



# Bulletin

of the

## Native Plant Society of Oregon

*Dedicated to the enjoyment, conservation, and study of Oregon's native vegetation*

VOLUME 35, No. 9

OCTOBER 2002

### What is Fire Ecology?

*This article was reprinted with permission from the website of the Pacific Biodiversity Institute of Winthrop, Washington. It was written last year. For the complete article with references go to [http://www.pacificbio.org/Projects/Fire2001/fire\\_ecology.htm](http://www.pacificbio.org/Projects/Fire2001/fire_ecology.htm). For more information about wild fires, ecology and other related topics check out the rest of their website at [www.pacificbio.org](http://www.pacificbio.org).*

**F**ire ecology is a branch of ecology that focuses on the origins of wildland fire and its relationship to the environment that surrounds it, both living and non-living. A wildland fire is defined as any fire that is burning in a natural environment. Fire ecologists recognize that fire is a natural process, and that it often operates as an integral part of the ecosystem in which it occurs.

The main factors that are looked at in fire ecology are fire dependence and adaptation of plants and animals, fire history, fire regime and fire effects on ecosystems.

#### Fire dependence

In the 1930s, researchers in the southern United States argued against the negative perspective that has surrounded fire, with the belief that all fire is bad. It was realized that the devastating picture painted by huge-scale fires produced fear in the minds of the public (and in politicians and scientists alike), and that this generated detrimental results in response to any wildland fires. These researchers recognized that there are species of plants that rely upon the effects of fire to make the environment more hospitable for regeneration and growth. Fire in these environments prepares the soil for seeding by creating an open seedbed, making nutrients more available for uptake and often killing plants that are invading

into the habitat and competing with native species.

#### Fire history

Fire history deals with how often fires have occurred in a given geographical area. Through recorded history, we can see into the recent past, but trees are our source of information on fires in the distant past. Trees record their history through a system of growth rings that develop on the trees each year. When a fire goes through an area, the growth rings of that particular tree may be scarred. On live trees this is called a fire scar. Fire scars can also be seen on dead trees. Tree origin dates (calculated from the total number of rings) can also tell when fires occurred, in that fires gave way for these new trees to develop. The study of growth rings is called dendrochronology. Utilizing dendrochronology, we can determine when fires have occurred in the past, and sometimes determine their intensity and direction as well as other information about the weather patterns in that era.

#### Fire regime

Fire regime refers to the patterns of fire that occur over long periods of time, and the immediate effects of fire in the ecosystem in which it occurs. There are many ways to define a fire regime. Fire regime is a function of the frequency of fire occurrence, fire

intensity and the amount of fuel consumed. The frequency is determined largely by the ecosystem characteristics, the duration and character of the weather (whether the season is drier or wetter than normal, etc.) and ignition sources. The intensity of a fire is determined by the quantity of fuel available, the fuel's combustion rates and existing weather conditions. Interactions between frequency and intensity are influenced by wind, topography and fire

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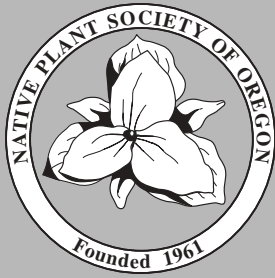
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## Native Plant Society of Oregon

### World Wide Web

<http://www.NPSOregon.org>

### E-mail Discussion List

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

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Eugene, OR 97440

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and Committee Chairs listed on the  
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tion are those of the authors of the  
articles. They do not represent the  
opinions of the Native Plant Society  
of Oregon, unless so stated.

## Kalmiopsis Needs an Advertising Manager

**N**PSO would like to sell advertising in *Kalmiopsis* to help offset some of the journal costs. The Advertising Manager will be a volunteer role, which will entail working with co-editors Cindy Roché and Linda Vorobik and the NPSO state Treasurer Candice Guth to develop standards and prices, then soliciting ads from businesses such as native plant nurseries and bookstores that feature botany and natural history merchandise. Most of these contacts can be made by mail or e-mail.

If you would like to try your creative skills in public relations and sales, here is a great opportunity to help NPSO. For more information or to volunteer, please contact Cindy Roché at [crupinaqueen@charter.net](mailto:crupinaqueen@charter.net).

## Eastside Conserva- tion Coordinator Still Needed

**T**he Eastside Conservation Coordinator/Chair position is currently vacant, and NPSO needs someone to fill that role. Responsibilities include working with chapters to identify and participate in public input on federal, regional, state, and local conservation-related issues that affect Oregon east of the Cascade crest. Letter writing, research, and occasionally meetings with officials or agency staff are typical duties of the position. A large time commitment is usually not required. If you are interested in serving NPSO in this position, please contact the president at [president@NPSOregon.org](mailto:president@NPSOregon.org).



TANYA HARVEY

*Western pasqueflower (Anemone occidentalis) grows in subalpine meadows such as this one below Mt. Hood. The typical white anemone flowers bloom soon after snowmelt. It is the unusual shaggy seedheads that are most often seen by hikers.*

## State

**October 5, Saturday**

**Board Meeting:** The next State Board meeting will take place in Coos Bay. Exact time and location will be announced on the NPSO website at [www.NPSOregon.org](http://www.NPSOregon.org).

## Blue Mountain

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

## Cheahmill

**September 26, Thursday, 7:00pm**

**Meeting: An Arctic Dream Come True: Botanizing in Alaska by Bush Plane and Canoe.** Kareen Sturgeon, Professor of Biology at Linfield College and a Past President of the Cheahmill Chapter, will give a slide presentation describing her month-long collecting trip for the BLM in a remote region of Arctic Alaska. Carnegie Room McMinnville Public Library, 225 N. Adams St., McMinnville. For more info contact Susan Williams at 503-538-1865 or [helgesusan@attbi.com](mailto:helgesusan@attbi.com).

**October 24, Thursday, 7:00pm**

**Meeting: Mushrooms—A Primer on Ecology and Identification.** Jack Murphy, Mycologist and Professor of Biology at Linfield College will give a slide show and talk highlighting the different ecological strategies demonstrated by fungi and introducing the basic characteristics necessary to start the process of mushroom identification. Carnegie Room McMinnville Public Library 225 N. Adams St, McMinnville For more information contact Susan Williams 503-538-1865 or [helgesusan@attbi.com](mailto:helgesusan@attbi.com).

## Corvallis

**October 7, Monday**

**Meeting: Speaker & Topic TBA.** This will be the first meeting of the season.

## Emerald

**October 28, Monday, 7:30pm**

**Meeting: Sudden Oak Death—The Latest Information.** Dr. Nancy Osterbauer, Regulatory Plant Pathologist with the Oregon Dept. of Agriculture, and Research Assistant Deirdre Jackson will tell us all we have been waiting to

hear about the pathogen *Phytophthora ramorum*, now infecting oaks and other Oregon species. Potential and existing implications for our state will be discussed. There will also be a chance to purchase your copy of the Lane County Checklist (\$12). As usual, we will meet in Room 117 of the Science Building at Lane Community College, 4000 E. 30th Avenue. See you there!

**November 25, Monday, 7:30pm**

**Meeting: To be announced.** Same location. Mark your calendars and check your November *Bulletin* for details on our next interesting program.

## High Desert

No meeting in October. For information on the High Desert Chapter, call Stu Garrett at 541-389-6981.

## Klamath Basin

For information on the Klamath Basin Chapter, call Sarah Malaby, 541-884-5703, [smalaby@cs.com](mailto:smalaby@cs.com); or Mike Cutler, 541-850-9012, [cutler@cvc.net](mailto:cutler@cvc.net).

## Mid-Columbia

**October 2, Wednesday, 7:30 pm**

**Meeting: Pollination in the Oak Savanna Community.** Andy Moldenke, entomologist at OSU, will give us a slide talk on pollination of the understory in oak savannas in both the Willamette Valley, where there has been great disturbance in the understory, and on our side of the mountains. Columbia Gorge Discovery Center, in The Dalles: Exit 82 off I-84, and follow signs.

## North Coast

For information on the North Coast Chapter, call Vivian Starbuck at 503-377-4141.

### IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips take place rain or shine, so proper dress and footwear are essential. 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. Bring water and lunch. 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.

## Portland

**October 8, Tuesday, 7:00pm**

**Meeting: Learn the latest on biological control of invasive species in Oregon.** Eric Coombs, with the Department of Agriculture will be our presenter. Eric gave us a presentation two years ago and it was fantastic. He has a lot of new information to share. Fireside Room (#355) of the First United Methodist Church located at 1838 SW Jefferson St., in Portland. For more information contact Dee White, 503-775-2909.

## Siskiyou

**October 17, Thursday, 7:30pm**

**Meeting: Program topic TBA.** Room 171 of the SOU Science Building, Ashland. For more information call Molly Sullivan at 541-552-9908.

## Umpqua Valley

**October 10, Thursday, 7:00pm**

**Meeting: Member Sharing.** Bring specimen grasses (harvest time), seeds for ID, slides, botanical experiences, and ideas for future programs or field trips to share. Welcome new members. 7:00pm at the Douglas County Courthouse Annex, just east of the main Courthouse on SE Douglas St. For information call Jack 541-863-5347.

## Willamette Valley

*The Willamette Valley Chapter is looking for a President! Our bylaws limit the terms of the four officers to two years, so the current president is "termed out." Consequently, there will be no organized Chapter activities until a replacement is found. If you're interested, please call Karl Anderson at 503-315-7329, or Wilbur Bluhm at 503-393-2934.*

## William Cusick

For information on the William Cusick Chapter call Frazier Nichol at 541-963-7870.

## Request For NPSO Fellows Nominations

*by Fellows Committee: Shane Latimer, Kelli Van Norman, Rhoda Love, Veva Stansell*

**T**he Fellows Committee is ready to receive nominations for the year 2003. Nominations may be made by Chapters, individual members or the State Board under the following guidelines:

Nominees will be members who have given outstanding service to the Native Plant Society of Oregon (NPSO). They may have been instrumental in establishing the State Organization or a Chapter, or produced distinguished editorial contributions, or served as an inspirational teacher of botany. They may have in other ways contributed valuable work relating to native plants or to the goals of NPSO.

The nominating group or person should prepare a formal letter of nomination for consideration by the NPSO Fellows Committee. The letter should include detailed biographical and background information about the nominee. A photo of the nominee suitable for an article in *Kalmiopsis* should be

provided by the nominator.

After review of the nominating letters, the Committee will make a recommendation to the State Board. Acceptance as Fellows will be by vote of the Board of Directors at a State Board Meeting. Fellows will receive a framed plaque and a life membership in NPSO, and will be featured in an article in *Kalmiopsis*.

The NPSO Fellows Committee asks that letters of nomination for the year 2003 be sent by December 1, 2002, to Veva Stansell at the address below. Nominations will be presented to the Board of Directors at the January Board meeting.

**For more information please contact:**

Veva Stansell  
PO Box 6077  
Pistol River, OR 97444-1575  
541-247-7153  
vstansel@harborside.com.



*Four NPSO ladies frolicking at last year's Mount Pisgah Arboretum Mushroom Festival in Eugene. Left to right: Gail Baker, Veva Stansell, Rhoda Love and Charlene Simpson. By the way, the sign at the top is referring to mushrooms in the exhibit. For more on this year's upcoming festival see the following page.*

## OTHER EVENTS

### Mount Pisgah Arboretum Events

Seavey Loop Rd., Eugene, call 541-747-1504 for information or to register.

#### **Drawing Birds Workshop** **October 5, Saturday, 1-4 pm**

The first in a new art series offered at MPA, Kris Kirkeby teaches this workshop for all experience levels. The birds are migrating this time of year, so it's a good time to study their field markings close-up and capture their beauty before they are gone! You'll learn drawing techniques with colored pencil, and draw birds and their intricate and unique markings. Fee: \$20 (\$15 MPA members). Pre-registration required.

#### **Reflecting on Our Place in Nature: an Autumn Workshop in Personal Narrative Writing** **October 6 & 13, Sundays, 1-4 pm**

Debra Gwartney will facilitate this six-hour program that guides participants through an examination of their connection to natural places in their lives. Participants will learn to tell their life stories, informed by a relationship to place, using various styles of personal narrative. Space is limited so call early! Fee \$5. An Oregon Council for the Humanities Chautauqua Program. Pre-registration required.

#### **Medicinal Herbs Walk** **October 12, Saturday, 10am-Noon**

Learn about Northwest medicinal herbs with herbalism student Sherri Brown. She'll explore the medicinal properties, traditional uses, and ecology of the herbs found on your walk. Suggested donation \$3. Meet at the Visitor Center, rain or shine.

#### **Changing Seasons Walk** **October 12, Saturday, Noon-2 pm**

Observe and learn about the many changes taking place in the natural world at this time of year. Find mosses swelling, fungi popping up, and ripening fruits of the season as Nick Sky leads you on the autumn trails of the Arboretum. Suggested donation \$3. Meet at the Visitor Center, rain or shine.

#### **Fall Fruits & Foliage Workshop** **October 20, Sunday, 12:30-3:30 pm**

Are you fascinated by the changing seasons and curious how the plant world responds to the changing seasons? Rhoda Love and Judith Manning will guide you through the adaptive strategies of plants for dealing with the coming of winter, as well as the great variety of fruits and seeds and their diverse dispersal mechanisms. Fee: \$12 (\$10 MPA members). Pre-registration required.

#### **Mushroom Festival** **October 27, Sunday, 10am-4 pm**

Don't miss our annual celebration of mushrooms and the harvest season, co-presented by the Cascade Mycological Society and Lane Community College. This event includes one of the largest mushroom displays on the West Coast, a great plant sale, a scarecrow contest, children's activities, hayrides, guided walks, craft vendors, incredible food, music, wine tasting, and more! Come out for a fun-filled fall day and enjoy and support the Arboretum. Suggested donation for non-members: \$3 per person, \$6 per family. Members are free! Call 541-747-3817 for more information.



*This year's featured mushroom at the Mount Pisgah Arboretum Mushroom Festival is Angel Wings, Pleurotus porrigens.*

### Nearby Nature Events

P.O. Box 3678, Eugene, OR 97403.  
Call 541-687-9699 for more information or to register.

#### **Nearby Nature Action Walks** **Ongoing, every 1st and 3rd Monday of the month, 3-5 pm**

Join other enthusiastic volunteers for litter patrol and park caretaking along the trails in Alton Baker Park. Meet at the Park Host Residence in Alton Baker Park (just east of the dog run).

#### **Life at the Edge of Night** **Nature Walk** **October 5, Saturday, 6:30-8:30 pm**

Discover whoo's out at night in the park with wildlife biologist Peg Boulay. Look for birds heading to their night roosts, listen for owls, watch for bats, and more. Weather permitting, we'll end the walk with an outdoor slide show highlighting night life in the woods. Bring a flashlight! Open to all ages, meet at the Park Host Residence in Alton Baker Park (just east of the community gardens). Free for Nearby Nature members, suggested donation of \$3 for non-members.

#### **Nearby Nature's Haunted Hike in Alton Baker Park** **October 25, Friday, 5:30-9 pm**

Join us for a celebration of night creatures! Enjoy special pumpkin-lit night hikes (each about an hour long) through the nearby woods. Meet our entertaining costumed night critters--owl, bat, raccoon, spider, and more. We'll also have creepy crafts, live night creatures from the Cascades Raptor Center, and tricky treats. Rain or moonshine. Members free, non-members \$5. Pre-registration required.

ILLUSTRATION BY TANYA HARVEY

## ONRC Action Team Meeting

**Old Growth Research in the H.J. Andrews Experimental Forest**  
**October 8, Tuesday, 7:00 pm**  
**Upstairs at the Grower's Market, 454 Willamette, Eugene**

John Cissell, Director of the H.J. Andrews Experimental Forest, will speak on old growth research past and present in the experimental forest near Blue River. This is where the classic research on old growth took place 20 years ago under the guidance of Jerry Franklin, Bill Denison, James Trappe, Chris Maser and others. (Before this, old growth was considered, even in scientific circles, to be a biological desert, which needed to be replaced by tree plantations as soon as possible!) John Cissell is also the author of the popular old growth hiking maps of the Willamette and Mt. Hood National Forests. For more information call the Oregon Natural Resources Council's office in Eugene at 541-344-0675.

## Fisheries Focus of Linfield Ecology Lecture

**October 8, 7:30 pm, Melrose Auditorium, Linfield College, McMinnville**

Edwin P. (Phil) Pister, a fishery biologist with the California Department of Fish and Game for 38 years, will present the Jane Claire Dirks-Edmunds Endowed Ecology Lecture. He will speak on "Desert Fishes: Reflections on Reality, Desirability and Conscience." His lecture will delve into the dilemma faced by managers of arid land ecosystems and their related biotas, as water use continues to expand dramatically to accommodate the wants and needs of society. Examples will be discussed, based upon Pister's 50-year career in dealing with such issues as a California Department of Fish and Game conservation biologist. He will address

concerns such as what the future holds for desert aquatic resources and where will we be in the year 2102.

The lecture is free and open to the public and honors Dr. Dirks-Edmunds, a Department of Biology emerita faculty member at Linfield who recognized the importance of ecological issues and humanity's impact on nature long before environmental issues became a major part of the public agenda. The endowment is used to bring speakers to campus to address critical environmental concerns and biological issues. For more information contact Mardi Mileham, 503-883-2498.

## Annual Wilderness Conference

**October 19, Saturday,**  
**Reed College, Portland**

Why is only 3% of Oregon protected as Wilderness? What do we have to do to protect more? Can we create sustainable jobs through thinning tree plantations? What do fires mean to the forest?

For answers to these and other burning questions, join us at the 2nd Annual Wilderness Conference, Saturday, October 19, at Reed College in Portland. Panels of national experts will: dissect the infamous Biscuit fire; discuss fire's effect on the landscape, both physical and political; answer questions about what the administration has in mind for the National Forests; and provide you with the information and tools needed to make a difference!

Presented by Oregon Natural Resources Council and the Oregon Wilderness Coalition. For up-to-date information visit [www.onrc.org](http://www.onrc.org) or call 503-283-6343.

## Oregon Herb Festival and Conference

**October 19 & 20, Ashland**  
**Community Center, Ashland**

A weekend of herbal education features leading experts on herbal medicine. The festival on Sunday presents workshops, herb walks and exhibits for a \$10 admission. Included will be plant identification, ecological harvesting techniques, medicine preparation and the therapeutic uses of many of our Oregon native plants. Also featured is a two-day conference and retreat on October 19 & 20 at Buckhorn Springs (near Ashland) which will feature more advanced topics on herbal medicine. Cost is \$225 for both days of the conference. Room and board are extra. For more information: [www.botanicalmedicine.org](http://www.botanicalmedicine.org) or 800-252-0688.

### Friends of the Oregon Flora Project



[www.oregonflora.org](http://www.oregonflora.org)

A phenomenal amount of work has been accomplished on the Oregon Flora Project this summer, and the Friends will be working equally hard through the fall and coming year to maintain the enthusiasm that comes with progress. As always, we are seeking ways to increase the public's awareness of the Flora Project and to raise funds to support the creation of a new Checklist, Flora, and Atlas. Interested in joining our committee? Our small, friendly group meets monthly and welcomes your input. Please contact Linda Hardison at [hardisol@bcc.orst.edu](mailto:hardisol@bcc.orst.edu), (541) 745-5770 for more information.

# Berry Botanic Garden Events

Portland's Berry Botanic Garden has a number of native plant oriented events. To register or to get more information on these and other events at the garden call Kris at 503-636-4112x22 or visit their website at <http://www.berrybot.org>.

## Native Plant Gardening Series

Register for all or individual classes. Four consecutive Fridays. Each class \$15, or \$45 for all.

## Gardening with Our Favorite Native Plants

**Friday, October 4, 10am-12**

A great introduction to our favorite plants, chosen because they are attractive, beneficial to wildlife and great garden specimens. Slides, discussion, and handouts provide lots of information.

## Native Plant Garden Field Trip

**Friday, October 11, 10am-1 pm**

Learn by other native plant gardeners' examples. On this field trip, you'll see how 2 knowledgeable gardeners have fit natives into the home landscape.

## Propagating Native Plants

**Friday, October 18, 10am-12**

Grow your own plants! Gain hands-on experience in our greenhouse taking and rooting hard and soft cuttings, making divisions and collecting seed. Find out which media and techniques work best to propagate the native plants you wish to have in your yard. Take home cuttings and seeds from BBG's nursery stock.

## Designing with Native Plants

**Friday, October 25, 10am-12**

Having an overall plan for your garden is crucial to its success. Amy Whitworth, of Plan-It Earth Designs, is a Portland garden designer and enthusiastic instructor, who will share with us some great exercises for designing a space using PNW natives. Bring photos of your yard for personal assistance.

## Botany for Gardeners Brown Bag Series, Sessions 2, 3 and 4.

\$10 each class.

## Keeping it Under Control

**Tuesday, October 1, 11:30am-1 pm**

You're probably well acquainted with plants that stretch toward the sun, or

bananas that ripen on the counter. This class explores how plants direct and control growth through hormone activity. Learn how knowing just a little about the chemistry of plants helps to make sense of what they do.

## Passion in the Garden: From Flowers to Fruit

**Tuesday, October 8, 11:30am-1 pm**

Become familiar with flower structures, pollination, fruit types and seed dispersal. We'll start inside to learn the basics using common groceries, and then we'll head into the garden—which holds a bevy of fruits and seeds in the fall.

## Seed Science

**Tuesday, October 15, 11:30am-1 pm**

While some plants come from spores, many begin as seeds. Growing plants from seeds is a satisfying and economical way to add different species to your garden. Learn the techniques needed for success, dissect some larger seeds for fun, and get a glimpse into our conservation program. We'll even give you some seeds to plant in your garden!

## Fungal Frolic Hike

**Thursday, October 17, 9am - 4 pm**

As "plant people" many of us don't even know the basics of studying another living kingdom: the fungi. Learn how a mycologist looks at a mushroom on this fall hike. Our mission is to have fun seeking out strange new fungi with field mycologist Maggie Rogers in the moist woods of the Gifford Pinchot Forest. \$10.

## Rare and Endangered Plants of Lane County

**Wednesday, October 23, 7 - 9 pm**

Almost without notice, species are disappearing, and not just in faraway rain forests. Our state, with its coastline, grasslands, mountains and desert possesses plant species of similar diversity. Conservation biologists have reason to worry about as many as 15% of our state's plants. As human pressures in-

crease, struggles for survival are going on all around us. Charlene Simpson of the NPSO has spent years documenting this struggle. Join us for an inspiring slide show of the little-seen lovelies of Lane County, which extends from the ocean to the mountains. Feast your eyes on our botanical bounty as you learn about the losses, gains, and near misses in two decades of preservation efforts. \$10.

## Wicker Wonders

**October 26-27, 10am-4pm**

In this 2-day workshop pack your lunches and discover the fun of working with wicker. Learn how to harvest and maintain willows and other shoot-producing basketry plants, such as dogwood, hazel and maple. Practice the European wicker technique. Learn about fencing styles, arbors, trellises, pea cages, obelisks, tables, chairs, and even living, rooted works! Learn basic techniques of random weaving, plaiting, twining, randing and three or more rod weaves. \$115.

## Butterfly Talk

**October 7, Monday, 7:30 pm**

**Butterfly Niches.** Dr. David McCorkle will do slide show presentation surveying the interaction of butterflies (and some moths) with their environment, with an emphasis upon their host plant relationships at the meeting of the Eugene-Springfield Chapter of the North American Butterfly Association. Many Pacific Northwest butterfly species will be discussed. Dr. McCorkle taught biology for many years at Western Oregon University in Monmouth, where he specialized in research on fritillaries, swallowtails, and many other butterflies of the Pacific Northwest.

The talk will be held in Room 21, Jefferson Middle School, 1650 W. 22nd, Eugene and is free and open to the public. For more information, contact Eric Wold at 541-431-7388.

## Fire Ecology

*continued from page 97*

history. There are many other factors that can come into play when talking of fire regimes, though this simple definition will work for most cases.

### Causes of fire

Approximately 90% of fires in the last decade have been human-caused, either through negligence, accident or intentional arson. Some of the fires caused by accidents and negligent acts are through unattended campfires, sparks, irresponsibly discarded cigarettes and burning debris. The remaining 10% of fires are caused by lightning strikes, which are especially prevalent in the Western United States and Alaska.

### Benefits/Disadvantages of Wildland Fire

**Benefits:** The ecological benefits of wildland fires often outweigh their negative effects. A regular occurrence of fires can reduce the amount of fuel build-up thereby lowering the likelihood of a potentially large wildland fire. Fires often remove alien plants that compete with native species for nutrients and space, and remove undergrowth, which allows sunlight to reach the forest floor, thereby supporting the growth of native species. The ashes that remain after a fire add nutrients often locked in older vegetation to the soil for trees and other vegetation. Fires can also provide a way for controlling insect pests by killing off the older or diseased trees and leaving the younger, healthier trees. In addition to all of the above-mentioned benefits, burned trees provide habitat for nesting birds, homes for mammals and a nutrient base for new plants. When these trees decay, they return even more nutrients to the soil. Overall, fire is a catalyst for promoting biological diversity and healthy ecosystems. It fosters new plant growth and wildlife populations often expand as a result.

**Disadvantages:** Fire can cause soil damage, especially through combustion in the litter layer and organic material in the soil. This organic material helps

to protect the soil from erosion. When organic material is removed by an essentially intense fire, erosion can occur. Heat from intense fires can also cause soil particles to become hydrophobic. Rainwater then tends to run off the soil rather than to infiltrate through the soil. This can also contribute to erosion. In actuality, the negative effects of fires on soils are often exaggerated, and many fairly intense fires in western United States forests cause little soil damage. There is also the potential for alien plants to become established after fire in previously uninfested areas.

### Fire suppression/Exclusion Policies

Wildfire behavior and the effect of fire-exclusion policies on vegetation composition and structure varies considerably (Smith and Fischer 1997). A substantial amount of attention has been paid to the development of dense stockings of small trees in some forests, and the contribution thereof to current fire severity in those areas. Although this is generally true of drier vegetation ecosystems, this observation does not always apply to many of the wetter and colder forests that dominate much of the northern Rockies and the Pacific Northwest. Nor does it apply to non-forested areas. The frequency of fire historically varies considerably depending upon the type of vegetation in a given ecosystem. The ecological effects of wildfire suppression policies instituted in 1911 have also varied with vegetation type.

In low-elevation ponderosa pine (*Pinus ponderosa*) and dry Douglas-fir (*Pseudotsuga menziesii*) forests, average fire intervals have historically ranged from 5 to 20 years, and low to medium intensity fires were common (Arno 1980, Smith and Fisher 1997). Fire suppression has been fairly effective in reducing the number of fire cycles that these low elevation dry coniferous forests have experienced since the onset of fire suppression (Mutch 1994). This suppression of fire often leads to more intense fires in these areas when fires do occur, due to the build-up of fuel and conditions that are conducive to severe fire hazards.

Many dry coniferous forests have now missed several fire cycles (Mutch 1994). Due to their accessibility, these forests have also been extensively managed for timber production and livestock grazing. The ecological consequences of these management activities have caused a fairly dramatic change in tree density and forest composition (Smith and Fischer 1997). These changes have often created stands of dense, small-diameter trees in areas that used to be dominated by widely spaced old-growth trees. Past management activities have clearly created a situation in which a greater concentration of fuel is present, and there is a higher probability of high-intensity fire, should a wildfire spread into or start in the area.

In contrast to the dry forests, subalpine forests composed mainly of subalpine fir (*Abies lasiocarpa*), lodgepole pine (*Pinus contorta* var. *latifolia*), Engelmann spruce (*Picea engelmannii*) and whitebark pine (*Pinus albicaulis*) cover vast expanses of landscape. These forests are situated at higher elevations, which are considerably wetter and colder than the dry forests discussed above. Some of the conifer species present in subalpine forests are killed by moderate-intensity fire (Bradley, et al. 1992). In contrast, lodgepole pine, which is a dominant species in some subalpine forests, often reproduces prolifically following wildfire (Agee 1993). This is due to the serotiny of its cones. Some of the lodgepole pine cones are sealed shut by a resinous substance. These cones often remain on the tree for years at a time, and the seeds are only released when the resin is melted (at temperatures of 113-140°F) during forest fires.

Subalpine forests typically burn rather infrequently, though often at a much higher intensity than do dry forests. A few subalpine forest types (e.g. white-bark pine) experience more frequent fire (Smith and Fisher 1997) but are very limited in distribution (less than 18% of the subalpine forests in the northern Rockies). Historic fire-return intervals in subalpine forests range from 50 to 300 years (Arno 1980, Smith and Fisher 1997, Agee 1990,

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Agee 1993). In many cases, historic fire-return intervals for subalpine forests are longer than the period of time in which the current fire-exclusion policies have been in effect. Fire exclusion due to wildfire-suppression activities has not yet measurably altered the structure and composition of the subalpine forests since they have, in general, not missed fire cycles like the dry forests have. (Smith and Fisher 1997).

In the northern Rockies, between the low-elevation dry forests and subalpine forests, a mid-elevation zone of forest, composed of Douglas-fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), subalpine fir (*Abies lasiocarpa*), lodgepole pine (*Pinus contorta* var. *latifolia*), red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*), western larch (*Larix occidentalis*) and other species, is found. The fire regimes and historic fire-return intervals for these forests vary considerably with location and forest type (Arno 1980, Bradley, et al. 1992, Smith and Fischer 1997). Historic fire-return intervals range from 25 years to over 250 years in these stands (Arno 1980, Smith and Fisher 1997). Montane forests, generally, have been substantially affected by forest-management activities (primarily logging). These management activities and fire exclusion effects have largely varied within the diverse regions of montane forests in the western United States. In some areas, the effects have been subtle and slow to develop, while in other areas fire exclusion has led to the development of dense understory vegetation and changes in forest composition (Smith and Fisher 1997).

### **Do severe wildfires burn in areas that are not composed of dense forests resulting from fire exclusion and other land management activities?**

In the western United States, many areas that are not forested or only sparsely forested often experience severe wildfires. Many of the wildfires that burn each year burn in non-forested areas or involve substantial acreage of forests with sparse tree cover. In

these areas, forest-thinning programs are inappropriate (due to a lack of trees) or would have little effect on fire behavior, because the tree density is already low. In a study performed by the Pacific Biodiversity Institute during the summer of 2000, seven recent major fires were examined that clearly illustrate this point: the Kate's Basin Fire, the Canyon Ferry Fire Complex, the Mule Dry Creek Fire, the Hanford Fire, the Eastside Fire Complex, the Maudlow-Toston Fire, and the Maloney Creek Fire. These fires all burned through areas that included large portions of land that were not composed of dense forests. This year (2001), most of the large fires are burning in desert and sparsely forested country. Examples of this are: the Sheepshead Fire (Oregon), the Lakeview Complex (Oregon), the Sheep Complex (Nevada) and the Elk Mountain Complex (South Dakota and Wyoming).

In the northern Rocky Mountains, there are many areas that regularly experience severe wildfires that are not in densely forested areas. Persistent seral shrubfields are widespread in this region, a good example of which, are the "large expanses of shrub-dominated slopes, where tree regeneration is sparse or lacking, that characterize many areas in northern Idaho (Smith and Fisher, 1997)." Severe reburns are the main cause of these persistent shrubfields. Some of these shrubfields have persisted for 200 years or more, and have a mean fire-return interval of about 31 years (Barrett 1982). It is clear that persistent shrubfields are a product of wildfires burning in an environment where forest thinning would have little benefit.

### **Could extensive thinning of forests have prevented the current fire situation?**

Silvicultural thinning (i.e., logging of small-diameter trees to reduce tree densities and/or underbrush) has been posited as a possible treatment method for reducing wildfire risk. Although thinning to reduce fuel load has received much media attention recently, it is controversial among the scientific community and remains largely untested (Henjum, et al. 1994, DellaSala, et

al. 1995, SNEP 1996). There have been few empirical studies looking at the effectiveness of thinning as a treatment for reducing wildfire hazard (Frost 1999). The studies that have been conducted have reported highly variable results. Some studies indicate that thinning treatments designed to reduce fire risk actually increase the risk and severity of the fires (Huff, et al. 1995, van Wegendonk 1996, Weatherspoon 1996). Although these treatments may reduce the flammable biomass in the area, they also lead to drier forests and higher winds (Countryman 1955, Agee 1997). Additionally, silvicultural treatments, even when conducted carefully, can lead to the following adverse conditions (excerpted from Frost 1999):

- Damage to soil integrity through increased erosion, compaction, and loss of litter layer (Harvey, et al. 1994, Meurisse and Geist 1994).
- Increased mortality of residual trees due to pathogens and mechanical damage to boles and roots (Hagle and Schmitz 1993, Filip 1994)
- Creation of sediment that may eventually be delivered to streams (Beschta 1978, Grant and Wolff 1991)
- Increased levels of fine fuels and near-term fire hazard (Fahnestock 1968, Weatherspoon 1996, Wilson and Dell 1971, Huff, et al. 1995)
- Dependence on roads, which result in numerous adverse effects (Henjum, et al. 1994, Megahan, et al. 1994)
- Reduced habitat quality for sensitive species associated with cool, moist micro-sites or closed-canopy forests (FEMAT 1993, Thomas, et al. 1993)

Fires also burn in US Forest Service Inventoried Roadless Areas and designated Wilderness Areas. Many of the forests in these areas have not been severely altered from their historic fire regimes, and are difficult to access due to steep, rugged topography.

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Widespread thinning of backcountry areas is likely to be extremely costly, cause extensive environmental damage and create little benefit to society. Thus, the cost involved and the environmental disturbances of applying mechanical treatments over large roadless areas are not justified.

Thinning of small diameter trees in dense, young forests may be appropriate and result in reduction of wildfire risk to human communities in certain situations. The most appropriate place to apply forest thinning is in dry forest types adjacent to human communities threatened by wildfires. In these areas, it may be appropriate to thin dense stands of young trees close to homes and community resources. Such thinning needs to be followed up by a program of regular prescribed burning in order to be effective. More

research is needed on the efficacy of thinning programs for wildfire risk reduction before there is conclusive evidence to decide on their benefits or disadvantages.

### **What kinds of large-scale management practices should be implemented to reduce wildfire risk? Where should these take place, if they should?**

Large-scale management practices are necessary to control the risk of wildfire in the interface between forested and rural landscapes. The effects of fire suppression and the potential for severe wildfire are greatest in these areas. While rural-forest interfaces occur in many different forest types, they are most common in dry and montane forests that have been the most altered from their historic fire regimes by past management activities.

Many researchers and scientists agree that the best way to reduce wild-

fire risk in the rural-forest interface is through the reintroduction of fire to many natural ecosystems (Walstad, et al. 1990, Mutch 1994, USDA/USDI 1995, Arno 1996, Frost 1999). Prescribed fire appears to be the most effective means for controlling the rate of spread and severity of wildfire (van Wagtendonk 1996, Stephens 1998). Prescribed fire as a management tool has been increasingly used; however, more burning is necessary to restore many ecosystems to their historic fire regimes, thereby preventing the chance of an intense, large-scale wildland fire (Mutch 1994, USDA/USDI 1995, Arno 1996, Wright and Bailey 1982). The success of prescribed fire lies in keeping the fire under control. In some instances, mechanical treatments (e.g., thinning) may be applied to reduce the fuel loads to a point at which prescribed fires can be effectively controlled (Mutch 1994).

## NPSO Items for Sale

**Vascular Plants of Lane County, Oregon: An Annotated Checklist** by C. Simpson, J. Koenig, J. Lippert, R. Love, B. Newhouse, N. Otting, S. Sundberg, D. Wagner, and P. Warner. Emerald Chapter, NPSO. This new county checklist includes more than 1,740 species and varieties representing 39 percent of the 4,460 plants currently recognized by the Oregon Flora Project at Oregon State University. It also includes a color map of Lane County's five major ecoregions; and information about rare and endangered species, noxious weeds, and escaped cultivated plants. Information is included for every species on habitat, ecoregion, occurrence frequency, and native or non-native origin. To order, send **\$15** payable to Emerald Chapter, NPSO to Lane County Checklist, Emerald Chapter, NPSO, PO Box 902, Eugene, OR 97440-0902.

**Camas Tee Shirt from Cheahmill Chapter.** Beautiful moss green or tan tee shirts with botanical drawing in color of *Camassia quamash* by Carlton, OR artist and Cheahmill chapter member Marilyn Karbonski. Short sleeve, high quality, **\$15 plus shipping**. For ordering information call 503-852-7230, or send order to PO Box 291, Carlton, OR 97111.

**NPSO Membership Directory** lists names, addresses, phone numbers, and e-mail address of NPSO members (April 2001). Available from Jan Dobak, 2921 NE 25th Avenue, Portland, OR 97212-3460. **\$3 postpaid**.

**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. **Price: \$10.**

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**Oregon's Rare Wildflower Poster** depicts Punchbowl Falls and three of the Columbia River Gorge's endemic wildflowers. Text on the back describes the natural history of the Gorge and the mission of the NPSO. Available from Stu Garrett, 21663 Paloma Drive, Bend, OR 97701, 541-389-6981. Individuals may order posters at **\$12 each**, plus \$3 per order for shipping. Posters are mailed in tubes.

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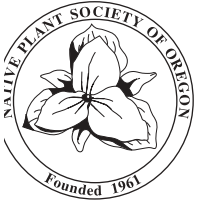
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TANYA HARVEY

*Avalanche lilies (Erythronium montanum) bloom in spectacular masses after snowmelt, but can still be seen in late August as here on Mt. Hood if pockets of snow remain long enough in some areas.*

## Call For Papers

by *Cindy Roché*, *Kalmiopsis* Co-editor

**T**he new issue of *Kalmiopsis* will be coming out soon, which means that the editors are looking for articles for next year. There are openings for an Oregon Plants, Oregon Places article, Plant of the Year, and an article about historical botanists. We have one exciting feature article already promised (you have to wait, I'm not going to tell you the subject).

Oregon Plants, Oregon Places and Plant of the Year are your opportunity to showcase a part of Oregon or a species that is special to you! Do you like to draw or photograph Oregon native plants, or maybe make up botanical cartoons or write botanical poetry? Here is an opportunity for publishing your creativity (we said publish, not sell).

Please refer to previous issues of *Kalmiopsis* for length and content of articles, and to the 'notice to contributors' inside the back cover of volumes 7 to 9 for submission instructions. The submission deadline is December 1, but prospective authors may contact Cindy Roché to negotiate a (slightly) later date. (However, if another author submits first, your article may wait until the next issue to see the light of publication). Editor contact information: 109 Meadow View Drive, Medford, OR 97504, [crupinaqueen@charter.net](mailto:crupinaqueen@charter.net).