



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

The 12th Annual Idaho Botanical Foray

By Ben Legler and Dave Tank, Stillinger Herbarium, University of Idaho

The Stillinger Herbarium at the University of Idaho hosted the 12th annual Idaho Botanical Foray, June 27–July 1, 2019, in the Idaho Panhandle. From our base of operations at the aptly named Brush Lake Campground, a mere 8 miles from the Canadian border, the 16 participants fanned out to collect plants in a diversity of locations and habitats within the Selkirk Range, Purcell Mountains, and Cabinet Mountains on both sides of the Kootenai River valley. This is a landscape profoundly shaped by glaciations and the only portion of Idaho touched by the Continental Ice Sheet as it extended south through the Kootenai Valley around 15,000 years ago, repeatedly forming massive ice dams at the current site of Lake Pend Oreille, and turning the Clark Fork River into a giant lake. Catastrophic failures of the ice dams produced some of the largest known floods on earth, scouring out the channeled scablands of eastern Washington. As the glaciers retreated, they left behind the landscape we explored during the foray—sculpted mountains and deeply incised valleys harboring moist conifer forests, wetlands, fens, and lakes, with strong floristic connections to coastal ranges and boreal forests.

For those unfamiliar with the Idaho Botanical Foray project, Jim Smith (Boise State University) started the Forays in 2008 with the goal of establishing collaborations between the four largest herbaria in Idaho—Boise State University, the College of Idaho, Idaho State University, and the University of Idaho—and promoting a sense of community among botanical enthusiasts. The research goals of the foray projects center on conducting general botanical surveys to document the

diversity and distribution of vascular plants in particular regions. Each day, participants head out to collect and press specimens, returning to camp in the evening to relax around the fire, enjoy conversation with friends, and make new acquaintances.

This year's location represents the farthest north foray to date, and the first in the Panhandle. The location also complements an ongoing floristic inventory of the Selkirk Range by University of Idaho graduate student Harpo Faust during the 2019 and 2020 field seasons. A portion of the foray's collections will contribute to her inventory.

The foray kicked off early this year, with several in the group arriving at the campground on Tuesday and Wednesday to secure sites; their generosity was rewarded with periodic thunderstorms and downpours. Fortunately, the weather improved on Friday, and cool, cloudy skies gave way to dry and sunnier days. A steady trickle of arriving participants, however, continued to arrive through Saturday morning.

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Letter from the President

Many of you are aware that I have been fighting an uphill battle with my health for the past three years. While on a plant foray in the Frank Church Wilderness during August of 2016, I suffered a massive heart attack. Given that it was almost 24 hours before appropriate medical care was available, I am very lucky to be alive. As part of medical treatment, I had an artificial heart pump installed to assist with creating adequate blood flow to my extremities. The incident left me with many difficult health considerations that have severely limited my ability to participate in strenuous outdoor activities—one of the joys of my life. But I continue to heal and can do more and more as time goes on.

So, I was ecstatic when I attended the INPS annual meeting and felt some confidence that I could make the hike to the Granite Mountain Fire Lookout. This turned out to be a strenuous hike of about eight miles (round-trip) with more than 2,000 feet of elevation gain. I did not quite make it to the fire lookout because I am still a slow mover and did not want to hold up my companions. But I did make it to the top of the ridge, about one-half mile short of the finish line.

What a wonderful experience. We saw many plant species unique to this area of Idaho. I was able to collect attractive forms of several species, including *Penstemon globosus*, *Deschampsia cespitosa*, *Ribes montigenum*, *Potentilla flabellifolia*, and *Arenaria aculeata* for use in my research (focused on developing native plants for landscape use). Best of all, I was able to rub shoulders with like-minded plant enthusiasts.

We live in an amazing part of the world where we have access to incredible public lands and live in a society that is generally conservation-minded. Regardless of personal challenges we may face, it is worthwhile to take advantage of this situation to enrich our lives. The Idaho Native Plant Society is a wonderful asset in my life in assisting me toward filling my existence with wonders of the world. May you too find ways to experience such enrichment.

Stephen Love
 INPS President

Announcement

2020 Idaho Rare Plant Conference Announced

The 2020 Idaho Rare Plant Conference (RPC) will be held February 25-27, 2020, at the Idaho Fish & Game Southwest Region Office in Nampa. More details will be posted on the INPS webpage as they become available.

The RPC is generally held every other year, and is organized by INPS along with various agencies, academics, consultants, and others interested in Idaho's rare plants. It is an opportunity to learn about rare plants, share information, and network with others of similar interests. Updating the INPS Rare Plant List, based on new information, is a substantial portion of the RPC. The 2020 conference program will include a series of presentations relevant to rare plant conservation issues and related topics. Dinners (either banquet or informal gatherings), along with conference breaks and poster sessions, offer opportunities to renew or make new botanical acquaintances.

INPS ERIG Solicitation for Proposals 2020

Every year the Idaho Native Plant Society (INPS) awards grants through the Education Research Inventory Grant (ERIG) program. Since 2005 the INPS has awarded over \$24,000 in grants of up to \$1000. Continuing in that tradition in 2020, the INPS will partner with projects that contribute to the appreciation, conservation, or knowledge of Idaho's native flora and vegetation. The purpose of the ERIG program is to stimulate and lend support to educational, research, and conservation activities that promote an appreciation for native plants and plant communities in Idaho. The Idaho Native Plant Society encourages you to submit a proposal for projects that may qualify. The deadline for submitting proposals is January 15, 2020.



Grant guidelines: The ERIG program is intended to support direct project costs. Grant proposals should not include expenses for salary and personal benefits, the purchase of personal equipment, equipment not dedicated to the project, or other expenses not essential to the project. Here are some examples of costs the grant may cover:

- Meals, lodging, and direct costs of travel.
- Indirect costs will not be funded.
- Supply and service expenses used for the sole purpose of the project (e.g., native plant material, interpretive signs, lab materials).
- Printing costs for public outreach material or research publications.

Application procedure and requirements: Proposals must contain the following information. Please be succinct:

1. **Project Title.**
2. **Contact Information:** Name, address, phone number, organization/affiliation, and email address.
3. **Project Description:**
 - a. Outline the project objectives, methods, and final product.
 - b. Explain how the project will benefit the appreciation, conservation, or knowledge of Idaho's native flora or vegetation.
 - c. Describe how the public will have access to the project.
 - d. Describe how project success will be evaluated.

4. **Itemized budget:** Outline an overall project budget, including the amount you are requesting (up to \$1,000). Include other funding sources.
5. **Timeline:** Please provide a timeline for completion of all major milestones associated with the project, including presentation of the results.

Project proposals must pertain to native plants of Idaho. Please limit grant requests to a maximum of \$1,000, and be aware that less may be awarded due to INPS budget constraints and the number of applications submitted. Recipients of these awards have a timeline of two years from the date of the written award to complete their projects. Successful applicants will be required to submit a final report to the INPS documenting project accomplishments and a summary of the project to be published in the INPS newsletter, *Sage Notes*. We encourage applicants to become an INPS member if they are not already, however, membership is not a prerequisite to apply for or to receive an ERIG grant.

Please submit proposals by email to Bob McCoy at sawabi.inps@gmail.com or by post to: ATTN: ERIG Committee Chair, Idaho Native Plant Society, P.O. Box 9451, Boise, ID 83707.



The Second Conference on the
Research and Management of
High Elevation Five Needle Pines
in Western North America

Missoula, MT • September 15-17, 2020

Hosted By The Whitebark Pine Ecosystem Foundation

The Whitebark Pine Ecosystem Foundation is proud to host HSII, an international conference bringing together forest managers, researchers, and advocates on the future of five-needle pines in high-elevation ecosystems of Western North America.

Many high-elevation, five-needle pine forests are rapidly declining throughout North America. In particular, the six species we will focus on are of great ecological and symbolic importance to both the U.S. and Canada.

- ◊ Whitebark pine (*Pinus albicaulis* Engelm.)
- ◊ Limber pine (*P. flexilis* James)
- ◊ Southwestern white pine (*P. strobiformis* Engelm.)
- ◊ Great Basin bristlecone pine (*P. longaeva* D.K. Bailey)
- ◊ Rocky Mountain bristlecone pine (*P. aristata* Engelm.)

This second International symposium builds on findings from the first symposium held in 2010.

With this conference we intend to: (1) bring together scientists, managers, and concerned citizens to exchange information on the ecology, threats, and management of these important pines; (2) learn about the threats and current status of pine populations; (3) describe efforts to mitigate threats through restoration techniques and action plans; and, (4) build a foundation for the synthesis of research efforts and management approaches.

Visit [HSII Conference](http://www.highfivepines.org) or enter www.highfivepines.org into your browser for conference specifics, and details on presenting your paper or poster, becoming a sponsor, volunteering, or attending.



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Hiking through a meadow of *Senecio integerrimus* on the Burton Peak Trail. Photo by Dave Tank.

On Friday morning we gathered to discuss collecting objectives and procedures before splitting into two groups to collect. Harpo Faust, Peri Lee Pipkin, and Ben Legler headed to the dry, rocky slopes of the lower Parker Creek Trail in the Selkirks;

among the species collected were *Allium cernuum* (nodding onion), *Calochortus apiculatus* (three-spot mariposa-lily), *Erythranthe nasuta* (large-nose monkey-flower), *Heterocodon rariflorus* (western pearlflower), and the first collection of the exotic weed *Cruciata pedemontana* (piedmont bedstraw) from the Panhandle.

Dave Tank led a group with Derek Antonelli, Jennifer Costich-Thompson, and Barbara Ertter eastward to Cop-



Collecting *Heterocodon rariflorus* along the Parker Butte Trail. Photo by Peri Lee Pipkin.



Calochortus apiculatus flower. Photo by Peri Lee Pipkin.

per Lake, rimmed by wet, subalpine meadows within a stone's throw of the Canadian border, finding *Diphasiastrum sitchense* (Sitka clubmoss) and *Potentilla drummondii* (Drummond's cinquefoil).

With a larger group on Saturday we fanned out to three destinations. Improving weather allowed Harpo Faust to lead a group with Beth Corbin, Bar-

bara Ertter, Peri Lee Pipkin, and Dave Tank to high elevations in the Selkirks, reaching nearly 7,000 feet along the Burton Peak Trail, and rewarded by spectacular views, showy patches of *Penstemon ellipticus* (rockvine



Penstemon ellipticus on a granite slab in the Selkirks. Photo by Dave Tank.

beardtongue), high elevation species such as *Antennaria media* (alpine pussytoes), and *Cassiope mertensiana* (Mertens' moss-heather), as well as the regional endemics *Delphinium sutherlandii* (Sutherland's larkspur) and *Lomatium sandbergii* (Sandberg's biscuitroot). Ben Legler headed south to Boulder Meadows in the Cabinet Mountains with Hannah and Rachel Gross, Gab Raber, and Danielle Trawick; among the finds were the ferns *Equisetum sylvaticum* (wood horsetail) and *Diphasiastrum alpinum* (alpine clubmoss), the latter representing the first collection from Idaho.

Don Mansfield, joined by Derek Antonelli, Brian Carrier, Cara Hastings, and Erin Moyer, headed east to Ruby Ridge in the Purcells. After a stop at Spruce Lake among moist subalpine forest, the group reached the subalpine, rocky openings of Ruby Ridge; collections included *Lilium columbianum* (Columbia lily), *Rhododendron albiflorum* (white rhododendron), and *Xerophyllum tenax* (beargrass), indicating the affinities between northern Idaho and the Cascade and Coastal ranges to the west.



Lilium columbianum flower. Photo by Peri Lee Pipkin.

Among the foray's highlights were collections of a potentially undescribed *Castilleja* species from Ruby Ridge made by Don's group on Saturday, and again by Dave Tank and Danielle Trawick on a return trip to the area on Sunday. Dave was aware of this potential find from two prior herbarium collections from 1983 and 2002



A potentially undescribed *Castilleja* species from Ruby Ridge. Photo by Dave Tank.



Pressing plants back at camp after a day of collecting. Photo by Don Mansfield.

that had also documented it from Ruby Ridge, but were both misidentified as other paintbrush species. Following its rediscovery on the foray, we have learned of additional reports of the species elsewhere from the northeast corner of the Idaho Panhandle and adjacent north-west Montana. Preliminary examination of

the plants suggests affinities to *C. cusickii* (Cusick's paintbrush) and *C. pulchella* (showy paintbrush). Further study by Dave Tank and colleagues is underway.

Elsewhere on Sunday, Harpo returned to the Selkirks with Don Mansfield, Erin Moyer, and Peri Lee Pipkin for a hike up Long Canyon Trail, passing through open, rocky habitats harboring *Juniperus scopulorum* (Rocky Mountain Juniper), which this far north occurs in widely scattered and often small populations. Ben Legler, Derek Antonelli, and Beth Corbin collected in the wetlands and forests just north of Brush Lake, where the finds included *Aralia nudicaulis* (wild sarsaparilla), *Botrychium virginianum* (rattlesnake fern), and *Picea ×albertiana* (interior spruce). Barbara Ertter stayed near camp, documenting several hybrid roses.

Over the course of three days we accumulated 598 collections, now stored at the Stillinger Herbarium at the University of Idaho for processing. Individuals interested in helping us identify the specimens are encouraged to join us for evening keying sessions in the herbarium during the fall and winter. Contact Dave Tank (dtank@uidaho.edu) or Ben Legler (blegler@uidaho.edu) for more information. Once processed, this year's specimens will be added to the Stillinger Herbarium's collection with duplicates distributed to the other three large Idaho herbaria.

Participants included Derek Antonelli (Sandpoint), Brian Carrier (Boise), Beth Corbin (Marsing), Jennifer Costich-Thompson (Botanist, Idaho Panhandle National Forests), Barbara Ertter (Boise State University/College of Idaho), Harpo Faust (University of Idaho), Hannah Gross (University of Idaho), Rachel Gross (University of Idaho), Cara Hastings (Boise State University), Ben Legler (University of Idaho), Don Mansfield (College of Idaho), Erin Moyer (College of Idaho), Peri Lee Pipkin

(California), Dave Tank (University of Idaho), Danielle Trawick (College of Idaho) and Gab Waser (University of Idaho). We thank Jennifer Costich-Thompson for providing collecting permits for the Panhandle National Forests. The Stillinger Herbarium's Expedition Funds supported the costs of foray supplies and travel. Derek Antonelli's expert fire tending skills and ample supply of wood livened up our nightly campfires and Saturday evening's potluck.

The 2020 Idaho Botanical Foray will be hosted by Idaho State University. Look for announcements this coming winter. Botanists and enthusiasts of all skill levels are welcome to attend. •



Group photo. Back row from left to right: Dave Tank, Rachel Gross, Don Mansfield, Gab Waser, Hannah Gross, Danielle Trawick, Erin Moyer, Derek Antonelli, Beth Corbin, and Peri Lee Pipkin. Front row: Ben Legler, Harpo Faust, and Barbara Ertter. Not shown: Brian Carrier, Jennifer Costich-Thompson, and Cara Hastings. Photo by Ben Legler.



Around the evening campfire. Photo by Barbara Ertter.

The 2019 INPS Annual Meeting

By Lauren Pfund, Cottonwood, Idaho

I arrived at the 2019 INPS annual meeting in spectacular McCall already on a high note after having just completed the inaugural Idaho State University Botany Field Camp course, taught in June by Janet Bala and Mike Mancuso. After immersing myself in plant identification keying and pressing plant specimens with them for two straight weeks, I was ready to be quizzed on plant family characteristics when Mike led us on the Saturday field trip up Granite Mountain to the lookout on top. “Alright, what family is this?” he asked me, handing over a grass-like specimen. Upon closer inspection, I right away recognized the six tepals diagnostic of the genus *Juncus*. “It’s a rush!” I exclaimed with newfound botanical confidence. Indeed, as more experienced botanists will attest, speaking with authority is half the battle when someone asks, “What’s this?” As we proceeded along the trail, passing through open meadows, riparian communities, and forested habitats, we ended up tallying a whopping 104 species by the end of the day. (See plant list on page 7.)

The previous day I joined other INPS folks for a tour of Twin Peaks Nursery. This tour was valuable for my own personal edification and as a land management employee because I was able to witness firsthand what contracting for native plant restoration material is like from the horticulturalist’s point of view. Jim and Margo’s generous greenhouse facility was chock-full of ingenious features and innovative techniques, not to mention a cornucopia of indigenous tree, shrub, and herbaceous species destined for projects with tribal, state, private and federal partners. It was a special treat to hear the story of why they changed their business name, formerly Buffalo-berry Farm, after twenty some-odd years. Their initial thought was to use the name of a lovely and familiar local species that people could appreciate. Apparently, not only did few clients or customers actually know the plant, they also eventually wearied of explaining to misguided passersby that no, there was not any jerky for sale, nor could anyone come pick their own strawberries!

On Sunday, the hike from Lick Creek Summit to Duck Lake, led by Kristin Williams and Anne Halford, afforded

a wonderful opportunity to continue exploring the montane and riparian flora of the region. For all her insisting that she was a bit rusty after having been gone from the area for a number of years, I was amazed by how much knowledge Kristin was able to recall and, importantly, impart to the rest of us. To a preliminary list of around 80 species, we added approximately 30 to 40 more. A highlight for me was seeing western bog laurel (*Kalmia microphylla*) for the first time, with its outstanding embossed magenta corolla, and growing along the shore of the lake. As we made our return, Carol Blackburn recounted what it was like to be one of only two female

graduates in the wildlife program at Humboldt State University in 1959, and helped me appreciate how different the world was not so very long ago.

Speaking of change, our keynote speaker, Barbara Ertter, absolutely regaled the crowd at the banquet on Saturday night with her presentation on the Natural History of McCall, Past and Present. Everyone had the chance to contemplate the widespread evidence of a transformed landscape that deep

geologic time has left behind and the anomalies that cannot be easily explained, such as the basalt intrusion into Idaho batholith rocks seen at Osprey Point in Ponderosa State Park. Also at the banquet, a surprise announcement came to honor Michael Mancuso’s contributions to INPS with an honorary lifetime membership to the organization.

The North Fork Payette River kayak meander on Monday north of Payette Lake provided a peaceful end to the festivities with exploration of what I still consider a quite foreign plant realm—that of the aquatic plants. Common species we saw included pondweed (*Potamogeton* sp.), white water-buttercup (*Ranunculus aquatilis*), and bladderwort (*Utricularia* sp.). Overall, I think I speak for everyone when saying thank you to the organizers, presenters, and field trip leaders whose hard work made each event a fun learning experience. The weekend was a terrific success and I believe we all walked away from it with a renewed sense of appreciation and care for the abundance and diversity of plant life in Idaho and beyond. •



Kirsten Severud enjoying the wildflowers and whitebark pine around the summit of Granite Mountain. Photo by Anne Halford.

Granite Mountain Field Trip Plant List, July 13, 2019

Compiled by Sam Charpentier with assistance from other field trip participants

TREES

Abies lasiocarpa (subalpine fir)
Picea engelmannii (Engelmann spruce)
Pinus albicaulis (whitebark pine)
Pinus contorta (lodgepole pine)
Populus tremuloides (quaking aspen)

SHRUBS

Amelanchier alnifolia (western juneberry)
Artemisia spiciformis (snowfield sagebrush)
Ericameria discoidea (whitestem goldenbush)
Ericameria nauseosa (rubber rabbitbrush)
Juniperus communis (common juniper)
Lonicera involucrata (black twinberry)
Lonicera utahensis (Utah honeysuckle)
Ribes montigenum (mountain currant)
Salix scouleriana (Scouler's willow)
Sambucus nigra var. *cerulea* (blue elderberry)
Sambucus racemosa (red elderberry)
Sorbus scopulina (mountain ash)
Spiraea splendens (rose meadowsweet)
Vaccinium membranaceum (thinleaf huckleberry)
Vaccinium scoparium (grouse whortleberry)

FORBS

Achillea millefolium (common yarrow)
Aconogonon phytolaccifolium (alpine knotweed)
Actinium columbianum (monkshood)
Agoseris aurantiaca (mountain dandelion)
Allium simillimum (dwarf onion)
Antennaria alpina (alpine pussytoes)
Antennaria lanata (wooly pussytoes)
Antennaria microphylla (littleleaf pussytoes)
Antennaria umbrinella (umber pussytoes)
Arnica latifolia (broadleaf arnica)
Balsamorhiza sagittata (arrowleaf balsamroot)
Bistorta bistortoides (American bistort)
Calyptridium umbellatum (Mt. Hood pussypaws)
Castilleja applegatei (wavyleaf paintbrush)
Chamaenerion angustifolium (fireweed)
Chionophila tweedyi (Tweedy's snowlover)
Claytonia lanceolata (springbeauty)
Collinsia parviflora (blue-eyed Mary)
Cymopterus glaucus (waxy Spring-Parsley)
Dodecatheon pulchellum (darkthroat shootingstar)
Dodecatheon jeffreyi (Jeffrey's shootingstar)

Epilobium minutum (chaparral willowherb)
Equisetum sp. (horsetail)
Eremogone aculeata (prickly sandwort)
Eremogone capillaris (slender sandwort)
Erigeron glacialis (subalpine daisy)
Eriogonum flavum (yellow buckwheat)
Eriogonum heracleoides (Wyeth buckwheat)
Eriogonum pyrolifolium (alpine buckwheat)
Erythronium grandiflorum (glacier lily)
Galium bifolium (thinleaf bedstraw)
Gaultheria sp. (wintergreen)
Ipomopsis aggregata (scarlet gilia)
Hackelia floribunda (manyflowered stickseed)
Hieracium gracile (slender hawkweed)
Hieracium scouleri var. *albertinum* (western hawkweed)
Hydrophyllum capitatum (ballhead waterleaf)
Hypericum scouleri (western St. John's-wort)
Lewisia triphylla (threeleaf lewisia)
Ligusticum canbyi (Canby's lovage)
Lithophragma glabrum (bulbous woodlandstar)
Lomatium sp. (biscuitroot)
Lupinus argenteus (silvery lupine)
Micranthes bryophora (Tobias' saxifrage)
Moehringia macrophylla (bigleaf sandwort)
Mertensia paniculata (tall bluebells)
Noccaea fendleri (Fendler's pennycress)
Penstemon attenuatus (sulphur penstemon)
Penstemon globosus (globe penstemon)
Penstemon payettensis (Payette penstemon)
Phacelia hastada (silverleaf phacelia)
Phlox multiflora (flowery phlox)
Polemonium pulcherrimum (Jacob's-ladder)
Polygonum polygaloides ssp. *kelloggii* (Kellogg's knotweed)
Potentilla flabellifolia (mountain cinquefoil)
Potentilla sp. (cinquefoil)
Ranunculus alismaefolius (water-plantain buttercup)

Saxifraga austromontana (matted saxifrage)
Sedum lanceolatum (lanceleaf stonecrop)
Senecio crassulus (thick-leaved groundsel)
Senecio integerrimus (western groundsel)
Senecio triangularis (arrowleaf groundsel)
Stenotus lanuginosus (woolly mock goldenweed)
Taraxicum officinale (common dandelion)
Thalictrum fendleri (Fendler's meadowrue)
Valerian occidentalis (western valerian)
Veratrum californicum (California false hellebore)
Veronica wormskjoldii (alpine speedwell)
Viola purpurea (goose-foot violet)

GRAMINOIDS

Achnatherum occidentale (western needlegrass)
Bromus marginatus (mountain brome)
Carex aquatilis (water sedge)
Carex paysonis (Payson's sedge)
Carex scopulorum (mountain sedge)
Deschampsia cespitosa (tufted hairgrass)
Juncus ensifolius (swordleaf rush)
Juncus mertensianus (Merten's rush)
Luzula hitchcockii (smooth woodrush)
Poa secunda (Sandberg bluegrass)
Poa wheeleri (Wheeler's bluegrass)

FERNS

Cryptogramma crispa (rockbrake)

MOSSES

Polytrichum juniperinum (juniper haircap moss)



Field trip participants at the Granite Mountain Lookout.

Annual Meeting Lichen/Moss Workshops

By Alma Hanson, White Pine Chapter

On July 13, the INPS Lichen/Moss Workshops led by Roger Rosentreter, retired BLM botanist/lichenologist, and Alma Hanson, retired USFS botanist, convened under the Peninsula

Shelter in Ponderosa Park at McCall, Idaho. After introductions of the 25-30 participating members, Roger with the help of Ann DeBolt introduced the group to the fascinating world of lichens. Using specimens collected in the park we were able to observe the diversity of color, size and form of this composite organism that arises from algae

or cyanobacteria living with fungi filaments in a mutualistic beneficial symbiotic relationship. While we looked at the lichen specimens with our hand lens, Roger entertained us with stories of early lichenologists and human uses of lichens as food, dyes, poisons, and medicine. Lastly, he and Ann turned our attention to the array of reference books and keys on display for our use during the workshop.

After a short break, we started a similar overview of the miniature world of mosses. Alma with the help of Alan Steele spread moss specimens out for the group to observe and with hand lenses we dissected the common moss *Polytrichum juniperinum* (hair cap moss) and learned about the life cycle and different reproductive methods of this group. We discussed the ecological scope and habitats of mosses and their amazing ability to survive desiccation that would quickly kill hardy vascular plants. Lastly, we were encouraged to take an interest in mosses and collect specimens to increase our understanding of moss rarity and diversity in Idaho. Again reference books like McCune and Hutten's *Common Mosses of Western Oregon and Washington*, and Lawton's *Moss Flora of the Pacific Northwest* were on display and available for use.

At the end of the presentations, mother nature freshened up the park with a quick intense thunder shower. With raingear nearby, we divided into two



Alma Hanson leads the moss workshop.
Photo by Karie Pappani.

groups for a field trip to explore the mosses and lichens in the numerous micro-habitats of Ponderosa State Park. In the moss group we found *Fissidens osmundioides* and *Climacium dendroides* (tree moss) along the shores of Lake Payette. The *F. osmundioides* looked like layers of green feathers hugging the shoreline. Although the genus derives its name from the cleft teeth of the peristome, the leaves are the identifying characteristic with each leaf making a little pocket where a new leaf forms. *C. dendroides* looks like a miniature tree and has been used in dish gardens and floral decorations for years.

Under an aspen grove we found bright yellow-green patches of *Aulacomnium palustre* in the wettest sites and *A. androgynum* on a rotting log with its characteristic golf ball-like brood bodies on long stalks. Tufts of *Orthotrichum* were found growing on the aspen trunks with their caps or calyptra covered with long straight hairs. Along the path back to the shelter we found *Dicranum tauricum*, identified by the broken leaf tips, growing on the bark of a Douglas-fir, and the cosmopolitan moss, *Ceratodon purpureus*, forming a neat cushion on soil with young reddish sporophytes just starting to show the characteristic ribbing on the capsule.



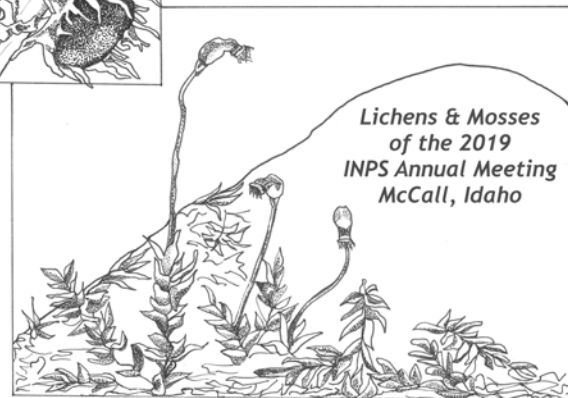
Moss workshop participants study hard. Photo by Karie Pappani.

In the lichen group Roger again pointed out the diversity that we could observe just looking at the nearby trees and rock outcrops. One of the common lichens in the park *Letharia vulpina* or wolf lichen was found growing on the trunks and branches of conifers. While *L. vulpina* is easy to identify, a common look alike is *Letharia columbiana* which has large brown discs called apothecia. The chartreuse or yellow pigment of these species has been used historically as a dye by many native North American tribes. The vegetation reproductive

structures soredia and isidia were easy to see once Roger pointed them out on the thalli. One other common species in the park was *Alectoria fremontii*, or beard lichen, found growing mostly on tree branches. Its olive green to brown color separates it from another pendant lichen that grows in our region, *Nodobryoria oregana*, which is a red beard lichen. A favorite of some participants were the *Cladonia*, a diverse genus of lichens with cuplike podetia often found on rotten wood and mineral soil.

At the end of the workshop as we were packing up my grandson said, “Grandma, I don’t want to hurt your feelings but lichens are really cool, they’re awesome compared to mosses.” Hmm, I thought. Whatever your preference, lichens or mosses, their miniature world is fascinating! As you travel along exploring, you’ll soon find that lichens and mosses are often close neighbors and where you find one you’ll see the other. Hopefully now, upon examination, you can tell the two apart. •

Letharia vulpina



Hypogymnia imshaugii

Illustration by Karie Pappani.

Annual Meeting

Michael Mancuso Receives INPS Lifetime Membership Award

By Caroline Morris, Pahove Chapter

At the July 2019 annual meeting, the Idaho Native Plant Society (INPS) honored a former New York City kid who once upon a time couldn’t tell a dandelion from a pine tree, by bestowing on him its prestigious Lifetime Membership Award (LMA). After receiving this surprise commendation, Michael Mancuso’s acceptance comments downplayed the award’s loftiness by telling the audience that his botany career started humbly with a blank slate. He’s come a long way! What impressive accomplishments earned his INPS fame?

Michael Mancuso, also known as “M2,” has a rare honor, only one of about a dozen such INPS LMAs given during the last four decades. For the INPS Directors to consider a LMA nomination, the prospective (unaware) candidate’s credentials must demonstrate convincing examples of achieving the INPS goals: ‘promoting interest in native plants and plant communities, ...collecting and sharing the information on all phases of the botany of native plants in Idaho..., foster[ing] understanding and appreciation of our native flora, and ...preserv[ing] the rich heritage for future generations’ (INPS website). A Pahove Chapter committee secretly solicited letters of recommendation for M2 from professional colleagues with

diverse botanical/ecological specialties. Their letters impressed the INPS Directors, who voted to grant the award. Michael’s wide-ranging work demonstrates myriad INPS and botany interests. His professional work includes 15 years as a botanist with the Idaho Department of Fish and Game’s Conservation Data Center and subsequently as a freelance botanist, with a specialty in rare plant conservation projects throughout this time. He has also furthered the goals of INPS through educational efforts, donating plant specimens to Idaho herbaria, being editor for *Sage Notes*, having a long-standing role in the Idaho Rare Plant Conference, and by helping with other INPS-related activities. Michael is a treasured asset for both INPS and the Pahove Chapter. His informative, often scenic field trips; lively meeting presentations; and frequent, substantial help with events are exceptional contributions.

For Michael Mancuso’s many contributions to INPS, and his friendship, we are grateful. Perhaps this will inspire you to also volunteer for INPS. •

Note: This article was edited with the author's consent, reducing accolades.

Insight from an Idaho GLORIA Summit

By Olivia Turner and Claire Parsons



Idaho GLORIA team atop the new GLORIA summit established in 2019, with Sheep Mountain rising behind it. Photo by Rose Lehman.

Starting in May, we have been working closely with Caribou-Targhee National Forest Botanist, Rose Lehman, as Botany Interns through a partnership with the Chicago Botanic Garden's Conservation Land Management program. We have enjoyed some great experiences so far with the Seeds of Success Program (<https://www.blm.gov/programs/natural-resources/native-plant-communities/native-plant-and-seed-material-development/collection/idaho>), completing monarch butterfly migration surveys, and assisting with rare plant species monitoring.

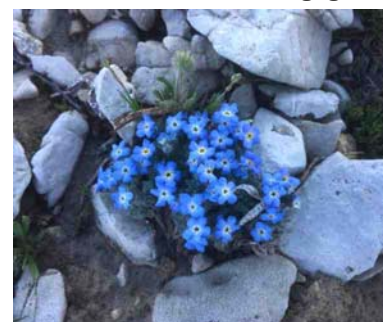
On July 24, 2019, we had the opportunity to join the Idaho GLORIA (Global Observation Research Initiative in Alpine Environments) team to establish a fourth GLORIA alpine vegetation monitoring summit in the state. This newest GLORIA summit is located at 10,380 ft. elevation, south of Sheep Mountain in the Lemhi Range of east-central Idaho. It joins three other nearby GLORIA summits originally established in 2018. To learn more about initiation of the Idaho GLORIA project in 2018, please reference Michael Mancuso's article, "Establishing GLORIA for Long-Term Monitoring of Alpine Vegetation," in the March 2019 issue of *Sage Notes*.



View south of the stunning Lemhi Mountain range from the 2019 GLORIA peak. Photo by Claire Parsons.

Being part of the 2019 Idaho GLORIA team was an incredibly motivating experience because both of us have a passion for plant ecology and the effects of climate change on plant populations. It was humbling to learn that participating in GLORIA meant contributing to an alpine monitoring program that is worldwide in scope.

Alpine environments are some of the most potentially vulnerable ecosystems to climate change, and the more we learn about this threat, the more we understand the contribution GLORIA has to conservation biology. The ability to explore and assist in this research was an opportunity to see a remarkable environment and engage with professional botanists. What stood out to us was the depth and documentation that guides the GLORIA initiative. The intensive protocols and botanical expertise required to complete just one summit site was overwhelmingly impressive. From laying several



*The delightful alpine forget-me-not (*Eritrichium argenteum*). Photo by Claire Parsons.*

hundred meters of string to delineate the various summit plots, to spending an hour sampling some of the vegetation plots, it became evident that large scale monitoring and conservation projects require a lot of effort. In addition to the research methods, we noticed how important partnerships can be for the success of conservation projects. The Idaho GLORIA projects involves agencies like the U.S. Forest Service, Bureau of Land Management, and Idaho Department of Fish and Game, as well as Idaho Native Plant Society volunteers, and others.



*One of many Old-Man-of-the-Mountain (*Hymenoxys grandiflora*) flowers blooming throughout the GLORIA site. Photo by Claire Parsons.*

We were able to assist in the intensive vegetation sampling required by GLORIA and learned about the 40+ species inhabiting the summit landscape. Sampling protocols collect information related to the composition and abundance of plant species in the summit area. Some of the colorful plant species we observed included moun-



A sampling quadrat used to collect alpine vegetation data. Photo by Rose Lehman.

tain dryad (*Dryas octopetala*), featherleaf kittentails (*Synthyris pinnatifida*), and alpine forget-me-not (*Eritrichium argenteum*). Although already known from Sheep Mountain, we were surprised to find an abundance of Douglass' wavewing (*Cymopterus douglassii*) at the new GLORIA summit. This rare species is endemic to the Lost River and Lemhi mountain ranges and its presence adds to the conservation value of the GLORIA monitoring plots. Douglass' wavewing is a member of the parsley family (Apiaceae) with a striking umbel of yellow flowers. Its pinnately compound leaves are easy to spot within the rock and talus due to their blueish-green color. As aspiring botanists, we could not have felt more grateful or excited to document the presence of this rare plant species.

Spending an entire day amongst one of the tallest mountain ranges in Idaho was something we will never forget! Being a part of the 2019 Idaho GLORIA team was a priceless experience and gave us exposure of what it is like to be involved in active botanical research. •



GLORIA team members reviewing the alpine flora and discussing species variation before starting surveys. Photo by Olivia Turner.



Conservation and Land Management botany interns, Olivia Turner (left) and Claire Parsons (right) at peak, getting ready to lay vegetation survey grid. Photo by Rose Lehman.

Pioneer Cemeteries and Native Plant Diversity

By Judy Sunderland Ferguson, White Pine Chapter

In June, the White Pine Chapter of the Idaho Native Plant Society joined the Palouse Prairie Foundation in sponsoring a program on the historical and botanical values of Whelan Pioneer Cemetery. Pioneer cemeteries, such as Whelan Pioneer Cemetery in Whitman County, Washington, are of great importance to native plant conservation. Whelan Pioneer Cemetery was formally established in 1888, but it was in use as a burying ground before that. When huge acreages of Palouse Prairie were going under the plow, Whelan Pioneer Cemetery was set aside and left alone, except for a few plantings of iris and lilac near the old graves. Today, this cemetery is an important prairie relict that is a snapshot of the amazing species diversity that once was widespread across native Palouse Prairie grasslands. The Palouse Prairie Foundation was given the authority by the Washington Department of Archeology and Historic Preservation to maintain and to protect this valuable resource. Last year, the WDAHP provided a \$2,000 grant to build a fence around the cemetery.

Members of both the Palouse Prairie Foundation and the White Pine Chapter of the Idaho Native Plant Society met near the cemetery at the home of Ray and Joan Folwell for a program on the historic and botanical importance of Whelan Pioneer Cemetery. Pamela Brunfeld, retired Stillinger Herbarium curator and Systematic Botany instructor and Joan gave a brief synopsis of the his-

tory of the area and the diversity of native species still found at Whelan Pioneer Cemetery today. After a provided lunch, participants went to Whelan Pioneer Cemetery where Pam led a 1-hour botany foray to identify native Palouse Prairie species, including the very rare Palouse thistle (*Cirsium brevifolium*), for half of the participants.


The other half of participants were invited to take part in the Third Annual Whelan Weeding Party for an hour. The groups then switched places for the second hour. It was a busy but fulfilling day identifying native plants and also weeding to help maintain the quality on this unplowed Palouse Prairie remnant. Many weeds were pulled, but a one-day count of 63 native plant species made it all worthwhile. We all enjoyed the wonderful diversity still thriving on this prairie remnant. •



Palouse Prairie vegetation in the Whelan Pioneer Cemetery area. Photo by Eric Anderson.

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Upper Snake Chapter Ends Dormancy

By Catherine Black, Upper Snake Chapter



New Upper Snake Chapter officers: Heather Phillips, Vice-President; Catherine Black, Secretary; Kristin Kaser, President; Ross Hays, Treasurer. Photo by Johnathan Black.

Like *Calochortus* re-emerging after a long winter, the Upper Snake Chapter of the Idaho Native Plant Society came out of dormancy and has spent the summer in full bloom. After the chapter being inactive for four years, the INPS state board approved reactivation of the Upper Snake chapter on February 21, 2019. The inaugural meeting of the revived chapter was held on March 5, 2019, at the Idaho Department of Fish and Game office in Idaho Falls, with 30 people in attendance. Officers elected at this meeting were Kristin Kaser, President; Heather Phillips, Vice-President; Catherine Black, Secretary; and Ross Hays, Treasurer.

At this inaugural meeting, plans for the year were discussed and Dr. Paul Allen of the Sawabi Chapter (Pocatello) spoke about how his chapter operates. The evening concluded with a rousing round of Native Plant Bingo. At the April meeting, members enjoyed a presentation by Nick Kozlowski, a soil scientist with the Natural Resources Conservation Service. Summer Native Plant walks included outings to Craters of the Moon (May), Cress Creek (June), Kelly Canyon area (July) and Sawtell Peak (August). Some favorite finds on these outings included buckwheat (Polygonaceae), monkeyflowers (Phrymaceae), Indian Paintbrush (Orobanchaceae), cinquefoil (Rosaceae) and western coralroot (Orchidaceae). Plans for the Fall include a Fall Forage Picnic. Anyone interested in joining can check out our Facebook page (Upper Snake Chapter INPS) or contact Kristin Kaser (kaser.kristin@gmail.com). •



Upper Snake chapter on guided plant walk at Craters of the Moon National Monument May 2019. Photo by Nick Kozlowski.

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Chapter News

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: Meetings are held in the Wildlife Building, North Idaho Fairgrounds, Coeur d'Alene.

Contact: Derek Antonelli, ds.ca.antonelli@gmail.com

Upcoming Events

October 2: Derek Antonelli will present on "The Amazing Family of Grasses."

October 3: North Idaho Rare Plant Working Group, Moscow, 9:30 am to 3:30 pm. Contact Derek Antonelli for specific details.

Past Events

The Calypso Chapter took two plant hikes in August. The first was a joint hike to Crystal Lake in the St. Joe Mountains with the White Pine Chapter on August 3. The combined group of members from both chapters saw many splendid wildflowers on the hike to the high mountain lake. The second outing was to the Roman Nose Lakes high in the Selkirk Mountains on August 31. In addition to the wildflowers, the group enjoyed spectacular views.



Crystal Lake high in the St. Joe Mountains. Photo by Derek Antonelli.

LOASA CHAPTER

When: Meetings are held the third Thursday of each month at 7:00 pm.

Where: Taylor Building, Room 208, College of Southern Idaho, Twin Falls.

Contact: Bill Bridges, bridgesbill34@yahoo.com

Upcoming Events

September 19: Andy West will speak about Master Gardeners.

October 17: Steve O'Connor will speak on Bee City designation.

November 2: Steve Love will give a presentation about his research and his plans for the INPS.

December 19: Christmas dinner at LaMar Orton's house and viewing Christmas lights.

January 16: Steve Polson will speak on Native Roots.

February 20: Terry Ruby will speak on Weed Control.

PAHOVE CHAPTER

When: Meetings are held on the second Tuesday of each month from September–April at 7:00 pm. 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://idahonative-plants.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 Karie Pappani at pahove.chapter.president@gmail.com.

Upcoming Events

October 8: TBD, details still in the works.

October 11: The Southern Idaho Rare Plant Working Group will be meeting from 8:30–4:30 in the Camas Room of the Idaho BLM State Office.

November 12: Michael Ottenlips will give a presentation on Highlights from Botany 2019.

December 10: Michael Mancuso will give a presentation on the Idaho GLORIA (Global Observation Research Initiative in Alpine Environments) project.

SAWABI CHAPTER

When: Meetings are held on the third Monday night of October, November, January, February, March and May. Programs begin at 7:00 pm and refreshments are available afterwards. Each meeting is preceded by a short presentation on the plant family of the month.

Where: The Middle Fork Room of the Pond Student Union Building on the lower Idaho State University campus.

Contact: Geoff Hogander, ghogander@yahoo.com

UPPER SNAKE CHAPTER

Contact: Kristen Kaser, kaser.kristen@gmail.com

See article on page 13.

WHITE PINE CHAPTER

When: Meetings are held once a month except during the summer. Field trips can occur most any month.

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 (between Adams and Van Buren) at 7:00 pm. Contact: INPS, White Pine Chapter, PO Box 8481, Moscow, ID 83843 or whitepine.chapter@gmail.com.

WOOD RIVER CHAPTER

When: Meetings are generally held each month with field trips throughout the summer and lectures during the off season.

Where: Various places.

Contact: Kristin Fletcher at naturewalker7@gmail.com for general information and Lisa Horton at LisaHortonJewelry@gmail.com to be added to the chapter's monthly email list.

Upcoming Events

September 28, 9:00 am–4:00 pm: That's One Big Tree! Continuing our popular series of Big Tree field trips, John Shelly will lead us to another of his pet trees—this time jumbo-sized aspen trees. We'll take measurements of the tree to determine if it is a state record holder. We'll be travelling out the Fish Creek Road (between Craters of the Moon and Carey). Meet at Hailey Park and Ride (River X Bullion Streets) by 9:00 am to arrange car-pools, or at Timmerman Hill Rest Stop by 9:30 am. Returning to Timmerman Hill around 4:00 pm. Bring lunch and water. Wear sturdy shoes and be prepared for Idaho fall weather and possibly ticks. Difficulty: mostly driving but requires a short walk through uneven grassland.

November 22, 7:00–9:00 pm: Fall Potluck and Annual Meeting. Location TBA. Bring a dish to share. We'll supply some beverages. Extra points if you bring a washable plate, glass and fork from home. Otherwise, we'll have some to share. Everyone is welcome. There is no charge to attend. We will elect chapter officers to take effect January 1, 2020. We will also talk about this year's field trips and lectures and suggest ideas for 2020, and look at a slideshow of beautiful plant pictures. •



Members of Calypso and White Pine chapters completed a hike to Crystal Lake. Photo by Karen Williams.



Calypso members at Lower Roman Nose Lake in the Selkirk Mountains. Photo by Derek Antonelli.



Hike at Roman Nose Lakes provide spectacular views. Photo by Derek Antonelli.



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