiary. The Institute for Tribal Environmental Professionals (ITEP) was identified in the Trust Agreement as the Technical Assistance Provider and can provide Tribes with technical assistance for EMAs 1-9 or provide assistance in filling out paperwork for the trust.

EMA 10 (the DERA Option) allows tribal entities to use trust funds as non-federal voluntary matching funds under USEPA's Tribal Clean Diesel Funding Assistance Program funded by the Diesel Emissions Reduction Act (DERA). If Tribes select the DERA Option, they work directly with USEPA and its process for submitting applications through the Tribal DERA Request for Application process.

Status of VW Trust Settlement

A total of 29 Tribes filed with the Courts their Certification of Beneficiary Status forms (Appendix D-3 forms) for the first round of funding, which officially closed on January 2, 2018. Of these 29 Tribes, 27 submitted their Beneficiary Eligible Mitigation Action Certification (Appendix D-4 forms) to the Courts and the Trustee by the required deadline requesting in excess of $30 Million to undertake mitigation projects. Quite an accomplishment given the short turn-around time for this first round of funding!

On March 2, 2018, the United States and the parties to the Trust Agreement, namely the Defendants and the Trustee, informed the Court that the amount of approvable funding requests from the Beneficiaries exceeded the amount of available funding in the first funding cycle, and that if funds are distributed for the first funding cycle in accordance with the applicable allocation method in the Trust, the result would be inconsistent with the purpose of the Trust. In its Order, the Court directed the United States and interested Beneficiaries to meet and confer, in consultation with the Trustee, to discuss whether any adjustment to the Trust's allocation methodology, which is applicable when approvable funding requests from Beneficiaries exceed available funding, is necessary to ensure that the Trust funds are distributed in a manner that is consistent with the purpose of the Trust.

Next Steps

Following the discussions between USEPA, DOJ, the Trustee, and the Tribes, a report and recommendations to the Court will be issued to address the over-allocation issue encountered in the first round of funding.

The deadline for the **2nd year of funding is currently set for September 1, 2018**. ITEP staff and their contractors will continue to be available to provide Tribes with technical support, answer questions they may have, and assist in reviewing Appendix D-3 and D-4 beneficiary forms. For more information and updates please visit ITEP's website at http://www7.nau.edu/itep/main/volkswagensettlement/.

Nottawaseppi Huron Band of the Potawatomi

Oil well in Kalamazoo County, about 8 miles from the Pine Creek Reservation. Photo credit: Google Earth

There are currently 15,500 active oil and gas wells in the State of Michigan. One to five percent of residents in Michigan live within 1 mile of a confirmed active oil and/or gas well. Common pollutants reported on/near these well sites include: benzene, VOCs, and ozone while other potential pollutants include particulate matter, nitrogen oxides, carbon monoxide, and sometimes hydrogen sulfide. State and federal regulators do not monitor hazardous air pollutants that come from oil and gas operations because oil and gas production is exempt from Clean Air Act regulations. Early studies from other states note adverse health impacts in association with oil and gas wells and suggest the need for more research. Active oil wells are already less than 10 miles from the Pine Creek Reservation and further expansion is likely. We cannot say that Michigan's oil and gas wells are causing adverse health impacts, our initial research indicates that we should at least be exploring the links.

In addition to our exploration of air emissions of recent oil and gas well expansion in our area, we also plan to look deeper into completing our air emissions inventory and exploring air quality around confined animal feeding operations (CAFOs). Common pollutants in air surrounding CAFOs include: ammonia, hydrogen sulfide, methane, and particulate matter. Calhoun County is a very agricultural area with half of all land in agriculture. There are currently seven CAFOs in or very near Calhoun County. Our projects this year span new and mostly unexplored territory for us, however we have good reason to move our primary focus away from indoor air and toward ambient air at the Pine Creek Reservation.

3.6 Climate Change

Air Site Solar Pilot Project: Bad River Band of Lake Superior Chippewa

In 2016, the Bad River Band of Lake Superior Chippewa received funds from the Bemidji Area Indian Health Services through the Environmental Sustainability Initiatives Grant to conduct a small demonstration project. The primary goal was to offset the Ambient Air Monitoring Site (Air Site) energy costs and to assess the feasibility of solar power at the location.

Why Solar Photovoltaic?
The Air Site used photovoltaic on a small scale for other pieces of equipment in the past and knew that it worked well. Photovoltaic is also a growing industry which uses clean energy and has been more available due to lower costs of photovoltaic modules. Although it is important to power the monitoring equipment, the Tribe and the Air Office would like to do so with minimal impact on energy consumption through local gas and electrical distributors to reduce the Tribe's footprint for greenhouse gases and other pollutants. Overall, it's a good thing for everyone!

Why the Air Site Location?
The Air Site is operated by the Bad River Natural Resources Department's Air Office, located within the Reservation Boundaries in the community of Odanah, and has monitored two pollutants for comparison to the National Ambient Air Quality Standards (NAAQS) – fine particulates and ground-level ozone – for the past 15 years, hosts a suite of meteorological sensors, and has conducted other short-term monitoring studies and projects.

The current Air Site has been centered in the once-developed area previously used by the Tribe as powwow grounds and other recreational activities, including baseball. Over time the area proved to be difficult to maintain, primarily due to a high water table producing wet soil conditions throughout most of the year. Programs such as the Air Office and Food Sovereignty have found uses for the area, but activities and development are still limited by environmental conditions.

Sizing the System
The Air Office was fortunate to identify and work with Chris LaForge, CEO of Great Northern Solar, who is recognized by the Renewable Energy Council as the 2016 IREC Certified Clean Energy Instructor/Master Trainer of the year. Mr. LaForge was immediately able work with Tribal staff to offer expertise on how to size a system with a limited budget.

Using energy data provided by the electrical provider, Bayfield Electric Cooperative, the Air Office and Mr. LaForge were able to determine the amount of energy that would be offset by a 3.2 kW grid-tied photovoltaic array. The system is estimated to offset the Air Site and Food Sovereignty's electrical usage up to 20% annually and has the ability for expansion at minimal cost. Having the system tied to the utility grid will avoid the need for batteries, therefore allowing for more solar modules (solar panels). Batteries can be an expensive addition to a

system and was one of the factors considered, but a system connected to the grid better fit the needs at this site.

Installation Process

Even before the installation of the solar modules, the group had to consider the optimal foundation type, mounting system, and the best location for the system at the Air Site location. In addition, the exact location had considered the following variables:

1. *Wetland and environmental impact*
2. *Mounting designs (some mounting options do not need concrete)*
3. *Optimal solar radiation collection (orientation and placement)*

The training consisted of a five-day workshop that reviewed related building codes, energy consumption, battery sizing, module sizing, and array installation best practices. The class had a two day in-classroom, along with a three-day hands-on for the actual installation. Overall the class was a success with four people pushing through the workshop.

Daniel Wiggins and Chris Laforge, CEO of Great Northern Solar, installing modules on day 3 of the 5 day class.

Once the concrete foundation was in, Mr. LaForge was able to provide on-site training for the Air Office on how to properly install a small photovoltaic grid-tied system. This was great for the staff involved, as these would be the staff operating and maintaining the system.

Producing Power!

On August 17, 2017, the Air Monitoring Site Solar Array was commissioned, turning on the power and producing energy! The Air Office worked with the Bayfield Electric Cooperative to properly tie into the grid and to understand what the Tribe would be producing and how they would be monitoring it. Bayfield staff came to the site for commissioning and made this process very simple. The system is estimated to offset up to 20% of the Air Site and Food Sovereignty's electrical usage.

Partnerships

The Air Office worked with multiple programs and funding agencies to help complete this project. Within the Tribe, the Air Office worked with the Water Office, Environmental Office, Tribal Facilities, and Food Sovereignty. Other partners included the following: Great Northern Solar & Chris LaForge, Let It Shine & John Johanning, Bayfield Electric Cooperative & Larry Roecker, Bemidji Area Indian Health Services, and the USEPA.

All modules installed!

Conclusion

This is only the beginning! The area is proving to be sufficient for solar power production and has adequate space for multiple arrays. The Air Office is planning on working with the Tribe and other departments to advocate for larger arrays to be installed in the Air Monitoring Site's immediate vicinity. In addition, the Air Office is excited to continue working with partners that made this project a huge success! Chi-Migwetch to all those involved.

Little Traverse Bay Bands of Odawa Indians

Climate change adaptation and mitigation is a growing concern for LTBB. Solar power and energy efficiency is part of the LTBB strategy to mitigate and adapt to climate change. This will help the Tribe meet its Kyoto Protocol resolution of 25% energy use reduction by 2020. Our Air Quality Program has been a leading supporter of adaptation and mitigation efforts. LTBB's first solar array was installed last year and has generated over 20,000 kilowatt hours with a 20 kW system. In 2017 plans were developed for the next LTBB solar array. The 2nd array may be up to 30 kW and supply about 40% of the power consumed at our Natural Resources Department office. The Air Quality Program also promoted the lighting retrofitting of our 3 largest office buildings to LED lights. Carbon dioxide emissions will be reduced by about 2,471 tons over the 20 year life expectancy of the LED bulbs.

Oneida Tribe of Indians of Wisconsin

Oneida Nation, located in Northeast Wisconsin, is committed to protecting the natural systems – land, air, and water – that support the Oneida Community and our neighbors. For example, agriculture is an important and significant industry in the region. This requires significant resources to be devoted to non-point runoff, habitat destruction, and other land use challenges. Equally important is Oneida's commitment to the air we breathe and the climate we depend on. In recent years climate adaptation has been an important educational pursuit as well as encourage the investigation into mitigation opportunities.

Using a Department of Energy Office of Indian Energy grant and a partnership with SunVest Solar Inc., Oneida Nation is installing 800 kilowatts of solar-electric modules (photovoltaics) on six Tribal buildings at $2.54/watt. Project construction started in August 2017 and it's just a few weeks away from generating power.

Oneida Community Health Center solar modules installed.

Despite that solar prices have decreased by more than 60% in the last 10 years, challenges remain. The Investment Tax Credit (ITC), grants, and similar financial tools have allowed many organizations to take advantage of this reliable energy source. Partnerships with for-profit entities have also allowed Tribes to gain access to benefits that would otherwise not be available, such as the ITC. Beyond the financial strategies, utility policy and political will are the largest obstacles to a broader deployment that could have a much greater impact. The future demands bold decisions.

The benefits of this project include savings on utility costs, decreases Oneida's dependence on imported energy, demonstrates Oneida's leadership in sustainable practices, and it confirms Oneida's commitment to Mother Earth. With this project, Oneida Nation will decrease its carbon footprint by nearly 700 tons/year and it will see a benefit of nearly a million dollars of savings over the life of the project. Projects like this one give Tribes the leverage to build relationships that encourage greater participation and a collective strategy to address global energy issues.

3.7 Wood Smoke

ITEP's Air Quality Planning for Wildland Smoke

Devil's Elbow Fire 2014, Colville Reservation

Tribal communities contend with wildland smoke on a yearly basis and for increasingly prolonged periods of time. The impact of these smoke events on the health of Tribal communities is a growing concern. To address this concern the Institute for Tribal Environmental Professionals (ITEP), the United States Environmental Protection Agency (USEPA) Office of Air Quality Planning and Standards and several Tribal air programs partnered to sponsor two educational events.

The first event, Smoke Ready Tribal Communities, was a one-day training at the 2017 National Tribal Forum on Air Quality. The training was designed for Tribal air program and environmental professionals to learn about sources of smoke and how to prepare Tribal community infrastructure and residences to cope with smoke intrusion. Talks included wildfire

smoke preparation; wood stove use and change-outs; vegetation debris burning; indoor smoke intrusion and measurements; and a discussion on how these fit together. Presentations can be viewed under "Past NTFs" at: http://www7.nau.edu/itep/main/Conferences/confr_ntf.

North Star Fire 2015, Colville Reservation

The second event, Air Quality Planning for Wildland Smoke webinar series, was designed to provide an understanding of the impacts of smoke on the health of our communities and strategies to minimize exposure. This topic was presented in five 90-minute webinars between January and March 2018. Webinar #1 explored the components of smoke, calculating emissions, and what the health effects are. Webinar #2 looked at modeling and smoke movement, the role of air resource advisors, and using portable monitors and sensors. In Webinar #3, we focused on gathering and disseminating information to ensure the health and safety of our communities. In Webinar #4, Tribal presenters described how smoke events impacted their communities, how monitoring data can be used, and methods to prepare for the next smoke event. Webinar #5 closed the series by providing information on preparing homes for smoke intrusion, using air scrubbers, creating a community clean-air shelter, and protecting the health of pets and livestock. The webinars were open to everyone, with over 350 registrants. Recordings of the webinar series can be viewed at http://bit.ly/AQforWildlandSmoke. Tribal staff who completed the 5 webinars became eligible for an in-person, hands-on training March 27-28, 2018, in Boise, Idaho.

Alaska's "Let's Clear the Air: Protect Yourself from Wildland Smoke" Videos

The 2015 Alaska wildfire season was the second biggest on record burning more than 5 million acres around the state. Bristol Bay also experienced its share of wildfires in 2015, several of which were close to communities and caused alarm to many that were not able to avoid the smoke drifting into their villages. Wildfire smoke is a mix of gases and fine particles that can make anyone sick, especially older adults, pregnant women, children, and people with pre- existing respiratory and heart conditions.

Wildfire on Lower Nushagak (500-600 acres) impacting nearby villages in 2015.

In order to help protect the health of their residents, the Aleknagik Traditional Council in collaboration with other partners -- USEPA, ANTHC, BBNA, BBAHC and ADEC -- recently completed an educational video that offers proactive steps communities can take to protect residents from wildfire impacts. Aleknagik Thomas Nukwak, BBNA Susan Flensburg, and ANTHC Mary Schneider co-presented on the video at the May 2017 National Tribal Forum on Air Quality to an enthusiastic audience of Tribal and agency representatives from around the country that praised the video.

The wildfire video is the third video produced by Aleknagik and partners. While at the National Tribal Forum on Air Quality, Aleknagik's Environmental Coordinator Thomas Nukwak was "impressed to find out the Navajo Nation used the series of videos we produced as a reference for making their own videos." *Let's Clear the Air: Protect Yourself from Wildfire Smoke* can be downloaded and used to help your community prepare for wildfires. The website link is https://vimeo.com/196352282. For more information on wildfire smoke, visit the Alaska Department of Environmental Conservation's website: http://dec.alaska.gov/AIR/arn/smoke.htm. The Alaska Interagency Coordination Center also maintains a current map of active fires: https://afsmaps.blm.gov/imf_fire/imf.jsp?site=fire. We have posted these links on BBNA Natural Resources Department Facebook page: https://www.facebook.com/BBNANaturalResources.

The Navajo Nation EPA's IAQ and Wood Stove Change-out Program Success Story

On the Navajo Nation, many families use inefficient wood burning stoves to burn wood and coal to heat their homes. The combustion of wood and coal inside homes has been proven to increase the level of indoor fine particle pollution, which contributes to poor respiratory health and leads to increases in winter hospital admissions on the Navajo Nation. The Navajo Nation Environmental Protection Agency (NNEPA) Air Quality Control Program (AQCP) added an indoor air quality (IAQ) component to its Clean Air Act (CAA) Section 105 Grant work plan by breaking the IAQ work into two categories: indoor air quality assessments and wood and coal stove outreach. Over the past couple of years the program has also collaborated with USEPA Region 9 Burnwise Program to develop community-level strategies to improve IAQ for our Navajo communities through live read public service announcements, a Navajo specific best burn practices video, factsheets and wood stove installation trainings. Secondly, the NNEPA AQCP acquired IAQ monitors, first through a loan agreement from the Tribal Air Monitoring Support Center and then finally purchased the equipment through the 105 Grant (i.e. DustTrak, QTrak, Particle Counter) to conduct healthy homes IAQ assessments. In addition, the program developed a Quality Assurance Project Plan to support the home assessments with a goal to improve IAQ and respiratory health on the Navajo Nation.

Old stove pre-replacement in a hogan. Credit: Woodstock Soap Stone Company

Furthermore, a CAA legal settlement between USEPA and the Four Corners Power Plant provided $4.7 million for new, cleaner burning stoves and weatherization for Navajo homes. This stove change-out project will take place over a five-year period and is anticipated to serve approximately 600-700 homes. Eligible participants are low-income households in Chapters surrounding the Four Corners Power Plant (Shiprock, Nenahnezad, Tse anaozt'ii, San Juan, Upper Fruitland, Tse Daa K'aan, and Tiis Tsoh Sikaad). The settlement prioritizes households with elders, children, veterans, and people with health conditions like respiratory or heart disease. Because many households in the Navajo Nation use both wood and coal, it was determined that replacing stoves and weatherizing homes would be culturally acceptable, cost effective, and should reduce fuel use, improve indoor and outdoor air quality, and likely lead to improved health outcomes (Champion et al., 2017a). The AQCP has been collaborating with USEPA and the Four Corners Power Plant to assist with stove change-outs utilizing a cleaner burning, USEPA-certified dual-fuel (wood and coal) "Navajo Hybrid Wood/Coal" stove, a first in the United States. Manufactured by the Woodstock Soapstone Company, Inc. and USEPA certified on December 11, 2017, pursuant to the 2015 New Source Performance Standard (NSPS) for New Residential Wood Heaters (40 CFR Part 60, Subpart AAA), the Navajo Hybrid stove has a particulate matter mission rate of 1.0 g/hr which meets the 2020 NSPS emission limits of 2.0 g/hr. The carbon monoxide emission rate for this stove is 0.15g/Min with a heat output range of 15,332 – 27,294 BTU/hr and weighted average high heating value efficiency of 79%. It is expected that the improved efficiency of the Navajo Hybrid stoves, coupled with home weatherization, will lessen the need for people to use coal to keep warm at night while improving air quality.

New stove post-replacement in a hogan. Photo credit: Woodstock Soap Stone Company

A handful of studies have taken place to document the changes in indoor and/or outdoor air quality from wood stove replacement projects with mixed results (Noonan et al., 2012; Ward et al., 2011; Noonan et al., 2017). None have looked at the impact of stove replacement in Navajo households and none in the U.S. have looked at the impact of improving stoves for households that burn both wood and coal. Therefore, the AQCP in collaboration with research scientist from USEPA, University of Colorado – Boulder, and Diné College have developed a

study protocol to examine the impact of heating stove replacements on indoor and outdoor air quality as well as respiratory symptoms in Navajo residences in Shiprock, NM, Navajo Nation. The project team developed plans and obtained Institutional Review Board (IRB) approval from the Navajo Nation, University of Colorado, and Diné College during the fall and early winter of 2017. In early 2018, the AQCP and project team observed indoor and outdoor air pollutants (i.e. fine particulate matter, carbon monoxide, carbon dioxide) and occupant activities and administered health questionnaires before and after the stove replacements within 8 homes as part of the pilot installation phase. This research is a high priority for USEPA Region 9 and the Navajo Nation due to the large impact of wood and coal stove use on indoor and outdoor air quality within the Navajo Nation, and the disproportionate health impacts experienced by Navajo families. Research objectives are specific to the Navajo Nation and a few other communities that are reliant on coal for home heating (e.g., Alaska, Hopi Nation), as well as inform national policy with broad applicability to multiple regions and multiple federal agencies (e.g., USEPA, USDA, HUD, DOE, HHS). The research study is being conducted largely through in-kind donations of time and expertise from the many project partners, and funding and support from the following USEPA offices: Region 9, Office of Radiation and Indoor Air, Office of Research and Development, Office of Air Quality Planning and Standards, and the Tribal Air Monitoring Support center.

Running emissions tests on old stoves. Photo credit: Ferguson, Andors & Company

Wood Smoke Reduction Efforts on the Nez Perce Reservation

Similar to many Tribal communities, families living on the Nez Perce Reservation rely on wood heat during the winter months. Since 2006, our Program has collaborated with other Tribes,

universities, and agencies on wood smoke-related projects. While honoring cultural connections to wood burning, we promote best burn practices and ways to protect health.

Nez Perce family with their new USEPA-certified stove in Kamiah, Idaho

Through USEPA funding we conducted our first research study, "Measureable Outcomes of a Woodstove Change Out on the Nez Perce Reservation," with the University of Montana from 2007 to 2009. Sixteen Tribal member homes with asthmatic children committed for two winters to indoor $PM_{2.5}$ sampling and received a new, USEPA-certified wood stove in between winters. Three Nez Perce students, one in high school and two attending Northwest Indian College, funded through ITEP's Short Internship Program, assisted in collecting data. Through this project, we learned the necessity of targeted outreach for wood stove users when receiving a new burning device. Although each home received educational materials and verbal instruction upon installation of their new stove, four homes had higher $PM_{2.5}$ values in their new stove compared to their old, non-USEPA certified stove. Old practices such as burning wet wood, drying wood on top of their stove, not achieving optimum burn temperatures, and not cleaning their chimney resulted in elevated particulates. We revisited all homes and offered a "new stove refresher," sharing the benefits of dry wood and stove maintenance, and providing a written, step-by-step protocol specific to their new stove. As $PM_{2.5}$ levels dropped after the "refresher," our education effort proved successful. For more details and a complete list of partners, please visit USEPA's Burn Wise website for our Final Reports (www.epa.gov/burnwise/burn-wise-tribal-resources).

Currently, we are participating in a five-year, National Institute of Environmental Health Sciences funded project with the University of Montana (UM), Nimiipuu Health (the Tribe's health agency), and the Nez Perce Tribe Forestry and Fire Management Division. The Elders' Air project seeks to improve health for Nez Perce seniors and elders through community and home level interventions. This study, designed to be responsive to community needs, includes valuable lessons from previous wood stove studies and projects conducted by Tribes, states, and local agencies. A Community Advisory Board including elders and Nez Perce Tribe Cultural staff provided feedback and guidance on education intervention aspects. The sharing of memories and personal stories of wood burning resulted in three digital stories that include Nez Perce fire stories and tips on best burn practices.

Nez Perce Tribe Wood Yard in Sweetwater, Idaho

Through this Elders' Air project, the Nez Perce Tribe developed a wood yard to provide dry firewood to the nearly 120 Senior Wood Program recipients. Similar to our previous UM study, homes participate for two winters and we collect indoor air quality and health data. By the end of the project, over 60 senior and elder study homes will receive the home-level intervention tools of a HEPA-filter, portable air filtration device, moisture meter, stove thermometer, and fire starters as well as viewing the digital stories and discussing the benefits of dry wood and stove maintenance. Additionally, through partnering with the Tribe's Housing Authority in the fall of 2017, we hosted an "All About Firewood" class which included presentations about firewood storage and class participants built a one cord shed. Housing also built two additional sheds for elder homes.

Community members building a woodshed in Lapwai, Idaho

During the last decade, we also participated in two other wood stove-related research projects: "Asthma Randomized Trial of Indoor Smoke (ARTIS)" with UM from 2009 to 2011, and "Alternative Wood Fuel Study" with the Tribal Healthy Homes Network (TTHN) and three Tribes in USEPA Region 10 from 2011 to 2014. Collaborating with the Tribal Clean Burning Workgroup (four northwest Tribes and USEPA Region 10 staff), we developed a set of outreach tools for communities to distribute: "Wet Wood is a Waste" and "Smoky Fires are a Waste." Digital versions are available and customizable; contact Erin McTigue at mctigue.erin@epa.gov for more information.

We deeply value the collaborative projects that have assisted us in improving indoor air quality and increasing efficiency of wood stoves in Nez Perce Tribal homes. Working together with other Tribes, researchers, USEPA, THHN, ITEP, and local and state air agencies, we continue to creatively explore ways to best serve our communities.

3.8 Tribal Air Monitoring Support (TAMS) Center

The Tribal Air Monitoring Support (TAMS) Center was formed in 2000 through a cooperative agreement between the USEPA and the Northern Arizona University (NAU) Institute for Tribal Environmental Professionals (ITEP). The mission of the TAMS Center is to develop Tribal capacity to assess, understand, and prevent environmental impacts that adversely affect health, culture, and natural resources. The TAMS Center is the first technical training center

designed specifically to meet the needs of Tribes involved in air quality management and offers an array of training and support services to Tribal air professionals.

TAMS 2017 Technical Needs Assessment Implementation Plan Summary

The TAMS Center Steering Committee (SC) was formed to provide timely guidance and information to Center staff, to inform the development and maintenance of the Center, and to ensure that services reflect Tribal air monitoring needs and concerns. The operation of the TAMS Center is heavily dependent on dialogue with Tribes, with the SC serving as a primary mechanism for this. Consequently, a needs assessment (i.e. a survey) was undertaken from 2016 to 2017 to identify the technical support needs of Tribal air quality programs nationwide. The final report represents the culmination of this effort.

In total, sixty-six respondents participated in the needs assessment. Through extensive effort put forth in developing the needs assessment and evaluating the responses, the SC feels the results provide the best snapshot in determining Tribal air quality program needs on a national scale. The SC further understands that it is an ongoing process to ensure that services provided by the TAMS Center remain relevant and useful for Tribal programs. Since Tribal programs nationwide almost exclusively rely on federal funding sources, the SC recognizes that providing the relevant services remains a delicate balance between support services and actual Tribal implementation of the tasks and programs. The SC views the needs assessment as a tool to guide actions and bolster services of the Center.

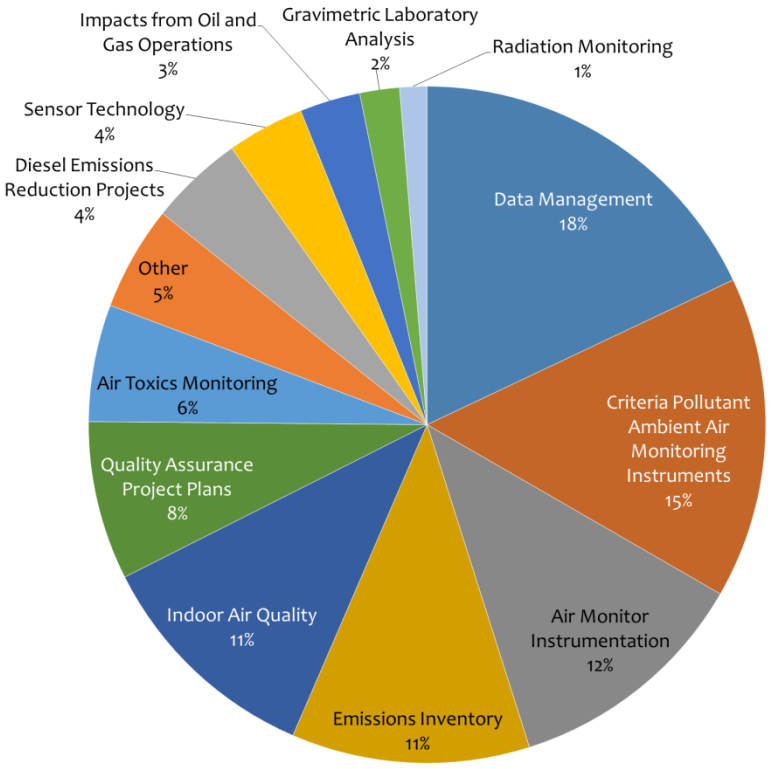


Figure 3 Summary of TAMS Needs Assessment focus areas by top-ranked (highest percentage) to lowest ranked (lowest percentage).

Update to the Technical Guidance for the Development of Tribal Air Monitoring Programs

TAMS Steering Committee members, along with USEPA staff are revising the 2007 USEPA *Technical Guidance for the Development of Tribal Air Monitoring Programs.* The Guidance needs an update to reflect changes in technology, regulations, and policy. The eight sections of the document provide direction, references, and examples regarding topics that include: monitoring objectives, program planning, funding, data collection and usage, and more. Multiple appendices provide additional details about: monitoring costs, QAPPs, grant funding, the National Ambient Air Quality Standards, and other topics. Interspersed throughout the document readers will find Tribal pictures and case studies that provide a contextual perspective on Tribal air programs. As it will transition into a TAMS living document, more frequent updates will be made to reflect the progress of developing Tribal monitoring programs.

From the *Guidance:* "One of the most important reasons that tribes are conducting air quality monitoring is to gather information on the long-term effects on the health of the tribal community and lands. In many cases, tribes use their lands for subsistence hunting, fishing and harvesting native plants. These subsistence cultures are affected by increased exposure to pollutants. In addition, the environment is often integral to religious and traditional practices. Some tribes are concerned that long-term exposures to air pollutants, acid rain, and heavy metal deposition will adversely affect these resources as well as their physical and mental health."

As the *Technical Guidance* has transitioned into a TAMS living document, updates will be made to reflect the progress of developing Tribal monitoring programs and incorporate further Tribal examples. Tribal air quality staff are encouraged to continue to submit examples, documents, and pictures that showcase their work in furthering the protection on clean air.

Impairment of Visibility-Tribal Case Studies

The Aroostook Band of Micmac Indians operate both an IMPROVE monitor and a haze camera at their air monitoring site in Presque Isle Maine. Data from this site is included in the National IMPROVE web page.

The Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation in northern Montana also operate an IMPROVE monitor which they use to monitor the status of their voluntary Class 1 airshed.

The Confederated Salish and Kootenai Tribes, and the Northern Cheyenne Tribe operate IMPROVE samplers that supplement the core IMPROVE network and provide valuable information on areas that would otherwise lack monitoring resolution.

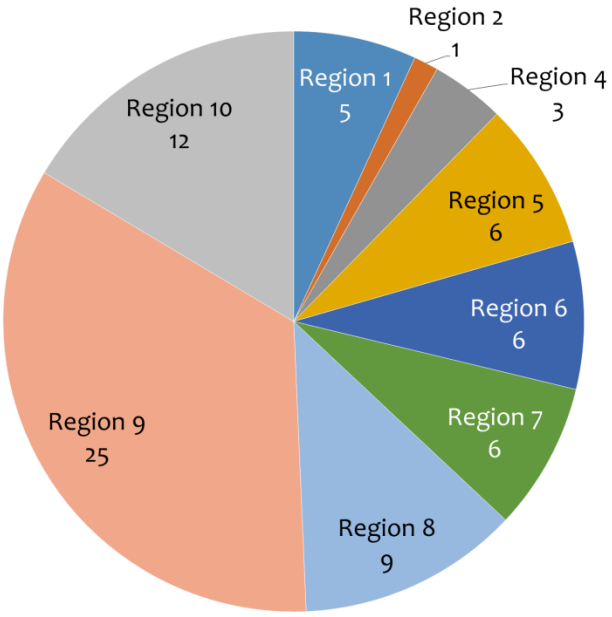
Sidebar with tribal case studies from the updated *Technical Guidance* document.

Cherokee Nation site operators performing an independent audit for the Quapaw Tribe.

Photo and caption from the updated *Technical Guidance* document.

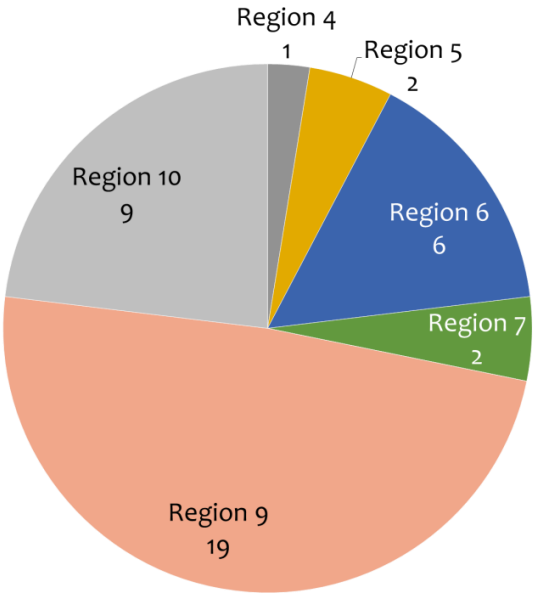
TAMS Summary of Tribal Air Quality Monitors by EPA Region Report Update

In 2015, the TAMS Center's Steering Committee (SC) conducted a needs assessment to identify the technical support needs of Tribal air quality programs nationwide. From the analysis and discussion of the findings, the SC determined that a survey of monitoring equipment currently used by Tribes would help advise the decision making process. The first TAMS Summary of Tribal Air Quality Monitors by EPA Region report was completed in 2015 and will be periodically updated by the SC to provide the most current and accurate information concerning tribal air quality monitoring within each EPA Region.

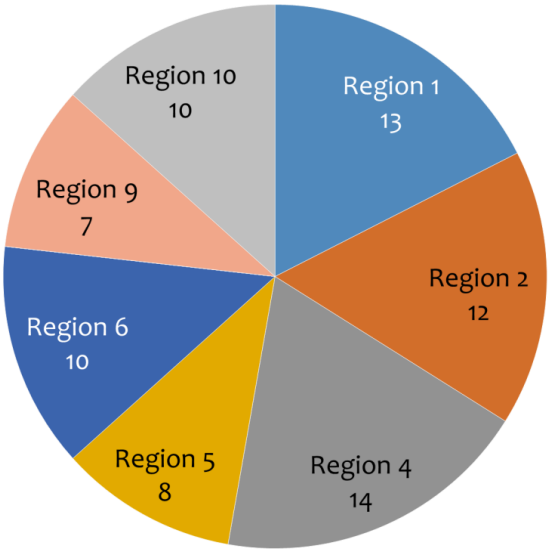


Number of Tribes Monitoring per Region

To update this report, the SC has been working with each EPA Regional Tribal Air Coordinator (TAC) to provide an up-to-date listing of Tribal air monitors within their respective region. The SC has compiled the data provided by each TAC and is in the process of analyzing the information. A couple of new additions will be made to this updated report – a section regarding the proper disposal of beta attenuation monitors and a section discussing the aging Tribal air monitoring infrastructure. This information will help the TAMS Center to develop a program to assist Tribes in properly disposing of beta attenuation monitors, all of which contain radioactive material and may be subject to disposal requirements. The Tribal monitoring infrastructure section will demonstrate the need for providing additional funding to replace aging monitors and equipment.



Number of Tribal Beta Attenuation Monitors by Region



Average Age of Each Tribal Monitor by Region

Virgil Masayesva Tribal Air Programs Excellence Award

In 2007, the Tribal Air Monitoring Support (TAMS) Center Steering Committee chose to develop an award that formally recognizes the tremendous work put forth by Tribal program staff on their air quality projects and programs. The award was named the Virgil Masayesva Tribal Air Programs Excellence Award after the co-founder and former director of the Institute for Tribal Environmental Professionals (ITEP).

Virgil Masayesva was a member of Hopi tribe and a decorated Vietnam Veteran. In his role as special assistant to NAU president Eugene Hughes, he co-founded ITEP in 1992 with a vision of strengthening Tribal sovereignty by helping Tribes build environmental management capacity and capability. Virgil was instrumental in developing and building the ITEP training programs including the TAMS Center and numerous other projects dedicated to the

protection of Tribal environmental resources and cultures. Through his innovation, hard work, and commitment, Virgil positively affected the direction of environmental management in the Indian Country forever.

Every year since 2007, the TAMS Steering Committee has selected hardworking individual Tribal environmental professionals, Tribal air quality programs, or Tribal consortia from a pool of nominations to receive this prestigious award. The selectees are nominated by their peers and colleagues in any one of three categories: Technical Excellence, Policy Excellence, and/or Tribal Program Development. The award recipient is recognized and presented a commemorative plaque at the Virgil Masayesva Award Ceremony held at the annual National Tribal Forum on Air Quality.

The award for 2018 goes to the Air Quality Program of the Morongo Band of Mission Indians in the category of Tribal Program Development. The program has focused on protecting air quality for the benefit of the Morongo Band of Mission Indians and all living beings. The Morongo Air Quality Program handles a range of tasks from indoor air quality issues to intertribal air quality capacity building with the Southern California Indian Tribes. The program conducts IAQ testing, Title V stack testing/reporting, and ambient air monitoring for Ozone, PM, and NOx. Every year, the program presents to the Morongo School (K-8th) on culturally relevant air quality focused topics. The Morongo Air Quality Program staff all contribute stories to the Morongo Band of Mission Indians Environmental Protection Department quarterly newsletter. The Morongo Air Quality Program has had a vital role with the Southern California Tribal Air Monitoring Collaborative in the ongoing development of a consolidated Primary Quality Assurance Organization. The Morongo Air Quality Program has a dedicated staff with personal and professional devotion to Tribal causes, air quality issues, and education outreach. It is for all these reasons that the Morongo Air Quality Program is being recognized.

Here is the list of award recipients from 2007 through 2018:

Roxanne Ellingson, Walker River Paiute Tribe	2007
Southern Ute Air Quality Program	2007
Nez Perce Tribal Air Quality Program	2008
Dewayne Beavers, Cherokee Nation	2008
Forrest County Potawatomi Air Quality Program/Jeff Crawford, FCPC Attorney General	2009
Dr. Toni Richards, Bishop Paiute Tribe	2010
Navajo Nation Radon Program	2011
Joy Wiecks, Fund Du Lac Band of Lake Superior Chippewa	2011
Brandy Toft, Leech Lake Band of Ojibwe	2012
Syndi Smallwood, Pechanga Band of Luiseno Indians	2013
Delbert Althaha, White Mountain Apache	2014
Randy Ashley, Confederated Salish and Kootenai Tribe	2015
Dan Blair, Gila River Indian Community	2015

Angela Benedict, Saint Regis Mohawk	2016
Rosalie Kalistook, Orutsararmiut Native Council	2016
Jason Walker, Northwest Band of Shoshone	2017
Northern Cheyenne Tribe Air Quality Program	2017
Morongo Air Quality Program	2018

3.9 Funding

The vast majority of Tribes are small, isolated, and have limited budgets. As such, federal assistance for Tribal Air Quality Programs is critical to their operation. As shown in the NTAA budget analysis (see Appendix A), funding levels have decreased in recent years, causing stagnation of Tribal Air Program growth. These programs have continued to achieve more with less, particularly in how they have been able to paint a fuller picture of the nation's air quality through their monitoring efforts, and moving to control and regulate air quality in their areas. However, current funding levels threaten the sustainability of these achievements. For example, as monitoring equipment and infrastructure ages and breaks down, Tribal Air Quality Programs are unable to continue operations with the same levels of success and data Quality Assurance Quality Control (QA/QC). Additional funding is necessary to establish new and maintain current Tribal Air Quality Programs, to build capacity, and to grow these programs in the future in order to contribute to a national strategy for achieving cleaner air.

Sac and Fox Nation: Withstanding the Test of Funding

Sac and Fox Nation is a federally recognized Tribe with approximately 4,000 enrolled members in Oklahoma, USEPA Region 6. Sac and Fox Nation's jurisdiction covers approximately 900 square miles across portions of Lincoln, Payne, and Pottawatomie counties with the North Canadian River as the Southern boundary, Cimarron River as the North boundary, and the Deep Fork River running through the middle. Sac and Fox Nation's jurisdiction also contains the world's largest oil storage facility in Cushing, OK, that has been dubbed the "Pipeline Crossroads of the World". Commercial and industrial activities associated with this notoriety significantly impact the air quality of the region. Sac and Fox Nation's Office of Environmental Services (SFNOES) is 100% grant funded and the primary administrator of environmental protection programs.

SFNOES first started air monitoring activities in 2004 with the installation of an air monitoring station. SFNOES maintained an Environmental Specialist - Air (ES) on staff until federal funding ended in 2011. The loss of capacity to maintain and operate air monitoring equipment has resulted in the continued dormancy of the air monitoring station.

SFNOES, in 2012, was successful in receiving federal funding and hired an ES to conduct air quality activities including creating an Emissions Inventory. An ES was hired, trained, and conducted an Emissions Inventory. Federal funding ceased upon the completion of the

Emissions Inventory. Once again, this resulted in the loss of the ES and the capacity and knowledge to conduct an Emissions Inventory.

SFNOES, in 2014, was once again successful in receiving federal funding and hired an ES to conduct Indoor Air Quality Assessments. An ES was hired, trained, and conducted numerous IAQ Assessments. The program was extremely successful. The program became even more popular when SFNOES developed a partnership with the American Lung Association (ALA) through their TEACH (Tribal Environmental Action for Children's Health) program. The partnership allowed Tribal members to receive supplies provided by ALA to address the issues identified by the IAQ assessments SFNOES conducted. No longer did the young, old, or vulnerable have to be left only with a list citing the causes exacerbating their symptoms! The partnership paved the way to make a meaningful difference by taking the next step to actually improve their quality of life! Many of the homes were multi-family and/or multi-generational homes. These types of living arrangements created unique and challenging scenarios, but also resulted in a big bang for the buck. On numerous occasions assessing a single home would benefit two, and many times three families.

As wonderful as the partnership is, it is unfortunate that many Tribes are unable to participate because they lack the capacity to conduct the initial IAQ assessment needed to be eligible to receive the supplies provided by ALA.

During this time, the USEPA Region 6 Regional Tribal Operations Committee elected Sac and Fox Nation as one of its representatives on the National Tribal Air Association's (NTAA) Executive Committee. Becoming a representative on NTAA's Executive Committee immediately broadened the scope of awareness and elevated the responsibility to positively influence Tribal air quality issues to a regional and national level. Once again great strides were being made. Federal funding then ceased in 2016. Due to unusual circumstances resulting in available funding and the project's popularity, Sac and Fox Nation's Governing Council voted to fund the program for 9 months until the next federal funding cycle. Three federal grant proposals were submitted to continue the project, but none were selected to receive funding. SFNOES lost its ES in October of 2017.

It is now 2018 and once again, SFNOES finds itself climbing the hill to rebuild capacity lost due inconsistent funding. Two more grant proposals were submitted in February of 2018 in hopes to be selected to receive funding in October. SFNOES staff is currently scheduled to attend some of the same training courses already successfully completed by the previous ES. As frustrating as it may be, there is no time to relax. It is time to persevere and strive to make it back to the level we once were……..again.

One can only imagine the strength of this program if it didn't have to start over every two years or so. At the end of each of the funding cycles mentioned, the majority of the investments made to establish capacity were lost. The loss of potential due to lapses in funding is even more monumental.

I hope this story voices how much can be achieved in the face of adversity and illustrates the potential of how much, enormously, abundantly, more could be accomplished during the same time frame by preventing a lapse in funding.

Sac and Fox Nation of Missouri in Kansas and Nebraska

Sac and Fox Nation of Missouri in Kansas and Nebraska has a mature air monitoring program (15 years). Just recently we have replaced our aging BAM 1020. We have been working with the National Atmospheric Deposition Program (NADP) for ten years, will be updating or Emissions Inventory in 2018-2019, and have an established ambient air and meteorological monitoring site. Additional training has been through webinars, RTOC meetings, ITEP (indoor Air Quality), and conferences. Region 7 Tribes work very hard to maintain their air monitoring programs with our partners and within the region. However, funding has always has been a concern for Region 7 and Indian country. Without funding, most Tribes will not be able to sustain our environmental programs to keep our Nation's environment viable for future generations. We are also proud to work with our national partners by representing our Tribal communities on committees like EROS and our newest partner, Aeroallergen Monitoring Science Committee (http://nadp.isws.illinois.edu/committees/amsc/), a committee formed in conjunction with NADP and the CDC who will be using the data collected from NADP partners to follow allergens, asthma, and other health related issues with the data collected nationwide. Other committees that environmental staff from Sac and Fox Nation represents Region 7 on are the Tribal Science Council (TSC), the National Tribal Air Association (NTAA), the National Tribal Operations Committee (NTOC), the Tribal Waste and Response (TWRAP), the Interstate Technology Regulatory Council (ITRC), and the Infrastructure Task Force (ITF).

4 Conclusion

Throughout Indian Country, Tribal Air Quality professionals work every day to protect human health and improve ambient and indoor air quality, and the NTAA hopes that the 2018 STAR tells the story of the successes and challenges they experience on a daily basis. Tribes have faced many challenges throughout their unique histories, and through their strong traditions Tribes will continue to serve as strong stewards of the land, air, and water. Tribes understand the interconnectedness of life, and seek successful partnerships with the federal, state, and local governments, and understand that air quality will improve when Tribes are recognized as strong co-regulators. As the 2018 STAR demonstrates, recognition of a Tribe's sovereignty, adequate consultation with Tribes, and adequate funding for air programs will provide all Americans with cleaner air to breathe and a better world for future generations.

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National Tribal Air Association's

Budget Analysis

May 2018

PRESENTED AT THE NATIONAL TRIBAL FORUM ON AIR QUALITY HOSTED BY THE FOND DU LAC BAND OF LAKE SUPERIOR CHIPPEWA

NTAA

Appendix A: NTAA Tribal Air Quality Budget Analysis

National Tribal Air Association

The NTAA was founded in 2002 through a grant from the USEPA's Office of Air and Radiation.

Mission

The mission of the NTAA is to advance air quality management policies and programs, consistent with the needs, interests, and unique legal status of American Indian Tribes and Alaska Natives.

Goals

1. Advocate for and advance Tribal environmental, cultural, and economic interests in the development of air policy at all levels of government (Tribal, local, state, regional, federal, and international).

2. Promote the development, funding, and capacity building of Tribal air management programs.

3. Promote and facilitate air quality policy and technical information that may include research and scientific and medical studies.

4. Advance the recognition and acceptance of Tribal sovereign authority by conducting effective communication and outreach to local, state, federal, and international agencies, as well as the general public.

5. Encourage and support appropriate consultation with all tribal governments in accordance with Tribal structures and policies.

The NTAA is a Tribal member organization with 129 principal member Tribes. The organization serves as a resource to all 573 federally recognized Tribal Nations. The NTAA's mission is to advance air quality management policies and programs, consistent with the needs, interests, and unique legal status of Tribes. As such, the NTAA uses its resources to support the efforts of all federally recognized Tribes in protecting and improving the air quality within their respective jurisdictions. Although the NTAA always seeks to represent consensus perspectives on any given issue, it is important to note that all Tribes may not agree upon its expressed views. Further, it is important that USEPA understands interactions with the NTAA do not substitute for government-to-government consultation, which can be achieved only through direct communication between the federal government and the Tribes.

FY 2020 Tribal Air Quality Budget Analysis

Introduction

This year marks the 20th anniversary of the promulgation of the Tribal Authority Rule (TAR) and more than three decades of Tribal involvement in protecting air quality in Indian country, including implementation of the Prevention of Significant Deterioration (PSD) program authorized for Tribes under the 1977 amendments to the Clean Air Act. Over those decades, Tribes have made remarkable progress in taking on the challenges of managing their air quality. As you have seen from the stories presented earlier in this report, Tribes have taken on myriad programs that include:

- monitoring air quality and issuing operating permits to sources on Tribal lands;
- indoor air quality assessments and mitigation; and
- public health alerts and 'best practices' training for potentially harmful air pollution emergencies within their communities.

However, in this anniversary year, things are not looking good for Tribes and their role in managing Tribal air quality. For the second year in a row, the administration is proposing in its FY 2019 budget major reductions in resources for environmental protection, and laying out priorities that have the potential for severely impacting public health in the decades to come. As we were writing the analysis last year for the 2017 budget year, considerable uncertainty remained because the President's Budget for that year, proposed by the previous administration, had never been acted upon by the Congress. After operating under Continuing Resolutions (CR) through the end of April 2017, which provided a pro rata share of the appropriations for the previous year, Congress enacted an omnibus CR carrying the government through the rest of the year at essentially the same funding levels as provided in 2016. Likewise, in FY2018, Congress has kept the government running on a series of short term CRs providing pro rata funding based on last year's appropriations. At this writing, it looks like the Congress will enact an omnibus CR for the rest of the year, providing funding at roughly FY 2017 levels. Final resource availability for FY 2019 is still very much an open question. Although the administration has submitted a budget request calling for an overall 25% decrease in fiscal resources for the year, Congress recently passed, and the President signed, the Bipartisan Budget Act of 2018, which provides for increasing spending caps for discretionary domestic programs in both FY 2018 and FY 2019 by more than $60 billion. It remains to be seen how the Congress will reconcile these disparities.

This resource uncertainty is matched by continued uncertainties in the policies this administration will be pursuing. As has already been observed, there has been considerable backpedaling from the policies supported by previous administrations of both parties. Although improving air quality continues to be one of the agency's priorities, funding for indoor air quality and radon, both significant Tribal priorities, has been completely eliminated in the FY 2019 budget request. Although infrastructure is also a priority in the FY 2019 budget request, the focus will be on water programs; resources to repair and update USEPA's air

monitoring infrastructure is not addressed. Other programs affected by this budget include stratospheric ozone (not an immediate Tribal priority, but an issue that has public health implications for indigenous peoples in many other parts of the world.), which has been eliminated, and radiation, which has been reduced by half.

Program Development

As the Tribal programs continue to mature, the following were identified as significant indicators of success in building Tribal air quality programs:

- 52 Tribes have been approved for Non-Regulatory Treatment as State (TAS) under the Tribal Authority Rule. These approvals authorize Tribes to manage programs under the CAA, including regulatory development, Title V permits, PSD re-designations, air quality monitoring, etc.;

- 85 Tribes operate air monitors, monitoring for criteria pollutants, hazardous air pollutants, and other pollutants under the National Atmospheric Deposition Program (NADP);

- Tribes have issued over 189 permits for major and minor sources of air pollution under the New Source Review program, the FARR, and Title V;

- Seventy-eight (78) Tribes have submitted over 140 emission inventories; data from 34 of these Tribes are now included in the National Emission Inventory database;

- Eighty (80) Tribes manage grants under CAA Section 103, and 40 Tribes manage grants under CAA section 105.

In FY 2017, the State and Tribal Assistance Grants (STAG) appropriation provided $11.5 million in grants and cooperative agreements to Tribes to build and sustain their air programs. These programs can be summarized as follows:

Environmental Assessment: An initial phase that takes a look at the Tribe's environment to determine the extent to which internal and external sources may be contributing to poor air quality. Where warranted, a formal emissions inventory may be completed. The phase can also include review of Tribal health data to determine whether air quality-related health issues are common among Tribal members.

Capacity Development: This program factor is critical to all phases of program development. Without internal program expertise to carry out the program, the Tribe will be limited in what it can do. Both the Institute for Tribal Environmental Professionals at Northern Arizona University and the Tribal Air Monitoring Support Center in Las Vegas, NV, provide a full range of technical and programmatic training courses to assist Tribal professionals in attaining the expertise needed to successfully execute programs. In addition, staff from both USEPA

Headquarters and the Regional offices are available to add their technical expertise to assist Tribes in developing and implementing programs.

Monitoring: Often the initial environmental assessment may suggest that more needs to be done to assess the quality of the ambient air by doing formal air monitoring. As shown above, more than 85 Tribes are now participating in one or more of USEPA's air monitoring programs and are routinely contributing air quality data to the national databases.

Program Development: Often, after its initial assessment, the Tribe may determine that a formal Clean Air Act (CAA) program (either regulatory or non-regulatory) is necessary to assist the Tribe in managing its air quality. Non-regulatory programs may include, in addition to monitoring, permit review for sources outside the reservation that are affecting Tribal air quality. Regulatory programs can include Tribal Implementation Plans (TIPs), Title V permit programs, or taking delegation for Federal programs to be implemented on reservation lands.

Program Implementation: As shown above, many Tribes are now implementing and enforcing their CAA programs, issuing hundreds of permits under various Tribal and federal programs and following up with appropriate enforcement.

Outreach & Communication: Tribal environmental staff work within their communities as well as outside of their communities to educate and inform others of the importance of the work they do and its benefits. In crises, (e.g., the massive wildfires in the Northwest in past years) they are able to alert communities to potential health effects of persistent and episodic air pollution and provide strategies for mitigating its impacts.

Budget Analysis

FY 2017

As this analysis has made clear in years past, the Tribes are uniquely dependent on Federal resources to develop and implement these CAA programs. The $11.5 million in federal funds for FY 2017 were allocated regionally to Tribes based on an agreed upon set of allocation factors. These factors include reservation population, number of major and synthetic minor sources, number of Tribes with programs and/or monitors, number of Tribes with emission inventories, etc. The final allocation of these funds to Tribes, of necessity, focuses on Tribes with existing programs, since Tribes do not have the wherewithal internally to support these programs. This approach leaves hundreds of Tribes, some with potentially health-threatening air quality issues, with no resources to address these problems. In the budget request that the NTAA forwarded in the STAR report for the FY 2018 budget year, it reiterated its request that USEPA begin to address this problem by requesting an additional $3.0 million for new and existing programs and another $6.0 million for program areas that have had insufficient funds in the past (air monitoring infrastructure, indoor air, etc.).

FY 2018

FY 2018 funding for tribal programs remains uncertain. Although Congress has passed and the President has signed an omnibus continuing resolution that funds the government through the rest of the year at roughly FY 2017 levels, the specifics of the appropriation have not yet been communicated. It should be noted that Congress included in this year's appropriation a $15 million increase for the Diesel Emission Reduction Act (DERA) program, although it's not yet clear the extent to which the Tribes will benefit from this increase. It is probably safe to assume that the tribal allocation will be roughly equivalent to last year's. This means that the reductions anticipated in the FY 2018 President's budget request will not be taken but it also means there will be no increases to fund new tribal programs. Furthermore, continued policy uncertainties in the new administration and the potential impact of the FY2019 President's Budget Request continues to make it difficult to plan for the future.

FY 2019

The reason for this continued uncertainty lies in the President's budget proposal for FY 2019. In NTAA's FY 2019 budget request to USEPA, NTAA proposed modest increases totaling $3.0 million, including funding for monitoring infrastructure and a comprehensive needs assessment for Indian Country. As noted above, the President proposed a radically reduced budget for USEPA that would represent an overall decrease to funding of nearly 30%, including State and Tribal Assistance Grants (STAG). Over the last couple of years, however, Congress has demonstrated a reluctance to impose the kind of reductions the administration has been seeking.

Future Funding Needs (FY 2020)

In the context of this kind of uncertainty, the NTAA is requesting that the USEPA, in its FY 2020 budget request, hold USEPA's Tribal air programs harmless and maintain funding levels, at a minimum, to FY 2018 levels. If the reductions proposed in the FY2019 President's Budget are sustained by the Congress, failure to restore those funds in FY2020 will certainly mean the loss of a significant portion of the 20 years of investment that USEPA has provided for Tribal air programs. In addition, NTAA requests an additional $3.0 million to support the following budget initiatives, which are consistent with the Administration's stated priorities.

Monitoring Infrastructure $2.5 million – Tribes are currently managing 85 monitoring sites for various pollutants throughout the country. Some of the sites have been in place for many years; others are more recent. Many of the sites are outmoded or are in need of repair. This initiative would undertake a comprehensive assessment of the Tribal air monitoring network and replace or upgrade equipment where necessary. This initiative would also provide additional base funding to support other Tribes interested in implementing air quality monitoring programs.

Needs Assessment $500,000 – The USEPA recognized early in its deliberations on developing regulations for implementing the CAA in Indian Country and clearly stated in the preamble to the final TAR a need to do a needs assessment for Indian Country. Needs assessments have been done to address narrow programmatic issues (capacity building, indoor air, etc.), but no one has ever undertaken a comprehensive assessment of the air quality management needs in Indian Country. This proposal provides funding for such an initiative.

Appendix B: List of NTAA Member Tribes by USEPA Regions

129 Member Tribes

Region 1 (3 Tribes)
- Houlton Band of Maliseet Indians
- The Mohegan Tribe
- Penobscot Indian Nation

Region 2 (2 Tribes)
- Seneca Nation of Indians
- Saint Regis Band of Mohawk Indians

Region 4 (4 Tribes)
- Catawba Indian Nation
- Eastern Band of Cherokee
- Miccosukee Indian Tribe of Florida
- Poarch Band of Creek Indians

Region 5 (20 Tribes)
- Bad River Band of Lake Superior Tribe of Chippewa Indians
- Bois Forte Band of Chippewa
- Fond du Lac Band of Lake Superior Chippewa
- Forest County Potawatomi Community
- Grand Portage Band of Lake Superior Chippewa
- Grand Traverse Band of Ottawa & Chippewa Indians
- Keweenaw Bay Indian Community
- Lac du Flambeau Band of Lake Superior Chippewa Indians
- Leech Lake Band of Ojibwe
- Little Traverse Bay Bands of Odawa Indians
- Lower Sioux Indian Community
- Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan
- Menominee Indian Tribe of Wisconsin
- Oneida Tribe of Indians of Wisconsin
- Red Lake Band of Chippewa Indians
- Saginaw Chippewa Indian Tribe of Michigan
- Sault Tribe of Chippewa Indians
- Shakopee Mdewakanton Sioux Community
- St. Croix Chippewa Indian of Wisconsin
- White Earth Nation

Region 6 (21 Tribes)

- Caddo Nation of Oklahoma
- Cherokee Nation of Oklahoma
- Choctaw Nation of Oklahoma
- Citizen Potawatomi Nation
- Delaware Nation of Oklahoma
- Fort Sill Apache Tribe of Oklahoma
- Iowa Tribe of Oklahoma
- Modoc Tribe of Oklahoma
- Ohkay Owingeh
- Pueblo of Acoma
- Pueblo of Jemez
- Pueblo of Laguna
- Pueblo of Pojoaque
- Pueblo of Santa Ana
- Pueblo of Santo Domingo
- Pueblo of Zuni
- Quapaw Tribe Of Oklahoma
- Sac and Fox Nation
- Seminole Nation of Oklahoma
- Taos Pueblo
- United Keetoowah Band of Cherokee Indians in Oklahoma

Region 7 (7 Tribes)

- Kickapoo Tribe in Kansas
- Ponca Tribe of Nebraska
- Prairie Band Potawatomi Nation
- Sac & Fox Tribe of the Mississippi in Iowa/Meskwaki
- Sac & Fox Nation of Missouri in Kansas and Nebraska
- Santee Sioux Nation
- Winnebago Tribe of Nebraska

Region 8 (8 Tribes)

- Confederated Salish & Kootenai Tribes
- Fort Belknap Indian Community
- Fort Peck Tribes of Assiniboine & Sioux Tribe
- Northern Cheyenne Tribe
- Northwestern Band of Shoshone Nation
- Sisseton Wahpeton Oyate
- Southern Ute Indian Tribe
- Standing Rock Sioux Tribe
- Ute Mountain Ute Tribe

Region 9 (28 Tribes)

- Ak-Chin Indian Community

- Big Pine Paiute Tribe of the Owens Valley
- Bishop Paiute Tribe
- Blue Lake Rancheria
- Campo Band of Mission Indians
- Colorado River Indian Tribes
- Cortina Indian Rancheria of Wintun Indians
- Coyote Valley Band of Pomo Indians
- Gila River Indian Community
- Habematolel Pomo of Upper Lake
- Hoopa Valley Tribe
- Hualapai Tribe
- La Posta Band of Mission Indians
- Lone Pine Paiute Shoshone Reservation
- Los Coyotes Band of Cahuilla Cupeno Indians
- Manzanita Band of the Kumeyaay Nation
- Moapa Band of Paiutes
- Morongo Band of Mission Indians
- Pala Band of Mission Indians
- Pechanga Band of Luiseno Indians
- Pyramid Lake Paiute Tribe
- Robinson Rancheria of Pomo Indians
- Soboba Band of Luiseno Indians
- Susanville Indian Rancheria
- Walker River Paiute Tribe
- Washoe Tribe of Nevada and California
- White Mountain Apache Tribe
- Yavapai-Apache Nation

Region 10 (13 Tribes)

- Coeur d'Alene Tribe
- Confederated Tribes of Warm Springs
- Confederated Tribes of the Colville Reservation
- Confederated Tribes of the Coos, Lower Umpqua & Siuslaw Indians
- Kootenai Tribe of Idaho
- Makah Indian Tribe
- Nez Perce Tribe
- Nisqually Tribe
- Quinault Indian Nation
- Shoshone-Bannock Tribes
- Spokane Tribe
- Tulalip Tribes
- Yakama Nation

Alaska (22 Tribes and Villages)

- Aleknagik Traditional Council
- Alutiiq Tribe of Old Harbor
- Bristol Bay Native Association
- Chickaloon Village Traditional Council
- Craig Tribal Association
- Inupiat Community of the Arctic Slope
- Klawock Cooperative Association
- Native Village of Buckland
- Native Village of Kiana
- Native Village of Kivalina (IRA)
- Native Village of Kluti-Kaah
- Native Village of Kwinhagak
- Native Village of Noatak
- Native Village of Nuiqsut
- Native Village of Selawik
- Native Village of Shungnak
- Noorvik Native Community
- Nulato Tribal Council
- Orutsararmuit Native Council
- Seldovia Village Tribe
- Ugashik Traditional Village
- Wrangell Cooperative Association

Tribal Consortia as Associate NTAA members

- Inter-Tribal Council of Arizona

Appendix C: USEPA OAR and OITA Organizational Charts

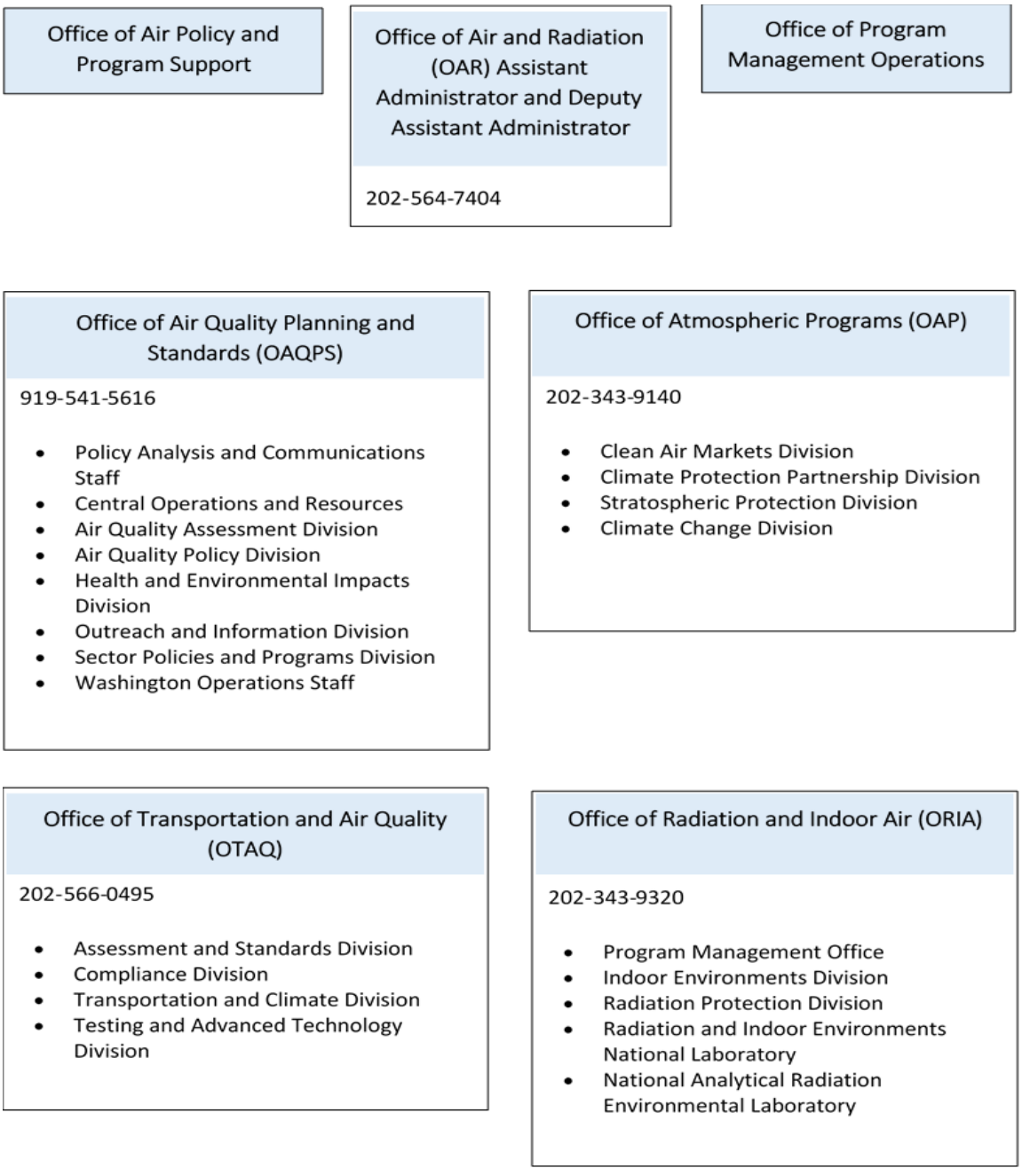


Figure 4 USEPA OAR Organizational Chart

Additional information about the USEPA Office of Air and Radiation can be found at: https://www.epa.gov/aboutepa/about-office-air-and-radiation-oar.

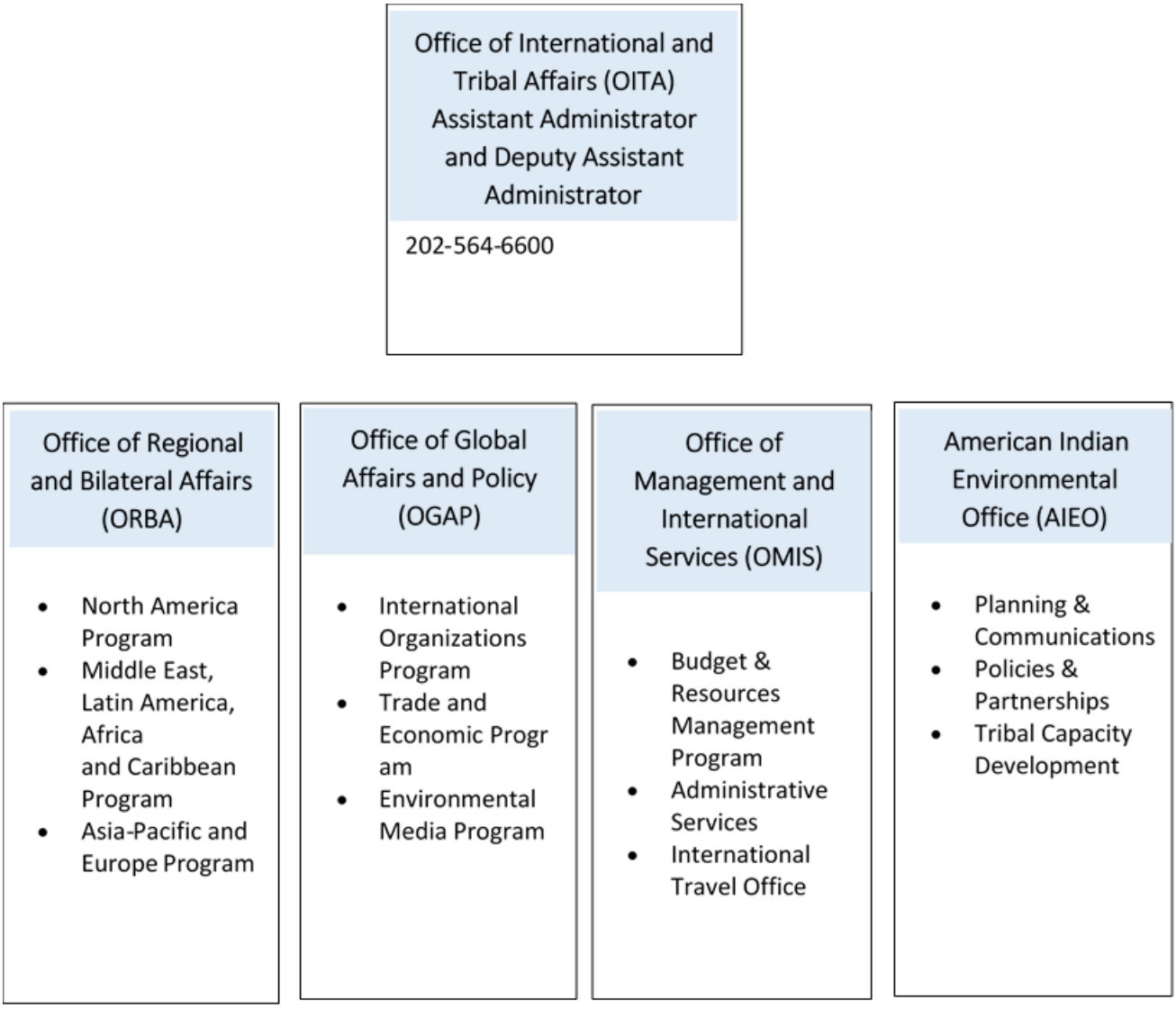


Figure 5 USEPA OITA Organizational Chart

Additional information about the USEPA Office of International and Tribal Affairs can be found at: https://www.epa.gov/aboutepa/about-office-international-and-tribal-affairs-oita.

Appendices D through F: Data Tables of Tribal Air Quality Programs and Grants

Tribal Air Quality Monitoring Programs and Projects

Tribes significantly contribute to air quality protection, exercising Tribal sovereignty through air quality program activities. At the request of the NTAA, USEPA's Office of Air and Radiation provided a set of data summarizing Tribal air activities from 2012-2018. A broad national summary of Tribal Air Quality Programs can be found in Appendix D, followed by regional summaries in Appendix E, with additional explanations of terms used in Appendix F.

The following data is used by the USEPA to create budgets that influence CAA grant funding available to Tribes. The presentation of this data is illustrated in a simplified layout that is both easier to understand and more useful to readers. This simplified layout serves the important purpose of highlighting recent declines of funding and stagnation of Tribal Air Quality Programs.

Please see Appendix A for a more in-depth Tribal Air Program budget analysis, which references these tables as well. The data set was provided to the NTAA by USEPA's OAR Tribal System (OTS) database.

Appendix D: National Summary of Tribal Air Quality Programs

National Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$12,489,000	$11,462,001	$11,758,000	$11,683,901	$11,651,001	$11,545,000	
Tribes Operating Air Monitors	81	83	84	83	85	83	85
Tribes w/ Completed EIs	74	73	84	86	84	80	78
Tribes w/ Non-Regulatory TAS	34	38	45	46	48	49	52
Tribes w/ Regulatory TAS	7	8	8	8	10	10	10
Major Sources on Reservations*	167	159	863	1626	1900	2991	189
Tribal Non-Attainment Areas	201	156	156	202	167	166	166

Table 3 National Summary of Tribal Air Quality Programs

*The values shown in this table reflect annual totals for all regions. The steep rise of Major Sources on Reservations in 2014-2017 is due to the introduction of new major source registration rules, which were applied to previously identified sources. This jump in major sources was caused by increased regulation, not by new pollutant sources. 2018 totals are reflective only of actual permitted sources in Indian country.

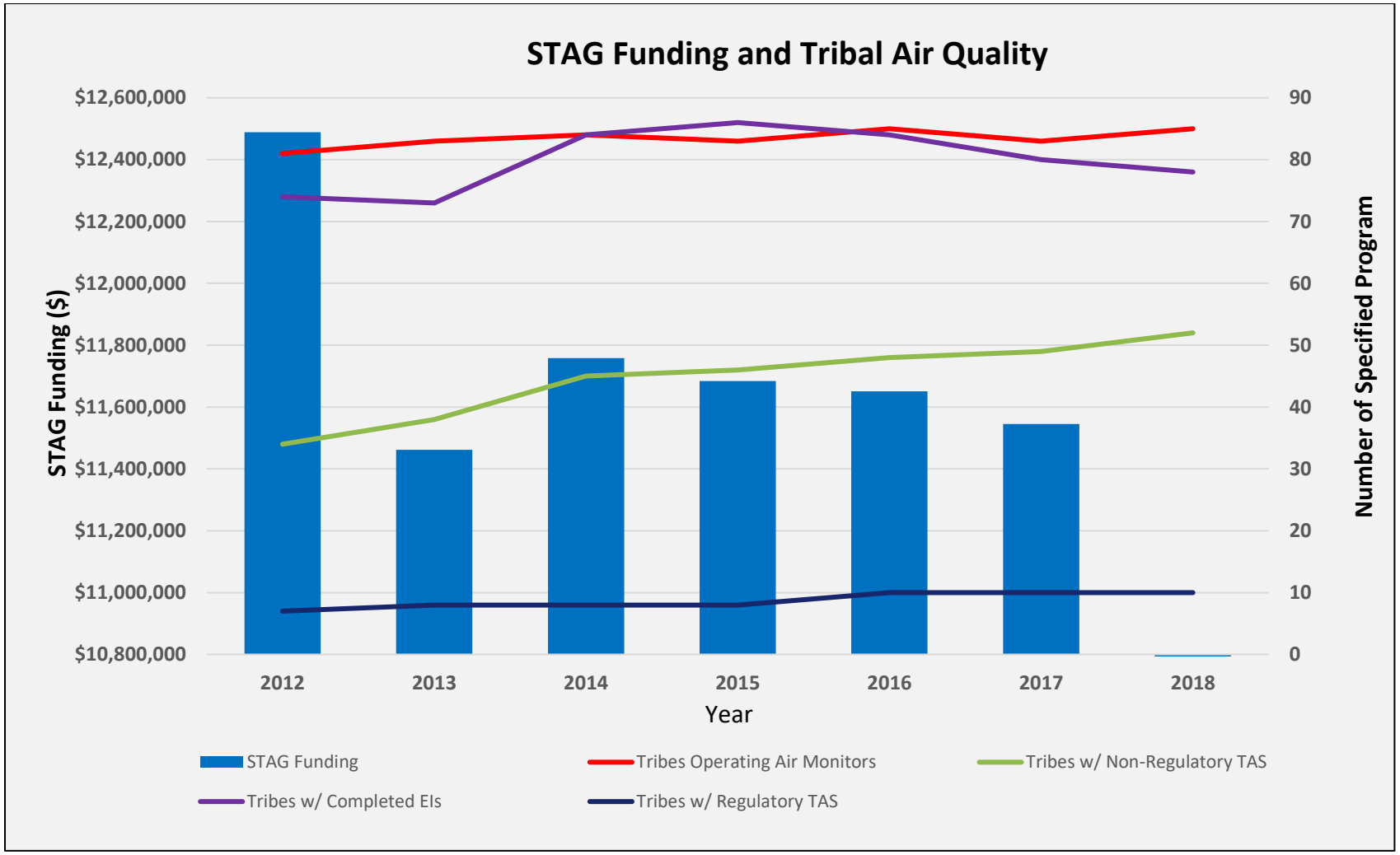


Table 4 STAG Funding and Tribal Air Quality Programs

National Summaries of Tribal Grants

USEPA Region	Grant Types			Region Total
	103	**105**	**DERA***	
1	5	2	0	**7**
2	1	1	0	**2**
4	4	1	0	**5**
5	10	7	1	**18**
6	15	1	0	**16**
7	5	2	0	**7**
8	13	8	0	**21**
9	25	5	2	**32**
10	4	13	3	**20**
Grand Total	**82**	**40**	**6**	**128**

Table 5 National Summaries of Tribal Grants 2018

* 2016 DERA Grants

Other air grants provided to Tribes but not included in this table include CARE, DITCA, GAP, and Local Showcase.

Appendix E: Regional Summaries of Tribal Air Quality Programs

Table 6 Regional Summaries of Tribal Air Quality Programs

Region 1 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$657,063	$613,577	$622,967	$621,504	$594,273	$576,217	
Tribes Operating Air Monitors	4	5	5	5	5	5	5
Tribes w/ Completed EIs	1	1	1	1	1	1	1
Tribes w/ Non-Regulatory TAS	1	2	2	2	2	2	2
Tribes w/ Regulatory TAS	2	2	2	2	2	2	2
Major Sources on Reservations	2	2	2	2	2	2	2
Tribal Non-Attainment Areas	5	5	5	5	3	3	3

Region 2 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$440,175	$424,265	$424,983	$417,874	$403,087	$394,068	
Tribes Operating Air Monitors	1	1	1	1	1	1	1
Tribes w/ Completed EIs	0	1	1	1	1	1	1
Tribes w/ Non-Regulatory TAS	1	1	1	1	1	1	1
Tribes w/ Regulatory TAS	1	1	1	1	1	1	1
Major Sources on Reservations	1	1	1	1	1	1	1
Tribal Non-Attainment Areas	5	4	4	4	1	1	1

Region 4 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$330,964	$312,481	$316,989	$313,173	$315,674	$327,356	
Tribes Operating Air Monitors	1	2	2	3	3	4	4
Tribes w/ Completed EIs	1	1	2	2	2	2	2
Tribes w/ Non-Regulatory TAS	1	1	1	1	1	1	1
Tribes w/ Regulatory TAS	0	0	0	0	0	0	0
Major Sources on Reservations	0	0	0	0	0	0	0
Tribal Non-Attainment Areas	1	0	0	0	0	0	0

Region 5 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$1,263,752	$1,145,597	$1,179,144	$1,226,435	$1,228,784	$1,233,135	
Tribes Operating Air Monitors	11	11	12	12	12	14	14
Tribes w/ Completed EIs	14	14	15	16	18	19	20
Tribes w/ Non-Regulatory TAS	4	4	5	5	5	6	7
Tribes w/ Regulatory TAS	0	0	0	0	0	0	0
Major Sources on Reservations	13	15	15	15	15	16	17
Tribal Non-Attainment Areas	5	5	5	5	4	4	4

Region 6 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$1,305,009	$1,174,439	$1,176,253	$1,181,133	$1,141,449	$1,137,346	
Tribes Operating Air Monitors	5	5	4	4	5	5	7
Tribes w/ Completed EIs	8	8	14	15	11	12	9
Tribes w/ Non-Regulatory TAS	2	2	3	3	4	4	5
Tribes w/ Regulatory TAS	0	0	0	0	0	0	0
Major Sources on Reservations	6	6	6	6	11	10	9
Tribal Non-Attainment Areas	0	0	0	0	0	0	0

Region 7 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$465,216	$434,188	$499,756	$524,625	$534,917	$534,741	
Tribes Operating Air Monitors	4	4	5	4	4	4	5
Tribes w/ Completed EIs	6	6	6	6	6	6	6
Tribes w/ Non-Regulatory TAS	0	1	2	2	2	2	2
Tribes w/ Regulatory TAS	0	0	0	0	0	0	0
Major Sources on Reservations	4	4	4	4	4	4	4
Tribal Non-Attainment Areas	0	0	0	0	0	0	0

Region 8 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$2,109,888	$2,002,337	$2,096,474	$2,070,039	$2,001,325	$1,975,617	
Tribes Operating Air Monitors	10	10	10	10	10	10	9
Tribes w/ Completed EIs	18	13	14	14	14	8	8
Tribes w/ Non-Regulatory TAS	7	7	9	9	9	9	9
Tribes w/ Regulatory TAS	1	1	1	1	1	1	1
Major Sources on Reservations*	86	89/706**	702	1451	1719	2806	108
Tribal Non-Attainment Areas	3	3	3	3	3	3	3

*The steep rise of Major Sources on Reservations in 2014-2017 is due to the introduction of new major source registration rules, which were applied to previously identified sources. This includes newly identified oil and gas sources required to be registered for PSD permits. 2018 totals are reflective only of actual permitted sources in Indian country.

** In 2013, Region 8 reported this data using both old and new rules.

Region 9 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$3,259,737	$2,933,750	$2,974,502	$2,885,487	$2,967,439	$2,916,567	
Tribes Operating Air Monitors	29	29	29	29	30	29	27
Tribes w/ Completed EIs	17	19	21	21	24	24	24
Tribes w/ Non-Regulatory TAS	7	7	9	10	11	11	12
Tribes w/ Regulatory TAS	2	2	2	2	4	4	4
Major Sources on Reservations	21	21	21	21	22	22	22
Tribal Non-Attainment Areas	170	137	137	183	154	154	154

Region 10 - Summary of Tribal Air Quality Programs							
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
STAG Funding	$2,657,197	$2,421,367	$2,466,932	$2,443,631	$2,464,053	$2,449,954	
Tribes Operating Air Monitors	16	16	16	15	15	13	13
Tribes w/ Completed EIs	9	10	10	10	7	7	7
Tribes w/ Non-Regulatory TAS	11	13	13	13	13	13	13
Tribes w/ Regulatory TAS	1	2	2	2	2	2	2
Major Sources on Reservations*	34	110	112	126	126	130	26
Tribal Non-Attainment Areas	12	2	2	2	1	1	1

*The steep rise of Major Sources on Reservations in 2014-2017 is due to the introduction of new major source registration rules, which were applied to previously identified sources. 2018 totals are reflective only of actual permitted sources in Indian country.

Appendix F: Permit Categories on Reservations

The Clean Air Act establishes emissions-related permitting programs, the pre-construction permit programs under Title I of the Act, and the operating permit program under Title V of the Act. USEPA delegates their implementation to local air agencies. Tribes may implement their permit programs once approved by USEPA either under the Tribal New Source Review rule or under the part 71 rule for Title V sources (Federal Implementation Plan) or by taking delegation of one or both of the Federal Implementation Plans (FIPs). Where a Tribe does not implement these programs, USEPA issues the permits to the sources as appropriate.

Terms

NSR – New Source Review – NSR is a Clean Air Act program (aka, the "preconstruction air permitting program") that requires industrial facilities to install modern pollution control equipment when they are built or when making a change that increases emissions significantly. The program requires owners or operators to obtain permits before they begin construction.

Tribal New Source Review rule – The Tribal NSR rule is a Federal Implementation Plan (FIP – a plan that is developed by the USEPA to federally implement CAA requirements) that establishes the nonattainment NSR and minor NSR permitting programs in Indian country where no USEPA-approved Tribal program exists. There are 2 parts – the minor NSR rule and the nonattainment major NSR rule. The permitting authority (either USEPA or a Tribe that takes delegation from USEPA) reviews the permit application and either grants or denies the permit after a public comment period.

PSD – Prevention of Significant Deterioration – Applicable to new and modified major sources in attainment areas. Regulated pollutants: NAAQS, GHGs, and others (sulfuric acid mist, hydrogen sulfide) – does not include air toxics (mercury, cadmium, benzene, etc.). Has specific requirements - Install Best Available Control Technology (BACT); perform air quality analysis to assess impacts on air quality; perform class I area analysis to assess impacts on national parks/wilderness areas; perform additional impacts analysis; and allow for public involvement. This program can also be delegated to the tribes or implemented through an USEPA approved Tribal Program.

FARR – Federal Air Rules for Reservations (applicable in Region 10 only) – A set of air quality regulations that apply to Indian Reservations in Idaho, Oregon, and Washington.

Title V – Permits issued to major sources by the Tribe (CAA part 70) and permits issued by USEPA (CAA part 71). These operating permits include all the applicable CAA requirements that apply to a major source and are designed to improve compliance by clarifying what sources must do to control air pollution.

Major Source – Facilities that emit or have the potential to emit pollutants in amounts equal to or greater than the corresponding major source threshold levels. These levels vary by pollutant and/or source category. Major sources must comply with specific emission limits which are generally more stringent in nonattainment areas and if the pollutant is a criterial pollutant or an air toxic.

Minor Source – Facilities that have the potential to emit pollutants in amounts less than the corresponding major source thresholds.

Synthetic Minor Source – Facilities that have the potential to emit pollutants at or above the major source threshold level, but voluntarily accept enforceable limits to keep emissions below the major source thresholds and avoid the major NSR requirements.

Nonattainment Area – Areas of the country that meet or violate air quality standards (NAAQS).

Attainment Area – Areas of the country that have air quality as good as or better than the air quality standards for a given pollutant.

HAP – Hazardous Air Pollutant - Pollutants (toxic air pollutants or air toxics) that are known to cause cancer and other serious health impacts. There are approximately 187 toxic air pollutants.

TAS – Treatment as a State

The Tribal Authority Rule authorizes USEPA to treat eligible federally recognized Indian tribes in the same manner as a state for implementing and managing certain environmental programs.

TAS Eligibility – A Tribe must meet certain criteria to be eligible for TAS. The Tribe must be federally recognized; have a governing body; have appropriate authority to regulate air quality (includes exterior boundaries of the reservation); and be capable of carrying out the functions of the program.

Administrative TAS – Examples include 105 grants, 107 designations, 126/505 notifications, 319 monitoring, permit review, redesignations, etc.

Regulatory TAS – Examples include Tribal Implementation Plan (TIP), delegation of a FIP, regional haze, or permit program, etc.

Note: TAS is not required for all programs, e.g., program development, monitoring.

Appendix G: Tribal Air Programs Infographic

The infographic found on the following pages was published in 2017 by the National Tribal Air Association in partnership with USEPA's Office of Air and Radiation, Northern Arizona University's Institute for Tribal Environmental Professionals, and the Tribal Air Monitoring Support Center.

TRIBAL AIR PROGRAMS

CELEBRATING 25 YEARS OF STRONG PARTNERSHIPS

TRIBES
573 Federally - Recognized Tribes

INSTITUTE for TRIBAL ENVIRONMENTAL PROFESSIONALS (ITEP)
since 1992

TRIBAL AIR PROGRAM
since 1994

TRIBAL AIR MONITORING SUPPORT CENTER (TAMS)
since 1999

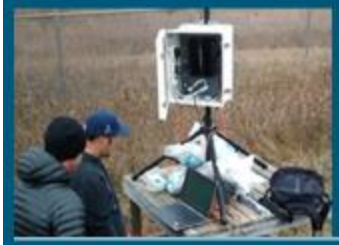
NATIONAL TRIBAL AIR ASSOCIATION (NTAA)
since 2002

RULE OF LAW 301(d) TRIBAL AIR RULE (TAR)

- **300** Permits for major and minor sources of air pollutants
- **149** Tribes manage air quality on their lands
- **120** Tribes have air grants
- **50** Tribes have Treatment as a State status
- **9** Tribes have delegation to implement Federal Rule
- **6** Tribes have Tribal Implementation Plans
- **5** Tribes with Class I Redesignation under the PSD program
- **2** Tribes implement Title V Programs

OFFICE of AIR and RADIATION (OAR) now has a coordinator for Tribal issues in all four OAR program offices.

PUBLIC PARTICIPATION and Government-to-Government Consultation



ITEP:

- Number of Tribes represented at Air Quality courses: 483
- Number of Air Quality Tribal professionals trained: approximately 8,500
- Over 1,900 Tribal professionals trained by the TAMS Center
- Organizes 2 National Tribal Conferences each year
- Provides support to 4 national Tribal Partnership Groups

NTAA:

- One of the Nation's largest Tribal membership organizations with 129 member Tribes and growing.
- Issue-specific Workgroups
- Monthly NTAA/*EPA Air Policy Calls
- NTAA Weekly Update
- Ad hoc high priority, topic specific NTAA/EPA calls

PARTNERS:

- Tribal organizations and businesses
- States and Local Governments
- Other Federal Agencies such as *USDA, *HUD and *DOE/NREL
- State organizations including *NACAA and *WRAP
- Public health groups such as *ALA and other Health Groups

*EPA: Environmental Protection Agency
*USDA: United States Department of Agriculture
*HUD: U.S. Department of Housing and Urban Development
*DOE: U.S. Department of Energy
*NREL: National Renewable Energy Laboratory
*NACAA: National Association of Clean Air Agencies
*WRAP: Western Regional Air Partnership
*ALA: American Lung Association

WANT MORE INFORMATION?

EPA's Tribal Air and Climate Resources:
www.epa.gov/tribal-air
ITEP: nau.edu/itep

NTAA: ntaatribalair.org
TAMS: nau.edu/tams

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