



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.

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Community Air Monitoring Network and VOCs

Written by: Dana Morey, Environmental Director

The Morongo Community Air Monitoring Network has been up and running for about two years now. The network of low-cost sensors provides real-time air pollution data that you can access at MorongoAir.com. The website also takes the real-time data and calculates the Air Quality Index (AQI) value for that particular pollutant. The AQI clearly shows the level of health concern associated with the current air pollution using a color system. Green is used to indicate low concern while orange and red are used to indicate elevated health concerns, particularly for sensitive groups. The Air Quality Index (AQI) has been established for five major pollutants that are regulated under the Clean Air Act to protect public health, of which the Morongo Community Air Monitoring project monitors for three - ozone, particle pollution, and nitrogen dioxide.

The network also monitors for 'Total VOCs' or Total Volatile Organic Compounds. VOCs are emitted as gases from certain solids or liquids including gasoline, paint, cleaning supplies, pesticides, building materials, glues, adhesives, drycleaning, and more. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors and pose a greater health risk indoors. Outdoors, VOCs react with other gases and sunlight to form ozone. There is no standardized measurement for protecting health from VOC air pollution and this is why the air monitoring network does not calculate AQI for VOC data. Generally, a higher reading indicates a higher air concentration of VOCs. Unfortunately, we can't say much more than that at this point.

Usually, the Community Air Monitoring Network does not detect the presence of outdoor VOCs. In July and August 2021 the network did show a spike in VOCs. The August 31, 2021 detection corresponds with a fuel tanker truck spill on the 10-Freeway near Hargrave in Banning. In general, reducing indoor and outdoor exposure to VOCs is important to protect public health. To better understand health risks from exposure to VOCs, we could deploy samplers and send the sample to a lab to determine the type and concentration of the VOCs and then estimate health risks. This could help us understand long term health risks to the community. For now, the sensors are an interesting tool to track and identify potential sources of VOC pollution. If you would like to help inform the program of possible sources of air pollution, you can send us an email or message letting us know of your air quality observations including odors, dust generation, fires, etc.

Morongo Community Air Monitoring Project is part of California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment — particularly in disadvantaged communities.



What to do with Decluttered Items?

Written by: Jessica Southard, Environmental Specialist I

You may be getting ready for our Annual Declutter Event on January 18, 2023. This is a great opportunity for Morongo Residents & Employees to safely and properly dispose of unwanted items. If you can't make it to our event, here are some tips on how to properly dispose of those items.

Document Shredding

- Shredded paper makes great compost material.
- If you shred documents at home, shredded paper cannot be put in the curbside recycle bins. Local recycle options are limited, so if necessary, it can be placed in the trash.
- Be selective— Shred only sensitive information, and never envelopes with plastic windows.

Electronic Waste (e-waste)

- Morongo residents can put e-waste, bulbs, batteries, and printer ink in the e-waste drop-off bin located behind public works, or bring them to our quarterly Household Hazardous Waste Drop-off day (the next date is 01/20/23 behind Public Works).
- Some retailers, such as [Best Buy](#) and [Home Depot](#) will accept some types of e-waste.

Medication

- Morongo residents can bring unwanted medication to our quarterly Household Hazardous Waste Drop-off day (the next date is 01/20/23 behind Public Works). *Excludes Schedule I controlled substances.

- Some pharmacies also offer medication drop-boxes such as [Rite Aid](#).
- The Drug Enforcement Administration (DEA) provides information on local [Controlled Substance Public Disposal Locations](#), as well as proper [Home Disposal Methods](#).

Clothing & Shoes

There are multiple opportunities to donate or recycle clothing and shoes.

- Donate your clothing, linens, and textiles. Visit <https://earth911.com/> to find local organizations that accept textile donations. Some local thrift stores will accept donations, but it is important to call ahead to check if they are currently accepting donations, what types, and what days/times they accept them.
- Some retailers host donation bins/ mail-back programs, and offer shopping discounts when you deposit your clothes. Examples include [Columbia](#), [Patagonia](#), [Levi Strauss & Co](#), [Nike](#), and [The North Face](#). When you're out shopping ask the retailers you patronize if they accept used clothing. Some retailers reward customers with a discount coupon.

If you are not a resident of the Morongo Reservation, here is some information on household hazardous waste & e-waste disposal for the local counties:

- Riverside County residents can use the following information to find the best way to dispose of their unwanted items: <https://www.rcwaste.org/hhw>
- San Bernardino County residents can use the following information to find the best way to dispose of their unwanted items: <https://sbcfire.org/hhw/>

It is important to remember that e-waste and medication can NEVER be disposed of in the trash, and none of the items above can be disposed of in the curbside recycle bins.

References: CalRecycle—How to Manage Textile Waste Responsibly <https://calrecycle.ca.gov/reducewaste/textiles/>

Annual Community Declutter Event

Wednesday
January 18, 2023
9am to 1pm
Community Center
Parking Lot



*Open to Morongo Community & Staff.

Event Services

- Document/ CD Shredding
- Electronic Waste Recycling
- Clothing & Small Household Goods Donations
- Medication Disposal
- General Recycling



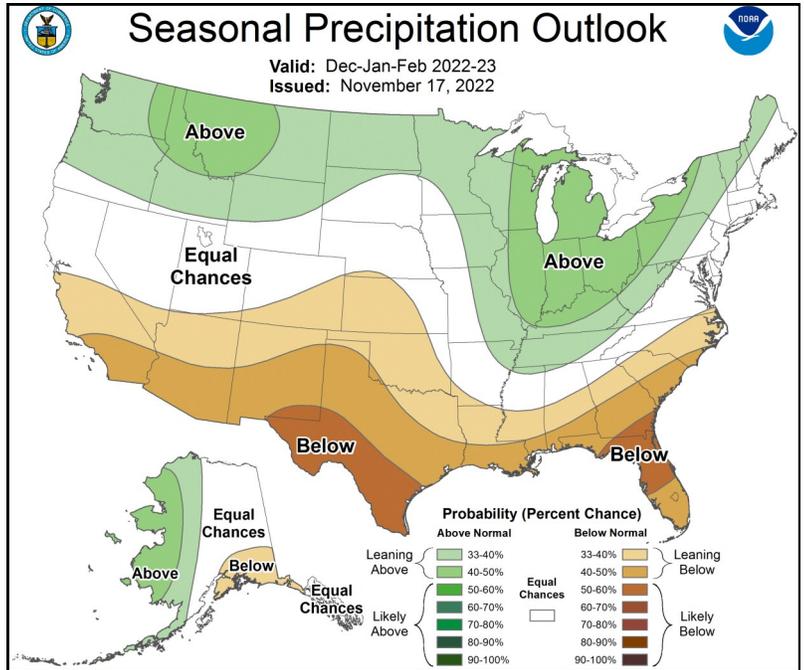
Keep Saving Water in the Winter

Written by: Kimberly Miller, Environmental Specialist II

Winter is when Southern California usually receives most of its rainfall for the year. While it may typically be our rainy season, the National Oceanic and Atmospheric Administration's Climate Prediction Center forecasts below normal precipitation and continuing drought for the next few months. With this in mind, it is important that we make the effort to save water when we can. This can mean adjusting to the occasional storm that comes along even if we do not receive the average amount of rainfall.

Cooler weather provides many opportunities to save waters outdoors. An easy thing to do is to check for leaks in your irrigation system, hoses, and faucets. Wet

spots will be more noticeable since they won't evaporate as quickly. While inspecting your irrigation system, remember to adjust watering for any rain that occurs. Make sure to turn off or set a rain delay for automatic systems when it is raining, or purchase a smart controller that can sense the rain and adjust the system for you. Even without rain, many plants need less water during the winter when temperatures are low. Check to see when the soil dries out a few inches below the surface to know when



you need to water again. Lawns need very little irrigation in the winter. If you have St. Augustine grass, you only need to apply a half inch of water every three weeks if there is no rain. This is also a great time to purchase and install a rain barrel to capture and store water for later use in your yard. If you don't have a downspout, place the screened barrel under an edge of the roof where water tends to run off.

In addition to turning off or reducing supplemental watering, you can place mulch around your plants to help insulate them from cold temperatures and reduce evaporation. Mulching reduces weed growth, keeps in moisture, prevents erosion, and controls soil temperature (helps soil stay cool in summer and warm in winter). Mulching with organic matter also enriches the soil as it breaks down. If you're ready for some large scale changes, pay attention to where the water naturally pools in your yard. This would be a great place to install a rain garden to help reduce runoff, filter pollutants, and provide habitat for bees and butterflies. You can also plan to replace high water use plants with native, drought tolerant plants during planting season (usually in the spring or fall.).



References: National Integrated Drought Information System—Climate Prediction Center Data and Maps <https://www.drought.gov/about/partners/climate-prediction-center>; Save our Water— <https://saveourwater.com/>

Improving Air Quality with Renewable Energy

Written by: Pamela Atcitty, Environmental Specialist II



The sources we use to get our energy plays an important role in air quality. The way we heat, cool and power our homes, as well as how we travel, all require the burning of some type of fossil fuels such as coal, natural gas, gasoline, and diesel. When fossil fuels are burned, they emit dangerous pollutants into the air, such as particulate matter, sulfur dioxide, carbon monoxide, nitrogen oxides, lead, and mercury. These air pollutants contribute to the formation of acid rain, smog, and other harmful environmental conditions. Burning fossil fuels also emit greenhouse gases such as carbon dioxide into the air, which contribute to global warming, thus worsening smog and other conditions. It's clear that fossil fuels are harming our health and wreaking havoc on the environment, fortunately, there are alternative ways to slow down or reduce further damages with renewable energy sources.

What is Renewable Energy?

Renewable energy comes from any resource that is naturally regenerated over a short time such as wind, solar, hydro, or geothermal potential, as opposed to non-renewable fossil-fuel energy, where once they have been used, they cannot naturally replenish themselves. When we develop and use clean, renewable sources of energy, no matter how long or how much energy is produced, the resources will still be as plentiful as when they were first harnessed. The possibilities are endless with renewable energy; whether the goal is to provide heat to a single house or add to the utility grid.

Types of Renewable Energy

Renewable energy sources, which are available in abundance all around us, provided by wind, water, the sun, waste, and heat from the Earth, are replenished naturally and emit little to no greenhouse gases or pollutants into the atmosphere. Here are the most common types of renewable energy sources:

- Wind– the most common renewable form of energy. It extracts from air flow using wind turbines or sails to produce mechanical or electrical power.
- Solar power– cells made from silicon absorb the sun's radiation.
- Hydropower– converting the energy of moving water to electricity. Large and small scale, hydropower technologies can produce energy, water supply, and control flooding.
- Biomass and Biofuels– converted to fuels by fermentation from crops or left-over food products and used as gasoline.
- Geothermal– Geothermal energy is heat from the earth that can be used to heat and cool homes or to run utility-scale power plants.

How can Renewable Energy Improve Air Quality?

Renewable energies are almost pollution free. When developed properly, there is minimal loss of air or water quality as a result of increasing the amount of energy produced, compared to non-renewable fossil fuels. The adoption of renewables would provide a significant and easy-to-notice change by immediately reducing pollutants such as black carbon, a type of particulate matter produced by fossil fuel-burning power plants. This type of pollutant doesn't just directly impact air quality, over time, they contribute to climate change, leading to hotter summers that worsen air quality. Burning fossil fuels also produce nitrogen oxides, some of the main chemical precursors to ozone, another pollutant that has a major negative impact on air quality. In the same way that renewables can help reduce black carbon production, they'll also help cut down on the production of nitrogen oxides, and air ozone levels as a result. Aside from protecting our health and our air quality, switching to renewable energy just makes practical sense.

Learn more about how many communities and countries are realizing the economic, societal, and environmental benefits of renewable energy by visiting: <https://www.un.org/en/climatechange/raising-ambition/renewable-energy>

Preventing Mosquitos

Written by: Nicholas Baccari, Environmental Intern

Mosquitoes are extremely dangerous and one of the world's deadliest animals. Many mosquitoes bite during dusk and dawn, but now, non-native mosquito species can be found in California and these species bite during the day. Not only do they annoy us and bite us, they also carry a variety of diseases and viruses that can result in sickness or even death. There are a variety of 'vector-borne' diseases transmitted through mosquito bites including Zika, West Nile, Chikungunya, dengue, and malaria.



There are particular methods to prevent these encounters from worsening. The County of Riverside has numerous vector control offices, each with smaller districts that help reduce the number of vector-borne illnesses and manage mosquito populations.

We can also participate in preventative measures as individuals to help reduce the spread of vector-borne illnesses affecting our community, such as preventing breeding sites, removing stagnant water, wearing protective clothing, and using repellents. Approaching pest management from a lifecycle approach can be very effective in reducing exposure, mosquito populations and pesticide use.



Prevent Mosquito Breeding Sites

- Mosquitoes need very little water to spawn. Mosquito eggs can survive for over eight months without any water and will spawn in stagnant water wherever they can find it.
- Make sure that birdbaths and fountains are regularly scrubbed clean to remove and prevent mosquito eggs.
- Make sure your pool is maintained with proper chemicals and filtering.

- Clean your gutters often to prevent clogs and stagnant water.
- Check your yard for sources of stagnant water which can include plant saucers, buckets, tires, rain barrels, children's toys and pools, recyclables, and yard clutter and litter. Tip stagnant water and toss unused containers. Put away toys and clean up debris.
- Mosquitos are also commonly found around humid and shady plants including ivy, hedges, dense bushes, and overgrown plants. Landscaping with California native plants and reducing dense vegetation helps reduce breeding grounds.
- Mosquitoes can complete their lifecycle for egg to adult in one week! Check weekly!

Chemical and Biological Control

County vector control programs use pesticides and biological control to reduce mosquito populations. One method of biological control sterilizes males which are then released into wild populations. Mosquitos only mate once before dying so this results in unfertilized eggs and a decrease in populations. Another approach is using natural predators that feed on mosquito larvae and pupae in standing water such as the mosquitofish. Mosquitofish are easy to maintain and help ensure that neglected or "green" swimming pools, fountains, ponds, birdbaths, animal troughs, and other standing water sources are not used as hatching grounds for mosquitoes. *(Continued on next page.)*

Preventing Mosquitos, cont.

Written by: Nicholas Baccari, Environmental Intern

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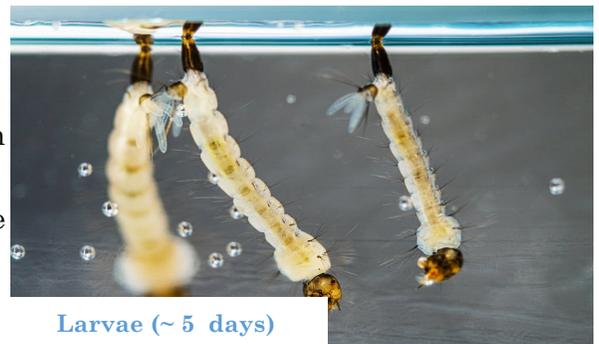
Chemical larvicides, which kill mosquito larvae, and adulticides, which kill adults, are effective measures to control populations but are labor intensive and require precise timing and often large scale applications to control mosquito populations.

There are residential/ DIY options for chemical mosquito control. These insecticides typically use pyrethrin as an active ingredient which is highly toxic to many insects including bees and are therefore not recommended.

Personal Protection

- Use window and door screens to exclude mosquitos from your home. Kill mosquitos with a fly swatter.
- Avoid going to areas where mosquitoes are more prevalent such as shady, overgrown, or wet areas.
- Wearing long, loose-fitting, and light-colored clothing can reduce the number of bites but is not the most efficient protection measure.
- Treated mosquito nets are a highly effective barrier that physically and chemically prevents mosquitoes from entering a given area and is a great way to protect yourself while camping, outside on your patio, or even in your bedroom.
 - Ultraviolet zappers are another widespread way to reduce the number of mosquitoes and other bugs in the neighboring vicinity by attracting them to the light and then administering lethal charge.
 - Repellents that contain DEET or another EPA-registered ingredient like picaridin, IR3535, or oil of lemon eucalyptus can repel mosquitoes by affecting their sense of smell and taste. Always read the label and follow directions. Consult with a pediatrician before using on young children.

Life Cycle of *Aedes aegypti* mosquitos



References: Environmental Protection Agency—Finding and Using Repellents <https://www.epa.gov/insect-repellents/>; Riverside County Department of Environmental Health—Vector Control: <https://www.rivcoeh.org/OurServices/VectorControl>; Mosquito and Vector Control Association of California: <https://www.mvca.org/amg/wp-content/uploads/MVCAC-IVM-White-Paper.pdf>; Coachella Valley Mosquito & Vector Control District: <https://www.cvmosquito.org/>; CDC—Mosquitoes: <https://www.cdc.gov/mosquitoes/index.html>



Honor, Respect, Protect Mother Earth

Save the date...

Friday

April 21

at

**Morongo Administration
12700 Pumarra Rd. Banning**

*Only 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 13 - July 20, 2023
1 week off July 3-7

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!
Preference given to Morongo Tribal Members or Descendants

For more information please contact us at
edp@morongo-nsn.gov or call 951-755-5127

Morongo Environmental Protection Department College Internship Program

An opportunity for a college student to gain professional work experience in the environmental field. Internship held on-site with flexible hours. Must be enrolled in an accredited college/university. Preference given to Morongo Tribal Members, Morongo Descendants, or an enrolled tribal member of a federally recognized tribe.

When: March—September, 2023.

Details: \$18.00 an hour, 320 hours total. Potential interns must be committed to work onsite with hours to be determined between intern and program director.

Applications Due: January 31, 2023

Apply at morongonation.org/employment/

For more information please contact us at
edp@morongo-nsn.gov or call 951-755-5127

Upcoming Events

Annual Community Declutter Event

Wednesday
January 18, 2023
9am to 1pm
Community Center
Parking Log



*Open to Morongo Community & Staff.

Event Services

- Document/ CD Shredding
- Electronic Waste Recycling
- Clothing & Small Household Goods Donations
- Medication Disposal
- General Recycling



Household Hazardous Wastes Drop-Off

Friday
January 20, 2023
9am to 12pm
Behind Public Works

Staff available on-site to collect, sort, and store materials.

Open to Morongo Residents & Tribal Members Only

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

Morongo Reuse Center

'Shop' during the HHW Drop-off Days for gently used paints, electronics, lawn care products, and cleaners!



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.



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