

Nature Trails

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R. Vega Thurber (L) and Ryan McMinds (graduate student), near Curacao

Coral Reef Decline

Rebecca Vega Thurber

Assistant Professor, Department of Microbiology

Oregon State University, Corvallis

PLEASE NOTE ROOM CHANGE

Friday, 15 April 2016, 7:30pm,

Room 177 Lawrence Hall, UO Campus

How many family vacations have any of us had centered around total solar eclipses? Our speaker's father was so intrigued by solar eclipses that the young Rebecca Vega got to see four of them. One such adventure had the family travelling to Turkey just so they could be where the eclipse was total.

Vega's parents met in the Cleveland Clinic, where her mother, a native of Pennsylvania, was a nurse and her father, a native of the Dominican Republic, was completing his medical residency. Vega's father set up his first medical practice in Puerto Rico, which explains why Vega's older siblings are all fluent in Spanish. But since her mom didn't care for Puerto Rico the family moved to Tucson, Arizona, where our speaker was born, which explains why her Spanish is poor. They lived on a ranch along the San Pedro River. The young Vega had a horse and a lot of land to explore, including a riparian zone, which along with the vacation experiences cemented her love of the natural world.

Vega went to the University of California at Santa Cruz for her undergraduate work, finishing with a B.A. in marine biology. From Santa Cruz she travelled a short distance to Palo Alto, where she did her graduate work at Stanford University under the tutelage of David Epel, a giant in the field of marine biology.

To understand how a child of the desert could end up a marine biologist we have to back up a bit. Vega's father was a naturalist at heart. While young in the Dominican Republic he dreamt of being a marine biologist. But that wasn't an option for his vocation so it became his avocation. He was an avid collector and even described a few marine species (and now his daughter has several of his specimens in a case in her office). Her family returned to the Dominican Republic for family visits every couple of years, which meant beach and ocean time. They also spent time in Hawaii, Florida, and Mexico on vacations, and these trips always included collecting forays on the beach and time in the water. Vega learned to scuba dive when she was 12. With these early experiences it's easier to see why she gravitated toward marine biology.

After completing her doctorate at Stanford she was awarded a National Science Foundation Minority Post-doctoral Fellowship, which allowed her to enter Forest Rohwer's lab at San Diego State University, which is where she first began working on the effects of marine viruses on marine ecosystems. While at SDSU she met Andrew Thurber and became Dr. Rebecca Vega Thurber. One of her findings at SDSU got her mentioned on Comedy Central's *The Colbert Report* (I cannot imagine how the Science Citation Index handled this). She gave a talk in New York City and mentioned the finding that one virus that commonly infects corals is distantly related to herpes-like viruses. Colbert could not resist; he used Vega Thurber's comment to define corals as "sluts of the sea." At the time Vega Thurber said the only higher honors she could imagine would be the Nobel Prize or being on Jon Stewart.

Her post-doc lasted three years, and then Vega Thurber took a faculty position at Florida International University,

in Miami. She said the new facilities and her new colleagues at FIU were marvelous, but Miami was not, so she applied for an open position in the Department of Microbiology at Oregon State University and got it. She loves OSU and has now been there a little shy of five years, enough time for her to make this comparison: "Miami could be considered the evil antithesis of Corvallis."

Vega Thurber is noted not only for her research contributions but also for her effectiveness as a mentor. There are undergraduates, graduate students, and post-docs in her lab. The lab focuses on how bacteria, viruses, and other microorganisms interact with and regulate marine ecosystems. She and her co-workers combine fieldwork (often the field is under water), metagenomics, microscopy and molecular biology to provide insight into a variety of scientific areas including virology, microbiology, coral reef ecology, animal physiology, and the evolution of symbioses. Currently her work is especially focused on tropical reef and deep-sea ecosystems. She says, "Coral reefs are hotspots of biodiversity but are increasingly threatened by factors such as climate change, pollution, and overfishing. One effect of these combined stressors is that corals are more frequently suffering from diseases of unknown origin. By isolating the viruses from healthy and sick corals, we can begin to understand which viruses may contribute to disease and decline of these precious habitats. Currently we have several projects on the types of viruses associated with Caribbean, Hawaiian, and Indo-Pacific coral diseases and bleaching events. We also are evaluating the types and effects of viruses on the development, fecundity, and health state of several species of corals from across the globe."

One good indicator of the quality of Vega Thurber's research is the extensive support her lab gets from the National Science Foundation. Another is the reputation of several of the journals that have published her work: *Nature*, *Proceedings of the National Academy of Sciences*, *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, *PLOS ONE*. A third is the number of collaborators she has, and their locations: she collaborates with scientists at Florida International University, Massachusetts Institute of Technology, U. of Texas at Austin, Duke U., U. of Miami, U. of the Virgin Islands, Cornell U., Nova Southeastern U., and California Institute of Technology, among other places.

The number of viral particles per cubic centimeter (cc) of seawater is somewhere between one and ten million. So one cubic kilometer, which is ten to the fifteenth cc, would have ten to the twenty-first or twenty-second viral particles, and since there are a great many cubic kilometers of water in all the world's oceans you get the idea that the number of marine viral particles is incomprehensibly large. Even if only a tiny fraction of them are pathogenic, marine organisms, as well as all that depend on them, could be in a world of hurt. In her talk to us Vega Thurber will relate some of her lab's recent work on the problem of coral bleaching, a recent scourge that has affected reefs in several places on the globe and that has a marine viral

component. Besides seeing what sick coral looks like I think we'll be treated to scenes of incredible beauty, both above and below the surfaces of several of the world's oceans. Please join us at 7:30pm on Friday, 15 April, in

room **177 Lawrence Hall (NOT 100 Willamette Hall)** to hear Dr. Rebecca Vega Thurber's talk "Coral Reef Decline." John Carter

It's All About Plastics by Reida Kimmel

Sixty-five or so years ago, my mother, who adored hurricanes, took me to watch the waves break over our town's seawall in the midst of a storm. The waves inundated Water Street, causing damage to a plastic factory that received shipments of brightly colored plastic chips and molded them into toys. The waters crashed into the factory's first floor and released the bales of plastic. They floated about and broke up. For weeks Stonington's streets were colorful and crunchy with plastic bits. And so was the harbor. We found it odd and interesting. No one called it pollution. Pollution was the untreated sewage that had made our bay scallops unsafe to eat.

By the 1970s plastic was omnipresent; bags, bottles, all sorts of packaging, floats and buoys, car-body parts, appliances, clothing. Plastic was apparently essential to our civilization, but it was also a global environmental disaster. When plastic trash gets into the water it does not sink, dissolve or disappear. Riversides from Japan to the Americas and even in the undeveloped world are thick with plastic debris, and most of it eventually finds its way into the oceans.

Because it is so light and durable, plastic has become the main component of marine debris. The proportion of debris that is plastic increases the farther one goes from shore. Some of it is smooth surfaced like buoys, but other objects such as coils of rope and abandoned nets have more complex surfaces. The debris found far from shore is more likely to have been dumped from ships or to be from cargo containers lost overboard, while debris close to shore originates from runoff, or beach litter and wind-blown litter. Over time the plastic breaks up, but it does not go away. Much of it is microplastic, with diameters of two millimeters or even less. Shockingly, the amount of plastic debris on the sea floor is as great as that on the surface. So great are the seabed accumulations that shipping companies have suggested clearing by dredging, notwithstanding the harm that would do.

Pollution from plastics on our vast oceans is hard to monitor, but it is indeed a real danger for wildlife. The endangered leatherback turtle eats mostly jellyfish. But drifting plastic shopping bags look a lot like jellyfish, and the turtles do ingest them. This can result in intestinal blockage or even suffocation when a turtle tries unsuccessfully to regurgitate the foreign body. Seabirds also mistakenly ingest plastic, and a stomach full of microplastic may feel full, but it has not been nourished. David Lee of the North Carolina State Museum of Natural History conducted a fourteen-year study of the digestive

tracts of seabirds off the North Carolina Coast. He found plastic in the stomachs of 21 of the 37 species he examined. One hundred percent of the dissected fulmars had some sort of plastic in their guts. Disturbingly, over the fourteen years the quantities of ingested plastic increased markedly. On a species-wide scale, the long-term effects of plastics mistakenly added to the diet can result in hormonal changes that disrupt reproduction, induce infertility and perhaps cause cancers.

Gyres are where the great ocean systems of currents rotate circularly due to the Coriolis effect. There are five of these gyres on our planet, and plastic debris is concentrated in all of them. The one closest to us, the North Pacific Subtropical Gyre, also known as the Great Pacific Garbage Dump, is five million square miles in area, roughly twice the size of Texas, and extends from seven hundred miles northeast of the Hawaiian Islands to a thousand miles off the California coast. As we have learned from the Japanese tsunami of 2011, debris from Asia can be picked up in the NPSG and transported in as little as a year to the West Coast of North America. Plastic debris is slow to break up and most of it floats, so much of the debris we can expect to find over the years from the tsunami will be plastic.

No matter what its origin, plastic marine debris attracts colonists. Larval forms of numerous species attach themselves to the floating debris and ride along. In general, the more complex the surface, the greater will be the diversity of its biological hitchhikers, so a coil of rope will house more different creatures than will a buoy. Exceptions to this logical rule, however, are the large

pieces of floating debris, whether or not plastic, that have the good fortune to be colonized by gooseneck barnacles, [*Lepas spp*]. The barnacles' surfaces attract other forms of mostly invertebrate life, and thus a thriving "floating assemblage" is formed. Miriam Goldstein of the Scripps Institute of Oceanography describes gooseneck barnacles, especially *L. pacifica* and *L. anatefera* as very prone to using floating plastic instead of wood or pumice to form their colonies. They are very common at the center of the Gyre where the plastic is most abundant. She calls them very "un-picky" eaters, and of the 385 individuals she studied, thirty three per cent had microplastic in their guts. The systems were not blocked, but diminished feeding stimuli, lowered hormone levels, and reproductive problems cannot be ruled out. The tasty barnacles are eaten by crabs, nudibranchs, and other marine creatures inhabiting the Gyre. These in turn feed birds, fish and dolphins. This helps us to understand how plastic is passed



Photo of plastic debris from Eve's mile, by Dean Walton. The photo appeared in Science magazine.

into the digestive tracts of the carnivorous seabirds that Lee studied.

Michael Gil of the University of Florida says that the more barnacles there are on a piece of debris the more numerous other species will be on the floating ecosystem the barnacles have created. Floating debris has always been an instrument in moving species around the world, but historically most debris sank and colonization failed. Not so with plastic debris. Gil found an Asian crab on a barnacle colony near San Diego, and species from both hemispheres in another colony. Biologists are desperately concerned that all beach trash that might be tsunami-related, be reported, studied, and destroyed. The threat of invasive species establishing themselves in our waters is real and grim.

Unknowable by Tom A. Titus

Can we spend a few minutes chatting about things we don't know? This might seem unorthodox in a column sponsored by an organization whose stated mission is to serve as "a coordinating group for the sharing of knowledge and experiences concerning various fields of natural history among its members." In other words, we consider ourselves an organization devoted to environmental education. Let me add that we are pretty good at this. Relax. I'm not interested in exploring life after death or the origins of Consciousness. My unknowns are far more basic.

At the downpour end of a day last month I was parked on the cabin porch reveling in the sound of rain on the metal roof. The storm dimpled the surface of a brim-full cast-off cast-iron bathtub that serves as a water garden just outside the porch to my right. Across the top rested a flat four-inch board that has been there since a grouse chick that came to drink slipped in and drowned. As the light just began to fade, a male chorus frog began barking directly beneath the piece of no-grouse-drowned-on-my-watch lumber.

I began frantically scribbling notes from eight feet away. Every so often Bathtub Frog stopped calling, perhaps spotting the movement of my right elbow or hearing the scratch of pen on paper or because he needed a break. If chorusing from a bathtub seems absurd, realize that for years he or someone a lot like him has been successfully luring at least one female into this porcelain fiefdom. I know this because every spring there are tadpoles in the tub, and along the way someone taught me enough biology to know that this was not spontaneous frog generation.

Then Bathtub Frog had company. An interloper began calling a few feet from the tub. Bathtub Frog had a low resonant voice. Latecomer was high and squeaky. I couldn't see Latecomer, but in my mind he was smaller. I found him mildly irritating. Bathtub Frog could ribbit at about three times the rate of Latecomer, an impressive difference given the huge energy investment required for chorusing. When Bathtub Frog stopped, Latecomer stopped. Then Bathtub Frog always initiated a new round of chorusing. In the world of chorus frogs, males call throughout the breeding season, using their audio presence to attract females and keep rivals at bay. So Bathtub Frog was a stud, even if his chosen circumstances seemed a little ignominious.

What can we do to help fix this mess? It is likely that the plastic already in the ocean will be there for the next 100 to 800 years. Various groups are trying to fund and implement schemes to suck up the plastic and to ship it back to land for disposal. But there is another way we can help abate this horror civilization has created. The seas regularly regurgitate large amounts of our trash, and after the winter storms the high tide line on our beaches is covered with unpleasant treasures waiting to be picked up. If you want to do something for the ocean, and have a little fun doing it, join our field trip on April 23rd to the mile of coastal beach between Ten Mile Creek and Bray's Point. ENHS has officially adopted this mile and we are very enthusiastic about making it a better place. [Ed. note: see Announcement 3., below, for more on our beach clean-up]

The tip of my pen began bleeding questions. Who was Bathtub Frog, anyway? Was he the same animal who was here five years ago? Or was this Bathtub Frog, Jr. or Bathtub Frog III? What is the lifespan of a chorus frog that breeds in old bathtubs and spends the rest of the year in Douglas-fir forest? Was he one of those startled tadpoles I saw a few springs ago, squiggling downward into the submerged vegetation like a sinking black pebble with a tail? Why does he think sex is best in a bathtub? Was he telling Latecomer "join me and we'll have a great time with the girls tonight"? Or was it more like "if you set foot in this tub I'll smother you with my distended vocal pouch and you will never again strut your puny stuff"? One question queued another, until the light left the overcast sky and I began to shiver and think that the woodstove and an electric light would be a friendlier writing venue than porch-sitting with two noisy frogs.

But the questions didn't stop. Surely we are hard-wired for asking questions, driven by the unknown. Other species ask questions as well. This is how we all learn. There is always more to learn, and learning more means more questions. If by good fortune or fortitude the answers do actually come, quantum mechanics steps in and tells us that nothing can be known with certainty because reality is adjusted to the eyes of the observer. So we get to ask again, this time taking turns.

Our questions have taken us from fire to the projectile point to the structure of DNA. Science has played its part. I constantly regale my students with questions made up on the fly and stylishly restated as "hypotheses." Then I ask them whether these hypotheses are testable. I like this approach because it foists the responsibility for my harebrained ideas onto them. Science is fueled by wonder and wonder, verb and adjective. Science is wonder-full, because enlarging our knowledge intensifies wonder.

But I wonder if wondering aimlessly might be a good thing, too. Maybe questions don't always need to be testable to expand our knowledge. What if we poke a bare hand out from beneath this comfortable, progress-driven porch, into the rainstorm of questions, and contemplate each cool wet splat on our skin. What if we ask whether it is acceptable, even preferable, to reflect on the unknown and be happy with leaving it that way—unknown. Even further, what good can come of sitting in the company of two uproarious frogs, one of whom seems to have a thing

for bathtubs, and deliberately scribbling questions I can never answer?

In his poem "Malheur at Dawn," William Stafford wrote about the chorus frogs: he "didn't know a ditch could hold so much joy." Do frogs feel joy? Or are they just a foil for our own emotion? For that matter, what is joy? Poets know that asking the unanswerable isn't a waste of time, because humility has value. Consider arrogance, even in something as local as the decline in chorus frogs. I live in a house on a lot that once was the edge of a wetland. Sometimes I think I am entitled to this life to which I have become

accustomed, or that somehow someone will have the brainpower and resolve to fix the mess I'm making, or that the frogs don't mind. On good days I just don't think.

So I'd like to celebrate the *unknowable*. Because pondering things like how chorus frogs feel about their world expands my humility. Regular head-on encounters with the unknowable help me cultivate a sense that the world is not my oyster waiting to be opened. Rather, the oyster is a secretive bivalve sitting quietly in the intertidal with an existence that I will never fully comprehend.

Announcements

1. A good place to park for our meetings is the Physical Plant lot: turn north (left) from Franklin onto Onyx, go about a block and you will be in the lot. After 6 pm it's open to the public.
2. Our meeting this month is in **177 Lawrence Hall**, only a two-block walk from the Physical Plant lot.
3. ENHS has agreed to take responsibility for Eve's mile: CoastWatch mile 186. We will visit our mile quarterly. Our next cleanup effort will be on Saturday, 23 April. If you want to be part of the crew, contact a board member. The southern end of this mile of beach begins near the mouth of Ten Mile Creek. Meet at the SEHS lot on 19th and Patterson at 7:45am for car-pooling, or, if you're driving there yourself, meet at 10am at the parking area immediately north of the bridge over Ten Mile Creek on U.S. 101. Bring rubber boots, gloves, a 5-gallon bucket, lunch, and dress for the weather.
4. We need booth sitters for the ENHS booth at the Mt. Pisgah Arboretum Wildflower festival on 15 May. No experience necessary. Sign up at the April meeting or contact a board member.
5. The May meeting is our annual Business Meeting. Members will be asked to vote on whether to accept the slate of officers and at-large Board members.

ENHS Field Trip to the Siskiyou Field Institute

Dates: 3-6 June

Location: SFI is 1.5 mi. west of Selma, Oregon, on the Illinois River Road. Selma is 21 miles southwest of Grants Pass on US Highway 199.

Housing:

For guests staying in dorm or private rooms. Private rooms have private bathrooms with showers. The dorm contains two shared bathrooms – one with a shower and one with a bathtub.

Private room: \$50/night, /\$10 for an additional guest. There are four private rooms, 1 with a queen bed, 2 with one double bed each, 1 with a double and single. Bedding and towels provided.

The dorm accommodates 7 or 8 guests; cost per bed per night is \$20. The dorm room has one single bed and 3 bunk beds, one of which has a double for the bottom bed. Bedding is provided but we need to bring our own towels.

For guests staying in the yurts or camping: The small yurt is \$10 per person per night and sleeps 12; the large yurt is \$12 per person per night and sleeps 20. Campsites are available at \$8/night. Yurters (and campers) supply their own bedding and towels and have the use of the solar bathhouse with showers & toilet facilities. They will have access to the kitchen for meal preparation and great room for hanging out.

Photos of the SFI grounds and all the living arrangements are on the ENHS website: <http://pages.uoregon.edu/enhs/>

Food: The kitchen at the Kendeda House is equipped with dishes, soaps, utensils and appliances. All you'll need to bring is your food. There is a refrigerator/freezer available for guests' food, and a cabinet for dried food storage. No matter which housing arrangement you choose you will have access to these facilities.

Things to do: Visit the Oregon Caves, hike and botanize on the Illinois River Trail and become familiar with the Klamath-Siskiyou region.

Sign up: Decide which sleeping arrangement you want, contact Judi Horstmann (horstmann529@comcast.net; 541-345-1264) to reserve that space, and send a check for the total amount, made to ENHS, to Judi Horstmann, 1835 E. 28th Ave., Eugene 97403. **The check must be RECEIVED by 26 April. All rooms are on a first-paid first-serve basis.** If you need to leave on Sunday rather than Monday, pay for two nights; otherwise pay for three.

Once we know who will be going the attendees will determine how to handle the food and car-pooling.

Events of Interest in the Community

Graduate Evolutionary Biology and Ecology Students (GrEBES) Spring Public Seminar Series

The GrEBES are pleased to present our annual Spring Public Seminar Series. This year we explore the topic of de-extinction through the eyes of paleontologist Jack Horner, bioethicist Hank Greely, and evolutionary geneticist Hendrik Poinar. [Ed. note: Horner's talk occurred before NT went to press]

Wednesday, 27 April, 7pm. De-extinction: How, Why, and Whether. Hank Greely. Seminar in 182 Lillis Hall, U of O.

Wednesday, 4 May, 7pm. Bring Back the Woolly Mammoth! Dr. Hendrik Poinar. Seminar in 182 Lillis Hall, U of O.

Lane County Audubon Society

Saturday, 15 April, 8am-noon. Third Saturday Bird Walk. The Third Saturday Bird Walk for April will be an insider tour of the Willamette Confluence Restoration Project, just northwest of Mt. Pisgah Arboretum. Join Charlie Quinn of The Nature Conservancy and local birder extraordinaire Dennis Arendt for an informative morning. More details will be posted to the LCAS website and Facebook page as the date approaches. We have a couple of pairs of binoculars to loan if needed. To carpool, meet at 8am at the SEHS parking lot (corner of 19th and Patterson). Remember that it's not a good idea to leave valuables or your vehicle registration in your car if you leave it at the lot. A \$3 donation is appreciated to help support Lane County Audubon's activities. For more information, contact Jim Maloney at 541-968-9249 or jimgm@comcast.net.

Tuesday, 26 April, 7:30pm. Douglas-fir National Monument. Stephen Sharnoff, nature photographer and research associate at UC Berkeley, will talk about a major new public-lands conservation initiative that he and Oregon conservationist Andy Kerr are leading. They have drafted a proposal for a national monument to the Douglas-fir forests of the Pacific Northwest, to be located in the Santiam River watershed of the western Cascades. Stephen's work has been published in two guidebooks on lichens and in National Geographic and Smithsonian magazines. The meeting is at The Eugene Garden Club, 1645 High St.

Mt. Pisgah Arboretum

Saturday, 16 April, 10am-noon. Medicinal Herbs Walk. Join Sue Sierralupe and Candace Hunter on a short stroll along the river path and learn about the medicinal properties of plants. View the Willamette Valley's native beauties in spring as they flower and begin to spread their leaves. This walk is senior-friendly, with no elevation gain and resting spots included. Rain or shine. Meet at the Arboretum Visitor Center. \$5, members free.

Sunday, 17 April, 8-10am. Spring Bird Walk. Join Chris Roth and Julia Siporin for another monthly bird walk intended for people with all levels of birding experience. Please bring binoculars. Option to continue the walk until noon for those who are interested. Rain or shine. Meet at the Arboretum Visitor Center. \$5, members free.

Sunday, 24 April, 10am-noon. Spring Family Adventure. Put on your explorer caps and walk with Nature Guide Rick Chase on the Arboretum's trails. Search with family and friends for signs of wildlife and spring blooms. Rain or shine. Don't forget your parking pass. Meet at the Arboretum Visitor Center. \$8 per family, \$5 individual, members free.

Sunday, 1 May, 10am-noon. Blooms, Birds, and Bees! Ecologists Peg Boulay and Bruce Newhouse will identify and talk about flowers and trees, birds and bees, and anything else you please! A collaboration with the **Native Plant Society of Oregon**. Rain or shine. Meet at the Arboretum Visitor Center. \$7, members free. Pre-registration required. To register call 541-747-3817 or go to: <http://www.mountpisgaharboretum.com/workshop-registration/>

Saturday, 7 May, 9am-2pm. Bikes to Bloom Wildflower Tour. This bike-based wildflower tour will take place at sites on the Row River Trail along scenic Dorena Lake ([map](#)). Regional plant experts will lead participants through natural areas with native prairie plants in bloom. Each participant should bring a helmet, water, a picnic lunch, and a bike. All sites will be accessible by car, but riding is encouraged. Pre-registration is required and space is limited. See <http://www.coastfork.org> for more information.

Friends of Buford Park and Mt. Pisgah

Monday Morning Regulars. 9am-noon. Contact volunteer@bufordpark.org for more information.

Tuesdays and Thursdays, 9am-noon. Nursery Work. Meet and work at the Native Plant Nursery at Buford Park. Enter Buford Park from Seavey Loop Road. Turn LEFT after crossing the bridge and drive 1/4 mile to the nursery.

Walama Restoration Project

Email krystal@walamarestoration.org or call 541-484-3939 for more information.

WREN (Willamette Resources and Educational Network)

For current WREN events go to <http://wewwild.blogspot.com/>

The University of Oregon's Museum of Natural and Cultural History

Exhibit Hours: Tuesday through Sunday, 11am-5pm

Cascade Mycological Society

Wednesday, 26 April, 7-9pm. Monthly Meeting. Free and open to the public and held the 4th Wednesday of each month September through May, our monthly meetings include an identification session, a featured presentation, and seasonal mushroom tastings. Amazon Community Recreation Center, 2700 Hilyard St.

Native Plant Society of Oregon, Emerald Chapter

Thursday, 14 April, 6-8pm. Field Trip: Zumwalt Park, Fern Ridge Reservoir. Ed Alverson and members of Friends of Zumwalt Park will lead an evening tour of Zumwalt Park, a 74-acre Lane County Park located along the southern part of Fern Ridge Reservoir. We will explore the park's remnant prairie flora as well as younger conifer forest and develop a plant list for the park. Location: Meet at 6 pm in front of the Lowe's store on the NE corner of 11th Ave. and Bailey Hill Rd. Contact Ed Alverson, 541-461-1958, for more information.

Thursday, 21 April, 7pm. Pollination Biology of Mushroom-Mimicking *Dracula* Orchids. Tobias Policha will share his dissertation work on the pollination biology of *Dracula* orchids, which grow in the cloud forests of Ecuador. *Dracula* orchids look and smell like mushrooms and are pollinated by mushroom-associated flies, making this a remarkable example of mimicry across kingdoms. Inherently ecological, with interactions bridging the three kingdoms of plants, fungi, and the animal pollinators, this system explores networks of biodiversity across scales, from volatile chemistry to behavior. Conference Room at Lane County Mental Health. For more information call 541-521-3964.

North American Butterfly Association, Eugene-Springfield Chapter

Monday, 11 April. 7:30pm. Travels Into the Natural World. Dr. Fred Ramsey, Professor Emeritus from Oregon State University, has performed wildlife surveys all over the world, including in Madagascar, the Hawaiian Islands, the Mariana and Eastern Carolina Islands, and other places where he studied birds, turtles, butterflies, and other wildlife populations. In his presentation, Dr. Ramsey will share with us some highlights from his continuing adventures into the natural world. Eugene Garden Club, 1645 High St.

Nearby Nature

Saturday, 9 April, 11am-2pm. Restoration Celebration!

Friday, 15 April, 10-11:30am. Green Start Pre-School Plant and Play Day.

Saturday, 23 April, 9am-1pm. Earth Day Park Clean-up.

Saturday, 30 April, 10am-noon. Wow! Newts Nature Quest.

Saturday, 7 May, 10am-noon. Walking Workshop: Southern Willamette Valley Tree ID

Go to <http://www.nearbynature.org/events> for details of these events.

ENHS welcomes new members! To join, fill out the form below. 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:	Family	\$25.00
	Individual	15.00
	Life Membership	300.00
	Contribution	_____

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

Make checks payable to:
The Eugene Natural History Society
P.O. Box 5494, Eugene OR 97405



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ENHS Schedule of Speakers and Topics for 2015-2016

15 Apr. 2016 – Rebecca Vega Thurber – Coral Reef Decline

20 May 2016 – Mark Blaine – Copper River Salmon

Tentative Schedule of Speakers and Topics for 2015-2016

16 Sept. 2016 – Jim Furnish –Toward a Natural Forest

21 Oct. – Authors and Music –Forest Under Story

18 Nov. – Celeste Mazzacano – More than Monarchs: Migration in Dragonflies & Other Insects

9 Dec. – Claudio Mello –Of Bird Genes and Bird Brains:
What Science Can Teach Us About Avian Singing and Seasonality

20 Jan. 2017 – Kelly Sutherland –Sea Jellies

17 Feb. – Terry Hunt –Easter Island Archaeology

17 Mar. – William Cresko –Sea Horses and Sea Dragons

21 Apr. –Svetlana Maslakova – Pythons of the Sea: Natural History of the Nemertean Worm

19 May – Ed Alverson –Natural Areas