

# *Nature Trails*

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## **How Will Climate Change Impact Terrestrial Ecosystems?**

Dr. Scott Bridgham,  
Professor, Center for Ecology and Evolutionary  
Biology,  
University of Oregon, Eugene, Oregon

## Friday, 18 March 2011, 7:30pm, Room 100 Willamette Hall, UO Campus

Our speaker this month could be described as an Air Force brat, or a Renaissance man, or both. Dr. Scott Bridgham's father had a career in the U.S. Air Force. Scott was born in Texas, and as a youngster lived in Oklahoma, Okinawa, South Carolina, and North Carolina. His family moved to Maine, where both his parents originally came from, when he was 16, and he ended up graduating from the same high school as his mother had, years before, in Augusta.

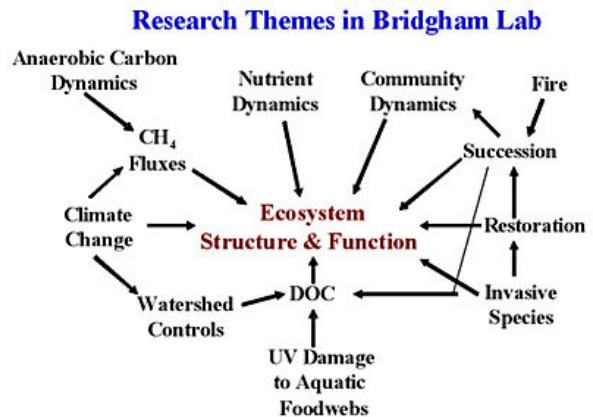
Bridgham was interested in creative writing when he first went to college, and he graduated with a BA in English, with highest honors, from the University of Maine. He then spent about a year and a half guiding river raft trips and living in a shack in the woods while writing short stories and poetry. He concluded that he would not be satisfied with the living he could make doing either of these things. He needed a career.

Besides writing, Bridgham loved biology. He had taken several biology and other science classes while pursuing his English degree, so he decided to go back to the University of Maine and flesh out a second degree, this time in Zoology; again he graduated with highest honors.

Bridgham went to the University of Minnesota for his Master's degree, in the Department of Ecology and Evolutionary Behavior. By the time he finished that work he was sure he wanted to be an ecologist. He went to Duke University for his Ph.D., where he was advised by Curtis Richardson on a thesis topic that dealt with the mechanisms controlling soil carbon cycling in peatlands.

Armed with his Ph.D. Bridgham headed back to Minnesota for more research on peatlands. He had been awarded a postdoctoral fellowship from the Department of Energy for an extremely ambitious project: a replicated manipulation of temperature and water level in peat from northern Minnesota. Each of the 53 samples in this monstrous experiment weighed about a ton, so you can imagine the sort of heavy equipment and planning that went into the project. But it was worth the effort. They were able to quantify the effects of increased temperature and changes in water table on the release of methane and carbon dioxide from peatlands, as well as lots of other information. He said they got at least 20 papers out of the study, and were able to draw some concrete conclusions on what will happen if and when northern peatlands warm up. It won't be good.

From this second sojourn in Minnesota Bridgham joined the faculty at the University of Notre Dame, where he stayed for eight years before coming to the University of Oregon. Here, Bridgham is a faculty member in the Center for Ecology and Evolutionary Biology, as well as the Environmental Studies Program. His research program is almost an ecosystem in itself. Here is a diagram he uses to show how the different pieces fit together:



From this you can see that it all centers on how an ecosystem is put together and how it functions. But not just one ecosystem: he is still working on wetlands, doing collaborative work in different parts of the country, from Northern Michigan to West Eugene, but his efforts have expanded to include lakes, streams and rivers, whole-watersheds, upland prairies, savannas, and forests.

Couple his diverse research interests and his teaching and advising schedule (he currently has six graduate students and four post-docs in his lab) with what he does for fun – kayaking rivers with hairy rapids or running long distances or writing poetry – and the phrase Renaissance man does indeed come to mind.

Bridgham's talk to the ENHS will get at how global climate change will affect the structure and function of ecosystems, as well as how the dynamics of ecosystems such as peatlands may impact global climate change. His presentation promises to be interesting to a broad spectrum of our community. Professor Scott Bridgham's talk "How will climate change impact terrestrial ecosystems?" is on Friday, 18 March 2011, at 7:30 pm in Room 100 Willamette Hall on the U of O campus. I hope you will join us.

John Carter

## In Like a Lion?

By Reida Kimmel

Sometimes it is just so hard waiting for spring. The long dry spell in January and early February got all the plants looking so perky. The catkins on the filberts elongated. Crocus and heather bloomed in the garden, and on those afternoons when the sun shone, hundreds of wild honeybees feasted on the season's first pollen. A few, a very few of the first spring flowers, snow queen *Synthyris reniformes*, which we call grouse flower, peeked through the moss. The hopeful and persistent bachelor red-winged blackbird sang at the pond. Occasionally a tree frog called. Every day, pairs of ducks came down on the pond, the males splashing, displaying, chasing the females. One day it would be mallards, another, wood ducks or mergansers. It seems our pond is too small to host more than one species at a time, but what a treat to watch whoever is there! Then came the snow, the rain, and more snow. The pond froze. The flowers were buried. Winter again.

Actually I love winter and snow. And if in our crazy new world it wants to come after the start of spring, so be it. Since childhood I have welcomed snow with open mouth. That is to say, I love to tilt back my head and watch the snow flakes fall until I am dizzy with the sight of cold twirling shapes slowly, then swiftly, falling on my face. Our farm is at its most beautiful in the snow. The fir trees look like a scene from a Christmas card. In the twilight, black silhouettes of trees and shrubs hug the ghostly whiteness of the frozen pond. Last week's snow was dry and powdery, unusual for our region. Walking was easy and it was tempting to stay out for hours in spite of the cold. In the woods tiny moss spore capsules stood out on top of the snow. Normally these are hard to see unless you bend over to study the ground cover, but now they were abundantly

apparent. The woods were quiet in the snow. Tiny tracks let us know that small mammals were active, sheltered in the underbrush. We startled a red-tailed hawk and hugely annoyed a flock of Steller's jays, but saw few other birds.

There certainly were a lot of busy birds at our feeders, however. This year two very lovely suet enthusiasts have joined our usual charming crowd of chickadees, juncos, towhees, song sparrows and nuthatches. The female downy woodpecker has no trouble attaching herself to the suet feeder and comfortably eating her fill, but the flicker, so much larger than the birds that the suet feeder is designed for, has to ponder awhile before venturing from its branch and grasping the feeder, clinging awkwardly, and stabbing the suet with its long bill. The juncos and sparrows love all the shards of suet that the flicker untidily spews earthward. I love being close enough to admire the beautiful patterns of a flicker's plumage from my kitchen window.

And today it is March. Two inches of rain yesterday melted the last traces of snow in our shady hills. A pair of mergansers are spending the day on the pond. The grouse flowers, liberated from the snow, are blooming in profusion. The Indian-plum (*Oemleria cerasiformis*) bushes have uncurled their frozen leaves and are putting on a show of flowers. The air is mild in spite of the wind. It's time to bother those ducks and go searching for northwest salamander (*Ambystoma gracile*) eggs along the banks of the pond. It's time also to get some seeds started: peas and sweet peas, lettuce and onions. Soon maybe it *will* be spring, or maybe not. There's a certain excitement and challenge to never knowing quite what to expect from the weather. I like it that way.

## President's Corner

### Depth

By Tom Titus

In the long run the land will heal and so will I. But in this moment there is no poetry left on the hillside above my garden, there will be no shadows growing into evening, no owls calling from dark depths, no tiny calypso orchids exuding sex from bulbous pink blossoms rising out of thick moss. This altered landscape has no depth, aesthetically, ecologically, or geometrically. What remains is a two-dimensional battlefield of broken fir parts, some scattered haphazardly across injured soil, others pushed into piles awaiting cremation. Interspersed are the stumps, with growth rings writing a cross-sectional epitaph to trees now gone. An unseasonably rainless February allows me to drive out on the dry ground and rummage the remains for useable firewood. High above me a group of seven ravens cavort in joyful spinning dives on the southwest wind of an incoming storm.

My garden, a 35-by 45-foot plot on the knoll just west of the Johnny Gunter cabin, is one immediate beneficiary in all of the destruction. The treeless western horizon is now significantly lower and the evening sun will rest on the meadow for more time each day, keeping the soil warm, making it a more hospitable place for the warm weather crops that I grow here: corn, squash, beans, and tomatoes. I would gladly have traded my garden for an intact forest, but such a transaction was never to be. Owls and orchids do not figure into the cold calculus of the timber economy.

Here in late winter, five raised beds are thick with tiny green spears of annual rye that was planted last fall to hold the soil in place, keep the weeds down, and produce root compost. Between the beds are paths covered with sodden cardboard, also there to thwart the weeds. Volunteer kale and collards are scattered willy-nilly across the beds and are now just recovering; I left the garden gate open for three weeks, and apparently deer love brassicas, too.

The garden, with its chocolate-brown earth covered in emerging green shoots, has an uncomfortable similarity to the logged hillside festooned with newly planted fir seedlings. This similarity is not a passing fancy. In both cases a crop is planted, grown, removed, and replanted. The animals that colonized the plants are disrupted. A degree of ruthless control over the land is required. Certainly these two versions of agriculture are different, especially in the temporal and spatial scale of the operation. The looming

starkness of the hillside encompasses several hundred acres that will not regrow and be colonized by chanterelles in my lifetime. In contrast, the garden is 1200 square feet that by August will be covered with head-high corn and the broad green leaves of spreading winter squash vines.

Yet there is a critical divergence between these two approaches to agriculture, and it is this: I always tithe to the soil. This February I hauled in trailer loads of fresh horse manure and straw from the Kimmel farm, forking it into huge yellow and green heaps outside the east fence. This afternoon the piles have shrunk to half their original size, and by May they will be dark brown and crumbly, odorless except for the faint musty smell of a microbial community busily returning all that poop to the earth. I will fill a rusty wheelbarrow, put my hands to the handles, and grunt load after load of this fertilizer to each bed, then churn it into the top six inches of soil with a spading fork.

A healthy forest needs no such intervention. Soils are built over thousands of years by trees that grow, shed their needles and nitrogen-fixing lichens, and then eventually die and rot in place. Although the data on nutrient cycling on clearcuts are mixed, it is difficult to imagine that the large-scale and repeated removal of biomass from a system can do anything but deplete the soil. The immediate losses caused by incessant winter rain that lands on bare ground forming muddy runoff that chokes the waterways below should give us pause.

But I wouldn't have a garden if this land had not at one time been cleared. When digging my beds I occasionally turn up intact pieces of bark and black charcoal left from the trees that were felled and the stumps that were burned two generations ago. In fact, I wouldn't be here to contemplate my sense of place and a healthy relationship to the land if my great grandparents hadn't been lured from the Midwest by a piece of Oregon and California Railroad land and the vast forests that fueled a booming timber economy in the last century. These facts cause me to pause, take a deep breath, and exhale some self-righteousness.

In the evening I leave the garden knoll and take up my customary post on the front porch of the cabin to listen to the land become dark. To think. As a scientist, I wonder if we place too much stock in science to tell us what is right. Seeing a multidimensional landscape reduced to flat barrenness is emotionally jarring. I don't understand



why this is so, but I have come to believe that my emotions are worth paying attention to, despite their subjectivity. Do we have some innate template that is a basis for recognizing the tolerances of ecological acceptability? One could speculate that our survival over the vast reaches of history preceding civilization would have depended on such ecological intuition. Or perhaps we resonate with the natural world when

it reflects a vibrant state within ourselves. We thrive on depth; deep soil, deep shadows, deep connections to people and places. All of these produce intricate, multifaceted personal ecologies. Certainly this much is true: a forest that has been reduced to two dimensions heals by tending naturally toward complexity. People heal that way, too.

**ENHS bike path work party.** Sunday, 20 March. Meet at 10 am on North Bank Bike Path under the north end of Ferry Street Bridge, or in the parking lot in front of McMenamins 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 McMenamins. 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*



### Petroglyph Rock at Malheur National Wildlife Refuge

I know, Malheur is for the birds. Each spring snow geese, sandhill cranes and all manner of waterfowl pass through Malheur National Wildlife Refuge, one of the best in the west. But have you seen this rock right by the road on the way to Krumbo Reservoir?

Learn more about the birds at Malheur at the John Scharff Bird Festival in early April. Get in on the trip to an increasingly rare event - watch the male sage grouse strutting and drumming on their lek to impress the ladies. [www.migratorybirdfestival.com](http://www.migratorybirdfestival.com)

Ed. note: In the February paper issue this photograph was almost uniformly black. I apologize to Dave Stone, whose photos have graced this section of Nature Trails for several months now. So, we're trying it again. I hope you can see the petroglyphs this time (those looking at this on the website will be seeing it in color and so may wonder what the fuss is about).

## Events of Interest in the Community

### Eugene Natural History Society

**Friday, 15 April, 7:30 pm. Among Penguins: A Bird Man in Antarctica.** Noah Strycker spent 3 months on a research project on penguins in Antarctica, and has written a book describing his adventure. He will share with us some highlights and describe the research he did, gracing his talk with many stunning photographs. He was featured

in the 20 Feb. 2011 Sunday edition of the Register Guard. (Note that we have altered our schedule to accommodate this unique opportunity. Tom Titus had agreed to speak (and introduce himself?) on that date but will favor us with his presentation at a future date.) Room 100, Willamette Hall, U of O campus.

### **Lane County Audubon Society**

**Saturday, 19 March, 8 am-2 pm. Third Saturday Bird Walk: Birding in Oakridge.** Cheron Ferland, experienced birder and wildlife biologist in the Oakridge Ranger District, will help us explore bird habitats as we look for mountain specialties in the western Cascades. All levels of birders are welcome, from first timer to expert. Meet at South Eugene High at 19<sup>th</sup> and Patterson, rain or shine. A \$3 donation is suggested, as well as a share of gas costs for carpooling. As a precaution, do not leave valuables in your parked car. Questions? Contact Leila at leilas@ori.org or 541-968-5533.

### **Tuesday, 22 March, 7:30 pm. East Cascades Audubon Project Highlights and the Vaux's Swift Migration Project.**

Nicole Nielsen-Pincus, Eugene resident and former East Cascades Audubon Society (ECAS) board member, will walk us through several of the ongoing projects that ECAS is working on in central Oregon and throughout the state. As the project leader for the Vaux's Swift Migration Project, Nicole will give special focus to this project, which also has relevance to Eugene. Nicole will also cover other projects, including the Oregon Winter Raptor Study, the Lewis's Woodpecker Nest Box Study, the American Kestrel Nest Box Study, the Green Ridge Raptor Migration Count, and the Oregon Birding Guide. 1645 High St., 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](mailto:mtpisgjp@efn.org) for more information or to sign up for any of the following Arboretum activities.

#### **Become a Nature Guide: Explore Nature with Kids!**

Mt. Pisgah Arboretum is training volunteers to lead small groups of K-5 grade students on nature hikes this spring. Do you have one morning a week (1 May-14 June) to share your love of nature with kids in our community? Training is free and covers natural history, hands-on activities, and teaching techniques for the trails.

#### **Orientation Session: Wed. 16 March OR Tues. 29 March, 6:30-8 pm. at Wayne Morse Family Farm, 595**

Crest Drive, Eugene. For information or an application call Fran at 541-747-

1504, [mtpisgfr@efn.org](mailto:mtpisgfr@efn.org), [www.mountpisgaharboretum.org](http://www.mountpisgaharboretum.org)

### **Nearby Nature**

Call 541-687-9699 or email [info@nearbynature.org](mailto:info@nearbynature.org).

**Saturday, 12 March, 10 am-noon. Nearby Nature Quest: Nesting Neighbors.** Go on a family-style bird walk and peek at herons with nature guide Mieko Aoki. Make a wooden birdhouse with naturalist Don Lown. FREE for members, \$2/person or \$5/family for non-members. Small donation requested for birdhouse materials. Pre-registration suggested: 541-687-9699. For the rest of 2011's Nature Quests, see <http://www.nearbynature.org/events>.

**Saturday, 9 April, 11 am-2 pm. Walk on the Wild Side.** Join us for a celebration of spring and all things wild! Enjoy trailside presentations by Frannie Frog and her Kinder Critter friends, storytelling, spring Learnscape garden goodies, heron nest watching, crafts, water table activities, and more. Event happens rain or shine! Ride your bike and park in our covered bike shelter...or park your car at the Alton Baker Park Boat Ramp and stroll down the bike path to the [Learnscape](#). Members FREE, non-members \$5 per family.

**Friday, 15 April, 8:30 am-3 pm. Nearby Nature No School Day Program: Creature Feature.** Discover who's zooming, digging, and hopping in the park! Use nets and magnifiers to find hidden life in the ponds and meadows. Enjoy fun critter games and create your own creature out of beads. \$30 members/\$35 non-members, ages 6-9, maximum 12 kids. Register at 541-687-9699, ext. 2.

**Saturday, 16 April, 1-4 pm. Nearby Nature Restoration Celebration.** Join Nearby Nature SOLV for litter pick up in Alton Baker Park. Please come dressed for the weather and bring a re-usable water bottle. Please call ahead at 541-687-9699 or email [info@nearbynature.org](mailto:info@nearbynature.org) if you plan to attend. Sponsored in part by REI.

**North American Butterfly Association, Eugene/Springfield Chapter**

**Monday, 4 April, 7 pm Friends and Food, 7:30 pm Presentation: Butterflies, People, and Hydroelectric Schemes in Northeastern Anatolia, Turkey, by Dr. Paul Severns, Washington State University, Vancouver.**

Dr. Severns will report on his recent trip to the Kaçkar Mountains in northeastern Turkey. This region is recognized as a world "hot spot" for biodiversity. He will talk about the relationship between traditional agricultural practices and butterfly diversity, and he will consider the potential impact of hydroelectric schemes on this unique habitat. EWEB Training Center, 500 E 4<sup>th</sup> Ave., Eugene. FREE.

**North American Rock Garden Society, Emerald Chapter**

**Tuesday, 5 April, 7 pm. Seed Germination and Propagation Techniques.** Alan Bradshaw will talk about his efforts to preserve wild flora. His 2009 catalog contains seed of over 1000 different rare and unusual plant species including a large selection of cactus seed from the collection of Jeff Thompson. Door prizes and refreshments follow. Contact Tanya ([president@nargsemerald.org](mailto:president@nargsemerald.org) or 541-937-1401) for more information. Eugene Garden Club, 1645 High St. Free, open to all.

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

**Monday, 21 March, 7:30 pm. Delights, Myths and Legends of Native Plant Gardening.** Bruce Newhouse will explore the myths, legends and delights of native gardening and landscaping. Is there really a difference between planting native or non-native plants? Do native plants have special care needs? (Note: This presentation was originally scheduled in January but has been postponed to March.) EWEB Training Room at 500 E. 4th Ave., Eugene. For more info call 541-343-2364.

**Saturday, 2 April, 10 am to 1 pm. Field Trip.** Join Chris Orsinger of Friends of Buford Park & Mt. Pisgah on an exclusive tour of The Nature Conservancy's newest Eugene/Springfield area acquisition, the Willamette Confluence Project. This 1,270-acre property borders Buford Park and includes over six miles of Willamette riverfront. To register email Dave at [dpredeek@msn.com](mailto:dpredeek@msn.com) or call 541-345-5531.

**The ENHS is invited on a joint outing with the Many Rivers Group of the Sierra Club!**

**Here are the details provided by Cathy Corlett of the MRG:**

**Saturday 30 April, 2011, Eagle's Rest to Goodman Creek**

We will experience a variety of habitat types on this easy but moderately briskly paced outing. First we will take a car shuttle to a trailhead convenient to the top of Eagle's Rest, where we will encounter Madrones and Manzanitas, enjoy the southern sun, and the views of the Lost Creek Valley. Then we head downhill to the Goodman Creek trail, pausing for "first lunch" at Ash Swale shelter. We will see woodland wildflowers, skunk cabbage in bloom and other wonders of this wilderness-quality landscape. For "second lunch" we will stop at a lovely little waterfall, and head mostly downhill the rest of the way back to our car shuttle. 7.4 miles, 2022' total elevation change from top of Eagle's Rest to parking lot. Meet at 8:45 AM at South Eugene High School parking lot at 19<sup>th</sup> x Patterson in Eugene for carpool to trailhead. Pre-register by emailing

[Cathleen.corlett@gmail.com](mailto:Cathleen.corlett@gmail.com)

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**

**Eugene Natural History Society  
P.O. Box 5494, Eugene OR 97405**

Name \_\_\_\_\_ <http://biology.uoregon.edu/enhs/>  
Address \_\_\_\_\_  
E-mail (if you want to receive announcements) \_\_\_\_\_ Phone \_\_\_\_\_  
City \_\_\_\_\_ State & Zip \_\_\_\_\_

<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

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  
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Eugene, Oregon 97405



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## ENHS Schedule of Speakers and Topics for the rest of 2010-2011

- 18 Mar 2011** – Scott Bridgham – How Will Climate Change Impact Terrestrial Ecosystems?  
**15 Apr 2011** – Noah Strycker – Among Penguins: A Bird Man in Antarctica  
**20 May 2011** – John Fischer – La Nina, El Nino, and La Nada: The Big Weather Makers in the Northwest

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