

Douglasia

VOLUME 30, NO. 1 WINTER 2006



Journal of the

WASHINGTON
NATIVE PLANT
SOCIETY

*To promote the appreciation
and conservation of Washington's
native plants and their habitats
through study, education,
and advocacy.*

The wind and the willows

Page 10

Study Weekend June 23-25

Page 14

Help collect noxious weeds

Page 19



Contents

Features

Book Review: <i>Plants of Western Oregon, Washington, and British Columbia</i>	8
Taxa Talk: The wind and the willows, <i>Dana Visalli</i>	10
WNPS Study Weekend, June 23-25	14
Help collect noxious weeds, <i>Peter Zika</i>	19
Member profile: George Wooten, <i>Dana Visalli</i>	26
Call for artists!	27

Departments

President's message, <i>Dean Longrie</i>	1
Conservation update, <i>Mike Marsh</i>	4
WNPS list serve	7
Advertise in <i>Douglasia</i>	28
Plant lists available online	28
Information for contributors	28
Welcome new members	29
Thank you for your generosity—2005 Donors	30
Earth Share: Giving at the workplace	32
Join WNPS	32

Douglasia

(ISSN 1064-4032) is published quarterly by the Washington Native Plant Society.

See inside back cover for a WNPS directory and for subscription and membership information.

Douglasia logo designed by Louise Smith of Seattle.

Printed on acid-free paper using 30% post-consumer waste.



The Washington Native Plant Society is an affiliate of Earth Share of Washington.

www.wnps.org

Editorial Board, Chair

David Biek
3830 Nassau Ave NE
Tacoma, WA 98422-2242
(253) 927-2654
davidbiek@comcast.net

Managing Editor

Karen Gatrell
gatrellk@msn.com

Layout Editor

Kimberly Galimanis

Editor Emeritus

Dr. Arthur R. Kruckeberg

Assistant & Contributing Editors

Joe Arnett
Elizabeth Binney
David Giblin
Catherine Hovanich
Richard Robohm
Linda Storm
Anna Thurston
Fred Weinmann
Jane Wentworth
Kathleen Winters

WNPS Fellows*

William Barker**
Nelsa Buckingham**
Melinda Denton**
Lee Ellis
Betty Jo Fitzgerald
Mary Fries
Amy Jean Gilmartin**
Al Hanners
Lynn Hendrix**
Karen Hinman**
Art Kermoade
Arthur R. Kruckeberg
Joy Mastrogioseppe
Lou Messmer
Joe Miller
Margaret Miller
Mae Morey
Brian O. Mulligan**
Ruth Peck Ownbey
Jim Riley
Ron Taylor**

* To become a WNPS Fellow is the highest honor given to a member by our Society. This title is given to those who have made outstanding contributions to the understanding and/or preservation of Washington's flora, or to the success of WNPS.
** Deceased

Editor's note

This is a particularly chock-full issue of *Douglasia*, with timely information for the upcoming field season. Many thanks, as always, to all the contributors.

In this issue, Peter Zika tells how members can help expand our knowledge of noxious weeds by collecting and donating specimens to the U.W. and WSU herbariums. Invasive species is one of WNPS's top focus areas, and this is an instrumental way members can help. We are especially thankful to Cindy Talbott Roché for permission to use her beautiful illustrations to accompany this article.

Also, in this issue's Taxa Talk, Dana Visalli takes a comprehensive look at Washington's willows. Dana has developed a "mini-key" to identify the willows, which readers can copy and carry with them out in the field.

And yes, it's that time again—time to mark your calendars for this year's Study Weekend, to be held in Northeastern Washington on June 23 to 25. Details and the registration form are all inside.

We hope you enjoy these and all the articles inside, starting with a message from WNPS's new president, Dean Longrie.

Wishing you a safe and productive 2006,

Karen Gatrell

WNPS State Board of Directors: Meetings 2006

April 8, 2006

October 21, 2006

For more information on agenda and location contact the WNPS office two weeks ahead of the meeting date.

President's message

by Dean Longrie



30th anniversary: Reflection and vision

WNPS celebrates its 30th anniversary this year. As the new president, I am the 14th president of the Society and I am excited about building upon the work and the energies of my predecessors.

Let me start with a brief self-introduction. Born and raised in Wisconsin, I had a life-influencing experience on a small dairy farm owned by close friends. There I saw on-the-ground conservation of natural resources—wildlife, native flowers, marshes and woodlands, though I certainly would not have described it as such at the time. After military service I started college majoring in botany, though my goal was to be a wildlife biologist. Leaving Wisconsin, now married, I went off to Michigan State University where I earned an MS and Ph.D. in Wildlife Ecology. We moved our family of four to Vancouver in January of 1978. I started my career with the U.S. Forest Service as the Forest Wildlife Biologist for the Mt. Hood National Forest in March of 1979. In 1989 I moved into the Regional Office and was given the opportunity to start a Regional Botany Program. I was in the right place at the right time. While working on the Mt. Hood, I started a Botany Program and supervised one temporary botanist for over six years. I strongly felt a long-term need, if only for threatened, endangered and rare plants. Funding for a botany program was earmarked by Congress. Only one Region—Region 6 of National Forests in Oregon and Washington—used some of those funds to hire full-time permanent botanists. By the time I took early retirement in 1997 we had permanent botanists on every National Forest in the Region. We had the honor and good fortune of initiating “Celebrating Wildflowers,” which soon became a national program with the Forest Service. I now spend most of my time running a landscape construction business I started part-time in the early 80’s. I am active with the Clark Conservation District, the Washington Association of Conservation Districts, and the Clark County Endangered Species Advisory Committee. As the first Regional Botanist headquartered in Portland I was active with the Oregon Native Plant Society and the Berry Botanical Gardens. Whew, enough of me. I am here to serve you through our WNPS.

In this 30th year, WNPS has a lot to be happy about as we reflect on past milestones. In 1976 we began with 100 members and a visionary leadership including Dr. Art Kruckeberg, WNPS founder and first president. The founding members envisioned a Society dedicated to the conservation, appreciation and study of the state’s native plants and their habitat. Regular member dues were 8 bucks back then; they’re now \$25.00. That’s a \$17.00 increase over 30 years which is not bad. We’ve done a lot because of your support.

30 years of research and conservation highlights

From the very beginning the Society started compiling a list of rare plants and in 1977 presented its first workshop on endangered plants. Charter members, Dr. Art Kruckeberg and Dr. Melinda Denton, were key to developing a rare plant list that served as a foundation for the Natural Heritage Program. In 1980, the Society also advocated for “permanent” status for Washington’s Natural Heritage Program. The Heritage program develops and maintains a comprehensive data base and information system on the location of Washington’s rare/sensitive plants and habitats. This information is used by land managers, planners and researchers to ensure protection for these plants/habitats.

It was in 1977 that the Plant Inventory and Research Committee was formed and WNPS awarded its first grants totaling \$1,000.00 to four applicants. Since that time thousands more have been awarded to individuals working to further our knowledge and understanding of Washington’s native plants.

A second standing committee, the Conservation Committee, was established in 1977. The Society’s conservation and research activities have often complemented each other as WNPS has advocated for recognition and preservation of special areas in Washington.

In 1980 Mt. St. Helens erupted with a “Big Bang” and the Society sponsored the study of plant recovery in an area of volcanic devastation. Using some of the preliminary studies, the Society advocated for National Monument Status for Mt. St. Helens in 1982. In this same year WNPS also advocated for the establishment of more Research Natural Areas (RNA’s) on U.S. Forest Service managed-lands.

WNPS began working for the establishment of the Big Beaver Valley RNA in 1984 while Seattle City Light planned to raise the level of Ross Lake to help meet consumption needs in the metropolitan area. In 1986,

the Society applied for its first grant from the Skagit Environmental Endowment Commission for \$5,000 to conduct a plant inventory of the Big Beaver Valley. The subsequent survey identified a stand of 1,000-year-old cedar near Ross Lake. The discovery of this ancient cedar stand along with other WNPS activity resulted in the east half of Big Beaver Valley not being flooded as initially planned by Seattle utility.

It was onto mountain goats in 1988 when WNPS became concerned about the impact of these introduced animals in Olympic National Park and began advocating for their reduction and removal. The goats were introduced in the 1920s. As numbers increased they were responsible for severe damage to rare endemic species by their wallowing in the fragile meadow alpine habitat.

The Society began working on a Native Plant Code of Ethics in 1984, and in 1989 adopted a set of Guidelines for the Sale and Collection of Native Plants. A Conservation Policy was adopted in 1997. In recent years the Conservation Committee has been active on many fronts, and quarterly reports in *Douglasia* have been keeping the membership informed about important issues affecting native plants in Washington. Mike Marsh has done an extraordinary job as Conservation Chair for the Society. He will be stepping down from the chair position but will remain on the committee to help the new Conservation Chair for WNPS, whom I'm pleased to announce will be John Browne, Jr.

30 years of education highlights

It was 1979 when the Society organized its first Study Weekend which was held at the Cispus Environmental Learning Center. Since that time we have had a WNPS Study Weekend every year except the year of the Mt. St. Helens eruption when the weekend was cancelled. Study Weekends were intended as an opportunity for members to learn about native plants in different parts of Washington. This year I'm looking forward to our Study Weekend in northeastern Washington which is presented in this issue. If you're interested I'd encourage you to register early.

To study and learn about native plants is part of the Society's mission. The Education Committee, a WNPS Standing Committee, was formed in 1983 and it began to distribute education grants to others in 1984. Since that time many, many grants have been awarded to schools, learning centers, museums, chapters and others in an effort to spread the word about native plants and enhance educational efforts.

The Society along with partners including the North Cascades Institute, the Mt. Baker-Snoqualmie National Forest and the U.S. Fish and Wildlife Foundation, created the "Celebrating Wildflowers" curriculum project in 1991. This successful education effort provided teacher training workshops and materials throughout the state to enhance education in conservation and appreciation of native plants. Laura Potash, Forest Botanist on the Mt. Baker-Snoqualmie and a past president of WNPS, was a leader in the "Celebrating Wildflowers" initiative and curriculum project.

WNPS began another major educational effort with the Native Plant Stewardship Program in 1996. Participants in the program are taught the importance and use of native plants in restoration and landscaping. To date, 333 Native Plant Stewards have graduated from this program. Native Plant Stewards, in return for their training, have logged over 50,000 hours of volunteer service in community education, habitat protection and habitat restoration. Grants supporting this training have come from King County/USDA Forest Service, Snohomish County Surface Water Management and most recently the Pierce County Conservation District.

Other educational programs initiated by WNPS include the Ivy OUT program in 2000 and the Growing Wild Program in 2003. Then in 2004 WNPS helped to initiate the first Native Plant Appreciation Week in Washington. This was continued in 2005 and this year the 2006 Native Plant Appreciation Week will be the first week of May. Mark your calendars.

Last but not least on the education front, the biggest purveyors of education are the chapters throughout Washington who offer great programs, field trips and other activities for members and the public to learn about Washington's native plants.

Publications

The Washington Native Plant Society is proud of its quarterly publication which has been offered since 1977. It was in that year, also, that the name *Douglasia* was established for this publication. In 1979 the WNPS logo was selected and it has been on the publication ever since. It included the Douglas maple and Douglas fir as representational for Washington.

The first Occasional Paper, "Steppe by Steppe" Understanding Priest Rapids Plants, by Joy Mastrogiuseppe and Steve Gill was published by WNPS in 1983. WNPS has published seven Occasional Papers and will publish this year our eighth, titled: "A Centenary Survey of Plant

Life in Washington State: Retracing the 1892 Collecting Trips of Louis F. Henderson,” by Sarah Gage and Sharon Rodman.

How we've grown

Our first chapters (Central Puget Sound, Central Washington, South Sound and Palouse) were organized in 1977. Membership almost tripled at the time. The Koma Kulshan Chapter was formed in 1978. The Northeast Chapter was formed in 1982 followed by the Olympic Peninsula Chapter in 1983. The Suksdorfia and Okanogan chapters were formed in 1984. The Salal Chapter formed in 1991. In 1995 the Wenatchee Valley Chapter formed and in 1997 the Society welcomed the Columbia Basin and San Juan Islands chapters. In 2002 a new entity, the sub-chapter, was formed by Walla Walla Society members who also belong to the Columbia Basin Chapter. The Society has grown from 100 to nearly 1,700 members in 30 years. This is large by most Native Plant Society standards, but dwarfed by the California Native Plant Society and the New England Wildflower Society, the latter of which encompasses many states.

Growth and fundraising seemed to go hand-in-hand as the Society looked at the many possible ways to fulfill its mission and support the ideas and organizational growth. The Society's first venture into fundraising in 1983 included the sale of T-shirts and note cards. The first Native Plant Sale was held in 1984. WNPS filed with the IRS for the first time in 1991 when our budget grew to over \$25,000. Total revenue in 2004 was nearly \$175,000. Balancing organizational growth and financial support required Strategic Planning, which the Society's Board of Directors began in 1992 and have continued ever since.

Through the years the Society has revised its bylaws a number of times, adopted many policies, prepared a business plan, and established a permanent office located in Seattle in 1999. Two part-time staff have been hired and many individuals have worked for WNPS under professional service contracts to implement the Stewardship Program, Ivy OUT, Growing Wild, the Native Plant of the Month Campaign, and our newest endeavor to document Invasive Species described in this issue.

The Society established the WNPS Fellows Award, the highest honor of the Society, recognizing significant and/or long term statewide contributions, and selected 16 Fellows in 1995. This year we will add to the list of WNPS Fellows during the 2006 WNPS Study

Weekend—another reason to attend.

The Society's vision for today and the future is found in our Strategic Plan and in our collective minds and imagination. I invite you to look at the current strategic plan on our web site at www.wnps.org. Best to you all and I look forward to meeting you.



Washington's Third Annual Native Plant Appreciation Week

April 30th through May 1st, 2006

Woodbrook Nursery

Growing NW Native Plants

Over 120 types of native plants

For plant list check our web site
(www.woodbrook.net)

Hours: Fri. & Sat. 10 AM to 4 PM
(Except some holidays – check website)

Farm site: 5919-78th Ave NW
Gig Harbor, WA

Mail & Office: 1620- 59th Ave NW
Gig Harbor, WA 98335

Phone: (253) 265-6271 (Office)
Fax (253) 265-6471 (Office)
Cell (253) 225-1900 (Farm)



Conservation update

by Mike Marsh, WNPS Conservation Committee Chair

Forests—Spotted owls, old growth forest and Washington's Forest Practices Board

The northern spotted owl has been at the center of controversy over logging practices in Washington and Oregon for at least 11 years, since President Clinton's Northwest Forest Plan was adopted. In 1996, Washington's Forest Practices Board adopted rules for timber harvest, which established ten landscapes called Spotted Owl Special Emphasis Areas (SOSEAs) totaling 786,400 acres, within which proposed harvest of suitable spotted owl habitat would receive environmental review intended to provide some protection for the species. The rules as adopted contravened certain scientific advisory group recommendations, dropping recommended protections for specific habitat areas along the Cascades and in southwestern Washington, and allowing for complete harvest of some owl territories. The state, and several timber companies with owls on private land, entered into agreements called Habitat Conservation Plans (HCPs) with the US Fish and Wildlife Service. Such a plan permits "incidental take" (harm to members of the species concerned) as long as the parties carry out agreed-to measures assuring long-term protection of the species.

Despite the partial protections thus afforded, over the past 10 years, spotted owl numbers have declined in the state at an average rate of 7%.

In 2004 the Washington Department of Natural Resources and Washington Department of Fish and Wildlife agreed to gather information useful to both agencies on the amounts of harvest between 1996 and 2004 within spotted owl habitat and the net change in suitable spotted owl habitat over that period. The resulting study (Pierce et. al, 2005) found a reduction in spotted owl habitat through timber harvest of approximately 6% (7% in the August, 2005 draft of this report) since 1996, with 15% (17% in the above cited draft) of this harvest occurring on state and local lands.

On non-HCP lands in SOSEAs, 5% of the Spotted Owl habitat within owl circles (circular areas of 6,500 or more acres around an active Spotted Owl Nest) was harvested from 1996 to 2004. But 10% of spotted owl habitat outside of owl circles was harvested. On HCP lands in SOSEAs, in contrast, approximately equal proportions of

Spotted Owl habitat, relative to the total owl habitat, was harvested within owl circles and outside of them.

Despite Forest Practices Rules acknowledging that 40% of the landscape (the federal guideline marking the minimum threshold at which an owl pair can survive) within an owl's territory should meet established habitat criteria for structural complex forest, the average landscape within owl circles in most SOSEAs is significantly below that threshold. Furthermore, habitat loss from logging outside of owl circles (and within SOSEAs) was twice as high as that inside them, so that owl habitat will become increasingly fragmented, and eventually will be restricted only to that within inhabited owl circles. Furthermore, the Rules permit the "decertification" of owl circles not inhabited for three consecutive survey years, thus progressively restricting the available unoccupied territory for dispersal to and occupation by young owls.

The Pierce report recommends that long-term landscape level planning be implemented to counteract the trends just noted. It also recommends the development of better quality habitat mapping.

In a meeting on November 9, 2005, the Forest Practices Board rejected a proposal by staff to implement landscape level planning, which would address the issue of habitat fragmentation ("Tighter review of owl habitat rejected," Seattle Post-Intelligencer, November 10, 2005). The Board is chaired by Pat McElroy, a DNR employee, who according to a November 9 P-I report, had met privately with timber industry members and agreed to conceal the recommendation by DNR staff. That charge is supported by the following passage from a memorandum from Washington Forest Protection Association Executive Director Bill Wilkerson, Director of Environmental Affairs Josh Weiss, and Director of Strategic Communication Cindy Michell dated December 3, 2005, which I obtained at the Washington Forest Practices Board hearing:

"Late yesterday Bill Wilkerson, Bob Meier, Kevin Godbout, Court Stanley and Josh Weiss met with Pat McElroy and Lenny Young. Lenny presented 14 recommendations on actions that the board could take on spotted owls. A number of the recommendations were similar to actions that the Board could take on spotted owls. A number of the recommendations were similar to actions approved by the WFPA Board of Trustees at Chelan. Many of the recommendations were new, and several were completely unacceptable. The worst was a change in the definition of spotted owl critical habitat which would result in a SEPA trigger [requiring

an environmental impact study and statement] for any harvest of suitable habitat inside a SOSEA (rather than within a circle).

Pat was clear that the 14 points were not his recommendations, and that he would not himself support all of them. At the end of the meeting, Pat agreed that the document would be substantially revised, eliminating the SEPA trigger recommendations. This was important to us, because they plan to brief the environmental groups today.

Pat informed us this morning that the Commissioner [Doug Sutherland, Commissioner of Public Lands] did not want to risk the environmental litigants discovering that the recommendations had been modified to appease the industry, and that they would not be amending the document. When explaining the recommendations, Pat will explain that he does not feel that the SEPA trigger is a viable option, and that he will not be supporting it or recommending it to the Board."

The "SEPA trigger" referred to in the memo would have provided some interim protection while the landscape level planning recommended by the Pierce report was worked out. Such planning would be designed to greatly reduce the habitat fragmentation occurring under present forest practices rules that is so detrimental to spotted owl population recovery, as well as to the futures of native plant communities. As expected, the Board did not adopt this measure despite testimony from several environmental groups.

Shrub-steppe

Inland Northwest Restoration Conference

The first Inland Northwest Restoration Conference was held October 28-30, 2005, at Washington State University in Pullman, Washington. Participants and organizers included restoration practitioners, ranchers, farmers, seed collectors, native seed companies, nurseries, tree planters, conservationists, researchers, agency representatives, Native Americans and others engaged in or interested in restoration. This conference was put on by a grass-roots organization called the "Inland Northwest Grassroots Restoration Coalition" and was a unique gathering of people who are doing work on the ground to restore native plant communities and ecosystems in eastern Washington, eastern Oregon, Idaho, Montana and south interior British Columbia. Workshop topics ranged from controlling weeds such as the challenging cheatgrass to using native plants with economic value for food, medicine and other uses. The theme of large-scale landscape

restoration spanned the topics of native seed production, the equipment needed to do large scale restoration activities, and large scale restoration efforts, with the Hanford reserve being used as an example of what is needed in arid land systems. Habitat restoration addressed shrub-steppe and bunchgrass, cryptobiotic crust, beaver habitat, large-scale arid lands such as the Hanford reach, arid stream and camas meadow restoration, forests, rangeland improvement, and management of invasive species, particularly cheatgrass.

Several WNPS members facilitated workshops. Pam Camp organized a session on how to restore native plant communities to areas cropped in crested wheatgrass. Linda Storm organized a workshop where tribal members and representatives addressed traditional ecological knowledge and restoration and use of native plant communities, fisheries, and hunting grounds. For example, Gwen Carter, a Nez Perce member and Director of the tribe's Water Resources Division, demonstrated the materials for baskets, dyes and food products from plants her family still gathers. Roger Jacob, a Yakama member and Yakama Native Food and Medicinal Plant Project Lead, addressed the Starvation Flats restoration project that involved raising the water table in a downcut stream to replenish adjacent wet meadows. The wet meadows support *sawitke* (Indian carrot or *Perideridia gairdneri*) and *wak'mu* (blue camas or *Camassia quamash* var. *quamash*), two important root foods that continue to be gathered today.

A key intent of the conference overall was to "grow" core, locally based groups from a number of smaller biogeographic regions within the larger Inland Northwest. These groups will continue to collaborate and exchange knowledge, working together to restore systems within their area. The second annual conference will be held the first weekend of November in 2006 in the Tri-Cities area. WNPS is invited to join the Oregon Native Plant Society, the Inland Northwest Grassroots Restoration Coalition and others to be a co-sponsor.

Badger Mountain shrub-steppe park

Friends of Badger Mountain, a group of individuals near Richland, Washington, have worked to preserve the upper portion of that 1,135-ft. peak in southern Richland. Badger Mountain supports an unusually rich shrub-steppe flora. Members of the WNPS Steppe in Time program, while measuring vegetation at over 32 sites in Benton County in the 1990s, often found up to 40 or more species in plots on Badger, compared to 15 to 25 species at other sites. A variety of grasses, buckwheats, biscuitroots, locoweeds, and evening primrose were

found, and off-beat (for this area) shrubs such as winterfat were also seen.

Friends of Badger Mountain has secured funding for and arranged purchase of 574 acres of land on the mountain, and now has begun construction of a trail. Janelle Downs reported on the Columbia Basin Chapter's recent hike up Badger with members of this group in the December issue of *Phlox Phlyer*. The chapter plans to advise and assist with restoration in the new parkland.

Garry Oak and associated plant communities

Year in review

This past year the State Board's Conservation Committee increased the WNPS profile as one of the leaders in raising awareness about protecting and restoring Garry oak and associated plant communities. Linda Storm took the lead in this area for the Committee. Several things

accomplished this year include: Revising and re-publishing a brochure with The Nature Conservancy, *South Puget Sound Prairie and Oak Communities*; participating in the British Columbia-based GOERT (Garry Oak Ecosystem Recovery Team) annual technical symposium on the status and recovery of Garry oak systems; and arranging a meeting specifically focused on Garry oak and associated prairie communities in conjunction with the WNPS board retreat in March (see www.wnps.org under Garry oak priority for meeting and presentations summary). This event gave chapters and board members the opportunity to learn and share information about work to protect and conserve Garry oak and associated prairie ecosystems, and to hear from local, state and federal agencies and non-profit groups about their activities and stewardship funding programs.

WNPS Conservation Committee members attended sessions on Garry oak restoration and conservation at the Northwest Science Meeting in Corvallis, Oregon,



Caption: Controlled burn of Garry Oak prairie at Glacial Heritage Preserve, Thurston County. Native Americans used fire in this way to encourage herbaceous plants whose roots were harvested for food. Burning also prevented the encroachment of woody plants. PHOTO: LINDA STORM

March 2005, and moderated a day-long session on Garry oak/prairie restoration at the April 2005 meeting of the Pacific Northwest Chapter of the Society for Ecological Restoration (SER) held in Seattle. A field trip was also co-led by WNPS and TNC members to Glacial Heritage preserve where participants were able to see the effects of burn, herbicide and mowing treatments on Scot's broom and other non-natives in the effort to restore these systems.

Seward Park

WNPS members influenced the direction of Seward Park's management plan. The efforts of Stuart Wechsler, Paul Talbot, and other WNPS members successfully convinced Seward Park managers to incorporate Garry Oak restoration into their management plan.

Riparian oak woodland understory burn

On September 1, 2005, TNC and Washington Department of Natural Resources treated a 50-plus-acre oak woodland riparian corridor along the Black River at Glacial Heritage Preserve in Thurston County. Linda Storm had the opportunity to observe an understory burn. This is probably the first time this area has been burned in the last 150 years. Next spring WNPS members will be invited to document the plants that recover and respond to this prescribed burn.

Cross-base Highway update

The proposed Cross-base Highway on Ft. Lewis, which would divide a stand of Garry oak and ponderosa pine woodland and cause serious environmental damage, besides threatening rare and endangered plant and animal species, continues to have life, with inclusion in the list of projects for which a substantial sum of money was appropriated in the last state legislature. Conservation Northwest (formerly Northwest Ecosystem Alliance) is sharing leadership of opposition to this project with Tahoma Audubon. A WNPS Conservation Committee member has been attending some of their meetings.

Invasive plants—Washington State bioagent news

According to Ed Alverson, a blackberry rust (*Phragmidium violaceum*) has been reported from Oregon and from one site in Washington in the past several years. The rust affects Himalayan and evergreen blackberry, but Alverson states that "it does not seem to affect native species of *Rubus*," although he does not report whether testing has been done.

Richard Tinsley circulated a year-end e-mail summary of news from Washington State University Extension's Integrated Noxious Weed Invasive Species Project. The publication was too long to include here. Topics of special interest included:

- Leafy Spurge News: More than 1.2 million *Aphthona* leafy spurge biocontrol agents (flea beetles) and 3,000 red-headed leafy spurge stem-boring beetles were collected for release in Washington.
- Weeds Cross Borders Project: Legislative Tour from Okanogan to sites in Canada.
- Houndstongue Insect Update: In 1997, the houndstongue root weevil, *Mogulones cruciger*, was released in Canada. The root weevil is not approved for release in the United States because of its potential impact on nontarget plant species related to houndstongue, including one endangered species only found in Washington State.

Contact Jennifer Andreas at (206) 205-3135 for more information.

Reference:

Pierce, D. John, Joseph B. Buchanan, Brian L. Cosentino, and Shelly Snyder. 2005. An Assessment of Spotted Owl Habitat on Non-federal Lands in Washington between 1996 and 2004. Washington Department of Fish and Wildlife, Olympia, WA.



Sign up for WNPS list serve

Want to get involved with discussions about native plants and related issues with other WNPS members? The WNPS list serve offers announcements, news, and discussion relevant to native plants and the WNPS membership.

How to sign up: Email wnps@wnps.org and ask Catherine Hovanic to be added to the list. You must be a current WNPS member. Catherine will forward your request to our list provider who will add you to the list and email you with instructions for posting and unsubscribing.

Plants of Western Oregon, Washington, and British Columbia

By Eugene Kozloff

Timber Press, Portland Oregon 2005

Reviewed by Fred Weinmann

At irregular multi-year intervals, botanists of the Pacific Northwest are treated to landmark publications which expand our knowledge, enhance our appreciation, and serve to emphasize the importance of plants in our landscapes. Some examples include *Flora of Washington* authored by

Charles Piper in 1906 (I was not on the scene to appreciate this book when it was published but it remains useful for historic records) and *Vascular Plants of the Pacific Northwest* published in five parts between 1955 and 1969 by C. Leo Hitchcock, et al (and its condensed one volume version published in 1973). As an easy-to-use, transportable, and accessible field guide, Pojar and MacKinnon's *Plants of the Pacific Northwest*

published in 1994 has been a warmly received and welcome addition to our book shelves. The new book by Eugene Kozloff is in the same league as these publications.

Plants of Western Oregon, Washington and British Columbia is a blend between a field guide and a technical manual or flora. It is comprehensive with respect to species coverage and relies on binomial keys for identification, two features that would be expected of a good flora. On the other hand the illustrations rely largely on photographs, which is more characteristic of a field guide. This format expands the utility of the book to a broad range of plant people. Along this vein I believe readers will enjoy the paragraph devoted to the process of "Picture Keying" with an explanation of its utility and probable practitioners.

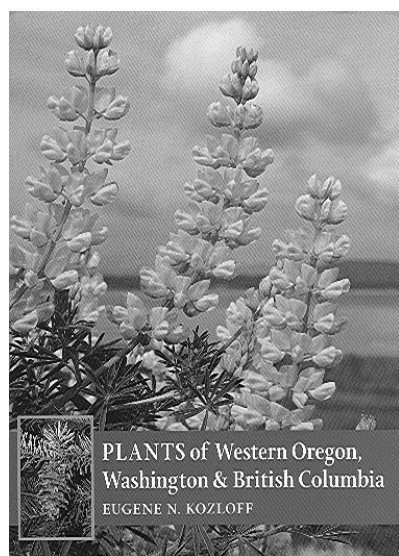
Here are some particulars. The geographic range of the book includes those lands west of the crest of the Cascades from southern British Columbia south to the

California border. A significant advantage of this range, which extends south of the area covered by Hitchcock et al., is the inclusion of southern Oregon and the Siskiyou Mountains. This remarkably diverse area with its serpentine soils including wet serpentine seeps is underrepresented in our regional floristic literature. The Kozloff book provides botanical access to the Siskiyou flora that makes it worth a trip to the area next spring or summer.

A noteworthy attempt has been made to include all native and non-native species growing wild within the region, a daunting task considering the many non-native introductions and garden escapes that have become established on our landscapes; and the minimal effort that has been devoted to herbarium collecting for recently established non-native species. The effort was worth it and has resulted in coverage of over 2,500 species. We now have a reference book for many plants that may have previously required researching literature for eastern North America, Europe, Asia or other parts of the world.

The taxonomy and nomenclature is first rate and up to date. Current scientific names will always be a moving target, but Kozloff has done an excellent job of using names that have become widely accepted while not including every name change that has been published. For example, the book includes many of our old friends in the genus *Aster*, even though there is published material that would eliminate the genus *Aster* from our Northwest flora by dividing the species into several different genera. While this may be the trend—and the future, when the Asteraceae volumes are published by the Flora of North America project—most of us are not ready to adopt the complete array of new generic monikers for our *Aster* spp.

Careful attention to taxonomy and nomenclature will calm some of the persistent confusion about native and non-native species in our flora. The genus *Cardamine* provides a good example. For several years, many regional botanists have realized that the small weedy *Cardamine* which grows as a winter annual (often flowering in January) in multiple habitats of Pacific Northwest lowlands (gravel driveways, roadsides, cracks and crevices, rain gutters, etc.) is really *Cardamine hirsuta* (an introduction from Europe) rather than *C. oligosperma*, the taxon it keys to in Hitchcock et al. Our native *C. oligosperma* is found in habitats such as rocky balds and moist prairies. The issue about these two species comes up as a question on Internet botanical discussion groups nearly every year. The Kozloff book should reduce the confusion. (Note: The morphological character used by Kozloff to separate the two taxa is the shape of the tip of the fruit, a good character but requires mature



fruits. The two species can also be separated by stamen number, nearly always four stamens for *C. hirsuta* and six for *C. oligosperma*.) Another example is the clarification of the taxa of giant knotweeds. The morphological distinctions between *Reynoutria* (*Polygonum*) *cuspidata*, *R. sachalinensis* and their hybrid, *R. X bohémica* are clarified. This should be helpful to the weed managers of the region who are working to control these noxious species. An excellent feature throughout the book is an indication of the country or region of origin for those species not native to western British Columbia, Washington or Oregon.

The book takes an unusual tact to keying the flowering plants. There is one key for Broad-leaved Trees, Shrubs and Woody Vines, and a second key for Herbaceous Flowering Plants. This approach will appeal to the logical botanizer even if not in tune with the phylogenetic approach of technical manuals. Within each of these keys one might end up at the name of a plant family (e.g. the Juncaceae), a complex consisting of two or more genera (e.g. the *Eri-cameria*-*Pyrrhocoma*-*Columbiadorea*-*Hazardia* complex), a single genus or even a species. At this point the text will direct you to another key as necessary (usually a family key) that separates the species of the various genera. Kozloff strives to eliminate obscure botanical language from the keys. In doing so, he provides accessibility for botanists at all levels of proficiency. Descriptions for each species are limited to the material in the keys, that is, there are no separate species descriptions. Obviously this would have required several volumes rather than a single book. The five volumes by Hitchcock et al. will continue to serve for those seeking that kind of detail.

There are line drawings for some species, but the sine qua non of the book's illustrations is provided by over 700 color photographs. The photography is high quality and represents decades of patient work and attention to detail by the author. Plant photography is often a choice between a beautiful, artistic photo (often a macro shot) or a photo that actually aids in the identification of a species. The Kozloff photographs represent an excellent compromise between these objectives—they are enjoyable as beautiful representations of nature as well as helpful for identification. The shiny yellow flowers of buttercups and the pure whites of many species represent two of the most difficult photographic challenges. Details get washed out or lost in the glare. Photographs in this book retain the detail in nearly all cases. As I peruse the photos I can visualize and almost hear Eugene Kozloff giving one of his patented plant talks, illustrated with color slides.

No botany book can be all things to all people. That's why we allocate several book shelves to the subject. For

species with limited range, a comment is usually included; for example, for *Castilleja parviflora* var. *olympica* the range is described as Olympic Mountains, Washington. This approach is helpful but is not included for all species with limited range. The book would have benefited from maps with shading to show the geographic range of species.

Coverage of the family, Sarraceniaceae, is limited to a discussion of the range of *Darlingtonia californica*. At least two species of *Sarracenia* (*S. purpurea* and *S. flava*) are naturalized in western Washington. Also, *S. leucophylla* and the Venus fly trap, *Dionaea muscipula* (of the Droseraceae) have persisted in western Washington for at least 7 years. This kind of information, whether you consider these species to be charming interlopers or undesirable introductions, is worth mentioning in a comprehensive flora of the region.

The choice of photo for the front of the jacket cover is a curious one. While *Lupinus arboreus* is a beautiful plant and the photo does its beauty justice, the species is not native to British Columbia, Washington, or Oregon, and has become pestiferous in some areas. Kozloff notes that the species was introduced to the Northwest to stabilize sand.

Along with the bibliographic references it would have been helpful to include web addresses for major herbaria in the region. Collection records for hundreds of thousands of species plus photographs of many species are rapidly coming online for the herbaria at the University of Washington (Burke Museum), Oregon State University and Washington State University. This is not a book that you will routinely carry in your backpack. It is constructed of high quality (heavy) paper and at 500 pages plus, it tips the scale at 3.5 pounds.

Eugene Kozloff and Timber Press have brought us a book that will be widely appreciated and is destined for multiple printings. It fills a substantial portion of the need for updating the Hitchcock and Cronquist one-volume version of *Flora of the Pacific Northwest*. Many of you know Gene Kozloff personally and lots more know him through his many contributions to understanding the natural history of the Pacific Northwest. Previous books include *Plants and Animals of the Pacific Northwest* and *Seashore Life of the Northern Pacific Coast*. We can all join in congratulating Gene on the completion of this excellent book which will be enjoyed and appreciated by all botanical aficionados and practitioners in the Pacific Northwest. Buy a copy and get his signature the next time you have a chance to see one of his slide shows.



The wind and the willows: Why the genus *Salix* is worth a second look

by Dana Visalli, WNPS Okanogan Chapter

There's more to willows than the stubby shrubs that first meet the eye. We might begin a journey to the willows by noting a few of their mysterious aspects. Why do most willows bloom before their leaves appear? Why do their floral structures appear in the form of many wind-pollinated plants—that is, elongated clusters of tiny flowers called catkins—while they are in fact largely insect-pollinated? If they are insect-pollinated, why do the little willow flowers lack petals, which evolved precisely because they attract insects? And if the flowers lack petals, why do insects come to them at all? Last but not least, why are there male and female willows, that is, why do male catkins and female catkins appear on separate plants?



A mourning cloak butterfly nectaring on a female willow catkin.

PHOTO: DANA VISALLI

The blooming of willows, early in the spring before the leaves appear, is a critical herald of the reawakening of life after winter. On the very day that the first willow catkins open, migrant songbirds such as the Ruby-crowned Kinglet and the Yellow-rumped Warbler materialize as if by magic, as the willows begin to palpably vibrate with the buzz of innumerable winged insects.

The catkins are simple though attractive structures, well worth a closer look with a hand lens. The female catkins are composed of numerous small capsules neatly arranged along a stalk, each with a small bract at its base. The cap-

sules can be hairy or glabrous (hairless), and the scale can be dark or light; these are important features if you want to identify the willow to species. The male catkins, which appear on different plants than the females, are a similarly neat arrangement of stamens and bracts. Just before these male catkins burst open in full bloom, they form the fuzzy paw-like structures that elicited the name “pussy willow.”

Both male and female catkins often have a nectary at the base of each tiny flower, producing—you guessed it—nectar, which serves as an inducement for insects to visit. The male catkins are bright yellow, thanks to hundreds of pollen-producing anthers, and serve as a visual attractant to insects, in the absence of colorful petals. Because of this, insects will typically visit male catkins first, picking up pollen in the process, prior to visiting the female catkins, which are usually close by, but lack the bright color. This optimizes for the willows the likelihood that the capsules will be pollinated, and would have to be considered a well thought-out plan, if there were a mind involved in any of this.

While willow catkins have an almost pre-floral, primitive appearance to them, in fact they are considered to have evolved through and away from having showy petals. That is to say, while ancestral species did have petals, modern members of the genus have given them up as extraneous.

The fact that the flowers bloom before the leaves are developed optimizes their visibility to potential pollinators, and may have obviated the need for bright floral structures (petals) to serve as attractants. Blooming early in the spring also ensures the undivided attention of the available cadre of pollinating insects, as there are few other flowers to compete with at this time.

Most willows can reproduce asexually, making genetically identical copies by sprouting new plants from underground roots, or rooting from branches that are pressed to the ground or broken off the parent plant. This type of reproduction has the obvious advantage of not requiring a mate, and is for that reason rather commonly found among plants that pioneer disturbed sites. Willows are of course common along rivers and streams, which are frequently scoured by high-water events.

There is a disadvantage to asexual reproduction, and that is that the genetic diversity of the population is reduced. Every asexually produced plant is a genetic replica of the parent. Genetic diversity is a valuable asset in a constantly changing world, because it allows varied responses to variable environmental conditions.

Willows have optimized the genetic mixing that does occur in a population by evolving the trait of dioecy (the direct translation from the Latin root is ‘two houses’). Willows are



Several catkins together
on a branch. HITCHCOCK



A capsule, one of many
arranged along a female
catkin. HITCHCOCK

dioecious, which means that male and female flowers are on separate plants. Therefore self-pollination—a flower or a plant pollinating itself, which creates a clone of the original—is impossible in willows. Sexual reproduction can only occur between different plants, which mixes up the genes of the parents and creates genetically unique offspring.

The willow family is made up primarily of two genera, the willows (*Salix*) and the poplars (*Populus*, including our trembling aspen and black cottonwood). Poplars are 100% wind-pollinated; they produce no nectar and attract no insects. Their catkins are much longer than willow catkins, and they are pedulous, hanging down to catch the breeze. Willows on the other hand are about 90% insect-pollinated, and most willow catkins are erect, making them more visible to pollinators. Willow pollen is small and light though, and a lesser percentage still takes a chance on riding the wind in search of a receptive female flower.

Take a close look at willow catkins with a hand lens this spring; you will be impressed by what you see.

How to use the “Mini-Key to Willows”

On the following two pages there is a “mini-key” to all but the rarest of the native willow species in Washington State. If you want to use it to identify our willows, I suggest you copy it onto two sides of one piece of paper and tuck it into your botany book.

The key is quite functional, but it is not perfect and will not work for you every time. On the other hand, you will

sometimes be able to key out a willow in just a few minutes, and occasionally in a few seconds! Be aware that willows are highly variable and have many intermediate forms. Many species appear more than once in the key because they are so variable.

Getting started with the key is very easy; getting down to a single species will often take some patience and concentration.

The key is not dichotomous—that is, it is not the either-or set of two choices common in botany keys. Rather, you simply go down the numbered groups until you find a statement that is true for your specimen, and then work within that group to refine your options.

Start with Group 1; if the plant you are keying is not a “Single-stemmed tree over 4 meters tall,” go to Group 2. If you are not in the alpine zone, or if your specimen is not very short, move on to Group 3. If Group 3 doesn’t describe your plant, move on to Group 4.

Once you’ve landed in a numbered group, there may be subgroups to examine. For example Group 4 has subgroups A, B, and C.

Having arrived at an undivided group, you may need to read all the information for each species therein to determine which you have in hand. Pay particular attention to the underlined portions of each description. Be sure to note the ranges; if one species is “coastal” and you are over in Spokane, you can eliminate that species. Also note the elevation. If you are in the high mountains, scratch any species that are “low to mid” elevation.

Two critical characters in identifying willows are 1) whether the leaves are glaucous or not (glaucous leaves have a coating of fine white powder on the underside that can be wiped off with one’s finger), and 2) whether the capsules are hairy or glabrous (hairless).

Note that there is a lot of information jammed into the key in the form of abbreviations, which are defined at the top of the first page. For example, ‘cg’ means the capsule is glabrous, ‘ch’ means it is hairy, ‘cg/h’ means it can be either way.

It’s nice to have the catkins for the identification process, but they often disappear early in the season. A cute little trick I learned from George Wooten is to get down on your hands and knees and scratch around for some dried up ones; you can still perform “forensic botany” on them if you find any. It is, for example, easy to tell even with dried catkins if the capsule was hairy or not. Furthermore, while still on your knees, you will be in a perfect position, if you are successful in your keying efforts, to thank your lucky stars.

Mini-Key to Washington Willows

Dana Visalli/Methow Biodiversity Project, PO Box 175, Winthrop, WA 98862

Key is not dichotomous; read through numbered choices until appropriate statement found, then continue same process in the numbered sub-sections. Willows are highly variable; many species are entered in more than one category below. Take particular note of underlined passages. Numbers in parentheses at end of each species description is page number in Brayshaw's *Catkin-bearing Plants of BC*, which has good drawings.

Abbreviations: b= floral bract, p= pale, d= dark (dark brown or black), h= hairy, g= glabrous, b d/h= bract dark/hairy, y= yellow, grn= green, c= capsule, ch= capsule hairy, cg= capsule glabrous, ch/g= capsule hairy or glabrous, t= twigs (this year's growth), th= twigs hairy, tg= twigs glabrous, th/g= hairy or glabrous, lan= lanceolate, ellip= elliptic, ES/WS= occurs only east/west of the Cascade Crest. **Common names:** alba= golden or white, amygdaloides= peachleaf, arctica= arctic, barclayi= barclay, bebbiana= bebb, boothii= booth, brachycarpa= short-fruited, candida= sage, cascadiensis= Cascade, commutata= undergreen, drummondiana= drummond, exigua= coyote, farriae= farr, fluvialis= river, geyeriana= geyer, glauca= glaucous, lasiandra= whiplash, lasiolepis= arroyo, lemmonii= lemon, piperii= piper, maccalliana= maccall, myrtilifolia= blueberry, melanopsis= dusky, nivalis= snow, pedicellaris= bog, petrophila= rock, planifolia= plane-leaved, pseudomonticola= mountain, reticulata= net-leaved, rigida= Mackenzie, scouleriana= scouler, sessilifolia= sandbar, sitchensis= Sitka, tweedyi= tweedy. **Synonyms:** S. farriae/hastata, lasiandra/lucida, pendulina/babylonica, petrophila split from arctica, piperii/hookeriana, rigida/prolixa.

1. Single-stemmed trees >4 meters tall

- A. Leaves hairy at maturity, above and/or below
 - S. alba**- lvs lanceolate, to 10cm, serrate, acuminate, twigs bright yellow, bract pale/hairy near base, cg, th/tg, moist low elev (32)
- B. Leaves glabrous at maturity, or nearly so
 - S. amygdaloides**- lvs lanceolate, tip long acuminate, to 10 cm, pale yellow-grn above, stamens 3-9, bp/h, cg, tg, low elev ES (32)
 - S. lasiandra**- to 30', lvs narrow, lan to elliptic, to 15cm, w 2 glands at base, stamens 2, by/h, cg, th/g, low/mid, rivers/wet (76)

2. Dwarf alpine sub-shrubs (lvs all +/- entire, all can be glaucous below, all can be hairy or glabrous [nivalis always glab above])

- S. arctica**- to 3 dm high, lvs elliptic to obovate, 1-8 x .5-6cm, catkins to 9cm, style .6-2.2mm, bd/h, ch(cg), tg (36)
- S. cascadiensis**- 1-4 cm high, lvs small, lanceolate to elliptic, 9-26 x 3.8-7.5mm, style .3-1mm, bd/h, ch(cg), th (52)
- S. nivalis**- 1-4cm high, lvs small, elliptic to obovate, 6-22 x 4-15mm, style .2-.4mm, by-grn/hairy within, ch, th/g (100)
- S. petrophila**- 2-10 cm high, lvs oblong to elliptic, to 4.5 x 2cm, style .4-1.6mm, bract p/h, ch, th/g, close to S. arctica, rare (36)
- S. reticulata**- 3-15cm, lvs obovate to circular, 1-6.5 x .8-5cm, wrinkled-veiny above, reticulate below, by-grn/h(g), ch, tg, (100)

3. Leaves very long and narrow, never over 2 cm wide, usually grow as colonial shrubs, occasionally become small trees

- A. Leaves glaucous below, usually more or less hairy
 - S. exigua**- to 25', lvs to 16x1cm, serrulate or entire, style & stigma .2-.5mm, bp/h, ch, th/g; rivers/lakes, low/mid elev, ES (60)
 - S. fluvialis**- to 18', lvs to 15x1.5cm, serrulate, style & stigma .8-1.5mm, bp/h, ch, th, sandy shores only on lower Columbia.
 - S. melanopsis**- to 16', lvs oblong or ellip, to 8.5x2cm, serrulate, style & stigma .2-.5mm, bp/h(g), cg, th/g, on rivers, low/mid (60)
- B. Leaves not glaucous below, S. lasiandra leaves glabrous, S. sessilifolia leaves more or less hairy
 - S. lasiandra**- to 30', lvs narrow, lan to elliptic, to 15cm, w 2 glands at base, style .2-.8, by/h, cg, th/g, low/mid, rivers/wet (76)
 - S. sessilifolia**- to 16', lvs oblanceolate to elliptic, to 10 x 3.5 cm, style & stigma .4-1mm, by/h, ch, th; WS, rare, (110)

4. Leaves hairy at maturity, above and/or below, glaucous below (twigs on all usually all hairy, but can transition to glabrous)

- A. Leaves clearly lanceolate to narrowly elliptic (all +/- shiny above)
 - S. geyeriana**- to 16', lvs lan to elliptic, to 8 x 1.4 cm, often w brown & white hairs, style .1-.3, bp/h, ch, th/g; lakes low/mid (64)
 - S. lemmonii**- to 12', lvs lan to elliptic, to 11x2.2cm, often w brown & white hairs, style .3-1, bd/h, ch, th/g; lakes low/mid, rare, (74)
 - S. melanopsis**- to 16', leaves oblong or elliptic, to 8.5 x 2 cm, hairs white, style .2-.4, bp/h(g), cg, th/g, along rivers, low/mid (60)
- B. Leaves wider (not clearly lanceolate): elliptic, ovate, to obovate and serrate (see next choice for leaves that are entire)
 - S. barclayi**- to 8', lvs ellip to obov, to 9cm, long-hairy, hairy vein above, catkin to 7cm, style .6-2.5mm, bd/h, cg, th/g, mid/alp (40)
 - S. glauca**- to 12', lvs oblan to elliptic, to 10cm, long-hairy, f ament to 3cm, style .3-1.4mm, bp/h, ch, th; mesic to wet, mid/alp (66)
 - S. planifolia**- <12', lvs oblanceolate to elliptic, to 6.5cm, short-hairy, petiole grooved above, style .5-2m, bd/h, ch, th/g, mid/alp (88)
 - S. rigida**- to 16'+, lvs ellip, to 10cm, oft hair on vein above, bract minute, style .3-1mm, bd/g, cg, tg(h), low-mid streams/lakes (92)
- C. Leaves wider (not clearly lanceolate): elliptic, ovate, to obovate and entire
 - C1. Floral bract dark
 - S. lasiolepis**- to 20', lvs elliptic to oblan, 3-12 cm long, thick, edges rolled under, bd/h, cg, th, streams in low, arid areas, ES.
 - S. piperi**- to 16', lvs obovate, to 12 cm, glossy above, hairs white & rust-color below, style 1-2mm, bd/h, cg(h), th-g, coastal (70)
 - S. planifolia**- <12', lvs oblan to elliptic, to 6.5cm, glossy above, petiole grooved above, style .5-2m, bd/h, ch, th/g, mid/alp (88)
 - S. scouleriana**- lvs obovate, to 8cm, crowded at br tips, often with rusty hairs below, style to .5mm, ch, th, wet/dry forest, (106)
 - S. rigida**- to 16'+, lvs ellip, to 10cm, oft hair on vein above, bract minute, style .3-1mm, bd/g, cg, tg(h), low-mid strms/lakes (92)

C2. Floral bract pale

S. bebbiana- to 30', lvs obovate, to 8cm, capsule long & thin, style .1-.4mm, ch, th, low to mid elevations in wet places, ES (44)

S. brachycarpa- to 4', lvs elliptic, small, to 4 cm, very hairy below, female catkin short, to 2 cm, ch, th dry to wet mont/alp (48)

S. glauca- to 12', leaves elliptic to oblanceolate, pale, to 10cm, female catkin to 5 cm, ch, th; dry to wet, montane/alpine, rare (66)

5. Leaves hairy at maturity above and/or below, not glaucous below (tweedyi never entire, candida never serrate, the rest either):

A. Leaves lanceolate to oblanceolate

S. boothii- to 20', lvs lan to elliptic, to 10x3cm, glossy green above, style .3-1mm, bd/h, cg, th/g, mont/alpine wet areas, ES, (46)

S. candida- to 5', lvs lanceolate, to 15x3cm, dull above, long-hairy below, styles .3-1.9, bp-d/h, ch, th, mont wet areas, ES, rare, (50)

S. drummondiana- to 12', lan to oblan, to 9cm, short-hairy below, twigs glaucous, style .5-1.5, bd/h, ch, th/g, mid to subalp (58)

S. sessilifolia- to 20', lv lanceolate or oblanceolate, to 12x1.4mm, midvein raised above & below, by/h, ch, th; WS, rare (110)

B. Leaves elliptic to obovate

S. boothii- to 20', lv lan to elliptic, to 10x3cm, glossy green above, style .3-1mm, bd/h, cg, th/g, mont/alpine wet areas, ES, (46)

S. commutata- to 10', lvs to 8cm, elliptic, long hairy, mid-vein above hairy, style .5-1.2mm, bp/h, cg(h), th lake/strm/tundra (54)

S. sitchensis- to 20', lvs to 12cm, obovate, satiny short-hairy below, stamen 1(most have 2), bd/h, ch, th, wet/dry, low/mont (114)

S. tweedyi- to 12'; lvs elliptic, to 10x5cm, dull green above, style 1.5-3mm, catkins at br tips, bd/h, cg, th, subalp, ES, rare (118)

6. Leaves glabrous at maturity or nearly so, and glaucous below

A. Leaves serrate

A1. Capsules pubescent

S. bebbiana- to 30', lvs obovate, to 8cm, capsule long & thin, style .1-.4mm, ch, th, low to mid elevations in wet places, ES (44)

S. piperi- to 16', leaves obovate, to 12 cm, glossy above, hairs white & rust-color below, style 1-2mm, bd/h, cg(h), th, coastal (70)

S. planifolia- <12', lvs oblanceolate or elliptic, to 6.5cm, glossy above, petiole grooved above, style .5-2, bd/h, th/g, mid/alp (88)

A2. Capsules glabrous

S. farriar- to 7', lvs elliptic to oblanceolate, to 7.5cm, pale yellow-green above, style .3-1.2, bd/h(g), th, subalp, wet to dry (68)

S. lasiandra- to 30', lvs narrowly lan to elliptic, to 15cm, w 2 glands at base, by/h, cg, th/g, low/mid, rivers & wet places (76)

S. piperi- to 16', leaves obovate, to 12 cm, glossy above, hairs white & rust-color below, style 1-2mm, bd/h, cg(h), th, coastal (70)

S. pseudomonticola- to 15', lvs ellip to obovate, to 8cm, midrib oft hairy, margin glandular-serrate, bd/h, th/g, low/mid elev (94)

S. rigida- to 16'+, lvs elliptic, to 10cm, often a band of hairs on mid-vein, bract minute, bd/g, tg(h), low-mid elev strms/lakes (92)

B. Leaves entire or nearly so

B1. Capsules pubescent

S. bebbiana- to 30', lvs obovate, to 8cm, long-tapered to base, bract narrow, style .1-.4mm, bp/h, th, low to mid-wet, ES (44)

S. piperi- to 16', leaves obovate, to 12 cm, glossy above, hairs white & rust-color below, style 1-2mm, bd/h, cg(h), th, coastal (70)

S. planifolia- to 10', lvs oblanceolate or ellip, to 6.5cm, glossy above, petiole grooved above, style .5-2, bd/h, th/g, mid/alp (88)

S. scouleriana- to 40', lvs obovate, to 8cm, crowded at br tips, may have rusty hairs below, bd/h, ch, th, wet/dry forest (106)

B2. Capsules glabrous (more acute in *farriar* and longer acuminate in *pseudomonticola*; leaf midvein oft hairy in latter)

1. Floral bract dark

S. farriar- to 7', lvs elliptic to oblan, to 7.5cm, tapered at base, pale above, bract often bicolored, bd/h(g), th/g, mid/high (68)

S. piperi- to 16', lvs obovate, to 12 cm, glossy above, hairs white & rust-color below, style 1-2mm, bd/h, cg(h), th, coastal (70)

S. pseudomonticola- to 15', lvs elliptic to obovate, to 8cm, often rounded or cordate at base, bd/h, th/g, low/mid elevation (94)

S. rigida- to 16'+, lvs elliptic, to 10cm, oft a band of hairs on mid-vein, bract minute, bd/g, tg(h), low-mid elev strms/lakes (92)

2. Floral bract light

S. lasiandra- to 30', lvs narrowly lan to elliptic, to 15cm, w 2 glands at base, by/h, cg, th/g, low/mid, rivers & wet places (76)

S. pedicellaris- to 3', lvs oblong, to 4.5x2cm, tips oft rounded, bract y/hairy within, bp/g, cg, tg, bogs, often in sphagnum, (82)

7. Leaves glabrous at maturity or nearly so, not glaucous below

A. Leaves serrate

A1. Floral bract dark

S. boothii- to 20', lvs elliptic, to 10cm, not layering, stipules 3-12mm, bract .7-1.5mm, bd/h, cg, th/g, mont/alpine wet, ES (46)

S. tweedyi- to 12'; lvs broad-elliptic, to 10x5cm, dull green above, style 1.5-3mm, catkins at br tips, bh, cg, th, subalp, ES (118)

A2. Floral bract pale

S. lasiandra- to 30', lvs narrowly lan to elliptic, to 15cm, w 2 glands at base, by/h, cg, th/g, low/mid, rivers & wet places (76)

S. maccalliana- to 6', lvs lan to oblong, to 8cm, leathery w yellow midrib, coarsely serrate, bp/h, ch, low elev wetlands, rare, (78)

S. myrtilifolia- to 3', lvs ellip to obovate, to 5cm, layering, stipules <1mm, bract <1mm, bp/h, cg, th/g, bogs, wet, mont/alp, (80)

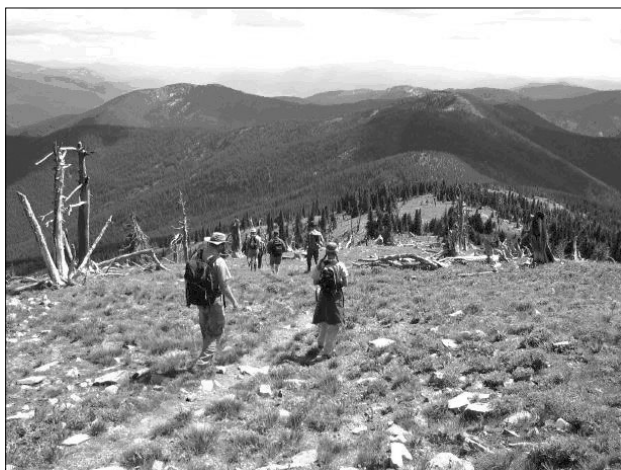
B. Leaves entire

S. boothii- to 20', lvs lan to elliptic, to 10x3cm, glossy green above, style .3-1mm, bd/h, cg, th/g, mont/alpine wet areas, ES, (46)

S. farriar- to 7', lvs elliptic to oblanceolate, to 7.5x3.5cm, shiny or dull above, style .3-1.2mm, bd/h(g), cg, th/g, montane/subalp (68)

WNPS Study Weekend June 23-25, 2006

Discovering Washington's forgotten corner—its mountains, meadows, rivers and deserts



Come hike in Northeastern Washington!

PHOTO: KATHY AHLENSLAGER

Location and setting

This year's Study Weekend is presented by the Northeastern Chapter of the Washington Native Plant Society. Chewelah Peak Learning Center, located 10 miles east of Chewelah at the 4000 foot level of Chewelah Peak, will serve as the center of activity. It first opened its doors late in 2003 to support outdoor learning for K-12 students in Eastern Washington.

Directions

Take Hwy I-90 from either the east or west to Spokane. From Spokane, take US Hwy 395 (Division) north to Chewelah. Upon entering Chewelah from the south, look for Flowery Trail Rd. and turn east (the only signal in Chewelah) and drive about 10 miles up Chewelah Mtn. (or follow the signs to 49 Degrees North Ski Area). A longer but more scenic route for those coming from NW Washington is Hwy 20. Follow Hwy 20 east to Colville. Turn south on US Hwy 395 to Chewelah and then turn east on Flowery Trail Road. Participants from the Priest River area can take Hwy 20 northwest to Dalkena and turn west on Chewelah Road. Follow this to Flowery Trail Road proceeding past the ski area to Chewelah Peak Learning Center.

Lodging

The Center normally accommodates 100 guests overnight in rooms with two or three bunk beds. Tent camping is permitted on the center's lawn. Ten miles away in Chewelah are motels and RV sites:

- **49er Motel & RV Park:** 509-935-8613. This facility has both rooms and RV spaces. Current prices (as of 12/8/05): RVs \$17.50/nite + tax. Motel rooms are \$52.00/night + tax for 2 people. Senior discount of \$5.00.
- **Chewelah City Park:** RV sites are \$10.00/night, first-come-first-served.
- **Chewelah Creek Inn:** 509-935-8166. Rates are \$49.95 for 1 or \$54.25 for 2 + tax.
- **Chewelah Golf & Country Club RV Park:** 509-935-6807
- **Flowery Trail Guest House:** 509-936-1502
- **Humble Beginnings B&B:** 509-935-0707. Rate \$100/full breakfast. www.humblebeginnings.biz
- **Nordling Motel:** 509-935-6704. Rates are \$46 for 1 or \$52 for 2 + tax. Seniors are \$43 for 1 or \$49 for 2 + tax.

Meals

Breakfast and dinner meals will be served in the main lodge. Box lunches will be available for lunch on Saturday and Sunday for field trips. Please note on the registration form if you want vegetarian meals or if you have allergies to any foods.

Arrival and signing in

Upon arrival, participants can sign in and receive room assignments at the main lodge after 2 p.m. on Friday.

Friday evening program

"Discovering the Forgotten Corner of Washington" Join Chris Loggers for a virtual tour of northeastern Washington's natural history. Chris works as a wildlife biologist for the Colville National Forest, Three Rivers Ranger District.

Saturday evening program

Jack Nisbet is a teacher, naturalist, and an award winning writer who lives in Spokane. He will present a survey of some things early Pacific Northwest explorer

David Thompson learned from the tribes, and what this tells us about our landscape and habitats today.

Fur trader David Thompson never had the time to pay consistent attention to the natural history of the regions where he traveled, but he did spend 27 years living in the field, including five in the Pacific Northwest. While he was here, he found himself utterly dependent on the local tribes for their knowledge of local flora for everything from edible berries to fibers and roots for cordage, from trees for particular wood uses to cooking methods for strange new tubers. Because Thompson was a curious man, he absorbed and then left behind in his writings deep insights into some very important species.

Jack Nisbet published *Sources of the River in 1994: Tracking David Thompson across western North America*. Since then, Nisbet has published three more books—*Purple Flat Top* (1997), *Singing Grass, Burning Sage* (1999), and *Visible Bones* (2003), all of which explore the melding of human and natural history in the greater Northwest.

Field trips and workshops

A variety of field trips are offered to give participants an opportunity to become familiar with the forgotten corner of Washington. Register for field trips by selecting your top three choices for each day and writing them on your registration form. Trips are generally limited to twelve participants assigned on a first-come-first-served basis. Directions for all field trips will be posted in the Main Lodge. Driving times are one way.

Saturday, June 24

All Day Trips

1. Moonwort Madness at the South Fork of Mill Homestead Meadows

Amy Cabral, botanist on the Colville National Forest, knows where to hunt for wiley moonworts. Join her for a day searching for elusive dry meadow *Botrychiums*. History, other rare plants, and easy walking will provide an interesting day for all.

2. Calispell Mountain

Join Colville National Forest botanist Kathy Ahlenslager, on a 3.5-mile roundtrip hike and climb 1200 feet to a big sagebrush/green fescue mountain parkland atop Calispell Mountain, 6855 feet. We'll look for pink mountain

heather, ivesia, and other high elevation plants. Since the drive (partly on dirt roads) is about 1.5 hours northeast of Chewelah, please plan on an all-day event.

3. Trombetta Canyon

Umatilla National Forest botanist Jean Wood and Washington Natural Heritage Program botanist Joe Arnett will explore unique Trombetta Canyon, a one-mile long limestone canyon with 1000 foot high walls on Washington state land. This could be a strenuous hike, as we may need to bushwack. Since the canyon is about 45 miles north of Chewelah, plan on an all-day outing.

4. Swamp Stomp in "The Wedge"

With wetlands specialist Fred Weinmann and geomorphologist Bill Swartz, weather is no object, but bring your gum boots for this all-day outing. We will spend the day in several classes of wetlands north of Kettle Falls, in an area with great geologic and topographic variety. A few of the sites are near natural. Others are intensely modified, but we are early enough in the season for native plants, even rare ones, to make a good show. Expect short to moderate walks in boggy and brushy landscapes. Part of route is on dirt roads.

5. Where Boreal Forests Meet Subalpine Forests

Mycologist Jim Groth will feature correspondence of genera and species of fungi that occur in boreal and subalpine forests and why this might be so. We will drive the Olson Creek Road or Tacoma Divide Road to about 4500 feet, sticking to north and east slopes. These are good roads, so unless it is muddy any car can negotiate them. We will walk perhaps a mile or two in relatively flat areas, staying close to the roads. The outing will take most of the day. Group is limited to 15.



Beargrass (*Xerophyllum tenax*)

PHOTO: KATHY AHLENSLAGER

6. Bunchgrass Meadows Research Natural Area

Bunchgrass Meadow is a mid-elevation (5,000 ft.) fen located on the border of Kaniksu and Colville National Forests at the headwaters of LeClerc and Harvey creeks. The area includes one Priority 1, one Priority 2, and one Priority 3 species. Ecological communities include subalpine fir, beargrass; subalpine fir, cascades azalea woodland; mid-elevation sphagnum bog; and mid-

elevation permanent pond. This will be an all-day field trip with driving time of about two hours one way. Trip leader: Lawton Fox

7. Botanical photography

Explore techniques for photographing wildflowers in their habitats from both an artistic and scientific viewpoint. Learn ways to control the light, enhance compositions, and visually tell stories about plants with Mark Turner, photographer and co-author of *Wildflowers of the Pacific Northwest*. For maximum photo time we'll explore and photograph along Flowery Trail Road near the Learning Center, with short walks away from the road as we find interesting subjects. Bring your film or digital camera, tripod, and your favorite light modifiers. Limit 12.

8. Botanical Painting

Louise Smith will present an introduction to the art of botanical painting including simple drawing, watercolor exercises and an introduction to color mixing. These color concepts will be applied to the accurate drawing and painting of one leaf. The leaf is the most challenging of all botanical subjects to capture correctly and Louise hopes to give attendees a good start in learning how to approach the rendition of all types of plant materials. The workshop will last all day.

Saturday Morning Sessions

9. Fired Up on the Little Pend Oreille National Wildlife Refuge

Spend the morning with prescribed fire specialist Dan Brauner at the Little Pend Oreille National Wildlife Refuge. We will look at vegetation differences between natural and prescribed fires in dry forest communities. See the uncommon Adder's tongue (*Ophioglossum pusillum*) in one burn unit. Short walks are planned on the Refuge, 13 miles southeast of Colville.

10. Wild Teas of Northeast Washington

Spend the morning learning to identify, harvest, and prepare teas from wild plants of Northeast Washington with Wilma Cullooyah, Cultural Educator with the Kalispel Tribe, and Carol Mack, Washington State University/Pend Oreille County Extension educator. From spruce needles to mountain balm leaves, many wild plants provide flavoring for hot and cold beverages—much more healthful than ubiquitous sugar-based sodas. We will examine traditional Kalispel tribal uses, discuss

current medicinal claims, and enjoy a leisurely tea party together as we sample at least ten teas from leaves, roots, bark, fruits, and flowers of wild plants. We will collect leaves, flowers, etc. for teas around the Chewelah Peak Learning Center. No driving is anticipated at this point. Group size is limited to 20.

Saturday Afternoon Sessions

11. Northeast Washington Butterflies and Host Plants

Carol Mack, Washington State University/Pend Oreille County Extension educator, will lead this half-day afternoon session at Chewelah Peak Learning Center, nearby open meadows, and the summit of 49 Degrees North Ski Area (pending permission). Weather permitting we will car-pool in the local area with most of the time spent on foot watching butterflies through binoculars, as well as catching (and releasing) butterflies for identification. We will especially look at the specialized co-evolutionary relationships between butterflies and their preferred host plants. Group size is limited to 20.

12. Saving Aspen in the West

Mike Borysewicz, wildlife biologist on the Colville National Forest, will lead a field discussion on the ecology of aspen, the value of the trees as wildlife habitat, and the decline of aspen on the Forest at Bartlett Meadows, a 10-mile drive to the east (regular vehicles are fine). We will view projects which address the problem; i.e. livestock fencing, conifer felling, and prescribed fire. We may also drive to the Middle Fork of Calispell Creek to review another project. Approximate time needed is 3-4 hours, including drive time.

Sunday, June 25

13. Plants of The Forest/Sage Ecotone

Rex Crawford will lead a caravan that will make several stops to look at the dominant plants in the forest-sage transition zone (includes at least one Natural Area Reserve).

14. Stonerose Interpretive Center & Eocene Fossil Site

Geomorphologist Bill Swartz will introduce you to Stonerose, one of the few places in the United States where you can view a collection of 50-million-year-old "photographs" of flowers and leaves. After purchasing

a permit (adults \$5; seniors 62+ and 6-18 year olds \$3; children under 6 years of age are free), you may hunt for your own fossils at the nearby Boot Hill Fossil Site. Bring your own chisel and hammer or rent them from the Center. Stonerose is located about 45 miles west of Colville in Republic. For more information: www.stonerosefossil.org.

15. Prescribed Fires at Turnbull NWR—Cheney, WA

Mike Rule and Doug Frederick will lead your visit to Turnbull National Wildlife Refuge where you will see the effects of prescribed burning designed to reduce fuel loads and to restore the natural open Ponderosa Pine Forest.

16. Dishman Hills Natural Area

During a moderate 3-mile hike, Bob Bohlen will discuss the history of the Dishman Hills Natural Area, identify the flora, and hopefully, glimpse a few Bitterroot in full bloom.

17. Mt. Spokane

Howard Ferguson recommends boots for this minimal effort walk atop Mt. Spokane. It will be a bird and plant adventure with the possibility of seeing Pikas.

18. Kettle Falls to Keller Ferry via Inchelium

This is a road trip with key stops across the southeast part of the Colville Tribal Reservation. The trip is designed as a return trip for those going home to the southwest from the Botany Weekend. This trip continues over the pass from Inchelium to the San Poil River and returns to the I-5 corridor via the Keller Ferry. The main feature includes a drive along the relatively undeveloped reach of the Columbia River south of Kettle Falls.

This trip highlights the change in vegetation from the relatively lush shrub understories and balds near Kettle Falls, across a minor volcanic area into increasingly drier shrub-steppe landscapes at Keller Ferry, where we reach the Columbia basalts.

Directions: Travel as a group on Highway 20 west 4 miles past the Columbia River Bridge near Kettle Falls, and turn left on the Kettle Falls Road going south. We will follow this road for 22 miles south to Inchelium, with a stop at Haag Cove three miles south of the Highway 20 junction.

From Inchelium we will follow the Twin Lakes-Bridge Creek road west 27 miles to the San Poil River. We will

stop along the road just before reaching the San Poil River for a short walk into the volcanic rocks north of Bridge Creek. There are several other stopping points along the road near the pass in the middle of this stretch.

Once we reach the San Poil River, we will drive south 10 miles on Highway 21 to Keller, and then turn left and go three more miles for a stop at the Coulee Dam National Recreation area boat launch on Silver Creek. After this stop we will return to Keller and continue eight more miles south to Keller Ferry.

19. Iller Creek/Tower Mountain Hike

The Iller Creek Conservation Area, just south of Spokane, is at the interface of the Northern Rocky Mountains and the Columbia Basin. It is an ecotone with high plant community diversity. The Iller Creek riparian corridor contains hemlock and grand fir forests, with Pacific Yew, ladyfern, and the moist Clintonia understory plant union—all beyond their generally recognized range limits. The south-facing slopes of Tower Mountain are dominated by ponderosa pine, dry shrub communities. The hike will traverse these environmental gradients, going up the bottom of Iller Creek and climbing to the Rocks of Sharon on a shoulder of Tower Mountain. From the top, excellent views look southwest to the Columbia Basin, and northeast into the northern Rocky Mountains. The 3+ hour roundtrip is a moderate intensity trail hike with a few short steep pitches near the top. Total elevation gain is approximately 1,000 ft. It is possible to have an enjoyable hike and turn around before the steepest part of the climb.

20. Arid Plant Demonstration areas and Green Zones

Toni Fitzgerald and Dianna Stutzman will combine their expertise to present participants with examples of landscaping with natives. The Master Gardeners of Spokane County's Extension Education Center have planted a low-maintenance landscape area and a drought tolerant perennial bed surrounding their office. They also have a Green Zone area that demonstrates low-maintenance grasses, rock gardens, wildlife plantings and recycled pathways. Afterwards, the group will visit Diane Stutzman's native plant nursery to see her native beds. She may also have arid land natives for you to purchase.

See next page for Study Weekend registration form.



WNPS Study Weekend June 23-25, 2006: Washington's Forgotten Corner

Name _____

Address _____

Phone Number _____ email address _____

Package #1: Includes registration fee, 6 meals and 2 nights lodging: \$125 per person.

Number in group attending _____ X \$125.00 = \$ _____

Package #2: Includes registration fee, 5 meals (Sat breakfast-Sun lunch) and 2 nights lodging: \$115 per person.

Number in group attending _____ X \$115.00 = \$ _____

Package #3: Includes registration fee, 6 meals and 2 nights camping at Chewelah Peak Learning Center: \$120 per person.

Number in group attending _____ X \$120.00 = \$ _____

Package #4: Includes registration fee, four meals (Sat lunch-Sun lunch) and one night (Sat) Lodging at Chewelah Peak Learning Center. \$90 per person (this package is based upon space available)

Number in group attending _____ X \$90.00 = \$ _____

Commuters & Others Not Using The Above Options:**Meals**

Friday Dinner

Number of People

\$9 x _____ = \$ _____

Saturday Breakfast

\$6 x _____ = \$ _____

Saturday box lunch

\$6 x _____ = \$ _____

Saturday dinner

\$9 x _____ = \$ _____

Sunday breakfast

\$6 x _____ = \$ _____

Sunday box lunch

\$6 x _____ = \$ _____

Lodging – \$45/2nights Chewelah Peak Learning Center x # people

= \$ _____

Registration fee for Commuters and others:

\$40 x _____ = \$ _____

T-shirt Y__ N__ Sizes S__ M__ L__ XL__ \$20 x # _____ = \$ _____**Total Fees** = \$ _____**Type of Meals:** Regular ____ Vegetarian ____ Allergy Diet ____ attach description**Field Trip/Workshop Preference:** **Saturday** 1st choice ____ 2nd choice ____ 3rd choice ____**Sunday** 1st choice ____ 2nd choice ____ 3rd choice ____**Registration deadline is May 1st. No refunds after May 15th.**

Make checks payable to WNPS. Include a legal-sized, stamped, self-addressed envelope and send to:

Northeastern Chapter WNPS, c/o Mary Water, 805 S Edgerton Rd., Spokane Valley, WA 99212.

Questions? Email bcmiller@earthlink.net or mlwater@earthlink.net. Or call: 509-238-3130 or 509-844-1306.

Help collect noxious weeds in Washington

by Peter Zika, WNPS Central Puget Sound Chapter

Noxious weeds vex Washingtonians. They hamstring farmers and ranchers, and trouble casual gardeners. Native plant and animal communities, which continue to face fragmentation and disturbance as our human population expands, face an additional threat from invasive exotics. The Washington Native Plant Society is devoted to protecting our native plants and native plant communities, and so naturally has a deep and suspicious interest in aggressive noxious weeds. It is unfortunate that we still have access to so few herbarium records documenting what noxious weeds are found in which counties. How can this be? There are more than 15 Washington herbaria which serve as permanent archival repositories for pressed plant specimens. But all too frequently weed specimens are not prepared, or not deposited, in our state.

Sometimes new weeds are difficult to identify accurately, and so initial specimens are sent to experts in other states or countries, where the plant is native or well-studied. Recently, this included giant reed (*Phragmites*) collections (mentioned in Haubrich and Simon 2004); or puzzling hawkweed (*Hieracium*) specimens sent to Germany for determination. There are other reasons we don't see more aliens in our herbaria. Academic collectors provide most material, and they are often focused on their research group, and ignore everything else. Even general floristic collectors tend to be biased towards gathering native plants, not introductions. And finally, there is a trend for collectors to gravitate towards the sexy, unique and infrequent. So herbaria around the world may have more collections of rare or endemic plants than common ones, and of course the weeds are the most common and the most ignored.

There are two major collections of dried plants in Washington: at Washington State University in Pullman (WS) and at the University of Washington in Seattle (WTU). Between them they have roughly three-quarters of a million specimens, with extensive holdings of native plants, reaching back more than a century. These specimens provided the basic data that allowed Hitchcock, Cronquist, Thompson, Ownbey, and others to write and illustrate our most recent regional flora (Hitchcock et al. 1955-1969, Hitchcock and Cronquist 1973). These pressed plants have also been the subject of hundreds of loan requests, research studies, monographs,

and technical papers in the last 20 years, (including nine volumes of the Flora of North America), helping all of us to better understand our flora. Herbarium specimens are the primary resource for all botanical research, and are increasingly important in molecular systematics as techniques improve for sampling dried plants. All our names for plants are founded on specimens. Simply put, it makes sense to study and document ALL the wild plants in our state, not just the pretty ones, the rare ones, the endemic ones, or the native ones.

As a botanical community, we need to beef up our herbarium holdings of noxious weeds. These specimens are important for everyone who studies and teaches the flora. They allow comparison of native and non-native species in the same genus, an important distinction to make in large complex genera like thistles (*Cirsium*), water milfoil (*Myriophyllum*), and hawkweeds (*Hieracium*) (see Table 1 at www.wnps.org/invasive_species/noxious_weed_project). The locality information with each herbarium specimen also allows accurate targeting of weed control efforts, both on the ground, and in determining regulatory lists.

In a major effort to increase what we know about the distribution of noxious weeds in Washington, WNPS has examined the current holdings of the WTU herbarium, and drawn up a list of the noxious weeds that have been reported from a county but not documented with a herbarium collection (see Tables 2 and 3 at www.wnps.org/invasive_species/noxious_weed_project). This is where you can contribute, by making collections of these weeds, and donating the specimens, with good location information, to the WTU herbarium. Duplicates will be distributed to the WS herbarium, as well as other research institutions, where they will form an important resource for students of systematics, evolution, floristics, and exotics.

How did we assemble a list of weeds to document? Estimates suggest that perhaps 20% of the Washington flora consists of exotic introductions. From this, we chose to address those species legally classified as "noxious weeds" in state statutes and regulations (Chapter 16-750 WAC). There are four classes of noxious weeds: Class A, Class B, Class C, and the Monitor List (see accompanying



Featherhead knapweed
(*Centaurea tricocephala*)
ILLUSTRATIONS: CINDY
TALBOTT ROCHÉ

Tables 4-7, with lists and definitions). This totals 162 species we are interested in. Maps of their reported county-by-county distribution were compiled by Greg Haubrich (2002) of the Washington State Department of Agriculture. These were compared with online data for the collections at the WTU herbarium. Then those records were added to the John Kartesz (2003) county-level literature search, which also included a substantial number of county records databased at the WS herbarium. The result was an excellent list of what weeds were reported and collected in every county (Table 8), although it also highlighted that 11 noxious weeds had no herbarium voucher at all (Table 9). Those species were sought in visits to four regional herbaria.

We have extracted from that dataset a list of noxious weeds that need to be collected from each county in the state. You may easily find these lists on the WNPS web site at www.wnps.org/invasive_species/map. Just click on any county on the map and you will find a list of collections we want. If you are unfamiliar with collecting plants, there are detailed instructions online at www.wnps.org/invasive_species/how_to_collect. The next short article in this issue also provides this information.

There are roughly 1,390 county records that still need collection, so you are sure to find something near you. Each county averages about 37 reported noxious weeds that have not yet been documented with a pressed specimen (see Table 8 for more statistics).

We encourage as many of you as possible to make some pressed specimens of noxious weeds, and contribute to our knowledge of the distribution, abundance, and classification of our adventive flora. If you venture off public roadsides to collect, be sure to do so with permission of the landowner. And collect with the knowledge that pressing herbarium specimens of state noxious weeds is specifically allowed by our state statutes (WAC 16-752-515, WAC 16-752-630). Check the WNPS web site for the Noxious Weed Project, and keep track of what specimens are still needed in your county. The web site will be updated frequently, as reports of new collections come in during the 2006 growing season. To help you identify some of the more obscure species, check out the web sites listed in Table 10.

References

Dore, W. G. and J. McNeill. 1980. Grasses of Ontario. Monograph 26, Research Branch, Agriculture Canada. 566 p.

Haubrich, G. 2002. Noxious Weed Spreadsheet. Unpublished set of tables and maps prepared for Washington State Department of Agriculture, Olympia.

Haubrich, G. and B. Simon. 2004. Native and non-native *Phragmites australis* in Washington State. *Douglasia* 28(2): 12-15.

Hitchcock, C. L., A. Cronquist, M. Ownbey, and J. W. Thompson. 1955-1969. Vascular Plants of the Pacific Northwest. 5 parts. Univ. of Washington Press, Seattle.

Hitchcock, C. L. and A. Cronquist. 1973. Flora of the Pacific Northwest. Univ. of Washington Press, Seattle. 730 p.

Kartesz, J. T. 2003. A Synonymized Checklist and Atlas with Biological Attributes for the Vascular Flora of the United States, Canada, and Greenland. Second Edition. In: Kartesz, J.T., and C.A. Meacham. Synthesis of the North American Flora, Version 2.0. [Copyright © 2003 J.T. Kartesz & Phylosystems Corp.]

Pimentel, D., L. Lach, R. Zuniga, and D. Morrison. 2000. Environmental and economic costs of nonindigenous species in the United States. *BioScience* 50: 53-65.

Tucker, G. C., B. G. Marcks, and J. R. Carter. 2002. *Cyperus Linnaeus*. Pp. 141-191, In: Flora of North America Editorial Committee, Eds. Flora of North America North of Mexico. Volume 23, Magnoliophyta: Commelinidae (in part): Cyperaceae. Oxford University Press, New York, NY.

List of Tables

Tables 1, 2, and 3.

Can be found at: www.wnps.org/invasive_species/noxious_weed_project

Table 4. Class A noxious weeds

Table 5. Class B noxious weeds

Table 6. Class C noxious weeds

Table 7. Monitor list of noxious weeds

Table 8. Facts and figures about noxious weeds

Table 9. Washington's most wanted noxious weeds

Table 10. Useful web sites

How to make plant collections

Collection protocol in more detail at: http://www.wnps.org/invasive_species/how_to_collect.html

Collect

- Select a typical individual (no runts or giants).
- Carefully uproot with a trowel or digging knife.
- Be sure to get the roots, foliage, and flowers (and ripe fruits, if possible). Woody plants: get a flowering branch and a leafy branch.
- Press as soon as possible.
- Too large? Edit judiciously and fold smartly so it fits in newspaper (11 × 17 inches maximum size; e.g. Little Nickel, Auto Trader). Make sure upper and lower side of leaves are visible. Trim off anything that hangs out of the newspaper!
- Collect three of each species in each county if possible (so we can share with other herbaria).

Record and press

- Put your name and collecting number on the newspaper, and enter the following in a notebook: your collecting number, date, precise location, abundance, type of habitat (marsh, roadside, etc.), sun or shade, dry or wet, elevation, a few of the common associated plants (use Latin names).
- Note color of flowers or fruits, height of plant, and if runners are present (stolons or rhizomes).
- Place each numbered newspaper between two pieces of cardboard. Press using straps or weights until completely dry (without pressure, it will wrinkle and be worthless). Daily changing of newspapers helps blot dry the specimen(s) without molding. Encourage air circulation around the press. Commercial plant presses (with cardboard ventilators, endboards, and straps) are available from biological supply houses and some college bookstores, if you desire one.
- Flat dry specimens are fragile, so store where they will stay dry and nothing heavy can drop on them.

Ship

- Type up herbarium label data, using your notes, and include state, county, lat/long or TRS, and air distance to the nearest permanent landmark, using a good map. One label in each specimen. Also prepare a list of all specimens, to include with shipped package.
- Wrap specimen(s) like a birthday present, in large newspapers, making firm bundles (if the specimens slide around in transit, they will shatter and be ruined). Armor bundle(s) with cardboard attached by string or tape, and mail firmly packed (but not crushed) in a sturdy box.
- Ship to: David Giblin, Collections Manager; Noxious Weed Project, Herbarium, Box 355325, University of Washington, Seattle, WA 98195-5325.

Upon arrival, the herbarium will fumigate your collections in the freezer, then permanently mount the plants on heavy archival paper, with your label data attached.

Sample label

The corresponding newspaper with the plant is labeled: Zika 22487

PEND OREILLE COUNTY, WASHINGTON

Cirsium arvense (L.) Scop. Asteraceae

Rhizomatous, pink flowers, common weed on dry gravel roadside, full sun, with *Conyza canadensis* and *Tragopogon pratensis*, junction of Routes 211 and 2, at 5 air kilometers SW of Diamond Lake; elevation 730 meters, 48° 5.9' N, 117° 16.6' W, T30N R44E S17

Coll. Peter F. Zika 22487 5 October 2005

Table 4. Class A noxious weeds – 2006

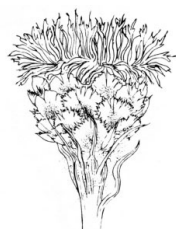
Class A noxious weeds are: “Non-native species with a limited distribution in Washington. Preventing new infestations and eradicating existing infestations is the highest priority. Eradication is required.”



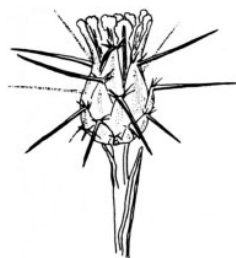
Purple starthistle
(*Centaurea calcitrapa*)



Spotted knapweed
(*Centaurea biebersteinii*)



Bighead knapweed,
lemon fluff, globe
cornflower, globe
centaury (*Centaurea
macrocephala*)



Yellow starthistle
(*Centaurea solstitialis*)

Abutilon theophrasti Velvetleaf
Alliaria petiolata Garlic mustard
Carduus pycnocephalus Italian thistle
Carduus tenuiflorus Slenderflower thistle
Centaurea calcitrapa Purple starthistle
Centaurea macrocephala Bighead knapweed
Centaurea nigrescens Vochin knapweed
Crupina vulgaris Common crupina
Euphorbia oblongata Eggleaf spurge
Galega officinalis Goatsrue
Glyceria maxima Reed sweetgrass
Helianthus ciliaris Texas blueweed
Heracleum mantegazzianum Giant hogweed
Hieracium floribundum Yellow devil hawkweed
Hydrilla verticillata Hydrilla
Isatis tinctoria Dyers woad
Ludwigia peploides Floating primrose willow
Mirabilis nyctaginea Wild four o'clock
Pueraria montana var. *lobata* Kudzu
Salvia aethiopis Mediterranean sage
Salvia pratensis Meadow clary
Salvia sclarea Clary sage
Silybum marianum Milk thistle
Solanum elaeagnifolium Silverleaf nightshade
Solanum rostratum Buffalobur
Soliva sessilis Lawnweed
Sorghum halepense Johnsongrass
Spartina densiflora Denseflower cordgrass
Spartina patens Salt meadow cordgrass
Spartium junceum Spanish broom
Thymelaea passerina Spurge flax
Zygophyllum fabago Syrian bean-caper

Table 5. Class B noxious weeds – 2006

Class B noxious weeds are: “Non-native species presently limited to portions of the state. Species are designated for control in regions where they are not yet widespread. Preventing new infestations in these areas is a high priority. In regions where a Class B species is already abundant, control is decided at the local level, with containment as the primary goal.”

Acroptilon (Centaurea) repens Russian knapweed
Alhagi maurorum Camelthorn
Alopecurus myosuroides Blackgrass
Amorpha fruticosa Indigobush
Anchusa arvensis Annual bugloss
Anchusa officinalis Common bugloss
Anthriscus sylvestris Wild chervil
Berteroa incana Hoary alyssum
Bryonia alba White bryony
Cabomba caroliniana Fanwort
Carduus acanthoides Plumeless thistle
Carduus nutans Musk thistle
Cenchrus longispinus Longspine sandbur
Centaurea biebersteinii (*C. maculosa*, *C. stoebe*)
Spotted knapweed
Centaurea diffusa Diffuse knapweed
Centaurea jacea Brown knapweed
Centaurea nigra Black knapweed
Centaurea pratensis (*C. × moncktonii*, *C. jacea* × *nigra*)
Meadow knapweed
Centaurea solstitialis Yellow starthistle
Chondrilla juncea Rush skeletonweed
Cynoglossum officinale Houndstongue
Cyperus esculentus Yellow nutsedge
Cytisus scoparius Scotch broom
Daucus carota Wild carrot
Echium vulgare Blueweed
Egeria densa Brazilian elodea
Euphorbia esula Leafy spurge
Euphorbia myrsinites Myrtle spurge
Geranium robertianum Herb-robert
Hieracium aurantiacum Orange hawkweed
Hieracium atratum Polar hawkweed
Hieracium caespitosum Yellow hawkweed
Hieracium glomeratum Queendevil hawkweed
Hieracium laevigatum Smooth hawkweed
Hieracium pilosella Mouseear hawkweed
Hypochaeris radicata Common catsear
Impatiens glandulifera Policeman's helmet
Kochia scoparia Kochia
Lepidium latifolium Perennial pepperweed
Lepyrodictis holosteoides Lepyrodictis
Leucanthemum vulgare Oxeye daisy
Linaria dalmatica ssp. *dalmatica* Dalmatian toadflax
Ludwigia hexapetala Water primrose
Lysimachia vulgaris Garden loosestrife
Lythrum salicaria Purple loosestrife
Lythrum virgatum Wand loosestrife
Myriophyllum aquaticum Parrotfeather
Myriophyllum spicatum Eurasian watermilfoil
Nymphoides peltata Yellow floating heart

Onopordum acanthium Scotch thistle
Picris hieracioides Oxtongue hawkweed
Polygonum ×bohemicum Bohemian knotweed
Polygonum cuspidatum Japanese knotweed
Polygonum polystachyum Himalayan knotweed
Polygonum sachalinense Giant knotweed
Potentilla recta Sulfur cinquefoil
Rorippa austriaca Austrian fieldcress
Sagittaria graminea Grass-leaved arrowhead
Senecio jacobaea Tansy ragwort
Sonchus arvensis Perennial sowthistle
Spartina alterniflora Smooth cordgrass
Spartina anglica Common cordgrass
Sphaerophysa salsula Swainsonpea
Tamarix ramosissima Saltcedar
Torilis arvensis Hedgeparsley
Tribulus terrestris Puncturevine
Ulex europaeus Gorse

Table 6. Class C noxious weeds – 2006

Class C noxious weeds are: “Non-native weeds found in Washington. Many of these species are widespread in the state. Long-term programs of suppression and control are a County option, depending upon local threats and the feasibility of control in local areas.”

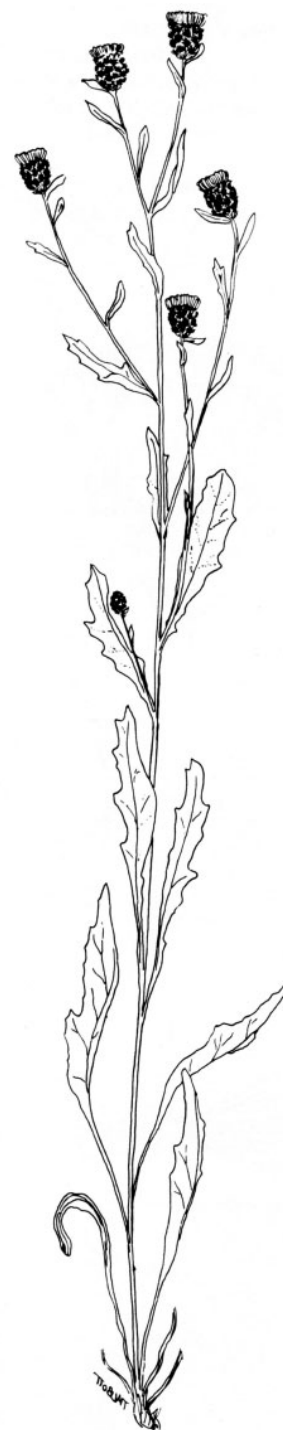
Aegilops cylindrica Jointed goatgrass
Artemisia absinthium Absinth wormwood
Buddleia davidii Butterfly bush
Cardaria draba Hoary cress
Cardaria pubescens Hairy whitetop
Cirsium arvense Canada thistle
Cirsium vulgare Bull thistle
Clematis vitalba Old man’s beard
Conium maculatum Poison-hemlock
Convolvulus arvensis Field bindweed
Cuscuta approximata Dodder
Epilobium hirsutum Hairy willow-herb
Gypsophila paniculata Babysbreath
Hedera helix ‘Baltica,’ ‘Pittsburg,’ and ‘Star’ English ivy
Hedera hibernica ‘Hibernica’ English ivy
Hemizonia pungens Spikeweed
Hieracium non-native species (except those listed as class A or B), including the following:
Hieracium ×flagellare Whip hawkweed
Hieracium lachenalii European hawkweed
Hieracium maculatum Spotted hawkweed
Hieracium murorum Golden lungwort
Hieracium piloselloides Smooth hawkweed
Hieracium sabaudum Savoy hawkweed
Hieracium ×stoloniflorum Hybrid hawkweed
Hieracium vulgatum Common hawkweed

Hyoscyamus niger Black henbane
Hypericum perforatum St. Johnswort
Iris pseudacorus Yellow flag iris
Linaria vulgaris Yellow toadflax
Matricaria perforata (*Tripleurospermum inodorum*, *T. perforata*) Scentless mayweed
Nymphaea odorata Fragrant water lily
Phalaris arundinacea Reed canarygrass
Phragmites australis Common reed (non-native genotypes)
Potamogeton crispus Curly-leaf pondweed
Secale cereale Cereal rye
Senecio vulgaris Common groundsel
Silene latifolia ssp. *alba* White cockle
Tanacetum vulgare Common tansy
Xanthium spinosum Spiny cocklebur

Table 7. Monitor list noxious weeds

Monitor List weeds are in a different category from Class A, B, and C weeds, with no legal demand for removal. These are weeds under investigation by the Washington State Noxious Weed Control Board. The state defines them as quoted here (WAC 16-750-025): “The purpose of the monitor list is to gather more information on suspect weeds as well as monitor for occurrence or spread. Information collected may be used to justify future inclusion on the state noxious weed list. There is no regulatory aspect to this list. Reasons for plant inclusion on the monitor list include: (1) There is reason to believe the species is invasive or posed a potential threat to Washington; (2) Additional information is needed on distribution, abundance, or biology; (3) The species was once present in Washington and on the state noxious weed list. It is now being monitored for reoccurrence; (4) There is need to verify existence (site investigation), verify identification, and/or obtain voucher specimen[s].”

Adonis aestivalis Pheasants-eye
Adonis annua Blooddrops
Ambrosia tomentosa Skeletonleaf Bursage
Carthamus lanatus Distaff Thistle
Centaurea tricocephala Featherhead knapweed
Chaenorrhinum minus Dwarf snapdragon
Crucianella angustifolia Narrowleaved crosswort



Black knapweed
(*Centaurea nigra*)

Eichhornia crassipes Waterhyacinth
Eruca vesicaria Garden rocket
Fatoua villosa Mulberry weed
Galium pedemontanum Foothills bedstraw
Halogeton glomeratus Halogeton
Herniaria cinerea Rupturewort
Hibiscus trionum Venice Mallow
Inula helenium Inula
Lamium (*Lamiastrum*) *galeobdolon* Yellow archangel
Nardus stricta Matgrass
Peganum harmala African rue peganum
Polygonum aubertii (*P. baldschuanicum*) Silver lace vine
Potentilla argentea Silvery cinquefoil
Proboscidea louisianica Unicorn-plant
Rorippa nasturtium-aquaticum Watercress
Rorippa sylvestris Creeping fieldcress
Typha angustifolia Lesser cattail
Utricularia inflata Swollen bladderwort
Verbascum thapsus Common Mullein
Verbena bonariensis Tall verbena

Table 8. Facts and figures about noxious weeds

\$137 billion	Estimate of annual economic damage from all introduced pests in U.S. (Pimental et al. 2000)
162	Number of noxious weeds in Washington
5	Number of noxious weeds eradicated from WA
39	Number of counties in WA
2,119	Number of county reports for all noxious weeds in WA
13	Average number of county reports for a noxious weed
54	Average number of noxious weeds reported per county
36	Average number of noxious weed collections per county needed at WTU
41	Average number of noxious weed collections per county needed at WS

Cirsium arvense (C): Only noxious weed reported from every county, Canada thistle

Hypericum perforatum (C): Most commonly collected noxious weed, Klamathweed (21 county records at WTU, 21 county records at WS)

Lythrum salicaria (B): Shabbiest collecting history, purple loosestrife (reported from 35 counties, collected in just 7)

Myriophyllum spicatum (B): Most common aquatic noxious weed, water milfoil (reported from 36 counties)

Eichhornia crassipes (Monitor): Most surprising aquatic noxious weed, water hyacinth (from lowland Mesoamerica; 1 WA collection)

Pueraria montana (A): Most surprising terrestrial noxious weed, kudzu (a pest in SE US, and eradicated as soon as found in WA; no WA collections)

Table 9. Washington's most wanted noxious weeds

Reported outside WA, not (yet) in WA (4 spp.)

Carthamus lanatus (Monitor)
Crucianella angustifolia (Monitor)
Lythrum virgatum (B)
Nardus stricta (Monitor)

Reported in WA, but no specimens ever collected for either WS or WTU (11 spp.)

Ambrosia tomentosa (Monitor)
Carduus acanthoides (B)
Carduus pycnocephalus (A)
Fatoua villosa (Monitor)
Herniaria cinerea (Monitor) eradicated in 1979
Hieracium pilosella (B)
Hieracium piloselloides (C)
Inula belenium (Monitor)
Isatis tinctoria (A) eradicated in 1993
Pueraria montana (A) eradicated
Solanum elaeagnifolium (A) eradicated in 1995

No WA specimen at WTU (20 spp.)

Adonis aestivalis (Monitor)
Adonis annua (Monitor)
Anthriscus sylvestris (B)
Carduus tenuiflorus (A)
Centaurea calcitrapa (A)
Centaurea macrocephala (A)
Centaurea nigra (B)
Centaurea nigrescens (A)
Centaurea tricocephala (Monitor) eradicated in 1990

Chaenorrhinum minus (Monitor)
Halogeton glomeratus (Monitor)
Helianthus ciliaris (A)
Hibiscus trionum (Monitor)
Lepydodictis holosteoides (B)
Mirabilis nyctaginea (A)
Picris hieracioides (B)
Proboscidea lonisiana (Monitor)
Rorippa austriaca (B)
Rorippa sylvestris (Monitor)
Thymelaea passerina (A)

No WA specimen at WS (25 spp.)

Alliaria petiolata (A)
Cabomba caroliniana (B)
Daphne laureola (Monitor)
Egeria densa (B)
Eichhornia crassipes (Monitor)
Euphorbia oblongata (A)
Hedera helix s. str. (C)
Hedera hibernica (C)
Hieracium glomeratum (B)
Hieracium maculatum (C)
Hieracium murorum (C)
Hieracium sabaudum (B)
Hieracium ×stoloniflorum [*H. aurantiacum* × *pilosella*] (C)
Hieracium vulgatum (C)
Hydrilla verticillata (A)
Lamiastrum galeobdolon (Monitor)
Lysimachia vulgaris (B)
Ranunculus ficaria (Monitor)
Sagittaria graminea (B)
Salvia aethiopsis (A)
Spartina densiflora (A)
Spartium junceum (A)
Tamarix ramosissima (B)
Utricularia inflata (Monitor)
Verbena bonariensis (Monitor)

Table 10. Useful web sites

WNPS home page:

<http://www.wnps.org/>

- **Noxious Weed Project page:** http://www.wnps.org/invasive_species/noxious_weed_project.html
- **Noxious weed lists:** http://www.wnps.org/invasive_species/map.html
- **Noxious weed collecting protocol:** http://www.wnps.org/invasive_species/how_to_collect.html

WSDA noxious weed page:

http://www.nwcb.wa.gov/weed_list/weed_listhome.html

CUH herbarium home page:

<http://depts.washington.edu/hydeherb/>

WS herbarium home page:

<http://www.wsu.edu:8080/%7Ewsherb/>

WTU herbarium home page:

<http://www.washington.edu/burkemuseum/collections/herbarium/index.php>

WTU specimen database (85,000 specimens):

<http://biology.burke.washington.edu/herbarium/collections/vascular/search.php>

Collecting plant specimens

<http://www.rmh.uwyo.edu/prelude/intro/rmcoll.htm>
<http://depts.washington.edu/hydeherb/collecting.htm>
<http://www.anbg.gov.au/cpbr/herbarium/collecting/collection-procedures.html>

Virtual herbarium

<http://sciweb.nybg.org/science2/VirtualHerbarium.asp>

Photos of noxious weeds

Google Image:

<http://www.google.com/imghp?hl=en&tab=wi&q=>

WTU photo site:

<http://biology.burke.washington.edu/herbarium/imagecollection.php>

WSNWCB web site:

http://www.nwcb.wa.gov/weed_list/weed_listhome.html

USDA Plants Database:

<http://plants.usda.gov/>



Short-fringed knapweed,
 Vochin knapweed
 (*Centaurea nigrescens*)

[The illustrations accompanying this article are courtesy of Cindy Talbott Roché and were originally printed in *Identification of Knapweeds and Starthistles in the Pacific Northwest*, PNW 432, a Pacific Northwest Extension Publication, 1993, a joint publication of Washington State University Cooperative Extension, Oregon State University Extension Service, and University of Idaho Cooperative Extension.—Ed.]



A tribute to George Wooten

by Dana Visalli, WNPS Okanogan Chapter

George Wooten stood in rapt attention, gazing at a particularly alluring clump of flowers. To the others gathered around, it appeared he was trying to say something. He raised his hand, pointed intently at the blazing flash of bloom, and announced emphatically, “Bowers!” George was one year old, and he had not only uttered the first intelligible word in his life, but had also made his first scientifically accurate taxonomic determination.

George’s seeming genetic predisposition to know and love the flowers has, in his adult life, benefited dozens if not hundreds of us in the Methow Valley and Okanogan County. As the long-serving Chair of the Okanogan Chapter of the Washington Native Plant Society, George has led countless field trips to obscure corners of the county, each yielding new floral treasures. He helped organize and lead the 1999 WNPS Study Weekend in the Methow, and with Art Kruckeberg organized the first-ever Botany Washington gathering in the state, also in the Methow Valley.

George also has a long-standing interest and concern about noxious weeds and control methods. He is a tireless defender of wild lands and wildflowers, up late into the night making GIS maps of unroaded areas, and attending early morning meetings to forestall new powerline projects through undisturbed land.

As a youth, George’s latent interest in all things floral quickly blossomed in a love affair with nature. His mother Penny reports that in his youth, in rural Maryland, he would regularly come tromping into the house with bags of plants gathered from field and forest that he insisted were edible. Many of them actually were—from poke and May apple to nettles and sassafras, the local flora regularly made its way onto the family dining table.

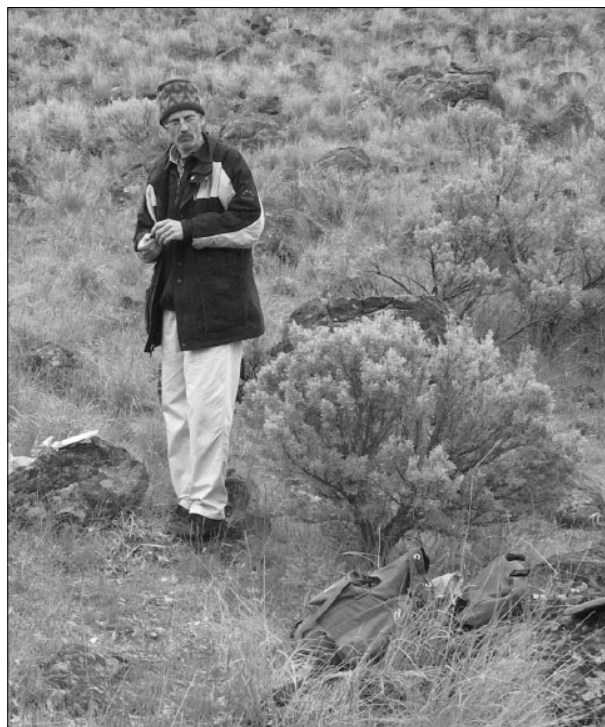
George attributes some of his continuing passion for plants to finding the right teacher at the right time. He spent four years attending the evening classes at the home of his eccentric mentor, Professor Elmer Worthley, of the University of Maryland. Other professors would pull students aside and advise them, “This guy is a nut but he may be the best botanist in the country.” Worthley was overbearing, demanding, argumentative, over-critical...and

full of passion for life. When George is asked why students seemed to like Worthley so well, he responds with typical aplomb, “His character flaws were so numerous that they canceled one another out.”

George is multidimensional—remember that when you are out in the field with him. He is full of tricks and puns, like Wylie Coyote. He will for example purposely misname something just to see if anyone is paying attention. I recall an occasion where, standing in a mountain meadow, he gave us a briefing on *Botrychium*, some of which, he announced, are quite fond of mountain meadows. We looked down at our feet, and there they were, new elvin additions to our personal floras.

In my personal copy of *The Flora of the Pacific Northwest* there are a number of handwritten entries for the sedges and grasses where my first sighting was “on George’s table.” When helping me get oriented to the *Carex* keys in Hitchcock, he jabbed a finger at Group II and noted with frustration, “I don’t know why they didn’t just call this group ‘large plants!’” To this day I have “Large Plants!” written in my book under Group II, and will always first seek the identity of a large sedge there. There are doubtless dozens of aspiring botanists with emphatic notes from George scribbled throughout their botany books.

George gives freely to his community the gifts of keen observation, high ethics and great enthusiasm.



Honorary Professor George Wooten communing with a sagebrush, *Artemisia tridentata*. PHOTO: DENNY O'CALLAGHAN

Call for artists!

First WNPS Annual Limited Edition Print Competition

The Washington Native Plant Society is announcing a call for entries to the members of the WNPS and the Association of the Pacific Northwest Botanical Artists for the selection of an artist who will be commissioned to paint a watercolor plant portrait. The plant must be native to Washington. The work will be used for a Giclee reproduction of the Washington Native Plant Society's first Annual Limited Edition Print. The artist will confer one-time use rights only. The amount of \$1,000.00 will be awarded to the winner. Applicants will be judged by examples of previous work.

To compete, artists must be a member of the Washington Native Plant Society or the Association of the Pacific Northwest Botanical Artists. Interested artists may submit up to three watercolor example images as jpegs or as slides.

The deadline for submission is April 15, 2006.

Artists will receive notification by May 15, 2006, at which point the artist and the WNPS will jointly choose a species for depiction.

The commissioned piece has a deadline of September 1, 2006.

Jurors are to be announced.

To enter:

Please include an entry form with each set of images, which contains a corresponding inventory for each image, to include the following information (the entry form below may be recreated for electronic submissions):

1. **Inventory number**
2. **Artwork title, scientific and common names if known**
3. **Artwork dimension**
4. **Artist's phone and e-mail address if applicable**
5. **Artist's address**
6. **Artist's name**

Please also label each separate image with number, title, dimensions and artist's name and address. Slide entries should carry an arrow pointing up in the upper right hand side of the front of the slide frame.

Please include a self-addressed envelope with return postage suitable for return mail of your slides if you wish them to be returned.

Electronic images should be emailed to:

wnps@wnps.org

Slide images should be mailed to:

Washington Native Plant Society
6310 NE 74th St., Ste. 215E
Seattle, WA 98115

Entry Form – First WNPS Annual Limited Edition Print Competition

Name: _____ **Date:** _____

Address: _____

Phone: _____ **E-mail** _____

	Scientific Name	Common Name	Size
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

Advertise in *Douglasia*

Douglasia, the quarterly publication of the Washington Native Plant Society, reaches 1,800 members of the Washington Native Plant Society (WNPS). Content is geared to botanists, gardeners and others interested in native plants. We welcome advertising for products, information, and services relevant to these audiences, of benefit to WNPS members, and to the advancement of native plants in Washington State. If you already know that advertising interests you, please visit our web site at www.wnps.org for detailed and printable ad rates and specification sheets which include information regarding printing specs and editorial deadlines.

Douglasia is a primary and tangible benefit to WNPS members. Because of the educational nature of articles, advertisers can expect “permanent” shelf life of issues distributed.

Please send advertising information requests to:

E-mail:

Catherine Hovanic
wnps@wnps.org

Mail:

Washington Native Plant Society
6310 NE 74th Street, Suite 215E
Seattle, WA 98115

Online:

www.wnps.org

Plant lists available online

Before you set out on your next hike, check out the “Native Plant Lists” link at the WNPS web site www.wnps.org. Here you’ll find plant lists from more than 300 sites throughout the state, compiled by some of the most respected names in Washington botany. Updates will be done once a year and members are invited to contribute their own lists. If you have suggestions about the plants lists or would like to contribute a plant list, please contact Don Knoke at donknoke@yahoo.com.

Information for contributors

Members and others are invited to submit material for publication in *Douglasia*. Articles, book reviews, poetry, photography or illustrations are welcome. All materials submitted should relate to the study of Washington’s native plants. Acceptance will be based on space and appropriateness, and materials are subject to copyediting (substantive editing with author’s permission). Contributors are reminded that the *Douglasia* audience ranges from professional botanist to the interested enthusiast.

Articles Send as email attachment in Word, or a rtf (rich text format) or txt (text only) with minimal formatting please.

For plants whose ranges include California, follow the nomenclature of *The Jepson Manual* (Hickman 1993), since many species names in *Flora of the Pacific Northwest* (Hitchcock and Cronquist 1973) and *Vascular Plants of the Pacific Northwest* (Hitchcock et al., 1955–69) have changed. For species not found in *The Jepson Manual*, follow the National Plants Database, available on the Web at plants.usda.gov or *Flora of North America*. A common name, on first use, should be followed by the botanical name in parentheses. Please provide the Hitchcock synonym for species whose names have changed.

Illustrations and photos Send as an attached jpg or tif file, with reference in the text where the photo or illustration should appear. Do not embed or paste photos or illustrations in your Word files. Medium resolution (at least 150 dpi at the size they are used) photos will reproduce better. Any photo submitted at 72 dpi will not be included. Be sure to obtain permission from the photographer, and credit the photographer. *Douglasia* has standing permission to use, with credit, illustrations from Hitchcock and Jepson. Contributors are responsible for obtaining permission for illustrations from sources other than Hitchcock and Jepson.

Email material to: gatrellk@msn.com

Deadlines for submission

Deadline	Issue	Members receive approximately
January 1	Winter	March 1
March 1	Spring	May 1
June 1	Summer	August 1
September 1	Fall	November 1

Welcome new members

9/17/2005 through 1/18/2006

Central Puget Sound Chapter

Maryanne Adams, Rosemary Baker, Lynne Banki, Janet Bird, Monica Bretherton, Margaret Bridge, Geary Britton-Simmons, Susan Bush, Karen B. Calara, Melissa Coiley and Tom Meyer, Beverly Dahlin, James Erckmann, Suzanne Fritch, Sandra Fry, Cyn Gabriel, Christine George, Deborah Giddings, Darrin Gunkel (Gift of Shauna Cheney), Laura Harvell-Spehar, Sarah Haynes PhD, Lora Mary Hein, Judette Hemachandra, Harriet Huber, Wren and Leigh Hudgins, Peter Hurley, Arlene Inez, Danielle Jalbert, Roxanne A. Kenison, Eva Koeniger, Tiffany Linbo, Stan Lundgaard, Joel Merriman, Kelda Miller, Chris Moller, Nancy Moore, John Nugent, Jim O'Keeffe and Judy Otsuji, Karen Phipps, Anne Preston and Karen Wood, Gil Price, Marcia Reed, Karelina Resnick, Claudia Robbs (Gift of Decky Fiedler), Kim Rooney, Francis Roque, Valerie Rose, Donald B. and Ann K. Schaechtel, Drake Signe, Bridget Louise Smith, Irene Su (Gift of Lynne Banki), Pearsall Tamar, Ann Uhrich (Gift of Fred Weinmann), Valentina Visscher, Michele Waltz, Rolfe Watson

Central Washington Chapter

Tom Elliott and Kat Strathmann (Gift of Peter H. Holloran)

Columbia Basin Chapter

Christopher Alford, Alexandra Amonette, Amy Bjerke, Cloyd Bowers, Anitra Breit, Jeanne M. Fromm, Shannon Hays-Truex, Steven Roy, Tanya Williams

Koma Kulshan Chapter

Julie L. Clinton, Dawn and Hudson Gauthier-Dodd, Linda Jennings, Kimberley Kolb Ayre

Okanogan Chapter

Steve Isaacs

Olympic Chapter

Tad Parrington, Stephanie Reith, Ann Terry

Salal Chapter

Jim Gallup, Christi Hardy, Bob Jackson, Herta Kurp, Gavin Murray, Alice (Sandy) Nason, Sue Ruppert, Alice Turner

South Sound Chapter

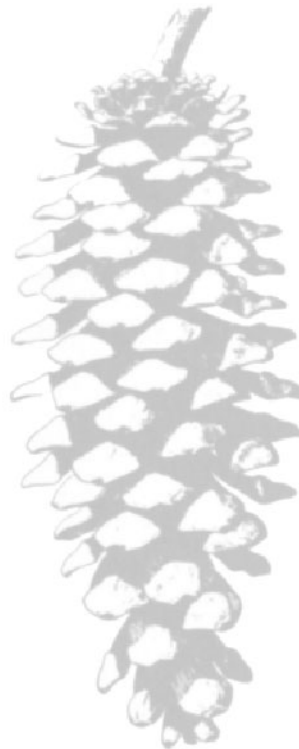
Sue N. Butkus, Dennis Downing, Linda Frizzell, Stan Graham (Gift of Jenny Downs), Alison Halpern, Ruth Lowry, Audrey Montano, Anne Percival, Clyde S. and Kathryn M. Powell, Graeme Sackrison, Lauren Seyda, Laurie Skinner, Ingrid Wachtler

Wenatchee Valley Chapter

Steve Isaacs

At Large Members

Indiana Native Plant and Wildflower Society, Jack Maze, Maureen Paszek, Wild Ones



WNPS Donors in 2005 – *Thank you for your generosity*

Any group dedicated to the appreciation and conservation of Washington's native plants has their work cut out for them. During the past year over one-fifth of our members and some supportive friends have made financial donations to the Society. These donations make possible our programs to study, educate and advocate for native plants. This page serves to recognize our donors and thank them for their open-handed generosity and support during the past year. Donations given in 2006 will be acknowledged in the next issue of *Douglasia*.

WNPS Patrons \$5,000 or more

Dr. Linda S. Park
Peg Pearson
Jo Roberts

WNPS Sustaining Members \$1,000 or more

Anonymous
Catherine Conolly and Rodney L. Brown Jr.
Thomas F. Gedosch
Maren Gribskov
Lisa Hoffman and Bill Driscoll
Don and Ruth Knoke
Gary Smith and Jean Yee
Fred and Ann Weinmann

WNPS Best Friends \$500–\$999

Clara and Art Bald Trust
Scott and Susie Blackstock
Barbara Broderick
Martin and Rebecca Chaney
Lars Crabo and Carolyn Coughlin
Helen Curtis
Barbara Downward
Paul Fendt
Robert and Judith Fisher
JKU Foundation
Jan Gombotz
Ann Lennartz
Susan Holmes Lipsky
Bill McJohn
George Thornton and Lee Miller
Claudia Tidball
Jane Wentworth

WNPS Special Friends \$100–\$499

Anonymous
Anonymous
Ted Alway
Robert Antieau
Shannon Bailey
Martha Beard

Kathryn A. Beck
Arlene Bell
Maggie Bell-McKinnon
Alan Bennett
Rebecca and Robert Benton
Alan and Norma Borden
Tom Bowden
Renagene Brady
Ann Chiller
Joan Christ and Family
Carolyn Wren Clark
Steven Clark
Dr. and Mrs. Thomas F. Corrigan
James and Edna Dam
Allen Davenport
Pam David
Patty Davis
Richard Decker
Annette deKnijf
Gary DeWitt
Janelle Downs
Sylvia Duryee
Christopher J. Earle
Jim Ellingboe and Michelle Margroff
Lee Ellis
Jim Evans
Sylvia Feder
Robert J. Fortman
Phelps Freeborn
Anne E. Goslin
Heather Coles Halabisky
Benjamin and Margaret Hall Foundation
Al Hanners and Family
Elise Hemenway
James L. Hermanson
Joanne and Jim Hicken
Marie Hitchman
Bill Horder
Catherine Hovanic and William Brookreson
Barbara Kajiya
Sulley Keehnel
Victoria Leslie
Ed and Kay Lester
Tiffany Linbo
Dixie and Dave Llewellyn
Walter Lockwood
Dean Longrie
Anne A. Mack
Phillip Marks
Michael and Jane Marsh
John Martin
Wendy McClure

Jan and Tim McGruder
Marcia Mellinger and Alex McAlvay
Milestone Nursery
Bonnie Miller
Libby Mills
Dan and Pat Montague
Louisa Nishitani
Jim and Helen Oakland
Jennifer O'Connor and Family
Margaret Padelford
George Pinyuh
Laura Potash
Greg Rabourn
Jim and Jo Ann Roberts
Angela C. Robinson
Sharon Rodman
Richard and Nancy Rust
Phil Schneider
Seattle Garden Club
Mark Sheehan
Dyanne Sheldon
Barbara and Philip Smith
Fred Stark
William Steil and Family
Sue Summers and Al Ferguson
Shari Tallarico
Joanne Tallman
Joan Thomas
Lisa Therrell
Alan and Alexandra Thompson
Margaret and David Thouless
Anna Thurston
Sally Turner
Monica Van der Vieren
Vashon-Maury Island Land Trust
Cynthia Wayburn
Karen Wayenberg and David Hagen
David Wooten
Alan Yen
Jacklynn Zorich

WNPS Friends \$50–\$99

Caren Adams
Richard Ambrose
Pati, Ben and Noah An
Lyle Anderson
Paul Anderson
Clayton Antieau and Naomi Chechowitz
Mildred Arnot
Randy and Cici Asplund
Suzanne Bagshaw
Sharon Baker

Susan Ballinger
Dr. Julia Bent
Elizabeth Binney
Marilyn Boysen
Dory Brooking
Eileen Bryant
Carol Burton
Jim Campbell
Judy Chapman
Jean Chott
Elizabeth G. Christensen
Paula K. Clark
Rodrick and Claudia Clausnitzer
Bob and Molly Cleland
Don and Pat Clifford
Tina Cohen
David Cole
June M. Coloff
Maude E. Conrad
Betsy Cooper
Elizabeth Crosby and Paul Becker
Herbert Curl, Jr.
Troy Deady
Kathy Dennis
Wendy and Marc Descamp
John Dixon
Beth A. Duncan
Lorraine Edmond and Tom Bowden
Mark and Kerry Egger and Esta Modian
Carol Ellis
Margaret "Kit" Ellis and Hugh Stout
Paige Embry
Lorna Emerich
Helen Engle
Kern Ewing
Patricia Farmer
Joan Frazee
Shelley French
Susan D. Freiberg
Mary Fries
Jim Gallup
David Giblin
Candice Guth and David Pogel
Clayton R. Haberman
Roger and Ronan Hagarty
Chris Hall
Cleveland Hall
Charles Halpern and Family
Judith Hance
Jim Hansen
Marie Hartford and John Schmied
Sarah Haynes

WNPS Donors in 2005 – *Thank you for your generosity*

Catherine Helten
Jan Hersey
Amy Hiatt
Connie Hoge
Sue Hoover
Diane and Clint Hurd
Dale and Glenda Johnson
Donna Kelleher
Helen Kolff
Donna Kostka
Linda Krippner
Phyllis and Dr. N.W. Kronenberg
Art Kruckeberg
Tom Kuykendall
John A. Lee
Bob Lemon and Annie Prevost
Cynthia Lenz
Mark Levensky and Michelle Connor
Maxine Linial
Larry Loftis
John Lombard
Jack Longino and Nalini Nadkarni
Jim Lyons
Laura B. Maier
Emily and Len Mandelbaum
Gina Massoni
Michael McGee
Pat Medvick and Family
Louis Messmer
Brian Miller
Margaret and Joe Miller
Kathleen Mitchell and Family
Carol Anne Modena and Dana Roberts
Sarah Moore
Jamie Moran
Christine Mustelier
David A. Nelson
Jan North
Tim O'Connor
Joyce Ogden
Dr. Richard Old
Richard G. and Sheila Olmstead
Mark Olsen
Joann Otto
Tom Palm
Dan Paquette
Margie Parker
Betsy Peirce
Jocelyn Penner
Van Perdue
Wanda Peters
Ruth S. Peterson
Michael Pietro

Lynn and Norm Prewitt
Gil Price
Pam Pritzl
Rick Purn
Kathleen Raettig
Catherine Reed
Kathleen Richardson
Ann Risvold and L.J. Donovan
Marcia Rivers-Smith
Tom Sawyer
Wilbur Saxton and Family
Maureen Schmitz
Lynn Schueler
Gilbert Seely
Sasha and Timothy Shaw
Joan and Charles Simmerman
Bridget and James Simon
Leni Skarin
Catherine A. Sloan
Liz Smith
Brian and Cheryl Smith
Randy Smith and Sharon Metcalf
James and Mary Stephenson
Anne Stewart
Prudence Stoudt-McRae
Ken Swedberg
Robert S. Swenson
Paul Talbert
Phyllis Taylor
Penny Thayer
Ted Thomas
Norman Tjaden
Joan Tracy
Dennis Tully and Family
Janette Tureman
Virginia Vose
Scott Warner
Everett Weakley
Pete and Michelle Weigel
Kristen West and Rod Gilbert
David Wilderman and Jeanne Ponzetti
Marianne Wiley
Henry C. Wilkens
Bob Wiltermood
Anne Winter
Veronica Wisniewski
Anne Woolf
Nikolina Yonkow
Pamela Yorks and Stephen West
Patricia Youngman
Elsie L. Zarnowitz
Other Donors
Gail Adams
Jan J. Anderson

Mark and Ruth Backlund
Chrys Bertolotto
Mary Bicknell
James Blake
Melinda Bronsdon
Mary Cadigan
Laura Caruso
John Day and Martha Bray
Darrell Dobson
Sharon Dunn
Sarah Gage
Steve George
Thelma Gilmur
Michael and Jana Hobbs
Alice Q. Howard
Dorothy D. Jegottka
Sue Kacskos
Jonathan Kemp
Harold and Ruth Kephart
Byrna Klavano
Kathleen Lavallee
Julie Lemme
Gillian D. Lewis
Mara McGrath
Terri Knoke and Mark Mease
Mara McGrath
Christine E. Meyers
Lynne Pearson
Rodney Pond
Margarita Ramos
Susan Robinson
J. Hawkeye Rondeau
Holly Sawin
Katherine Schloemer
Joan Scott
Anna Scruton
Clint Stewart
Janet Strong
Tim Wahl
Jeff Walker
Patricia Wenke
Gary Wilburn
Dennis White
Kathleen June Whitson Wiley
Mary Maxwell Young and Ian Young
A special thanks to all who have given through their workplace.*
June M. Brown
Caren Crandell
Patricia Ellingson
Mark Folkerts
Kari S. Gilje
Leah Helms

Terry D. Krugel
Michael Shepherd
Robert Vargas

In Memory of Dorothy Naas

Mark Sheehan

In Memory of Mareen Kruckeberg

Marian Kohn

In Memory of Marjorie Baird

Marian Kohn

Donations to the Endowment in 2005

Phelps Freeborn
Barbara Kaijiya
Marian Kohn
Peg Pearson
Mark Sheehan
Jane and Keith Wentworth
David Wooten

Donations to the Growing Wild Program

David Bembridge
Rebecca Bykowski
Karen Calara
Gretchen Carlson
Melissa Coiley and Tom Meyer
Kathleen Dowd-Gailey
Judith Finn
Patricia Gawley
Irana Hawkins
Christine Larkin
John Nugent
Clyde and Kathryn Powell
Anne Preston and Karen Wood
Marcia Reed
Deb Richardson
Beverly Rose
Julie Russillo
Kathy Schuler
Dirk Smith
Carol Thompson
Karen Tripson
Nancy Whittaker

* We wish to apologize to any who have generously given to WNPS at the workplace, but are not listed. We do not receive the names of all people who have given, nor do we always receive information on the amount given. This varies with workplace giving campaigns and donor preferences. We also may not receive information on workplace pledges until six months or a year after the initial pledge. We do receive your donated pledges through Earth Share of Washington in quarterly payments. In 2005 these payments totaled \$11,990 for the year. A very big thank-you for your support through the workplace!

Giving at the workplace



Workplace giving is a means by which you can donate to WNPS and other charitable organizations through payroll pledges. Giving through automatic payroll deductions makes it easy to give. The Washington Native Plant Society is a member of Earth Share of Washington, a federation of leading environmental and conservation organizations. Many companies sponsor Earth Share of Washington giving campaigns through which you can designate a donation to WNPS. Federal, Washington State (including UW and WSU), King County, City of Seattle and other govern-

mental agencies also sponsor giving campaigns that include WNPS as a charitable option. For a complete list of participating companies check out the Earth Share of Washington web site at www.esw.org. If your company has only a United Way giving campaign, you can still contribute to WNPS by designating Washington Native Plant Society in the "specific organization" or "donor option" section of the United Way pledge form.



Membership in WNPS entitles you to:

- A subscription to *Douglasia*
- Special price on Occasional Papers, studies of native plants
- A chapter newsletter with local news and information
- Field trips to see wildflowers and unusual plant communities
- Classes by expert botanists
- Annual study weekends
- Conservation and restoration activities
- The fellowship of plant lovers from all over the State of Washington

Join the Washington Native Plant Society

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____ E-mail _____

☐ New Membership ☐ Renewal ☐ Change of Address

Membership Category (Membership includes one chapter affiliation)

☐ \$15 Budget	☐ \$50 WNPS Friend
☐ \$25 Individual Membership	☐ \$100 WNPS Special Friend
☐ \$35 Family Membership	☐ \$500 WNPS Best Friend
☐ \$50 Club/Institution	☐ \$1,000 WNPS Sustaining Member
☐ \$5 Each additional chapter	☐ \$5,000 WNPS Patron
	☐ Donation \$ _____

Chapter Affiliation

☐ Central Puget Sound (Seattle)	☐ Palouse (Pullman, inactive)
☐ Central Washington (Yakima/Ellensburg)	☐ Salal (Skagit Valley)
☐ Columbia Basin (TriCities)	☐ San Juan
☐ Koma Kulshan (Bellingham)	☐ South Sound (Olympia)
☐ Northeastern Washington (Spokane)	☐ Suksdorfia (Vancouver, WA, inactive)
☐ Okanogan	☐ Wenatchee Valley
☐ Olympic Peninsula	☐ At-Large

Make checks payable to:
WNPS
6310 NE 74th Street, Suite 215E
Seattle, WA 98115

Washington Native Plant Society Directory

Officers & Elected Directors

(Director's term follows name)

President

Dean Longrie 2004-2007
20611 NE 245th Ave
Battle Ground, WA 98604-8803
(360) 687-5148
deanpl@aol.com

Immediate Past President

Fred Weinmann 2003-2006
242 Cedar View Dr.
Port Townsend, WA 98368
(360) 379-0986
fweinmann@cablespeed.com

Vice-President

Dr. Elizabeth Binney 2005-2008
PO Box 4398
Bellingham, WA 98227-4398
(360) 671-2317
atsi2@fidalgo.net

Treasurer

Scott Moore 2005-2008
7009 23rd Ave NW
Seattle, WA 98117-5630
(206) 784-4471
skirpus@msn.com

Secretary

Linda Storm, 2003-2006
3744 SW Ida St.
Seattle, WA 98126-3242
(206) 935-0419
lstorm61@aol.com

Jane Wentworth 2004-2007
8901 Woodbank Dr NE
Bainbridge Island, WA 98110-3486
(206) 842-7178
jane@ckwentworth.com

Ellen Kuhlmann 2003-2006
2228 Verona St #201
Bellingham, WA 98229
(360) 647-7871
ekuhlmann@earthlink.net

Brian Miller 2004-2007
4210 E. Woolard Ct
Colbert, WA 99005
(509) 238-3130
bcmiller@earthlink.net

David Biek 2005-2008
3830 Nassau Ave NE
Tacoma, WA 98422-2242
(253) 927-2654
davidbik@comcast.net

Mike Marsh 2006-2007
3434 14th Ave W
Seattle, WA 98119-1613
(206) 281-8976
swamp@blarg.net

Standing Committees

Conservation

John Browne, Jr, *Chair*
20929 111th Ave SW
Vashon, WA 98070
206-463-9641
jb4juddcreek@webtv.net

Mike Marsh
swamp@blarg.net

Janelle Downs
sagejld@aol.com
George Wooten
gwooten@mymethow.com
Linda Storm
lstorm61@aol.com
Susan Alaynick
s_alaynick@hotmail.com
Wendy McClure
wendymac3@earthlink.net

Education

Fayla Schwartz, *Chair*
10032 31st Ave NE
Seattle WA 98125-7706
(425) 388-9451 w
fschwartz@everettcc.edu
Diane Doss
Ddoss@spscctc.edu

Joan Frazee
jfrazee@fs.fed.us
Russell Link
linkrel@dfw.wa.gov
Toni Fitzgerald
tjftz@wsu.edu

Plant Inventory and Research

Pam Camp, *Chair*
1014 Westmorland
Wenatchee, WA 98801
(509) 663-5491
Pamela_Camp@or.blm.gov
Peter Dunwiddie
pdunwiddie@tnc.org

Lou Messmer
lmessmer@reachone.com
Dr. Sarah Reichard
reichard@u.washington.edu
Dr. Elizabeth Binney
atsi2@fidalgo.net

Dr. Ken Swedberg
klswedberg@icehouse.net

Editorial Board

David Biek, *Chair*
davidbik@comcast.net
Dr. Art Kruckeberg
ark@u.washington.edu
Richard Robohm
robohm1@comcast.net
Joe Arnett
joseph.arnett@wadnr.gov
David Giblin
dgiblin@u.washington.edu
Fred Weinmann
fweinmann@cablespeed.com
Linda Storm
lstorm61@aol.com
Anna Thurston
a.thurston@worldnet.att.net

Fundraising

Chair, Vacant
Elizabeth Binney
atsi2@fidalgo.net
Tom Johnson
tjohns@u.washington.edu
Dr. Steve Link
Slink@tricity.wsu.edu

Helen Roberts
robertsh@earthlink.net
Anna Thurston
a.thurston@worldnet.att.net

Earth Share Representative

Peg Pearson
(206) 524-5564

Native Plant Appreciation Week State Coordinator

Monica VanderVieren
(425) 334-1968
larkeyskip@yahoo.com

Douglasia Editor Emeritus

Dr. Art Kruckeberg (ARK/Doug)
(206) 546-1281 h
(206) 543-1976 w
ark@u.washington.edu

Chapter Chairs

Central Puget Sound

Chrys Bertolotto
13230 6th Ave NW
Seattle, WA 98177-4011
(206) 568-1802
auklet@Comcast.net

Central Washington

Charles Hawkins
106 E 17th Ave
Ellensburg, WA 98926-2518
(509) 962-2669
hawkinsc@cwu.edu

Columbia Basin

Janelle Downs
Pacific Northwest National
Laboratory
Richland, WA 99352
(509) 376-6641
sagejld@aol.com

Koma Kulshan

Walter Lockwood
9007 Shearwater Rd
Blaine, WA 98230-5705
(360) 371-3161
siggielock@comcast.net

Northeast Washington

Mary Water
805 S. Edgerton
Spokane WA 99212-3016
(509) 928-8702
mlwater@earthlink.net

Okanogan

George Wooten
PO Box 501
Twisp, WA 98856
(509) 997-6010
gwooten@mymethow.com

Olympic Peninsula

Wendy McClure, *Co-chair*
PO Box 395
Poulsbo, WA 98370-0395
(360) 779-3820
wendymac3@earthlink.net

Sharon Schlentner, Co-chair

581 Saddle Dr.
Port Townsend, WA 98368-8905
(360) 379-9810
sschlentner@waypoint.com

Send changes to:

Washington Native Plant Society
6310 NE 74th St, Suite 215 E
Seattle, WA 98115-8171
(206) 527-3210 or
1 (888) 288-8022
wnps@wnps.org

Catherine Hovanik
Administrator
wnps@wnps.org

Linda Ellis
Office & Program Assistant
lindaellis@wnps.org

www.wnps.org



Salal

Susan Alaynick
13625 11th Ave NE
Marysville, WA 98271-6717
(360) 659-8792
s_alaynick@hotmail.com

San Juan Islands

Terry Domico
c/o PUGET SOUND BioSURVEY
PO Box 2012
Friday Harbor, WA 98250-2012
(360) 378-3105
biosurvey@mail.com
naturalist@australiainmail.com

South Sound

Anna Thurston
227 Contra Costa Ave
Fircrest, WA 98466
(253) 566-3342
a.thurston@worldnet.att.net

Wenatchee Valley

Ted Alway
PO Box 385
Peshastin, WA 98847-0385
(509) 548-4384
ted@derbycanyonatives.com

Palouse

inactive

Suksdorfia

inactive

Douglasia

c/o Washington Native Plant Society
6310 NE 74th Street, Suite 215E
Seattle, WA 98115



Nonprofit Org.

US Postage

P A I D

Seattle, WA

Permit No. 3558