



Environmental Protection Department

Our Mission is to protect, monitor, restore, and regulate Morongo's natural resources, honoring and protecting all life, land, and traditions and enhancing tribal sovereignty. We will promote environmental awareness and environmentally considerate actions by exemplifying environmental stewards, fostering collaborative relationships, expanding education and outreach activities, and continuing to enrich and develop our programs.

INSIDE THIS ISSUE

What's New in the Tribal Air Program? Continued...	2
Morongo Priority Climate Action Plan	3
Importance of Stormwater and Riparian Areas	4
Particulate Matter Matters	5
How to Recycle... Paper & Cardboard	6
Upcoming Events	7-8

What's New in the Tribal Air Program?

Written by: Pamela Atcitty, Environmental Specialist II

In 2023 Morongo's Tribal Air Program accomplished a variety of projects that will help the Tribe understand the state of their air quality. With the assistance of state and federal government funding, Morongo was able to conduct a particulate matter and heavy metal study, as well as take inventory of polluting emission sources on the Reservation. These two projects are going to assist in understanding what types of pollutants are in the air that we breath, where they come from, and hopefully find ways to help reduce these pollutants and their sources.

Particulate Matter and Heavy Metals Study

With state funding from California Environmental Protection Agency's Environmental Justice Small Grant Program, Morongo partnered with Blue Tomorrow, an environmental consulting firm, to investigate particulate matter (PM) pollution on the Morongo Reservation. The goal was to analyze the air quality during the summer and fall months, when PM concentrations are at their highest levels, and determine the impact of local polluting sources. Morongo's Air Program was also interested in understanding if PM that is transported onto the Morongo Reservation still contains these toxic metals, which could potentially threaten the health of their community. This project utilized an EPA registered high-volume air sampler to collect PM samples at the Morongo's Air Monitoring Station. The samples were then analyzed by a laboratory for heavy metal concentrations and the results were compared to Morongo's PM data records and EPA's screening levels to determine the community health risks from pollutant exposure.

Key Findings - PM and Heavy Metals Study

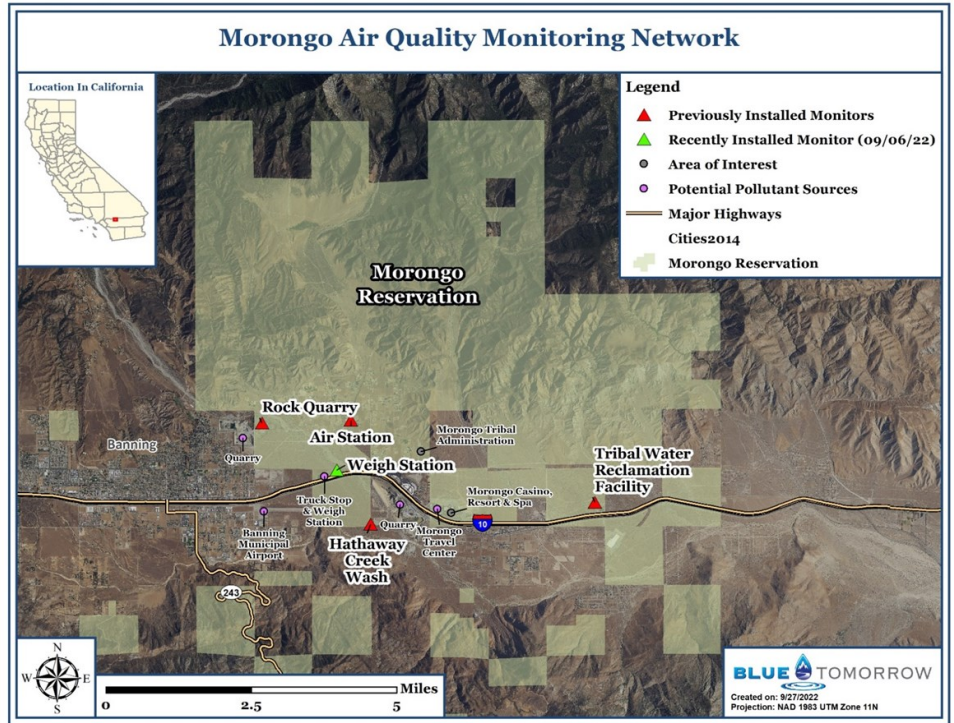
- 28 air samples were taken and compared to EPA Regional Screening Levels (RSL).
- 11 of 25 metal compounds detected are recognized by EPA as hazardous air pollutants (HAPs) which pose the most significant potential health risks in urban areas.
- Arsenic was the only metal detected at levels which came close to exceeding its RSL of .00065 ug/m3 on two different sampling days.
- Magnesium was the second highest metal to almost exceed its RSL of 0.052.
- Arsenic was detected in 23 of the 28 air samples collected.



What's New in the Tribal Air Program? Cont.

Written by: Pamela Atcitty, Environmental Specialist II

- Aluminum, calcium, iron, magnesium, and potassium were detected in all 28 of the air samples taken (none of these metals have an RSL) and are common metals in the ambient air environment.
- Winds during the sampling period blew predominantly from the west, suggesting facilities like the rock quarries or the I-10 freeway may have the heaviest impact on Morongo's air quality.
- Wind speed did not impact increased PM levels.
- Further funding and testing have been slated to continue to test for and understand the transport of arsenic and other toxic metals that originate from the rock quarry, I-10 freeway, and/or major urban areas to the west.



Inventory of Morongo's 2022 Emissions

The second project was funded by the U.S. Environmental Protection Agency (USEPA) in preparation for the Climate Pollution Reduction Grant application. This grant required a full inventory of the Tribe's emissions in hopes to develop and implement plans to reduce greenhouse gas emissions and harmful air pollution on the Morongo Reservation. Morongo Tribal Air Program partnered with the Tribe's various governmental departments to research and document the emissions data factors and the same environmental consulting firm, Blue Tomorrow, to develop this emissions inventory report.

Morongo's 2022 Emissions Inventory Findings

- The largest source of greenhouse gas (GHG) emissions came from the Morongo Casino Resort and Spa (MCRS).
- MCRS's had a total emission of 19,585 metric tons of carbon dioxide equivalent (MTCO₂e).
- 41.8% of Morongo Reservation's emission comes from the MCRS.
- Stationary point sources (coming from a building, structure, facility or installation) on the reservation attribute to 44.8% of Morongo's GHGs emissions.
- On-road sources, such as cars, vans, trucks, buses, and motorcycles, are responsible for 29.1% of Morongo's GHG emissions.
- 11.5% of Morongo's GHG emissions came from electricity consumption.
- 9.6% of Morong's GHG emissions came from non-point source emissions, those from many diffuse sources such as land runoff, precipitation, drainage, or seepage.
- Solid waste generation attributes to 3.5% of the Reservation's GHGs.



What's New in the Tribal Air Program? Cont.

Written by: Pamela Atcity, Environmental Specialist II

- Off-road mobile sources or engines found in off road applications such as construction, industrial, and farm are responsible for only .1% of Morongo's GHGs.

As the Tribe continues to analyze and comprehend the intricate factors that contribute to poor air quality with these two projects, it not only equips itself with the knowledge needed to safeguard the well-being of its community, but also lays the groundwork for future strategies to mitigate and reduce pollution through research, strategic planning, and positive partnerships.



Morongo Priority Climate Action Plan

Written by: Kimberly Miller, Environmental Director

The Tribe applied for and received funding under the Environmental Protection Agency's Climate Pollution Reduction Grant (CPRG) program to develop plans for reducing greenhouse gas emissions and other harmful air pollutants under the control or influence of the Tribe. The Tribe utilized Phase 1 funding to develop a Priority Climate Action Plan (PCAP) and to prioritize near term actions for implementation grants available in Phase 2. Funding will then be used to develop a more detailed Comprehensive Climate Action Plan (CCAP) detailing long-term plans for climate pollution reduction. After compiling a greenhouse gas emissions inventory and meeting with an internal Tribal Advisory Committee the PCAP was completed. The plan contains a summary of greenhouse gas sources and quantities on the reservation, priority greenhouse gas reduction measures, a co-pollutant inventory, and a benefits analysis. Reducing greenhouse gases can help reduce the rate of climate change. Also many of the activities which reduce greenhouse gases also help reduce other air pollutants, which can lead to cleaner air and protect public health.

The priority reduction measures included projects that would reduce greenhouse gases, are under the Tribe's authority to implement, and are relatively ready to proceed. Two projects for the transportation sector, one for electricity, and one for materials and waste were selected as priority reduction measures. These measures are tribal fleet electrification, electric vehicle charging station installation, solar powered water pumping at reservoirs, and a community compost program. Fleet electrification and charging station installation reduce the amount of gas powered vehicles on the road and encourage the use of electric vehicles. Electric and hybrid vehicles typically produce lower tailpipe emissions than conventional vehicles and zero emissions when running only on electricity. Solar powered pumps can replace traditional generators and use no fuel other than renewable sunlight. Composting helps to reduce the greenhouse gas emissions at landfills by diverting waste and turning it into a useful product for plants. These measures would reduce greenhouse gases as well as criteria air pollutants and hazardous air pollutants. It is estimated that implementing all four priority measures would result in a reduction of over 3,200 million metric tons of carbon dioxide equivalent. This is equivalent to about 8% of the greenhouse gas emissions estimated for the Reservation for the base year 2022. If you would like to review the PCAP or stay up to date on future climate planning activities, contact the Environmental Protection Department or follow along with our website, newsletters, and social media.

Importance of Stormwater and Riparian Areas

Written by: Micah Knox, Environmental Specialist II

In the intricate network that is our natural ecosystems, few connections are as crucial and dynamic as those between stormwater and riparian areas. These landscapes, where land and water meet, serve as ecological lifelines, supporting diverse habitats and providing numerous benefits to both humans and wildlife. Understanding the significance of stormwater in riparian areas is not only essential for environmental conservation, but also for ensuring the resilience of our communities against the impacts of climate change.

Riparian areas are the transitional zones between terrestrial and aquatic ecosystems. This includes riverbanks, wetlands, and floodplains. These areas are characterized by their unique hydrological, ecological, and geomorphological features, which make them incredibly productive and biodiverse habitats.

Stormwater, typically generated by rainfall or snowmelt, plays a pivotal role in shaping riparian areas. It serves as a natural source of freshwater, nourishing vegetation and maintaining hydrological balance. Stormwater runoff transports essential nutrients, sediment, and organic matter downstream, helping the growth of riparian vegetation and providing habitat and food for organisms in our watershed. Additionally, stormwater helps recharge groundwater aquifers, which are critical for sustaining water availability during dry periods.

Riparian areas are biodiversity hotspots, supporting a wide array of plant and animal species. The diverse habitats provided by riparian vegetation offer food, shelter, and breeding grounds for numerous species, from amphibians and birds to mammals and insects. Many species depend on riparian corridors for migration, dispersal, and nesting, making these areas crucial for maintaining healthy populations and promoting genetic diversity. Without riparian areas on the Morongo Reservation, the biodiversity would be more monocultural, with only a few generalist species occupying the area.

Given their ecological importance, it is imperative to conserve and restore riparian areas. Sustainable land management practices, such as riparian buffers, vegetative restoration, and erosion control measures, can help safeguard these critical habitats. Community involvement and stewardship initiatives are also essential for raising awareness and promoting responsible stewardship of riparian ecosystems.

In conclusion, the intricate relationship between stormwater and riparian areas really show the interconnectedness of natural systems and just how delicate they can be. By recognizing the importance of these ecosystems and taking proactive measures to protect and restore them, we can ensure the continued health and resilience of our environment for generations to come.

References: United States Geological Survey— “Riparian Area Research” <https://www.usgs.gov/centers/northern-prairie-wildlife-research-center/science/science-topics/riparian-areas-and>; US EPA— “Stormwater BMP: Riparian/Forested Buffer” <https://www.epa.gov/system/files/documents/2021-11/bmp-riparian-forested-buffer.pdf>”



Example of a riparian area rich in biodiversity



Example of riparian buffer degradation

Particulate Matter Matters

Written by: Lina Luu, Environmental Specialist I

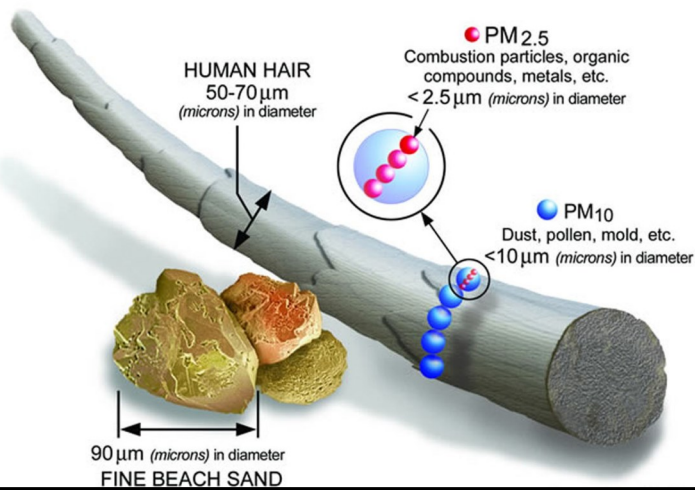


Figure 1. Size comparisons for PM particles

Particulate matter, or PM, are “particles that come in many sizes and shapes and can be made up of hundreds of different chemicals” (EPA). At Morongo, we are continuously monitoring for PM2.5 and PM10. Exposure to PM can lead to a variety of health problems (refer to Figure 2). PM2.5 is a pollutant that is 2.5 microns in size and has been known to have harmful effects on human health. Particles that are less than 10 micrometers in diameter can get deep into your lungs, and some may even get into your bloodstream. Since PM2.5 is much smaller compared to PM10, these pose a greater health risk.

When looking at the specific types of air pollution, the source of emissions must be taken into consideration so those emitters can be controlled more efficiently as to not increase or continue pollution. Particulate matter can be emitted from a source, such as unpaved roads or fires, and they can be the result of chemical reactions that take place. A study conducted from 2006 to 2020 found that although the annual average concentration of PM2.5 reduced, the chemical composition of PM2.5 had changed. This finding led the researchers to suggest a different method of air pollution mitigation. Strategies that are targeted toward the specific region may be more effective in reducing air pollution. Since there are regional differences in air quality, a targeted approach will ideally be able to improve the air quality in that area and that in turn would lead to a decrease in air-pollution related health problems.

If you live on or around the Morongo Reservation, you can go to www.morongoir.com and click on the “Air Quality Index” tab to see if the conditions outside are favorable for outdoor activities. If you are located at a different area, or curious about other locations, you can go on www.airnow.gov, input a ZIP code, city, or state, and find out what the air quality is!

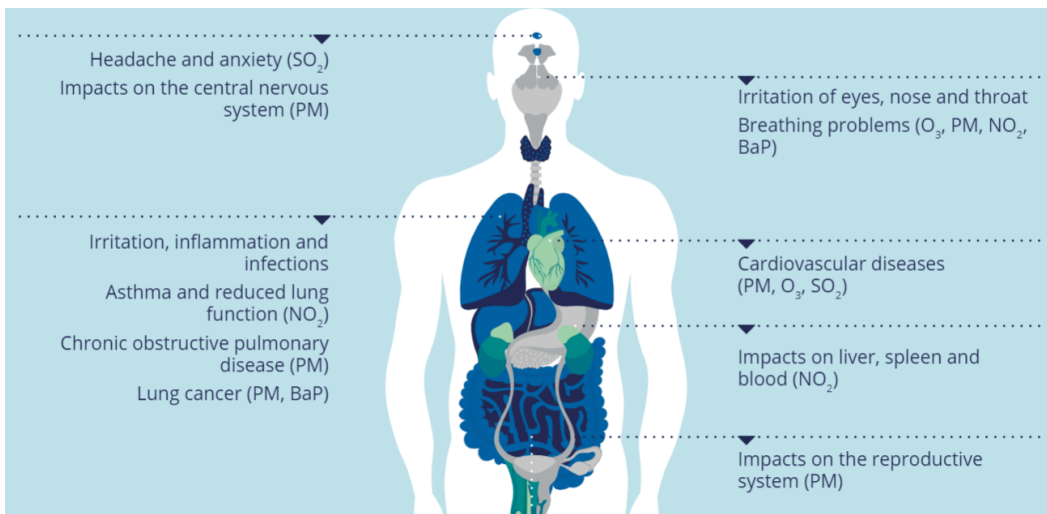


Figure 2. Health related issues associated with exposure to PM

References: ScienceDaily—New study finds chemical composition of US air pollution changed over time <https://www.sciencedaily.com/releases/2024/02/240216135901.htm>; EPA—Particulate Matter (PM) Pollution <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>



How to Recycle... Paper & Cardboard

Written by: Jessica Southard, Environmental Specialist I

Recycling isn't always simple. Paper and cardboard seems like easy items to recycle, but there are a few rules to follow to ensure the items placed in the recycle bin are correct. Here are the do's and don'ts of putting your paper and cardboard items in your curbside recycle bin.

• RECYCLE –

- **Paper:** Office paper, newspaper, magazines, junk mail, kraft paper packaging, cardstock, paper bags, gift wrap, file folders
- **Chipboard:** Tissue boxes, toilet paper/paper towel tubes, food boxes, paper milk cartons
- **Cardboard:** Boxes, egg cartons, drink carry trays



• DO NOT RECYCLE –

- **Food/Grease-stained items:** The food makes the paper non-recyclable and can contaminate other recyclables (ie: pizza boxes, un-rinsed milk carton, etc.)
- **Laminated or Glossy items**
- **Napkins, Paper towels, Tissue, or Paper plates**
- **Mixed material:** Items that are made of more than one type of material (ie: a paper envelope with a plastic window, a paper cup with waxy/plastic lining, a frozen food box with waxy lining, a notebook with a metal spiral, etc.)
- **Shredded paper:** Loose shredded paper becomes litter, and cannot be put in the curbside recycle bin either loose or bagged
- **Styrofoam or Plastic packaging:** Remove any styrofoam, plastic air packs, bubble wrap, or plastic film wrap from the cardboard box
- **Small items**– Dispose of pieces that are smaller than your hand



If you still have questions about paper and cardboard recycling, contact the Environmental Protection Department at 951-755-5128.



Upcoming Events / Internship Opportunities

Morongo Environmental Education

The Morongo Environmental Protection Department collaborates with the Morongo School every year to conduct environmental education and outreach to Pre-School through 8th Grade students. The goal of this partnership is to foster a desire to learn about tribal natural resources and the role the department plays in helping to fight pollution and resource depletion on the Reservation. Our department manages programs that are designed to protect and conserve air, land, and surface water within Reservation boundaries by utilizing federal grants to help the tribe to achieve department goals while developing and expanding current programs. In March 2024, our specialists spent three weeks with Morongo School students, exposing them to topics relating to our air, water, and pollution prevention programs. Our annual Earth Day Event, scheduled for April 19, 2024, marks the end of the year's educational outreach with the schools and students will be able to celebrate what they've learned, and showcase their environmental projects at a free community event.



Save the Date!

**FRIDAY APRIL 19TH,
2024
10AM-2PM**

at Morongo Administration
12700 Pumarra Rd. Banning

*Open to Morongo Community and employees

For additional information, contact EPD at earthday@morongo-nsn.gov or 951-755-5127



Morongo Environmental Protection Department High School Summer Internship Program

An opportunity for high school Native American students to explore professional work experience in the environmental field. Students can receive school credit or volunteer hours upon successful completion!


When: 5 Weeks: June 11 - July 18, 2024
1 week off July 1-5

Details: Open to current 8th -11th grade students.

Internship days: Tuesday-Thursday, 9:00am-4:00pm with 1 hour lunch from 12:00pm-1:00pm.

Applications available at morongonation.org/employment/ soon!

Upcoming Events



ELDERS Household Hazardous Wastes Pick-Up

Friday, April 12, 2024
Elders can call 951-755-5128 to schedule

Staff will collect, sort, and store materials.
Open to Morongo Elder Residents Only

- Cleaning Products
- Paints
- Pesticides
- Oil & Antifreeze
- Sharps & Medication
- Batteries
- Electronics
- Bulbs



Morongo Reuse Center

Friday May 17, 2024
9am to 12pm
Behind Public Works

Donate usable household items or take what you need for FREE.
Open to Morongo Residents & Tribal Members Only

- Cleaning Products
- Paints
- Electronics
- Lawn Care
- Vehicle Care
- Pool Care



This and previous newsletters are available at <https://morongonation.org/environmental/>. If you would like to join our email list or would like a hard copy mailed to you, let us know at epd@morongo-nsn.gov or 951-755-5127.



MORONGO Environmental
BAND OF Protection Dept.
MISSION 12700 Pumarra Road
INDIANS Banning, CA 92220



A SOVEREIGN NATION

