

# *Nature Trails*

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## **Energy from Waves: A Consideration of the Issues**

**Robin Hartmann**  
**Ocean Policy Advocate for Oregon Shores  
Conservation Coalition**

**Friday, 16 May 2014, 7:30pm, Room 100  
Willamette Hall, UO Campus**

Humans almost certainly have been aware of the tremendous power of the oceans ever since the first one of us got pummeled in the African surf hundreds of thousands of years ago. Storing that energy and transforming it into useable form has stumped humankind for almost as long as we have known of its potential, but the time is almost upon us when finally we can draw from this immense reservoir. Our May speaker, Robin Hartmann, has been involved in Oregon's efforts in this regard for many years.

Hartmann is nothing if not resourceful. The number of organizations she is now and has been part of is soberingly large. Adding to the general sense of wonderment at her personal energy level is the fact that none of the Associations, Trusts, Coalitions, Councils, Working Groups, Teams or Programs on which she serves employs her. For the last eighteen years she has supported herself as an independent contractor – in recent years mostly with foundation grants. There is a central theme in the roles she plays in these different organizations, which is to bring together diverse stakeholders and help them reach solutions that maximize benefits for the environment as well as for the residents of rural communities. She has helped citizens voice their concerns about diverse development proposals including gas pipelines, high-power transmission lines, hydropower dams and LNG (liquefied natural gas) terminals.

Hartmann was born in Missouri. She grew up in the outdoors and around water, both her parents being accomplished scuba divers, which helps explain her eventual attachment to the Oregon coast. Hartmann went to the University of Missouri for her forestry B.S. She and one of her sisters in 1980 hiked the Pacific Coast Trail, and both were smitten with the Pacific Northwest. The sister now lives in Eugene. After a brief return to Kansas, Hartmann went to the University of Idaho for her M.S., getting a degree in Wildland Recreation Management. She focused on natural resource communications – essentially a sociological program dealing with how people use the outdoors.

After her graduate work she took her first real job with a forest trade association, interacting with timber and logging companies and their employees from her location in Coeur d'Alene, Idaho. Then she accepted a position with Idaho Representative Larry LaRocco and worked in Washington D.C. for four years as his natural resources staff person. When LaRocco was swept out of office by the Republican wave in the '90s Hartmann returned to the west, becoming an independent contractor. Her next position was Project Manager for the Umpqua Land Exchange Project in Roseburg in 1995. She has made

Roseburg her home ever since. After her third year with the land exchange project it switched its management location to Eugene, and Hartmann began working with another Roseburg-based agency: The North Umpqua Foundation, a native fish- and river-advocacy organization. When she first moved to Roseburg she joined a dive club and began diving at the Oregon coast. She was looking for a way to have a purpose while on the coast which is why in 1997 she adopted a mile of coastline (#151) through the CoastWatch program of the Oregon Shores Conservation Coalition (most commonly referred to simply as Oregon Shores).

From that first association with Oregon Shores Hartmann began serving on their board and representing them in Salem as a lobbyist, and helping to grow the organization's ocean program. It is through Oregon Shores that, unbeknownst to her, she first formed an indirect connection with ENHS. In the early 2000's Bayard McConnaughey, retired Director of the Oregon Institute of Marine Biology and husband of ENHS board member Evelyn McConnaughey, wrote the resolution that became the standing policy on marine reserves within which Oregon Shores still operates.

She started the Ocean Program for Oregon Shores and served for ten years as its Director. In this guise Hartmann helped start Our Ocean, a statewide coalition that includes such groups as The Nature Conservancy, Audubon, and Surf Rider. Since 2004 this coalition has been urging the state to establish a system of marine reserves. One concrete indication of Hartmann's effectiveness as an advocate is that the system of marine reserves is now a reality.

Hartmann also serves as the coastal conservation organization representative on Oregon's Ocean Policy Advisory Council, or OPAC, where she and other Council members advise the Governor, the legislature, and other decision makers at the state level. Since 2007 OPAC has been at the forefront of planning for wave energy in Oregon. In 2013, Council members put a plan in place to determine where in Oregon's ocean (out to the three-mile limit) the testing of wave energy technology would – and would not – be done. The plan is protective as well as visionary. Members of the Council spent much time and effort gathering relevant data into a central, searchable location: information such as location of rocky reefs, haul-out spots for marine mammals, seabird concentrations and migration routes, and kelp bed locations had to be determined so they could be avoided in the siting of the actual wave-energy power

generating buoys and the hardware associated with them. Quite by chance, the first commercial-scale wave energy project in North America was to be sited just offshore from Hartmann's adopted mile 151.

Anyone who has watched waves pound the rocky headlands along Oregon's coastline has witnessed the power of the ocean. Is it possible to harness that power to meet growing energy demands and to reduce our reliance on fossil fuels? Equally as important, could we do that while protecting the marine life and habitats in our ocean as well as the fishing communities that have long depended on

harvesting the ocean's bounty? If so, where do we want to install these offshore power facilities – and where do we NOT want them deployed? These are the questions that have been pursued in Oregon since 2007. Hartmann will talk about the progress made as well as the challenges ahead for Oregon's marine renewable energy future. Please join us at 7:30 pm on Friday, 16 May, in room 100 Willamette Hall on the U of O campus to hear Robin Hartmann's talk "Energy from Waves: A Consideration of the Issues."

John Carter

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### **A Beautiful Clearcut?** By Reida Kimmel

Back in the 1970s we used to ride the horses to a place we called "the beautiful clear cut." The cut lay in a high valley somewhere between Fox Hollow and Jackson Marlow Roads, accessed by going down a steep, eroded logging road. In the summer the glade was covered with wildflowers and positively noisy with birdsong. Blooming thistles perfumed the air. There were grasses and shrubs of many varieties. Finches, bushtits, juncos, and other birds we could not name, foraged on the lush bounty of this gap in the dense Douglas fir forest. Later the BLM decommissioned the road, and it merged with the young forest that our beautiful clearcut had become. We did not know it then, but the place we loved was a prime example of early seral vegetation, the vegetation that returns first after an event like fire, volcanic eruption or logging. There are of course many types of vegetation that can be classed as early seral. A dry south-facing site may have a very different set of shrubs and flowers than a moist north-facing site. On one we might see lupines, *Iris tenax*, *ceanothus*, oak saplings, poison oak, ocean spray and Douglas fir, while the moister site will favor maples, ferns, osoberry, ninebark, huckleberries, orchids, and golden iris. Whatever types of plants are growing, and scientists have described eight types of early seral plant communities in the Coast Range alone, these areas support an enormous diversity of vertebrate and invertebrate life. The re-vegetating openings provide the food, while the dense trees elsewhere provide shelter. A 2012 Oregon State University study by Ellis, Kroll and Betts discovered that the feeding and nesting opportunities provided by early seral broadleaf cover in the Coast Range allowed five species of birds, whose declines are a subject of much concern, a very significantly increased chance of breeding success compared to other areas. The species are Swainson's Thrush, Black-headed Grosbeak, Orange-crowned Warbler, MacGillivray's Warbler and Wilson's Warbler. The authors believe that if more such habitat could be

created on a landscape scale, the decline of these species could be reversed. Another study showed that overall the greatest diversity of bird species was to be found in disturbed areas with shrubby oak and pine and some old legacy trees.

Enter the concept of ecological forestry. This concept is mostly the creation of OSU professor Norm Johnson and his long time colleague Jerry Franklin. What Johnson has to say is of great importance, though as you will see, there is much to criticize. He says that there is less early seral growth in the Pacific Northwest than ever before in history, and that we must create more diverse ecosystems in our forests. We must always leave burned areas alone: no salvage logging, no planting. And (here's the rub) we must emulate large-scale disturbance on the national forests through 'regeneration harvest', which is the polite term for clearcutting. Over the years Johnson has been involved in many BLM projects to thin tree stands, to create open places that mimic natural processes, and to restore riparian areas. Recently he presented ideas for harvesting trees on the O&C lands that fill me with horror, because of the size of the open areas that might be created, and the suggestion of logging within the riparian areas, even though research has shown that leaving these areas alone to develop through natural processes is the best approach.

A century of fire suppression is one reason for the present dearth of early seral-stage vegetation in Oregon, but most of the blame can be put to forestry practices as they have developed over the past sixty years. The Oregon Forest Practices Act demands that logged areas be replanted soon after harvest and that trees be given 'freedom to grow' which means that the young trees must have no competition from other trees and shrubs. These strictures are just what the timber companies want. They allow the cultivation of monocultured Douglas fir and the use of chemicals to kill all competing vegetation. Our state is far more lenient to pesticide applicators than surrounding states. Plantations are repeatedly sprayed with secret

chemical cocktails whose contents have never been tested for safety. It is no wonder there are few or no grasses, forbs, shrubs or hardwood saplings where there has been an industrial clearcut. Real plant and animal community development is not welcome except on Federal land, which has been protected from forestry-by-herbicide for almost forty years. One can only hope and agitate to keep it so. Dr. Johnson is a strong critic of the Act, and in his paper with Debora Johnson he facetiously devises some potential slogans in a war against the Act. "Forced regeneration is tyranny!" "No death panels for little plants!" "Protect the freedom of shrubs and forbs!"

Practically just outside my door there are one hundred and forty three acres of early seral vegetation. Regeneration harvest on three properties retained hardwoods and some old snags. Then the properties were planted sparsely with mixed conifer species, and never sprayed. These acres are becoming the new beautiful clear cuts. At this time of year

those sunny acres are the go-to place for wildflowers. Today's show features masses of iris in all the shades of purple, blooming amidst golden Thermopsis. At first glance the five-acre hillside clearing along our neighbors' driveway, which I so hated when it happened, is a solid mass of vine maple with its soft new leaves and tiny delicate red flowers hanging from every twig. There are fir and cedar trees amongst the maples, and one day they will overtop the vine maples, most of which will die, but that's how forests work. We desperately need to rewrite the Oregon Forest Practices Act, although that won't happen soon. Hope for retaining biodiversity in our forests lies with small woodlot owners. If they can be convinced that it is a good thing to let nature take its course, to grow their trees more slowly, but in a healthy and species-rich environment, we can still save space for our wonderfully rich floral communities and the animals they support.

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### **Floral Heartthrob** By Tom A. Titus

Oh my, it's May! The weather is frothy and undecided, but there is no ambivalence whatsoever in the burgeoning green of plants hitting their stride. So in honor of the climax of our wildflower season, I'm going to shake loose from my vertebrate-centric worldview and write about my favorite flower. While I do have a favorite salamander, the truth is I've never forced myself to pick a favorite flower. In some respects, the choice is a moving target and context dependent; it reminds me of trying to pick a favorite dessert. There's the small thrill of stumbling across that first tiny yellow wood violet in February, the startling white of a trillium when March rains are coursing downward and real spring seems like a dream, or the huge patch of fawn lilies that bloom every April along our regular Friday running route into Hendricks Park, when I always swear I'll bring the camera next week and then never do.

As a child, Mom taught my brothers and me the common names of the prettiest spring flowers that grew on the second-growth forest hillside behind our house. We learned them as spring beauty and lamb's tongue and Johnny-jump-up. But in all those remembrances, there is an indelible wildflower memory that supersedes all others. When I was very young, my Aunt Catherine took me "lady slipper" picking (also called fairy slippers or what I now know as Calypso orchids, (*Calypso bulbosa*). These are my floral heartthrobs. The bloom is no larger than a quarter, a half fringe of impossibly pink petals standing erect above a mottled pink and white "slipper" too small for the end of my pinky. The tiny bloom is perched two or three inches above the

surface on a stem that seems too thin to support it. Calypso orchids are a vivid pink droplet of plant sex.

Aunt Catherine and I walked along a flat, mossy floor of coniferous forest somewhere in the Upper Smith River Valley where my maternal ancestors landed in Oregon in the late 1800's. We picked Calypso orchids by the fistful. Periodically we returned to the car to gather the dainty orchids together and place them in wet paper towels. I remember breathing in the aroma of those bouquets, and I am still in awe of how beautiful they smelled collectively. Returning home, I gave Mom a bouquet, and she gratefully placed it in a small water-filled vase in the center of the dining room table. Aunt Catherine divvied the rest up among friends and other family members. We must have picked a couple of hundred.

In those days, I was naïve to the destructiveness of Aunt Catherine's generosity. Years afterward, Mom went back to school and took a botany course from Freeman Rowe at Lane Community College in which she was required to make a pressed plant collection. But Calypso orchids were strictly off limits. This is because picking even just the bloom can disrupt the sensitive system of corms and root hairs, often killing the plant. Calypso orchids live on an energetic knife-edge anyway, growing in the shade of coniferous forests with a single heart-shaped leaf their only organ of photosynthesis in marginal light. They survive in part because of a tight association between mycorrhizal fungi that assist in nutrient transfer between the orchid's corms and roots and the needle duff in which they are precariously anchored.

Only now am I able to put that day of lady slipper-picking in a larger context. My ancestors came to the Oregon Coast Range to make their way as extractionists, removing and milling the forests, growing orchards and gardens on the cleared land, supplementing that food with deer that grew plentiful and fat on brushy clearcuts. Everything was seemingly here to be used, either consumed directly as calories or sold to provide money for getting along in life. This was my aunt's heritage—to her the dainty Calypso orchids were another resource to be extracted, if only for the transient beauty and sweet aroma of a bouquet. This has been my heritage too: I am the end product of four generations of stories built on extraction.

But the story has a sequel. One spring some years ago we learned that the property next door to ours on Upper Smith River Road was to be clear-cut. So on an April afternoon, Kim and I went lady slipper picking. But this time we took trowels and cardboard boxes into the doomed second growth. We dug deeply into the soil in order to fully remove not only the blossoms, but also the corms and roots and leaves and mycorrhizae on which the plants depend. We transported the flowers to a nearby patch of BLM old-growth forest above the cabin and carefully dug them into a thick blanket of moss in the shady cathedral floor. Transplanting is never recommended, but the orchids would have been doomed had we done nothing. In the larger scheme of logging and orchid population dynamics, those thirty or so

flowers that we saved from the scorching sun that now ravages the logged hillside were probably insignificant. But when I walk into that dim old forest in spring and watch for the first blooming transplants, when I count each orchid marked with a small upright stick, my heart tells me it was worth it.

Hindsight, they say, is 20/20. But I'm not so sure—mostly, I have questions. If not for that destructive flower picking outing with my aunt so long ago, would I have developed the deep connection to Calypso orchids that compelled me to spend an afternoon decades later trying to save as many as I could? Or would Mom's love of wildflowers and what I learned second-hand from her botany class have been enough to separate me from the attitudes of three previous generations? Would *Calypso bulbosa* still have become my darling wildflower? Would I be telling you these stories? I cannot say. The truth that emerges for me is that we need our stories so we can remain connected to each other and our world. Although nearly all of us are products of an extraction-based past that has ravaged the earth, we find ourselves in frothy, tumultuous times that demand that we create new stories. We must turn and face our past squarely and with as much honesty as we can muster, forgive what has not worked, and then carry the rest into a sane and ethical future.

I am so grateful to all of you for your ongoing support of the Eugene Natural History Society. I look forward to continuing our conversation in September.

#### **ANNUAL ENHS POTLUCK PICNIC** Saturday, 14 June, 2:00 pm, rain or shine.

Once again the Kimmels are hosting the ENHS potluck picnic at the farm on Fox Hollow Road. Just bring a favorite dish or beverage to share and come prepared to watch some birds, walk around the wild area and the pond, pat the horses, socialize with the critters, or best of all, to sit outside or by the woodstove chatting with friends, old and new.

#### **Here are directions to the farm, 30306 Fox Hollow Road.**

If you are driving south on Hilyard St., ¼ mi after passing the 30<sup>th</sup> St. light, [see the Dari Mart] go left on W. Amazon Dr. [This turn is the next light after E. Amazon Dr. Both intersect Fox Hollow actually.] Go ¾ mi. [see Calvary Chapel which looks like a warehouse]. Turn right [approximately west] on Fox Hollow Road. Ignoring the street numbers, drive through suburbia into the countryside. In 4.7 miles you will see S. Willamette St. coming in on the right. \*Drive on. In another 1.9 miles there will be a fire station on your right, and Macbeth Road will join Fox Hollow Road from the right. Bear left, [southwest] staying on Fox Hollow. The road will curve downhill in a southerly and southwesterly direction. In 1.1 more miles you will see our mailbox on the right [Kimmel, 30306]. Turn left into our driveway and park by the barn, the garage, the front walk or on the grass beside the driveway.

You have now gone 8.7 miles from the intersection of 30th and Hilyard. The entire road is paved.

\*If you are coming from Willamette St, just follow S. Willamette out into the country past Spencer's Butte Park to the stop sign and junction with Fox Hollow Road and follow the directions from \*

If you are coming from West Eugene, go on Bailey Hill Road to Lorane Highway and turn left on Lorane Highway at Twin Oaks Church, just after Twin Oaks School. Go east on Lorane Highway to Macbeth Road, just past the Grange. Turn Right. Go 3.68 miles to the end of MacBeth, and turn right onto Fox Hollow. Go southwest down hill for 1.1 miles and turn left at our driveway.

**We need booth sitters during the Wildflower and Music Festival at Mt. Pisgah Arboretum on Sunday, 18 May. No experience necessary. Please let a board member know if you are willing to help out. Sign up at the May meeting.**



**Reminder: the May meeting is the annual business meeting and members will be asked to vote on whether to accept the slate of officers and at-large Board members.**

## 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.*



Ready for a get-away to the coast? Head to Cape Arago, just west of Coos Bay and check out the tidepools at low tide. Sunset Beach has easy-to-get-to tidepools. If you want hard-to-get-to, and thus less disturbed tidepools, go to the end of the Cape Arago Park loop and hike down the moderately steep trail to the cove in this picture. Check the tide table (Google Cape Arago Tides and click in the NOAA link). Look for the day(s) with minus tides that occur during daylight. Start with the prediction (yes, it's just a prediction - tides vary with weather, especially the wind) for May 17 when it shows a minus 1.66' at 8:50 am. To take full advantage of low tide, arrive an hour before low tide when the tide is still going out; be sure to pay attention to the incoming tide so you don't get caught as the water begins coming back in.

The lowest tide of the year is on July 12, when the tide goes down to minus 2.25 at 7:30 am (and all the other low tide fans show up).

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### Events of Interest in the Community

#### Lane County Audubon Society

You can access the current issue of *The Quail*, LCAS's excellent newsletter, from their website: <http://www.laneaudubon.org/>. A summary of their upcoming monthly meeting can be found there, as well as many other interesting avian tidbits.

**Saturday, 17 May, 8 am-noon. Third Saturday Bird Walk.** Elijah Bristow State Park, off Highway 58 near Dexter. Led by Wildlife biologist Dave Bontrager.

**Tuesday, 27 May, 7:30 pm. Antshrikes to the Xenopses: Biomes of Brazil with Bob Fleming.** 1645 High St., Eugene.

#### Mt. Pisgah Arboretum

**Tuesday, 13 May, 10 am-noon. Wildflower Walk.** Led by Gail Baker, LCC professor emeritus.. Meet at the Visitor Center. Adults \$5 (members free).

**Sunday, 18 May, 10 am-5 pm. Spring Wildflower and Music Festival.** As many as three to four hundred species of wildflowers will be on display, from Anemones to Vancouveria. Collected and organized for attendees to get a close look, top botanists of the region will be on hand to answer questions. For an even closer look, guests can use on-site microscopes. Bring the entire family (except the dog). Expert nature guides will weave folks through the nearby nature trails, providing more information about the Arboretum's ecology and history.

#### Friends of Buford Park and Mt. Pisgah

**Saturday, 10 May, 10 am-1 pm. Work up a Thirst at Turtle Flats!** Get your hands dirty pulling teasel at a Turtle Flats restoration party and join us afterwards for a free beer at the Bier Stein! Carpool from the Bier Stein at 10 am at 1591 Willamette St, Eugene, OR 97401. Email [volunteer@bufordpark.org](mailto:volunteer@bufordpark.org) to RSVP or with questions.

**Monday, 12 May, 10 am-noon. Morning Regulars.** Monday Morning Regulars work on habitat restoration projects wherever they are most needed each week. Their work includes working in our native plant nursery as well as planting native species and removing invasive species around Buford Park. Contact [volunteer@bufordpark.org](mailto:volunteer@bufordpark.org) for more information.

Saturday, 24 May, 8-11 am. TOUR - Birds of Pisgah's Grasslands.

**Nearby Nature** Go to <http://www.nearbynature.org/events> for information on these activities, or call 541-687-9699.

**Saturday, 10 May, 10 am-noon. Fairies and Forts Nature Quest.** Enjoy an outdoor play day in the Learnscape. Build fairy houses, stick forts, sandcastles, and more. Members FREE, non-members \$2/person, \$5/family. Pre-register: 541-687-9699.

**Summer Activities.** Go to <http://www.nearbynature.org/events> for descriptions of NN's summer plans. Lots of fun stuff.

### **Native Plant Society of Oregon, Emerald Chapter**

**Saturday, 10 May, 9 am. Wildflower Tour: Bikes to Blooms.** This bike-based wildflower tour will visit three sites on the Row River Trail along scenic Dorena Lake. Regional plant experts will lead participants through natural areas with native prairie plants in bloom. Bring a helmet, water, picnic lunch, and bike in order to ride the 5 miles between the three sites. All sites will be accessible by car, but riding is encouraged. Pre-registration is required and space is limited. See [www.coastfork.org](http://www.coastfork.org) for more information. Volunteers needed: contact Pam Reber of Coast Fork Willamette Watershed Council at 541-767-9717 or [coordinator@coastfork.org](mailto:coordinator@coastfork.org).

**Thursday, 22 May, 7:30 pm. Determining the Environmental Factors that Drive the Distribution of a River Ecosystem Engineer, Carex nudata.** Presented by Matthew Goslin of the University of Oregon, Department of Geography. Conference Room at Lane County Mental Health, 2411 MLK Blvd. For more information, contact [goslin@uoregon.edu](mailto:goslin@uoregon.edu) or 503-383-7560.

### **North American Butterfly Association, Eugene-Springfield Chapter**

**Summer Activities.** Go to <http://www.naba.org/chapters/nabaes/fieldtrips.html> for a list of several interesting NABA summer field trips.

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

**Exhibit Hours: Tuesday through Sunday, 11:00 am - 5:00 pm**

#### **Current Exhibits**

- Cruisin' the fossil freeway with artist Ray Troll and paleontologist Kirk Johnson.
- Site Seeing: Snapshots of Historical Archaeology in Oregon.
- Oregon - Where Past is Present. 15,000 years of Northwest cultural history and 200 million years of geology.
- Tradition Keepers: Cornhusk Weavings by Kelly Palmer and Joy Ramirez.

### **WREN**

**Tuesday, 13 May, 9-10:30 am. Wetland Wander at Dragonfly Bend.** Meet at Checkermallow Access, 5790 Royal Ave., Eugene. Dragonfly Bend is on the north side of Royal Ave, west toward Greenhill Rd. Participants should bring water and wear sturdy shoes. WREN will provide binoculars.

**We welcome new members! To join ENHS, 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): \_\_\_\_\_

<b>ANNUAL DUES:</b>	Contributing	20.00
	Family	15.00
	Individual	10.00
	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

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: \_\_\_\_\_

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## ENHS OFFICERS AND BOARD MEMBERS 2011-2012

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Nature Trails: Editor, John Carter, [jvernoncarter@comcast.net](mailto:jvernoncarter@comcast.net); Support Staff: Ruth BreMiller and Reida Kimmel.

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## ENHS Schedule of Speakers and Topics for 2013-2014 and for 2014-2015

**116 May 2014** – Robin Hartmann – Energy from Waves: A Consideration of the Issues

**19 Sept. 2014** – Rich Lamplugh – Yellowstone Wolves

**17 Oct. 2014** – R. M. Pyle – From Ancient Capitol to South of the Clouds: Butterflies and

Others in Wild China (joint with NABA Eugene-Springfield Chapter)

**21 Nov. 2014** – George Wuerthner – Praise the Dead: the Ecological Role of Dead Trees

**12 Dec. 2014** – John Marzluff – Welcome to Subirdia

**16 Jan. 2015** – James Cassidy – Soil: What it is and How it Works!

**17 Feb. 2015** – Shelly Miller – Native Freshwater Mussels in the Pacific Northwest

**17 Mar. 2015** – Paul Engelmeyer – Conservation strategies: seabirds and forage fish

**18 April 2015** – Marli Miller – Roadside Geology of Oregon: Some Highlights

**19 May 2015** – Pat Orm – Wings in the Night: A Glimpse into the Mysterious World of Bats



Hartmann on the beach within her adopted mile 151.