



Bulletin

of the

Native Plant Society of Oregon

Dedicated to the enjoyment, conservation and study of Oregon's native plants and habitats

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JUNE 2006

Intern Report

The following articles on Willamette daisy are part of a series in which NPSO/Institute for Applied Ecology (IAE) interns discuss their activities during the 2005 field season. Interns participated in rare plant monitoring, restoration, floristic surveys, and other research projects conducted by IAE staff throughout Oregon during the past summer. In these articles, Marin Palmer and Tara Gaitaud discuss our efforts in collaboration with the Eugene District BLM to track changes in one of the largest remaining populations of the daisy, evaluate burning and mowing as habitat management tools, and understand how seed production fails in small populations. For more information on internship opportunities, please contact IAE at kayet@peak.org, 541-753-3099 or visit www.appliedeco.org. Thanks again to NPSO for contributing to botanical education and work experience.

- Tom Kaye, Institute for Applied Ecology, Corvallis, Oregon

Willamette Daisy Population Monitoring and Management in West Eugene

by Marin Palmer

Walking through the prairie habitat of the West Eugene Wetlands, one can see many native plants and beautiful wildflowers. If you are lucky enough, you may even stumble across one of my favorite flowers, the Willamette daisy. *Erigeron decumbens* var. *decumbens* is endemic to Oregon's Willamette Valley and its range consists of several dozen sites. It is a small plant (less than 35 cm in height) with delicate lavender flowers and tiny yellow centers. The little flowers poke their heads up toward the sky on one or several flowering stems per plant. However, Willamette daisy is easy to miss because of its small size and its tendency to blend in with the native grasses (or invasive annuals!) and other plants that share its habitat.

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Effects of Population Size on Seed Production in Willamette Daisy

by Tara Gaitaud

Willamette daisy was once abundant throughout its range in the Willamette Valley but today fewer than thirty populations remain, and many have fewer than one hundred plants. Once thought extinct, the species was rediscovered in 1980 and is listed as endangered by both federal and state agencies. Little is known about this delicate, purple-tinged, decumbent-stemmed perennial plant except that the species has little chance of survival without protection and effective management.

The Willamette daisy predominately occurs in wetland prairie habitat. The greatest threats to its survival are agriculture and urban expansion, secondary succession by trees and shrubs, and invasive non-native plants.

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2006 ANNUAL MEETING

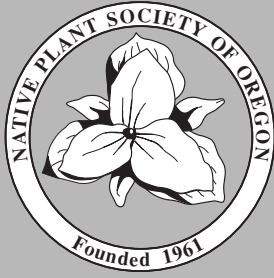
June 9 – 11 in McMinnville

Don't miss it!

Look for registration form and other information in March *Bulletin* or online at www.NPSOregon.org

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Native Plant Society of Oregon

World Wide Web

<http://www.NPSOregon.org>

E-mail Discussion List

To join send a message to majordomo@tardigrade.net, with the following in the body of the message:
subscribe npsos

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or correspond directly with Officers and Committee Chairs listed on the inside of the back page.

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The submission date is the 10th of each month for the following month's issue except for the Aug./Sept. issue which is July 24. Send submissions by e-mail to bulletin@NPSOregon.org.

Opinions expressed in this publication are those of the authors of the articles. They do not represent the opinions of the Native Plant Society of Oregon, unless so stated.

Highlights of the March State Board Meeting

by Leslie Rossmell, Secretary

The Mid-Columbia chapter hosted the March board meeting at the Columbia Gorge Discovery Center in The Dalles. Attendees enjoyed a stroll through the native plant garden on the Center's grounds established and maintained by Mid-Columbia. Chapter president Jerry Igo reported planning is underway for the 2007 Annual Meeting to take place in the Gorge area.

Each year NPSO encourages basic field research on Oregon native plants through a membership-funded grant program. The field research committee, chaired by Dan Luoma, reviews proposals and makes grant decisions. Three proposals will be funded in 2006, each for \$750. The proposal titles are 1) Headwater riparian plant dynamics and importance to regional conservation strategies; 2) Pollination and reproductive biology of three *Collinsia* species native to SW Oregon; and 3) Predictive mapping of plant distributions and their underlying environmental determinants in a forest/tundra ecotone, Jefferson Park, Oregon.

Expect the next issue of *Kalmiopsis* later this year if Editor Cindy Roché receives the articles promised. Our new liaison for Earthshare of Oregon is Kelli Van Norman who is taking over from Jenifer Hutchinson. Veva Stansell, Fellows Committee chair, is stepping down and interested individuals should contact any board member about filling the vacancy.



TANYA HARVEY

Fremont's silk tassel (*Garrya fremontii*) is an evergreen shrub common in Oregon in the Siskiyou and the southern and central Cascades. Though not as long or striking as its coastal relative, *G. elliptica*, its male (left) and female (right) flowers, found on separate plants, are still intriguing upon closer examination. They are very early bloomers; look for them soon after snowmelt.

State

June 9 – 11, Friday – Sunday

Annual Meeting: The Willamette Valley and Cheahmill chapters will jointly host the Annual Meeting at Linfield College in McMinnville. Information and registration materials were included in the March *Bulletin* and can also be found on the NPSO website, www.NPSOreg.org.

Blue Mountain

For information on the Blue Mountain Chapter call Jerry Baker at 541-566-2244.

Ceahmill

The chapter will be co-hosting the Annual Meeting this month. For more information about the chapter call Rob Tracey at 503-843-2702 or visit www.oregon-nativeplants.com.

Corvallis

June 24, Saturday, 8 am

Field Trip: Browder Ridge Trail.

Come explore ancient old growth forests and sweeping alpine meadows on the ramparts of Browder Ridge, just south of Iron Mountain. The walk is about 6 miles round-trip with an elevation gain of 1200 feet. Bring sturdy boots, lunch and water for this all day trip. Meet at the OSU parking lot SW of the Beanery, 26th and Monroe, Corvallis, at 8 am. For more information please contact Matt Blakeley-Smith mattbs@peak.org or 541-752-1091.

July 8, Saturday, 10 am

Field Trip: Marys Peak Summit Walk dedicated to Danna Lytjen. Danna was our Corvallis chapter president in 1997 and brought great enthusiasm and appreciation of native plants to our chapter. The Eugene and Corvallis chapters are dedicating this special hike

on Marys Peak to Danna to show our appreciation and support her in her illness. Cards and notes will be collected and delivered to her in Eugene. We will meet at 10 am at the parking lot across from the Monroe Beanery on Monroe and NW 26th St., Corvallis. We will carpool from the parking lot. Please bring good walking shoes, warm clothes, raincoat, lunch and water. We will drive to the campground parking lot and hike to the peak, have lunch and hike back down through the noble fir forest. We will return by mid afternoon to Corvallis. The rock garden

should be in bloom with *Sedum ore-ganum*, *Penstemon cardwellii*, *Erysimum asperum*, and *Senecio triangularis*. For more information contact Esther McEvoy at 541-754-0893.

Emerald

Oregon Flora Project Challenge!

There is still time to double your donation to the Oregon Flora Project. Emerald Chapter will double your donation up to \$1,200. At press time, 9 donors had taken advantage of this offer. Send your check to: Oregon Flora Project, PO Box 402, Corvallis, OR 97339-0402. Write "Emerald Challenge" on the subject line to double your contribution.

July 8, Saturday, 8:30 am

Field Trip: Marys Peak Summit Walk Dedicated to Danna Lytjen.

Our friend Danna is ill and we wish to show our concern and support by dedicating this special Marys Peak Wildflower Hike to her. Cards or notes to Danna will be collected and delivered to her in Eugene. Marys Peak (4097') south of Corvallis, is the highest point in the Coast Range and supports a unique flora which includes relic species now more common east of the Cascades. The summit has the largest stand of noble fir (*Abies procera*) in the Coast Range, and xeric plant species include *Allium crenulatum*, *Eriogonum umbellatum*, *Lupinus lepidus*, *Silene douglasii*, and *Erythronium grandiflorum*. The trip will be led by Marys Peak experts Esther McEvoy and Phil Hays. Plant lists will be available. Emerald Chapter Members: please meet at the South Eugene High at 8:30 am to carpool to Corvallis. See more information under Corvallis Chapter Announcements. For information in Eugene call Dave Predeek at 541-345-5531.

IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips take place rain or shine, so proper dress and footwear are essential. **Bring water and lunch.** Trips may be strenuous and/or hazardous. Participation is at your own risk. Be prepared to sign a release form indicating this. For a sample copy check out the NPSO website. Please contact the trip leader or chapter representative about difficulty, distance, and terrain to be expected on field trips. Dogs are not allowed. All NPSO field trips are open to the public at no charge (other than contribution to carpool driver) and newcomers and visitors are always welcome. National Forests require a Northwest Forest Pass for many field trip locations. Permits can be acquired at forest headquarters and ranger districts.

NOTICE TO FIELD TRIP CHAIRS AND LEADERS

The Forest Service and other agencies have set policies limiting group size in many wilderness areas to 12. The reason is to limit human impacts on these fragile areas. Groups using wilderness areas should be no larger than 12.

July 15, Saturday, 9 am

Field Trip: Horsepasture Mountain.

Rob Weiss will teach Conifer ID on scenic Horsepasture Mountain south of McKenzie Bridge. Learn to identify 16 native conifer species including sugar pine and Alaska yellow cedar. Bring lunch and water. Wear good hiking shoes. Meet at South Eugene HS at 9 am. We will return to Eugene by 6 pm. For more information call Rob at 541-926-5012.

July 22, Saturday, 8 am

Field Trip: Spirit Lake. Barbro McCree will lead us to Spirit Lake and meadow on Koch Mountain, west of Waldo Lake. It is 1-mile round trip to the lake. Meet at 8 am at South Eugene HS or at 9 am at Middle Fork Ranger Station near Oakridge. We will return to Eugene by 6 pm. Contact Barbro at 541-782-3919 or k_mccree@efn.org. Visit the McCrees' web page at www.efn.org/~k_mccree/SpiritLake.html for more about the site.

High Desert

June 27, Tuesday, TBA

July 15, Saturday, TBA

Monitoring Work: Survey for Peck's Penstemon in a Deschutes Forest restoration project near Sisters. Call Stu Garrett at 541-389-6981 for details.

Klamath Basin

For information on the Klamath Basin Chapter, contact Sarah Malaby, 541-884-5703, smalaby@cs.com.

Mid-Columbia

June 8, Thursday, 7:30 pm

Meeting: Wildflowers and Wind Machines—In the Pacific Northwest We Can Grow Them Both. Join us while Jerry Igo discusses melding large scale wind farms with our existing native plant populations. The Commodore Building, Downstairs Conference Room, 3rd & Court Street, The Dalles.

July 13, Thursday, 6:30 pm

Event: Annual Potluck. Location and directions will be in July *Bulletin*.

North Coast

Wanted, new members for our group, located in Tillamook County. Trips subject to suggestions. Please phone Janet Stahl 503-842-8708.

Portland

June 5, Monday, 9 am – 4 pm

Field Trip: Angel's Rest. Enjoy a rare weekday, wildflower-filled walk to a stunning viewpoint. The hike is about 5.5 miles round trip with 1500 feet of elevation gain. We should see Oregon iris (*Iris tenax*), Columbia lily (*Lilium columbianum*), and maybe Western corydalis (*Corydalis scouleri*), plus lots of others. Contact leader Don Jacobson for car pool location, 503-235-6234, donj@dslnorthwest.net.

June 8, Thursday, 7 pm

Meeting: Birds, Blossoms & Butterflies: The Nature Year on Mt. Adams! Come join Paul Slichter, longtime NPSO member, botanist and photographer extraordinaire as he takes us on a whirlwind tour of the flowers and animals of Mt. Adams, from first thing in the spring until the snow flies. The program will also emphasize current efforts to update the flora for the mountain, as well as where to find interesting plants! Location: Room #202, First United Methodist Church, 1938 SW Jefferson St., Portland. Located just uphill from the Goose Hollow MAX stop.

Siskiyou

June 3, Saturday, 9 am

Field Trip: Grizzly Peak (Dead Indian Memorial Rd., east of Ashland). Early spring flowers: Klamath fawn lily, yellow bells, small lewisias, lomatiums. Easy-to-moderate, 5-mile round-trip hike, 600' elevation gain (5300-5900'). Meet behind Oil Stop on Ashland St., just west of the Ashland BiMart/Shop

'n Kart parking lot, about 1/4 mi west of I-5, exit 14. Leader: Jim Duncan, 541-482-7629.

June 10, Saturday, 9 am

Field Trip: King Mountain Summit (near Wolf Creek). Visit a natural rock garden with rock beardtongue and several species of sedum and phlox in this remote, fascinatingly beautiful BLM Area of Critical Environmental Concern. Easy 1-mile hike. Meet at 9 am at US Forest Service Bldg., 200 NE Greenfield Rd., Grants Pass, just north of Exit 58 off I-5, east side of freeway. Leaders: Norm Jensen, 541-951-4420, and Don Heinze, 541-955-7247.

June 17, Saturday, 10 am

Field Trip: Miller Lake (Applegate Valley). We will hike on a trail through the Miller Lake Botanical Area in the Sturgis Fork watershed. We should see bunchberry, Brewer's spruce and, with an additional off road hike, Baker's cypress. Elevation gains are moderate, and we'll walk up slowly looking at plants. Elevation gain to Miller Lake is 400 ft. Those who feel more energetic may continue an additional 350 ft above the lake to the gap at the top of the ridge and back down; others may wish to stay around the lake. Meet at 10 am at Star Ranger Station in the Applegate Valley, 7 miles south of Ruch on Upper Applegate Rd. Leader: Barbara Mumblo, 541-899-3855.

June 24, Saturday, 8 am

Field Trip: Castle Lake (west of Mt. Shasta City). Join Penn Martin, wildflower expert of the Mt. Shasta region, for a hike through this botanically rich area. Penn will be selling his Castle Lake wildflower brochure for \$5 (same format as his brochure for Mt. Shasta). Because the field trip will be passing through a wilderness area, it is limited to 10 participants. Call Alex Maksymowicz, 541-482-1964, to reserve a place. Meet at 8 am behind Oil Stop on Ashland St., just west of the Ashland BiMart/Shop 'n Kart parking lot, about 1/4 mile west of I-5, exit 14; or meet at 9:30 am in the Castle Lake parking area. Leader: Penn Martin, www.shastawildflowers.com.

July 1, Saturday, 9 am

Field Trip: Fiddler Mountain (Illinois Valley). Expect to see rare, common, and just plain beautiful blooms on this trip, including scarlet monkeyflower, bronze bells, Bolander's lily, Siskiyou lewisia, piggy-back plant, and a mysterious masked lomatium! Mostly driving, with short walks. Bring lunch, water, sun block, and insect repellent. Meet at 9 am right (south) side of Ray's Market parking lot in Selma, 20 miles south of Grants Pass on Hwy 199. Leader: Norm Jensen, 541-951-4420 or normjensen@gmail.com.

Umpqua Valley

June 3, Saturday, 8 am

Field Trip: King Mountain. Ron Hatt will lead the group on a venture to lofty King Mountain for an amazing spectacle of short stature plants that one might find in a rock garden. Such plants to view are *Viola hallii* (Hall's violet), *Phacelia* cf. *peckii* (variation of Peck's phacelia), anemones, lupines, sedums, sandworts, phloxes, and hopefully a late blooming fritillary. Expect an easy stroll. Meet at 8 am at the northeast corner parking lot behind Douglas County Courthouse, 1036 SE Douglas Ave., Roseburg to carpool or caravan, or at the Riddle exit McDonalds at 8:30 am. For more information call Ron Hatt at 541-863-2074.

June 8, Thursday, 7 pm

Meeting: Field Trip Slides. Ron Hatt will show slides from various field trips taken by the group this year. Everyone is welcome. Bring a plant specimen to discuss or identify. Mercy Community Education Building, 2459 Stewart Parkway, Roseburg. For information call Ron Hatt 541-863-7024.

June 17, Saturday, 9 am

Meeting: Native Garden Planning at VA Hospital. Meet at the BLM parking lot at 9 am to carpool or caravan over to the VA hospital for further planning of NPSO's native plant garden. For more information call Ron Hatt at 541-863-2074.

June 24, Saturday, 8 am

Field Trip: Dunes Research Natural Area. We will visit a quiet beach just inside Douglas County. Leader Richard Sommer will help to identify tideland flora and fauna as well as dune plants. We should find two sand verbenas, two sea rockets and eel grasses. Meet at the northeast corner parking lot of the Douglas County Courthouse, 1036 SE Douglas, Roseburg. For information call Richard Sommer 541-440-0612.

July 1, Saturday, 8 am

Field Trip: Lower Twin Lakes. Sam Friedman will lead the group on an outing to Twin Lakes bog/fen. We will be looking for tall bog onions, pardalium lilies and twinberry. There is also a stand of Alaska yellowcedar. Meet at the northeast corner parking lot of the Douglas County Courthouse, 1036 SE Douglas, Roseburg. For information call Sam Friedman 541-673-0589.

Willamette Valley

June 3, Saturday, 7 am – 6 pm

Field Trip: Dog Mountain. Chapter President John Savage will lead this all-day hike identifying and viewing wildflowers on Dog Mountain on the Washington side of the Columbia Gorge. This is a difficult hike with a 3000' elevation gain, but the flowers are well worth it. For more information or to register, please call 503-399-8615.

June 14, Wednesday, 7 – 8 pm

Program: Martha Springer Botanical Garden. Dean Wentworth, botanical garden and greenhouse curator at Willamette University in Salem, will lead a walking tour of the Martha Springer Botanical Garden. This delightful one-acre garden, located on campus at 900 State Street, contains hundreds of plant species and includes a Northwest plant section. Free and open to the public. To register or to obtain additional information, please call 503-399-8615. The tour may be subject to time change.

William Cusick

June 10, Saturday, 9 am

Field Trip: Wildlife Enclosures North of Elgin. We will compare the effects of deer and elk on native plants. The enclosures have excluded big game as well as cattle for over 60 years, and the plants that have grown within the fenced areas demonstrate how robust they can become when they are not browsed. Meet in front of Max Square in La Grande at 9 am to car pool. One-meter-tall *Paxistima myrsinites*, as well as taller than usual *Acer glabrum*, *Sambucus* species and others are expected. Bring lunch and water, and we will try to be back in La Grande about 2 pm. Easy, short hiking involved. For more information call Kent Coe at 541-962-7049.



Lower Twin Lakes and its wet meadows seen from the upper trail. See Umpqua Valley trips.

TANYA HARVEY

OTHER EVENTS

North Mountain Park Nature Center Events

620 N Mountain Ave., Ashland

To get more information and to register or buy tickets, visit call 541-488-6606 or visit <http://ashlandparks.recware.com>.

Nature Walk in Upper Lithia Park June 7, Wednesday, 4:30 – 6 pm

Making New Plants from Cuttings June 8, Thursday, 7 – 8:30 pm

\$5/person.

“Naturescaping” 3rd Annual Benefit Garden Tour & Presentation June 22, Thursday, 7 pm Presentation

June 24, Saturday, 9 am – 2 pm Garden Tour

This year's theme is permaculture, “a design approach based on ecological principles that creates sustainable landscapes, homes, and workplaces.” Permaculture ethics are: Care for the Earth, Care for the People, Return the Surplus. Six fabulous Rogue Valley gardens are included on this self-guided tour. Toby Hemenway, author of *Gaid's Garden: A Guide to Home-Scale Permaculture*, will be presenting on Thursday, June 22, 7 pm at the Community Center, 59 Winburn Way, in Lithia Park. \$10 Garden Tour, \$5 Presentation or \$12 Garden Tour & Presentation combination ticket.

Water-Wise Gardening Workshops

June 24, Saturday, “Be Water Smart” Workshops

- Farmington Gardens, 21825 SW Farmington Rd., Portland, (10 am–1 pm)
- Cornell Farm, 8212 SW Barnes Rd., Portland, (10 am–2 pm)
- Al's Garden Center, 16920 SW Roy Rogers Rd., Sherwood, (10 am–2 pm)

The Regional Water Providers Consortium (RWPC) will sponsor a free “Be Water Smart” event at three local nurseries. Attendees will learn simple water conservation tips and techniques for gardens and landscapes including use of native plants. A water conservation and nursery expert will be on hand to answer questions.

RWPC is also seeking greater Portland residents interested in having their water-efficient landscape pictured on television, in the newspaper or willing to verbally discuss their garden with the media. Please visit www.conserveh2o.org or contact Allison Wehrley at allison@anthillmarketing.com or 503-236-3192 for additional information.

ONRC Wilderness Week: June 24–July 7

Wilderness Week is an opportunity for people of all ages to explore Oregon's spectacular wildlands. ONRC and conservation partners will offer more than 40 events and free guided hikes through unprotected wilderness areas around the state. Visit spectacular waterfalls and wildflower meadows in proposed Wilderness areas.

For a complete list of hikes and events, more information or to RSVP, visit www.oregonwild.org/wweek2006.html.

Iron Mountain & Echo Mountain Wildflower Hikes (and Campout) July (20) 21–22, Thursday evening thru Saturday

As a continuation of ONRC's Summer 2006 Wilderness outing events, ONRC is hosting this wildflower hike campout led by Wendell Wood, to the Old Cascades proposed Wilderness Area in the Willamette National Forest east of Sweet Home. Both days' hikes will meet at Sevenmile (group) Campground, .25 mile east of mile post 59 off South Santiam Hwy 20 at 9 am. A plant list will be provided, with common and scientific names of everything to be seen. Bring water to camp on either Thursday or Friday night. For registration and directions contact Nanci Champlain at nc@onrc.org or 503-283-6343 x 203.

5th Annual Native Orchid Conference

June 8-12, Thursday–Sunday Southern Oregon U., Ashland

For more information about speakers and field trips or to see if space is still available, contact conference chairs Carol Ferguson (541-552-6748 or ferguson@sou.edu) or Ron Coleman (520-749-1168 or ronorchid@cox.net). Downloadable brochure available at www.chebucto.ns.ca/recreation/orchid-congress/noc06.pdf.

Siskiyou Field Institute Courses

To learn more about our courses or to reserve your place, visit our website, www.thesfi.org, or call 541-592-3777.

Forests and Fungi: Introduction to Forest Mycology June 19–23, Ashland

Explore the world of fungi with OSU professor Dan Luoma both in the lab and field.

Crash Course in Identifying Plant Families June 19–23, Ashland

Linda Ann Vorobik, PhD

Grasses of Southwest Oregon June 23–24, Ashland

Whether you are a novice or a grass shark grown rusty on the names, this two-part grass identification workshop with Cindy Roché, PhD, is for you!

Kozloff in the Siskiyou: Test Driving Kozloff's New Book June 24, Ashland

Explore the flora of the Siskiyou with Dr. Frank Lang using Eugene Kozloff's *Plants of Western Oregon, Washington and British Columbia*.

Arbor Day Restoration Seminar

The Practice of Restoring Native Ecosystems Seminar June 7, Wednesday, Portland

Ecologist Steve Apfelbaum and landscape restoration contractor William Young will give restoration practitioners many practical, hands-on methods to use in the restoration of various ecosystems. Sponsored by the National Arbor Day Foundation, the seminar, designed for the beginning to intermediate-level restorationist, will provide a good foundation in the core principles and techniques of ecological restoration. For a brochure or to register, visit www.arborday.org/shopping/conferences/conferencelist.cfm.

Mt. Pisgah Events

34901 Frank Parrish Rd, (off of Seavey Loop Rd.), Eugene. For more information or to register call 541-747-1504.

A Look at Floodplain Restoration June 5, Monday, 6 – 8 pm

Hike to the South Meadow with Jason Blazar, of Friends of Buford Park and Mount Pisgah, to see the recent stewardship activities there to help control invasive vegetation, reforest the floodplain, enhance the channel connectivity with the river, and restore habitat for aquatic species. Suggested Donation: \$3 (MPA and FBP members free!)

Butterfly Walk June 11, Sunday, 12 – 2 pm

Explore the best butterfly habitats on the east side of the Mt. Pisgah with Neil Björklund, of the North American Butterfly Association. Pre-registration required. Suggested donation: \$3. (MPA and NABA members free!)

Flower & Garden Photography June 24, Saturday, 10 am – 1 pm June 27, Tuesday, 6:30 – 8:30 pm

Professional photographer David Stone will demonstrate composition, lighting, lens choice and tripod use. Includes field work in a local garden. \$25 (\$20 members.) Pre-registration required.

NPSO Items for Sale

Vascular Plants of Lane County, Oregon: An Annotated Checklist Emerald Chapter, NPSO. More than 1,740 species and varieties representing 39% of the 4,460 plants currently recognized by the Oregon Flora Project are listed with information on habitat, ecoregion, occurrence frequency, and native or non-native origin for every species. To order, send **\$15** payable to Emerald Chapter, NPSO to Lane County Checklist, Emerald Chapter, NPSO, PO Box 902, Eugene, OR 97440-0902.

The *Atlas of Oregon Carex* was NPSO's first Occasional Paper. The Atlas has 128 location maps, one for each *Carex* taxon in the state of Oregon. Also included are a synonymy, fun facts about sedges, a history of the project, and Oregon geography maps. **Price: \$5.**

Louis F. Henderson (1853-1942): The Grand Old Man of Northwest Botany by Rhoda M. Love. NPSO's second Occasional Paper is the only existing publication with detailed coverage of the long and fascinating life of this John Muir-like western character. Included: 56 pictures, 133 notes, chronology, list of plants named for Henderson. Fourth printing, February, 2004. **Price \$10.**

To order either or both Occasional Papers, send check for the appropriate amount (made payable to NPSO) to: **Occasional Papers, Native Plant Society of Oregon, PO Box 902, Eugene, OR 97440-0902.**

NPSO Membership Directory lists names, addresses, phone numbers, and e-mail address of NPSO members (April 2005). Available from Jan Dobak, 2921 NE 25th Avenue, Portland, OR 97212-3460. **\$3 postpaid.**

Oregon's Rare Wildflower Poster depicts Punchbowl Falls and three of the Columbia River Gorge's endemic wildflowers. Stu Garrett, 21663 Paloma Drive, Bend, OR 97701, 541-389-6981. **\$12 each**, plus \$3 shipping per order. Posters are mailed in tubes.

NEW Salal T-shirt. Attractive forest green t-shirts with botanical drawing of *Gaultheria shallon* in cream-colored ink by Carlton, OR artist and Cheahmill Chapter member, Marilyn Karbonski. High quality t-shirts, S-XL, short sleeve **\$15 plus \$5 shipping.** To order, call Jennie Sue Dunn-Dixon at 503-472-1745.

"Land of Umpqua" T-Shirt featured at the 2005 Annual Meeting is available again through the Umpqua Chapter. It depicts the delightful *Calochortus umpquaensis* illustrated by Dorothy Schattenkerk and in cream, purple, yellow, and green. Arched over the top in black letters are the words "Land of Umpqua", and underneath it says, "Native Plant Society of Oregon." The shirts are **\$16 plus \$5 shipping** and come in light gray, beige, pink or light blue in sizes M, L, and XL. To order call Ron Hatt at 541-863-7024.



Willamette Daisy Population Monitoring and Management

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Willamette daisy is an endangered species found in grassland habitat, mainly in seasonally wet areas and some upland prairies. Once thought extinct, less than 10,000 plants survive in under 30 populations throughout the Willamette Valley, mostly between Eugene and Salem. The size of these populations ranges from three plants to thousands, making management of some populations essential for their survival. A few of these populations are on public land and therefore protected, such as the one at Oxbow West on lands managed by the Bureau of Land Management in West Eugene.

Monitoring and management of the daisy population at Oxbow West has been an ongoing project for the Institute for Applied Ecology in partnership with the Eugene District BLM, since 1999. The Oxbow population is one of the largest known populations, with over 3500 plants covering four to five acres in 2005 (Kaye and Benfield 2005). The site is within the West Eugene Wetlands and is a prairie site that has been managed to remove invading

shrubs and trees. Several other rare plants are found at Oxbow, including *Sidalcea cusickii* and *Aster curtus*. The biggest natural threat to the daisy population at this site is competition from competing vegetation, which increases in the absence of disturbance, and encroachment by the invasive reed canary grass, which is abundant in nearby riparian areas. However, while working at the site, we also encountered a crew monitoring for the possible highway that could run straight through Oxbow West in the future. Construction at the site would have obvious negative effects on at least some of the plants here, but exactly how many was unclear.

The main goal of our monitoring has been to explore the use of mowing and burning as possible management strategies for Willamette daisy. Historically, many prairie sites in the Willamette Valley were burned by Native Americans to provide open habitat for gathering plants used as food. Mowing is also helpful in reducing competing vegetation abundance and preventing the encroachment of trees and shrubs. Some plots within the population have been mowed every other year since 2002. Fire as a management strategy was implemented in fall of

2005. However, this was after our sampling in the summer and the results will not be known until 2006.

My first experience heading out into the field to monitor the Willamette daisy could be compared to finding a needle in a haystack. To the untrained eye, searching for tiny vegetative plants is like searching for the one special blade of grass in a huge field. Of the many things I've learned this summer, one of the most useful (at least in this line of work) is how to create a good mental search image. After sampling *Erigeron* for a week, I quickly learned to recognize those special narrow "blades of grass" for their unique leaf shape, size, color, venation, and degree of stickiness. Once I learned how to recognize and identify all life stages of Willamette daisy, the task of finding and measuring each of the plants in the five-acre area became much less daunting.

The study plots at Oxbow are set up to count each daisy plant at the site. After dividing the plots and setting up transects, we carefully searched for, counted and measured each plant. Plant abundance, flowering and crown cover are all important in understanding this population's dynamics and how various aspects fluctuate from year to year. Our crew spent over a week this summer crawling across the ground to count and measure each and every daisy, the enjoyment of which any fellow plant enthusiast can understand.

The result of our careful searches is an optimistic one. Since 1999, the total number of daisies at Oxbow has increased, which is hopeful for the well-being of this population. Just shy of 2000 plants were counted in 1999, and the number has increased most years, with this year's total of 3622 daisies surpassed only by the 2004 count. An important aspect of this research is how it can be applied to help maintain other populations. Mowing and/or burning may be helpful for the expansion of *E. decumbens* at Oxbow, but the habitat conditions are already fairly good at the site because of the lack of weedy competitors. However, active management may be crucial at other



Marin Palmer

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Willamette Daisy Population Monitoring and Management

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less pristine sites where Willamette daisy is currently being out-competed. As of 2005, after only two mowing applications, we were not yet able to confirm whether mowing had a significant effect on the plants. Repeated, long-term mowing has been used to help control weedy competitors of other threatened Willamette Valley species, such as Kincaid's lupine, and there is hope that this will also be a successful strategy for the Willamette daisy.

Another *E. decumbens* study being done by IAE and the Eugene District BLM seeks to understand the effect of population size on seed production across a large number of populations. (See the accompanying article by Tara Guitaud for details of this study.)

Monitoring at Oxbow and other sites, as well as studies such as seed viability, all help increase our ability to recover Willamette daisy, a beautiful plant that will hopefully someday be back to its full abundance in the Willamette Valley.

Over the course of my internship, I have learned all kinds of valuable skills. These skills range from general plant identification, to understanding how population dynamics are studied, and learning how to properly walk through a field without trampling any of the many plant species of conservation concern. This experience has been very enjoyable as well as educational. I would like to thank the Native Plant Society of Oregon for making my internship possible. I would also like to give many thanks to the IAE crew for fielding my many questions with grace and for a great summer.

Effects of Population Size on Seed Production in Willamette Daisy

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Although this species has both sexual reproduction and vegetative reproduction, the plant is considered self-incompatible and depends on pollinators such as bees, beetles and butterflies to set seed.

IAE initiated a field study with the Eugene District BLM to examine the relationship between population size and seed viability. Our objectives were to test the hypothesis that larger populations are able to produce a larger proportion of viable seed than small ones. Our goal was to determine if a population size threshold exists below which populations fail to produce seed to assist in future management actions for this species.

We sampled 18 populations of *Erigeron decumbens* ranging from 3 to more than 4000 individuals. I present information from the 10 populations for which the data have been fully tallied (work is underway to complete the data analysis). In June 2005, prior to flowering, random individuals from each population were flagged, then in

July, seed heads were collected from each flagged individual. We sampled up to 30 individuals of each population (fewer at smaller populations). For each capitulum (seed head), we recorded the number of viable and nonviable seeds. From this we calculated the seed set or proportion of viable seeds. For this study, we defined viable seeds as seed that was round and solid with a plump embryo versus seed that was flattened or filled with air.

The relationship between population sizes and seed set is summarized in the accompanying figure. There is a significant relationship between seed set and population size, and populations with fewer than ten plants do not appear to reproduce by seed. The viable seeds will undergo cold stratification, a refrigeration process which overcomes a seed's dormancy. The seeds will be germinated to determine viability, and this information will be compared to population sizes to further examine whether a relationship exists between population size and seed viability.

There are many problems associated with small, isolated populations. As distances between populations and

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CARLA WISE

Flowers of Willamette daisy (Erigeron decumbens)

Effects of Population Size on Seed Production in Willamette Daisy

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individuals increase due to habitat destruction and fragmentation, the viability of this species is likely to decline because of reduced compatible pollination and low seed set. Two mechanisms may be at work here, genetic incompatibility and inbreeding depression. Incompatibility has not been studied in this species, but it could explain the observed pattern if in small populations compatible mating types are not present or have reduced probability of crossing with each other.

Small populations have an increased risk of inbreeding depression and genetic drift. Inbreeding depression occurs when closely related individuals mate and genetic drift is the random changes which occur in isolated populations which cannot be attributed to natural selection or mutation. The offspring in both cases usually have reduced genetic variability and fitness which can lead to poor seed set as well as a reduced ability to adapt to environmental change (Ellstrand and Elam 1993).

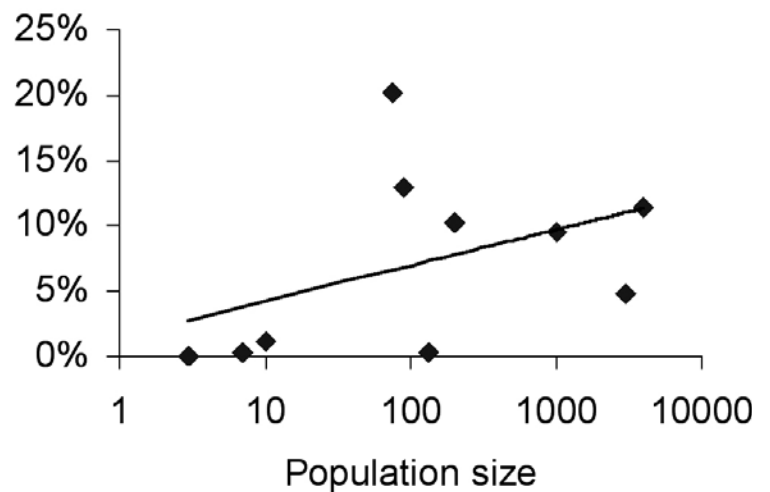
The survival of this rare species is at a crucial stage. If it continues to decline without the proper management of existing populations, it is likely that the Willamette daisy will soon become extinct. Conservation efforts to protect existing populations, augmenting small populations with additional genetically diverse plants, and introduction to new sites will greatly benefit this species. Although there are many gaps in our knowledge of this species, simple observations of the associated species, site and population ecology may help identify new suitable habitats. Also in an effort to maintain genetic diversity for future populations, seed collection is recommended from current sites, especially those that are not protected. The future of the Willamette daisy is not hopeless, but work on this species is necessary to prevent further decline.

I have been fortunate this summer to have the opportunity to work as an intern with the Institute for Applied Ecology in Corvallis, Oregon, a non-profit organization that specializes in conservation, research and education of natural resources. I am grateful to Tom Kaye, Carla Wise and the rest of the IAE staff for this rewarding educational experience.



CARLA WISE

Willamette daisy flagged for seed sampling.



Scattergram of seed set vs. log of population size of Willamette daisy.

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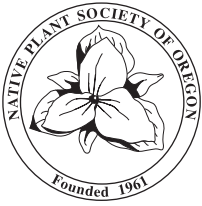
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