



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 2012

A Phenological Comparison of Two Deciduous Trees in Western Oregon: Bigleaf Maple (*Acer macrophyllum* Pursh.) and Oregon Ash (*Fraxinus latifolia* Benth.)

by Robert Hladky and William Matthews, Science Division, Lane Community College, Eugene, OR

The authors of this article are members of the NPSO Emerald Chapter and have completed the biology major's sequence at Lane Community College (LCC) which included Botany 213: Principles of Botany, a field ecology and botany course. This article documents their research. For more information about this course or the many plant science courses offered in the Science Division at LCC, contact Gail Baker (bakerg@lanec.edu) or Susie Holmes (holmess@lanec.edu)

While phenology of agricultural, horticultural, and wild species has been studied extensively in Europe, Asia, and the Eastern U.S., phenological research on Western U.S. species has not been as widespread. In western Oregon, Oregon ash (*Fraxinus latifolia*), and bigleaf maple (*Acer macrophyllum*) make fascinating subjects

for phenological study because they are ecologically prominent and overlap in geographical and habitat distribution but differ in their reproductive strategies. Both grow from southern British Columbia to California and into the Western Cascades and Sierras (Minore and Zasada 1990; Hitchcock and Cronquist 1976). Bigleaf maple can

survive in a broad habitat range from dry to wet as well as fertile soils to talus slopes (Minore and Zasada 1990) while Oregon ash is generally more limited to riparian habitats or adjacent poorly

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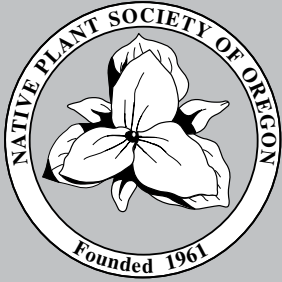


GAIL BAKER

Bob (left) and Billy (right) recording phenology data in the LCC Native Landscape Area

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P.O. Box 902
Eugene, OR 97440
or correspond directly with Officers and Committee Chairs listed on the inside of the back page.

Membership Inquiries Only

Clayton Gautier
3927 Shasta View St.
Eugene, OR 97405-4442

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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.

Participate in the Xerces Society's Milkweed Survey



THE XERCES SOCIETY FOR INVERTEBRATE CONSERVATION

Monarch butterflies in North America are in decline, and the loss of milkweed plants (*Asclepias* spp.) across their breeding range is believed to be a significant contributing factor. Milkweeds are vital to the monarch's survival because they are the only plants the caterpillars can eat, to grow and develop into adults. The protection and restoration of native milkweeds is critical to reversing these monarch population declines. Their overwintering sites have been well studied, yet very little is known about where and when these butterflies breed during the rest of the year.

With support from the Monarch Joint Venture, the Xerces Society for

Invertebrate Conservation is working to provide answers. The Society has developed a web-based survey to gather information about the distribution of milkweed in the western states and the location of stands that may serve as important monarch breeding areas. Sites that are identified may then be monitored or prioritized for future conservation activities. If you know where milkweed grows—or will have time to go look—and want to help complete their knowledge of the western monarch migration, please visit <http://www.xerces.org/milkweedsurvey/> to link to the survey. A guide to Oregon's native milkweeds is available for download from the site.



Showy milkweed (Asclepias speciosa) in flower at John Anderson's Hedgerow Farms.

JOHN ANDERSON

State Notes

July 13-15, 2012

Annual Meeting and State Board Meeting, Selma, OR. Join us for a botanical extravaganza in the Siskiyou Mountains. In addition to the annual meeting, all are invited to attend the NPSO Board meeting from 9 am to 1 pm on Sunday. See the latest updates at the website: <http://siskiyou.npsoregon.org/2012annualmeeting/>

Blue Mountain

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

Cheahmill

For more information, visit the chapter Web site, www.oregon-nativeplants.com. To be added to the e-mail list for upcoming programs and events, please contact cheahmillchapternpsocomcast.net.

June 12, Tuesday, 5 pm-7 pm

Work Party #150: McMinnville Library Native Plant Garden. Monthly work parties have switched over to a mid-week, early evening time slot. Focused weeding and ongoing careful maintenance of the native plant garden is called for during this season of rapid growth. Contact: Susan Williams, 503-538-1865, helgesusan@comcast.net.

June 23, Saturday

Field Trip: Cascade Head TNC Preserve. Join retired Linfield College biology professor Karen Sturgeon and Debbie Pickering, Oregon Coast Stewardship Ecologist for The Nature Conservancy, for a 5-mile hike (1000' elevation gain) through a Sitka spruce-western hemlock forest and coastal prairie. See beautiful views of the coast from this basalt headland and learn about restoration efforts on the headland, which provides critical habitat for the Oregon silverspot butterfly, rare wildflowers and native prairie grasses. Group size limited to 12; registration is required. To register, call Karen at 503-472-0866.

June 30, Saturday

Field Trip: Marys Peak. Join Dr. Steven Carpenter, author of "Wildflowers of Marys Peak Meadows" for a visit to this 4,097 foot peak west of Corvallis. Carpoolers from McMinnville should meet at the Linfield College parking lot on the northwest corner of Linfield Ave. & Blaine St., McMinnville by 7:30 am to depart at 7:45 am. We will meet Steve in Corvallis and leave from there about 9:30 am. There is a \$5 day use fee per vehicle; Northwest Forest Passes are accepted. Contact: Jim Culbert, 503-472-8501, jhcultbert@yahoo.com.

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. You must pre-register for all events. National Forests require a Northwest Forest Pass for some 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.

Corvallis

For questions, information on upcoming events, or to be on the Corvallis chapter e-mail list, contact Esther McEvoy at co_president@NPSOregon.org or 541-754-0893.

June 2, Saturday, 9:30 am-2 pm

Hike: Return to Lower North ridge trail on Mary's Peak. Same hike, but a very different flora than we saw in April. Easy 4 1/2 mile RT hike. Wear sturdy shoes, and bring water and lunch. Meet at the OSU parking lot across from the Beanery at Monroe and 26th. Contact: Louise, 541-753-0012.

June 9, Saturday, 1:30-3:30 pm

Hike: In search of *Delphinium pavonaceum* with Gaylee Goodrich and Esther McEvoy. We will go to a number of sites where *Delphinium pavonaceum* has grown in the past and check on the populations. This is a car fieldtrip with several stops. We will meet at the OSU parking lot across from the Monroe Beanery to carpool. Bring water and rain gear. Contact: Esther McEvoy, 541-754-0893.

June 16, Saturday, 9:30 am

Hike: Wildflowers on Marys Peak with Phil Hays and Esther McEvoy. We will hike the Connors Camp East Ridge Trail, Tie Trail, North Ridge Trail and back down the East Ridge Trail loop. It is a 6.2 mile loop with a 1600' elevation gain, and should take about five hours including a lunch break at the top, plus 1 1/2 hours travel time. Meet at the OSU parking lot at Monroe and the 27th St. Bring a lunch, water and good hiking shoes. Contact: Esther McEvoy, 541-754-0893.

July 7, Saturday, 8 am

Hike: Iron Mountain. Spectacular wildflowers with over 200 species of vascular plants recorded along this botanically rich trail west of Santiam Pass. The all-day hike will be 5 miles through moderately difficult terrain. Bring good boots, lunch, and water. Meet at the OSU parking lot SW of The Beanery, 26th and Monroe,

Corvallis. Information: Dan Luoma at 541-752-8860.

Emerald

Visit the Emerald Chapter Web site at <http://emerald.npsoregon.org> to learn more about the latest chapter events, plant lists and botanical information about Lane County plants and the people who love them.

June 16, Saturday, 9 am

Field Trip: Horse Rock Ridge. Alan Curtis leads a 4-mile hike to a steep, rocky meadow high in the Coburg Hills north of Springfield. Enjoy wonderful views of the surrounding countryside and great botanical diversity. Bring water and lunch. Meet at South Eugene High School. Contact: 541-345-2571.

July 21, Saturday, 8 am-4 pm

Field Trip: Upper Elk Meadows. Alan B. Curtis will lead a hike to Upper Elk Meadows, 30 miles from Cottage Grove. Elevation of the meadow is 4,000 feet. Over 200 species of vascular plants have been identified here. Of special interest is *Frasera umpquaensis* at its most northerly known location. Surrounding the meadow is an old-growth forest of *Abies amabilis*, *Abies grandis*, and *Pseudotsuga menziesii*. We will walk about 1.5 miles through moist meadow. Wear boots and bring lunch and water. Location: Meet at South Eugene High School. Contact: Alan Curtis, 541-345-2571.

Klamath Basin

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

Mid-Columbia

For information on the Mid-Columbia Chapter, contact Sara Wu at wusara96@yahoo.com.

June 9, Saturday, 9 am

Hike: The Dalles Airport Dunes and Hess Lake. This trip will combine three short loop walks in an area that is ecologically different from those usually visited in the Gorge. The first is a

half-mile loop up onto the sandy-soil hills to the southeast of The Dalles Airport. The second half-mile loop starts at Hess Lake and wanders cross-country up onto the hill to the southeast. The third loop follows an undeveloped path around Spearfish Lake. We hope to see *Oenothera pallida*, *Abronia mellifera*, and more. Meet at the junction of WA Hwy 14 and Hwy 197. Contact: Don Hardin, donhardin0@gmail.com, 509-493-4819.

June 10, Sunday

Annual Summer Pot Luck and Hike. We'll meet at the Rhodes/Bloch home in White Salmon. For details, contact Dell Rhodes, rhodes@reed.edu or Don Hardin, 509-493-3572.

June 14, Thursday, 7 pm

Meeting: Larkspurs in the Wake of the Flood: Molecular Genetic Diversification of a PNW Wildflower. Keith Karoly, Professor of Biology at Reed College, will discuss his current research on the diversification of larkspurs in the Columbia River Gorge and western Oregon, with an emphasis on understanding how events since the last Ice Age have shaped their current diversity and distribution. Visit his website: <http://academic.reed.edu/biology/professors/kkaroly/research.html>. Boardroom, Building 1, Columbia Gorge Community College, The Dalles.

July 12, Thursday, 4 pm

Hike: Conboy Lake National Wildlife Refuge. The Willard Springs Foot Trail is an easy 2-mile loop that begins at the refuge headquarters and parallels the west shore of the old Conboy Lake. The return portion of the Willard Springs Trail uses an old dirt road that travels through a conifer forest. Flowers seen at about this time last year included *Gaillardia aristata*, *Madia citrodoria*, *Platanthera dialata*, and more! Meet at the Conboy Lake Headquarters parking area. Contact: Don Hardin, donhardin0@gmail.com, 509-493-4819.

Portland

If you would like to receive the chapter's semi-official e-mail newsletter, The Calochortus, e-mail Don Jacobson at [\[photo@gmail.com\]\(mailto:photo@gmail.com\).](mailto:donj-</p></div><div data-bbox=)

Facebook: Take a look at our Facebook page. Native Plant Society of Oregon-Portland-Chapter. It will have the most up-to-date information on hike and other events as well as great plant pictures.

June 7, Thursday

Field Trip: Dog Mtn. Nothing beats this in the Gorge for flowers and views. Balsamroot, lomatiums, orchids, and more. Difficult hike, 7-miles, 2900' elevation gain. 110 mile RT. Rain cancels. Contact: Roger Brewer, rogerbrewer@comcast.net, 503-789-5027 to sign up for the hike.

June 9, Saturday

Hike: McCord Creek with Roger Brewer. An easy hike of 3 miles RT, 600' elevation gain. See great Gorge flowers and beautiful waterfalls only 35 miles from Portland. Flowers we may see include *Erigeron oregana*, *Erigeron howellii*, and more! Contact Roger Brewer at rogerbrewer@comcast.net or 503-789-5027 to register.

June 14, Thursday

Powell Butte State Park Grass ID class/Hike. Led by Rick Shory, who has worked botanically with grasses since 1993. We will easily find all the grasses within a quarter mile of the parking area. This class is fine for first-timers or for those who have taken Rick's previous grass ID classes. Attendees will use visual recognition or your preferred key. Contact: Rick Shory, rickshory@gmail.com, 503 253-8100 for additional information to register. On the day of the class, contact Rick at 360-774-6593.

June 14, Thursday, 7 pm

Program: The Unique Flora of the Siskiyou Mountains and Their Serpentine Soils. Rare plants, carnivorous plants and fragrant blossoms of the Siskiyous by Dr. Kareen Sturgeon, retired biology professor at Linfield College, will feature photos of the unique plants and plant communities found on serpentine soils in the Siskiyou Mountains. She'll discuss how the soils form and the unusual characteristics typical

of plants that grow in these challenging environments. Metro building at 600 NE Grand Avenue, Portland. Enter the building at the south end of the upper plaza on Irving St. An attendant will let you in and direct you to the meeting room upstairs. Contact: Angie Moore, mlm@teleport.com, 503-292-2093.

June 19, Tuesday

Hike: Tamanawas Falls Hike led by Don Jacobson and Roger Brewer. This 4.5 mile round trip, 600' elevation gain hike terminates at one of the loveliest, most accessible falls on the east slope of Mt. Hood. We will see a mix of east and west side plants along the trail that follows Coldwater Creek to the falls. To register and for carpool information, contact: Don Jacobson, 503-235-6234, donjphoto@gmail.com.

June 26, Tuesday

Grassy Knoll Hike led by Jan and Dave Dobak. Forest, rocky outcrops, the bald summit of Grassy Knoll, scree slopes, and plenty of botanical diversity and great views. 130 miles RT drive (20 miles on gravel); 8 miles of hiking with 1000' of elevation gain. USFS parking permit required. Contact: Jan and Dave Dobak, 503-248-9242.

July 2, Monday

Field Trip: Saddle Mt. Join Roger Brewer to explore this botanic gem near the coast, with species including *Dodecatheon dentatum*, *Corydalis scouleri*, and many others. If we make it to the summit and the weather cooperates, we'll be treated to a view from Mt. Rainier to Mt. Jefferson. Full day. Difficult although we will go at botany pace. 160 miles RT. Contact: Roger Brewer, rogerbrewer@comcast.net, 503 789 5027.

July 6, Friday

Hike: Larch Mt. This is a moderate to strenuous hike that consists of an approximately 6.4 mile loop with an elevation gain of 1,300' through meadow and old growth forest. We will also view wildflowers that have emerged within the last several weeks from the recent snow melt. Contact: Ron Klump, ronklump55@comcast.net for more information or to sign up for the hike.

July 7, Saturday

Field Trip: Iron Mt. Iron Mountain is a botanical paradise so wonderful, there's a book about it: *Wildflowers of the Western Cascades*, by Ross & Chambers. The mountain is home to 18 different community types, and at the beginning of July the meadows are in full bloom. Expect to see several *Sedum* and *Castilleja* species, *Lilium washingtonianum*, *Orthocarpus imbricatus*, and more. Moderate 3.4 mile hike round-trip with 1200' elevation gain. 260 miles RT. USFS pass required (or bring \$5 in cash). Contact: Brent Miller, 503-382-7605, foliosus@foliosus.com to register.

Siskiyou

To join the Siskiyou Chapter email list: Send an email, from the address at which you want to receive announcements, to announce-join@siskiyou.npsoregon.org. No subject or message is required. You will get a confirmation email. If you would like to volunteer to lead a hike in 2012, make a suggestion, or provide feedback regarding the field trip program please contact Sasha Joachims at: sasharain71@gmail.com.

June 23, Saturday, 1 pm

Hike: Cascade Siskiyou National Monument, PCT south of Hobart Bluff from Hobart Bluff Trailhead. Diane Newell Meyer and Sasha Joachims will lead a moderate hike to look for the newly located range extending site of Brandegee's springbeauty (*Claytonia saxosa*), found in the area last year, and botanize the many other wildflowers found here. Meet behind the Oil Stop off Ashland St. in Ashland at 1pm. Parties interested in carpooling from Grants Pass can meet at the Wal-Mart parking lot next to the Taco Bell and leave by 12:15 but carpool is unguided and self-directed. Contact: Diane, 541-488-2646 (leave message) or Sasha, Sasharain71@gmail.com.

June 30, Saturday, 9 am

Hike: Hinkle Lake Botanical Area in the Upper Applegate Valley. Luke Ruediger will lead a hike to the Hinkle Lake Botanical Area in the Upper Applegate Valley. The extensive meadows surrounding Hinkle Lake are home to

a vast array of flowering plants, as well as the extremely rare alpine liverwort (*Chilocyphus gemmiparus*). This is a coordinated hike with the Applegate Trails Association. The hike includes two separate options: a gentle 3 mile road hike, or a longer 4-5 mile loop with some off trail scrambling and elevation gain. Bring water, food, and wear appropriate clothing. No pets. Meet at the Ruch Plaza. For more information check out the Applegate Trails Association website calendar at www.applegatetrails.org, or contact David Calahan, 541-899-1226, david@applegatetrails.org.

July 7, Saturday, 9 am

Hike: Mt. Ashland. Enjoy the early summer bloom on Mt. Ashland. We'll visit the summit area, Rabbit Ears, and Grouse Meadows. Expect 1-2 miles of easy walking with modest elevation gain. Meet behind the Oil Stop on Ashland St., just west of the BiMart/Shop 'n Kart parking lot in Ashland, about 1/4 mi west of I-5, exit 14. Leader: Alex Maksymowicz, 541-482-1964.

Umpqua Valley

Visit www.umpquavalley.npsoregon.org for more information on chapter activities.

Willamette Valley

For program information, contact John Savage at 503-399-8615 or Alexandra Ninneman at 503-391-4145.

Sunday, June 3, 8:30 am-12 pm

Field Trip: Kingston Prairie Preserve. This 52-acre Nature Conservancy Preserve southeast of Stayton is the best example of native prairie remaining in the central Willamette Valley. Join the Willamette Valley Chapter and Friends of Straub Environmental Learning Center. The hike is free and open to the public. Contact: John Savage, 503-399-8615 after 7 pm.

Saturday, June 16, 8 am-4 pm

Field Trip: Cascade Head Preserve. John Savage will lead a 6 mile roundtrip hike with elevation gain to view wildflowers of the Cascade Head Preserve near Lincoln City. The Preserve features

a scenic coastal headland, many native grasses and flowers, and a population of the rare Oregon silverspot butterfly. Bring food and water. The hike is free and open to the public. Contact: John Savage, 503-399-8615 after 7 pm.

William Cusick

Visit our Web site at <http://williamcusick.npsoregon.org> or contact Laurie Allen at 541-805-0499 for updates and general information.

OTHER EVENTS

Siskiyou Field Institute

July 7-10, Saturday-Tuesday

Course: Crash Course in Flowering Plant Families with Linda Ann Vobrik, PhD. Brush up on your botany skills with this intensive plant identification class. Create a framework for learning plants and learn how to key using *The Jepson Manual*. Morning lab and lectures whet appetites for afternoons in the field. Some botany experience is strongly recommended. Cost: \$250, advance registration is required. Contact 541-597-8530, www.thesfi.org.

July 16-18, Monday-Wednesday

Course: Wildflower Photography with a Pocket Camera with Mark Turner. Photographer Mark Turner will help you learn new ways to photograph flowers, create strong compositions, control natural light, and take charge of your pocket digital camera. Cost: \$150, advance registration is required. Contact 541-597-8530, www.thesfi.org.

July 22, Friday

Course: Botanizing Big Red Mountain with Kristi Mergenthaler. Want a taste of high elevation serpentine botany and ecology on the eastern Siskiyou Crest? Come explore this big red mountain, which supports flower-filled bunchgrass meadows, an exquisite summit rock garden, and an incredible display of beargrass growing in the open subalpine forest. Cost: \$50, advance registration is required. Contact 541-597-8530, www.thesfi.org.

NPSO Citizen's Rare Plant Watch: Search for rare species and contribute to their conservation!

The Citizen's Rare Plant Watch is a new project of the Rare and Endangered Plants Committee, where NPSO botanists and volunteers will revisit historic populations of rare species, collect data on their extent and habitat, and contribute directly to the conservation of species throughout Oregon! Working together with the Oregon Flora Project and the Oregon Biodiversity Information Center (ORBIC) we will determine which plant species are in need of field verification – little is known of range and/or numbers of the species or historic populations haven't been visited in years. On Citizen's Rare Plant Watch outings, knowledgeable botanists and amateurs alike will record information on rare species encountered (we'll create an easy form to take along to record information such as estimated population size, GPS coordinates, elevation, associated species, habitat characteristics, etc.) and photographs of the species. After the trip, any information acquired would be sent to us, and we would work with the ORBIC, the Oregon Flora Project, and Federal and State agencies to enter

it into their databases. Similar citizen-science projects have been a huge success with University of Washington Botanic Garden's Rare Care and the California Native Plant Society's Rare Plant Treasure Hunt, and we want the same for Oregon!

We will plan one or two Citizen's Rare Plant Watch outings this summer, and build from there. Each outing will require a knowledgeable botanist and a leader to work with us to plan it. Eventually, interested people in each chapter will take on the role of being the Citizen's Rare Plant Watch coordinator for that chapter. These outings will be educational experiences, and people of all levels of botany expertise are encouraged to participate!

If you are interested in leading an outing, or participating in one, please contact NPSO Rare & Endangered Plants Committee co-chairs Erin (ecgray830@gmail.com; 541-224-4977) or Cecile (cshohet@gmail.com; 510-604-8201)! We are very excited about the potential of this program to increase understanding of the extent of rare species throughout Oregon.

Highlights of the April 7, 2012 NPSO Board Meeting

by Lisa Blackburn, NPSO Secretary

Treasurer Cyndi Dion is sending letters to each Chapter Treasurer explaining what they need to do for their Chapter State and Federal tax filings. Billy Don Robinson will contact each Chapter to ask for their EarthShare placard displays last year, to report to EarthShare. Candidates for the 2012 elections were announced in the May Bulletin, so be sure to vote! The new co-chairs of the Rare and Endangered Plants Committee (Cecile Shohet and Erin Gray) presented their plans to talk with people all over the state to get ideas and feedback. The Board needs to develop backup plans for key positions, such as Webmaster and Treasurer. Sunia Young is currently serving as the temporary Webmaster. Dan Luoma is willing to be the interim backup Treasurer. The Membership Chair, Clayton Gautier, wants to step down; Robin Darbyshire is willing to take over the position. Robin will develop electronic membership renewal and *Bulletin* delivery. A rotation schedule for the Annual meeting was discussed and we have yet to determine a new 2013 host for the Annual Meeting. It was moved, seconded and passed to establish an Annual Meeting Committee. President Judi Sanders was asked to serve on the State Invasive Species Council, which speaks to the credibility of NPSO. The Council's mission is to coordinate invasive species efforts across the state.

Phenological Comparison, cont. from page 1
 drained bottomland (Owsten 2005). In the southern Willamette Valley, both species are frequently seen together in riparian areas. Oregon ash is dioecious and wind pollinated. Bigleaf maple has both perfect and male-only flowers on the same tree and is pollinated by insects. For more details about the mating strategy of bigleaf maples refer to Julian-Gordon (1993, cited in Fryer, 2011) and Wagner (1988). Both produce wind-dispersed samara fruits. Populations of these species have been established in the Lane Community College (LCC) native landscape area which allowed us to study and compare their seasonal phenological growth and development patterns under the same climate conditions.

What were the similarities and difference in phenological patterns of growth and development of each of these species when they experienced the same climate cues? This study focused on temperature fluctuation and rainfall amounts only during the observable and active vegetative and reproductive phenophases from March through June. Twice weekly, phenophase observations were made of 3 branches each on 6 individuals (3 male and 3 female) of Oregon ash and 5 individuals of bigleaf maples. Rainfall and temperatures data are recorded daily on a weather station on a building in

the center of the LCC native landscape area.

Flowering and Leaf Expansion. The flowering of both species precedes the unfurling of leaves but the length and timing of flowering and mature leaf cover differs dramatically (Table 1). Bigleaf maples flowered for the first 3 weeks of April. By the end of April, fruiting was well underway and leaves on each tree were fully expanding to their mature size, taking full advantage of photosynthesis opportunities. In contrast, Oregon ash flowers are exposed for eight weeks with little leaf cover. Oregon ash leaves did not start reaching mature size until the end of May as the female trees started producing fruits. When Oregon ash trees were in full fruit in mid-June, at least 50% of the leaves on each tree were fully expanded mature leaves. The overlap of fruiting and mature leaf development therefore is seven weeks earlier in bigleaf maples than in Oregon ash. This supports the prediction made by Robertson (1985) that wind-pollinated trees hold off leaf development to reduce impediments to wind pollination.

How influential are environmental cues to timing and longevity of these phenophases? Average weekly temperatures and total rainfall were evaluated but the cues we present in Table 1 are day length, weekly rainfall, and temperature extremes. Leaves of

both species began expanding when day lengths were more than 12 hours long despite minimum temperatures below 1°C. Most notable was the full expansion of the bigleaf maple leaves when the extreme minimum temperature jumped from below 1°C to above 3°C. These leaves have a large surface area and may be more vulnerable to cold temperatures. Comparisons between annual climate data are needed to determine if the wet spring of 2011 affected the longevity of any of the phenophases. Forrest and Miller-Rushing (2010) state in their paper on phenology that “it is relatively easy to detect a correlation between some climate variable and a particular phenological response,” but this correlation does not mean causation. Without the ability to isolate different factors, it is difficult to determine the main cues for phenological events. However, our study records both the phenological events and the weather data that Forrest and Miller-Rushing indicate to be paramount. One season is inadequate to fully determine relationships between phenophase and climate cues, but our data provided a good comparison of the phenological patterns of the two species. It also raised many questions about the interactions of different selective pressures for reproductive timing, pollination strategy and optimizing photosynthesis, and how climate cues might affect those patterns.

Table 1: Phenophase comparison between bigleaf maple and Oregon ash, LLC native plant garden, Spring, 2011.

Table 1: Phenophase comparison between bigleaf maple and Oregon ash, LLC native plant garden, Spring, 2011.																
Dates indicate the week starting Monday and ending on Sunday.																
Bars show the beginning of each phenophase, beginning bud expansion dates for maple leaves and flowers initiated prior to 3/28.																
50% Mature lvs = 50% of leaves on each plant reached maturity; Full flowering = 75% of the flowers on each plant reached maturity																
Weekly Climate Data	Date:	3/28	4/4	4/11	4/18	4/25	5/2	5/9	5/16	5/23	5/30	6/6	6/13	6/20		
Rainfall (cm)		3.45	5.46	1.3	4.11	6.76	7.9	2.4	2.64	3	11.73	3.61	10.26	5.94		
Temperature Extremes	Max	20.2	14.2	13.6	18.1	17.5	19.6	19.8	21.9	20.8	24.7	22.5	23.7	24.8		
(°C)	Min	0.4	-0.06	0.1	-1.1	-0.1	3.5	3.3	3.8	5.1	4.4	6.8	6.2	7.2		
Day Length (hrs/min)		12/1	13/00	13/21	13/41	14/00	14/19	14/36	14/51	15/5	15/18	15/22	15/27	15/30		
Bigleaf maple <i>Acer macrophyllum</i>	New lvs				Mature lvs			50% Mature lvs								
	1st Flwrs				Full flowering											
	1st Fruit	Full fruit (no flwrs)														
Oregon ash <i>Fraxinus latifolia</i>	No observations recorded before 3/28	New lvs					Mature lvs					50% Mature lvs				
		1st Male	1st Female flwrs					Full fruit (no flwrs)								

Biologists in Training. What we enjoyed the most about being “biologists in training” was spending time observing the seasonal development of different species. Like the stereotypical farmer carefully watching a prize pumpkin, we found ourselves developing a deeper relationship with the plants we observed. We also gained some insights about doing research. Bob Hladky was struck by how subjective some of the phenological stages can be. For example, it was challenging to determine the “mature flowers” phenophase for bigleaf maple. It was necessary to make definitive descriptions and photographic images of a mature flowers and the inflorescence. Billy Matthews discovered the importance of monitoring a population of a species rather than one individual because there are variations in phenophases between different plants. Some individuals leaf out and flower a week before or after other individuals. To achieve an accurate consensus, a population needed to be measured. The need is ever increasing for people that are willing to monitor the phenology of different plants (Baker 2011). We encourage anyone who may be even slightly interested to take part in this exciting venture.

Acknowledgements: Thank you to Gail Baker who supervised our research and provided extensive editorial comments about how to present our data for this report.

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Meet us in the Siskiyou Mountains! Annual Meeting July 13-15

by Cindy Roché, Siskiyou Chapter

As host for the 2012 ANPSO Annual Meeting, the Siskiyou Chapter is looking forward to Native Plant friends from far and wide joining us July 13-15 for a botanical extravaganza. Friday evening kicks off with a social, complete with our own NPSO Calochortus howellii wineglasses and a talk by Linda Ann Vorobik. The Siskiyou Mountains are practically Linda's second home, so “Siskiyou Wildflowers: Art and Inspiration” is a program you won't want to miss. Those who registered early had to agonize over the decision of choosing just one among fourteen intriguing field trips centered in the high western Siskiyou Mountains. Even though half of the field trips filled up quickly, it may still be difficult to select just one insider-guided tour on Saturday. In the evening our caterer will serve a superb meal (bring your wineglass again) and Susan Harrison will tell us about Serpentine Plant Diversity in the California Floristic Province (which extends into southern Oregon). Attend the NPSO Board meeting from 9 to 1 on Sunday, or spend some more time exploring the region. See the latest updates at the website: <http://siskiyou.npsoregon.org/2012annualmeeting/>.



Guide To Oregon Hornworts

David Wagner recently published a guide to hornworts of our state, *Hornworts of Oregon*. Three of the six species native to Oregon have so few records that they qualify for listing as rare in the state. Maybe with further attention, they will be found to be more widespread even if not common.

The guide can be downloaded at no cost as a MS Word document (<http://dl.dropbox.com/u/46975054/HornwortsOfOregon.doc>) or as a pdf file

(<http://dl.dropbox.com/u/46975054/HornwortsOfOregon.pdf>). For those who would like an archival version on cotton content paper with the CD in a back pocket, mail \$25, post paid anywhere in the world,



Phaeoceros carolinianus, a more common hornwort species in Oregon.

to the address below. For a CD of the guide (with the HTML version as well as the pdf file) send \$10. Send check or money order (payable to Northwest Botanical Institute) to:

Northwest Botanical Institute
P.O. Box 30064
Eugene, OR 97403-1064

To use a credit card use PayPal to submit the proper amount to davidwagner@mac.com.

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Membership applications, renewals and changes of address (include old address) should be sent to the Membership Chair. Changes of address may also be e-mailed to Membership@NPSOregon.org.

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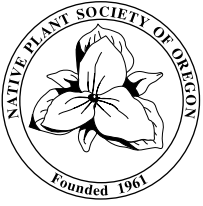
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PUBLICATIONS

BULLETIN EDITOR..... Taya MacLean 7727 N. Woolsey Ave., Portland, OR 97203; bulletin@NPSOregon.org
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