Nature Trails

Published by the Eugene Natural History Society

Volume Forty-eight, Number Two, February 2013

The day before the breach. Photo by R. W. Lowe

Tidal Marsh Restoration On Bandon Marsh National Wildlife Refuge

Three months after the breach, at high tide. Photo by R. W. Lowe

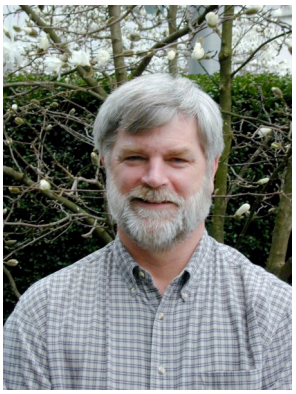
Roy W. Lowe, Project Leader, Oregon Coast National Wildlife Complex U. S. Fish and Wildlife Service, Newport, Oregon

Friday, 15 February 2013, 7:30pm, Room 100 Willamette Hall, UO Campus

Back when Roy Lowe's father moved from Los Angeles to Sonoma County, California, prune orchards abounded. Busloads of tourists from the Bay Area would show up in spring during the annual Prune Blossom Festival to see the valleys full of white blossoms. (Tourists still flock to Sonoma County, but the plant product they are interested in is not prunes.) The locals introduced the elder Lowe, who was a city boy, to the natural world through hunting and fishing, activities he quickly grew to love. He in turn got his son hooked. The young Lowe was tasked with sneaking up on ducks that were along the edge of the Russian River

and flushing them toward his dad. He took it as a personal challenge to get as close as he could to them before they took off. Later, after he was old enough to take the hunter-safety course, he graduated to hunting them himself. He and his dad also fished for trout and bluegills in the Russian River. When he was about 12 Lowe saw an ad in a magazine. It was a picture of a man in uniform saying, "Become a Game Warden!" He thought to himself "Wow! You can actually have a job that takes you out into nature!"

After high school in Healdsburg, where one of his talents was demonstrated on the football field, he enrolled in Santa Rosa Junior College. His football career came to an abrupt end when he blew out a knee. The injury was a blessing in disguise because it had been hard to be both an athlete and a scholar. With the pressure of athletics removed he was able to concentrate on the history and math and other general courses he was taking. From SRJC he went to Humboldt State University, in Arcata, California, where he got his B.S. in Wildlife Management. He said HSU was an excellent school for that program, not only for the curriculum but also for the assistance in obtaining a position in that field after graduation.



In 1977, wildlife-management credential newly in hand, Lowe got a temporary position with the U.S. Fish and Wildlife Service in the deep south of Alabama. He withstood the shock of going from the cool coastal redwoods to the sweltering swamps of Alabama and Mississippi, and after a few months his superiors recognized they had a winner and offered him a permanent position. He was there for four years, after which he transferred to the San Francisco Bay National Wildlife Refuge Complex. There was an opening there for a wildlife biologist and he got in barely under the wire of the 1981 Reagan Federal hiring freeze.

In 1985 Lowe became the first employee of the USFWS to be stationed on the Oregon coast. Located in Newport, his initial focus was on marine wildlife, chiefly seabirds. Over the years he has assumed more and more responsibilities, and now he is the Project Leader for the Oregon Coast National Wildlife Complex, which covers 320 miles of coastline from Tillamook Head to the California border. The marine refuges within this Complex – Oregon Islands, Cape Mears, and Three Arch Rock – protect 1,863 coastal rocks, reefs, islands and three headland areas where over a million seabirds nest. There are three estuarine Refuges within the Complex as well: Nestucca Bay, Siletz Bay, and Bandon Marsh. This last area, Bandon Marsh, is the topic of Lowe's presentation to us. The Bandon Marsh National Wildlife Refuge comprises two areas: Bandon Marsh Unit and Ni-les'tun. Ni-les'tun was established in 2000 to protect and restore intertidal and freshwater marsh habitat and riparian areas, critical habitat for migratory waterfowl as well as anadromous fish.

Lowe's biggest frustration has been the time it takes to acquire the privately held lands so crucial to the expansion and restoration of these critical areas. But his biggest achievement has been his part in their actual acquisition, knowing they will provide lasting benefits to fish and wildlife populations and to the American public.

Many other groups like ENHS have been eager to hear the story of the restoration of these critical estuarine areas to their natural state. Lowe reckons he talks to organizations like ours roughly once every other month. In addition he and other members of his staff have shared their expertise by giving presentations at other state and federal agencies and at regional and national conferences.

Lowe summarizes what he will tell us as follows: "In September 2011, the USFWS and its many partners completed the Ni-les'tun Tidal Marsh Restoration Project on Bandon Marsh National Wildlife Refuge. The 418-acre project is the largest tidal marsh restoration ever constructed in Oregon and the second largest in the Pacific Northwest to date; upon completion it doubled the amount of tidal salt-marsh habitat within the estuary. The restoration involved three major construction projects including improving more than 3 miles of county road and raising it 7-8' in two locations; undergrounding an overhead electrical transmission line by boring under the river and up a hillside; and constructing the marsh restoration project itself. All of this construction was carefully done among numerous known and unknown archaeological sites including two that are on the National Register of Historic Places. The success of this project is due to extensive and dedicated partnerships of the USFWS with other federal, state and county agencies, two tribes, and several universities and non-governmental organizations."

All of us who treasure our state's precious and unique coastline owe a debt at least of thanks to Roy Lowe and others like him who have worked so hard and so well over the decades. You will want to be in the hall to hear Lowe's presentation "Tidal Marsh Restoration on Bandon Marsh National Wildlife Refuge" on Friday, 15 February at 7:30 pm. See you in room 100 Willamette Hall on the U of O campus. John Carter

For a touching summary of this massive effort go to http://www.youtube.com/watch?v=Dgyta4TDaEc

Out and About

"Out & about" is a periodical encouragement to Eugene Natural History Society members to get out and experience our magnificent Oregon. Photos and descriptions provided by David Stone.

Winter is a great time to head down to the Klamath Basin, host to the largest wintering population of Bald Eagles in the lower 48 states. But that's not all to look for when you visit. The bald eagles gather there because it is also winter home to abundant waterfowl (if you want to find an animal, look for its food).

And don't head straight to Lower Klamath National Wildlife Refuge. Just south of town, make a short side trip to the Miller Island unit of the Klamath State Wildlife Area. Here you'll find such birds as these Ross's Geese. They look a lot like Snow Geese, only smaller. But don't worry if you can't tell the difference; they both form spectacular, noisy, often mixed flocks when they lift off the ground.

Be sure to take in the Public Interest Environmental Law Conference (28 Feb-3 March), one of the largest Environmental Conferences in the world, right here at the UO Law School. Google PIELC for details.

President's Corner

Waiting for Warm Rain by Tom A. Titus

February eases in on the heels of a dry January that included two weeks of rainless foggy freezing gray cold-to-the-bones overcast. Day length remains my obsession as the seasonal yo-yo of light rolls perceptibly outward after those dark months around the winter Solstice and full nightfall remains at bay until six in the evening. Winter is over on my mental calendar, and I begin tapping my fingers, waiting for those first frog-strangling fifty-degree rains.

During my undergraduate days, that warm deluge made me a herpetologist. When February darkness came, my buddy Bryan and I drove the roads of the central Willamette Valley just for the thrill of seeing rough-skinned newts and red-legged frogs and Pacific chorus frogs crossing the glistening pavement, migrating from Willamette Valley forests into their breeding ponds. But the animals that really pushed my buttons were the large cocoa-brown northwestern salamanders (*Ambystoma gracile*), paratoid glands bulging from either side of their heads, lumbering through the gallery forest and across the asphalt loop through Helmick Park to court and lay their gelatinous baseball-size egg masses in the Luckiamute River. My wife Kim says they look like space aliens.

Perhaps northwestern salamanders really are otherworldly, because their curse fell upon me. I became a salamander geek, even managing to engineer a long-range Master's thesis around northwestern salamanders while I was at the University of Kansas. There is little help for those of us so afflicted. Although we have effective twelve-step programs for addictions to alcohol, marijuana, gambling, and sex, to my knowledge there are no chapters of Salamanders Anonymous. Oh well—I wouldn't go to the meetings anyway because I really don't want to recover.

Normally salamander geeks go about their daily business without being too public in their obscure attraction to the sleek and slimy. We try to be normal, try to avoid attracting too much attention to ourselves. Really. But occasionally something causes us to crawl out from under our rocks, squint, and become a little too obviously enthusiastic about the animals we love. This happened recently when a research article on spotted salamanders went viral on the Internet. Over the course of one day my daughter emailed me a link and a co-worker with whom I am Facebook "friends" posted it on her page. In fairness to the scientists and those of us who aren't glued to bytes and phosphors, the original

research by Kerney and colleagues in the *Proceedings of the National Academy of Sciences* was published in February 2011, almost exactly two years ago. So the Google servers that supposedly place the world instantaneously at my awkward fingertips seem to be a little slow on the uptake. But hey, salamanders are on the slow side, and two years for one of them to rise to public prominence by being featured on a Reddit, a social media newsfeed, isn't so bad.

In short, the story runs like this. Biologists have known since 1942 that developing embryos of the beautiful spotted salamander (*Ambystoma maculatum*) contain an alga aptly named *Oophilia ambystomatis* within the egg capsules. The relationship is truly symbiotic because the alga benefits from the carbon dioxide produced by the embryo and the salamander profits from photosynthetic oxygen produced by the alga. Interestingly, the jelly of spotted salamander egg masses is so dense that dissolved oxygen that might be carried in by water is reduced, drastically so for embryos in the center of the egg mass.

But Kerney and associates found this relationship between salamander and alga to be far more profound—the embryonic tissues and cells actually contain algal cells. If this weren't startling enough, a year later Graham and colleagues showed in the *Journal of Experimental Biology* what Kerney et al. had earlier suspected: that this algal symbiont actually provides photosynthesized carbon to the developing salamander embryo. Now I love photosynthetic organisms just as much as the next non-botanist—you know, big Douglas firs and showy white trilliums and corn on the cob and collard greens with butter and vinegar. Plants are beautiful and don't run off when you try to photograph them, and many taste great. Humans depend upon them for oxygen and food and a huge number of other so-called "ecosystem services." But while I like my green leafy vegetables, the idea of a vertebrate sharing inter- and intracellular space with a living green thing is positively mind bending.

Now my mind is flexing around the reality of February and I am waiting for that mothership of warm rains to bring out my beloved brown space monsters. We know that northwestern salamanders are green, too. They are the closest living relative of the spotted salamander and also contain *Oophila* in their egg masses. I predict that if researchers spend the time looking, they will discover that northwestern salamanders have become fully co-opted by *Oophilia* and are also green photosynthetic machines. I can say this because, well, talk is cheap and I won't likely do that work myself but also because even given the vast sweep of biological diversity produced by evolution, the world of possibilities in this evolutionary process is very much constrained. Tight relationships between organisms such as host-parasite associations and symbioses tend to remain in place even as new species form and the tree of life bifurcates. One of the most extreme illustrations of this principle is the ancient symbiosis between two free-living single-celled species that gave us our mitochondria, the intracellular energy factories contained within all eukaryotic cells that make up such diverse life forms as algae, collard greens, hedgehog mushrooms, and us. Eukaryotes have had mitochondria ever since.

The salamander-alga story confirms a mantrum that I am fond of repeating: biology is a mess, a beautiful sometimes brutal but always mind-boggling mess. Those of us who wade into this world that contains within it order and chaos and sensibility and confusion are not generally folks who are enamored of clear-cut, black-or-white, this-or-that categories. Time is a continuum and evolution produces a continuum of possibilities. Tennyson's version of nature "red in tooth and claw" is certainly true. Sometimes. But cooperation often counts for a lot, too. And by all means remember this: if sometime in the future the cohabitation of northwestern salamanders and algae goes viral on the Internet, you read the hypothesis in the pages of Nature Trails first!

Scorched by Reida Kimmel

Last year on July 8th, when we in the Valley were just welcoming sunny weather after a cool wet spring, a fire erupted near the Oregon-Nevada border in the tinder-dry, remote Owyhee Canyonlands. 2011 had been a wet year and there was an abundance of desiccated vegetation. By the time the fire was finally controlled, 582,313 acres had burned. This fire, called the Long Draw Fire, was the largest wildfire in Oregon's recorded history. In recent times we have learned that fire is part of the natural process, necessary in the big picture of landscape ecology. However, this fire was not that sort of a fire. It was too large, too hot, too all-encompassing and what is worse, it occurred in the center of the best remaining habitat for the endangered Greater Sage-Grouse [*Centrocercus urophasianus*] More than 491,000 acres of land critical to the survival of the species burned. The Oregon Natural Desert Association calls this tragic fire "the turning point for the population of Greater sage-grouse in the Western portion of its historic range." ODFW states that 84% of the burned area is either core greater sage-grouse

habitat, that is with many leks where breeding males display their fine plumage, or low-density areas with fewer leks but where enough habitat remains to support breeding populations. And there were other fires last year that burned even more acres of sagebrush and native vegetation elsewhere.

Greater sage-grouse are almost completely dependent on the foliage of Big sagebrush [*Artemesia tridentata*] in the fall and winter, though they do feed on the buds and leaves from other plants in spring and summer. Intense rangeland fires kill Big-sagebrush. It cannot resprout, and if replanted, does not grow swiftly. It takes between twenty and a hundred and fifty years for a burned area to be fully vegetated with mature sagebrush plants. Anyone who has been to the Oregon "desert", the miles and miles of sagebrush-dominated, seemingly empty land that encompasses most of the Southeast quadrant of Oregon and continues into Idaho and Nevada, knows that replanting over half a million acres of burned land is not going to be easy. There are no huge seed banks. There are few producers of native seed, and they are always sold out. The soil of sagebrush country is generally poor, deficient in nitrogen, often too rich in toxic salts. Fires must surely damage the cryptogamic crust, that four-millimeter-thick mix of cyanobacteria, mosses, and lichens that holds most of the soil nutrients and enables moisture to penetrate the earth. Efforts to replant devastated areas in the past have not been very successful because in all but the wettest years, the planted seeds, though they germinate, cannot penetrate the tough soil crust. Recent experiments using pelleted bunches of seeds are quite hopeful, because where one seed cannot force its way into the sunlight, the force of many sprouted seeds can crack the crust.

The greater sage-grouse's greatest biological enemy is cheat grass [*Bromus tectorum*], a nasty weed that hitchhiked from Europe with introduced cattle in the nineteenth century. It is everywhere in the Great Basin, food for nothing, sucking up moisture with its long, fine roots, crowding out native species. When the BLM decides to plant an area with native seed, it sprays the land with herbicide to kill newly sprouted cheat grass, and then plants natives. The problem is that the next year the cheat grass is back, as substantial numbers of its myriad seeds are programmed to sprout the second year. And so the young native plants may be choked out after all. Forest Service scientist Susan Myers is working on a naturally occurring fungus that destroys those second-year cheat grass seeds before they sprout. Let's hope that this "Black Fingers of Death" fungus can be produced in sufficient quantity to become a powerful inhibitor of cheat grass.

But the greater sage-grouse has an even greater enemy, and once again it's us, or most egregiously, our own government agency, the Bureau of Land Management. Teetering between its obligation to protect the land that all Americans own, and the interests of the ranchers who hold grazing permits for vast acreages of this fragile arid land, the BLM usually sides with the ranchers. The agency plants crested wheatgrass, a non-native forage relished by cattle but not by wildlife. It even mows down sagebrush. Cattle do not eat sagebrush though pronghorns and mule deer, and of course greater sage-grouse, do. Cattle require fences, foul the streams that they drink from, and leave hoof prints, divots that in wet seasons can harbor the larvae of West Nile-virus-carrying mosquitoes. Now, energy development poses another threat to the sagebrush habitat. Wind and solar energy both require service roads. Solar panels must be erected on land free of interfering vegetation, including sagebrush.

The core area critical for preventing the extinction of Sage-grouse is the BLM's Louse Canyon Geographic Management Area [LCGMA]. Much of this land burned in the Long Draw Fire. The land has been in contention and litigation for years. In 2011, spearheaded by ONDA, the district court ordered the BLM to prepare a new environmental assessment for its plans to graze cattle in the LCGMA. Unbelievably, the BLM released nearly 5, 000 cows into the canyon anyway. Then the canyon burned. Now ONDA has appealed the court's failure to force the BLM to stop grazing until they have a new environmental assessment. The BLM's response has been to announce plans to re-seed burned areas with non-native plants and to rebuild fences. In other words, grazing as usual even though the sage-grouse are more in need of help than ever.

We are witnessing the extinction of a bird we all know well, a local bird as it were. Many of us have had the unforgettable experience of watching male greater sage-grouse dance in the leks on a cold spring morning. It is both unbelievable and unbearable that this terrible thing could be happening, and I don't know what to do. The activist approach is to support ONDA in its legal battles, write letters to the BLM, and comment on any new environmental impact statements. Acquiring habitat is so important. The Nature Conservancy is good at that, but so much land is needed. Populations must not be allowed to drop below a critical number of individuals, because loss of genetic diversity or a disease epidemic could deal the final blow. The prognosis for the greater sage-grouse is indeed as bleak as the landscape it inhabits, but it is far too early to give up the struggle to save this species and all the other less charismatic or visible living beings that make the sage steppe their home.

MARCH 1 last chance to join John Day Fossil Beds trip!

Our annual field trip will explore the John Day Fossil Beds National Monument in eastern Oregon, **31 May through 3 June**. OMSI's Hancock Field Station will provide cabins for 3 nights plus meals at a cost of **$150 per person**.

We will explore all three areas of the Fossil Beds (Painted Hills, Clarno and Sheep Rock), the Thomas Condon Paleontology Center and Cant Ranch Historical Museum. There will be plenty of opportunities for hiking, studying geology and paleontology, taking photos and exploring on one's own. Check out www.nps.gov/joda for more information about this spectacular area.

To join the trip, full payment is **due 1 March**, with no refunds after 15 March. If you are interested in going on this trip, please contact Kim Wollter, 541-484-4477 or kwollter@comcast.net. Send payment to her, made out to Eugene Natural History Society, at 3550 Mill St. Eugene, OR 97405. This is a fabulous opportunity to visit some of the best and most beautiful geological formations in Oregon. We encourage you to join us!

Christmas Bird Count. To view the results of this herculean effort please look at the February 2013 issue of *The Quail*, Lane County Audubon Society's newsletter. There's a summary by Dick Lamster, and a big table with all the birds. If you don't get *The Quail* you can see it by going to LCAS's website (http://www.laneaudubon.org/thequail.htm) and clicking on the current issue.

Events of Interest in the Community

Lane County Audubon Society

Saturday, 16 February, 8 am-noon. THIRD SATURDAY BIRD WALK. *Delta Ponds, led by Jim Regali.* This in-town location often provides sightings of raptors, waterbirds, and songbirds, including the black phoebe, a regular at the ponds. Meet at the South Eugene High School parking lot (corner of 19th and Patterson) for carpooling at 8 am and plan to return by noon. All birders are welcome. A $3 donation is suggested. As a precaution, please remember not to leave valuables in your car. Questions? Call Maeve Sowles at 541.343.8664 or e-mail president@laneaudubon.org.

Tuesday, 26 February, 7:30 pm. Beyond the Summit Trail: Pisgah's Hidden Treasures. Val Rogers, development director for Friends of Buford Park and Mt. Pisgah, will talk about lesser-known places in the greater Mt. Pisgah area, including the Nature Conservancy's Confluence Project. 1645 High St., Eugene.

Mount Pisgah Arboretum

34901 Frank Parrish Rd., Eugene, 97405. Call Peg Douthit-Jackson at 541-747-1504, email mtpisgjp@efn.org, or look at http://mountpisgaharboretum.org/ to find out about current Arboretum activities.

Wednesday, 13 March or Tuesday, 2 April, 6:30-8 pm. Nature Guide Training at Mt. Pisgah Arboretum. Have a morning a week to share your love of nature with kids this spring? Mount Pisgah Arboretum is looking for volunteers to lead nature walks for K-5 grade students. No experience required. Free training covers natural history and how to lead fun, interactive tours. Orientation sessions will be held at Morse Ranch Family Farm, 595 Crest Drive, Eugene.

Nearby Nature

Go to http://www.nearbynature.org/events to view NN's calendar, or call 541-687-9699.

Monday, 18 February, 8:30 am-3 pm. Rhythms of the Forest No School Day Program. Class size is limited to a maximum of 12 kids. Nearby Nature Yurt in Alton Baker Park. For registration information call 541-687-9699.

Saturday, 2 March, 6:30-8 pm. Nature Quest: Treefrog Tunes. Meet at the Amazon Park playground and go on a treefrog tunes walk. Learn all about (and listen for!) Pacific treefrogs with Ecologists Peg Boulay and Bruce Newhouse. FREE for members. $2/person, $5/family. Pre-registration required: 541-687-9699.

Tuesday, 12 March, 6:30-8 pm. Spring New Volunteer Orientation. Love nature? Enjoy kids? Learn all about leading spring school nature walks in Alton Baker Park, as well as other Nearby Nature volunteer opportunities, in the Tykeson Room at the Eugene Public Library. No experience needed--training provided in April. Questions? Call Nearby Nature at 541-687-9699, email info@nearbynature.org, or see www.nearbynature.org.

University of Oregon Museum of Natural and Cultural History, 1680 E. 15th Ave.

http://natural-history.uoregon.edu/

Free Admission Wednesdays, 11 am – 5 pm.

Fridays, 1 pm and 3 pm, Guided Tours.

Ongoing Exhibits: 1) Out in Space Back in Time; 2) Nick Sixkiller, The Man Behind the MIC; 3) Geophotography; 4) Site-seeing: Snapshots of Historical Archaeology in Oregon.

Native Plant Society of Oregon, Emerald Chapter

Thursday, 21 February, 7:30 pm. Biographical video: Finding David Douglas. Location: EWEB Training Room, 500 E. 4th Avenue, Eugene. For more information call 541-349-9999.

WREN

Tuesday, 5 March, 3:30-5 pm. Volunteer Meet & Greet. WREN is seeking Education Guides and Operations Volunteers. Education Guides assist WREN staff with classroom and/or field programs, community events, prepare education materials, conduct workshops, and complete special projects. WREN provides special training for all Education Guides and offers opportunities for you to shadow an experienced Guide before you take the lead yourself. We are also looking for creative, skilled Operations Volunteers. Whether your specialty is in social media, web development and design, fundraising and/or grant writing, event planning, photography/filming, membership development, or general office, we have projects to match your interests. WREN has opportunities for high school and college students looking to fulfill requirements for graduation, as well as unpaid internships. Red House 751 S. Danebo Ave. For more info call 541-338-7047, email info@wewetlands.org**,** or go to their website: http://www.wewetlands.org/

Cascades Raptor Center

Open for Visitors: Tuesday – Sunday. Winter Hours (November - March) 10 am - 4 pm. Handler Talks: Sat & Sun at 1 p.m. Cascades Raptor Center is located in south Eugene on the side of Spencer Butte. Admission Fees (which help to feed the birds): Adults: $7, Teens/Seniors: $6, Children under 12: $4. Free to members. If admission fees are a problem you can go to your local public library and check out a free family pass, good for up to $25.

North American Butterfly Association – Eugene/Springfield Chapter

Monday, 11 February, 7:00 pm – refreshments; 7:30 – presentation. Butterflies and Other Invertebrates of South Florida. By Rick Ahrens. Butterfly enthusiast, long-time birder, and local naturalist Rick Ahrens will share his observations of and ruminations about selected invertebrates of the subtropical part of the Sunshine State. EWEB Training Center at 500 4th Ave., Eugene. Free, all are welcome.

We welcome new members! To join ENHS, fill out the form below. You will receive *Nature Trails* through November of this year. Membership payments allow us to give modest honoraria to our speakers, as well as to pay for the publication and mailing of *Nature Trails*. Our web address: http://biology.uoregon.edu/enhs/

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):_____

ANNUAL DUES: Contributing 20.00
Family 15.00
Individual 10.00
Life Membership 300.00
Contribution _____

Make checks payable to: The Eugene Natural History Society
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Annual dues for renewing members are payable in September. Memberships run from September to September.
Generosity is encouraged and appreciated.

The following information is voluntary, but appreciated:
Would you like to: __lead field trips __teach informal classes __work on committees?
What would you like to hear a talk on? _____
Do you have special experience in natural history: _____
INTERESTS: __Archaeology__Astronomy __Bird Study __Botany __Conservation __Geology __History of Science__Herpetology __Meteorology __Mosses & Lichens __Mushrooms __Nature Walks __Wildflowers __Zoology __Other_____

ENHS Schedule of Speakers and Topics for 2012-2013

15 Feb. 2013 – Roy Lowe	– Tidal Marsh Restoration on Bandon Marsh National Wildlife Refuge
15 Mar. 2013 – Gail Baker	– A Plant Ecologist's Dream Trip: The Floral Diversity of Australia
19 Apr. 2013 – Josh Roering	– Are mountains like giant sandpiles? A tale of giant landslides, ancient lakes, big floods, and fish evolution
17 May 2013 – Jason Dunham	– Bull Trout
20 Sept. 2013 – Scott Pike	– The Ness of Brodgar, Orkney's Ancient Temple Complex: Using Geochemistry to Unravel its Mysteries
18 Oct. 2013	– TBA
15 Nov. 2013 – Ray Rivera	– Native Salmonid Fishes of the McKenzie River.
13 Dec. 2013 – Daniel Robey	– Caspian Tern Predation in the lower Columbia River Basin

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Channel Excavation. Photo by R.W. Lowe