

Nature Trails

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Dr. Grant, in the Cascades.

Willamette River Hydrology

Dr. Gordon Grant

**Research Hydrologist, U.S. Forest Service,
Corvallis, Oregon**

**Friday, 16 March 2012, 7:30pm, Room 100 Willamette Hall, UO
Campus**

Some of our more chronologically gifted members may remember our March speaker from when he was a youngster, since Dr. Gordon Grant spent a portion of his formative years in our fair city. Born in Manhattan and raised in the east, the young Grant came to Eugene at age 13, when his father accepted a position as a Professor of Biology at the University of Oregon in 1966. In 1968 he went up the McKenzie River to a boat parade. He remembers standing at Martins Rapids and being thrilled as boat after boat traversed the whitewater. That day could be counted as the conception of Grant the River Rat. He bought an inflatable raft not long after that experience.

After graduating from Sheldon High School, Grant attended Reed College – for a while. He didn't elaborate on his reasons for dropping out of Reed, merely saying that in that era there were other interesting things to do. For a while he was the owner of a Eugene business: Serendipity River Trips. He said it wasn't a moneymaker, but he had a lot of fun being a river guide, trying to kill himself in a number of exciting ways.

While spending all that time on Oregon rivers, Grant began asking himself the sort of questions to which ultimately he would devote his professional life: why is this river just here? Why does it change so much after some winters, not so much after others? Why does this one run strong even in dry summers but that one get so puny? What makes a river sick, and what keeps it healthy?

After a few years of guiding, Grant went back to school, enrolling in the Clark Honors College at the University of Oregon. He used the Independent Studies Program to design his own major: he essentially majored in rivers. His undergraduate thesis dealt with the Willamette River. He got a grant from the Oregon Committee for the Humanities to assemble a Chautauqua – he called it his dog-and-pony show – on the Willamette, which he presented several times at various locations in the state.

Grant went to Johns Hopkins University for his Ph.D., studying under M. Gordon Wolman, arguably the greatest river scientist of his time. Grant's Ph.D. dissertation is entitled *Downstream effects of timber harvest activities on the channel morphology of western Cascade streams*. I asked him how he managed to do that sort of research in Maryland. He said the topic was essentially an

excuse to get him away from Baltimore for the summers; he did the work out here.

Grant's research interests are focused on moving water: structure and dynamics of mountain streams; watershed and stream response to changing land use and climate. His publication record is extensive and impressive. Looking it over it seemed to me that his favorite areas must be 1) groundwater and 2) river restoration. He said it has distilled simply to this: how and why do rivers change? Comparing this at once simple and profound question to those he used to ask himself while guiding a raft down a river, it might seem his basic quest hasn't changed much in the decades since he shipped his oars.

At present Grant is a research hydrologist with the U.S. Forest Service's Pacific Northwest Research Station in Corvallis. He holds a courtesy professorship in the Department of Geosciences at Oregon State University.

I asked him where or in what way he sees his research having the biggest societal impact. He said, "I labor in relative obscurity." He is too modest by half, at least. Witness the Oregon Field Guide clip "High Cascades Springs" in which Grant

describes the huge volume of groundwater beneath the Cascade range:

<http://www.opb.org/programs/ofg/segments/view/1665>. Oregon Public Broadcasting doesn't just devote over 8 minutes of prime television time to someone who 'labors in relative obscurity.' Besides groundwater issues, Grant is an expert on the problems caused by dams, and also the dynamics of streams in response to dam removal. He and fellow researchers have followed closely the response of the Sandy River to the removal in 2008 of the Marmot Dam (If you want to watch him really get excited, look at this coverage of the day the Sandy River reclaimed its channel:

<http://www.opb.org/programs/ofg/segments/view/1651>). He has given presentations on the dramatic response of the Sandy at conferences from Sacramento to Italy to China. He and his co-workers have also been involved in several studies and lots of discussions concerning removal of the four dams on the Klamath River.

When Dr. Grant speaks to the Eugene Natural History Society he will focus on the Willamette and McKenzie Rivers, using them as examples to get at where water and stream flow will go in the future: how much water will there be, where, when, and of



what quality? Given the recent intense local interest in possible future commercial use of McKenzie River water, Grant's presentation takes on even more significance. His talk, entitled "Willamette River Hydrology," is on Friday, 16 March, at 7:30 pm, in Room 100 Willamette Hall, on the U of O campus. Be sure to come, with family and friends. John Carter

Roller Coaster by Reida Kimmel

Winter spring, winter spring. Last night's dusting of snow is dripping off the trees in the warm sunshine. The downspouts on the barn roof are pouring water into my overflowing water buckets. Tonight it will be twenty-five degrees and tomorrow perhaps sixty. This is the third time in two weeks that we have had such dramatic weather shifts, but the plants and animals don't mind. It's only we humans who complain. Nature's sap is running. The red-tailed hawks and great horned owls must be nesting by now. In the 'pond pasture' the big willow's myriad yellow twigs are dazzlingly bright in the intermittent morning sunshine. Suddenly the sky blackens, and for the next half hour it is deepest winter, sleet and snow swirling, but melting. Everything is so wet, sodden and slippery. Amphibian weather. Flattened masses of red-legged frog (*Rana aurora*) eggs, the embryos black and already well developed, line the north bank of our pond. I have never seen so many. Across the pond, attached to submerged branches, a single football-shaped mass, bright green with algae, contains northwestern salamander (*Ambystoma gracile*) eggs. Could those be the eggs of the very rotund salamander we escorted from the driveway to the pond's edge several weeks ago? Rough-skinned newts (*Taricha granulosa*) betray their presence in the café-au-lait colored waters by the ripples and currents they make as they swim near the surface.

In the woods under mature trees, the mossy ground cover shines in myriad shades of green, each species with its own specific hue. Somber liverworts reach out from the trunks of hardwoods – plumper, I think, than they were a month ago when their world was darker though hardly less damp. Some mosses have sent up dainty spore-bearing bodies, but the stars of the forest are the tiny purple flowers of snow queen (*Synthyris reniformis*), scattered abundantly in the mosses. Their very pretty leaves are almost invisible. It's not quite time to search for emergent Trilliums, or to turn wild

ginger (*Asarum caudatum*) leaves over in search of the shy curvaceous chocolate-brown flowers they hide.

But travel further uphill and south. Pass through the neighbors' carefully nurtured woods. Linger in the messy, chaotic, untended BLM woods, where spindly dead trees, all moss and woodpecker holes, collapse amongst the growing forest. Go beyond this Hobbit world, so moist and green, and you will enter the Dead Zone. Here it is neither winter nor spring. It is warm, but the land is grey. Hundreds of acres stretch east, west and south, dotted with little plastic cones protecting newly planted Douglas fir clones from predators like mice and deer, should there be any about. When the land was clear cut, the slash was defoliated and burned. A year passed. Nothing much remained on the land except some shrubs, filberts, small madronas, chinquapins, and a few Scotch broom bushes. Then in September, the helicopters came and sprayed. Why? To kill what? To kill the possibility of anything, because the land was about to be planted, and spraying is part of the standard practice. Unless laws, and mindsets, can be changed, this former forest and all the others in the Northwest will be sprayed again, perhaps as many as four times before the firs are big enough to shade out all other vegetation. The little trees have no shelter. If spring is early and dry, few will live. Out there in the commercial forests it is snowing too. The snow may stick, its moisture soaking into the soil, slowly nourishing the tiny fragile fir roots. I want those trees to live. I hope that some of the native hardwoods or their seeds will survive the spray as well. I want our barren hills to be green again, even if it is with second rate, monocultured forests. Perhaps some of the native hardwoods or their seeds will survive, and the new forests will increase in health and diversity. I want more snow, more cool weather, even if my flowers and salad greens suffer. I want to have hope.

President's Corner

Knowing by Tom A. Titus

By late winter everything knows. Nettle shoots with new leaves so deeply dark they seem more black than green rise out of moist loam along creek bottoms fertilized by black used-to-be green alder leaves and dead salmon. Newts with chocolate backs and bright orange bellies and rough rubbery skin clasp in a days-long embrace, swimming

together in the quiet water of overfull ponds and sloughs and ditches and rain-filled ruts cut into muddy roads that should never have been built. Song sparrows belt out song-sparrow song into a sunrise with no sun, a gray fish-belly band of wan light growing over the eastern ridge.

Humans know in that special, brainy, convoluted, gray matter way in which humans know things. Dr. Bill Bradshaw studies how plants and animals adapt to changes in day length, and he likes to project a graph of temperature plotted over a year of time, a jiggly line that eventually does indicate colder winters and warmer summers. There is a similar line for rainfall that lurches and climbs into wetter winters and then descends back to drier summers. But the line for daylight increases toward the summer solstice in a curve as dependably smooth as a piece of rounded river bottom basalt. Then Bill asks, "Which one would you bet your life on?" In other words, if you were a living thing going about the business of living in order to continue living *and* ensure that your genes stay alive in the next generation, would you wager that in late winter tomorrow will bring rain or that it will send along just slightly less than three additional minutes of daylight?

People do have circadian-clock genes with cryptic labels that sound like spy names: Per2, Per3, Clock, and AANA. These could influence our response to seasonal changes in day length. Human populations existing at different latitudes differ from one another in the prevalence of genetic variants for each of these genes, and it is tempting to speculate that natural selection has favored certain genetic variants that are better suited to environments with varying seasonality. But this story has a boring ending—most likely these changes in the frequency of our day-length genes came about because of chance rather than the imposition of natural selection in seasonal environments. This makes sense to me. I have a big woodpile and a full pantry and very little to lose if I bet in the wrong direction and don't behave myself as the equinox approaches.

I can screw up and plant my tomatoes and corn and squash into the cold wet ground right now, then after it all rots in a few months I can go to the garden store and buy more starts and seeds. It's hard for me to imagine that at this juncture natural selection is the omnipotent master of my behavior.

Perhaps selection isn't sifting human clock genes. But every other thing around us seems to know that something is up, even in late winter: camas and cattail shoots, chorus frogs, green hazel buds, garrulous towhees, growing garlic, a few early garter snakes, the first yellow wood violets, red-tailed hawks twirling together with legs outstretched, varied thrushes wheezing asthmatically, red fox with winter hair falling free. Despite our fluorescent lights and forced-air heat and clocks and watches and nine-to-five and everything running twenty-four-seven that has blotted out our intrinsic knowledge of the seasons, I believe that we still know in the way that plants and other animals know. We sense the quickening pace of morning, that precious extra hour of evening light. We send a glance toward spring and feel that fully-formed feeling, that deep round *yes* in our chest—we have made it through one more winter. Or maybe this is just a deep round sigh of relief as the day length slowly and predictably progresses back to something more akin to our equatorial roots?

Hard to say. Personally, part of me is already missing the quiet introspection of winter. I'm tearing around and tearing things up, re-landscaping my back yard and trying to figure out what needs to be planted when and where. I do this even though natural selection is no longer beating me about the head and ears because my day-length genes aren't just so, and while there seems little reason to bet on anything anymore, my money will stay on the daylight. I knew it was coming.

ENHS bike path work party. Sunday, 18 March. Meet at 10 am on the North Bank Bike Path under the north end of Ferry Street Bridge, or in the parking lot in front of McMenamin's North Bank restaurant off Centennial Loop. Families welcome; nature study entertainment provided. Bring gloves and be clothed for the weather. Work usually lasts until about noon, after which many of us stay for lunch and conversation at McMenamin's. Contact for info: David Wagner 541-344-3327.

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.



Kentucky Falls

Don't miss this spring old-growth hike to a major waterfall in the Coast Range. The first 1/3 mile is mostly level with a few easy rolling grades, taking you to the top level of the falls. A few moderately steep switchbacks bring you to the bottom of the falls. Continue steadily downhill along the creek to more switchbacks that lead to the bottom of two side-by-side waterfalls on Kentucky Creek and the North Fork of the Smith River.

In the web version of NT (Go to <http://biology.uoregon.edu/enhs/> and click on Newsletter) the Out and About photos are in color (the cover photo is, too). But note: the current issue of NT doesn't appear on the website until after the meeting.

Events of Interest in the Community

Lane County Audubon Society

Tuesday, 27 March, 7:30 pm. Not Quite a Full Deck. Richard Weeks, artist and former educator, will illustrate a six-year quest, involving nine separate trips to eight states, to locate, photograph, and paint the 52 breeding warblers of the U.S. "Not Quite a Full Deck" will reveal which birds are missing from Richard's deck of warbler "cards." Eugene Garden Club, 1645 High St.

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, email mtpisgjp@efn.org, or look at <http://mountpisgaharboretum.org/> to find out about current Arboretum activities.

Thursday, 15 March OR Tuesday, 3 April, 6:30-8 pm. Nature Guide Orientation Session, at Wayne Morse Family Farm, 595 Crest Drive, Eugene. Enjoy working with kids and being out in nature? Train to be a nature guide at Mount Pisgah Arboretum. Lead small groups of K-5 grade students. Teach them about the wonders of nature and introduce them to the plants and animals of the Arboretum. No experience required. (Just a love of kids and nature!) Free training. Commitment: One tour per week, for 8 weeks.

Nearby Nature

Saturday, 17 March, 1-4 pm. Nearby Nature's 20th Birthday Party. First United Methodist Church (1376 Olive St. in Eugene): Enjoy a show by the costumed Kinder Critters, games, crafts, a raffle, honors for volunteers, and cake! FREE! Questions: 541-687-9699 or www.nearbynature.org.

Museum of Natural and Cultural History

Wednesdays, 11 am – 5 pm. Free Admission Wednesdays.

Fridays, 1 pm and 3 pm. Guided Tours.

Wednesday, 4 April, 11:00am. Little Wonders: Stories and Activities for Prekindergartners. *Fur and Feathers*, by Janet Halfmann Make your own animal coat to take home using fun materials like cotton balls, feathers, and yarn. Free.

Native Plant Society of Oregon, Emerald Chapter

For information on current activities contact ngap@emeraldnpsoregon.org or look at <http://emerald.npsoregon.org/>

Monday, 16 April, 7:30 pm. Icons of the Pacific Northwest Natural Environment. Tim Giraudier's presentation will include photographs of flora, wildlife and landscapes from the Cascades to the Pacific Ocean. EWEB Training Room 500 E. 4th Avenue, Eugene. For more information call 541-345-5531.

North American Butterfly Association – Eugene/Springfield Chapter

Monday, 9 April, 7 pm refreshments, 7:30 pm program. Dragonflies & Damselflies of Oregon. By Cary Kerst & Steve Gordon. Authors of *Dragonflies and Damselflies of Oregon* and *Dragonflies & Damselflies of the Willamette Valley, Oregon*. EWEB Training Center at 500 4th Ave., Eugene. FREE, all are welcome.

WREN

For information about upcoming events call 541-338-7047 or email info@wewetlands.org. You can also go to their website: <http://www.wewetlands.org/>

Tuesday, 13 March, 9-10:30 am. WREN Wander at Meadowlark Prairie.

Tuesday, 10 April, 9-10:30 am. WREN Wander at Luk-wah Prairie.

WREN Wetland Wanders are casual walks through various West Eugene Wetlands sites, the second Tuesday of every month. Dress for the weather. WREN will provide binoculars. FREE!

Brain Development Lab, University of Oregon

Saturday, 10 March, 1-4 pm. Brain Awareness Expo. This is the first annual Brain Awareness Expo, put on by the Brain Development Lab. It is part of the larger National Brain Awareness Week, which is sponsored by the Dana Foundation. At our expo, researchers from various disciplines (mainly psychology and neuroscience) will set up tables with information and hands-on activities that relate to the brain. Examples include optical illusion, sensory perception, a brain coloring station, a discussion of the brain from an ethological perspective, prism adaptations, real animal and human brains to see/touch, selective attention activities, and more. Most of the tables will have some kid-friendly activities, with more in-depth info for adults as well. The event will be held at WOW Hall. It is free and open to the public.

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*.
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
P.O. Box 5494, Eugene OR 97405

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 2011-2012

16 Mar. 2012 – Gordon Grant – Willamette River Hydrology
20 Apr. 2012 – Tina Schweickert – Landscape History of Oregon's Waldo Hills, and Beyond
18 May 2012 – Robert M. Pyle – Butterflies

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