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Sage Notes

Newsletter of the Idaho Native Plant Society • Promoting Interest in Idaho's Native Flora

2018 INPS Rare Plant Conference

By Beth Corbin, Pahove Chapter

The 28th Idaho Rare Plant Conference (RPC) was held in Boise on February 27–March 1, 2018. Conference coordinator Rose Lehman and her able RPC planning committee did a fabulous job to pull everything together for a splendid conference. We had 54 registrants, from a variety of agencies, companies, universities, a tribe, and other affiliations. One of the roles of INPS is to maintain and periodically review and update the Idaho Rare Plant List. The Idaho RPC is the venue where this gets done.

The conference started with a welcome from INPS president Steve Love, an introduction to our featured plant (the newly published Salmon River Mountains penstemon) by Janet Bala, and an interesting keynote talk about rare plants on Palouse Prairie remnants on Nez Perce Tribal Lands by Angela Sondanaa. Next, we had informative agency updates from U.S. Fish and Wildlife Service (Karen Colson), Idaho Department of Fish and Game (Lynn Kinter), BLM (Anne Halford), and U.S. Forest Service (Jennifer Brickey & Brittni Brown).

Conservation talks included an investigation of potentially rare milkweeds in Idaho (Kinter), the Global Observation Research Initiative in Alpine Environments (with the charming acronym GLORIA, by Mike Mancuso, introduced with song and dance to the Van Morrison song), Alpine *Potentilla* in Idaho (Barbara Ertter), and National Vegetation Classification (Steven Rust). Announcements for upcoming events included an update on an Idaho Native Plant Garden Guide (Holly Hovis & Colson), notice of the INPS annual statewide meeting (Coeur d'Alene, Jun 29–July 2, 2018) and Idaho Botanical Foray (near Fairfield, May 31–June 4, 2018).

Rare Plant Ranking is a large part of the RPC. This year we presented a record 82 plant taxa for conservation ranking or discussion, thanks to the hard work of Rare Plant Working Group (RPWG) members. I gave a short overview of the ranking process that we use based on the NatureServe rank calculator. We then jumped right into ranking presentations, beginning with the Northern Idaho RPWG, under the tireless work of Derek Antonelli. The Southern Idaho RPWG presentations followed. For each plant, a short summary of the RPWG's research findings on abundance, distribution, condition, and threats was presented, along with a recommended State conservation rank. After a short group discussion (for questions or additional information) a consensus rank was voted upon. Out of the total plant species presented, 31 were newly ranked and maintain Rare status; 15 were ranked and new additions to the Rare list; 13 were ranked and moved from Review to Rare status; 4 previously ranked Rare plants

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Letter from the President

I recently spent several days in the Owyhee Mountains and Canyonlands of southwestern Idaho on a plant collection foray. This is a floristically fascinating part of the state. The region represents a convergence of Pacific, Great Basin, and Northern Rocky Mountain floras. As a result, habitats of the area contain an unusual combination of plants that include many rare or uncommon species. It was a gold mine of exceptional plants for research and my colleagues from partner universities and I collected over 200 stem cuttings that we will use to evaluate ornamental utility. The foray was very successful and time spent outdoors was good for my soul, especially given the limitations of my health during the past two years.

The Owyhee region exhibits complex interactions between humans and nature. The land is a patchwork of small wilderness areas, public lands (mostly BLM), Indian reservation, and privately owned parcels. Human influence has a long history in this region and has been more or less destructive to natural systems, especially the rampant mining, continuous grazing which has periodically been managed poorly, and the introduction of invasive plant species (particularly cheatgrass). As a result, much of the land is seriously degraded, especially in the area known as the Owyhee Front between the Snake River and the highest peaks of the Owyhee Mountains. On the other hand, there are some pristine lands in the southern Owyhee Canyonlands. Additionally, the area is receiving attention from both public and private land managers, with progress beginning to be made toward conserving the resources remaining and restoring some of the most degraded places. This unique landscape is definitely worth defending and has the potential to result in the creation of new models for conservation that involve a combination of public policy and private landowner efforts. It will be interesting to see what the future brings to the region.

One more thing before I end this letter. I hope you are planning to attend the INPS Annual Meeting at Bumblebee Campground near Coeur d' Alene. There is still time to make arrangements. The Calypso Chapter, led by Derek Antonelli, has put together an outstanding program. Come, rub shoulders with like-minded people and see a beautiful part of our state.

Stephen Love,
INPS President

Achnatherum hymenoides.
Illustration by Karie Pappani, June 2018.

2018 INPS Online Photo Contest

Enter the 2018 INPS online photo contest! We hope this contest will serve as a medium to enhance and share the beauty and diversity of Idaho's floral heritage.

Calochortus nuttallii.
2017 INPS Photo Contest Winner.
Photo by Jordan Allen.

Who may submit photos? Anyone other than a professional photographer may submit photographs. This person need not be an INPS member or even a resident of Idaho. Photos will only be accepted from the photographer who took them. There is no limit to the number of photos that may be submitted.

What are the start and end dates? Photos will be accepted from the first of each year until September 30 of that same year.

What types of photos are acceptable? INPS will only accept photos taken in Idaho of plants native to Idaho. No ornamentals please. Entries are required to have been taken during the contest year.

How are photos judged? There are no specific criteria or categories for winning photographs. Winners are identified solely upon the number of "Likes" tallied on the INPS Facebook page. Only INPS members in good standing may vote. Voting will begin October 1 and end October 31 each year. There may be an "Editor's Choice" award as well. The board of the Sawabi Chapter of the INPS will arbitrate any dispute.

How do I submit a photo entry? Post your entry to the comments section of the 2018 INPS Photo Contest Folder on the INPS Facebook page. Click on Photos > Albums (https://www.facebook.com/pg/IdahoNativePlants/photos/?tab=album&album_id=1901972986543402). Please provide the location, time of year, and tentative identification, if possible.

How might my photos be used? Your photos may be used as part of the image library (to be housed on the INPS website), in education and outreach materials, in Sage Notes, and in future calendars. The photographer will retain the copyright of images he or she submits. INPS will have the right to use the images submitted in documents promoting Idaho native plants.

Prizes? The recognition of your peers should be enough! However, if this contest receives adequate interest, there may be a free calendar for the top three entrants.

ERIG needs YOU!

Want to help INPS support great projects? The Education, Research, and Inventory Grant (ERIG) program relies on funding from various sources such as memberships, workshops, and private donations. If you, your business, or your employer would like to make a donation to INPS to help keep the ERIG program successful, send your tax deductible donation to: ERIG Program, INPS P.O. Box 9451, Boise Idaho 83707. Checks should be made out to INPS. Please be sure to specify that your donation is to be used for ERIG projects. Or, you can make a secure online payment using PayPal on the INPS website. Thank you for your help!

Interested in applying for an ERIG? More information on how and when to apply is available at https://idahonativeplants.org/erig-news/.

were updated; 8 plants were dropped from the Review list; 2 were dropped from the Rare list; 6 were considered for adding but not added; and 3 plants on the list were discussed but not ranked (see Table 1). We always encourage people to participate in the RPWGs between RPCs as this greatly improves the quality of our information. The RPC highlights the transparent process upon which the Idaho Rare Plant List is based, helping to keep the list a relevant conservation tool. The updated Idaho Rare Plant list will be posted to the INPS website shortly.

Ah, but the RPC wasn't all serious work. We took the opportunity to catch up with old friends, make new ones, and network. We got great tote bags with a Salmon River Mountains penstemon logo; presenters also got a small INPS waterproof bag. We enjoyed excellent break snacks and continental breakfasts on site at the Washington

Beth Corbin presents Juncus brevicaudatus. Photo Lynn Kinter.

Group Plaza. We gathered for a casual social at the Reef Restaurant in downtown Boise on Tuesday night, and a social, Ethiopian dinner, and talk about Sagebrush Steppe by Eric Yensen at the MK Nature Center on Wednesday night. A Primrose Hill field trip, planned for Thursday afternoon, was unfortunately snowed out.

We wrapped up the RPC with an open discussion for critique, next steps, and recommendations. Some items discussed include recommendations for the Idaho Natural Heritage Program (since IDFG is reorganizing and cutting botanist positions), desire for a Rare Plant Species field guide or application (brainstormed potential ideas), and volunteer recruitment from groups such as the Master Naturalists. No one has yet stepped forward to coordinate the next RPC, but Rose may appoint someone.

Many thanks to Rose Lehman for her leadership for this conference! A partial list of RPC planning committee members and their accomplishments include Caroline Morris (registration, treasurer, dinner coordinator), Susan Ziebarth (handout packets, artwork layout,

Audience participates in a session. Photo Lynn Kinter.

nametags, tables, poster easels), Janet Bala (coordinating conservation speakers & poster, arranging for *Penstemon salmonensis* artwork), Carol Prentice (bags), Karie Pappani (website posting and INPS coordination), Anne Halford (venue reservation, parking), Lynn Kinter (Reef reservation), Barbara Ertter (dinner speaker coordination), Derek Antonelli and me (RPWG coordinators). Special thanks to all the RPWG members who presented plants (Derek Antonelli, LeeAnn Abell, Blair McClarin, Juanita Lichthardt, Jennifer Miller, Ertter, Kinter, Prentice, Jim Strickland, Morgan Cheyney, Halford, Pappani, Jody Hull, Corbin, Lehman, and Lisa Harloe). Thanks also to those scribes who took notes for the ranking process: Colson, Abell, Brickey, Trish Winn, and Gillian Wigglesworth. It definitely takes a village to pull the RPC together, and this is one well-oiled machine! •

Rose Lehman, Steve Love, Derek Antonelli, and Beth Corbin are recognized for their contributions to making this year's RPC a success. Photo Lynn Kinter.

Table 1: Results of the 2018 Rare Plant Conference

Newly Ranked, maintain RARE:	Rank
Angelica kingii	S1
Antennaria arcuata	S1
Astragalus atratus var. *inseptus*	G4G5T3+ S3
Blechnum spicant	S3
Blepharidachne kingii	S1
Carex rostrata	S3
Cephalanthera austiniae	S3
Chaenactis stevioides	S2
Crepis bakeri ssp. *idahoensis*	S1
Cypripedium fasciculatum	S3
Cypripedium parviflorum var. *pubescens*	S1
Dasynotus daubenmirei	G2+S2
Dodecatheon dentatum	S3
Downingia bacipalupii	S2
Epipactis gigantea	S2S3
Eriogonum calcareum var. *calcareum*	S3
Machaerocarpus californicus	S2S3
Mimulus alsinoides	S1
Papaver radicatum ssp. *kluanense*	S1
Penstemon janishiae	S2
Phacelia inconspicua	S1S2
Physaria didymocarpa var. *lyrata*	G5T2+S2
Pilophorus acicularis	S2
Polypodium glycyrrhiza	S1
Potamogeton diversifolius	S2
Pyrrocoma insecticruris	G3+S3
Rubus spectabilis	S3
Thamnolia subuliformis	S2
Thelypteris nevadensis	S1
Trichophorum alpinum	S1
Xanthoparmelia idahoensis	S1

New to List, RARE:	Rank
Asclepias asperula	S1
Astragalus arthurii	S1
Astragalus collinus	S1
Boechera rollinsiorum	G1+S1
Carex cordillerana	S2
Eriogonum elatum var. *elatum*	S3
Ipomopsis congesta ssp. *crebrifolia*	S1S2
Lomatium basalticum	S3
Lomatium swingerae	G1+S1
Mirabilis linearis var. *linearis*	S1
Penstemon miser	S2
Penstemon salmonensis	G2+S2
Phacelia thermalis	S1
Potentilla hookeriana	S1
Potentilla modesta	S1

Newly Ranked, moved Review to RARE:	Rank
Carex occidentalis	S2
Castilleja peckiana	S2
Delphinium glaucescens	S3S4
Geum rossii var. *rossii*	S1
Juncus brevicaudatus	S2
Lomatium ravenii var. *paiutense*	S3
Mitella nuda	S1
Muhlenbergia glomerata	S1
Poa paucispicula	S1
Sclerolinon digynum	SH
Utricularia gibba	S1
Viola septentrionalis	S1
Xanthoparmelia camtschadalis	S1

Previously Ranked, maintain RARE:	Rank
Allium aaseae G2+S2	G2+S2
Astragalus conjunctus S3	S3
Sanicula marilandica S3	S3
Thalictrum dasycarpum S1	S1

Dropped from Review:	Rationale
Arabis lasiocarpa	No Idaho records
Bacopa rotundifolia	Introduced/adventive
Boechera hastatula	No Idaho records
Lomatium idahoense	G4(+?) S4
Mimulus ringens	Introduced/adventive
Sagittaria rigida	Introduced/adventive
Solanum heterodoxum	Introduced/adventive
Sparanium ermersum	S4

Dropped from RARE:	Rationale
Drosera intermedia	No Idaho records
Escobaria vivipara	No Idaho records

Considered for adding, but not added:	Rationale
Asclepias subverticillata	No Idaho records
Carex backii	Synonym/mis-id
Carex saximontana	Synonym/mis-id
Carex rossii var. *turbinatum*	S3S4
Penstemon attenuates var. *millitaris*	S4
Phacelia bicolor	No Idaho records

Discussed but not Ranked, leave on list:
Botrychium minganense
Muhlenbergia racemosa
Viburnum opulus var. *americana*

Lucky Peak Nursery Pollinator Garden

By Kay Beall, Pahove Chapter

Pollinators are essential to life on earth. Over 85 percent of the world's flowering plants, including more than two-thirds of the world's crop species, depend on pollinators. Butterflies/moths and bees are critical members of the pollinator group, and many species have suffered major declines in recent years.

The iconic Monarch butterfly *(Danaus plexippus)* has become a symbol of the movement to protect pollinators and their habitat. Populations are declining due to loss of habitat and their primary food source (in Idaho, primarily showy milkweed *Asclepias speciosa*), degradation of overwintering sites, and climate change. Idaho is one of the destinations for northern spring/summer migration from California, providing summer breeding areas and the starting point for southern migration in the fall.

Bee populations, including native bees, are declining because of habitat loss and fragmentation, disease and predation, and climate change. Most of Idaho's native bees are solitary bees, but also includes the social bumblebee. The western bumblebee *(Bombus occidentalis)*, once widespread from Alaska to California and east to the Great Plain states, is currently under review by the U.S. Fish & Wildlife Service for listing under the Endangered Species Act (USFWS 2016).

Ground-nesting solitary bee

New Pollinator Garden at Lucky Peak Nursery (2016-2017): In March 2016, in cooperation with the U.S. Forest Service Nursery at Lucky Peak, the Boise National Forest successfully competed for an ERIG (Education, Research, Inventory Grant) from the Idaho Native Plant Society to start a pollinator garden on the eastern grounds of the nursery. The Lucky Peak Nursery facility is located about 17 miles northeast of Boise off Highway 21, and grows millions of conifers and other native plants for reforestation and restoration on public lands. The Nursery's mission and this project dovetailed well with the purpose of ERIG—to stimulate and promote research, conservation and educational activities which contribute to the appreciation, conservation, or knowledge of Idaho's native flora or plant communities.

The purpose of the garden is to support native pollinators, including monarchs and other local butterflies, native bees, and other pollinating insects by promoting native species that will provide season-long habitat needs (pollen and nectar sources) and physical structure that will support seasonal reproduction/nesting and overwintering needs. The area will serve as a native plant and pollinator demonstration garden to be incorporated into ongoing environmental education activities hosted by Lucky Peak Nursery and the Boise National Forest. Value is added to the project by virtue of the garden being located within deer/elk winter range, and the diverse variety of other birds and wildlife associated with the area.

Ground-breaking for the garden started in June 2016, on an approximately two acre area on the east side of the nursery facilities, overlooking the Lucky Peak Reservoir. Unfortunately, formerly diverse habitat provided by big sagebrush/antelope bitterbrush *(Artemisia tridentata/Purshia tridentata)* communities has been highly impacted by the noxious weeds rush skeletonweed *(Chondrilla juncea)* and Canada thistle *(Cirsium arvense)*, and other non-native species such as medusahead rye *(Taeniatherum caput-medusae)* and cheatgrass *(Bromus tectorum)*, as well as several fires occurring in recent years. The garden area includes a stand of conifer trees—the result of plantings for past revegetation trainings held at the Nursery. Also included are a series of wetlands and an approximately 1-acre pond colonized by willows and emergent vegetation; originally constructed to treat the Nursery's field run-off and provide a source of irrigation water during drought periods.

This combination of sagebrush/bitterbrush habitat and wetlands creates a unique opportunity to restore the site to support native pollinators, birds, and other wildlife, and at the same time provide a convenient and easily accessible location to promote pollinator and native plant education.

Early groundbreaking included clearing two small islands and an access path in a sea of weeds. As part of the commitment to the "no pesticides" approach advocated by the Xerces Society—the surface mat of dead medusahead and cheatgrass stalks/seed heads was raked off, and perennial weeds grubbed out with hand tools. All native species were left in place—primarily big sagebrush, barestem biscuitroot *(Lomatium nudicaule)*; prairie star

(Lithophragma parviflora) and bottlebrush squirreltail *(Elymus elymoides)*. A small number of bluebunch wheatgrass *(Pseudoroegneria spicata)* transplants were installed in the islands. Canada thistle removal and/or seed head topping in the wetlands also took place. The work was accomplished with the help of the Idaho City Ranger District's YCC (Youth Conservation Corp) crew and teens participating in WOW (Wild Outdoor Week)—a program which introduces refugee youth to the outdoor activities and natural resource conservation work.

With the onset of the Pioneer Fire on the Boise NF midsummer 2016, further work at the pollinator garden was delayed until fall. This included more island cleanup, installation of golden currant *(Ribes aureum)* and black cottonwood *(Populus balsamifera* ssp. *trichocarpa)* seedlings, and seeding of western clematis *(Clematis ligusticifolia)* and blue elderberry *(Sambucus nigra* ssp. *cerulea)*. Species selection was oriented to native forb and grass seed and seedlings that would meet habitat needs for monarchs and native bees. Weeds were cleared around each seedling/seeded area to reduce competition to the newly establishing plantings.

A major planting effort was undertaken in the pollinator garden in the spring of 2017. Lucky Peak Nursery grew milkweed seedlings in their greenhouse, and 50 of them were planted in small rills that become visible following extensive spring rains. A total of 135 seedlings of western serviceberry *(Amelanchier alnifolia)*, red-osier dogwood *(Cornus sericea)*, black hawthorn *(Crataegus douglasii)*, wax currant *(Ribes cereum)*, Woods' rose *(Rosa woodsii)*, sulfur buckwheat *(Eriogonum umbellatum)*, mountain hollyhock *(Illiamna rivularis)*, and hot rock penstemon *(Penstemon deustus)* purchased from Buffaloberry Farms in McCall were planted at the pollinator garden at the same time. Planting was undertaken by Forest Service employees and volunteers.

Planting the pollinator garden

Seedling survival was low following the hot summer of 2017. The garden area is not irrigated, and despite the heavy spring rains, many seedlings were not well enough established to survive. Supplemental watering is going to be necessary to ensure higher survival of newly planted seedlings. In September 2017, additional milkweed seedlings were planted, with the hope of establishment before winter dormancy.

Continued Development of the Pollinator Garden at Lucky Peak Nursery (2018 and beyond): Work on the pollinator garden has been heavily dependent on available workforce and oversight time. The garden development plan consists of six phases and we originally hoped to be farther along by the end of 2017. It is now apparent that implementation will take several more planting seasons. Recruitment of volunteers, engagement of partners and securing additional funding sources will be critical to the success of this project at all phases.

Milkweed seedlings

Implementation Methods:

Phase 1: *Reduce noxious weed cover*. This was started by creating the planting islands and path, but will be an ongoing task. Weed removal work for this project is being done primarily by hand—use of heavy equipment would create soil compaction detrimental to the ground nesting bees (the most common type of solitary bee in the area). With the goal of avoiding herbicides, a long-term pest management strategy needs to be developed for the area using a combination of hand/mechanical and biocontrol strategies. There are some promising weed-suppressive bacterial biocontrol agents (such as *Pseudomonas fluorescens*) being developed to treat invasive annuals.

Phase 2: *Installation of native plant materials*. Over 200 seedlings have been planted in the Lucky Peak Pollinator Garden over the last two years. Due to extreme summer drought conditions and lack of irrigation, seedling survival has been low. A means of watering at least one or two times during the growing season would help increase survival. This would likely be accomplished via labor intensive methods such as use of backpack pumps or carrying buckets from the pond—but it is possible that a cooperative arrangement could be made with the engine crew stationed at the Lucky Peak Helibase to periodically provide water for the garden.

Future plant material sources would continue to include INPS sales, local native plant vendors, native plants grown at Lucky Peak Nursery, native seed in the Boise NF seedbank, and seed collected on-site at the Nursery and surrounding public lands. Seed and native plant materials collections are ideal tasks for volunteers.

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Lucky Peak Pollinator Garden.....*Continued from Page 7*

Just a few of the local native species suitable for collecting/planting that will supply pollinator and wildlife needs include hot rock penstemon, fern-leaf desert parsley *(Lomatium dissectum)* and other biscuitroots, arrowleaf balsamroot *(Balsamorhiza sagittata)*, lupines *(Lupinus* ssp.*)*, sticky geranium *(Geranium viscosissimum)*, bluebunch wheatgrass, and bottlebrush squirreltail.


Golden currant

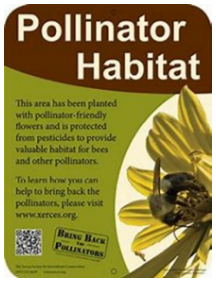
Suitable shrub plantings include elderberry whose pithy stems are used as nests by some bee species; gray rabbitbrush *(Ericameria nauseosa)* important for late season bees and butterflies; Scouler's and Booth willows *(Salix scouleriana, S. boothii*) which are both used by early spring bees; as well as bitterbrush, sagebrush, serviceberry, chokecherry, golden currant, syringa *(Philadelphus lewisii)*, black hawthorn and others.

Phase 3: *Habitat supplementation*. The habitat needs of the pollinators, birds and other wildlife would be supplemented with installation of supporting features such as:

- Old logs or logs with drilled holes to provide nesting sites for native bees
- Bee nesting boxes
- Flat rocks for butterfly temperature regulation
- Woodpiles constructed as shelters for overwintering butterflies (fire safety must also be considered here)
- Planting or creating windbreaks around butterfly feeding areas
- Construction and maintenance of intentional bare areas for ground nesting insects to overwinter
- Reconstruction and maintenance of existing nest boxes for bluebirds or other bird species
- Bat boxes

Building and installing supplemental features are ideal projects for schools, scouts, or other groups of native plant/pollinator enthusiasts.

Phase 4: *Environmental Education sign installation*. Signs and other interpretive materials on the identification and values of native pollinators and plants, and how the public can participate in supporting pollinator friendly plants at home and in the community, need to be created and installed. An entrance sign to the pollinator garden is scheduled for installation in spring 2018.



Phase 5: *Maintenance*. Continued maintenance will be needed to control weeds, and for structures and interpretive signs. Future development and availability of biocontrol agents may help reduce current competition from weed species and help maintain a pesticide-free weed control program. Use of supplemental watering will enhance seedling survival.

Phase 6: *Monitoring*. A monitoring program of native plants and insects is needed to evaluate the success of the garden. Criteria could include a pollinator habitat assessment (Jordan et al. 2014), native plant survival, success of weed suppression, education outreach and public involvement. Habitat assessment can be used as both an educational tool and a way of maintaining local support.

Acknowledgements: The Boise National Forest and the Lucky Peak Nursery would like to thank the Idaho Native Plant Society and the members of the ERIG committee for providing the opportunity to jump start this pollinator garden project.

Project Contact Information: USFS Boise National Forest, Idaho City RD, PO Box 129, Idaho City, ID 83631, (208) 392-3738; South Zone Botanist; or Lucky Peak Nursery 15169 East Highway 21, Boise, ID 83716, (208) 343-1977, Seed Program Manager.

For Further Information:

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Western Society of Weed Science Annual Meeting

By Daniel Murphy, Pahove Chapter

In March of this year, I went to Garden Grove, California to attend the 71st annual meeting of the Western Society of Weed Science. My trip was generously funded by an Education and Enrichment Award presented by the Pahove Chapter. It was a great opportunity for a weeds-obsessed plant geek like myself to hang out with weed scientists from across the western states and learn about their latest research. What follows are a few highlights and takeaways from the meeting.

General Session

Apart from opening remarks and business items, the general session featured two invited speakers: soil ecologist Lydia Jennings and historian David Marley. Lydia's talk was titled "Land Acknowledgement and Indigenous Knowledge in Science." She started by sharing a website called Native Land, which features an image of the Earth overlaid with known boundaries of indigenous territories. By entering your address, you can see a list of the tribes that historically used the land you now inhabit. It is important for us to consider the history of the land we currently live and work on. Lydia then compared aspects of western science and indigenous science; pointing out ways they differ, as well as ways they can be used in tandem. By collaborating with tribal nations, weed scientists can benefit from traditional ecological knowledge.

David Marley was the comic relief. Well-versed in the history of Disneyland, he humorously presented a series of stories involving its creation. Little of what he had to say related to weed science, which he openly admitted along the way; however, one weeds related story stood out. Due to a lack of funds, the early years of Tomorrowland featured few landscape plants. To make up for that, Walt Disney had signs with fake Latin names created for some of the weeds that were growing there.

Weeds of Range and Natural Areas

I spent the last half of the first day in the "Weeds of Range and Natural Areas" session, where I learned about herbicide ballistic technology (i.e. killing plants from a helicopter with a paintball gun loaded with herbicide). This is one of the ways that *Miconia calvescens* invasions in Hawaii are being addressed. I also learned about research involving plant debris left over after logging. When heavy amounts of debris are left in place, scotch broom *(Cytisus scoparius)* infestations are thwarted. There was a talk about controlling escaped garden loosestrife *(Lysimachia punctata)* populations in the Seattle area, as well as a few talks about efforts to control annual grasses like cheatgrass *(Bromus tectorum)* in the sagebrush-steppe ecosystem.

Basic Biology and Ecology

On the morning of the second day, the "Basic Biology and Ecology" session held a discussion about weeds and climate change. As climate changes, weeds will adapt and find new locations to invade. Perhaps some weeds won't be as problematic in certain areas, but other species are sure to take their place. Understanding the changes that are afoot and the ways that weeds will respond to them is paramount to successful weed management. This means documenting the traits of every weed species, including variations between and among populations of each species, so that predictions can be made about their behavior. It also means anticipating new weed species and determining ways in which weeds might exploit new conditions.

No doubt there is much to learn in order to adequately manage weeds in a changing climate. An intriguing idea brought up during the discussion was to use citizen scientists to help gather data about weeds. Similar to other organizations that collect phenological data from the public on a variety of species, a website could be set up for citizen scientists to report information about weeds in their area. Of course, Bugwood has already developed a series of apps for citizen scientists in North America to report invasive species sightings, so it seems this is already happening to some degree.

Teaching and Technology Transfer

A highlight of the afternoon's "Teaching and Technology Transfer" session was learning about the Wyoming Restoration Challenge hosted by University of Wyoming Extension. This was a three year long contest in which thirteen teams were given a quarter-acre plot dominated by cheatgrass, with the challenge to restore the plant community to a more productive and diverse state. Each team developed and carried out their own strategy and in the end were judged on a series of criteria including control of cheatgrass and other weed species, plant diversity, forage production, education and outreach, and scalability.

And so much more...

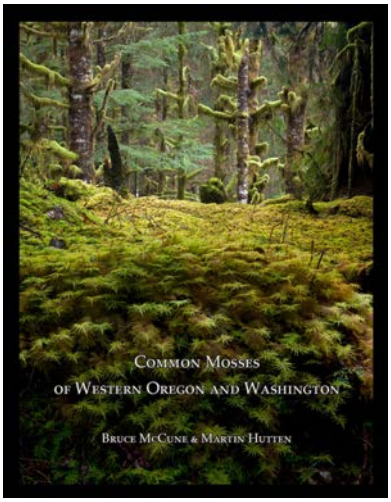
With multiple sessions being held simultaneously,

I was unable to attend every talk. There were dozens of other presumably excellent presentations that I had to miss. One final highlight, however, was getting to meet up with Heather Olsen, a researcher at Utah State University, and talk to her briefly about her work in updating the *Noxious Weed Field Guide for Utah*. If you are at all interested in weeds of the western states, the Western Society of Weed Science is a group you should meet. They are fun and friendly people who really know their weeds. •

Book Review

Common Mosses of Western Oregon and Washington by Bruce McCune and Martin Hutten
Published by Wild Blueberry Media, Corvallis, Oregon. iv+148 pages.

From the moment you open Bruce McCune's and Martin Hutten's *Common Mosses of Western Oregon and Washington*, you'll be impressed with their microphotography and attention to detail. The front cover alone delights the eyes and encourages you to further explore their new keys and photography that clearly show moss characteristics such as leaf tips, lamellae, papillae and cross-sections.



This valuable resource book will not only aid students and naturalists identifying the common Pacific Northwest mosses on the west side of the Cascade Range, but will also expand their skills and techniques. Read the tools and techniques section before jumping right into the keys. You'll laugh when you learn how to use MiraLax as an embedding agent for leaf sections and realize that the authors have spent numerous hours dissecting moss specimens. Their insights will help you choose and modify your dissecting tools for more efficient use and give you handy pointers to reduce the frustrations of working with small and fragile materials.

Careful attention to detail is one of the many attributes that makes the book unique. The keys to species, the heart of the book, are carefully designed so species descriptions and photos of the specimens are side by side. The end points to the keys offer taxa characteristics and ecological information that help confirm your identification. If your specimen does not fit the brief descriptions in the end point you know you've gone astray somewhere in the key. A real jewel is that after the taxa name, in parentheses, are three references you can use to confirm your keying result. The authors give the page and plate numbers to find the specimens in Moss Flora of the Pacific Northwest, California Mosses, and Some Common Mosses of British Columbia. By giving exact page numbers of references, the authors greatly reduce the time involved in identification confirmation.

The majority of moss species addressed in this book also occur in parts of Idaho and Montana, making this book a valuable primary reference for students and teachers of mosses throughout the Pacific Northwest. For years bryologists praised the illustrations of Lawton, Flowers, and Schofield, but now we have McCune's and Hutten's photography that takes us to a new level. Their expert work allows us to identify the common mosses while enjoying beautiful photography and easy-to-use species keys.

—Alma Hanson, White Pine Chapter

Pahove's First Wildflower Show

Article by Caroline Morris, Photos by Barbara Ertter, Pahove Chapter

Pahove staged its first wildflower show on Saturday, May 12. Our event was included in the monthly Family Day held at Boise Parks and Recreation Department's Foothills Learning Center. We were pleased with attendance, people's interest and curiosity, and our plant display. We also learned how we might better promote and prepare for next year's show. Barbara Ertter is head of Pahove's Floristics Committee and always trying to spur others' interest in and education about native plants. She suggested collecting and publicly displaying wildflower species about a year ago. Discussions soon added flowering weed species to the specimens for collection and display. Most plants came from the Boise foothills and

Bogus Basin area. The Ertter team found, picked, refrigerated, labeled, and exhibited 112 different plants. Barbara prepared small adhesive-backed labels, which were then stuck onto black construction paper and folded to stand up. Finding containers for so many plants of all sizes required raiding members' pantries and thrift shops. In 1.5 hours before the public's arrival, several Pahove arrangers chose appropriate vessels for each plant, added water, and found all a favorable display space on the tables and counters in the classroom. Barbara's botanist houseguest, Lindsay Woodruff from Austin, Texas, certainly earned her room and board.

Susan Ziebarth, our graphics wizard, prepared three standup laminated signs reading:

The flowers on display were collected by professionals following strict collecting protocols.

Please always leave native wildflowers for the pollinators and for others to enjoy.

The signs were distributed on various display tables, along with INPS membership brochures. Alan Crockett

skillfully led two wildflower walks for interested plant lovers.

One unusual featured plant was the newly named Boise sand-verbena *(Abronia mellifera* var. *pahoveorum)* with May-nights' blooms of white, mildly fragrant large pompoms. This plant grows in some areas with ongoing residential development, so protective actions are needed to prevent its extirpation. Another species on display was *Lomatium andrusianum*, a new biscuitroot species named in honor of late Idaho Governor Cecil Andrus.

Twenty-seven species displayed were introduced weeds. These were all placed on one crowded table, with people eager to identify which of these monsters inhabited their yards. We answered all kinds of questions during the 3-hour show. Magnifying glasses were popular, especially, but not only, with kids.

At the show's conclusion, we composted all plants except weeds, or those wanted by someone. Weeds were trashed. Containers will be stored by a few members. Next year, we will have much more PR, written collection guidelines for two teams, laminated and waterproof labels (although only a few were soaked by spills), and larger display space. Other modifications are likely, but this show was a worthwhile beginning. Other Pahove members participating included Ann Brueck, Beth Corbin, JoAnne Michaels, Caroline Morris, and Sandy Smith. All enjoyed it. We genuinely appreciated the Foothills Learning Center staff's friendly, helpful assistance. •

Janet Benoit 1940-2018

I'm sad to report the passing of Janet Benoit (August 6, 1940-April 20, 2018), a major contributor to the Idaho Native Plant Society for over a quarter century. Janet joined the Calypso Chapter in Coeur d'Alene in 1992, just one year after the chapter's formation. She quickly became a chapter officer and served the chapter in various officer roles ever since. She worked tirelessly within Calypso Chapter for the benefit of north Idaho's native plants. Janet had a vast knowledge of native plants and well-honed skills that she put to good use leading numerous outings for the chapter. She was responsible for continuing the chapter's influence in educating the public about native plants. Janet made major contributions to INPS beyond the local chapter. She served as the statewide INPS president from 2005 to 2008. One of her chief goals as president was to foster relationships between individuals and the various chapters throughout the state. Janet played a key role in overhauling the bylaws to make INPS a more functional organization.

One would think with all of Janet's volunteer contributions to INPS that she would not have time to volunteer for any other organization. Not true! Janet's list of volunteer contributions is very impressive indeed.

Janet is a legend in the Bonner County 4-H world. 2018 was her 36th year as a volunteer 4-H Leader with the Careywood Eager Beavers. She taught crochet, knitting, leathercraft, and forestry. Two years ago she took a team to the National Forestry Contest in West Virginia, where the team place 6th in the nation. Janet also served as a volunteer AARP Tax Aide since 2002. She became the local coordinator for the Athol Community Center site in 2004. The Athol site does 100 tax returns a year. Janet was selected as an AARP Foundation Tax Aide Fellow. The award is received by less than 1% of volunteers.

Janet joined the Idaho Forest Owners Association in 1993. She encouraged many new forest landowners to join this valuable organization and to better manage and care for their forest lands. To expand her knowledge of trees, Janet was one of the first to take advantage of the Idaho Master Forest Stewards program offered by the University of Idaho Extension program. She logged in more than 800 volunteer hours as an Idaho Master Forest Steward. Janet joined the ABC (Athol-Bayview-Careywood) Garden Group to expand and share her 44 years of gardening experience with others. She is famous for her stories of gardening in Careywood's "arctic."

The Idaho Forest Owners Association Education Foundation has established the Janet Benoit Memorial Forestry Scholarship Fund to fund scholarships for youths and adults in forestry related programs. Contributions can be sent to Idaho Forest Owners Association—Education Foundation, P.O. Box 1257, Coeur d'Alene, ID 83816-1257.

— *Derek Antonelii*, Calypso Chapter

CALYPSO CHAPTER

When: Meetings are the first Wednesdays of March, April, May and October at 7:00 pm. Field trips take place during the spring, summer, and early fall months.
Where: Meeting are held in the conference room of Idaho Department of Fish and Game, 2885 W. Kathleen Ave., Coeur d'Alene
Contact: Derek Antonelli, ds.ca.antonelli@gmail.com

LOASA CHAPTER

When: Meetings are held the third Thursday of each month at 7:00 pm.
Where: Taylor Building, Room 248, College of Southern Idaho, Twin Falls.
Contact: Bill Bridges, bridgesbill34@yahoo.com

PAHOVE CHAPTER

When: Meetings are held on the second Tuesday of each month from September–April at 7:00 pm. Dates, times, or topics are occasionally subject to change. Upcoming meeting information is sent to members via postcard and/or email. Events are also posted on the Pahove Chapter page of the INPS website: http://idahonativeplants.org/local-chapters/pahove/
Where: The MK Nature Center Auditorium, 600 S. Walnut Street, Boise.
Contact: For more information about activities please visit the Pahove Chapter page on the INPS website, or email pahove.chapter.president@gmail.com

Board Position Opening:

Pahove chapter is seeking a new board president. Current president, Karie Pappani, has served the chapter exceptionally for 7+ years, and the time has come to select her successor. Interested individuals are encouraged to contact the board at pahove.chapter.president@gmail.com

Past events:

Another season of presentations is behind us. As usual, we were enriched and entertained by our presenters, and thank them for taking the time to share their knowledge and experience with us. Our annual native plant sale was a big success. Only a few plants remained after the two day sale, and a stack of new membership applications were processed. Overall it was a very successful season, and we look forward to kicking off another one this coming September. Until then, enjoy the summer.

Memorandum of Understanding: The Pahove Chapter and Land Trust of the Treasure Valley (LTTV) signed a Memorandum of Understanding (MOU) in late February, 2018. The intent of the MOU is to formalize a relationship between the two organizations that share several overlapping goals and interests. The LTTV mission is to conserve the natural, scenic, recreational, historic, and agricultural values of southwestern Idaho's open spaces. Within the MOU, the Chapter agrees to assist the LTTV on native plant conservation and restoration projects at Harrison Hollow, an open-space property near Boise's North End neighborhood. Cooperative projects will focus on native plant community restoration efforts and may include plant propagation, planting native plant species, weed control, and monitoring. Opportunities for rare plant conservation projects are also available at Harrison Hollow. The MOU will provide Pahove Chapter members opportunities to participate in projects benefiting native plant species and plant communities in a popular, high-profile open-space area.

Pahove Bus Tour to Orton Botanical Garden:

Pahove members and other plant-lovers enjoyed a fine guided tour of Orton Botanical Garden (OBG) in Twin Falls on May 22, Idaho's newest botanical display garden. The one-day trip on a comfortable, professionally driven bus, cost $25 per person, $5 of which was given to the non-profit OBG.

The 50+ participants took walking tours of this lovely 5-acre site, with informative commentary by OBG's founders, LaMar and Rosalie Orton, and always helpful INPS members/botanists, Ann DeBolt and Roger Rosentreter. Stroll-around time also let us revisit favorite or unusual plants and photograph the spectacularly blooming cacti and buckwheats, just a sample of the botanical gems to admire. We luckily had lovely weather.

OBG's sales display of unique, high quality cacti, succulents, and native plants at reasonable prices tempted many gardeners. On our return trip to Boise, the bus cargo area was filled with captivating OBG plants for our gardens. We were glad to learn that OBG will have its first open hours on Fridays and Saturdays from 10am-4pm from June–September 2018. Encourage friends to visit. Thanks to all Pahove members who recruited passengers and helped with myriad trip details. Yay Susan Zeibarth and Ann DeBolt for a NO-water-bottle mission!

SAWABI CHAPTER

Contact: Karl Holte at plantprof@live.com, (208) 241-8358

Past events:

Annual Chapter Meeting: The Sawabi Chapter met on April 2nd for the annual chapter meeting at Puerto Vallarta restaurant in Pocatello. Election results for of-

ficers for 2018 resulted in the re-election of Paul Allen as President, Geoff Hogander as Vice President, Barbara Nicholls as Secretary and Linda Edwards as Treasurer. Sawabi had a booth at Pocatello's annual Earth Day Environmental Fair on April 21, where small potted plants and seedlings were handed out along with "seed bombs" made of seeds, soil, and clay molded into balls designed to be tossed anywhere where they can sprout and flower.
Winter Plant Talks: May 7th was the last of Sawabi's monthly winter plant talks at the ISU Student Union. Ray Liable and Dr. Roger Boe talked about their experiences in Hawaii with flora, fauna and fire.
Summer Plant Walks: Sawabi's summer schedule of Monday evening plant walks and Saturday plant hikes started with Karl Holte's annual Cherry Springs Nature Walk on May 12. We finished the day with a potluck meal at the Holtes.
Upcoming events:
Upcoming field trips: May through September. The public is invited to all Sawabi Chapter field trips and events. Most of our trips carpool from the Bison sculpture located behind the Idaho Museum of Natural History building which is adjacent to the Pond Student Union building, lower campus, Idaho State University. The sculpture is by the big parking lot at 5th and Dillon. You may choose to meet us at the Bison to carpool and caravan, or later at the trip site. For questions and directions: Contact the Holtes, (208) 232-6563, or the Nicholls, (208) 233-0714, or Geoff Hogander, (208) 232-3437. At least a week before each trip, an email is sent to those on our email list with details about the trip's plants, terrain, location, and directions to the site.
See the full schedule on the INPS-Sawabi Chapter webpage: https://idahonativeplants.org/wp-content/uploads/2018/05/Field-Trip-Schedule-for-2018-copy.pdf

UPPER SNAKE CHAPTER

The Upper Snake Chapter is currently inactive.
Contact: Rose Lehman, jojorose@cableone.net
If anyone is interested in reviving the chapter, they are welcome to contact Rose.

WHITE PINE CHAPTER

When: Meetings are held once a month except during the summer. Field trips can occur most any month. Please check the chapter website at www.whitepineinps.org for events which may be scheduled or finalized after *Sage Notes* is printed; or email the chapter officers at whitepine.chapter@gmail.com
Where: Great Room of the 1912 Building, 412 East Third St. in Moscow at 7 pm.
Contact: INPS, White Pine Chapter, PO Box 8481, Moscow, ID 83843 or whitepine.chapter@gmail.com
Upcoming events:
July 21: Dr. Steve Cook from the University of Idaho will lead us on a field trip to discuss forest insects and how they affect forest health. This field trip will start with a group information program at a site and time to be determined and then continue to multiple forest sites to examine forest health and insect activity. Please check the White Pine Chapter web calendar for details.
July 29-August 3: Call for GLORIA (Global Observation Research Initiative in Alpine Environments) Field Volunteers. The White Pine Chapter is co-operating with the Wallowa-Whitman National Forest to set up climate change plots at Mt. Howard and the Eagle Cap Wilderness Area in the Wallowa Mountains. The plan is for everyone to make their way to Joseph, Oregon, by the afternoon of July 29, where there will be a shuttle up to Mt. Howard because of limited space for vehicles. Camping will be dispersed, in a somewhat flat sagebrush meadow; so bring your fattest ground pad! We will have access to outhouses. Everyone is responsible for their own camping gear, food and beverages (including water). The hope is to get all the fieldwork done in 3 days (Tues–Thurs) weather permitting, but we may need to work through Friday. We primarily need botanists (plant identification skills), but there will be non-botany support work to do as well (setting up plots, data recording, taking photos). Email Upekala Wijayratne, Ecologist with the Malheur, Umatilla and Wallowa-Whitman National Forests if you wish to learn more about volunteering (ucwijayratne@fs.fed.us).
September 13: Angela Sondenaa will present a program on the Nez Perce Tribe's rare plant and prairie conservation work. She will discuss the results of extensive inventories completed, the results of reproductive ecology and pollinator research on specific species, explain the Tribe's prairie inventory and assessment projects, and update us on the conservation of *Silene spaldingii* in Joseph Creek.

WOOD RIVER CHAPTER

When: Meetings are held various weekday evenings beginning at 7:00 pm.
Where: Meetings are held at the Sawtooth Botanical Garden, located three miles south of Ketchum, on Highway 75 and Gimlet Road.
Contact: Cynthia Langlois at cplangloisACRP@msn.com for information about field trips and presentations. Also, check Sawtooth Botanical Garden website: sbgarden.org for presentation updates. •

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☐ Pahove (Boise)
☐ Sawabi (Pocatello)
☐ Upper Snake (Idaho Falls)
☐ White Pine (Moscow)
☐ Wood River (Ketchum/Sun Valley)
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Boise, ID 83707

Memberships run calendar year. New memberships enrolled after June 1 include the following year. ***Renew or join online:*** *https://idahonativeplants.org/membership/*

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Submissions: Members and non-members may submit material for publication. Relevant articles, essays, poetry, news, announcements, photographs and artwork are welcome. Authors, artists and photographers retain copyright to their work and are credited in *Sage Notes.* Send all submissions electronically to the editor at the link below. Please provide a phone number and/or email address with your submission. Submission deadlines are January 8, April 1, August 1 and November 1.

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