FALLON PAIUTE-SHOSHONE TRIBE

August 2020

Environmental Protection Department Newsletter

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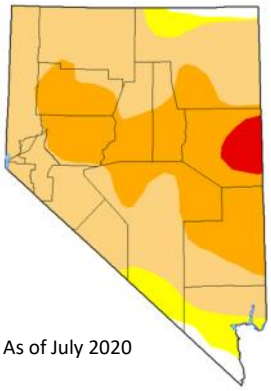
Nevada Drought Early Warning

Drought in Nevada is a common occurrence that can last for multiple years. In 2017, our valley received an abundance of water due to heavy rainfall events and heavy snowmelt running off the mountains and into our watershed. We had been in drought for several years prior to this. Our farmers all throughout our valley and in the neighboring valleys were struggling to produce what they could with the ever decreasing water allocations. We received such an abundance of water that year that we didn't know what to do with it. Our county officials implemented a plan to divert the water to the south side of the valley by moving the water through culverts. We were literally watering the desert to spare our town from flooding. The water saturated our dry soils, and even managed to percolate through our well known clay loam soil causing our water table to rise. We were able to use this water for the next few years. Since 2017, our farmers received 100% water allocations, they received so much water that sometimes they couldn't even use all that they had ordered and would send it down the watershed to our tribal wetlands free water delivery system. Our wetlands have flourished with the much needed high water year. Waterfowl and wildlife has increased and the ecosystem has improved. Everyone along the watershed has been enjoying the water, especially the wildlife, whether it be farming, habitat or just enjoying recreational activities.

Churchill County averages 4.91 inches of rainfall and 7 inches in snowfall annually. So far for 2020, Fallon has received 1 inch or rainfall with the wet season between (October - April). According to the Nevada Drought Early Warning System, Churchill County is in the "severe drought" category or the "orange" category on the U.S. Drought Monitor as of July.



As of July 2020

For more information, please visit https://www.drought.gov/drought/dews/nevada

Groundwater and Wellhead Protection Area Information

Groundwater is water found in the spaces between soil particles and cracks in underground rocks underground. Groundwater is a natural resource that is used for drinking, recreation, industry, and growing crops, among other things.

When rain falls to the ground, the water does not stop moving. Some of it flows along the surface to streams or lakes, some of it is used by plants, some evaporates and returns to the atmosphere, and some seeps into the ground. Imagine pouring a glass of water onto a pile of sand. Where does the water go? The water moves into the spaces between the particles of sand.

Groundwater is stored in and moves slowly through layers of soil, sand, and rocks called aquifers. Aquifers typically consist of gravel, sand, sandstone, or fractured rock, like limestone. These materials are permeable because they have large connected spaces that allow water to flow through them. The size of the spaces in the soil or rock and how well the spaces are connected determine the speed that groundwater flows.

The area where water fills the aquifer is called the saturated zone. The top surface of this zone is called the water table. The water table may be located only a foot below the ground's surface or it may be hundreds of feet down.

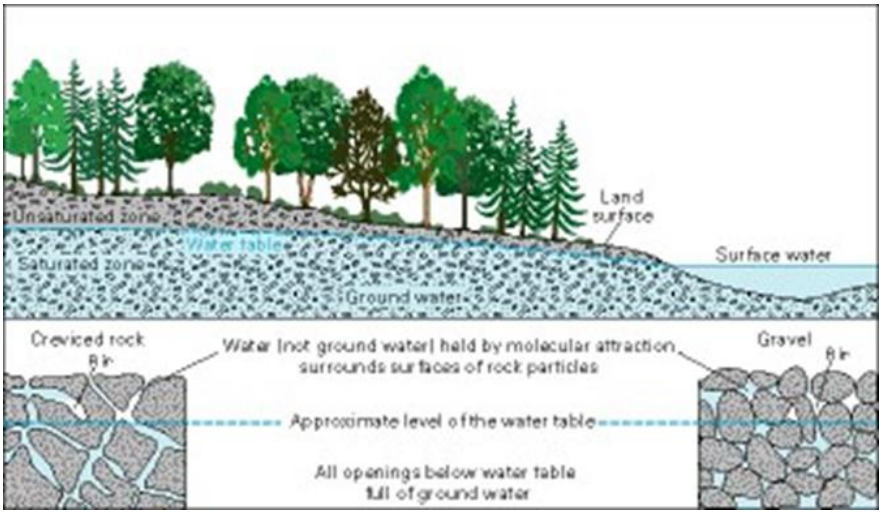
Groundwater can be found almost everywhere. The water table may be deep or shallow and may rise or fall depending on many factors. Heavy rains or melting snow may cause the water table to rise; heavy pumping of groundwater wells or drought may cause the water table to fall.

Water in aquifers is brought to the surface naturally through a spring or can be discharged into wetlands, lakes and streams. Groundwater can also be extracted through a well drilled into the aquifer. A well is a pipe in the ground that fills with groundwater. This water can be brought to the surface by a pump. A wellhead protection area is defined as a surface and subsurface zone surrounding a well that supplies water to a public water system. Any well may go dry if the water table falls below the bottom of the well.

Groundwater supplies are replenished, or recharged, by rain and snow melt. In some areas of the world, people face serious water shortages because groundwater is used faster than it is naturally replenished. In other areas, groundwater is polluted by human activities, or may be unusable for human consumption due to natural conditions.

In areas where material above the aquifer is permeable (or capable of transmitting water), contaminants can readily seep into groundwater supplies. Groundwater can be polluted by landfills, septic tanks, leaking underground storage tanks, and from the overuse of fertilizers and pesticides, to name just a few sources. If groundwater becomes polluted, it may not be safe to drink.

Groundwater is used as a source of drinking water by more than 50 percent of the people in the United States. Protecting public drinking water supplies at the source and managing land uses and human-caused sources of contamination are the keys to preventing pollution *before* it enters our drinking water supply.



Mosquito Season Is Here

July 29, 2020

The Environmental Protection Department is collaborating with the Churchill County Mosquito Abatement District (CCMAD) to reduce nuisance mosquitos and to reduce exposure to the West Nile Virus. The department implements monitoring, surveillance, larval control and adulticiding within the reservation.

The department conducts ground fogging in the housing subdivisions, and scattered home sites when requested. Fogging is done on an as-needed basis based on the number of phone calls we get from an area and by the number of adult mosquitos found when we trap in an area.

Because of the Covid-19 pandemic, please call our mosquito abatement contact number directly at (775) 217-8375 to report any high mosquito activity in your area. Requests will be documented and responded to by our staff or CCMAD, who will evaluate conditions and determine appropriate measures for treatment. When possible, the department will try to honor courtesy no-spray requests. Please submit a request in writing so that we may plan routes and accommodate no spray requests. Thank you and stay safe.

FPST Environmental Protection Department
1011 Rio Vista Drive Fallon, NV 89406
Office number: 423-0590 (Please leave a message.)

Household Hazardous Waste

Household hazardous waste (HHW) is any material discarded from a home that may pose a threat to human health or the environment when disposed of improperly. It differs from other household waste because it can be toxic, corrosive, flammable or explosive. Household hazardous waste is not covered under the Resource Recovery and Conservation Act (RCRA), or any other legislation, yet a typical home contains many materials that if generated by industry would be classified as hazardous under RCRA. Toxic chemicals such as arsenic may be found in medicine, rat poison and plant killers. Lead may be found in paint and gasoline. Organic solvents may be found in the home in cleaning fluids, nail polish remover, paint thinners and spray enamels. Improper disposal of any of these products and numerous others could contaminate groundwater, poison wildlife, damage sewer systems, harm refuse collectors or contaminate the air if incinerated improperly.

Introduction to Compost

What Is Composting?

Composting is the natural process of recycling organic matter, such as leaves and food scraps, into a valuable fertilizer that can enrich soil and plants. Anything that grows decomposes eventually; composting simply speeds up the process by providing an ideal environment for bacteria, fungi, and other decomposing organisms (such as worms, sow bugs, and nematodes) to do their work. The resulting decomposed matter, which often ends up looking like fertile garden soil, is called compost. Fondly referred to by farmers as "black gold," compost is rich in nutrients and can be used for gardening, horticulture, and agriculture.

Organic discards can be processed in industrial-scale composting facilities, in smaller-scale community composting systems, and in anaerobic digesters, among other options. Home composting is a great way to keep your organic discards out of the waste stream and produce a valuable soil amendment for your own use.

Reduces the Waste Stream

Composting is a great way to recycle the organic waste we generate at home. Food scraps and garden waste combined make up more than 28 percent of what we throw away. Not only is food waste a significant burden on the environment, but processing it is costly. The average cost to landfill municipal solid waste in the United States was around $55 per ton in 2019. With the United States generating more than 267 million tons of municipal waste in 2017 and sending two-thirds of that to landfills and incinerators, we spend billions of dollars on waste management. Composting at home allows us to divert some of that waste from landfills and turn it into something practical for our yards.

Cuts Methane Emissions from Landfills

Typically when organic matter decomposes, it undergoes aerobic decomposition, meaning that it's broken down by microorganisms that require oxygen. When compostable waste goes to a landfill, it gets buried under massive amounts of other trash, cutting off a regular supply of oxygen for the decomposers. The waste then ends up undergoing aerobic decomposition, being broken down by organisms that can live without free-flowing oxygen. During anaerobic decomposition, biogas is created as a by-product. This biogas is roughly 50 percent methane and 50 percent carbon dioxide, both of which are potent greenhouse gases, with methane being 28 to 36 times more effective than CO_2 at trapping heat in the atmosphere over a century. Although most modern landfills have methane capture systems, these do not capture all of the gas; landfills are the third-largest source of human-generated methane emissions in the United States. Because our solid waste infrastructure was designed around landfilling, only about 6 percent of food waste gets composted.

Improves Soil Health and Lessens Erosion

Compost is an essential tool for improving large-scale agricultural systems. Compost contains three primary nutrients needed by garden crops: nitrogen, phosphorus, and potassium. It also includes traces of other essential elements like calcium, magnesium, iron, and zinc. Instead of relying on synthetic fertilizers that contain harmful chemicals, composting offers an organic alternative.

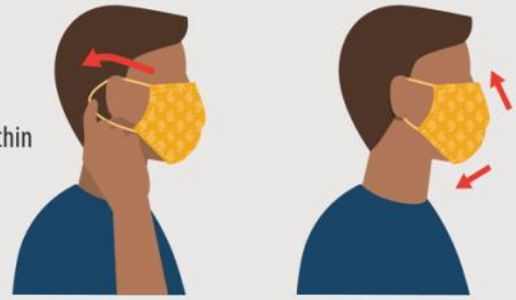
Reduces Personal Food Waste

Consumers are responsible for a staggering amount of wasted food. An average American family of four throws out about $150 worth of food per month, a 50 percent increase since the 1970s. The best way to reduce impacts from food waste is to prevent waste from occurring in the first place. However, even if we do everything possible to decrease food waste, there will still be food scraps that cannot be consumed (e.g., a banana peel). Composting is a great way to recycle those discards instead of tossing them in the trash.

How to Safely Wear and Take Off a Cloth Face Covering

WEAR YOUR FACE COVERING CORRECTLY

- Wash your hands before putting on your face covering
- Put it over your nose and mouth and secure it under your chin
- Try to fit it snugly against the sides of your face
- Make sure you can breathe easily
- Do not place a mask on a child younger than 2



USE THE FACE COVERING TO HELP PROTECT OTHERS

- Wear cloth face coverings in public settings and when around people who don't live in your household, especially when other social distancing measures are difficult to maintain
- Don't put the covering around your neck or up on your forehead
- Don't touch the face covering, and, if you do, clean your hands

FOLLOW EVERYDAY HEALTH HABITS

- Stay at least 6 feet away from others
- Avoid contact with people who are sick
- Wash your hands often, with soap and water, for at least 20 seconds each time
- Use hand sanitizer if soap and water are not available

TAKE OFF YOUR CLOTH FACE COVERING CAREFULLY, WHEN YOU'RE HOME

- Untie the strings behind your head or stretch the ear loops
- Handle only by the ear loops or ties
- Fold outside corners together
- Place covering in the washing machine
- Wash your hands with soap and water

Cloth face coverings are not surgical masks or N-95 respirators, both of which should be saved for health care workers and other medical first responders.

For instructions on making a cloth face covering, see: **cdc.gov/coronavirus**

CS 316488A 07/06/2020

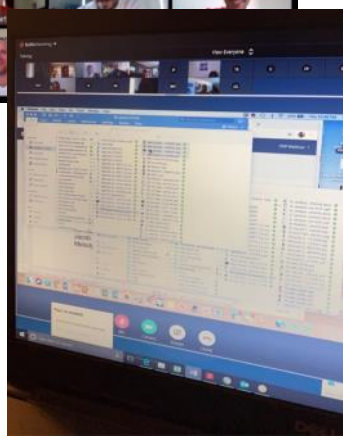
Water Quality Update

With the procurement of a new multiparameter sonde ProDSS instrument, our water quality sampling is better than ever! The new sonde is lighter, brighter with color, and more efficient with smart probes. Calibration is completed with ease with the help of on-demand tutorials from the YSI website. We have just completed our third water sampling event of the year and look forward to our last event toward the end of August. In our next newsletter, we will be sure to go over the water quality constituents we sample for, what trends we are observing and evaluating what it may tell about our water quality.

Our new Multiparameter Sonde ProDSS

Learning from a Distance

With the travel restrictions that came along with COVID-19, many planned trainings, meetings and workshops have gone virtual instead of being cancelled all together. Instructors have scrambled to develop new criterions on how to teach important topics virtually. With the Environmental Department in the preliminary stages of implementing an air program as well as fulfilling grant requirements for training, Environmental Specialist enrolled in an IAQ Instructor Led Online Course that required a commitment of seven weeks. This course would usually take 3-4 days to complete in-person. This course, which was provided by University of Arizona ITEP, was the first instructor led online course available. This may be a new way of learning and participating in meetings during this pandemic. Being open to trying activities independently and keeping an open line of communication with classmates and instructors was key to completing this course. There was plenty of confusion in the beginning as this was a learning experience to us all. ITEP mailed project activities bi-weekly to be completed and results presented. Is this the new norm? I hope not but it is for right now. Is it an effective way of learning? With minor setbacks that were expected from such a new way of learning, absolutely! I am thankful for ITEP taking the lead on virtual learning and offering it to us with such an approach that they were open to trial and error and dedicated to making it work.



Groundwater Contamination

Over 50% of the United States population depends on groundwater for drinking water. Unfortunately, groundwater is susceptible to pollutants. Groundwater contamination occurs when man-made products such as gasoline, oil, road salts and chemicals get into the groundwater and cause it to become unsafe and unfit for human use.

Materials from the land's surface can move through the soil and end up in the groundwater. For example, pesticides and fertilizers can find their way into groundwater supplies over time. Road salt, toxic substances from mining sites, and used motor oil also may seep into groundwater. In addition, it is possible for untreated waste from septic tanks and toxic chemicals from underground storage tanks and leaky landfills to contaminate groundwater.

Drinking contaminated groundwater can have serious health effects. Diseases such as hepatitis and dysentery may be caused by contamination from septic tank waste. Poisoning may be caused by toxins that have leached into well water supplies. Wildlife can also be harmed by contaminated groundwater. Other long term effects such as certain types of cancer may also result from exposure to polluted water.

Potential Sources od Groundwater Contamination:

Storage Tanks - May contain gasoline, oil, chemicals, or other types of liquids and they can either be above or below ground. There are estimated to be over 10 million storage tanks buried in the United States and over time the tanks can corrode, crack and develop leaks.

Septic Systems - Septic systems are designed to slowly drain away human waste underground at a slow, harmless rate. An improperly designed, located, constructed, or maintained septic system can leak bacteria, viruses, household chemicals, and other contaminants into the groundwater.

Uncontrolled Hazardous Waste - In the U.S. today, there are thought to be over 20,000 known abandoned and uncontrolled hazardous waste sites and the numbers grow every year. Hazardous waste sites can lead to groundwater contamination if there are barrels or other containers laying around that are full of hazardous materials.

Landfills - Landfills are supposed to have a protective bottom layer to prevent contaminants from getting into the water. However, if there is no layer or it is cracked, contaminants from the landfill (car battery acid, paint, household cleaners, etc.) can make their way down into the groundwater.

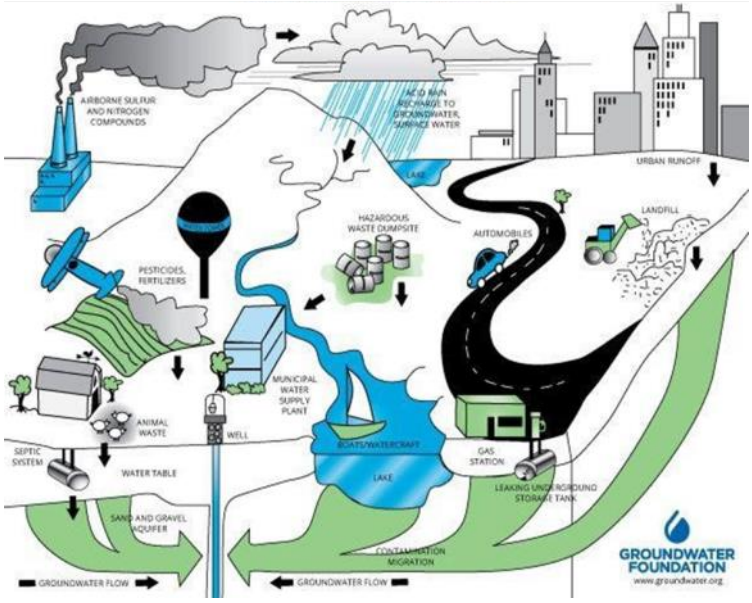
Chemicals and Road Salts - Chemicals include products used on lawns and farm fields to kill weeds and insects and to fertilize plants, and other products used in homes and businesses. When it rains, these chemicals can seep into the ground and eventually into the water. Road salts are used in the wintertime to put melt ice on roads to keep cars from sliding around. When the ice melts, the salt gets washed off the roads and eventually ends up in the water.

Atmospheric Contaminants - Since groundwater is part of the hydrologic cycle, contaminants in other parts of the cycle, such as the atmosphere or bodies of surface water, can eventually be transferred into our groundwater supplies.

You Can Help Protect Our Groundwater. Don't dump hazardous waste on the ground. It can contaminate the soil, which could also contaminate the groundwater or nearby surface water. A number of products used at home contain hazardous or toxic substances that can contaminate ground or surface waters, such as:

- Motor oil
- Pesticides
- Leftover paints or paint cans
- Mothballs
- Flea collars
- Household cleaners
- A number of medicines

Don't overuse pesticides or fertilizers. Many fertilizers and pesticides contain hazardous chemicals. These can travel through the soil and contaminate groundwater. If you feel you must use these chemicals, please remember to use them in moderation.



Protecting Human Health And The Environment

Fallon Paiute-Shoshone Tribe

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