

Nature Trails

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“Trees, Truffles and Beasts: How Forests Function”

Dr. Jim Trappe, Professor Emeritus,
Oregon State University, Corvallis, Oregon
**Friday, 15 October 2010, 7:30pm, Room 100
Willamette Hall, UO Campus**

Our October speaker is Professor Jim Trappe, from Oregon State University in Corvallis, and from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Canberra, Australia. My interview with him was over the phone, since he is in Australia until the day before he talks to us.

Jim has been interested in forests from a very early age. It was his great good fortune that his parents had friends who were foresters. On outings with his family and these friends, he was taken under wing by one of these men and taught things about forests in the Spokane area that few young boys could have learned on their own. He became fascinated with forest lore, and ended up a forester himself. He got his B.S. from the University of Washington in Forest Management, then went to the State University of New York, Syracuse, for his M.S. in Forestry before returning to UW for his Ph.D. in Forest Science, which he finished in 1962. Both his M.S. and Ph.D. research topics dealt with forest fungi. His interest in mycorrhizal fungi had been whetted in an undergrad course he took from mycologist Dan Stuntz.

His first position out of graduate school was with the U.S. Forest Service, in the Pacific Northwest Research Station. First he was in La Grande, Oregon, then Portland, and in 1965 ended up in Corvallis as a project leader in forest mycology. He had courtesy appointments in both the Forest Science Department and the Department of Botany and Plant Pathology at Oregon State University, but his primary employer was the USFS until he retired in 1986. For the next 10 years he was a Research Professor in OSU's Department of Forest Science. Even though he retired from that slot in 1996, he's still there, still active in research.

Jim has been working in this research area for 55 years; during that time he has become a world expert in truffles. He has published over 450 papers, and co-authored three books. He has published articles on over 200 new truffle species. He has advised about 25 graduate students, most of them Ph.D. candidates. OSU's Department of Botany and Plant Pathology web site contains this brief description of his research: Mycorrhizal ecology of subalpine and alpine ecosystems; mammal-truffle interactions; population ecology and functions of nonspecific biotrophic root endophytes; taxonomy of hypogeous fungi. [Ed. note: hypogeous means underground.]



His research in the Pacific Northwest has been supported by several grants from the National Science Foundation and the USFS. When he's in Australia he works at CSIRO. NSF has also supported some of his work in Australia; the title of one successful proposal is "Taxonomy of Australasian Truffle and Truffle-like Fungi." He said he has a backlog of over 1000 new fungal species he and co-workers have found in Australia. He calculates that he has at least 60 more years' worth of work to finish describing them.

His interest in Australian mycology began in the early 1980's, with a visit to his Corvallis lab by an Australian mycologist, who told Jim that he should come to Australia on an exchange visit. Six months later he wrote Jim saying he had a grant for his trip. Trappe has been going back ever since.

When asked whether he likes to eat truffles, Jim hesitated before answering. "They're good, but not that good. I can't understand their price. Their biology and taxonomy are more interesting to me than their

taste," he said.

I asked him if I could learn to find truffles on my own or if I had to be trained by an expert. He assured me that anyone can do it, but that dogs are better than we are at finding them. Dogs find the mature ones because of the distinctive aromas. Immature truffles are essentially odorless. When we go out in the forest with rakes we dig up the immature ones as well as the occasional mature one, which is not good because a raked-up baby truffle no longer has any chance of becoming a tasty mature truffle.

Asked about the effects of clear-cutting on mycorrhizal fungal diversity in disturbed forest soils, Trappe pointed out that after clear-cutting the mycorrhizal fungi all die, but there will be banks of spores in the soil that can germinate and colonize rootlets of tree seedlings in a clear-cut. There will be an array of early pioneer fungi, but the fungal composition will change with time, paralleling the changes in the plant community. This relates to what he'll talk about in his ENHS lecture.

Don't miss this chance to learn about the underground worlds of both Pacific-Northwest and Australian forests from one of the world's leading experts. Join us at 7:30 p.m. on Friday, 15 October 2010, in Room 100, Willamette Hall, on the U of O campus to hear Dr. Jim Trappe present "Trees, Truffles and Beasts: How Forests Function."

John Carter

Dearth by Reida Kimmel

It is a dark and profoundly foggy morning, but oddly warm, and the air is heavy with the summer scents of the last sweet peas and the musky fall smells of fallen leaves and fungi. All over the pastures and along the trails in the woods, spider webs, fairy blankets, stretch across the grass and over the moss and tree roots. Other spider species have stretched their orb webs across the trail, just at head height, so I must duck to avoid causing catastrophes. So quiet. No ravens. Will they ever come back? The timber companies, Guistina and Seneca, took out another one hundred eighty acres of forest close to us this year. Ravens like big trees, lots of them. The forests near us are almost gone.

A dearth of trees and ravens, but we are rich in chickadees, woodpeckers, Steller's jays, and visiting hordes of goldfinches, the latter a bit drab in their winter plumage. For these birds we have seeds and suet in abundance but what is there for the thousands of birds, chipmunks and squirrels that do not frequent the local feeders? If you socialize with gardeners, all the conversation is about the pitiful harvests this year. Whether it's apples and pears or tomatoes and peppers, everyone complains of the tardiness, paucity, and dreary taste of summer's meager bounty. Worse yet, the late hard rains that delayed gardens and prevented fruit set, also affected food sources for our wildlife. It rained so often that the hardy wild bees had trouble getting to the Ceanothus and other early flowers to feed. As a consequence they produced less brood and we saw fewer bumblebees later in the summer when the weather was warm and dry. The Madrona trees in our little woods were badly damaged by last December's cold. I thought some would die, but all recovered and leafed out beautifully. They did not bloom, however, and now have no fruit. The wild dogwoods and filberts are also barren this year. The acorn crop is poor, and it is not a cone year for firs or cedars. It is some

consolation that at least there is a mighty surplus of weed and grass seeds. Herbaceous plants have done very well for themselves in this year of late spring and early fall rains. The juncos and rodents will not starve, nor will their predators.

How different this year is from last. Yes 2010 was cooler, but not very much so. Nor was the absolute amount of rain considerably greater this year. Our rainfall years are calculated from October 1 to September 30 of the following calendar year. Actually, both this precipitation year and the last had below average rainfall. The difference lies in the unusual rainfall during this year's growing season, which adversely affected fruit set on trees while providing a rare bonanza of moisture for herbaceous vegetation. Last year the trees and shrubs fruited bounteously in spite of heat and drought. Perhaps they needed a rest this year to build up reserves for a season of riches next year. It's all part of nature's unpredictable cycle. No year is just like another, and no mere human can exactly predict what the next season will bring.

Every season has its magic surprises, and today was my lucky day. I made a wonderful discovery while walking on that spider rich trail through the neighbors' cedar grove. I saw many thousands of tiny newly sprouted Douglas firs emerging from the mosses underfoot, two or four seedlings here and there, but more commonly, clusters of close to one hundred elsewhere. I have never seen such a 'hatch' of baby conifers before. Most will be munched by assorted mammals over the winter, but some will live to become large trees, crowd out the cedars and move this relatively young forest on to the next stage of its succession. My intellect tells me that it's just chance that an abundant cone year was followed by such a favorable wet one, but something in my more primitive consciousness, whispers to me that the trees knew that their extraordinarily abundant cones of 2009 would have good fortune in 2010.

President's Corner

Orange by Tom Titus

Most folks have a favorite season. During our ten-year sojourn in the Midwest, I was always torn between favoring spring or fall. But in the end, winters were so gray and nasty and the spring greenery and sunshine were such a beautiful contrast that spring won out over fall's break in humidity and beautiful deciduous colors. Here in western Oregon,

the choice has become clear for me: although our spring wildflowers are beautiful, the rain becomes only a few degrees warmer. Yet in fall, the contrast between parched dryness and the early autumn rains is spectacular. Decreasing daylight adds increasing tension to the life force that is October. Apples ripen, salmon run, Roosevelt elk bugle, and geese talk from somewhere in a pitch-black sky. I love to wade chest deep into October and give myself over to the

building current that will eventually sweep us over into winter.

Orange is the archetypal color of October, although certainly not the most pervasive in the Willamette Valley; that honor still belongs to green (they don't call Eugene the Emerald City for nothin'). Orange isn't my favorite color, either, but in autumn it's orange that leaps out at me, shouting for my attention. Perhaps this is because we are so very green most of the time. In October the orange stands out like the contrasting trim on a well-painted house.

My deep connection to autumn orange has everything to do with edibility. Our fall mushroom diversity is amazing, and everyone should peruse the spectacular live mushroom display at the Mt. Pisgah Arboretum Mushroom Festival. Yet in all honesty, I have a short memory for fungi that I can't ingest. And of the ones I can eat, the golden chanterelle, *Cantharellus cibarius*, is hard to beat for flavor, abundance, and ease of identification. Nothing turns my crank quite like a vivid orange cluster of fresh chanterelles emerging from green moss on a coniferous forest floor.

Of course there is a reason why chanterelles are orange. They are chockablock full of beta-carotene, the same orange pigment found in penned-in domesticated foods like carrots and squash. Beta-carotenes are good for you. They are converted into retinal, a form of vitamin A that is bound to opsins, the chemical basis of vertebrate photoreception. Beta-carotenes are also antioxidants, a pack of predators that course through our system hunting down free radicals, those nasty byproducts of oxidative stress. Beta-carotenes are thought to aid in the prevention of all manner of human health problems, from cancer to heart disease to the really big bugaboo: aging. Even that apricot aroma wafting upward from a bag of chanterelles comes from the carotene-derived compounds beta-ionone and dihydroactinidiolide. We don't have a biosynthetic pathway for making our own beta-carotene. We have to consume the stuff. So, we can eat more carrots and squash, or go chanterelle hunting. My choice should be obvious.

But why do I become orange in October? I thought this would be a literary device leading to a more poetic exploration of my favorite month. But if we are hunting and consuming chanterelles, we actually do become orange. Surplus beta-carotenes from all those chanterelle dinners accumulate in our body fat. These stored carotenoids can be converted as needed to vitamin A. This is good. Because while it is possible to overdose on vitamin A, I am not aware of anyone who has overdosed on chanterelles (on rare occasions I have grown tired of eating them). We can eat chanterelles until our body fat becomes downright pumpkin-esque and with no ill effects, all in the name of storing incipient retinal and improving our night vision through the darkest part of the year. We can even get a tan from eating chanterelles; they contain canthaxanthin, a carotene that is deposited in the skin, and the ingredient in so-called tanning pills.

Okay, so why do I feel orange in October? What is that diaphragmatic thrill, that little burst of warm fuzziness that rises up in me when I walk into a particularly dense patch of chanterelles on a sunny October afternoon? I'm sure the sociologists and psychologists would say it's all a matter of conditioning: all those orange chanterelles over all those autumns have burned the color and timing into an indelible Pavlovian response. Neuroscientists would offer a more fundamental biochemical explanation: the anticipation of chanterelles sautéed in olive oil and garlic causes the release of dopamine into nerve junctions in appropriate regions of the brain. Perhaps an evolutionary biologist would chime in and suggest that my chanterelle response is the product of natural selection over millennia of Octobers, when finding another basket of mushrooms was the difference between surviving another winter and the Big Sleep. I'm happy with all of their reductionist explanations. Really. As long as they don't detract from that deep connection to all things wild that permeates my being when sitting down to a chanterelle and Chinook salmon dinner. I become very orange.

ENHS thanks Ellen McCumsey for doing our audit!

Out and About

"Out & about" is a periodical encouragement to Eugene Natural History Society members to get out and experience our magnificent Oregon

Star Trails from the Warner Wetlands at the base of Hart Mountain



Get way out (okay, not into the cosmos), but out onto the Oregon high desert. Autumn on a moonless night in eastern Oregon features clear skies far from city lights that obscure the wonders of the universe. While you're this far out, take the spectacular road up onto Hart Mountain and look for raptors and herds of pronghorn antelope. *Want more information about this location? Contact Dave Stone at 541 683 6127.*

Events of Interest in the Community

Lane County Audubon Society

Tuesday, 26 October, 7:30 p.m. Bluebirds: trails and quilts. Mary Nyquist Koons will share her passion for these birds through slides of nesting seasons on her trails in South Eugene and Sisters, Oregon. She will read from her book, *Mor Far's Bluebirds*, and show the original quilts she created to illustrate the books. Eugene Garden Club, 1645 High Street, Eugene.

Mount Pisgah Arboretum

34901 Frank Parrish Rd., Eugene, 97405. Located off I-5 Exit 189, 15 minutes southeast of Eugene. Call Peg Douthit-Jackson at 541-747-1504 or email mtpisgjp@efn.org for more information or to sign up for any of the following Arboretum activities.

Saturday, 16 October, 10am-4pm. Finding and Identifying Mushrooms. Join mushroom enthusiast Josiah Legler for a short lecture and a hike to observe mushrooms in their native habitat. We will discuss mushroom biology and ecology, edible and medicinal mushrooms, terminology and identification, and more. We will meet at MPA and carpool to a nearby site about 30 minutes away for the hike. Dress for a walk in the woods; bring a lunch, water, and a field guide if you have one. Registration required. Rain or shine. Meet at the MPA Visitors Center. Fee: \$25 (MPA members/\$20).

Sunday, 24 October, 1-3pm Scarecrow Building and Pumpkin Carving. The Arboretum staff provides inspiration and know-how for creative pumpkin carving, and you can design your own unique scarecrow to enter in the Scarecrow contest or display on your lawn. Scarecrows made at the workshop can be entered in the Mushroom Festival contest for FREE! Bring decorations for Scarecrows, and knives and spoons for pumpkins. Pants, shirts, straw, and pumpkins provided. Rain or Shine. Meet at the MPA Pavilion. Fee: \$5 per pumpkin or scarecrow.

Sunday, 31 October, 10am-5pm. Mushroom Festival. Co-presented by MPA, the Cascade Mycological Society and Lane Community College, this event is one of the largest mushroom displays on the West Coast. There will also be a huge plant sale, live music, a scarecrow contest, children's activities, hayrides, craft vendors, incredible mushroom-inspired food, fresh cider, wine and much more. Suggested donation: \$5/person/ Kids under 12/free.

Sunday, 31 October, Scarecrow Contest at the Mushroom Festival (Pre-Register) Judging at 3pm. Build your scarecrow from any materials (except invasive species) and set it up in the Arboretum's Scarecrow Alley on Saturday October 30th. Festival visitors vote for the Funniest, Most Original, Most likely to Scare a Crow, Most Beautiful, Best Youth Entry and Best Overall. Contest entry fee/\$10. Register before Friday October 29th.

Saturday, 6 November, 9am-4pm Back to Basics-Enhancing your Nature Sketchbook Workshop 2:

Join natural science illustrators Kris Kirkeby and Katura Reynolds for a workshop that will include a morning of learning basic drawing techniques and an afternoon of field sketching. Both instructors will be available for the full day. Rain or shine. Registration required. Fee \$30 (Members \$25).

Saturday, 6 November, 10am-Noon Fall Fruits and Foliage. Learn from Botanist Rhoda Love about the adaptive strategies of plants for dealing with the coming of winter, as well as the great variety of fruits and seeds and their diverse dispersal mechanisms. Rain or Shine. Meet at the Visitors Center. Fee: \$5 (MPA members/donation).

Saturday, 13 and Sunday, 14 November, 10am-4pm each day Mushrooming on the Mountain. Learn about identifying, picking and cooking mushrooms. Marcia Peeters, co-founder of Cascade Mycological Society, will lead this two-day workshop. Both days will include class and field time on Mount Pisgah. Rain or shine. Meet at the EPUD building. Fee: \$75.00 (MPA members/\$70).

Native Plant Society of Oregon, Emerald Chapter

For more information call 541-746-9478. Contact ngap@emerald.npsoregon.org with questions.

Saturday, 16 October, 9am-noon. Noon Herbarium Work Party. Assist with mounting and organizing specimens in the Rowe-Love Herbarium at Lane Community College. No background is necessary and all assistance is appreciated. Learn valuable plant collection and preparation skills while assisting in adding to our collection of over 3000 specimens. Notable and historic herbarium specimens from the Herbarium will be on display. Refreshments provided. To find out more about the Rowe-Lover Herbarium please visit the following sites: <https://teach.lanec.edu/bakerg/Herbarium.htm>; <http://www.lanec.edu/archives/OH-NelsonJK.html>; <http://www.lanec.edu/archives/OH-LoveR.htm>. Location: Science Building Room 117. Information: Contact Gail Baker, 541-463-5085 or bakerg@lanec.edu

Monday, 18 October, 7:30pm. Meeting: Alpine and Forest Flowers of the Matternispa Basin (Part I). Dan Luoma and Joyce Eberhart share their experiences from a week of botanizing in the Swiss Alps. They were led on an outstanding wildflower adventure in 2009 by longtime NPSO member Karen Sturgeon, retired botany professor from Linfield College. Location: EWEB Training Room at 500 East 4th Avenue, Eugene.

Monday, 15 November, 7:30pm. Meeting: A Botanist in Southern Iowa. Ed Alverson of the Nature Conservancy presents "A Botanist in Southern Iowa." Ed will describe his recent visit to remnants of the tallgrass prairie. He will also share pictures of some of the remaining examples of the now rare native ecosystems in southern Iowa. Location: EWEB Training Room at 500 East 4th Avenue, Eugene.

WREN

For more on these activities call 541-683-6483 or email info@wewetlands.org.

Tuesday, 12 October, 9-10am. Wetland Wander. Tsanchiifin Trail in the West Eugene Wetlands

Tuesday, 19 October, 6:30-8pm. Spider Talk. 751 S. Danebo Ave. Eugene. FREE!

Nearby Nature

Call 541-687-9699, email info@nearbynature.org, or go to <http://www.nearbynature.org/programs/registration-forms>

Sunday, 17 October, 1-4pm. Nearby Nature's Lessons in the Learnscape Workshop: Mushroom Identification and Medicinal Uses. Jennifer and Dustin Olson will cover key mushroom characteristics, sustainable harvesting of wild mushrooms, and identification of distinctive wild species, including poisonous, edible, and medicinal mushrooms. Participants will each get to inoculate her/his own log to bring home. Pre-registration is required and space is limited. The workshop costs \$30 for members, \$35 for non-members, or a work trade at the Nearby Nature Learnscape. To register, see www.nearbynature.org/learnscape/lessons-in-the-learnscape-workshop, call 541-687-9699, ext. 2, or email info@nearbynature.org with *Mushroom Identification* in the subject line.

Friday, 22 October, 5:30-9pm. 14th Annual HAUNTED HIKE! Pre-Registration Required. Go on a pumpkin-lit hike through Alton Baker Park and meet our costumed night critters—Bat, Owl, Raccoon, Frog, Moth, Beaver, and Spider! Back at the picnic shelter, enjoy creepy crafts and munch on tricky treats. Pre-registration required: 541-687-9699. This event fills to capacity, so call soon to secure your spot! Event happens rain or moonshine. Cost: members FREE, non-members \$5 per person. Volunteers also needed to help run the event.

Wednesday, 27 October. Track Town Pizza Pie Benefit Day Join us at Track Town Pizza at 1809 Franklin Blvd. on Wednesday, October 27 for a Nearby Nature PIE DAY in support of Nearby Nature's Scholarship Fund! All day long, Track Town will donate 50% of the cost of your pizza, salad, or soup order (not delivery items) to Nearby Nature if you bring in the special coupon attached to this email. Scholarships help families pay for daycamps, No School Days, service learning projects, and other fun adventures! -- Important: Pizza coupons will not be available at the restaurant—you must bring your coupon with you. Email us at info@nearbynature.org if you can't read our attachment and we'll send you a copy. Important: Pizza coupons will not be available at the restaurant—you must bring your coupon with you. Click <http://www.nearbynature.org/membership/benefit-days> to get a copy from our website. Email us at info@nearbynature.org if you can't read our attachment and we'll send you a copy.

Friday, 12 November, 8:30am-3pm. Nearby Nature No School Day Program: Forts in the Forest. How do animals build their homes? Make deer beds, a bird nest, and your own fort from the forest. Navigate in the woods by compass and clues hidden in the forest. \$30 members/\$35 non-members, ages 6-9, maximum 12 kids.

Saturday, 13 November, 10am-noon Nearby Nature Quest: Get Squirrely. Find out who's getting ready for winter on this late fall wander through park meadows and woodlands. Starts outside the Alton Baker Park Host Residence (between the dog run and community gardens). FREE for members, \$2/person or \$5/family for non-members. Pre-registration suggested.

Sunday, 14 November, 1-4pm. Nearby Nature's Lessons in the Learnscape Workshop: Backyard Habitats. Show up if you are interested in creating a backyard habitat for native birds, bees, and butterflies using native plants. Help our ecosystem, while having a great time and creating interest -- and perhaps you will create something beautiful, too! **Instructor:** Bruce Newhouse. Pre-registration is required and space is limited. \$30 for members, \$35 for non-members, or a work trade at the Nearby Nature Learnscape. To register, see www.nearbynature.org/learnscape/lessons-in-the-learnscape-workshop, call 541-687-9699, ext. 2, or email info@nearbynature.org with *Backyard Habitats* in the subject line.

We welcome new members! To join ENHS, fill out the form below. You will receive *Nature Trails* through December of next 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*.

MEMBERSHIP FORM

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P.O. Box 3082, Eugene OR 97403
<http://biology.uoregon.edu/enhs/>**

Name _____
Address _____
E-mail (if you want to receive announcements) _____ Phone _____
City _____ State & Zip _____

ANNUAL DUES:	Contributing	20.00
	Family	15.00
	Individual	10.00
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Annual dues for renewing members are payable in September. Memberships run from Sept. to Sept. 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 _____

Eugene Natural History Society
P.O. Box 3082
Eugene, Oregon 97403

ENHS Schedule of Speakers and Topics 2010-2011

17 Sept 2010	– Bill Sullivan	– Exploring Oregon’s New Wilderness Areas
15 Oct 2010	– Jim Trappe	– Trees, Truffles and Beasts: How Forests Function.
19 Nov 2010	– Bill Ripple	– Yellowstone Wolves
10 Dec 2010	– Doug Robinson	– Bird Ecology in Panama
21 Jan 2011	– Dennis Jenkins	– Paisley Caves
18 Feb 2011	– Lynn Houck	– Salamander Courtship
18 Mar 2011	– Scott Bridgham	– Climate Change/Terrestrial Ecosystems
15 Apr 2011	– Al St. John	– Great Basin Reptiles
20 May 2011	– Robert Pyle	– Butterflies

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