Nature Trails

Published by the Eugene Natural History Society

Volume 57, Number 3, March 2023

The Eugene Natural History Society is based out of the traditional homelands of the Kalapuya peoples who stewarded this land for millennia. Today most Kalapuya people are 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.



Water and Wind: Paleoenvironmental and Archaeological Correlations at Rimrock Draw Rockshelter

Patrick O'Grady

Museum of Natural and Cultural History, University of Oregon

Friday, 17 March 2023, 7:30 pm

This month's meeting will be a hybrid of in person and real-time Zoom. The in-person lecture will be held in the Great Hall at the Campbell Community Center, 155 High St., Eugene. Parking is adjacent to the building. For the link to the Zoom lecture, see our website at https://eugenenaturalhistorysociety.org/ or click here: https://zoom.us/j/97499095971?pwd=eE9sdG9hSHMvOHhIUEJuU21wT20rdz09



Patrick O'Grady grew up in the Medford area. Bird watching, fishing, and hunting got him out in nature early on. His love of the desert country of eastern Oregon began with a trip to Steens Mountain when he was 9. His first impression wasn't

good, but it must've grown on him because he couldn't wait to go back the next year. Now, some years later, he's managed to get set up so he's in eastern Oregon part of every year.

Mrs. Cook, O'Grady's 3rd-grade teacher in Medford, noticing the books he was checking out of the library, told him it looked like he was on his way to becoming an archaeologist. What is it about 3rd-grade teachers? They have this knack of observing their diminutive charges, predicting what will become of them, and sometimes subtly helping them along their way. O'Grady has all of his degrees from the University of Oregon. He graduated magna cum laude in 1996 with his B.S. degree and obtained his M.S. degree in anthropology in 1999 and his Ph.D. in 2006. Both M.S. and Ph.D. projects were under the direction of Dr. C. Melvin Aikens, whose area of expertise was the archaeology of the Great Basin of North America. O'Grady's master's thesis, Human Occupation Patterns in the Uplands: An Analysis of Sourced Obsidian Projectile Points from Playa Villages in the Fort Rock Uplands, Lake County, Oregon, was an exploration of highland village settlement and mobility patterns in the uplands between the Fort Rock and Summer Lake basins in south-central Oregon. His Ph.D. thesis, Before Winter Comes: Archaeological Investigations of Settlement and Subsistence in Harney Valley, Harney County, Oregon, is an examination of evidence of humans in the mid to late Holocene and their land-use patterns in wetland and upland areas of this large and (then) relatively well-watered valley. This title still describes many of his present research interests.

Before he became a staff archaeologist for the University of Oregon's Museum of Natural and Cultural History while still working on his Ph.D., O'Grady worked for several years as an archaeologist for the Oregon Department of Transportation. He has also done archaeological work for the U.S. Bureau of Land Management in eastern Oregon. The BLM provided a significant share of the financial support for his graduate field work.

O'Grady has presented his research at many conferences and has spoken to a large number of groups such as ours. He also has considerable teaching experience, including 20 seasons with the MNCH's archaeological field schools. When I asked him what it was like leading these field schools, he lit up: "It's the hardest work but the most fun of anything I do." Most students, who come from all over the U.S. and from other countries, have little or no camping experience. Many can't believe it when they first arrive at the site—always somewhere in the Oregon desert. (A panoramic photograph of one of the locations hangs in his office/laboratory. A speck of white canvas is visible in the middle of a vast, unbroken stretch of sagebrush with the very occasional juniper and foreboding hills in the distance.) The new students' jaws drop open and they intone something along the lines of "Is this it?!" But they don't complain. In fact, more people are volunteering part of their vacations just to be a part of these teams, embracing the desert experience. O'Grady is proud of these team members. They have gained experience in archaeological methods by working at one of the most complex digs in the country. Many have become archaeologists themselves.



Rimrock Field School, 2021. Trailer art by Megan McGuinness. Photo by O'Grady

Over 35,000 archaeological sites have been explored in Oregon. Fewer than 15 of these have multiple Clovis artifacts, once considered the oldest stone tool technology in the Americas. Many archaeologists only recently began to accept the idea that there are older sites, which are even more rare, and O'Grady will be talking about one of those: the Rimrock Draw Rockshelter. In 2009, O'Grady and his crew were working at Sheep Mountain (the site he discussed in his last presentation), and BLM archaeologist Scott Thomas often delivered supplies there. On one of his trips back and forth, he stopped at what appeared to be another likely spot, a shadowed basalt rim he could see in the distance that looked like a good place for a site. Sure enough, he found many artifacts on the rime but none at a sheltered area at the base. Suspicious, he reasoned that artifacts were there but buried. Again, he alerted O'Grady. Voila! O'Grady has been leading the archaeological exploration of this site since 2011. The first MNCH field school there was in 2012. Numerous artifacts have been found beneath a layer of volcanic ash from the climactic eruption

of Mt. Mazama that formed Crater Lake 7,600 years ago. These items date back to the end of the Pleistocene, and teeth fragments of extinct camelops have been found in proximity to the deepest artifacts. The enamel on these teeth has been carbon-dated at 18,300 years ago.

O'Grady clearly loves his work there. I could sense the awe and respect he has for the ancient people as he talked about how they were so attuned to their environment, how they hunted megafauna that are now extinct (camels, horses, and ancestral bison), and how they had to protect themselves from other apex predators.

Come and listen to what O'Grady and his teams have found in the past few years. We'll be at the Campbell Center at 7:30 pm on Friday, 17 March.

Mrs. Cook, to the extent you helped set O'Grady on his path, we thank you. Oregon thanks you. —John Carter

P.S. Portions of this introduction came from the piece I wrote for O'Grady's presentation to the ENHS in January 2012.

Saving The Ancient Ones by Reida Kimmel

Central to the lives and culture of Indigenous peoples of the Northwest was the understanding of connectedness, that each part of the world is connected: plants, animals, the earth itself. Humans are part of the circle, not the rulers; we are just one part of the whole. Elders speak of the near extinction of the Pacific lamprey with deep sorrow. How could this have happened? Why did we not notice sooner? What can we do to restore our ancient brother who has given his life for thousands of years to feed us, to enrich the earth?

How indeed! The Pacific lamprey, *Entosphenus tridentatus*, is the most widely distributed lamprey species on the West Coast. Its historic range extended from Baja California as far north and west as Hokkaido, Japan and into Russia. Indigenous people loved the rich, fatty meat and used its oil for lamps and medicines. At feasts and religious ceremonies, lampreys were served alongside salmon, both foods cherished and honored. Without lampreys or enough lampreys, the ceremony was marred.

With distribution patterns similar to those of salmonids, lampreys in the many millions swam

up all the major river systems of the Northwest, including the Fraser and upper Columbia rivers in Canada. But they are now extinct above the dams on the upper Snake River and the Columbia. The Euroamerican settlers saw lampreys as trash fish to be caught and hauled away for fertilizer. But dams have been the most destructive factor in the decimation of Pacific lamprey populations. More than 250 dams exist in the Columbia River watershed, and even where there is "fish passage," it is not designed for lampreys, killing thousands and thwarting what were once millions. No safe havens are available. Culverts, sedimentation, and pollution have destroyed populations in small rivers and streams along the coast.

The lamprey is such a peculiar creature, not exactly a fish; but this ancient relative of bony fishes evolved about 450 million years ago. It has no bones (just cartilage) and no jaws. Adults have a pair of blue eyes and a light-sensing spot on top of the head. A nasal pore on the head senses odors. On each side of the body are seven gill slits. Indigenous people sometimes call lampreys "nine eyes" and often "eels" because

of their body shape. An adult's mouth is a strong sucking disk with three teeth and a rasping tongue, perfect tools for attaching to their prey: fish and marine mammals on whose blood and fluids lampreys exclusively feed. The wounds and parasitism do no lasting damage to the prey and may actually protect the victim, because ocean predators prefer the easy harvest of lampreys attached to their hosts, an off-beat but effective example of symbiosis. Ready to breed after some years at sea, lampreys cease to feed and come close to shore, often delaying a year before surging up the rivers of the West to distant streams such as those that nurtured them as larvae. The sucker mouths are essential for the journey inland, allowing lampreys to hold onto rocks as they swim and thrash their way upstream over rapids and waterfalls. Like salmonids, lampreys seek a gravel substrate and clear, clean, cool water so that some of the female's 100,000–300,000 eggs will hatch. Attracted by the scent of larvae in a stream's detritus, a lamprey pair builds a gravel nest somewhat upstream of the quieter nutrient-rich pools where the larvae will spend 3–7 years. Their task completed, the adults die, and their decomposing bodies enrich both water and land. The larvae filter feed, clearing the water of vegetable and animal waste. But these very small water purifiers can only thrive where modern toxic pollutants and sediments are absent. When ready, larvae undergo a complete metamorphosis, rearranging internal organs and developing large functional eyes and the sucker mouth. They then make a leisurely journey to the Pacific, adjusting to the increasing salinity, and so the cycle begins again.

The West's largest waterfall is Willamette Falls in Oregon City. It is quite inaccessible for walking or viewing. The whole area is so rundown that it is impossible to enjoy the beauty of the Falls. But this waterfall is the only remaining place with a sufficient return of lampreys to justify harvest. Pacific Gas and Electric controls the flow of the water at the Falls, and at summer's low-water time, PG&E puts up boards to direct water into the turbines. This schedule also determines when tribal people can harvest lampreys. Tribal fisheries experts, young folks, and elders from many tribes gather

to harvest this last abundant treasure. Not all are lampreys are eaten or saved for the old and the needy. Many thousands continue their journey up the Willamette River, and heavy bags of live lampreys are carried off to tribal hatcheries.

Most tribal members believe that were it not for the care that Indigenous people take to improve water quality and habitat conditions, salmon and lamprey would both be doomed. Members of the tribal communities and their fisheries scientists work to make safe, effective passageways for lampreys. The Nez Pierce, Warm Springs, Umatilla, Yakima, and Grande Ronde Tribal Confederations have their own hatcheries where lamprey restoration plays an important part. Unique, creative programs are aimed at giving lampreys access to their prehistoric habitat on the Snake and upper Columbia rivers and tributaries, places where lampreys have been extinct since the 1960s. They do not make baby lampreys at the hatcheries. Instead they truck adults in spawning condition, caught at Willamette Falls and below the Columbia River dams, to places where the water conditions are favorable and lampreys once flourished. Upon arrival, the lampreys are released and "it's up to them now." Pairs breed upstream of perfect larval habitat and, their life's work complete, die. Years later, metamorphosed young lampreys will swim back to the sea. Some will return to the same sites to breed, and others will seek out new spawning sites. Under the right conditions, perhaps many small populations can be established. Perhaps more lampreys than were translocated will return to breed. It's a slow way to build populations, but all the descendants of the transplanted fish will be completely wild, genetically diverse, and resilient. Already more adult lampreys are travelling upstream of the lethal dams, a hopeful sign.

B. Toastie's brilliant illustrated article "Underwater Legends" in *High Country News*, October 2022, is an amazing read. *The Lost Fish*, a documentary by Freshwaters Illustrated, the Columbia River Intertribal Fish Commission, and the U.S. Fish and Wildlife Service, tells a touching and hopeful tale.

Planting in a Post-Wild World

by Margaret Essenberg

As a child, I played with my friend Amy in woods near our homes, inventing stories set in forest and lake. As a grad student, I retreated for spiritual balm to the pathless woods near my small university. These places remain fresh in memory. They were *nearby*. However, as human populations shift into dense urban living and working spaces, people are deprived of such everyday natural places.

My attention was caught by a book with the title of this essay. As a boy, author Thomas Rainier romped with "a pack of irreverent boys" through Piedmont Forest in Alabama. It is now housing developments and big box retail stores. His coauthor, Claudia West, grew up in the polluted concrete barrens of 1980s East Berlin. Nature was reduced to wasteland vegetation and her family's intensely cultivated allotment. After the fall of the Berlin Wall, however, nature rebounded: "we catch safe-to-eat trout in the once highly toxic streams."

Thomas and Claudia came to this book with stories of nature lost and nature regained. They believe that people yearn for nature. They also believe that for nature to thrive under the constraints of urban spaces, it needs our help. They have written an illustrated manifesto for bringing into our cities and suburbs resilient plant communities that mimic natural ones. The essence of their designs is densely planted assemblages of species. Their method is a blend of horticulture and ecology.

They write that a well-designed planting is harmonious in the relationships of its plants to the place, people, and other plants. They state five principles that define a designed plant community. (1) It is composed not of isolated individuals but of populations of plants that are related to one another. (2) The intrinsic stress of a site can be an asset for deterring weeds when the selected plants are adapted to that particular stress. (3) The community will be stabilized when the ground is covered densely by plants. (4) Western culture and perhaps an innate bias for the savanna give many people a preference for openness and clean edges. Therefore, with the exception of accent species or leafless stems that one can look through, plants are chosen to be no more than waist high so that a person can

see the whole planting, and such a planting may be framed by lawn, hedges, or walls to avoid messy edges. (5) Individual plants are not maintained by regular actions such as pruning and leaf litter removal; rather, the community of plants is managed by infrequent actions such as mowing or occasional plant replacement.

Inspired by the wild, the designer chooses a landscape archetype appropriate to the site: grassland, woodland (perhaps including its border with grassland), or forest. Plants that occupy the various heights and light levels in the landscape are chosen. Because the urban planting site is much smaller than the natural landscape, the design is simpler than a natural community; it "exaggerates and amplifies" the plants that have the visual essence of the archetype. The numbers of individuals of a given species planted together are governed by the patterns in which they grow in nature, varying from individual plants to large areas.

The big challenge is principle 5: to design a planting that requires only occasional management. Changes in species composition of a planting are inevitable, but when the plants are well chosen, the community will be resilient.

In 1979, Richard Hansen and Friedrich Stahl wrote that plants should be chosen from a natural habitat similar to that of the new site. It followed that one can invent a novel but stable plant community by combining exotic plants from similar habitats, expanding the designer's palette of plant forms and colors. Norbert Kühn developed an eight-class system of adaptive strategies that plants use to survive. Rainier and West use Kühn's system to select plants that are compatible with a site and with one another. They then assemble them in design layers and functional layers. Design layers are dramatic: trees, dominant shrubs, tall grasses, and seasonal splashes of color. Functional layers are lowgrowing ground covers that give the community stability, hold the soil, discourage weeds, and help filter rainwater. These low plants also may fix nitrogen, feed pollinators, and achieve phytoremediation of polluted soils. They may be self-sowing annuals and should be planted densely. We may not even notice them; "use them like you would mulch." Diversity is a virtue.

What do we think of this approach? The many photographs in the book are beautiful. Drifts of diverse plants completely cover the ground. Leaf forms and colors contrast. The designs are clear, with spots or patches of color. The photos remind me of some plantings that I see in Eugene.

It is now well established that plant diversity discourages pests and diseases, thus enhancing the stability of Rainier's and West's plantings and easing the work of management. However, I think there is much more to be learned about how plant species interact with one another in natural communities. If one wants to attract, feed, and harbor wildlife, native plants should be used. ENHS members know that ground-nesting species of native bees require bare soil, which these authors abjure. However, these comments are not criticisms of the book's main approach.

Rainier and West offered me hope that "we don't need to go to a national park to have a spiritual experience of nature; we can have such experiences in our backyards, parks, and rooftops."

Events of Interest in the Community

- McKenzie River Trust https://mckenzieriver.org/events/#event-listings or 541-345-2799
- **Sunday, Mar. 12, 5–7pm.** Winter Writers Series, Tsunami Books, Eugene. Nine local writers weave stories of connection between people and place. From old log ponds and logging camps to kitchen windows that reveal a nation's painful past, we can experience loss, connection, hope, and humor.
- Wednesdays, Mar.—June, 9–11:30 am. Watershed Wednesdays at Green Island. Join McKenzie River Trust every Wednesday morning at Green Island to help care for this special area where the McKenzie and Willamette Rivers meet! Projects differ based on the season but typically include invasive species removal, habitat care, planting, and tree establishment. Work is easy to moderately difficult. There is a restroom on site. Projects are best for participants 13 years of age and older. Winter, spring: invasive species removal, collecting seeds, planting. Sign Up
- Second Saturdays, Mar.–Dec., 8:00am–4:00pm. Near the confluence of the Willamette and McKenzie Rivers. Observe 15 years of tree planting on Green Island, a habitat for beaver, river otter, and >150 species of birds.
- First Fridays, 7 Apr., 9:30 am, 13 spaces remaining; Friday, 5 May, 9:30 am, 14 spaces remaining. Friends of Finn Rock Reach meet from February through November. Projects include invasive species removal, caring for the public Finn Rock boat landing, and restoring habitat in the middle McKenzie River area. Details for each project are available upon sign up.
- Lane County Audubon Society www.laneaudubon.org or 541-485-BIRD; maeveanddick@q.com or 541.343.8664

 Saturday, 18 Mar. Third Saturday Bird Walk, with Shinai Grz. Golden Gardens Park. For more information, check the LCAS website or Facebook page or email audubon@laneaudubon.org.
 - **Tuesday, 28 Mar., 7pm. Antarctica and the Sub-Antarctic Islands,** with Magnus Persmark. Campbell Center, 155 High Street, Eugene. In January, Magnus and his wife joined a cruise to the Falkland Islands, South Georgia, and the Antarctic peninsula. Magnus will share some impressions and photos of extraordinary birds and scenery.
- Native Plant Society of Oregon, Emerald Chapter https://emerald.npsoregon.org/.
- Monday, 20 Mar., 7–9pm. Seasonal Blooms in the Willamette Valley: Community Science and Research, with Jeff Diez, and Gail Baker. Amazon Community Center. Presentation will highlight the role of Friends of Buford Park Native Plant Nursery, which has expanded in space, management practices, and diversity of species grown.
- Sunday, 26 Mar., 1–3pm. Buford Park East Trailhead Ramble, with Karl Anderson. Meet at Public Market in Pleasant Hill. On these casual walks, participants identify and share their knowledge of plants. All levels of experience are welcome. For questions, call Karl Anderson at 505-257-0554.
- Saturday, 8 Apr., 9–10am. Amazon Park Family Plant Walk. Amazon Community Center. Join NPSO members on a family-oriented plant walk around Amazon Park to learn what grows in your neighborhood.
- Saturday, 15 Apr., 1–2pm. Museum of Natural and Cultural History Native Plant Garden. University of Oregon campus. Emerald Chapter members will lead a short walk in and around the museum's Glenn Starlin Native Plant Courtyard. Sign-up is not needed, and the tour is free to NPSO members.
- Saturday, 15 Apr., 9am–3pm. Brice Creek Trail Hike, with Bruce Waugh. Meet at South Eugene High School for carpooling. In this old growth forest on a streamside trail through a scenic rocky canyon, the walk is 3 miles round trip on an easy to moderate trail. Bring lunch, water, boots, rain gear, and possibly hiking poles.
- Mt. Pisgah Arboretum https://mountpisgaharboretum.com/festivals-events or 541-747-3817
 - Monday, 20 Mar. Volunteer nature guides, orientation night. The Arboretum is looking for guides to lead groups of children on nature walks this spring and summer. If this seems interesting or if you have questions, email education@mountpisgaharboretum.org or call 541-741-4110.
 - **Friday, 24 Mar., 10am—noon. Early Spring Wildflowers Walk.** Arboretum Education Building. Join Interpretation Coordinator August Jackson for a walk to identify the flowers in bloom. Rain or shine. Don't forget your parking pass. Fee \$5, FREE for Arboretum members. Limited to 15 attendees. Preregistration required.

- Saturday, 25 Mar., 9am-noon. Wildflowers and Weeds Work Party. Arboretum Education Building. Observe wildflowers and remove encroaching nonnative and invasive species. We will be doing a 1.5-mile loop while carrying buckets and tools. Tools, gloves, and parking passes will be provided to volunteers. Bring a water bottle. Please RSVP if you plan to attend or email for more info. Limited to 15 attendees.
- Sunday, 26 Mar., 9am–1pm. Meanderings. Arboretum Education Building. Join Julia Siporin to attune your senses to the simple delights and serenity of the natural world using various sensory awareness practices and guided mindfulness-based meditations. Bring something to sit on such as a mat or small folding chair. Fee \$5, FREE for Arboretum members. Limited to 12 attendees. Preregistration required.
- Sunday, 30 Apr., 10am–1pm. Birds, Bees, Butterflies and Blooms Walk. Local ecologists Peg Boulay and Bruce Newhouse will identify and engage with flowers, trees, birds, bees, and anything else you please! Rain or shine. Meet at the Education Building. Don't forget your parking pass. \$5, FREE for Arboretum members.
- Nearby Nature https://www.nearbynature.org/ or 541-687-9699, 622 Day Island Rd., Eugene (Alton Baker Park)

 Tuesday, 28 Mar., 8:30am-4:30pm. No School Day Adventure: Puddle Power. Alton Baker Park. Rain or shine, kids ages 5-11 in groups of 12. Ponder the power of water as we play Mountain Melt, experiment with our stream table, weave a river's web of life, make mud pies, and build like beavers. \$60 members, \$70 nonmembers. Scholarships available. Preregister online.
 - Wednesday, 29 Mar., 8:30am-4:30pm. No School Day Adventure: Soil Scientists. Alton Baker Park. Rain or shine, kids 5-11 in groups of 12. \$60 members, \$70 nonmembers. Scholarships available. Preregister online.
 - **Thursday, 30 Mar., 8:30am–4:30pm. No School Day Adventure: Spring Sprouts.** Alton Baker Park. Rain or shine, kids 5–11 in groups of 12. \$60 members, \$70 nonmembers. Scholarships available. Preregister online.
 - Mondays, Wednesdays, Fridays, 3 Apr. to 16 June, 8am–5pm. Preschool Wonder Keepers. Alton Baker Park. Rain or shine, kids ages 3–5. Children will enjoy sensory adventures, cooperative activities, nature storytelling, garden exploration, earth art, and free time in our outdoor play spaces. Online enrollment is ongoing. Scholarships available.
 - Monday, 3 Apr., 8:30am–4:30pm. No School Day Adventure: Flower Power. Alton Baker Park. Rain or shine, kids 5–11 in groups of 12. \$60 members, \$70 nonmembers. Scholarships available. Preregister online.
 - Tuesday, 11 Apr., 10:00–11:30am. Green Start Play Day: Get Egg-Cited. Alton Baker Park. Rain or shine, kids 5 and under with an adult. This month, it's all about critters who lay eggs! Members FREE, nonmembers \$8/family. Preregister.
- Museum of Natural and Cultural History, University of Oregon https://mnch.uoregon.edu/museum-home
 Visit the museum during Spring Break and receive 20% off family and individual new or renewing memberships.
- 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 go to the Lane County website for instructions about the park and updates.
- WREN (Willamette Resources and Educational Network) https://wewetlands.org
 See the website for programs and information.

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*. Find us at: http://eugenenaturalhistorysociety.org/ https://www.youtube.com/channel/UCEryzVh9lw9y-nLS t94BVw

MEMBERSHIP FORM Name Address City State & Zip

I (we) prefer electronic copies of NT rather than paper copies. ___Yes ___No

E-mail for electronic copies of NT

ANNUAL DUES:

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 Memberships run from September to September. Annual dues for renewing members are payable in September. Generosity is encouraged and appreciated.



A large herbivore tooth and three Paleoamerican stone tools unearthed at the North Terrace study locus. Photo by O'Grady

ENHS P.O. Box 5494 Eugene, OR 97405

The Eugene Natural History Society meets on the third Friday, September through May, except in December when the meeting is on the second Friday. Meetings are at 7:30 pm and/or on Zoom. Locations are noted in *Nature Trails* and on our website:

 $\frac{https://blogs.uoregon.edu/enhsu}{oregon/}$

ENHS Officers and Board Members 2022–2023

President: August Jackson <u>augustjackson@ecolingual.com</u> Vice President: Tom Titus tomtitus@tomtitus.com

Immediate Past President: Dean Walton

Secretary: Monica Farris

Treasurer: Judi Horstmann horstmann529@comcast.net

Board: John Carter, Tim Godsil, Chuck Kimmel, Reida Kimmel, Kris Kirkeby, Stan Sessions, Dave Wagner, Kim Wollter

Website: Tim Godsil tgodsil@uoregon.edu

Nature Trails: Editor: Kim Wollter kwollter@comcast.net; Support: Reida Kimmel, Chuck Kimmel, Stan Sessions, Tom Titus

2023 Speakers and Topics

21 Apr.

17 Mar. Pat O'Grady Water and Wind: Paleoenvironmental and Archaeological Correlations at Rimrock Draw Rockshelter

David G. Haskell Sounds Wild and Broken: What Listening Can Teach Us about Ecology, Evolution, and

Ethics

(cosponsored with the Emerald Chapter of the Native Plant Society of Oregon)

19 May Jamie Bowles Sierra Nevada Red Foxes