

Nature Trails

Published by the Eugene Natural History Society

Volume Forty-seven, Number Six, September 2012



Striped Whipsnake (*Masticophis taeniatus*), from Paisley Caves in the Summer Lake Basin

The Wet, the Dry, and the Indifferent: Amphibian and Reptile Diversity at the Center of the Universe

Dr. Tom A. Titus

Author, Molecular Geneticist

University of Oregon

**Friday, 21 September 2012, 7:30pm, Room 100
Willamette Hall, UO Campus**

Perhaps you thought our speaker this month is so well known to us all that Nature Trails would forego the usual introduction and go with an extra essay instead. If you did, think again. All of us know Dr. Tom Titus as President of our august organization, but there are hidden stretches of his checkered past that deserve – even cry out for – exposure.

Anyone who has read a couple of his essays knows that Titus has the soul of a poet. But he is gainfully employed as an evolutionary geneticist. Of the fair number of scientists I have known with training similar to Titus's I can recall no other poet among them. This is just one of several things about our speaker that takes some getting used to.

Another seeming anomaly is that although his day job involves the molecular genetics of fish, he teaches a herpetology class – and this class involves field trips to find real, live examples of the animals.

Still further, his knowledge isn't limited to snakes, frogs and salamanders. Titus also knows Oregon birds, mammals, and plants. Those of us who have gone on ENHS field trips to southeast Oregon can attest to this fact.

But as I learned while sitting with him in the back of Van 1 of our Hood-to-Coast relay team, given the path he has taken through life most of these odd combinations of expertise do make some sense.

Titus was born in Renton, Washington, a self-proclaimed Boeing brat. His family moved to Oregon when he was just three years old, to the 25-acre place east of Springfield where his mom and dad still live (his folks didn't want to raise their boys in a city). He and his three younger brothers had a huge natural playground on that hillside and the nearby McKenzie River. His earliest memories of family vacations involved foraging – fishing, hunting, and clamming trips. So Titus has been poking around and foraging in the natural world since shortly after he learned to walk.

After high school and a couple of false starts in college the young Titus landed at Western Oregon University, where one of the influential persons in his life lay in wait. Dr. Ken Walker was an all-around naturalist who offered a one-year class in the natural history of Oregon. Students had to learn all of Oregon's amphibians, reptiles, birds, mammals, trees, and shrubs. There were several field trips to various parts of the state. Titus became fascinated with the obscurity of amphibians, taken by the fact that they had been right under his nose while he was playing

on his hillside during those formative years but he never knew they were there.

After finishing with a B.S. in Education with an emphasis in biology Titus found that he didn't want to teach high school biology after all. He took off for New Zealand and spent several months in that fair country, touring and hiking, before coming back to Oregon and taking a seasonal job at the Nature Center in Sunriver (also working there was a young woman named Kim Wollter, his future wife).

Titus's boss was Jay Bowerman (son of the famous track coach Bill), who had been a student of Jim Kezer, one of the early members of ENHS. Through this set of connections Titus scored a trip to Costa Rica – his first serious salamander hunt. Kezer, still directing research although a retired U of O biology professor, organized this expedition to collect research material for one of his former graduate students.

His love of amphibians and reptiles led Titus to go to graduate school to study them further. He chose the University of Kansas, a premier institution for the study of herpetology. He said KU was really a "frog school", but they put up with his strange infatuation with salamanders. Titus got both his M.S. and Ph.D. degrees there, in Systematics and Ecology. His M.S. research dealt with population genetics of the Northwestern Salamander (which necessitated frequent trips to Oregon).

For his Ph.D. he worked on the molecular phylogenetics and life history evolution of a sub-family of lungless salamanders. He had to teach himself the required molecular-genetic techniques and their use in evolutionary studies. He set up a molecular evolution laboratory in KU's Museum of Natural History.

Titus continued this work at Washington University, in St. Louis, where he did postdoctoral work for two and a half years, obtaining a federal grant to fund his own research. When he and Kim decided in 1994 it was time to get back home he was able to transfer this grant to the University of Oregon. He held a Research Assistant Professorship (soft money), during which time he continued the molecular phylogenetics research and began teaching.

In 1999 he took his present position in John Postelthwait's lab. He dropped all of his teaching duties except the one summer class in herpetology, which he has now taught for 15 years.



Once home again in his familiar space Titus fell back into his foraging ways, and he has chronicled many of these adventures. He cultivated his love of writing by joining a writer's group. He has honed his writing technique to the point that we all look forward to his monthly Nature Trails essay. And now, he's a published author! *Blackberries in July: a Forager's Field Guide to Inner Peace*, by Tom A. Titus, will soon be available at your local bookstore. The chapters are compelling; the adventures are intriguing with funny bits and profound insights. But the fundamental message Titus gives us is that we become whole beings to the extent we connect with our physical place.

So there you have it: the fascination with amphibians born in an undergraduate class leading to self-taught expertise in molecular-genetic approaches to phylogenetics; the requirement to learn all the Oregon fauna and flora leading to the class he still teaches and the field trips he still leads; the molecular expertise leading to his position as a fish geneticist; his foraging and writing talents married in a book with his name on the cover as the author.

Dr. Tom Titus's talk on Friday, 21 September 2012, at 7:30 pm in room 100, Willamette Hall is entitled "The Wet, the Dry, and the Indifferent: Amphibian and Reptile Diversity at the Center of the Universe." Join Tom for a herpetological tour of Oregon, beginning in the rain-soaked ridges and canyons of the Coast Range, continuing through the wetlands of the Willamette Valley, climbing up and over the snowy Cascades, then descending into the dry sagebrush country of the northern Great Basin. Learn how changes in topography and climate produce huge differences in amphibian and reptile diversity from one side of our state to the other. Explore some of the peculiar features of amphibians and reptiles that allow them to occupy these different bioregions. At some point in the evening we have every reason to expect a short reading from *Blackberries in July* by the author. What a way to kick off our 2012-2013 year! Do not miss this.

John Carter

Happy Obsession by Reida Kimmel

Seventeen years ago we took a trip to Shetland, the archipelago that is Scotland's northernmost area. We planned to hike and to visit sheep farms and archeological sites. Our first walk took us to the lighthouse at Sumburgh Head. We looked over the wall at the top of the cliff, and there amongst the grasses and flowers, just feet away, were puffins, many, many, puffins, flying in from the sea, resting, visiting their burrows, and just lounging about being

photogenic. These were Atlantic puffins, [*Fratercula arctica*] the same species one can see, but only from a distance, in Maine. We were enchanted. After meeting the puffins, as well as the fulmars, guillemots, kittiwakes, shags and razorbills, nesting colonially in well-defined layers from the top of the cliffs to the edge of the violent surf in the blue ocean below, our Scottish vacation was mostly about bird watching.

Seven years later, visiting the Treshnish Islands as part of a daylong boat tour of small islands in the Inner Hebrides, our captain said; "You can walk around the island in three hours, but if you go near the puffins you can't go anywhere." That sounded rather cryptic. Would we fall into the sea? Were the birds on an inaccessible peninsula? Nothing of the sort! On the hill overlooking our landing site, puffins, perhaps a score of them, were furnishing their burrows. The males and females are identical, mate for life and share equally in the efforts of parenting. The female lays a single egg in a deep burrow, the length of a man's forearm. The nest chamber is at the end of the tunnel. The parent birds can make the burrow themselves by digging with their big, clawed feet. Or they can commandeer the burrow of a rabbit or of some unfortunate puffin pair. We lay on the grass just a few feet from the puffins, watching them busily plucking and moving pink-flowered thrift [*Armeria maritima*] and tender blooming grasses into their burrows. We were with the puffins for three hours. The captain was right. We couldn't go anywhere.

For years I've longed for more puffins. This summer I got my wish. We returned to Shetland. I was worried that we would be sadly disappointed. I had heard that populations of many of Britain's beautiful seabirds were threatened. Warming sea-surface temperatures were partially responsible for a decline in the small fish species that birds of the Auk family need to catch to raise healthy chicks. In parts of the British Isles these oily, calorie-rich "sandeels" [mainly *Ammodytes marinus*] are commercially fished for fertilizer, pet, and salmon food, so there is less of a dwindling resource for seabird chicks. The population dynamics have changed too. Increased intensity of fishing in the North Atlantic has favored the gannets and fulmars that have learned to follow the boats for scraps. In addition, for the birds like gannets that dive deeper to fish, the populations of their prey have not declined in the way that the schools of shallow water fish like the sandeels have, because it is only the surface water that has warmed so dramatically. Great Skuas [*Stercorarius skua*] are also on the increase. These birds, shaped like large

gulls, rob the birds that follow the fishing boats as well as the puffins and guillemots, and anything else they can bully. In addition, they kill the smaller birds. The sight of a flayed puffin carcass, only a few bits of bone and the remarkable bill remaining, is truly a sad shock. Kittiwakes have almost been wiped out in many breeding colonies. We saw none this year.

What could have been a very depressing odyssey was, however, a wonderful experience, and very encouraging. Young employees of the Royal Society for Protection of Birds, which manages so many bird reserves all over the British Isles, were a constant friendly and informative presence. We enjoyed their little museums and talked with them about research programs and plans to create large marine reserves. And of course there was “Puffincam” which we had been watching at home for weeks.

www.rspb.org.uk/.../shetland/b/shetland-blog/.../puffin-cam-news.asp... The RSPB had a camera set up in a puffin burrow at Sumburgh Head. The little puffling was growing bigger, almost ready to leave his burrow. He was plump and well grown. His parents’ offerings of shiny sand eels kept disappearing. Then the day before we got to Shetland he was murdered while the nest was unguarded, by another puffin that was probably looking for a future nesting site. I had become so attached to that little bird. There were tears in my eyes when I learned the sad news.

Of course there were hundreds of other puffin pairs, and the supply of sandeels, though never really abundant this year, was sufficient for many pairs to succeed in raising their pufflings. Tourists rarely see these babes because they stay in the burrows until



nearly fully fledged, keeping safe from Skuas and Great Black-backed Gulls [*Larus marinus*]. Then at night when they are ready to swim, the pufflings jump into the sea, where they remain, tended by their parents, until they can live independently. They will

not come ashore again until they are fully mature and ready to breed.

We had wonderful hikes in Shetland, to the horrifyingly high cliffs of Hermaness, and along sandy beaches, washed by turquoise and azure waters, where an abundance of shore-bird species foraged. We even spent time exploring ancient ruins and visiting with sheep farmers, and fiber artists. But it was the puffins that were really important. On our last morning in Shetland, we went back to Sumburgh Head. There were more puffins than ever, hanging out in the warm sunshine, and they were ever so close to our cameras. And then we took a last view over the wall on the other side of the Head. Unbelievable! A puffling out of the nest! She was unmistakable: dark narrow bill, drab feathers, a fluffy head, guarded by her attentive parent. In and out of the burrow she went. We hailed the nearest RSPB guide. We gathered a crowd. What a rare and wonderful sight! Perhaps she will get safely into the sea and thrive. Perhaps I will come back to Shetland another year and see her. But of course, I will never know.

Self-Centered By Tom A. Titus

For one short month I am the teacher of my students. The highlight of our time together is four days traveling 900 miles around southeastern Oregon catching snakes and lizards. With heat pressing downward from a blue sky sliced open by the white knife of Steens Mountain, my aspiring herpetologists scramble over a rocky promontory jutting like a gray-brown incisor into the mouth of Mickey Basin, searching for animals that capture the heat. The reptiles have captured the sky, too; blue-throated collared lizards, blue-bellied western fence lizards, and blue-spotted side-blotch lizards. Clutching their nooses, my students stalk basking lizards, dialing up their inner predator and behaving as though their next meal depended upon a successful capture. I love the animals that we pursue, and during this four-week class the students learn to love them, too.

During this short time, I also become the student of my students. They teach me about life. I consider this a pretty fair trade. They usually begin the long field trip in groups of twos and threes, but after four short days of staring into fires and sharing food and drink and stories we become enveloped by a tribal connectedness that seems contradictory to my experience in the everyday world. The Herpetology Class of 2012 was not unique: the gathering together of disparate spirits has happened repeatedly over the fifteen years that I have taught the course.

This unfolding of human connectedness is a wonderful thing to watch. But a shadow skulks along

behind it all, the dark matter of humanity. Although we are social animals, a selfish me-first side seems to drive most people most of the time. Many environmentalists have identified this myopic self-centeredness as the root of our global ecological predicament. Humans continue to reproduce and consume at alarming and unsustainable rates, running hell-bent-for-leather toward a Malthusian precipice that surely, given our vaunted capacity for consciousness and anticipatory thought, could be avoided with a modicum of self-corrective behavior. Yet little change is evident, despite all the signs that an ongoing global ecocide is in progress and will eventually engulf humanity. This blindness is not the purview of any race, social class, or political party. Dr. Anthony Leiserowitz, director of the Yale Project on Climate Change, conducted a poll of climate change believers and naysayers and found that the carbon footprint of both constituencies was identical.

I agree that a seemingly unlimited capacity for egocentric gain lies at the root of our destructiveness. But this self-centeredness will not soon be going away because self-preservation and advantage lies very near the heart of Darwinian evolution. Each of us is able to read these words right now because we are descended from ancestors stretching hundreds of millions of years into the past, organisms that were consumed by the biological imperative for *self-preservation and reproduction*. Yes, humans are primates with about 50 million of years of social evolution in our rearview mirror, and this more recent history might account for the effortless four-day tribal melding of my herpetology classes. Some would argue that even our sociality is the result of natural selection for individual benefit. Regardless, we are complex animals with complex brains capable of complex behaviors. Thus, there is every reason to expect that we continue to carry with us the evolutionary outcome of eons of natural selection favoring individual advantage *and* more recent selection for primate sociality that favors group participation. We should not be surprised that an individual drive to thrive is lurking beneath our best attempts to be more giving, more generous, more munificent. So how about if we just give up on this righteous insistence that we release our childish clenched hands? How about we just give in to our ancient history of hard-wired selfishness? Sounds pretty nihilistic, right?

Or maybe not. Maybe the time has come to engage in a little psychosocial judo and redirect that energy

contained within our deep-seated anthropocentric behavior toward a more constructive end. Maybe we need to learn how to become *appropriately* self-centered. This is scary stuff, especially in the age of peace-and-love-and-can't-we-all-get-along-and-respect-all-beings, a time when our two political parties seem diametrically opposed over the primacy of the individual versus that of the larger community.

Evolutionary biology suggests, however, that we are likely both things, a communitarian Jekyll and self-centered Hyde. Moreover, appeals to our communitarian side seem to have been of little help in spurring any sort of true environmental revolution. Has the time come to sell out to the reality that we as individuals need all of the parts of our living world in order to flourish? What if *I* change *my* language so that *I* can really buy into the concept? *I* need clean air. *I* need a stable climate. *I* need clean water. *I* need uncontaminated food. *I* need healthy happy people around me. *I* need healthy forests because they contain airborne compounds that boost the anticancer properties of *my* immune system. These statements carry with them the power of individual vulnerability and responsibility, energy that might compel us to action.

I have begun to wonder what would happen if each of us began to feel deeply and individually threatened by the daily insults of humanity to the biosphere. How would we react if we truly felt that with each abuse a piece of our own body was being removed? Surely *I* really need *my* planetary life-support system. The stuff I have been taught to need—new car, new clothes, bigger house, better microwave popcorn—becomes superfluous fluff in comparison. And yet these inconsequential “needs” have become our priority. Apparently our deep and abiding self-centeredness has been derailed.

Here in the lengthening shadows of late summer I remember the coals of a juniper fire from July, small flames lighting a circle of young faces, students telling their stories to one another, and I worry that I don't give humanity enough credit. There is the danger that in turning our energy inward and focusing on individual needs, even our real needs, we might short-circuit the development of some higher consciousness that awaits us, some emergent social property on the verge of erupting from our collective gray matter. In this dry brown grass withering squash vine cool evening end of summer, I think back to those fire-lit faces and worry that time is short.

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.



Maiden Peak Wild Area

Now that the mosquito populations are in decline, head up to Waldo Lake and make the 3-mile hike/climb to the top of The Twins. Take in the spectacular view of Waldo Lake, the Three Sisters and the Maiden Peak area, recently proposed for roadless, logging-free protection. The first two miles climb steadily to the Pacific Crest Trail. Cross the trail and begin a short, steep scramble through loose pumice soils to the top. .

If you'd rather not make the climb, visit nearby Bobby Lake, a two-mile, mostly level walk through the largest pure stand of mountain hemlock in the Northwest.

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, 25 September, 7 - 8 pm. 1645 High St. An All-Ages Program: An AITS “Birds and the Ecosystem” Presentation, with Barclay Browne. Each year LCAS volunteers visit schools throughout Lane County and share an exciting, truly unique educational opportunity with students via the Audubon in the Schools (AITS) program. The AITS curriculum, developed by Kris Kirkeby, is composed of five fun-filled lessons, combining bird biology and a basic art lesson. It is designed to provide elementary schools with a solid introduction to core aspects of bird biology, ranging from bird feather anatomy and function, to bird identification techniques, to bird field marks and habitat. The lessons are excellent examples of participatory education. Barclay Browne, the new AITS coordinator for the 2012-13 school year, invites students of all ages, along with their friends, family members, parents, and grandparents, to join us at the September program meeting to be part of a presentation of one of the AITS lessons: “Birds and the Ecosystem.” In this lesson students (and everyone else) will get a chance to draw directly from a wide collection of taxidermied and museum-mounted birds. We'll explore the essentials of bird plumage patterns, field marks, and bird anatomy and discuss how these features relate to each bird's adaptation to a particular habitat. We'll also discuss the concepts of bird conservation and ecosystems. The lesson is one hour long and is fun for both kids and their family members of all ages. You'll be surprised at how quickly you can draw an accurate picture of a bird by highlighting key field marks and using two simple techniques: building up a drawing of the bird shape using basic shapes and rendering accurate color with a layered color-pencil technique. This is an “all-ages” program! Note our earlier start time—7 p.m.—so we can finish a little earlier than usual. All materials will be provided. Bring your kids, grandkids, and their friends for a fun evening of drawing and bird biology.

Mount Pisgah Arboretum

34901 Frank Parrish Rd., Eugene, 97405. 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.

Saturday, 6 October, 1 – 4 pm and Saturday 13 October, 1 – 3 pm. Nature Photography in a Digital World. In this popular 2-day workshop, professional photographer David Stone will take the mystery out of your digital camera, and show you how to take amazing outdoor photos. If you are contemplating the purchase of a digital camera, this workshop will help you decipher the technical jargon and make an informed selection. Bring your camera, fully charged battery, empty memory card, a tripod (if you have one) and instruction book. Rain or Shine. Meet at MPA's Visitor Center. For more info: (541) 747-3817 or MountPisgahArboretum.org, Fee: \$35, Members-\$30

Nearby Nature

Friday, 12 October, 8:30 am-3 pm. No School Day Adventure: Swords, Gourds, and Castle Keeps. For kids aged 6-9. Use cardboard boxes and natural materials to build a fantasy castle in the Learnscape. Help make pie from pumpkins grown in the "castle" gardens on site and make your own play sword to take home. Listen to tales from the story of Redwall, drink tea, and eat pie in your castle! No School Day Programs happen mostly outdoors, but we also have an indoor space (our yurt) for inclement weather. Each program is themed for the season and includes fun games, crafts, hiking, stories, and outdoor exploration. An experienced environmental educator and an adult volunteer teach each program. Class size is limited to a maximum of 12.

University of Oregon Museum of Natural and Cultural History, 1680 E. 15th Ave.

Free Admission Wednesdays, 11 am – 5 pm.

15, 16 and 22, 23 September, Free Admission Weekends.

Fridays, 1 pm and 3 pm, Guided Tours.

Ongoing Exhibits:

Out in Space Back in Time: Images from the Hubble Telescope

Tidewaters by Rich Bergeman: Explore the light, landscape and way of life that once flourished along the rivers of Oregon's Coast Range.

Nick Sixkiller, The Man Behind the MIC: Learn about this local leader and advocate who seeks to build connections between native and non-native people.

Scientific at the Core: Explore an interactive laboratory that offers hands-on science-based activities for visitors of all ages.

Oregon: Where Past is Present: Experience 15,000 years of Northwest cultural history and 200 million years of geology. Realistic environmental displays portray four geographic regions of Oregon, each a different time in history and a different season of the year.

Native Plant Society of Oregon, Emerald Chapter

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

Monday, 15 October, 7:30 pm to 9:30 pm. Chris Hansen of the Oregon Natural Desert Association speaks on the Owyhee Canyonlands--the largest stretch of unprotected desert wilderness left in the United States--right here in Oregon! Come learn what the dry side of Oregon has to offer for those interested in the outdoors! The Oregon Natural Desert Association (ONDA) has been working to permanently protect the Owyhee, and we'll gather to show off some of the amazing images of this wild place. Learn about hiking opportunities you won't find in any SE Oregon guidebooks. We'll share stories about Wild and Scenic River trips, sage grouse counts, and inland redband trout; and we'll talk about how to fill the Oregon desert wilderness gap. Presentation at EWEB Training Room, 500 E. 4th Avenue, Eugene. For more information call 541-345-5531 or go to <http://onda.org>

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, 9 October, 9-10:30 am. Wetland Wander on the Tsanchiifin Trail. Free.

North American Butterfly Association – Eugene-Springfield Chapter

Monday, 8 October, 7 pm Friends and Food, 7:30 pm Presentation. UO Journalism Professor Peter Laufer will discuss his book *The Dangerous World of Butterflies: The Startling Subculture of Criminals, Collectors, and Conservationists*. EWEB Training Center, 500 E. 4th Ave. Free.

Cascade Raptor Center

Sunday, 23 September, noon - 4 pm. Family Nature Discovery Day. Migration Station. Handler talks at noon and 2 pm. For children 4-11 accompanied by an adult. For fees and other information call (541) 485-1320.

Saturday, 29 September, 6 – 9 pm. CRC Benefit Dinner. Hosted by the restaurant at King Estate Winery. For more information please call CRC at (541) 485-1320.

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
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Make checks payable to: The Eugene Natural History Society
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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 2012-2013

21 Sept. 2012	– Tom A. Titus	– The Wet, the Dry, and the Indifferent: Amphibian and Reptile Diversity at the Center of the Universe
19 Oct. 2012	– Craig Young	– High life in the Ocean Depths: the Biology of Deep-sea Mountains
16 Nov. 2012	– Jim Reichman	– Pocket Gophers
14 Dec. 2012	– David Craig	– Avian Predator Ecology
18 Jan. 2013	– Marge Helzer	– Rimrock Draw Shelter Archaeology
15 Feb. 2013	– Ray Lowe	– Restoration of Bandon Marsh
15 Mar. 2013	– Gail Baker	– Australian Botany
19 Apr. 2013	– Josh Roering	– Eel River Pleistocene Lake
17 May 2013	– Jason Dunham	– Bull Trout

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Torrent Salamander (*Rhyacotriton cascadae*)



Northern Alligator Lizard (*Gerrhonotus coeruleus*)



Night snake (*Hypsiglena torquata*)