

# Nature Trails

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The Eugene Natural History Society is based out of the traditional homelands of the Kalapuya peoples who stewarded this land for millennia. Today the Kalapuya people are largely citizens of the Confederated Tribes of Grand Ronde and the Confederated Tribes of Siletz Indians and continue to play an active role in local communities and in the stewardship of this land.



Famoso doing field work.

## In the Shadow of Volcanoes

**Nicolas Famoso**

**Paleontology Program Manager**

**John Day Fossil Beds National Monument**

**Friday, 16 September 2022, 7:30 p.m.**

The Eugene Natural History Society invites you to their September Zoom meeting. The Zoom session will open at 7:00. This allows everyone time to get connected and join in friendly conversation.

Our meeting will begin at 7:30. Time: 16 September 2022, 07:00 p.m. Pacific Time (US and Canada). Join Zoom Meeting: <https://zoom.us/j/97499095971?pwd=eE9sdG9hSHMvOHhIUeJuU21wT20rdz09>

Complications regarding room reservations have delayed our return to in-person meetings, but we anticipate running hybrid live/Zoom meetings in the near future.

Our September speaker has realized his childhood dream. Nick Famoso was fascinated with fossils even before he started school in Grants Pass, Oregon, where he grew up. His mom was a science teacher, and when she learned of her son's interest she took him to the John Day Fossil Beds (JDFOB). He was six years old when they made that journey the first time. When he turned ten he went to Hancock Field Station (HFS) for a one-week summer camp. (The HFS is in the Clarno unit of the JDFOB National Monument.) At age 13 he spent another week there. The summers when he was 14 and 15 he went back as a volunteer counselor, and during each summer of the next four years he spent up to 12 weeks at HFS as both counselor and instructor. Today HFS, administered by Oregon Museum of Science and Industry, continues its good work in this wonderful place, reaching thousands of camp visitors per season.

How often does this kind of childhood experience travel in a straight line to a career? In 2016 Famoso became Paleontology Program Manager at John Day Fossil Beds National Monument! Shortly thereafter, Famoso had an essay in the spring 2017 issue of Park Paleontology News. In it, he introduced himself to the paleontological and National Park Service communities. He did an excellent job, and I am not at all embarrassed to quote him verbatim. Here is what he said about himself.

I received my BS in Geology from the South Dakota School of Mines and Technology and worked with Dr. Darrin Pagnac on my senior research project examining the composition of horse populations in the late Miocene of the Great Plains. I spent two years working as a preparator for the University of Nebraska State Museum's Highway Salvage Paleontology Program collecting fossils from all over the state before I went back to graduate school. I received my MS in Geological Sciences from the University of Oregon where I worked with Dr. Edward Davis to investigate the processes that were driving the patterns of occlusal enamel bands in fossil horse teeth. While working on my MS, I took a seasonal paleontology position at Badlands National Park to help with quarry work at the Saber Site and prep work in their lab. I continued at the University of Oregon to work on my PhD in Earth Sciences with Drs. Davis and Samantha Hopkins where I investigated the processes driving mammalian community reassembly after volcanic eruptions. I also worked closely with the two previous John Day Fossil Beds paleontologists, Ted Fremd and Josh Samuels on this research, and even worked as a

Geoscientist-in-the-Parks at the monument to get some of my dissertation research done in 2014. I investigated how the modern mammalian communities around Mt. Lassen, Mt. St. Helens, Mt. Shasta, and Mt. Rainier as well as the fossil communities in the John Day Formation recover from volcanic events. I finished my PhD remotely in March of 2017 after working for JODA for about five months.

Being the chief of paleontology at John Day Fossil Beds has been an interesting experience for me. Before this position, I only worked for the NPS for three months as a seasonal at Badlands National Park, so most of my time has been spent learning and navigating the NPS. As the chief of paleontology, I am responsible for the park's paleontological resources in all three units of the monument (Sheep Rock, Painted Hills, and Clarno) that cover about 45 million years of time. I am also the curator of the museum collections at John Day Fossil Beds, which includes over 15,000 natural history specimens, a majority of which are paleontological. There are many hidden gems in the collection which I am eager to investigate and publish, but John Day Fossil Beds still maintains an active field program which brings in resources from the National Park Service, Bureau of Land Management, U.S. Forest Service, and private property among other property owners. There has been a cooperative relationship between the National Monument and the Bureau of Land Management that has formally been in place since 1987 that exists to protect the fossil resources of the region. This relationship continues to be one of most important relationships at John Day Fossil Beds National Monument.

In his presentation Famoso will delve into how mammals recover after volcanic eruptions. Here is his summary of what he will talk about.

It is clear that ecosystems are devastated after a volcanic eruption coats the landscape with a layer of ash; however, the ecological recovery of mammalian communities after eruptions is poorly understood. Volcanic eruptions vary with magnitude and type and only a fraction of them have been analyzed for effects on mammalian communities. To better understand mammalian community recovery, I investigated how species richness, evenness, and similarity change across volcanic boundaries. Three volcanic systems were studied to investigate the impact of the size of eruption. The 1980 Mount St. Helens eruption sheds light on short-term recovery after a

moderate-sized eruption. The 1914-1917 Mount Lassen eruption permits an analysis of long-term impacts from a relatively small eruption. The Picture Gorge Ignimbrite (28.7 Ma) within the Turtle Cove Member of the John Day Formation was a supervolcanic eruption associated with the Yellowstone hotspot. Vouchered occurrence data of modern and fossil mammals were used to calculate Chao richness, Shannon and Hurlburt indices of evenness, and for chord distance analysis of similarity. Richness and evenness remain unchanged in both Mount Lassen and the Picture Gorge Ignimbrite. Mount St. Helens saw an immediate drop in richness followed by an increase over five years to pre-eruptive levels, resembling succession. Chord distance analysis suggests no long-term change in the Mount Lassen fauna, while the pre- and post-Mount St. Helens fauna are different from one another, with

the post-eruption fauna being more similar to the fauna of neighboring regions. The pre- and post-Picture Gorge Ignimbrite faunal assemblages are also distinct. The pre-eruptive fauna shows more affinities for closed habitats while the post-eruptive fauna shows greater affinity for open habitats. It is clear from my results that larger eruptions tend to have a greater impact on mammalian community recovery than smaller eruptions. While richness and evenness may not change across volcanic boundaries, the species and their relative abundances do. The size of the eruption matters when it comes to mammalian recovery, but ultimately, mammalian populations are robust and the presence of refugia is important for recolonizing devastated areas.

Please join us at 7:30 p.m. on Friday, 16 September 2022 to hear Nicolas Famoso's talk, "In the Shadow of Volcanoes." John Carter

## Invasion

by August Jackson



Photo credit: A. Jackson

Around the turn of the summer solstice, in urban gardens across North America, male European wool carder bees (*Anthidium manicatum*) begin to establish their

seasonal territories. They prefer cohesive patches of labiate flowers and as usual the first male I see this year is patrolling a large patch of native self heal (*Prunella vulgaris* var. *lanceolata*) that I've seeded in the alley behind our house. He darts a yellow blur among deep purple flowers erupting from towering pagodas of lacy, rose-tinted bracts, searching for intruders and keeping watch for females. He's on the smaller end for his species and will likely struggle to hold his territory.

Native to Europe, western Asia, and northern Africa, *Anthidium manicatum* has rapidly become one of the most widespread bees in the world. Following an accidental introduction to the North American continent in the 1960's, the species was first picked up in Ithaca, New York. Additional widespread detection did not occur until the 1990's when the species was found in progressively more cities across the Northeastern United States and into Canada. Subsequent introductions of the European wool carder followed in the Western US and the species had become common in the Eugene-Springfield area within several years of its discovery in California in 2007.

Bee invasions tend to reveal much about their biology. In a remarkable instance of introduction it is

believed that all North American *Lasioglossum leucozonium*, a species of small sweat bee, are descended from a single fertilized female that was transported from Europe in soil-filled ship ballast. The haplo-diploid mating system in bees, in which nestmates are only partly related to one another, facilitates colonization of new territories by only one or a few individuals. While incidental transcontinental movement of soil-nesting bees occurs relatively infrequently, bees that nest in cavities in wood or other materials have the potential to be moved around much more regularly, and most of the bees successful in invading new regions are cavity nesters. *Anthidium manicatum* is particularly flexible in its choice of nesting cavities. Several years ago, I received an email from a professor at Lane Community College who was curious about the identity of a bee she had found nesting in an unusual place. A female *A. manicatum* was busy building a nest in the fingers of a winter glove that had been left on the porch.

Similar to a male hummingbird, a European wool carder male will establish a territory centered around a flower patch. Successful males will spend weeks exhaustively patrolling for conspecific males, as well as males and females of other species, seemingly no matter how large or small. Most bee species employ a mate-first strategy in which the first male to mate with a receptive female will contribute his genetic material. In such species, males emerge first and may wait outside of nests, or in some extreme cases, flightless males will mate with some of their sisters inside the nest prior to emergence. Less commonly, it is the males who mate last that are most successful, and in these species behaviors like mate guarding and

territoriality have evolved. Territoriality is restricted mostly to *Anthidium* species (of which there are about ten in the Pacific Northwest) and some members of the loosely-related leafcutter bee genus *Megachile*.

In most cases, territorial males are merely pests. They patrol a small patch of flowers, looking for females and body-slamming or occasionally tackling other bees that enter. The intruders leave unharmed, but the annoyance is typically enough to encourage them to move on. *Anthidium manicatum* males are truly built for battle. Males of all *Anthidium* species have modifications to their ultimate abdominal segment in the form of protuberances. The precise shape of these protuberances is species-specific and plays a role in matching up with the female genitalia. In *Anthidium manicatum*, these structures are no longer involved in sex, but have become modified into sickle-shaped weapons that have the capacity to shred the wings of other bees. *A. manicatum* males are also atypical in frequently being larger than females, presumably the result of sexual selection favoring larger males who are better able to defend a territory.

Patrolling males can be a joy to watch. Typically, they'll move about the exterior of their flower patch, making occasional sorties into the interior to inspect their flowers from all angles. They'll pause and hover, turning on their axis like a helicopter before darting off at full speed in pursuit of an intruder. This notable behavior, in combination with their large size and yellowjacket striping, tends to capture the attention of gardeners. As a result, the steady march of *Anthidium manicatum* has become one of the most closely tracked invasions of any insect species.

The spread of *A. manicatum* remained under the radar for a number of years, with many of the sparse detections being made by professional entomologists. Within the past several years, this pattern has been upended by the growing popularity of community science platforms like iNaturalist. Now, most new detections are made by non-professionals, frequently in their own gardens. The first record for Arizona was recorded on iNaturalist in Flagstaff in 2020 (<https://www.inaturalist.org/observations/61362009>), and earlier this summer the northernmost sighting of the species was recorded in Terrace, British Columbia, close to the Alaskan Panhandle (<https://www.inaturalist.org/observations/122866177>). I enjoy reading the comments from people encountering this extraordinary bee for the first time, and this from the southern-most record in the United

States (and likely the first in Texas) speaks volumes: “Very aggressively chasing away much larger Eastern Carpenter Bees” (<https://www.inaturalist.org/observations/12682975>). I would expect nothing less. A positive identification could be made from that description alone.

It is rare that observations from backyard gardens would be enough to monitor the expansion of an invasive bee, but once again *Anthidium manicatum* is fairly unique. The species has a particular affinity for our gardens and is only infrequently found outside of city limits. This pattern of distribution may only be temporary, but it is becoming clear that our gardens are facilitating the invasion of this species. There are regional differences in gardening trends, but there are constants too—plants that are staples of the nursery trade whether one lives in the Sonoran Desert or the Pacific Northwest.

Mints are a favorite of gardeners across North America as many species and cultivars are flexible in their moisture requirements and difficult to kill. They're a favorite, too, of *A. manicatum*, which has evolved alongside many of the common mints in our gardens. Overlay the maps of iNaturalist observations of *Lavendula* (lavender species and cultivars) and *A. manicatum* and you will find a remarkable confluence and hints at where the next locus of invasion may be. However, of all our common garden mints, *Stachys Byzantina* (lamb's ears) appears to be the most foundational to the excessive success of the European wool carder. Wool carders derive their name from their habit of trimming woolly plant fibers for use in the construction of their nest cells. Their many-toothed mandibles are built specifically for this purpose, and while a variety of plant fibers may do, *Anthidium manicatum* seems to have an exoskeleton-deep preference for the dense fibers of lamb's ears. A garden with *Stachys Byzantina* is an invitation to invasion.

Worldwide, the growing homogeneity of gardens produces predictable landscapes familiar to a European import. Our gardens speak the language of biological colonialism—a language in which the European wool carder bee is fluent. It's little surprise that a bee would find success when reunited with the flowers with which it co-evolved. It's hard not to see some beauty in that too. It remains to be seen whether *Anthidium manicatum* primarily stays in our manicured spaces or begins to establish itself in natural areas. Either way, we are still watching only the start of its global invasion and, remarkably, we are able to watch it unfold in real time.



## Sticky Feet by John Carter

What is it about geckos? Is it just me or are they beloved by all humankind? I have encountered them only a few times in my life; I was fascinated each time, not least because they seemingly defy gravity. They seem gentle, no doubt because they are small, but to their prey—they eat mainly insects—they must be fierce. Some species will knock their catch against a wall or tree to kill it. If geckos grew to twenty pounds, Kauai would not be overrun with feral chickens and cats. Small dogs would be leashed at all times.

My latest gecko sightings were in Hawai'i this past winter. We were in Kapa'a, the largest town on Kauai. Sitting on our lanai each morning we would see several on the palm trees just feet away. They were about three to five inches long, bright green with small orange marks. These were gold dust day geckos, *Phelsuma laticauda* (think GEICO).

There are seven gecko species in Hawai'i. None are native. Their eggs are sticky and salt-resistant so they could have floated on a log from some mainland. More likely they were stowaways on Polynesian boats from either the Marquesas or Tahiti.

The smallest of the roughly 1,450 gecko species is just over half an inch long. The biggest on record was 23 inches long; that species, native to New Zealand, is now extinct. Unlike other lizards, many geckos make noise: chirps, clicks, hisses, even fairly loud calls during mating season. The very name in English, gecko, comes from an Indonesian word that imitates the sound some species make. People who live where geckos live are often content to have them in their homes because they are so efficient at hunting insects like mosquitoes and moths, even cockroaches.

Johannes Diderik van der Waals, Nobel-prize-winning Dutch physicist, probably never saw a gecko walking on a smooth wall or a ceiling, an ability shared by about 60 percent of all gecko species. That is a shame, because the weak intermolecular interaction that bears his name is considered the secret behind this gecko superpower. As much as I am captivated by geckos, I am equally impressed by the strangeness—and unsung centrality—of the van der Waals interaction. Let me try to explain how it works. Then we will focus on gecko toes and put the two together.

The van der Waals attractive force can exist between *any* adjacent molecules. Basically, it's all about pluses and minuses attracting each other. The electrons in a bond between two atoms in a molecule can at any instant be more to one end of the bond than the other; this is an induced dipole, one end positive, the other negative. This induced dipole can

induce a dipole of the opposite polarity in a bond of another molecule close by. These two induced dipoles attract each other. That in essence is the van der Waals attractive force. It is very weak, and extremely distance-dependent. If the two molecules move just a couple of angstroms away from each other the force essentially disappears. Many, many of these induced dipole-induced dipole attractions can add up to a significant force. When we're talking molecules in structures we can see, or even those we need a microscope to see, we're talking about a huge number. Such a force can hold nonpolar molecules, pentane or hexane for example, in a liquid state at normal temperatures.

And, to our point here, they can keep a gecko attached to a wall. Even a ceiling. Which brings me to gecko toes. Gecko toes have tiny hairs called setae. Each gecko foot has about 14,000 of them. And the tip of each setae branches out into approximately a thousand spatula-shaped ends called spatulae. The mother of all split ends. If you looked with a magnifying glass at a wall that appeared smooth to your naked eye you would notice bumps and dips, irregularities that these spatulae can get into or onto and make extremely close contact with. Close enough to generate the van der Waals attraction. Each of these attractions is weak, but gecko feet have



thousands of setae, each with its thousand split ends, so in the aggregate there is more than enough attractive force to offset the animal's mass. One estimate is

about 600 pounds per square inch. You might wonder how they move at all, with such a strong attraction to whatever surface they are on. The answer is another superpower: they can bend their toes backwards, which changes the angle the setae and spatulae make with the surface. Because of the extreme distance-dependency of the van der Waals interaction, this change of angle breaks the attraction. Geckos are very good at making and breaking these interactions. They can move across a surface at speeds up to twenty body lengths per second.

A gecko with these sophisticated adhesive toe pads was found preserved in amber in Myanmar. It lived 100 million years ago. It is humbling to learn that evolution harnessed this subtle intermolecular interaction so long ago. And not just once. These sticky feet evolved separately more than ten different times and were lost nine times in geckos, in response to changes in habitat, according to a study published in 2012 in PLoS ONE.

Some beetles and spiders also have setae and spatulae and, thus, sticky feet. But one has to ask why creatures bigger than geckos (other than Spiderman,

whose secret is now revealed) have not been so blessed? Wouldn't you like to be able to crawl across your ceiling?

## Events of Interest in the Community

**McKenzie River Trust** <https://mckenzieriver.org/events/#event-listings> or 541-345-2799

**Saturday, 10 September, 8 a.m. to 4 p.m. Living River Exploration Day at Green Island.** Take a walk near the place the Willamette and the McKenzie Rivers meet. Observe 15 years of tree-planting work on Green Island, a habitat for beaver, river otter, and over 150 species of birds.

**Lane County Audubon Society** [www.laneaudubon.org](http://www.laneaudubon.org) or 541-485-BIRD

**Fridays, 9 and 16 September, at sunset. Bon Voyage to Vaux's Swifts at Agate Hall.** Come check out the swifts before they fly off to Central and South America for the winter. We may see thousands of birds entering the Agate Hall chimney to roost for the night, but there is no guarantee! We will be outdoors and well spread out to maintain social-distancing, so please be careful of your and other's safety. Look for the LCAS banner at the south parking lot of Agate Hall. FMI: 541-343-8664, or check out the Vaux's Swift page on our website: [laneaudubon.org/vauxs-swift-information/](http://laneaudubon.org/vauxs-swift-information/).

**Saturday, 17 September. Third Saturday Bird Walk.** Our Third Saturday Bird Walk continues to be open to all participants. The leader and destination are TBD. Reservations are no longer required. Times and locations are TBA. FMI: Email [audubon@laneaudubon.org](mailto:audubon@laneaudubon.org), or check our website and/or Facebook page close to the walk date.

**Tuesday, 27 September, 7 p.m. Bill Sullivan,** Oregon's hiking guru, will take us on an illustrated tour of the most spectacular trails in the entire Northwest, based on his newly released coffee-table picture book, *Hiking Trails of the Pacific Northwest*. Bart Smith, the book's photographer, has hiked every long-range trail in the country with his camera. Sullivan guided him on Oregon trails and wrote the text for Oregon and Northern California. Washington guidebook author Craig Romano wrote the text for that state, as well as Southwestern British Columbia. The in-person location is Campbell Senior Center, 155 High Street, near Skinner's Butte. Parking is ample. Drive north on High Street to Skinner Butte Park; the parking lots are on the right, both in front of the Campbell Center and in an adjacent parking area slightly beyond the Campbell Center. Check our website or Facebook page one week before the event for the Zoom link.

**Mt. Pisgah Arboretum** <https://mountpisgaharboretum.com/festivals-events> or 541-747-3817

**Sunday, 11 September, 8 to 11 a.m. Monthly Bird Walk.** Join Mieko Aoki and Julia Siporin for another monthly bird walk intended for people with all levels of birding experience. Please bring binoculars. Rain or shine. Meet at the Education Building. Don't forget your parking pass. Walk fee \$5, FREE for Arboretum members. **Limited to 18 attendees. Pre-registration required.** [Click here](#) to register.

**Friday, 16 September, 10 a.m. to noon. Late Summer Wildflowers Walk.** Join Arboretum Interpretation Coordinator August Jackson for a tour of the amazing diversity of wildflowers which wait to bloom until the end of summer. We'll take a walk along a wet prairie and down to the river to see emergent vegetation in bloom. We will also look at which insects pollinate these late-season flowers. Note that we will spend some time on unmaintained paths and river cobble. Meet at the Education Building. Don't forget your parking pass. Walk fee \$5, FREE for Arboretum members. **Limited to 18 attendees. Pre-registration required.** [Click here](#) to register.

**Saturday, 1 October, 1 to 6 p.m. Oaks for the Land, Acorns for the People: Ecology and Sustenance of a Wild Local Food.** Have you ever wanted to try eating acorns? We will explore the botany and identification of oaks, and also how human needs can be met when we help take care of the oaks. The workshop offers perspectives on the role of oaks in Indigenous ecological science, foodways, and worldview. We will practice hands-on techniques using manual methods of processing, with the goal of making this widespread traditional food accessible to you. Instructors: Heron Brae, botanist, wild food teacher, and educator at Live Oak Consulting; and Joe Scott, member of the Confederated Tribes of Siletz Indians and curriculum director for the Traditional Ecological Inquiry Program. Meet at the White Oak Pavilion. A to-bring list will be emailed in advance. Members \$60, Non-members \$70. **Limited to 12 attendees. Pre-registration required. To register visit:** <https://mountpisgaharboretum.org/learn/workshop-registration/>

**University of Oregon's Museum of Natural and Cultural History** <https://mnch.uoregon.edu/museum-home>

Go to <https://mnch.uoregon.edu/programs> or call 541-346-3024 to learn about the Museum's many exhibits and programs.

**Native Plant Society of Oregon, Emerald Chapter** <https://emerald.npsoregon.org/>

**Monday, 19 September 7:30 to 9:30 p.m. Ecocultural Knowledge, Plant Communities, Ecosystems, and Fire. Presenter: Joseph Scott, Confederated Tribes of Siletz Indians.** A better understanding of the deep ecology reflected in Indigenous fire practice is a step toward recognizing the role Traditional Ecological Knowledge has played in shaping our shared places. A zoom link will be sent to members and posted on our web site closer to the date of the program.

**Saturday, 10 September, 9 a.m. to 5 p.m. Field Trip to Hand Lake.** Join us for a short hike to Hand Lake on the edge of Mt. Washington Wilderness, with McKenzie River Ranger District botanist Krista Farris. Our focus will be the Regional Forester's sensitive plant, *Gentiana newberryi* (Newberry's gentian). Meet at South Eugene High School at 9 a.m. or McKenzie River Ranger District at 10 a.m. Sign up [here](#).

**Saturday, 10 September, 1 to 2 p.m. Field Trip to Museum of Natural and Cultural History Native Plant Garden.** This excellent native plant garden that is little known to the community. With over forty species, the courtyard offers a rich array of plants that have provided nutrition and material for tools, shelter, and more for millennia. This is part of a monthly series of walks at this location. Limited free parking is in a designated lot located just west of the mammoths on East 15th Avenue, and metered parking is available on the street. The address is 1680 East 15th Avenue on the U of O campus in Eugene. Sign-up is not needed, and the tour is free to NPSO members.

**Nearby Nature** <https://www.nearbynature.org/> or 541-687-9699

**Tuesday, 13 September, 10 to 11:30 a.m. Green Start Play Day—Fall Fun!** Enjoy outdoor nature play in our Learnscape plus toddler and pre-school activities and stories—this month all about fall. Rain or shine! We're back to meeting in person! Kids 5 and under only, with an adult. Members free, non-members \$7/family. [Pre-register online.](#)

**Saturday, 17 September, 10 a.m. to 1 p.m. Alton Baker Park Clean-Up with SOLVE.** This free event will focus on the extensive waterways and riparian areas found in the park. Join neighbors, community organizations and local businesses in picking up litter and helping to ensure the space is clean and safe for everyone. Meet on the lawn by the yurt at [Nearby Nature's site in Alton Baker Park](#). Nearby Nature will provide gloves, tools, and small snacks. **Volunteers should register in advance with SOLVE (coming soon)**, bring a water bottle, and dress for the weather in closed-toe shoes and clothes they don't mind getting dirty. Due to potential safety concerns we ask that all participants are 13 years of age or older.

**Monday, 19 September. Fall Wonder Keepers.** Coming soon—our fall session of preschool Wonder Keepers for 3-5 year olds will start mid-September and run through mid-December. Participants in this all-outdoor program enjoy nature discovery in our Learnscape as well as in Alton Baker Park. Programs will start the week of September 19th and registration will be available soon. Wonder Keepers will happen M/W/F from 8:30 a.m. to 12:30 p.m. (option to enroll for one, two, or three days a week). Interested families will apply online (prior to full payment) and we will contact you to discuss our program. Flexible drop off and pick up first and last 30 minutes. Month-long sessions with a discount when you register for the whole fall. Exact program dates and times TBA, but will be available soon. If you would like to know promptly when our programs are open for registration, please [contact us](#) and note in your email that you are interested in Wonder Keepers. We'll send you an email alert when programs open. Scholarship assistance will be available.

**Friday, 23 September, 10 a.m. to 1 p.m. Alton Baker Park Day of Caring.** Free. As part of United Way of Lane County Days of Caring, Nearby Nature is hosting a cleanup of Alton Baker Park and the Whilamut Natural Area. Volunteers will team up to pick up litter ranging from Nearby Nature to the I-5 bridge. Meet by the Water Wise Garden at [Nearby Nature's site in Alton Baker Park](#). Nearby Nature will provide gloves, tools, and small snacks. Volunteers should [register in advance](#), bring a water bottle, and dress for the weather in closed-toe shoes and clothes they don't mind getting dirty. We ask that all participants are 18 years of age or older, or ages 10-17 with an adult. Please [preregister in advance through United Way](#).

**Saturday, 24 September, 1 to 4 p.m. Nearby Nature 30th Birthday Celebration.** Join us for a party in the Learnscape celebrating our 30th Birthday. Activities for kids, volunteer recognition, dragonfly cupcakes, edible schoolyard goodies, and more. Details to come...check back in late August.

**Friends of Buford Park and Mt. Pisgah** <https://www.bufordpark.org/> or 541-344-8450

Because people and nature need each other, the Park is OPEN during the COVID-19 pandemic. Please refer to [Lane County](#) for instructions about the park and updates.

#### **WREN (Willamette Resources and Educational Network)**

**Saturday, 24 September, 9 a.m. to noon. National Public Lands Day: Wetlands Workday!** Free volunteer workday. Pre-registration is required, please register [HERE](#). **Recommended Ages:** 10 and up. The Wetland Workday meets at the BLM Red House at 751 S. Danebo Ave. Eugene, OR. 97402. Come spend a morning in YOUR West Eugene Wetlands improving access and signage in sensitive habitats just off the Fern Ridge Bike Trail. Bethel and Eugene community members are invited to sign-up for public-service projects in the wetlands including maintenance work on the Danebo Boardwalk, increasing native plantings, and clearing out gardens around the Red House. Masks are not required while outdoors, but are welcome and encouraged. Parking and portable restrooms are available at the site. After a brief introduction and safety orientation, groups will split into one of three work areas on nearby trails. All volunteers receive a free t-shirt, a fee-free federal lands voucher, and access to the vast wetland knowledge of BLM staff and WREN educators. WREN is constantly monitoring COVID and weather for all of our events. We will email all participants 24 hours before the event if there are any changes or cancellations.

**NABA (North American Butterfly Association), Eugene-Springfield Chapter.**

**Trips and events returning this Spring and Summer, details to be listed soon.** <https://www.naba.org/chapters/nabaes/>

#### **Cascade Mycological Society**

**Sunday, 9 October, 1 to 3 p.m.** Come to the Mountain Rose Herbs Annex next to the Mercantile at 152 W 5th, Eugene. Bring mushrooms to ID, or enjoy cool specimens on display. There'll be microscopes to use in learning about fungi and spores. Mycological Society members will be on hand to converse on all things 'shroom.

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**ENHS welcomes new members! To join, fill out the form below. Membership payments allow us to give modest honoraria to our speakers and pay for the publication and mailing of *Nature Trails*. Our Web address:** <http://eugenenaturalhistorysociety.org/>

#### **MEMBERSHIP FORM**

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State & Zip \_\_\_\_\_ Phone \_\_\_\_\_  
E-mail (if you want to receive announcements) \_\_\_\_\_  
I (we) prefer electronic copies of *NT* rather than paper copies. \_\_\_ Yes \_\_\_ No  
If yes, email address (if different from the one above): \_\_\_\_\_

<b>ANNUAL DUES:</b> Family	\$25.00
Individual	15.00
Life Membership	300.00
Contribution	_____

Make checks payable to ENHS  
mail to ENHS, P.O. Box 5494, Eugene, OR 97405

<p><b>Annual dues for renewing members are payable in September. Memberships run from September to September. Generosity is encouraged and appreciated.</b></p>
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Famoso team in the field

### ENHS Officers and Board Members 2022–2023

President: August Jackson [augustjackson@ecolingual.com](mailto:augustjackson@ecolingual.com)

Vice President: Tom Titus [tomtitus@tomtitus.com](mailto:tomtitus@tomtitus.com)

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### 2022-2023 Speakers and Topics

16 Sept.	Nicolas Famoso	In the Shadow of Volcanoes
21 Oct.	Peter Hatch	Sea Otters and Traditional Ecological Knowledge
18 Nov.	Nancy Staub	Salamanders
9 Dec.	Jeff Fleisher	Winter Raptor Surveys in the Pacific Northwest (co-sponsored with Lane County Audubon Society)
20 Jan.	Lisa Ballance	Marine Mammals
17 Feb.	Taylor Chapple	Sharks of the Pacific Northwest
17 Mar.	Pat O'Grady	Archaeology
21 Apr.	David Haskell	The Songs of Trees (co-sponsored with Emerald Chapter of Native Plant Society of Oregon)
19 May	Jamie Bowles	Sierra Nevada Red Foxes