Welcome to the Native Voices newsletter!

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Tribal Program Highlight – Pechanga Tribal Air Program

The Pechanga Tribal Air Program has been running since 2009, collecting ambient air quality data on ozone (O3), oxides of nitrogen (NOx), and particulate matter 2.5 micrometers and smaller (PM 2.5). In 2012, the Pechanga Band of Luiseño Indians (Tribe) Reservation was designated as its own moderate non-attainment area for the 8-hour ozone National Ambient Air Quality Standard (NAAQS). In 2014, the Tribe wrote their Tribal Implementation Plan (TIP), and the EPA confirmed that the Tribe was eligible for Treatment in a similar manner As a State (TAS) for Section 110 and 175A of the Clean Air Act. On February 3, 2015, the EPA published a final rule in the Federal Register (80 FR 18120) designating the Pechanga Reservation as a separate air quality planning area for the 1997 8-hour ozone NAAQS. In the same published final rule, the EPA also approved the Tribe’s TIP for maintaining the 1997 8-hour ozone standard, and granted the newly designated air quality planning area as “attainment” for the same standard.

Since that time, the Tribe has worked diligently to maintain the high quality of the ambient air on the Reservation through a variety of programs including installation of over 50 electric vehicle plug-in stations throughout the Reservation, use of electric and CNG vehicles at tribal commercial enterprises, use of low emissions natural gas co-generation and purchase of hydropower, and approval of a solar array on the Pechanga Resort and Casino parking lot.

The Pechanga Environmental Department is continually looking at ways to disseminate and effectively use the data collected at the Pechanga Air Station for improved public health. In 2018 Pechanga Environmental Department launched a website for tribal members and tribal government that streams real time data and provides the Air Quality Index (AQI) for the Pechanga Reservation. By allowing members and government access to real-time air quality data, the community can make proactive decisions regarding their health and safety. For the ubiquitous wildfire smoke issue in southern California, Pechanga Environmental Department is working with Pechanga Fire Department to develop alert messages for poor air quality days using a text-based system.
Our Staff:

**Tiffany Wolfe, Air Quality Specialist**
Tiffany Wolfe has worked with the Pechanga Environmental Department for four years. During this time she has successfully completed Ambient Air Network plans, Monitoring Assessments and data validation for the programs air program. Tiffany has worked in Tribal Environmental Programs for a total of 12 years and enjoys providing education and outreach to the youth on environmental subjects such as air quality, recycling, and preparedness.

**David Newman, Air Quality Technician**
David joined the Environmental Department in April of 2011. He has been working for the Pechanga Band of Luiseño Indians for more than 18 years in many different facets. He is an enthusiastic, loyal, and dedicated team member that brings great energy to everything he works on. “Self-reliance, self-sufficiency, self-sustaining” is his mantra that he strives to bring in every aspect of his life; work and at home. “Working in the Environmental Department resonates with me so much that my song is of enjoyment and great humility to be able to support the Tribe’s Environmental efforts,” says David of his role.

**Kelcey Stricker, Environmental Director**
Kelcey has been the Environmental Director since August 2014. Working at Pechanga has been the highlight of her career in environmental sciences. She loves bringing her passion for environmental management and sustainability to everyone she meets. She especially loves learning from the community she serves and is proud to be trusted with the care of important resources such as air, water, plants and animals.

In-person Trainings
ITEP’s American Indian Air Quality Training Program (AIAQTP) has a full slate of courses scheduled for FY2019. To view the schedule and to download a course announcement and application go to this link: [http://www7.nau.edu/itep/main/Training/training_air](http://www7.nau.edu/itep/main/Training/training_air). Upcoming courses are also listed in the Additional in-person trainings section below.

In late January, AIAQTP hosted the “Air Quality Computations” course at the Northern Arizona University North Valley campus. As much of the eastern United States was under a heavy winter storm, participants were enjoying warm days in Phoenix, AZ. Attendees practiced various mathematical computations. Refreshers in fractions, decimals, and significant figures, set the foundation for participants to calculate basic statistics such as mean, median, mode, standard deviation, rolling averages, percent, and percentiles. Presentations were interspersed with discussions, exercises, and various problem sets, including conversions between the conventional and metric system. This entry-level course emphasized the importance of mathematical calculations in data collection and reporting.
New Training Course – R and Environmental Data Analysis

A new technical course was developed and offered at the Fond du Lac Tribal and Community College in Cloquet, Minnesota on January 15-17. The highly technical but rewarding course provided tribal professionals with instruction on using the free and popular open-source R programming platform to develop data management tools to manipulate large amounts of air monitoring data. Open source software is software that can be freely used, modified, and shared (in both modified and unmodified form) by anyone, and R is supported by an online community of thousands of generous and helpful users who have assembled packages for the common tasks done by environmental professionals, such as wind roses, run charts, comparisons between sites and years, and even maps.

The TAMS Center worked with the Minnesota Pollution Control Agency and the Grand Portage Indian Reservation to assemble this course, because users of spreadsheets will begin to experience capacity issues with air monitoring data that is sometimes logged as frequently as five minutes. For example, one year of 5 m data produces half a million rows of data, and although each MS Excel sheet has a maximum of a million rows, doing an operation such as a sort on half a million rows slows down or crashes computers that can routinely handle tens of thousands of rows.

As tribes gather more data, including years of multiple parameters, it will become more difficult to manipulate using MS Office products such as Access and Excel. The TAMS Center is assembling an online repository of procedures and videos that can be used by for the most common tasks of environmental data manipulation, using R, to support tribal users. Another course is being planned tentatively for Pechanga (Temecula, CA) in August 6-8.
Participants in the R and Environmental Data Analysis course, January 15-17, 2019, Cloquet, MN

Additional in-person trainings for March-August 2019

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<thead>
<tr>
<th>Course Title</th>
<th>Dates</th>
<th>Location</th>
<th>Course Level</th>
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<tbody>
<tr>
<td>Air Quality Planning for Wildland Smoke (hybrid course)</td>
<td>April 2-3</td>
<td>Boise, ID</td>
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<tr>
<td>Air Quality Project Planning, QAPPS, and Grants for Alaska</td>
<td>April 9-12</td>
<td>Anchorage, AK</td>
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<tr>
<td>Fundamentals of Air Monitoring</td>
<td>April 16-18</td>
<td>TAMS Center, Las Vegas, NV</td>
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<tr>
<td>Introduction to Tribal Air Quality</td>
<td>June 4-7</td>
<td>Flagstaff, AZ</td>
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<tr>
<td>Air Pollution and Ecosystems</td>
<td>July 23-26</td>
<td>Flagstaff, AZ</td>
<td>2</td>
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<tr>
<td>R and Environmental Data Analysis</td>
<td>August 6-8</td>
<td>Temecula, CA</td>
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* Stay tuned at [http://www7.nau.edu/itep/main/Training/training_air](http://www7.nau.edu/itep/main/Training/training_air) for more updates*

Welcome Christal Black to ITEP and the Air Program Team!

**Christal Black – Program Coordinator, Sr. | American Indian Air Quality Training Program**

Christal Black joined the ITEP Air Quality Program team in January 2019 and will be responsible for coordinating ITEP’s air quality training courses. Prior to joining ITEP, Christal managed the Journey for Underrepresented Medical Professionals (JUMP), the Partnership for Native American Cancer Prevention (NACP) and the Bridges to Baccalaureate training programs at NAU. Christal is a graduate of NAU with a BA in Applied Indigenous Studies, a BS in Public Health, and a Masters of Administration in Public Health. She is a member of the Navajo Nation originally from Nipple Butte, AZ an area located 45 minutes north of Winslow, AZ. Her maternal clan is Near Water, her paternal clan is Big Water, her maternal grandfather was of Hispanic descent and her paternal grandfather’s clan is Bitter Water. In her spare time she enjoys a variety of sports and spending time with her family.

*Christal can be reached by e-mail at Christal.Black@nau.edu.*
Online Training Opportunities
The following self-paced, online courses are currently available through ITEP:
* Residential Building Science Review
* Building Performance: Improving IAQ in Cold Climates
* Quality Assurance Fundamentals / QAPP Series
* Radon Fundamentals
* Emissions Inventory Fundamentals / Advanced
* Tribal Data Toolbox Version 3.1
* Partnerships and Community Outreach
* Tribal Strategic Planning: Ensuring Successful Development of Your ETEP

These online courses contain assignments, quizzes, videos, examples, downloadable spreadsheets, and other resources. While they are self-paced, each course provides the opportunity for individual interaction with subject matter experts.

See www.nau.edu/itep/elearning for details or email professional@nau.edu with questions.

National Tribal Forum on Air Quality Agenda Offers Something for Everyone
The 2019 National Tribal Forum on Air Quality (NTFAQ) is just weeks away and the Forum planning team and co-hosts are excited to share some important updates and highlights that attendees can look forward to during the event. Below is a snapshot of some of the planned sessions and topics that are scheduled, along with updates on the various outings and activities planned. You can read more about our tribal co-hosts, the Pechanga Band of Luiseño Indians, in the article above—their gracious and accommodating staff and leadership are ensuring that there is a lot to learn, see, and do during the NTFAQ!

The agenda for the Forum will present a broad array of topics and presentations related to both ambient and indoor air quality, as well as climate change, sustainability, and health impacts of air quality. You can find the latest version of the agenda on our website: www.nau.edu/ntfaq.
A number of optional training opportunities are also available on Monday, May 6 prior to the Forum. Pre-registration for these in-demand sessions is currently available via the NTFAQ website:

*Introduction to R for Data Analysis (9am-5pm): “R” is a free data analysis tool that can easily handle large data files generated from sensors and other continuous monitors. This one-day introduction workshop will offer activities with example data and fun exercises. Attendees are required to bring their own laptops and data files.
*Drones 101 for Air Quality (9am-5pm): Ever wonder if a drone would work for you? What kind of drone? What can it be used for? Can anyone fly one? Do you need a license? Get all the answers to these questions and more by attending the NTFAQ Drones 101 Training.
*TAS & Air Quality Grants (1pm-5pm): This interactive session will delve into the process of applying, managing and reporting on Section 103 and 105 grants and TAS. Using updated training materials, presenters will share examples of successful work plans and reports, and are interested in input from tribal staff to help ensure cultural sensitivity and EPA consistency in grants management.
*Vendor-sponsored workshops on air quality equipment & tools (times and topics will vary, and updates will be announced when the details are firm).

With the assistance of the Pechanga staff, we are excited to offer several outings and other opportunities to explore the area. Visits to the Tribe’s air monitoring station, a nearby anaerobic digester for food waste, and the San Diego State University Solar Facility are all on tap, along with a walking tour of the Tribe’s Grandmother Tree, Wi’ášal, the Pechanga Great Oak, which will provide a brief cultural history of the Tribe. To wrap up the event, we are again planning the “Breath of
Fresh Air 5K Fun Run/Walk” on Thursday afternoon. Sign-up for these, and other optional outings, will be available on-site.

We hope that you are as excited as we are for the NTFAQ and look forward to seeing you there!

To find more details on the event, including registration and key contacts, please visit www.nau.edu/ntfaq.

Welcome Julie Tieman to the ITEP team!

Julie Tieman – Event Coordinator, Sr.

Julie Tieman, M.A., CMP, CMM, is ITEP’s new Event Coordinator, Sr. She is responsible for executing tasks related to ITEP conferences such as the Tribal Lands and Environment Forum (TLEF), Tribal Exchange Network Conference (Tribal EN), and the National Tribal Forum on Air Quality (NTFAQ).

Ms. Tieman was the former Director of Conference Services for the Conference Services Group housed at the University of Nevada, Reno with multiple federal, state, association and service contracts under her direction and leadership. She is an accomplished executive meeting professional with a track record of quality outcomes and relevant productions.

Professionally, Ms. Tieman earned the Event Industry Council’s designation of Certified Meeting Professional (CMP) as of 2010, a Certificate in Meetings Management (CMM) from the Darden School of Business at the University of Virginia in 2017 and is a member of Meeting Professionals International (MPI). Additionally, she earned a Certificate in Culinary Arts along with a Food Safety and Sanitation Certificate from Truckee Meadows Community College in Reno, Nevada in 2009.

In previous years, Julie was an English teacher abroad, with an internship in Tokyo, Japan. Traveling and meeting new people while soaking up new experiences has been a joyful part of Ms. Tieman’s work and personal life. Taking after her infamous trekking great-grandmother, "Grandma Gatewood", she also loves the outdoors and hikes whenever possible.

Julie can be reached by e-mail at Julie.Tieman@nau.edu.

Tribal Air Monitoring Support (TAMS) Center

2019 Spring TAMS Steering Committee Meeting

The 2019 Spring Tribal Air Monitoring Support (TAMS) Center Steering Committee (SC) meeting occurred at the TAMS Virgil Masayesva Environmental Learning Center on March 5-7. Darold Wallick, Pala Band of Mission Indians, was selected to an open position on the TAMS SC. Congratulations to Darold and our thanks to everyone that applied and showed interest in joining the TAMS Steering Committee.

Gillian Gawne-Mittelstaedt, Director of the Tribal Healthy Homes Network, was selected for the 2019 Virgil Masayesva Award. Gillian initially began with the Tulalip Tribe in the 1990’s providing IAQ assistance and has continued to provide exceptional work in the IAQ field for tribes in the Pacific Northwest and beyond. The Award will be presented to Gillian at the Virgil Masayesva Tribal Air Programs Excellence Award Ceremony at the NTFAQ this May 6-9. The TAMS Center Steering Committee and staff wish to congratulate Gillian on her great work!

Other Updates from the spring TAMS SC Meeting

*The 2017 TAMS Needs Assessment Results and Implementation Report was finalized and will be shared with tribes broadly.
A Regional Tribal Air Monitor Equipment Inventory has been updated annually for the past two years and the current TAMS SC has decided to continue this effort and will work with tribes and EPA regional Tribal Air Coordinators to ensure accuracy and completeness.

The TAMS SC provided approval and support for the development of the Quality Review and Exchange System for Tribes (QREST) cloud data management and database project. Melinda Ronca-Battista, TAMS Research Associate/Health Physicist, will be providing a presentation of this air quality data management tool at the NTF this year.

Equipment Loan Program – Support to Navajo Nation IAQ Study: Heating Stove Replacement Effect on Indoor and Outdoor Pollutants and Respiratory Health Study in Shiprock, NM, Navajo Nation

The TAMS Center Equipment Loan Program has provided Navajo Nation with indoor air quality monitors (DustTraks and Q-Traks) to monitor indoor air quality within tribal homes. In addition, the TAMS Center has provided technical assistance with the deployment of these indoor air monitors. Air quality monitoring will provide critical data to verify if the new stoves result in improved indoor and outdoor air quality. If improvements are not detected, monitoring will prompt additional instructions on proper stove usage and trouble shooting.

Equipment Loan Program

Naomi Chang (CU Graduate Research Student), Christopher Yazzie (NNEPA Environmental Technician), Dr. Lupita Montoya (CU Principle Investigator) setting up DustTraks and Q-Traks.

Michael King (TAMS Center Technology Specialist III), working with indoor air monitors to initiate a 72-hour sampling event, within the home of a stove change-out recipient in Shiprock, NM to measure PM2.5, CO, CO2, temperature, and relative humidity.

Additional information on the TAMS SC and the TAMS Center can be found at http://www7.nau.edu/itep/main/tams/ or by calling the TAMS Center at (702) 784-8264.

Environmental Education Outreach Program (EEOP)

Summer Student Internships

With growing concern for the health of our landscapes and integrity of our cultural resources, we look to our Native youth as the present and future protectors of the vast ecosystems that span Indian Country. The passing down of knowledge to numerous generations and engaging Native youth of varying ages within the environmental sciences can ensure that our future land managers reflect the same cultural values that are keystone to our tribal communities. Native youth are an invaluable resource to tribal commitment to environmental health. Professional development opportunities, such as internship programs, are valuable to the growth of our future leaders. ITEP offers such opportunities to youth, through the Environmental Education Outreach Program (EEOP) summer internship program. For more information about the EEOP internship program please contact mansel.nelson@nau.edu.

The EEOP Internship program has supported more than 250 internships over the past 25 years. One participant, Natalia Shaw, has completed three internships and is currently a lead instructor with the Environmental Education and Outreach Program.
I would like to introduce myself, Boozhoo, Natalia Shaw nidizhinikaaz. Hello, my name is Natalia and I am an Anishinaabe and Chicana graduate student in the masters of Science program in Environmental Science & Policy at Northern Arizona University. I graduated from the University of Redlands in Southern California in 2017. In addition to being a student, I am also a current Lead Instructor for EEOP and an alumni of the EEOP Internship Program.

As an undergraduate student I had the opportunity to apply for a summer internship through EEOP. That summer my host site was the Santa Ynez Chumash Environmental Office in Santa Ynez, California, where I interned for 8 weeks. During my internship I was introduced to writing quality assurance documents for the EPA, zero waste programs, water quality monitoring, and working with community members on environmental education. This internship provided me the opportunity to work alongside staff with varying job roles, which opened my eyes to the variety of job opportunities within tribal environmental offices in addition to the need for qualified native professionals to fill these roles. The following summers I re-applied for the EEOP internships and had the opportunity to work for the Port Gamble S’Klallam tribe’s Natural Resources Department in Kingston, Washington and for the Central Arizona Project in Phoenix, Arizona. Throughout my internship experience I focused on a variety of topics, from air quality education to tribal water rights. This diversity of topics allowed me to develop a number of skills that could be transferred to any career, but especially within the sciences, skills that I continue to practice as a graduate student. This holds true for my thesis work, in which I must communicate my research with varying audiences. This was a skill I learned during my internships when I worked with S’Klallam elders to communicate healthy indoor air quality practices, when I worked with Chumash youth on activities based on water quality, and when collaborating with policy analysts at the Central Arizona Project to develop a report on tribal water rights.

Beyond the skills I gained through my internship experience, I especially appreciated the relationships I developed while working alongside very knowledgeable people. Those who I had the chance to work with expressed excitement to learn from me, as much as I was excited to learn and work with them. This taught me the importance of continued growth and knowledge sharing.

Internship opportunities, whether for a host site that invites an intern, or for youth interested in environmental careers working alongside tribal nations, can provide great opportunities for growth for current and future tribal leaders. Internships can also provide great opportunities for introducing fresh perspectives and energy on both sides, intern and host. As a past intern and continuing student, I was able to take a lot away from my internships, including some of the challenges that continue to face Indian Country. In learning important skill sets and being presented with challenges, others who have had the chance to serve as interns and future interns may contribute to the work that is being done to overcome such challenges and enhance the self-determination of our tribal nations.”

More information about the ITEP-EEOP Summer Internship program can be found at nau.edu/itepinterns.
From the Executive Director...

Greetings from a cold and snowy Flagstaff. I hope you all are doing well wherever our newsletter finds you. In February, we broke the all-time daily snowfall record with 35.9 inches in one day! Our yearly average is about 102 inches, so for the arid southwest, it’s a blessing. In other parts of the country late winter snows and rain are causing devastating impacts. Many parts of the Midwest including several tribal communities are inundated with flooding that has washed away homes, bridges, roads and severely impacted the agricultural community in the region. We’ve been in touch with some of the tribes that are being impacted by the floods in the Midwest. We are praying for their safety and for the waters to quickly recede. Here’s a recent article profiling how flooding has impacted tribes in Nebraska and how they are working together and with local and national officials to seek assistance.

In January, several of us from ITEP were invited to attend the R9 RTOC meeting hosted by the Yavapai Apache Nation. Project staff and representatives from the National Tribal Air Association (NTAA), National Tribal Water Council (NTWC), Tribal Waste and Response (TWAR) and National Environmental Information and Exchange Network (NEIEN) provided updates, sought feedback, and answered questions from the RTOC. We want to thank the RTOC for inviting ITEP to attend their meeting and for the Yavapai Apache Nation for allowing us to be on their lands. ITEP welcomes invitations from other RTOCs if you feel it would add to your discussions.

In my last editorial, we welcomed a couple of new staff to our growing team. I would like to welcome a few additional new team members to ITEP. We are excited to have Christal Black join Dr. Pat Ellsworth as AIAQTP’s Program Coordinator Sr. The Waste and Response team hired Lisa Vandever as their new Program Coordinator to replace Riley Smith. And last but not least, we created a new position, Event Coordinator Sr., to help us with all the major forums, conferences and events that we host. We welcome Julie Tieman to that position. As you can imagine, it’s a full house here at ITEP and we are blessed to have an incredible team to support you and all your efforts out in Indian country.

As many of you know, the National Tribal Forum on Air Quality (#NTFAQ2019) is right around the corner! We are celebrating 25 years of this amazing Forum. We are working hard with the planning team to bring you yet another informative and inspiring week of speakers, trainings and activities. Southern California will be a welcomed relief from the snow and cold weather, so come and join us at #NTFAQ2019, where I’m pretty sure it will be in sunny and warm! We are honored to be hosted by the Pechanga Band of Luiseno Mission Indians. Please check out the new video we recently developed highlighting what you can see and expect at the #NTFAQ2019. And please register at our conference webpage. We hope to see you there!

As I close, I have another young person I’d like to highlight. I met Xiuhtezcatl (Shu-tez-cot) Martinez at COP21 in Paris in 2015 when he was 15 years old. We had this complex discussion on environmental/human rights and then when we were done talking, he said, “cool” and took off running with his friends. I smiled, and had to remember, he’s still so young. There’s a lot of information on him on the net, but I like this video. When I get tired and overwhelmed, I often look for inspiration, I often find it in our youth. I happily share my inspiration with you. Happy Spring and hope to see you at #NTFAQ2019.
Upcoming Events

>> Tribal EN Conference, POSTPONED, new dates TBD: http://www.tribalexchangenetwork.org/
>> Regional Haze for Tribes: Science, Policy, and Solutions Webinar, Register Here
>> National Tribal Forum on Air Quality, Temecula, CA, May 6-9: www.nau.edu/ntfaq