

Douglasia

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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.*

Black Huckleberries at Mount St. Helens

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Vaccinium membranaceum

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Managing Editor
Cindy Spurgeon
cspurgeon@msn.com

Layout Editor
Sonja Nelson

Editorial Board, Chair
Kathy Murray
kandmmurray@verizon.net

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

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 Hovanic
Executive Director
wnps@wnps.org

Linda Ellis
Office & Program Assistant
lindaellis@wnps.org

A Note About This Issue

Wildflower season is fleeting. Even though we haven't reached the summer solstice, this year's WNPS Study Weekend is in the past and early blooming plants have already set seed. Fortunately, the Society offers several more opportunities for members to explore untrammelled areas in small groups and to learn more about Washington's diverse flora.

This year's Botany Washington weekend will be July 25–27 in the Olympic National Park. A description of field trips and accommodations (Rosemary Inn, Lake Crescent) is in this issue along with a registration form. If you're interested in a more challenging weekend, the Society's annual backpack trip will take place the same weekend (July 25–28) in the Goat Rocks Wilderness of the Gifford Pinchot National Forest. See the Winter 2008 *Douglasia* (p. 22) for details.

Local chapters also offer numerous field trips. These are listed in local chapter newsletters and there is a statewide list on the WNPS Web site: http://www.wnps.org/chapter_info/chapter_trips.html.

For those traveling on their own, the articles on the sagebrush ecosystem and on recolonization of black huckleberries at Mount Saint Helens may give you some ideas for areas to explore.

This issue marks another *Douglasia* staff transition. The WNPS has extremely talented members and I'm delighted to welcome Sonja Nelson as the new layout editor. Sonja is a resident of Mount Vernon and member of the Salal Chapter. Since 1991 she has been editor of the *Journal American Rhododendron Society*. She is also assistant editor of *The Social Gardener*, a Whatcom Horticultural Society publication.

Enjoy the summer wildflowers. While you're out, if you come up with ideas for future articles, please convey them to *Douglasia* Managing Editor Cindy Spurgeon.

Kathy Murray
Editorial Board Chair

Thoughts on Conservation

by John H. Browne, Jr.
Conservation Committee Co-Chair



An interesting item surfaced on the news as I was writing this report, to wit: a 1959 Opel station wagon, with a stripped-down body and modified carburetor but a basically standard 4-cyl engine won a mileage contest in 1973 by getting 376 mpg. Sure, there were a lot of caveats: a nice, smooth course; maintaining a steady 30 mph speed; harder, narrower tires than usual; and the arcane engineering mysteries of the Past, which have been lost in the eons of time, since 1973, I guess. To those more curious, there's a Seattle PI article and web mention here: http://www.treehugger.com/files/2008/02/souped_down_old.php

What does this have to do with conservation, you ask? Well, only that we depend upon auto transport in our culture in so many ways, and that we dedicate a great deal of our earth's surface, locally, to that effort. In my own case, I live along a rural arterial which claims a 65' right-of-way (half deducted from the property on my side of the street, and half from my neighbor's across the road). It occurred to me that the 2-1/2 mile track into town occupies something like 20 acres and that the highway which runs from ferry dock to ferry dock through the middle of my island home takes up about 100 acres of prime real estate. Of course, only about 70 acres is paved surface, shoulders and swale, while the rest is—what it is—yards, fences, hedges, blackberry thickets, in other words, Habitat.

In an ecological sense, this particular 'habitat' has much to recommend it, because it's an 'edge'—a place where there is pronounced structural variation on the earth's surface that leads to a similar variation in the vegetation which adorns those surfaces. In the case of forested surfaces, that 'edge' can be the result of an abrupt change in the type of vegetation (e.g. a conifer/ deciduous interface) or the result of vegetation management (e.g. a logging clear-cut, a homesite, or farmland). One result of this situation is generally a greater variety of vegetation than might be found if there were no edge; and consequently, a stronger presence and a more diverse population of wildlife. So, one may rightly conclude that 'edge' can be a Good Thing.

Of course we (mostly) learn, over time, that too much of a Good Thing can become a Problem (reasoning

that eventually led me away from a diet of chocolate chip cookies, French vanilla ice cream, custard pies, and gingerbread). In the case of 'edge' provided by roads and highways we have a similar dilemma. Aside from the trade-off of paved over real estate for this opportunity for a richer ecological diversity, we also facilitate the abrupt termination of the lives of a wide variety of mega-fauna, and the introduction of seeds (mostly) and other propagules of undesirable plant (and sometimes animal) species. Compounding this latter challenge is the fact that this 'edge' to which we inadvertently bring unwanted seeds has the enhanced capacity to give those various intruders an easy start because of the constantly-disturbed dynamic of roadsides, and the available micro-climates that are generally present.

Our state highway department (and other public land managers as well) have begun, in the recent past, to respond to these problems in an ecologically sensitive manner, and have produced a "Roadside Manual" to guide the installation and management of roadside vegetation of the desirable types. They are depending on native plants in their appropriate locations to a greater extent than ever before and should be applauded and encouraged in these efforts. They should also hear from all of us with regard to the proposed construction of wildlife bridges (and tunnels and underpasses), which are a desperately-needed addition to landscapes, hereabouts. It has taken the application of Federal Law (or threat of it) to produce the efforts that are being exerted presently to mitigate the damage that insufficient culverts and other hindrances have inflicted on migrating salmon and their ilk (lampreys, whitefish, sturgeon, steelhead, etc.). It is so much simpler to look into the water and see what's taking place there, than it will ever be to stare into the forest, or to keep track of the ebb and flow of lives that are lived on a level less spectacular than the salmon, the elk, the waterfowl, and hummingbirds.

All life moves about and carries other life with it. The impediments to that travel which are part of the natural world have led to the creation of pathways, our oldest 'roads' favored by the migratory predilection of those pioneering species which first discovered them. In most cases our highway systems have followed suit, that is they have made their ways along great water courses and taken the easiest routes through mountain ranges, but highways become barriers, themselves. The great concrete plain of an interstate highway has an effect upon animals (and many plant species) similar to that of a river and can be far more forbidding, even deadly, to many. Where highways combine with other barriers, natural and man-made, an

“island” effect may come into play which can have the effect of eliminating species which were once at home there, even when, to all appearances, the habitat remains healthy. Then, the life in the place simply dwindles away.

The Defenders of Wildlife have produced an excellent manual that deals with the issues presented by the interaction between public roads and highways and wildlife, called “Getting Up To Speed: A Conservationists Guide To Wildlife and Highways.” It is highly readable, and seems very thorough. Its five sections address: Law, Policy and Governance (including where the money comes from); a Life Cycle analysis of a highway; the policies of transportation and their intersection with the natural environment; how advocacy can be conducted (and what has worked for others); and a great appendix/bibliography. Extensive sections of this treatise are available online and I’m leaving my copy for reference at our WNPS office. I’m also going to request my county library to provide a few copies in their system, it doesn’t hurt to ask.

Highways are important to our way of life. Like housing and the sources of our food, fuel, and clean water, these are all things we consider necessities. It may sound silly (or presumptive) to include our involvement with politics as one of those necessities; but I will make that claim, here. Politics has been defined as “the art of the possible” and is ultimately about a comparison of how we live with how we could be living. There are lots of indicators of the results of how we live today and the trends of those efforts on all of our parts to live a better life (“better” being seen more often as an inclusive quality—not simply “better” for the people who will be living here later on). Conservation takes many forms and can be an integral part of our general outlook about our lives. The story about the 1959 Opel, and the technology that was available in 1973 is an inkling of “the possible.” The will of people to create the changes and promote the visions to which they aspire can be simple, and profound. It can be as simple as knowing, and as profound as acting on that knowledge—and encouraging others to do likewise.



Recolonization of Black Huckleberries at Mount St. Helens

by Sylvia Yang

I think there were four of us that day, standing in the hot August sun looking at a large bucket full of coyote scat. “Look at how many intact huckleberry fruits made it through the coyote without being digested,” someone commented. “What shall we do with it now?” someone else asked. I, on the other hand, was still wondering whether or not I was a lucky or unlucky participant in this scat-collecting venture. And so began my PhD, and four years of field research at Mount St. Helens. I would never think about black huckleberry (*Vaccinium membranaceum*) the same way again.

In case you were wondering what happened to that bucket of scat, here’s the rest of the story. We wanted to learn about factors that might inhibit huckleberry establishment after a coyote delivers a load of seeds to a spot on the primary successional Pumice Plain. After discussing other ideas for the coyote scat we collected, we decided to find a big stick, and homogenize the bucket’s contents by stirring. We then donned fresh latex gloves, and re-formed the fruity mess into uniform, scat-sized lumps, carefully sealing each in a plastic bag. We then hauled our odorous load to a site near the base of Windy Ridge, and proceeded to set up our experiment. We placed the contents of each plastic bag on plots where lupine (*Lupinus lepidus*) was already established, on lupine which we killed but left in place, on moss, and on bare soil. Almost immediately, beetles, ants, and other insects showed up to investigate and remove material from our coyote scats. I returned year after year to see if any huckleberry plants survived, but the only evidence that remained of the coyote scats and their contents was tiny rodent bones.

Despite the failure of the seeds from this experiment, black huckleberry is starting to colonize the primary successional landscape created by Mount St. Helens’ 1980 eruption. This first experiment led me to investigate the challenges faced by black huckleberry during establishment in primary succession. In addition to surviving the harsh, physical environment, this species must go through a sequence of interactions with herbivores, pollinators, pathogens, and seed predators in order to successfully transition from the production of flowers on an adult plant all the way to the seedling stage.



At Mount St. Helens, black huckleberry (*Vaccinium membranaceum*) is one of the first animal-dispersed plants to colonize the primary successional Pumice Plain after the eruption in 1980. PHOTO: SYLVIA YANG

The overall effect of these interactions may be seen as a selective filter, resulting in a population of plants with special adaptations to primary succession. In contrast, populations in secondary succession, which may experience these interactions differently, may be evolving different adaptations more suited to their biotic and physical environment. However, seeds produced by secondary successional huckleberries can end up in primary succession. This input from outside of primary succession might interfere with the primary succession huckleberry population's ability to develop special adaptations quickly. Thus, documenting the different effects of herbivores, pollinators, pathogens, and seed predators on huckleberries' primary and secondary succession is an important step in understanding the success of the colonizing huckleberry population.

First, I found that in one out of four years, grasshoppers almost completely defoliated huckleberry plants, which resulted in very few flowers becoming fruit. This herbivory occurred only in primary succession; I did not observe herbivory of this magnitude in secondary succession. Interestingly, in years without this herbivory, huckleberries in primary succession generally produced many times more fruit than a plant of similar size in secondary succession. This pattern may result from reduced below-ground competition for nutrients—secondary succession populations are larger and much denser, with neighboring huckleberries within a few feet of each other.

This difference in density may also be a factor resulting in the reduced pollination quality (less fruit and seed set) of primary successional huckleberries relative to huckleberries in secondary succession. Experiments

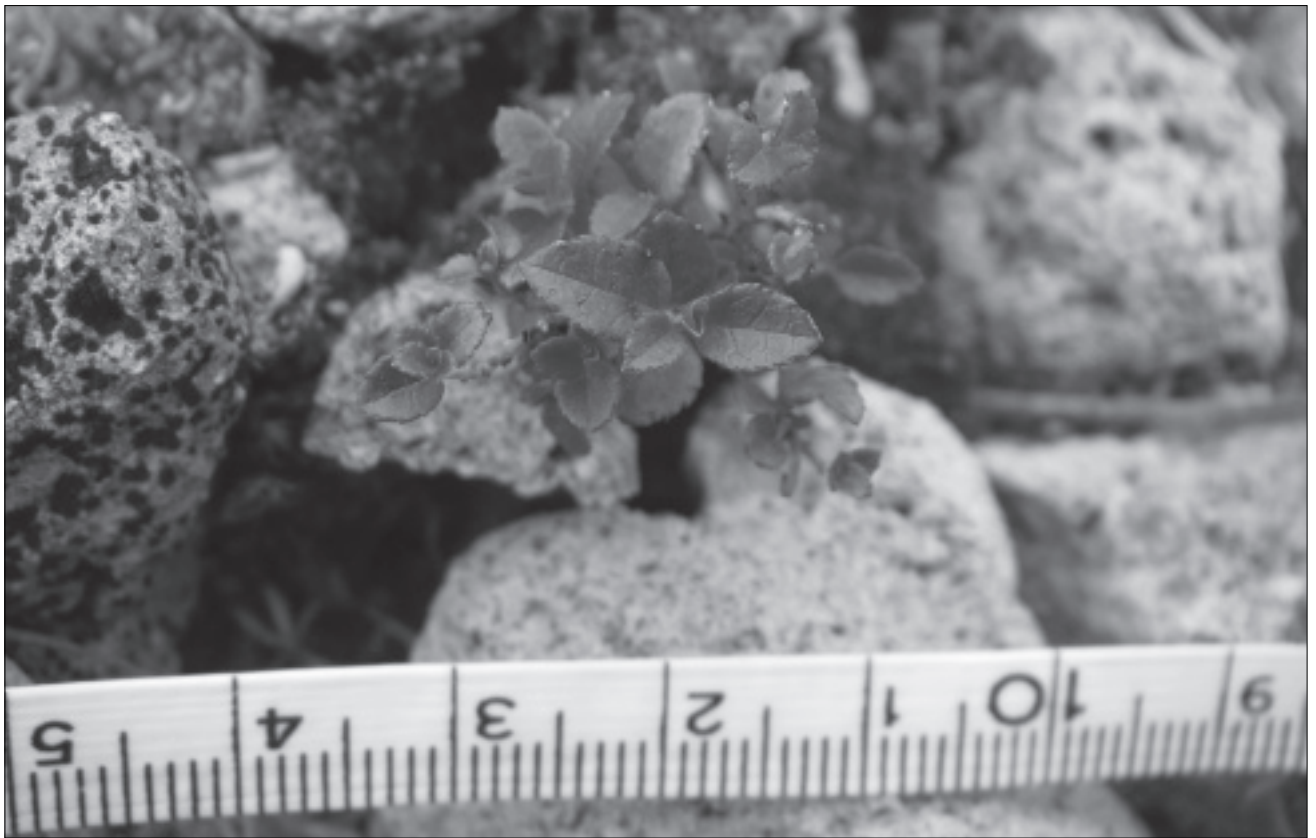
I've conducted suggest that black huckleberry is highly outcrossing. When I applied pollen from one flower to another on the same plant, fewer fruit and fewer seeds per fruit developed than under natural bee pollination. In addition, adding supplemental pollen to flowers on primary successional huckleberries resulted in more fruit and seeds per fruit, whereas in secondary succession, the same number of fruit and seeds per fruit developed when I added supplemental pollen. Thus, pollen limitation is a greater problem in primary succession, where potential mates are rarer and much further apart.

Despite the potential problem of getting good pollination in primary succession, the new population appears to be escaping one of their fungal pathogens, mummy berry fungus (*Monilinia vaccinii-corymbosii*). This fungus attacks developing fruits such that any seeds within them die. Mummy berry is initially spread by wind, but secondarily by pollinating bees. I found that rates of infection were significantly higher in black huckleberry plants located in secondary succession, compared to in primary. Thus, although a smaller proportion of flowers receive the right kind of pollen to develop into fruit, fewer of these on average die from mummy berry infection.

Fungal infection isn't the only factor that prevents seeds from becoming part of the next generation. Seed predators also attack fruits on plants. I tracked the fates of developing fruits, and saw that more predation occurs in primary succession. This may happen if the seed predators (mostly insects) are being controlled by their predators in secondary succession, but not primary succession. Also, huckleberries in primary succession are like islands in a sea of bare pumice and ash. Once a seed predator finds a huckleberry plant, it may forage on the plant for a long time, anticipating that the next food source will be hard to locate.

If a fruit and its seeds are able to survive seed predation, they become available for dispersal. After a fruit is eaten by a dispersal agent (mostly birds and coyotes), the seeds must not be damaged by the dispersal agent's digestive system in order to be dispersed successfully. I tested the germinability of seeds that passed through coyote and bird digestion, and found that overall germinability does not differ between the two types of digestion. However, I also found that the rate of germination was faster after coyote digestion, and both types of digestion resulted in higher germination percentages compared to the germination of seeds that I removed directly from fruits (no digestion).

Next, seeds must escape natural enemies in the form of seed and seedling predators, as well as endure stressful



The path to becoming a huckleberry seedling is full of hazards. A huckleberry seed must escape fungal pathogens and seed predators, survive a trip through a dispersal agent's digestive tract, and withstand less-than-ideal establishment conditions. Like other species of *Vaccinium*, huckleberry is pollinated by bees. These pollinators may travel long distances to reach isolated huckleberry plants in primary succession. PHOTO: SYLVIA YANG

primary successional conditions (such as low nutrient availability and drought). I placed more coyote scats with huckleberry seeds in secondary succession, compared to those in areas of primary succession, to see how seeds disappear from the initial deposition site. I estimated the number of seeds in each plot prior to the beginning of the experiment, and then I counted the number of seeds left toward the end of the season. I found a large proportion of seeds do disappear from the original deposition site, much more than the proportion that disappears in secondary succession. Although I identified some of the invertebrates in and near my plots as seed predators, others (like ants) may actually move seeds to potential germination sites. Unfortunately, I was not able to distinguish the actions of different invertebrates on these huckleberry seeds. I had hoped to observe some seedlings germinating over the season, as well as emerging the next spring. Like the experiment I described at the beginning, I did not find any seedlings at all. I view this as evidence that establishing seedlings in primary succession is one of the major challenges to colonization. As these stressful conditions ameliorate over time, biotic interactions such as the ones I examined should become more important in shaping

this young huckleberry population. Rates of immigration from secondary succession will also be likely to contribute to how quickly this might happen.

During the four years that I was fortunate to be conducting research at Mount St. Helens, I had the opportunity to meet many people who were visiting for the first time. These people usually had one or two responses regarding the recovery of flora and fauna since the 1980 eruption; either surprise that there has been so little recovery, or amazement at the speed of recovery. Whether or not the glass was half-full or half-empty, each of these visitors was struck by the power of the volcanic forces that have shaped and continue to shape the landscape of the Cascade Mountain region. These natural disturbances provide us with an excellent opportunity to study the factors that influence recolonization.



WNPS Member Donations at Work

This research was supported in part by a grant from the Washington Native Plant Society.



Seeking Ecological Sustainability for the Sagebrush Ecosystem

Foreword from Habitat Threats in the Sagebrush Ecosystem: Methods of Regional Assessment and Applications in the Great Basin, edited by Michael J. Wisdom, Mary M. Rowland and Lowell H. Spring. 2005. Alliance Commercial Group, Lawrence, Kansas.

Language embodies our perceptions, words are the tools that give shape to those perceptions, and words can be powerful: barren, desolate, wasteland...desert. These are the descriptors that have characterized the American public's vague notion of the sagebrush ecosystem in general, and of the Great Basin in particular. But only the fourth term is accurate. The Great Basin is indeed a desert, a cold desert, but far from barren. Like most desert ecosystems, the Great Basin is a region inhabited by a wealth of species exemplifying a range of adaptations shaped by evolution to survive and thrive in the extreme temperatures and aridity of a cold desert landscape.

Our perceptions and expectations of sagebrush dominated regions across the Intermountain West have been shaped by society's utilitarian descriptor of those lands as the so-called western "rangelands," administered principally by the federal Bureau of Land Management (BLM), with lesser amounts under the purview of other federal agencies and by the states. As "rangelands," these landscapes are predefined as suitable first and foremost for livestock grazing. Indeed, the BLM, formerly known in part as the federal Grazing Service, has managed these lands first and foremost for livestock grazing and secondarily for mineral, oil, and gas extraction. Ecological sustainability was not part of the agency's mandate. Which brings us to the ecological predicament in which we find sagebrush and other western shrubland ecosystems today,

The Great Basin is characterized by the predictable unpredictability of precipitation, whether as snow or rain, and the central role of fire as the dominant forces shaping the distribution and abundance of species across the sagebrush shrubsteppe. Although we think of fire as a "disturbance," in fire-adapted ecosystems of the western United States today it is the *absence* of fire that is the

disturbance. In taming the American West, we profoundly altered the characteristic temporal and spatial pattern of fire that had shaped these landscapes for millennia.

The past 200 years of humanity's impacts on the sagebrush ecosystem have produced unintentional as well as intentional ecological consequences. There is nothing subtle about the collapse of a bridge or a building, but the collapse of an ecosystem, especially one so geographically vast, is difficult to comprehend, both by scientists and the lay public alike. Collapse of the sagebrush and associated shrubland ecosystems lacks the speed and unambiguity of a building's implosion. It is instead a process that was started in motion 200 years ago with the elimination of beaver (the hydrological engineers of every riparian system they inhabit) from the streams and rivers that were the lifeblood of the arid and semi-arid landscapes of the Intermountain West. It accelerated dramatically with the introduction of large herds of livestock-hoofed, grazing animals (cows, sheep, and horses) that profoundly altered the composition and abundance of riparian and upland plant communities, which in turn produced a cascade of impacts on populations of all wildlife (from insects to mammals) that depended upon those plant communities for food and shelter. Increasingly effective control and suppression of fire over the past 100 years produced synergistic effects with livestock grazing that have brought us to the ecological dysfunction we face today: explosive spread and increasing dominance by an array of nonnative, colonizing plant species of little use to livestock or native wildlife; increased densities of native woody plant species; dramatically reduced densities and distributions of native herbaceous plants and of many native wildlife species.

We are witnessing a slow-motion collapse characterized not so much by the complete disappearance of species, but by extraordinary changes in their relative abundances. It is a collapse that is imperceptible to untrained eyes. Many inconspicuous species previously widespread and common are now sparsely distributed and few in number. The relative scarcity of many native bunchgrasses and herbaceous flowering plants is masked by the presence of abundant invasive non-native plants that continue to expand rapidly in range and number at the expense of native plants and wildlife. Today we face the unprecedented confluence of numerous invasive nonnative plant species that thrive in disturbed conditions, accelerating levels of human disturbance from oil and gas extraction, continued ecologically unsustainable livestock grazing practices, and a public that is largely ignorant of the problems through a combination of disinterest, denial, and disinformation.

Thanks in large part to the technological tools we

now have at our disposal (satellite imagery, geographic information system software [GIS], and powerful computing capacity), we have acquired an unprecedented amount of information about these landscapes. Nowhere is this better exemplified than by the massive data marshaled by the editors in this volume. But our knowledge, our understanding, of the basic natural history and ecological relationships of the plants and animals that comprise these landscapes is not commensurate with the scale and magnitude of the geographic information presented herein. As the editors and their coauthors candidly and repeatedly point out, we know precious little biology for many of the species about which we need be concerned. As a result, assumptions and approximations must be made in constructing the scenarios described here. But the assessment presented in this volume makes it abundantly clear that we cannot afford the luxury of waiting until we do know more about these species before we take actions to stem their disappearance.

There is a wealth of assessment provided in this volume, and scientists who work in these landscapes will find a broad foundation on which to build. There will be disagreement with some details of the picture presented. I do not share the level of concern expressed in the following pages about the spread of pinyon-juniper woodland. It is a symptom primarily caused by the problems of livestock grazing and loss of natural fire cycles, not a fundamental cause of sagebrush shrubsteppe loss. In contrast, there can

be little doubt that the single most important challenge facing the ecological future of shrubsteppe landscapes is posed by non-native, invasive plant species (exemplified by, but not limited to, cheatgrass). The spread and increasing dominance of invasive nonnatives are the expression of myriad underlying problems, and threaten the existence of native shrubsteppe from the local to the landscape scale. The overarching focus on this topic by the editors and their coauthors is laudable. Addressing the causes that underlie the problem of cheatgrass and other exotics is sufficient focus to fully occupy the attention and resources of land managers well into the foreseeable future.

Assessment of a problem is a necessary first step to understand that problem. But assessment is functionally meaningless without implementation of changes required to address the problem identified. The challenge for land managers will be to implement the changes needed in current management practices to effectively address the problems identified before the shrubland ecosystems of the region become literal deserts, deserted by the native biota. That is the trajectory on which we already are embarked.

David S. Dobkin, Director
High Desert Ecological Research Institute
Bend, Oregon
September 15, 2005

Reprinted with permission of David S. Dobkin.



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.

Conservation Committee Seeking Proposals

The WNPS Conservation Committee is soliciting proposals for Conservation Grants of up to \$500 for projects that further the goal of conservation of Washington native plants. Through its grant process, the committee's goal is to support or enhance on-the-ground conservation or restoration projects.

Grant requests may be from WNPS local chapters or WNPS members. Proposals will be evaluated based on: (1) appropriateness of the proposal for WNPS goals, (2) the likelihood that the proposed project will be successful, (3) the resources and experience of the applicant, and (4) how the project addresses WNPS conservation focus areas (shrub-steppe, Garry oak woodlands, and invasive species). Chapter financial resources and their ability to support the project will be considered on chapter applications.

For 2008, applications must be received by **June 1, 2008**. Awards will be announced by July 1, 2008. For 2009 and beyond, applications must be received by January 15 and awards will be announced by February 15.

Should grant funds remain after the initial award cycle, the Conservation Committee may consider proposals and award grants during the remainder of the calendar year. Please contact the Conservation Committee chair if you are interested in submitting a proposal after annual award dates.

For funded projects, one half will be paid upon award of the grant and one half when the project is completed and a final report is submitted. The final report should be 300-500 words in length and, if possible, include digital photo(s) suitable for publication in *Douglasia*



Applications should include the following:

TITLE:

Please select a brief title that can be used to share information about your project and date of the application.

CONTACT INFORMATION:

Include applicant name, address, telephone number and e-mail address. If the applicant is a chapter, the name, address, telephone number and e-mail of the designated contact person.

NARRATIVE:

The proposal narrative must include: a brief description of the project, proposed methods or activities, projected outcomes, and an explanation of how the project furthers the goals of WNPS.

TIMELINE:

Describe when activities funded by the grant will occur, including a timeline for the project.

BUDGET:

Include an itemized budget (as specific as possible).

LETTER OF SUPPORT:

If the applicant is an individual, include a letter of support from his/her WNPS chapter.

FINANCIAL NEED, FOR CHAPTERS ONLY:

Chapters with limited financial resources are encouraged to apply and good projects from these chapters will be given priority.

For individuals seeking grants, confirmation of current WNPS membership is required.

Send three hard copies and one electronic copy of the proposal to:

Conservation Committee – Grant Application
Washington Native Plant Society
6310 NE 74th St., Ste. 215E
Seattle, WA 98115
wnps@wnps.org

For more information or to discuss your proposal contact:

John Browne, Co-Chair
Conservation Committee
206-463-9641
jbrowne001@centurytel.net

Be on the Lookout for Shiny Geranium

by Alison Halpern, Washington State Noxious Weed Control Board, WNPS, South Sound Chapter

“Exploding” is not a word we like to hear in the noxious weed world, especially when it’s used in the context of population growth of a newly invading species. However, that’s just how Bruce Newhouse from the Oregon Native Plant Society described *Geranium lucidum* populations in Eugene. Commonly known as shiny geranium or shiny crane’s-bill, this small annual or biennial species is not common in the Pacific Northwest, or at least not yet. This species was included in the 1973 edition of Hitchcock and Cronquist’s Flora of the Pacific Northwest and noted as being “recently recorded in Yamhill County”, which is in northwest Oregon between Washington and Polk counties.



Geranium lucidum. PHOTO: BEN LEGLER.



Geranium lucidum collected in Skagit County in 2006. PHOTO: BEN LEGLER.

- It is gaining attention in the Eugene area. For example, the Emerald Chapter of the Oregon Native Plant Society notes that *G. lucidum* (along with our other nemesis *G. robertianum*) is “beginning to dominate forest understories south and west of Eugene.”
- It also seems to be spreading throughout the Portland area.
- Even more unsettling is the observation and concern at Mt. Pisgah that this invasive species, which is forming dense stands where few native species seem to persist, could dominate areas after false brome (*Brachypodium sylvaticum*) has been removed.

Native to parts of Eurasia and northern Africa, this species has been recently documented as an ornamental escapee in California and Oregon. Herbarium samples submitted to the Burke Herbarium are dated 2005 and 2006 from Clark and Skagit counties. According to Cal-IPC, the BLM tried hand-pulling *G. lucidum* from the oak woodland areas in Eugene, and this control method made the situation worse, so we are anxious to find any

new populations in Washington while they are still limited in distribution.

Now that I've sounded the alarm, I suspect you're anxious to know its taxonomic profile. This understory species is considered an annual or biennial. Plants germinate in late summer and early fall and are prominent in early spring. Flowering begins around April and May. By mid-summer, the plants senesce. *G. lucidum* looks very similar to our other cranesbill species. The stem is ascending, often has a reddish tinge, and may reach a height of approximately 50 cm. Leaves are sub-orbicular to reniform and are between 10-40 mm wide. They are typically divided into five sections, each of which is further divided into three deep to shallow lobes, which are obtuse and end in broad points. Stipules are between 1.5 -2.0 mm long, broadly

lanceolate, and hairless. The bright pink petals are between 8-9 mm long and are longer than the sepals, which are 5-7 mm long and ovate shaped, ending in a bristle-covered tip. It is noted that the flower stems do not surpass the leaves. The carpels are pubescent with tiny hairs and noticeably 5-ridged lengthwise. Seeds, if you happen to find them, are 2 mm long, oval-shaped, glabrous, and reddish with a black projection.

Now is the time to look for this new invader. Any information you could provide would be greatly appreciated, and you can contact me at ahalpern@agr.wa.gov or at (360)-902-2053. Early detection and prevention may be our only chance to keep this species from spreading in Washington.



What Is a Native Plant?

by Fred Weinmann

What does “native” mean, in terms of Washington’s plant palette? Members of our Society recently decided on a general definition for Washington State. We developed this formal definition to avoid confusion when we discuss native plants and to ensure that we are selling only native plants at our annual sales. Understandably, any definition may seem too narrow in some respects (for example, our definition does not include species that may have been recently introduced to Washington by birds or other non-human vectors) or too broad in other respects (for example, our definition includes species which may have been introduced by the first people of Washington). After considering all these issues and many more we have decided on the following definition for Washington native plants.

“Washington native plants are those species that occur or occurred within the state boundaries before European settlement based upon the best available scientific and historical documentation.”

Spend the weekend on the shores of Lake Crescent and in the Olympic Mountains July 25-27

by Fred Weinmann, *Olympic Peninsula Chapter*

Late July is the time of year for botanizing the high country. Field trips will be to the most diverse areas of the Olympic Mountains including the location of rare and/or endemic species. We will be near the Soleduck Hot Springs so if anybody cares for a botany break, they can go for a soak. Our base camp will be the campus of the Olympic Park Institute with accommodations and meals at the historic Rosemary Inn, the site of our popular 2004 study weekend. **Space is limited, so register early.**

Evening programs

On Friday and Saturday nights we will feature the flora of the Olympic Peninsula. Researchers and botanists from the National Park Service will describe the unique features of the OP flora as well as important research underway. This will be a chance to learn about the status of Elwha River dam removal and associated studies and research. On

Saturday night we will provide an opportunity to look at a few slides from the field trips of the same day. Also, begin organizing your digital images of Extreme Botanizing to share with colleagues.

Field trips

Field trips described below should be considered as options available. Adjustments can be made. For example, if more people than can be accommodated wish to go on one trip, we might be able to add a second group in lieu of some other field trip. Also, weather or snow conditions can affect the accessibility to certain areas, which requires flexibility. Those of you who attended the 2007 study weekend will be particularly familiar with this potentiality. On Sunday, we can easily reach some favorite botanical areas (e.g. Mt. Townsend) if people are traveling east toward Seattle. The specifics of some of these trips will need to be organized on site.

SATURDAY, JULY 26

Klahhane Ridge

Botanize the steep, fairly strenuous Switchback Trail through forest and open, flower-filled meadows to an alpine ridge with rocky outcrops. This is a classic Olympic Mountain hike with high botanical diversity. Nearly 250 species of vascular plants and 5 endemics have been recorded. The elevation gain is 1600 feet in 1.5 miles.

Lillian Ridge

Start high and stay high! Begin at Obstruction Point and make your way to a narrow alpine ridge. Be prepared for stops along the road for exquisite displays of flowers even before the hike begins. You will see endemic plants (e.g. Flett's violet) and rare sedges along the trail. Even with ups and downs the elevation gain will not exceed 1000 feet. This hike is described as a portion of the Grand Pass Trail in the Olympic Mountain Trail Guide by Robert Wood.



Oxytropis campestris on the ridge trail approaching the top of Mt. Townsend. PHOTO: FRED WEINMANN

Deer Park and Blue Mountain

Explore the flora of alpine wetlands and a rocky hillside rich in hardy species and Olympic endemics. This is one of the most popular Olympic Mountain destinations for wild flower trips to the Olympics. The views will be spectacular and if time permits there will be an easy trail walk on Grand Ridge Trail which connects Deer Park with Obstruction Point.

Mink Lake

Begin in an ancient forest of Douglas fir and western hemlock, then continue to the lake where we often see otter but not mink. At the lake spend time with the flowers, grasses and sedges of the wetlands. The hike will continue a short distance beyond the lake, and then it is a short cross country (easy) bushwhack to the upper marsh where rare sedges and other unusual wetland plants reside. We may also see a herd of Roosevelt Elk at the upper marsh. The hike will be about 6 miles round trip with an elevation gain of 1500 feet.

SUNDAY, JULY 27

Some of the hikes on Sunday are local and short. This will provide an opportunity to do two short trips or perhaps incorporate a soak in the Soleduck Hot Springs. Some of the trips will be organized as two-part adventures.

Spruce Railroad Grade

Walk a portion of the Discovery trail which stretches from Port Townsend to the Pacific Coast. The railroad grade was constructed during WW1 to transport Sitka spruce for the aviation industry. This scenic portion along Lake Crescent harbors a high diversity of species as well as the rare orchid, *Epipactis gigantea*. This will be a ½ day trip.

Olympic Hot Springs/Boulder Creek/Elwha dams

A visit to the Elwha dams slated for removal can be combined with a nice hike along Boulder Creek to the Olympic Hot Springs. Swim suits are officially required for dips in the springs, but are sometimes forgotten by hikers. Do the hot springs create habitat for unusual species? The hike will be about 3 miles with an elevation gain of 500 feet.



Chuck Easton and Fred Weinmann discussing Olympic Mountain endemics on Lillian Ridge. PHOTO: FRED WEINMANN

Salt Creek

Salt Creek Park is located on the Strait of Juan de Fuca. The rocky habitats are great for marine algae and excellent for tidepooling to see algae and invertebrates. Near by is a salt marsh for an opportunity to sharpen your recognition of those plants adapted to saline environments. The coastal marine scenery is worth the visit. This will be a ½ day trip.

Cranberry Lake/Discovery Bay salt marsh restoration

Bogs and salt marshes each provide habitat for an unusual flora—the reasons for this and the species supported are very different. On this trip, on the way east, we will sample them both. Cranberry Lake is a bog which requires a short hike and a downhill scramble for access to the floating *Sphagnum* mat and associated unique bog species. At discovery bay we will tour a salt marsh restoration project and an adjacent intact salt marsh at the south end of Discovery Bay.

Mt. Townsend

The forests, meadows and alpine slopes of Mt. Townsend provide some of the finest botanizing in the Olympic Mountains with over 260 species recorded including several rare species (one of them being a sedge). There are two trails to the summit, one from the north and one from the south. If there is interest, we will organize a car key exchange at the summit so that we can do a traverse of the mountain.

Bryophytes

We will be attempting to arrange a bryophyte and/or lichen workshop and hike on either Saturday or Sunday.

Other botanizing and just plain other

- The shoreline, wetlands and forests of Crescent Lake provide rewarding botanizing
- Kayaking and canoeing right from the Rosemary Inn campus.
- An early morning or evening hike to Marymere Falls is well worth it for the botany and the scenery
- There are many other hikes that originate in the area for those who wish to explore on their own (Aurora Ridge, Aurora Divide and Pyramid Mt. for example). Several are in need of a plant list.



Oxytropis campestris PHOTO:
FRED WEINMANN

REGISTRATION FORM

Botany Washington 2008 Registration Form

Name(s) _____
Address _____
City, State, Zip _____
Phone _____ Email _____

Type of meals:

- ☐ Regular
☐ Vegetarian
☐ Allergy diet (describe)

Field trip choices:

Saturday:

- 1st choice _____
2nd choice _____
3rd choice _____

Sunday:

- 1st choice _____
2nd choice _____
3rd choice _____

Registration cost: Registration includes 6 meals from Friday dinner through Sunday lunch and lodging on Friday and Saturday nights. Rooms are set up for double occupancy with shared bathroom facilities. General questions should be referred to Fred Weinmann at fweinmann@cablespeed.com or 360-379-0986 and for questions regarding registration contact the WNPS office at 206-527-3210 or 1-888-288-8022 or wnps@wnps.org.

Total: \$150.00 x _____ number of people:

Total Fees: \$

Mail registration form/check payable to:
Washington Native Plant Society
Botany WA registration
6310 NE 74th St., Ste 215 E
Seattle, WA 98115

Registration deadline: July 8, 2008

In Memory of Elroy Dixon Burnett

February 16, 1926 - February 1, 2008

by Tracy L. Fuentes
Central Puget Sound Chapter

A master, self-taught botanist and lichenologist, Elroy Dixon Burnett dedicated himself to the unusual and the obscure. He knew the names and usual haunts of both the common and rare plants and lichens throughout Washington State. Often, he could predict that he was about to find something rare, because he knew the habitats so well.

He was born in Sumner, Washington, on February 16, 1926. In 1944, he enlisted in the Navy. He received an Honorable Discharge and the following medals in 1946: Asiatic Pacific Area Campaign Medal, American Area Campaign Medal, World War II Victory Medal, and the Philippine Liberation Medal. In 1947, he graduated from Lincoln High School, in Tacoma. He worked variously as an electrician, a setter of avalanche charges, and a logger until about 1984. He then started his own landscaping and lawn care service, while also doing botany work for the state, the National Park Service, and the US Forest Service. He passed away in Tacoma on February 1, 2008.

He developed a keen eye for detail and record keeping at an early age. He amassed an extensive stamp collection, and he was also quite interested in photography, taking numerous photos and developing them himself in his own darkroom.

As Elroy once explained, it all started with photography. Meticulous and detailed, he labeled all his slides with location, date, and subject. He began taking pictures of plants, and he wanted to know exactly what his subject was. So, he taught himself by showing his slides to knowledgeable people, by going on plant walks, by teaming up with other plant enthusiasts, and by teaching himself to key plants with Hitchcock and Cronquist's *Flora of the Pacific Northwest*. Unlike many of us, when he'd mastered the usual suspects encountered in a particular area, he kept going back. He knew what plants to expect at a particular locale, and he'd seen them in different seasons.

Not only did he compile plant lists for particular trails and areas, but he also kept incredibly rich, detailed notes about his hikes that he could use as a reference. Bob

Hubbard summed it up best, "He was a great inspiration, but a hard act to follow." Bob related how he could tell Elroy about a particular lake he was planning to visit, and Elroy would vividly describe the route, the species most likely to be in bloom or fruit at the particular time of year, as well as the "must see" species.

Alpine lakes were a particular interest. Elroy hiked and fished every high lake in Washington State. In his usual, precise fashion, he recorded the name of the lake, the date, weather, and species caught, as well as other specific information about routes and anything unusual.

Because Elroy had hiked extensively throughout the state and had such a keen eye, he could quickly recognize that he'd found something unusual or new to him. He was also constantly looking, as Jim Riley described about Mount Adams hikes with him. "He was always exploring every nook and cranny whenever we stopped to catch our breath."

As his familiarity with the local flora grew, he delighted in finding rare and hard to see genera and species. Of the rare vascular plants currently tracked by the Washington Natural Heritage Program, Elroy is listed as an observer for 47 occurrences (28 species) that he visited between 1981 and 1996.

A classic example of this love of elusive, difficult groups is the fern genus *Botrychium* (moonworts or grapeferns). Some of the smallest have stems that are barely a few inches high. The end of the stem is tipped with a cluster of small, ball-like sporangia, which contain the spores and inspired the common name, grapefern. Branching off the main stem is the leaf blade. To identify them to species, one must look carefully at the size, shape, and color of the structures of this tiny fern. Elroy had it down cold. "You see that *montanum* – it's a lot smaller and a lot bluer than that *minganense* over there."

Some *Botrychium* species grow in disturbed mountain meadows or ski runs. Others grow along roads and trails or even avalanche chutes. Several species grow in old stands of *Thuja plicata* (western red-cedar) with an *Oplopanax horridum* (devil's club) understory. If Elroy was in *Botrychium* country, he knew it. He'd stop, find a branch, and start pushing leaves aside. He referred to such a branch as a *Botrychium* stick. Invariably, if Elroy started looking for *Botrychium*, he'd find it. Kelli Van Norman reports that Elroy is listed as the observer for 95 sites of *Botrychium* species in the former Forest Service/Bureau of Land Management Survey and Manage database.

Lauri Malmquist first met Elroy when they were both conducting botanical surveys for the Forest Service. "We

crew members were in our late 20s to 30s, and he was 67; and often we had to keep up with him, both physically and 'botanically'! We'd scramble on scree-fields and cliffs looking for *Silene seelyi* or crawl on hands and knees searching for *Botrychiums*."

I, too, have chased up after Elroy to see *Silene seelyi*, a cliff-dwelling Wenatchee Mountains endemic. My first two days with the Forest Service were spent planting trees on a landslide near Steven's Pass. Having never before used a Pulaski, my whole body ached from swinging it over and over. I was thrilled, that, on the third day, they sent me out with Elroy, who was 68 at the time. Soon, I found myself scrambling, as fast as I could go, on a steep, rocky, pine needle covered slope. Still, Elroy climbed higher and faster up to a band of cliffs. "We're here," he called down. "I can just climb up to the plants, and yell down the information, and you can write it all down from there, if you're too scared to come up here."

Although he slowed down, slightly, he kept hiking, botanizing, and learning new things. Elroy decided to teach himself lichens, and he went at it with full focus and detail, learning the common, the infrequent, and the rare. In keeping with his delight in the unusual, elusive, and difficult, Elroy fell in love with pin lichens.

A pin lichen looks like a tiny pin growing on wood. By tiny, I mean less than one centimeter tall. Pin lichens are finicky. A particular pin will grow on certain types of wood on particular trees. Some species are on snags that have lost their bark. Others will grow on the bark of living trees, and still others grow on dead branches on living trees. Elroy began to look at all kinds of wood, up close and personal, with his hand lens, everywhere he went.

Laura Potash Martin described the uncanny way he could find pin lichens that no one else could even see. "Elroy, I never would have even looked at that branch. And, even if I did, I wouldn't have even seen the pin lichens on it. I'm looking at the branch right now with my hand lens, and I can just barely make them out."

Remember, of course, that Elroy went hiking everywhere. Add to that the fact that you need to collect pin lichens to identify them. Often, the head of the pin needs to be squashed open to get the spores out and then examined under a high magnification microscope. Elroy collected thousands of pin lichens and constructed custom boxes for each collection. Darci Pankratz describes his boxes as works of art. "The thing I remember most about him was the little boxes he would create from any box he could get at the grocery store, how carefully he made them fit the specimen and also how they were packed into a box for

shipping, like one of those hi-tech puzzles."

In recognition of his contributions, Eric Peterson plans to name a pin lichen for Elroy. "I last talked to him in the fall and told him of my intention. Elroy had an incredible eye for small things and cared about them deeply. He has probably collected more 'pins' from the Pacific Northwest than any other person, myself included. There was always such a note of glee in his voice when we talked about them! His collections are a treasure trove of under-collected and poorly understood lichens and fungi - many of them are likely new to science. I and others will take great joy in working with his specimens for many decades, or longer. I am sure that we can find one to take his name in recognition of his love for these minute forms of life."

The combination of Elroy's botanical expertise, dedication, and breadth of travel make his records, photos, and plant and lichen specimens an unusually detailed and rich record of the flora and fauna of Washington State. If you have photos, stories, or other materials relating to Elroy, please contact me at tracyfuentes@yahoo.com. I am working with his family, the US Forest Service, and the University of Washington to properly curate and care for his natural history legacy.

Thanks to Mildred Arnot, Katie Glew, Darlene Gover, Bob Hubbard, Jack MacMillen, Lauri Malmquist, Laura Potash Martin, Darci Pankratz, Eric Peterson, Jim Riley, Gail Rackley, and Kelli Van Norman who generously shared memories and details about Elroy.



Steward's Fork: A Sustainable Future for the Klamath Mountains.

By J.K. Agee

University of California Press, Berkeley California

Price \$34.95

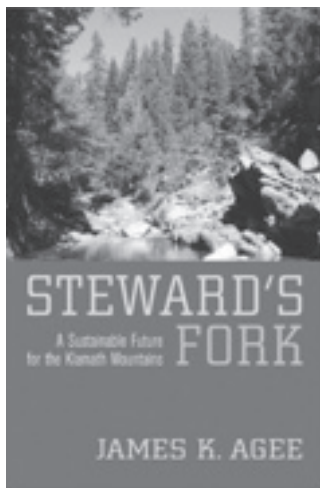
Reviewed by Frank Lang, Siskiyou Chapter, Native Plant Society of Oregon

The title "Steward's Fork" is a play on words that underlies the premise of the book's main theme, "Stewardship" of a landscape that Agee clearly knows and loves. He tells fond childhood memories of the Stuart Fork of the Trinity River and with considerable clarity and skill describes the physical and biological history of the Klamath Mountains.

Although the major areas of concentration are the Trinity and Marble Mountains of California, much of his discussion is also of interest to people who care for the land beyond the Klamath Mountains.

To tell the truth I nearly gave up on the book early on. When writing about the plants of the past (page 26) he wrote "The primary conifer was bald cypress, and its angiosperm associates (plants that have seeds enclosed in a closed ovary, like a rose) fig, holly ..." Sorry, but all I could think was that he had the genus *Rosa* in mind. The "ovary" wall is the hypanthium and the "seeds" are individual fruits that do have a real ovary wall derived from the ovaries of the plant's many pistils.

In Chapter 4, *A Rose by Any Name*, Agee starts discussing the rich diversity of the Klamath flora, and then shifts to a favorite whinge of many ecologists I have known; common and scientific names of plants. "Plant names are often mysteries intended to throw the average person off the track and maintain a professional niche for taxonomists," writes Agee. Jim, to what audience are you pandering? Then he complains about common names based on names of states: Oregon grape, why not California Grape; Oregon ash, why not Washington ash. He does call Oregon white



oak, Garry oak for which he is to be applauded, but fails to champion Kellogg oak for California black oak which occurs in Oregon. I nearly tossed the book at this point, but fortunately forged on.

Chapter 5, *My Botanical Contest with Miss Alice Eastwood*, is a story about Agee's efforts in 1962 to retrace, and duplicate or best, Eastwood's collecting survey in 1900 along Canyon Creek, a tributary of the Trinity River. Agee is able to work in a lot of history and information about the region in his telling of the tale.

Other chapters cover wild creatures of the Klamath Mountains, the factors of change, indigenous peoples and their impact on the ecosystem, the impact of mining, livestock grazing, water issues, and modern myths and monsters (including murder, Bigfoot, and other oddities). Final chapters cover the author's views on how humans can provide proper stewardship for a sustainable future for the Klamath Mountains. He does not paint a hopeless picture.

I found much of value in the book that makes it more than a regional piece, particularly his descriptions of how humans have used and abused the land. Read it to learn about mercury use in early gold mining and its modern legacy, the impact of water projects, the history of land ownership and the railroads, plans for river restoration, and more.

However, I was surprised that I could find no reference to David Raines Wallace's 1983 classic *The Klamath Knot*, a book that covers the natural history of the Klamath Mountains in a different way.

I liked his writing style, particularly things he witnessed, as this flood: "Redwood Creek, which one could easily wade in summer, was a raging 30 feet deep and perhaps 300 feet wide. A large redwood came down the creek broadside and swept into a red alder grove on the east bank. Without slowing down, it snapped off the stems of perhaps fifty or sixty alders. Even today, I get shivers when I remember the roar of the water and the explosion of the alder grove."

You know, I get shivers reading Agee's description. I also shiver at the price, but it is worth the investment if you are interested in the Klamath Mountains.



Wanted: Sighting Reports for Review Species

by Joe Arnett, Rare Plant Botanist, Washington Natural Heritage Program

One of the primary missions of the Washington Natural Heritage Program is to evaluate and rank rarity of plant species in Washington. You can see our whole list of rare species at our new web address at <http://www1.dnr.wa.gov/nhp/refdesk/lists/plantrnk.html>.

Ranking the rarity of a species can be a long-term and complex process, much more so than you might first expect. Determining what species are present in the state depends first on clarifying the taxonomy of the plants we encounter. Anyone who has dipped into plant systematics understands that the answer to the question what species (or subspecies or variety) is this plant? is not always straightforward. We are continually expanding our knowledge about biological diversity and our classification and naming change accordingly. I often feel that we are

running along behind, trying to bring our taxonomy up to date with current scientific understanding.

Then, the question arises, how rare are these plants? Evaluating the rarity of a species requires having good information on distribution and abundance and threats. The Natural Heritage Program uses this understanding of rarity as the basis for conservation recommendations, to our own state Natural Areas Program, as well as to anyone else who manages land or works for conservation in Washington.

All this discussion describes the basis for two review lists that the Natural Heritage Program maintains of species that do not yet have conservation priority, but that have been brought to our attention as being potentially rare. The two questions described above - about taxonomy and rarity - need to be addressed for each species before we can give it a state status.

Review List 1 currently includes fifty species that we are collecting abundance and distribution information about, in order to determine whether they warrant rare status in Washington. We are not able to rank these species until we have a reasonable idea of their distribution, and this is where we reach out to botanists - amateur and professional alike - and ask for sighting information.

Review List 2 currently includes nine species that we have taxonomic questions about. While most botanists encountering these species may be as uncertain as we are about their taxonomy, we need to know where the plants are. So, for these plants too, we are asking people to provide sighting information to us.

I submitted earlier tables to *Douglasia* that incorrectly stated that WNHP was not requesting occurrence data for review list species at this time. We are! Help us work to prioritize rare plant conservation in Washington by keeping your eyes out for these species and reporting their locations to the Washington Natural Heritage Program.

Thanks!



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See http://www.wnps.org/douglasia/douglasia_advertising.html

Review List 1: Species that require additional occurrence information before their rarity can be ranked

Scientific name	Common name
<i>Allium bisceptrum</i>	
var. <i>bisceptrum</i>	twincrest onion
<i>Bergia texana</i>	Texas bergia
<i>Boschniakia hookeri</i>	Vancouver ground-cone
<i>Carex atosquama</i>	blackened sedge
<i>Carex capitata</i>	capitate sedge
<i>Carex constanceana</i>	Contance's sedge
<i>Carex pallescens</i>	pale sedge
<i>Carex praeceptorum</i>	teacher's sedge
<i>Carex tahoensis</i>	Lake Tahoe sedge
<i>Centaurium muehlenbergii</i>	Monterey centaury
<i>Centunculus minimus</i>	chaffweed
<i>Chrysothamnus viscidiflorus</i>	
ssp. <i>axillaris</i>	sticky-leaf rabbitbrush
<i>Crataegus phippsii</i>	Phipps' hawthorn
<i>Crepis bakeri</i> ssp. <i>idahoensis</i>	Idaho hawksbeard
<i>Draba lonchocarpa</i>	
var. <i>vestita</i>	lance-fruited draba
<i>Dryopteris carthusiana</i>	toothed wood-fern
<i>Eremogone franklinii</i>	
var. <i>thompsonii</i>	Thompson's sandwort
<i>Erigeron engelmannii</i>	
var. <i>davisii</i>	Davis' fleabane
<i>Geranium oreganum</i>	Oregon crane's-bill
<i>Hierochloa odorata</i>	common northern sweet grass
<i>Impatiens aurella</i>	orange balsam
<i>Isoetes minima</i>	midget quillwort
<i>Lathrocasis tenerrima</i>	delicate gilia
<i>Leptosiphon minimus</i>	true babystars
<i>Linaria canadensis</i>	
var. <i>texana</i>	Texas toadflax
<i>Lupinus sericeus</i>	
var. <i>asotinensis</i>	Asotin silky lupine
<i>Mimulus clivicola</i>	bank monkey-flower
<i>Minuartia pusilla</i> var. <i>pusilla</i>	annual sandwort
<i>Monolepis spathulata</i>	prostrate poverty-weed
<i>Myriophyllum ussuriense</i>	Ussurian water-milfoil
<i>Packera porteri</i>	Porter's butterweed
<i>Pediocactus nigrispinus</i>	snowball cactus
<i>Perideridia oregana</i>	Oregon yampah

Scientific name	Common name
<i>Potamogeton filiformis</i>	
var. <i>occidentalis</i>	western fine-leaf pondweed
<i>Potamogeton foliosus</i>	
ssp. <i>fibrillosus</i>	leafy pondweed
<i>Ranunculus hebecarpus</i>	downy buttercup
<i>Ranunculus pygmaeus</i>	dwarf buttercup
<i>Salix pseudomonticola</i>	false mountain willow
<i>Saxifraga tischii</i>	Tisch's saxifrage
<i>Scutellaria angustifolia</i>	
ssp. <i>micrantha</i>	narrowleaf skullcap
<i>Silene sargentii</i>	Sargent's catchfly
<i>Silene scouleri</i>	
var. <i>pacifica</i>	Scouler's catchfly
<i>Subularia aquatica</i>	
var. <i>americana</i>	water awlwort
<i>Swertia perennis</i>	swertia
<i>Thelypodium howellii</i>	
ssp. <i>howellii</i>	Howell's thelypody
<i>Trichostema oblongum</i>	oblong bluecurls
<i>Utricularia gibba</i>	humped bladderwort
<i>Utricularia minor</i>	lesser bladderwort
<i>Whipplea modesta</i>	yerba de selva
<i>Wolffia columbiana</i>	Columbia water-meal

Review List 2: Potentially rare species with unresolved taxonomic questions

Scientific name	Common name
<i>Agoseris lackschewitzii</i>	pink agoseris
<i>Arabis furcata</i>	
var. <i>olympica</i>	Olympic Nuttall's rockcress
<i>Balsamorhiza deltoidea</i>	Puget balsamroot
<i>Calamagrostis canadensis</i>	
var. <i>imberbis</i>	bluejoint reedgrass
<i>Claytonia megarhiza</i>	
var. <i>nivalis</i>	Wenatchee springbeauty
<i>Impatiens noli-tangere</i>	western jewelweed
<i>Lupinus cusickii</i>	prairie lupine
<i>Silene douglasii</i>	
var. <i>monantha</i>	Douglas' silene
<i>Solidago missouriensis</i>	
var. <i>tolmieana</i>	Tolmie's goldenrod

New Online Database for Pacific Northwest Herbaria Collections

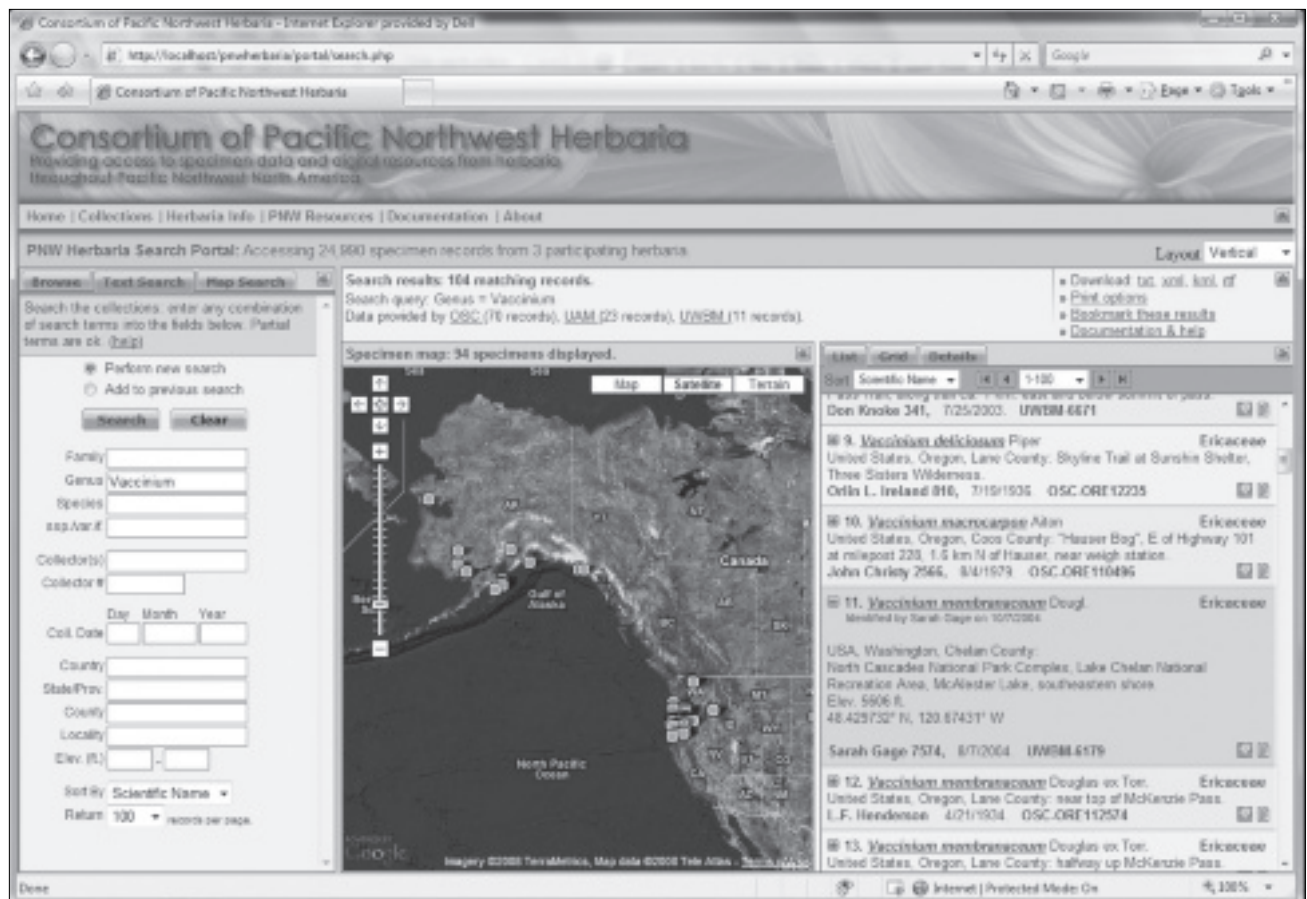
by David Giblin, Collections Manager
University of Washington Herbarium

In December 2006, the University of Washington Herbarium (WTU) received \$30,000 in supplemental funding to its National Science Foundation grant that resulted in WTU's online database (<http://biology.burke.washington.edu/herbarium/collections/vascular/search.php>). These supplemental funds were used to hire Ben Legler to design and build an online portal providing access to digitized vascular plant specimen label data from herbaria throughout the Pacific Northwest region. Ben is presently working on his Master's degree at the University of Wyoming, where part of his Research Assistantship includes developing the Pacific Northwest Herbaria portal.

Databasing efforts are ongoing at the University of Alaska, WTU, Washington State University, Oregon State University, University of Montana, University of Idaho, Boise State University, Idaho State University, Albertson College, and several herbaria in British Columbia. However, the supplemental funding has supported the collation of vascular plant specimen data from WTU, University of Alaska, and Oregon State University only (400,000+ specimens in total).

Results from a search in the new portal will include specimen label data that can be downloaded onto your computer, the identity of the herbarium where each specimen is stored, and a map showing the locality of each specimen record using the Google Maps interface. This latter functionality will be particularly valuable in highlighting regionally disjunct populations of particular species (i.e., populations that appear far removed from the species' core range), tracking the spread of invasive species, and having comprehensive knowledge of the distribution of regionally rare species.

A diversity of resources can be accessed by links from the portal, including the contact information and URLs for



Screenshot of the Pacific Northwest portal showing the search fields, specimen mapping, and specimen label data.

each herbarium in the region, image galleries, and existing species checklists at the state and provincial level. With a significant amount of the difficult programming now out of the way, it will be much easier to add other herbaria to the portal along with specimen data for other organismal groups such as bryophytes, fungi, and lichens.

We encourage you to explore the portal to learn more about the Northwest flora and the resources that are housed at herbaria throughout the region. Look for a more comprehensive article by Ben Legler about the portal in an upcoming issue of *Douglasia*.



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 500 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.



WNPS Call for Proposals

by Pam Camp

The WNPS Research and Inventory Committee has a yearly budget that it disburses to worthy proposals that foster the aims of the Washington Native Plant Society, that is, “to study and conserve native plants.” We are interested in supporting projects that extend our knowledge of the biology of native species or that inventory the flora of an understudied area. Special consideration will be given to proposals investigating the oak or shrub steppe ecosystems or invasive species. Another priority is to support research efforts of graduate students and to help develop the careers of botanists who are interested in native plants.

To receive full consideration, proposals should be submitted by **January 15** of each year. Members of the Research and Inventory Committee will review the proposals and a decision will be made by April 1. Proposals received after the January date may be considered later if any funds remain after the first round of awards. Proposals should request no more than \$1,000 to \$1,500, except in unusual circumstances. In general, half of an award is paid when the proposal is funded and the second half is paid when the project has been completed and a final report has been submitted.

Proposals should be about 4-8 pages in length and include the following information:

- **Introduction:** Objectives and significance of the proposed research
- **Methods:** Brief description of study areas, species, techniques, data collection and analysis
- **Timetable of proposed research:** In general, research and reports should be completed within 2 years.
- **Budget:** Personnel, equipment, and supply costs
- **Products:** What will result from the proposed research? We expect, at minimum, a project report and a brief account for publication in *Douglasia*. The preferred result is a publication in the peer-reviewed scientific literature.
- **Curriculum vitae** of all project personnel

Proposals will be rated by members of the Research and Inventory Committee based on (1) appropriateness of the project to the aims of WNPS, (2) adequacy of proposed methods to the project’s aims, (3) researcher’s experience in the types of research proposed, and (4) importance of the research in relation to the requested funds.

Submit five copies of your proposal to:

Pamela Camp, Chair
Bureau of Land Management
915 Walla Walla
Wenatchee, WA 98801
(509) 665-2100
email: p1camp@or.blm.gov

Past Occasional Papers Available from the WNPS

□ **Volume 8, 2006.** A Centenary Survey of Plant Life in Washington State: *Retracing the 1892 Collecting Trips of Louis F. Henderson* by Sarah Gage and Sharon Rodman. \$12.00.

□ **Volume 7, 1999.** *Douglasia Occasional Papers: Original Papers and Research Notes.* Editor Richy Harrod (8 articles). \$10.00

□ **Volume 6, 1997.** *Vegetation Studies Funded by the Washington Native Plant Society.* Edited by Ronald J. Taylor and Richy Harrod (22 articles). \$10.00

□ **Volume 5, 1994.** *Plant Life of Washington Territory: Northern Pacific Railroad Survey, Botanical Report 1853-1861 (with map).* Papers by James G. Cooper and Nelsa M. Buckingham. Edited by Alice R. Anderson. Free with purchase of Volume 6 or Volume 7; otherwise \$10.00.

□ **Volume 3, 1988.** *Plant Life of Washington State: Big Beaver Valley and the Kettle Range (with map).* Papers by Ron Vanbianchi and Steven J. Wagstaff; Carol R. Annable and Paul M. Peterson. \$10.00

□ **Volume 2, 1986.** *Plant Life of the North Cascades: Lake Chelan-Sawtooth Ridge, Stehekin Valley, and Glacier Peak.* Papers by Ed Alverson and Joe Arnett; Ronald J. Taylor; and Harold St. John and George Douglas. \$10.00

Out of Stock:

The WNPS office library maintains copies of all Douglasia Occasional Papers for research and review, including two volumes no longer in stock for sales.

Volume 1, 1983.

Steppe by Step: Understanding Priest Rapids Plants. Joy D. Mastroguiseppe and Steven J. Gill.

Volume 4, 1991.

Plant Life of Washington State: Dungeness Spit, Willapa Hills, and Lower Columbia River. Two papers by Thomas N. Kaye and Cathy L. Maxwell.

To order available volumes send in this order form with your check.

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Board members play an important role in the success of the Washington Native Plant Society. As a volunteer or a board member with WNPS, you can have a direct and personal impact on causes you care about. It's also a great way for you to participate in the vision and planning for WNPS. You can serve at the chapter level or the state level.

Service at the Chapter Level

The most critical functions of WNPS are the services provided by the chapters to members. It is at this level that the members have the opportunity to get involved in volunteer activities, education and advocacy at the local level. Chapters are the very heart and soul of WNPS. It is at the chapter level that programs, field trips, workshops, and conservation activities are offered to the membership.

Service at the State Level

The WNPS State Board guides the whole organization. Policy governance is a primary function, as is fiscal and legal accountability for the Washington Native Plant Society. Through its Research, Education, and Conservation committees it provides funding for projects and advocacy for state conservation issues. The Editorial Committee provides oversight for the production of *Douglasia* and WNPS Occasional Papers.

In all cases, Board Members are ambassadors for the Washington Native Plant Society.

They strive to ensure the mission and purpose of WNPS is carried out and that WNPS is a productive and effective nonprofit organization.

You don't have to be a botanist to serve the Washington Native Plant Society. Diverse talents and skills are needed to manage and guide WNPS. Your service is an opportunity to promote the appreciation and conservation of Washington's native plants and their habitats.

Let us know if you are interested by contacting your chapter chair or Catherine Hovanic at 206-527-3210 or wnps@wnps.org. Board position openings vary but we'd sure like to know of your interest and have the opportunity to call upon you when a vacancy occurs.

What Does It Take to Be a Good Board Member?

- ✓ Attend board meetings regularly.
- ✓ Become well informed on all agenda items.
- ✓ Contribute knowledge, consider other points of view, and help board make group decisions.
- ✓ Assume leadership roles on the board or on the board's committees.
- ✓ Be informed about WNPS programs and policies.
- ✓ Present a positive view of WNPS to the public.
- ✓ Pitch in and Help us Achieve our Mission!



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. For more information about how to contribute, see http://www.wnps.org/douglasia/douglasia_contributors.html.

Email submissions to: cspurgeon@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

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:

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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, Washing-

ton State (including UW and WSU), King County, City of Seattle and other governmental 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

WNPS State Board of Directors: Meetings 2008

October 18, 2008

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

Join the Washington Native Plant Society

Name _____

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6310 NE 74th Street, Suite 215E
Seattle, WA 98115

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Officers & Elected Directors

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President

Dean Longrie 2007-2010
20611 NE 245th Ave
Battle Ground, WA 98604-8803
(360) 687-5148
deanpl@aol.com

Immediate Past President

Fred Weinmann 2006-2009
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
ebinney@gmail.com

Treasurer

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

Secretary

Linda Storm, 2006-2009
3744 SW Ida St.
Seattle, WA 98126-3242
(206) 935-0419
lstorm61@aol.com

Terry Lillybridge 2007-2010
1505 Third St.
Wenatchee, WA 98801-1736
(509) 663-2869
lillybridgejt@msn.com

Walt Lockwood 2006-2009
9007 Shearwater Rd.
Bellingham, WA 98230-5705
(360) 371-3161
siggielock@comcast.net

Gary Smith 2007-2010
8936 179th Pl SW
Edmonds, WA 98026-5313
(425) 672-1370
yeesmith@comcast.net

Katrina Strathmann 2007-2008
P.O. Box 986
Naches, WA 98937
(509) 653-1375
Kat_strathmann@sbcglobal.net

Jane Wentworth 2007-2010
8901 Woodbank Dr NE
Bainbridge Island, WA 98110-3486
(206) 842-7178
janew@ckwentworth.com

Standing Committees

Conservation

John Browne, Jr, *Co-Chair*
20929 111th Ave SW
Vashon, WA 98070
206-463-9641
jbrowne001@centurytel.net

Mike Marsh, *Co-Chair*
3434 14th Ave W
Seattle, WA 98119-1613
206-281-8976
swamp@blarg.net

Bill Brookreson
B.brookreson@comcast.net

Scott Moore
skirpus@msn.com

Linda Storm
lstorm61@aol.com

Katrina Strathmann
Kat_strathmann@sbcglobal.net

Education

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

Diane Doss
Ddoss@spscc.ctc.edu

Toni Fitzgerald
tjfitz@wsu.edu

Joan Frazee
jfrazee@fs.fed.us

Mike Marsh
swamp@blarg.net

Mark Turner
mark@turnerphotographics.com

Plant Inventory and Research

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

Dr. Elizabeth Binney
ebinney@gmail.com

Dr. Peter Dunwiddie
pdunwiddie@tnc.org

Terry Lillybridge
lillybridgejt@msn.com

Lou Messmer
lmessmer@reachone.com

Dr. Sarah Reichard
reichard@u.washington.edu

Editorial Board

Chair, Kathy Murray
kandmmurray@verizon.net

Joe Arnett
joseph.arnett@dnr.wa.gov

Dr. Elizabeth Binney
ebinney@gmail.com

David Giblin
dgiblin@u.washington.edu

Catherine Hovanich
wnps@wnps.org

Linda Storm
lstorm61@aol.com

Mark Turner
mark@turnerphotographics.com

Fred Weinmann
fweinmann@cablespeed.com

Jane Wentworth
janew@ckwentworth.com

Kathleen Winters
kathl@scn.org

Fundraising

Chair, Vacant

Dr. Elizabeth Binney
ebinney@gmail.com

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
5749 29th Ave NE
Seattle, WA 98105-5521
(206) 524-5564

Chapter Chairs

Central Puget Sound

Chrys Bertolotto
(206) 568-1802
chrysb@peoplepc.com

Central Washington

DJ Shook
606 S 17th Ave
Yakima, WA 98902-4202
(509) 210-9694
shookdj@yahoo.com

Columbia Basin

Robert J. Fortman
70301 2410 PR SE
Kennewick, WA 99337-7739
(509) 582-0105
robertjfortman@aol.com

Koma Kulshan

Mark Turner
2414 C Street
Bellingham, WA 98225
(360) 671-6851
mark@turnerphotographics.com

Northeast Washington

Grant Cummings
1721 W Euclid Ave
Spokane, WA 99205-2670
(509) 466-8886
grant@cgeotech.com

Okanogan

Joyce Bergen
PO Box 1085
Winthrop, WA 98862-1085
(509) 996-7808
magpie@methownet.com

Olympic Peninsula

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

Sharon Schlentner, *Co-chair*

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

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

Suksdorfia

Jim Comrada
9905 NE 122nd Ave
Vancouver, WA 98682-1817
(360) 885-3798
j.comrada@comcast.net

Wenatchee Valley

Julie Sanderson
942 Highland Dr.
Wenatchee, WA 98801-3408
(509) 548-4384
sanderson@genext.net

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