November 2026

High Desert Voices

HIGH DESERT MUSEUM

A newsletter published by and for volunteers

North American Porcupine Project

By Torree Abrams, Newsletter Writer



How do you put a collar on a porcupine? Very carefully. The High Desert Museum is collaborating with the Oregon Department of Fish and Wildlife (ODF) on a two-year project studying North American porcupines (*Erethizon dorsatum)*. Using the porcupines at the Museum, staff members taught participants how to safely handle and fit specially designed radio collars on the prickly rodents. The project hopes to capture and fit 20 porcupines with these radio collars to track movements over time and assess seasonal home ranges. This information will show patterns of habitat use and how young porcupines disperse when establishing their own territories. This long-term study examines survival rates and causes of death, and it also collects scat samples to analyze diet and seasonal changes in food use.



In addition to the radio collars, the High Desert Museum Wildlife Watch and ODFW will work together to provide trail cameras and train volunteers to deploy, record, and upload wildlife observations of porcupines and others. There have already been 25 confirmed sightings on trail cams. With the help of the Museum the number of volunteers and trail cams doubled from 40 to around 80. Around the Museum there are posters asking anyone to report sightings of porcupines anywhere in Central Oregon, including those that have died or were killed beside a road. You can fill out a report form on the ODFW website or snap a photo and upload it onto iNaturalist. Volunteer observations on iNaturalist have risen from a few dozen to more than 2,000.

Why is this study important? Unlike other animals like deer or rabbits, which have males mating with multiple females, porcupines have a one-to-one ratio of males to females. Females are only in estrus for 12 hours in one year and only give birth to one porcupette after a gestation period of 212 days. The propagation of porcupines is a mathematical miracle. If females do not mate during their brief estrus cycle, they will not have offspring that year. Babies are born headfirst with quills smoothed back. Those quills harden within 48 hours, and the female nurses the porcupette for 4–6 weeks. They can climb trees within days of being born.



Predators of porcupines include weasels, eagles, and especially fishers, which can flip porcupines over and attack their unprotected bellies. Coyotes, bobcats, bears, and great horned owls have also attacked porcupines, especially young ones. It is a myth that porcupines can shoot their quills as a defense. With so many predators and habitat loss because of humans, there is concern about porcupine populations dwindling.

Since porcupines have low reproductive rates and suffer from habitat degradation and high predation levels, it's obvious why the Museum decided to participate in their study and conservation in Central Oregon. Recently, Senior Curator of Wildlife Jon Nelson received recognition as Volunteer of the Year for the Oregon Department of Fish and Wildlife. His critical role in the porcupine project has been part of the many, many hours he has spent at the Museum and volunteering with ODFW. The Museum currently cares for four porcupines. One, sometimes two, are on exhibit, and staff use another for educational purposes in the

Porcupine Project—continued



Desert Dwellers and mammal talks. The youngest porcupine awaits her naming by the generous donor with the winning bid at this year's High Desert Rendezvous.

The study began in September 2025 with the goal of identifying where porcupines actually live in Central Oregon. In 2026, officials added porcupines to the Oregon Species of Greatest Conservation Need list. Citizen scientists on iNaturalist provided porcupine data, which helped decide trail cam locations. The funding, supplies, and data analysis are provided by the Wildlife Ecology Institute and Oregon Wildlife Foundation.

Having a clear picture of the health of the porcupine population in Central Oregon is critical to their continued success. If you are interested in volunteering with this study, contact Jon Nelson or visit the ODFW website for more information. Anyone can contribute a sighting to the study. If your interest in learning more about porcupines is piqued, a new exhibit in the Collins Gallery called *Quills Out! A Porcupine Adventure* opens November 14. To learn more details about this exhibit, visit this page on the Museum's website.



Photos provided by Jon Nelson

Lava River Cave

by Siobhan Sullivan, Newsletter Editor



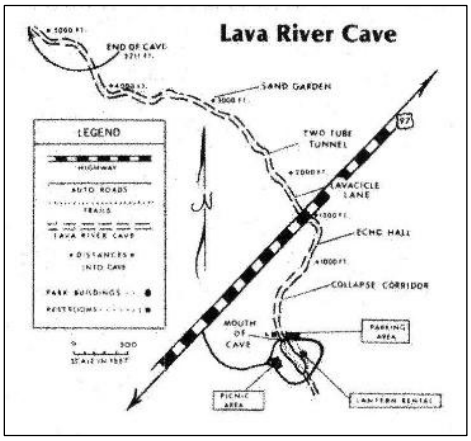
I recently went on a two-mile trek to the center of the Earth. Okay, not quite the center of the Earth, but the trail does lead you underneath Highway 97. I visited Lava River Cave shortly before it shut down for the season in mid-September. This cave is located twelve miles south of Bend, Oregon, in the Newberry Volcanic National Monument in Deschutes National Forest. Newberry Volcano is an active stratovolcano that began erupting 600,000 years ago.

With a length of 5,466 feet, Lava River Cave is one of Oregon's longest lava tubes. Lava flows from about 80,000 years ago are associated with Lava River Cave's formation. As the lava drained away, it created a long tube.

Lava tubes are often discovered when a part of the roof collapses, exposing the cave below. This cave was discovered in 1899 by Leander Dillman, a local stockman and trapper. The United States Forest Service (USFS) acquired the site in 1981. It became part of the Newberry National Volcanic Monument after it was established in 1990.

It is a cool but creepy experience to go inside this cave. When I say cool, I mean cool. The average temperature inside Lava River Cave ranges from 32° to 45° Fahrenheit, so visitors should dress accordingly. Wear decent quality closed-toe shoes or boots.

Note that all visitors must listen to a brief talk on protecting local bat populations from White-nose syndrome prior to going into the cave. A fungus that affects hibernating bats causes white-nose syndrome, and it is often fatal. In order to prevent the spread of this illness, visitors should not "wear or bring into the cave any clothing or gear you have used in any other cave or mine."



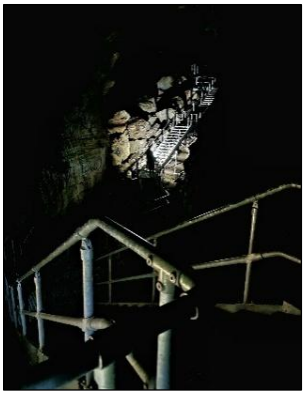
Pacific Northwest National Parks & Forests Association map



Visitors may bring their own lights, but on my latest visit, I rented a high-powered flashlight from the check-in counter. There is a small fee to rent these lights, but they are much more powerful than the average flashlight. The USFS recommends carrying two light sources.

When you start the walk, you'll go down a series of ramps and 55 metal stairs. After leaving this section, you'll get into a short section of rough ground. Two-thirds of the walk is over fairly smooth ground, but when you run into rough sections, you'll appreciate having a good light. I would not recommend this cave for very young children or for people who have mobility issues.

One of the unique features of this cave is the "sand garden." Over time, sediment washed through cracks in the roof, and it partially filled the cave. These sand gardens formed as water droplets eroded away the sand fill. They look sort of like tiny badlands formations.

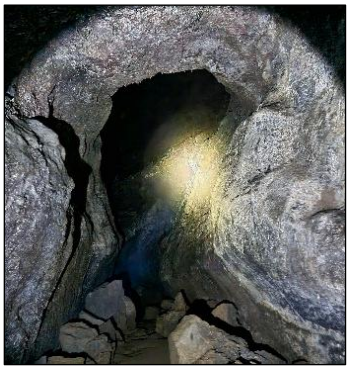


The cave is about a mile long from end to end. Most of the Lava River Cave trail has high-arched ceilings. However, there are a couple of spots near the end where you'll have to duck your head for a short distance.

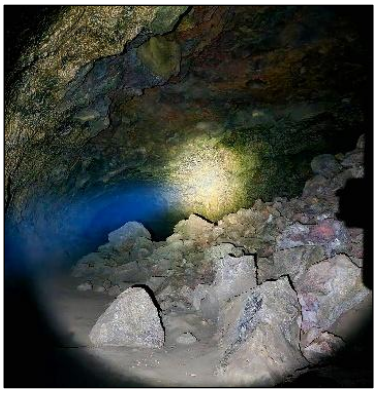
Lava River Cave is open to visitors from early May to mid-September. You must make reservations for timed entry into the cave. Reservations are available here during the operating season. The cave is open from 9:00 am to 4:00 pm on Fridays through Mondays. It's closed on Tuesdays through Thursdays. Visitors are required to have a recreation pass to park at this facility. For information on where to purchase passes, check here.

It took me 50 minutes on the way in to walk to the end since I often stopped to take pictures. On the way out, I walked much faster, and it only took about 20 minutes. My reservation was for 9:00 am, right when it opened. By the time I finished, there were significantly more visitors.

The USFS estimates 70,000 people visit the cave annually. If you're looking for a fascinating local attraction, plan to visit Lava River Cave during its regular operating season.







Photos by Siobhan Sullivan

The Secret Life of a Pinecone

From germination to canopy, the pinecone is a vessel of possibility
by Andrea Stuart, Newsletter Writer



Stepping out my front door on a cool autumn morning, I'm met with butterscotch aromatics ushered by the kiss of a breeze and a bed of tangerine needles scattered across my yard. The driveway, once gray and cold, disappears beneath a russet tide of needle and cone, merging with the surrounding landscape. As I stand beneath a ponderosa pine (*Pinus ponderosa*) canopy, a crack sounds above me, followed by a sequence of knocks until a pinecone lands just a few feet away. This little cone is the newest member among the dozens scattered throughout the freshly laid forest litter.



In parts of the High Desert, evergreen trees are a dominant presence—from ponderosas to lodgepole and spruce—punctuated by various deciduous trees and perennial shrubs that decorate our streets and forest floors with a polychromatic swath of color as their leaves fall in a process called abscission. However, this process is also present in pines, albeit interpreted a little differently. In abscission, a tree forms a layer of cells at the base of a leaf, needle, or cone, allowing it to cleanly detach and seal the wound. Where deciduous trees perform this action in full each year, pine trees perform partial sheds, releasing the oldest needles and cones, typically from the innermost branches.

A pinecone's story begins long before it reaches the ground. Ponderosa pines produce male and female cones, each responsible for generating pollen or seeds, respectively. In spring, the smaller pollen cones release blonde clouds carried by the wind to the developing seed cones. Many of us may recognize this as the flaxen dust we wipe down from our cars, windows, and outdoor furniture. Over the next two years, the seed cones mature while protecting the seeds, pleated between their scales.

Of course, weather influences this process. While ponderosa pines generally thrive in dry summers and cold, snowy winters, drought can reduce seed production. Cone crops also vary from year to year, with abundant crops commonly arriving every few years. By late summer and fall, mature cones open as they dry, releasing winged seeds that catch in the wind.



Many of these seeds land relatively close to the parent tree. Others hitch rides with wildlife. Rodents carry seeds in shallow caches, inadvertently planting them for the future. Squirrels are enthusiastic harvesters, collecting and eating seeds, sometimes clipping entire cone-bearing branches from ponderosa pines. This behavior destroys developing cones before their seeds can mature. Meanwhile, mice, chipmunks, and other small mammals feast on the seeds that remain available, as though nature has its own DoorDash service. For wildlife, a pinecone is less of a forest decoration than it is a well-stocked pantry.

However, the pantry requires favorable conditions to remain full, including adequate moisture, suitable soil, and enough sunlight. Ponderosa pine seedlings establish themselves best in open areas where they aren't overwhelmed by competing vegetation. Wildfires help create these conditions. Seeds typically germinate in spring, but survival in the High Desert depends on whether the young roots can find enough water as the season warms and dries.



Whether or not a seed becomes a tree is uncertain. Many seeds are eaten, some are damaged, and others fall into places where seedlings aren't likely to survive. Yet many take root, some even in the most unlikely of places. On our property, which sits along Lava Butte's basaltic flow in Deschutes River Woods, tiny green shoots have emerged as miniature replicas of their towering siblings.

So the next time you step over a ponderosa pinecone, consider bending down and taking a closer look. It may have fed a squirrel, nourished a bird, or released dozens of seeds into the autumn wind. Its active work may be finished, but its story continues. Slowly breaking down among fallen needles, twigs, and leaves, the cone returns to the forest floor, where fungi and other decomposers help recycle its organic matter.

And perhaps somewhere nearby, a seed from another cone may already be taking root, beginning the slow journey toward becoming the next generation of the High Desert forest.

Photos by Siobhan Sullivan





High Desert Voices

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	November 2026
1	**Winter Hours Begin.** 10:00 am–4:00 pm.
2	**Natural History Pub:** *Building Stream Resilience.* 7:00–8:00 pm. Doors open at 5:30 pm. Free. McMenamins Old St Francis School, 700 NW Bond St., Bend. RSVP here.
7	**Museum Event:** *Morning Mingle: Coyote Encounters.* 8:30–9:30 am. $5. Members only event. RSVP here.
11	**Veterans Day.** Free admission all day for veterans.
14	**Exhibition Opening:** *Quills Out! A Porcupine Adventure.*
17	**Museum Special Event:** *250 in the West: American Indians and the American Dream at 250.* 6:00–7:00 pm. $8. RSVP here.
18	**Senior Day:** Free admission all day for ages 65 and older.
19	**Museum Event:** *Museum and Me.* 4:00–6:00 pm. Free for individuals, friends, and family. RSVP here.
21	**Exhibition Opening:** *Dime Store Stories.*
21 to 29	**Silver Sage Trading Winter Sale.** 20% discount on most merchandise for Museum members, plus discounts on holiday gift favorites. November 29 shop with a purpose to support High Desert Museum. Museum admission not required if your destination is the store.
26	**Museum closed for Thanksgiving holiday.**
	To RSVP or register, click the link next to the event description or call 541-382-4754.