Morongo Band of Mission Indians
Environmental Protection Department

QUARTERLY NEWSLETTER

APRIL 2026—VOLUME 21, ISSUE 2

Native American High School Internship Opportunity – Summer 2026

The Morongo Environmental Protection Department's Native American Internship Program, established in 2007, provides Native American students the opportunity to explore professional work experience in the environmental field. Since its beginning, more than 30 Morongo Tribal Members or Descendants have participated in the program. The internship is open to **current 8th–11th grade students**, with preference given to Morongo Tribal Members or Descendants. Students should have an interest in natural resources and environmental science and be able to work both indoors and outdoors.

The Summer 2026 Internship is an **unpaid opportunity that runs for 5 weeks,** from June 9 to July 16 (**no program the week of June 29**). Students will work **Tuesday through Thursday from 9:00 AM to 4:00 PM**, with a **one-hour lunch**, for approximately 18 hours per week (90 hours total). Interns work alongside Environmental Specialists in both office and field settings, learning about the Environmental Protection Department's programs. Activities may include water and air sampling, data management, outdoor cleanups, waste audits, invasive species removal, community outreach events, and assisting with department projects and trainings.

During the internship, each student will complete an **individual environmental project**, conduct research, prepare a written report, and present their findings to the Morongo Community on the final day. Upon successful completion, students will receive a **certificate documenting volunteer hours** and may be eligible for high school credit with approval from their school counselor (**students must coordinate credit approval with their school)**.

Applications can be submitted online at https://morongonation.org/content/employment or in person at the Morongo Human Resources Office, 12700 Pumarra Road, Banning, CA 92220. **Applications are due May 15, 2026**. More information on our website, https://morongonation.org/native-american-intern.

INSIDE THIS ISSUE

Our mission is to protect and preserve Morongo's natural resources, traditions, and tribal sovereignty. We promote self-governance, 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.

How To Stay Safe During Rattlesnake Season

Written by: Zane Tatro, Environmental Specialist I

As warmer weather arrives on the Morongo Reservation, rattlesnake season begins, bringing an increase in snake activity across our desert landscapes. Rattlesnakes are a natural and important part of the local ecosystem, playing a key role in controlling rodent populations. The red diamondback rattlesnake is one of the most common rattlesnake species found on the reservation. Other snakes frequently seen in the area include the gopher snake and the California king snake, which are nonvenomous and often mistaken for rattlesnakes. However, their presence still means community members, workers, and visitors should take extra care when spending time outdoors. Staying aware and practicing simple safety habits can greatly reduce the chance of an encounter and help ensure everyone remains safe throughout the season.

During rattlesnake season, snakes become more active as they move between shelter, food sources, and areas for basking. On the Reservation, they may be found in rocky washes, desert scrub, tall grass, under brush, or around woodpiles and debris near homes or work areas. They do not seek out people, and the vast majority of bites occur when a snake is startled or accidentally stepped on. For this reason, being alert to your surroundings is one of the most important forms of protection. When walking through natural areas, watch the ground carefully and avoid stepping over rocks, logs, or thick vegetation without checking the other side. At dawn, dusk, and nighttime—common times for snake movement—a flashlight can help you spot a snake before you get too close. Keeping pets safe is also important during rattlesnake season, as dogs tend to explore brushy areas and may approach a snake without recognizing the danger. Keeping pets leashed and preventing them from running through tall grass or rocky areas can significantly reduce risks. Around homes, offices, and work sites, clearing away debris, trimming vegetation, and removing materials that provide hiding spots helps reduce the chances of snakes settling near frequently used spaces. Always check carefully before lifting boards, rocks, tarps, or equipment stored outdoors.

If you encounter a rattlesnake, the best response is simple: remain calm, back away slowly, and give the snake plenty of space. Rattlesnakes do not chase people, and most will move away once they feel safe. Attempting to kill or capture a rattlesnake greatly increases the likelihood of being bitten and is not recommended. As protected wildlife, rattlesnakes should be left undisturbed whenever possible. If a snake needs to be removed from a home, worksite, or high-traffic area, Morongo Reservation Patrol can assist with safe removal and can be reached at 951-634-4810.

Despite precautions, rattlesnake bites can happen, and it is important to know what to do. If someone is bitten, call 911 immediately and keep the affected limb as still as possible. Remove jewelry or tight clothing near the bite in case of swelling. Staying calm can help slow the spread of venom throughout the body. Do not attempt outdated first aid practices such as cutting the bite, applying a tourniquet, using ice, or trying to suck out the venom. These actions do not help and may cause additional harm. Timely medical attention is the most effective and safest treatment.

From Waste to Resource: The Benefits of Backyard Composting

Written by: Isabel Hughes, Environmental Specialist I

Backyard composting is a simple and effective way to reduce household waste while improving soil health. Composting is the natural process of recycling organic materials such as fruit and vegetable scraps, yard trimmings, coffee grounds, and paper products into a nutrient rich soil amendment. When organic waste is sent to landfills, it breaks down without oxygen and produces methane, a potent greenhouse gas. By composting at home, you can divert waste from landfills and turn it into a valuable resource for your yard and garden. Compost improves soil structure, enhances moisture retention while still allowing proper drainage, restores essential nutrients, and introduces beneficial microorganisms that strengthen plant roots and improve resilience against disease.

Getting started with backyard composting is easy and affordable. Choose a bin that fits your space and budget, whether it's a store-bought composter, wooden crate, or sturdy plastic container. For best results, aim for a compost container that is about 3ft x 3ft x 3ft, and make sure it allows airflow by adding small holes to the sides and bottom. Place the bin in a shaded, well-drained area. Successful composting depends on balancing nitrogen-rich "greens," such as fruit and vegetable scraps, coffee grounds, and fresh grass clippings, with carbon-rich "browns," including dried leaves, shredded paper, cardboard, and small twigs. A good rule of thumb is a 2:1 ratio of browns to greens. Keep the pile as damp as a wrung-out sponge and turn it every few weeks to provide oxygen and speed up decomposition. If the pile smells unpleasant, add more browns; if it appears dry, add greens and a small amount of water. Cutting materials into smaller pieces will also help them break down faster.

While many organic materials are compost-friendly, not everything belongs in your pile. Ideal compost items include fruit and vegetable scraps, yard trimmings, coffee grounds, and shredded paper products. Avoid adding meat, dairy, oily or greasy foods, pet waste, treated or painted wood, and weeds that have gone to seed, as these can attract pests, create odors, or contaminate the compost. With the right balance and maintenance, compost will be ready in about two to six months. Finished compost is dark, crumbly, and smells like fresh soil. It can be mixed into garden beds, added to potted plants, or used as mulch to enrich the yard. By adopting backyard composting, households can reduce waste, lower environmental impacts, and contribute to a more sustainable practices.

For more detailed information see our Backyard Composting brochure at https://morongo.sfo2.digitaloceanspaces.com/morongo.com/Backyard-Composting-Brochure.pdf. If you are interested in going a step further, check out our Vermicomposting Guide, P2_Brochure_GuideToVermicompost.pdf.

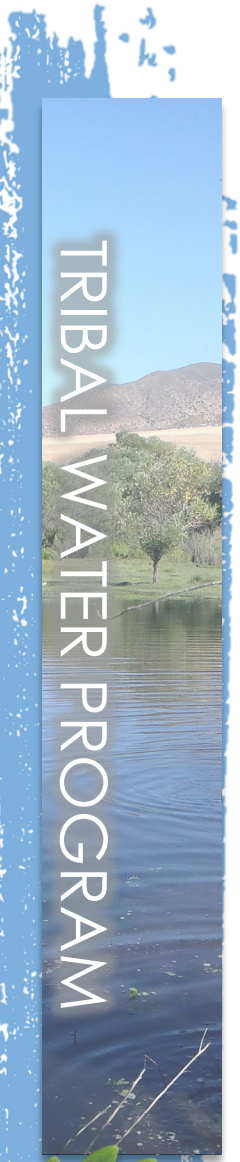
Photo: EPA Composting—https://www.epa.gov/sustainable-management-food/composting#scale

Heavy Metals in Water?

Written by: Oscar Perez, Environmental Specialist II

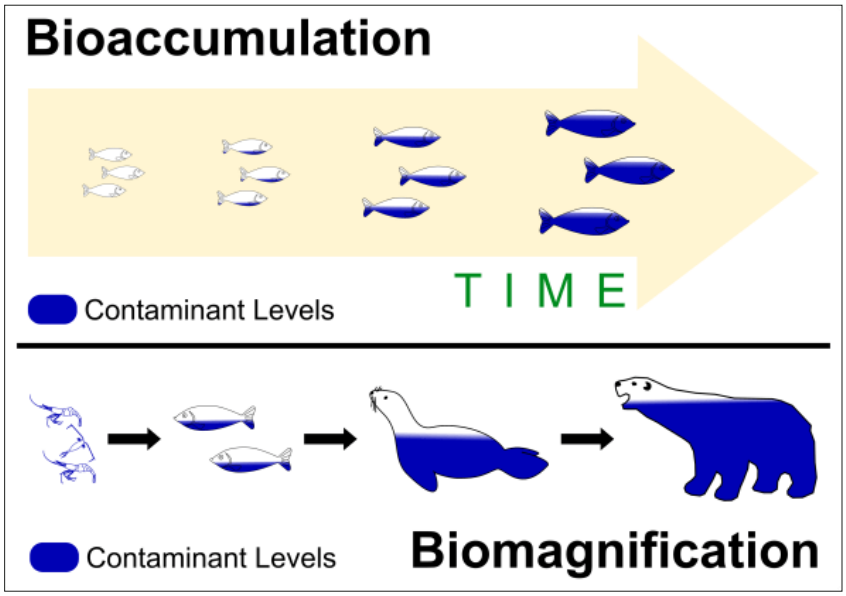
Although the term "heavy metal" is commonly used, its definition can vary. Heavy metals are generally described as elements located in the center columns of the periodic table and are typically classified as transition metals. These elements are known for having relatively high densities, high atomic numbers, and similar chemical properties. Some of the most well known heavy metals include mercury, lead, copper, gold, silver, and chromium.

Chromium may not be as widely recognized as some other heavy metals, but it made major headlines in the 1990s when it was linked to the largest class action lawsuit in United States history involving water pollution in Hinkley, California. Heavy metals can naturally enter waterways through processes such as weathering and erosion. However, when concentrations become excessive, these metals can be toxic to humans and wildlife. Industrial runoff, mining activities, fertilizers and pesticides, and even forest fires can all contribute to elevated heavy metal levels in water. For this reason, monitoring our waterways is essential to prevent contamination events like the one that occurred in Hinkley. Detecting heavy metals in water is challenging, which is why water samples are sent to laboratories where advanced instruments can accurately measure their presence. At Morongo, surface water bodies are tested for several heavy metals, including arsenic, cadmium, chromium, copper, lead, mercury, and selenium.



Heavy metals do not only affect humans. They can also impact wildlife. Once these metals enter the body, they are difficult to eliminate. Organisms that are regularly exposed to heavy metals may experience bioaccumulation, a process in which contaminants build up in the body over time and often increase as the organism ages. Each new exposure adds to the total burden of heavy metals already present in the body. This process has been observed in wildlife populations such as the California condor, where heavy metal exposure has contributed to severe population declines in the past.

A related process called biomagnification occurs when heavy metal concentrations increase along the food chain. Apex predators often have the highest levels because they consume prey that have already accumulated these metals. As contaminants move up the food chain from smaller organisms to larger predators, the concentration of heavy metals becomes greater at each level.



Heavy metals occur naturally, but elevated levels can harm both people and wildlife. Because they persist and accumulate over time, regular monitoring and prevention are essential to protect our water and environment.

References: EPA Factsheet About Water Quality: Metals, https://www.epa.gov/system/files/documents/2022-01/parameter-factsheet_metals_508.pdf

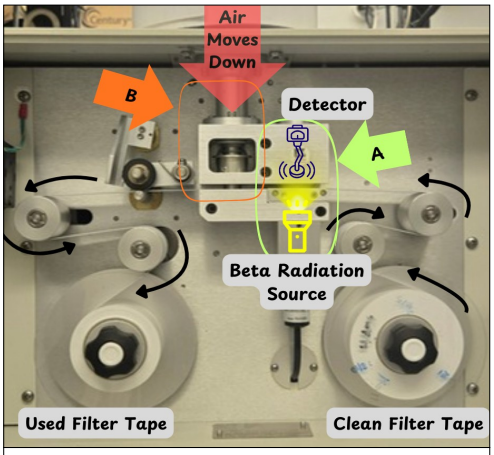
How Do We Measure Particulate Matter?

Written by: Bianca Sandoval, Environmental Specialist I

Particulate matter (PM) refers to tiny particles in the air such as dust, pollen, and smoke. PM is commonly divided into two categories: PM10 and PM2.5. PM10 includes particles 10 micrometers or smaller, while PM2.5 includes particles 2.5 micrometers or smaller. For comparison, a human hair is about 100 micrometers wide, we are talking about very small particles!

So how do we measure the particles in the air that are practically invisible to the naked eye? Our Tribal Air Program uses instruments called Beta Attenuation Monitors (BAMs) to measure particulate matter in the air every hour of the day. Our air monitoring station operates two BAM instruments: the BAM 1020, which measures PM10, and the BAM 1022, which measures PM2.5.

BAM 1022



Inside the BAM 1020

Step One: Inside the monitor is a long roll of filter tape. A clean section of this tape is placed in the measurement area (see "A" referenced in the figure to the left). The instrument shines a small amount of beta radiation through the clean filter and measures how much radiation passes through. This serves as a baseline measurement.

Step Two: The tape moves to the nozzle area (See "B" referenced in the figure to the left). A pump pulls air through the filter at a steady rate. Particles in the air, such as dust and smoke, collect on the filter spot. This sampling process runs for about one hour.

Step Three: The filter tape then moves back to the measurement area (A). The instrument shines beta radiation through the filter again. Because particles are now on the filter, they block some of the radiation. The instrument measures this difference.

Each dot represents one hour of PM collected

Step Four: The used section of filter tape moves out of the measurement area (A) and the monitor advances to a new clean section of tape to begin the next cycle. Think of it like this, imagine shining a flashlight through a window. If the window is clean, most of the light passes through. If the window is dusty, less light reaches the other side. The BAM's work in a similar way. Particles on the filter block some of the radiation, and the instrument measures that change.

The Result: The BAM calculates the amount of particulate matter in the air each hour. Particles collected from the air appear as small spots on the filter tape. Darker spots indicate higher particulate matter levels, such as during wildfire smoke events.

BAM instruments give us a clear picture of air quality by measuring tiny particles that are invisible to the eye. This hourly data helps protect public health and track pollution events around the Morongo Reservation.

References: California Air Resources Board—Inhalable Particulate Matter and Health (PM2.5 and PM10, https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health

Morongo Asserts Sovereignty Over Water Quality

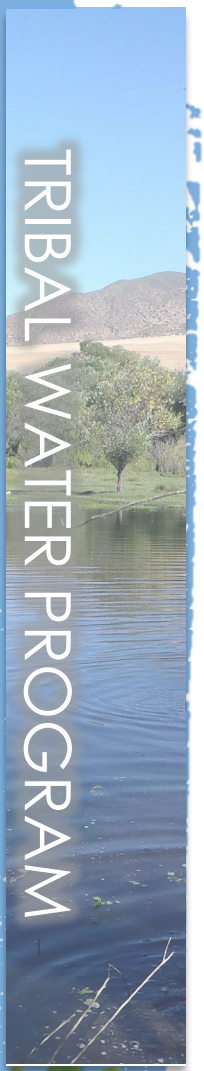
Written by: Jason Brooks, Environmental Director

The U.S. Environmental Protection Agency establishes standards for the quality of surface waters in rivers, lakes, and streams across the country. In 2018, the Morongo Band of Mission Indians applied for Treatment in a Manner Similar to a State (TAS) for surface water quality. After more than six years of review and development, Morongo has become only the 12th Tribe out of 148 in the region to receive full approval of its own surface water quality standards.

What does this mean?

This designation affirms that the Morongo Band of Mission Indians, as a sovereign nation, now has the authority to establish and enforce water quality standards for surface waters within the Reservation. This includes the ability to adopt standards that are more protective than federal requirements if the Tribe chooses. It also allows the Tribe to determine how, when, and where water monitoring is conducted, and to apply for federal funding through the Environmental Protection Agency to support these efforts.

This raises an important question: what is the current condition of Morongo's surface waters, and are they safe for recreational use?



The short answer is that many of these surface waters are currently not safe for recreational use. They should not be used for swimming, and in some cases, the water may not even be suitable for animals to drink. This is an important concern for both public health and environmental protection.

There are two primary sources of contamination affecting these waters. The first is animal waste. Wildlife and livestock often stand in or near water sources, where waste can be directly deposited or carried into waterways through rainfall and runoff. This significantly increases levels of harmful bacteria, sometimes to the point where the water is unsafe for human contact and, in certain areas, even unsafe for animals.

The second, and growing, source of contamination is the presence of heavy metals. These pollutants often originate from improperly discarded waste, including old electronics, chemical containers, and other debris. In some areas, illegal dumping and the use of these sites for target practice have contributed to the accumulation of lead from bullets and shell casings. Over time, these materials break down and leach into nearby surface waters, creating long-term environmental impacts.

As water flows downstream through canyons and drainage areas, it can accumulate increasing levels of contamination from both animal waste and human activity. While Morongo has achieved a major milestone in gaining authority over its water quality standards, these ongoing pollution issues present a serious challenge. Contaminated water not only affects Tribal lands but can also impact neighboring communities downstream.

In the coming months, the Morongo Environmental Protection Department will be working closely with the community and Tribal Council to identify solutions and develop strategies to address these threats. Protecting surface water quality is critical—not only for the health of our environment and wildlife, but also for maintaining the Tribe's authority and responsibility over its natural resources.

Addressing these issues will require community awareness, responsible stewardship, and coordinated action. Ensuring clean and safe water for future generations remains a top priority. For more information on the Morongo Tribal Water Program visit our website, https://morongonation.org/tribal-water/.

Pollinators & Native Plants

Written by: Jessica Southard, Environmental Data Analyst

Pollinators play a vital role in our eco system. Animal pollinators help in flowering plant reproduction and are crucial in the production of most fruits and vegetables. According to US Department of Agriculture, "Pollinators visit flowers in search of food, mates, shelter and nest-building materials. The energy that powers pollinator growth, metamorphosis, flight and reproduction comes from sugars in nectar, and the proteins, fats, vitamins and minerals from pollen grains."

The Morongo Reservation is host to a plethora of pollinators. Bees, birds, butterflies, moths, beetles, and wasps contribute to pollination. Some of the specific species of pollinators at Morongo are listed below.

Carpenter Bees (Xylocopa brasilianorum)—Inhabits warm, sunny, and arid to semi-arid regions, including valleys, foothills, and urban areas in the Southwestern US. They are wood-boring, favoring dead, unpainted, and weathered wood such as trees, fence posts, and rafters for building.

Anna's Hummingbirds (Calypte anna)—Occupy diverse habitats along the Pacific coast, with a significant presence in chaparral, coastal scrub, and oak woodlands. They are highly adaptable, commonly found in suburban gardens, parks, and urban areas.

Queen Butterflies (Danaus gilippus)—Prefers open, sunny areas like fields, meadows, deserts, roadsides, and coastal regions. They prefer warm, sunny spots and roosting in shrubs or trees at night, often near waterways or dunes.

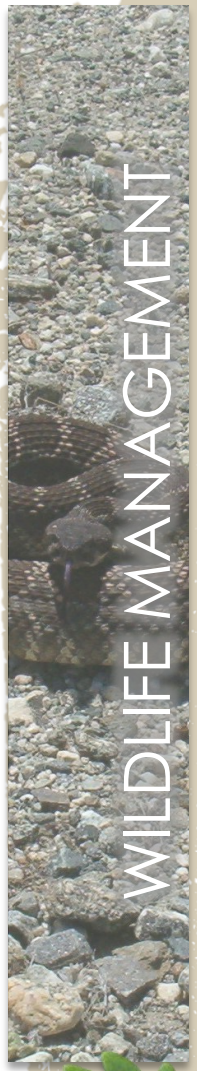
These pollinators are dependent on our native plants for their survival. While there are many plants on the Morongo Reservation that these pollinators utilize for various needs, some of the more important ones are listed below.

Lupine (Lupinus bicolor, L. hirsutissimus, L. sparsiflorus) Cahuilla Name: samat iwyak & tamit meh'a—Annual or perennial herb. Flowers are purple, pink, blue, and/or white (some varieties yellow) and are stacked in small clusters. The stems are short and hairy with thin leaves. Grows throughout California with the exact range dependent upon the species.

White Sage (Salvia apiana) Cahuilla Name: qas'ily, Serrano Name: qaaqwc—The leaves and stems of this shrub are a grey green color. When mature, they are about 3-5 feet in height. It blooms from late summer to early fall for about a month. Distributed widely throughout Cahuilla territory, white sage can be found from low canyon to in high mountain areas.

California Buckwheat (Eriogonum fasciculatum) Cahuilla Name: hulaqal—This medium sized shrub has grey-green leaves and white flowers. Buckwheat grows 3-6 feet tall and 6 feet wide. It is drought tolerant, and it provides nectar to butterflies, moths, and other insects. Buckwheat is native to southern and central California. It is generally found in dry slopes and canyons in a variety of habitats including chaparral, scrub, and deserts.

References: US Department of Agriculture, "Who Are the Pollinators?", https://www.fs.usda.gov/managing-land/wildflowers/pollinators/who-are-the-pollinators; Morongo Band of Mission Indians, Environmental Protection Department "Morongo Native Plant Guide"; https://plants.sc.egov.usda.gov/java/; http://www.calflora.org/; http://calscape.org/



Upcoming Events

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

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