



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

## INPS 2018 Annual Meeting in the Coeur d'Alene Mountains

By Derek Antonelli, President, Calypso Chapter

The Idaho Native Plant Society's 2018 Annual Meeting was held in the beautiful Coeur d'Alene Mountains from Friday, June 29, through Monday, July 2. Fifty-seven people registered for the four-day event, hosted by the Calypso Chapter. We staged activities out of the U.S. Forest Service Bumblebee Campground Group Site along the Little North Fork of the Coeur d'Alene River. The focus of the event was John Leiberg, a Swedish-American pioneering botanical collector, forester, and bryologist. Leiberg was responsible for documenting floras throughout the Pacific Northwest, but particularly north Idaho.

Activities began Friday. As people checked in, they were given the opportunity to participate in a plant scavenger hunt. The objective was to see who could find the most species of plants around the campground. Other users of the campground must have thought we were crazy. Beth Corbin was the winner after finding 92 different species of plants. While Beth was showing off her superior plant identification skills, the rest of us were dining on grilled hamburgers, sausages, and some outstanding potluck fare.

Saturday was a busy day for activities. Half of the group took a field trip up to the Twin Crags/Mount Wiessner area. The field trip was led by author and naturalist Jack Nisbet, with assistance by BLM botanist LeAnn Abell. This was an area John Leiberg visited in the late 1800s on his surveys for the U.S. Government. Jack Nisbet has been researching a book on John Leiberg and provided fascinating insights into the work of Leiberg during the field trip. The other half of our group completed two plant walks, both led by

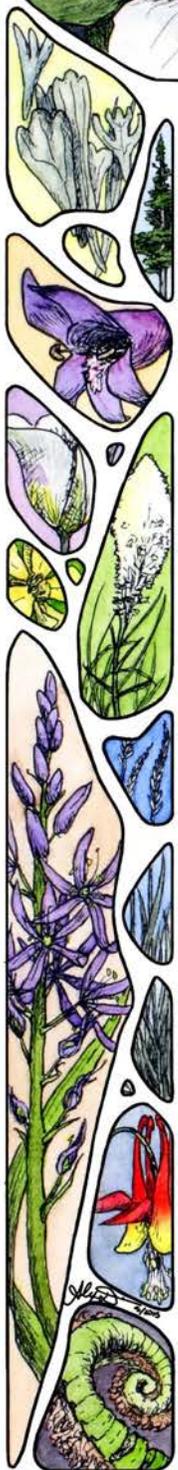
Derek Antonelli. The morning's walk was through Settler's Grove of Ancient Cedars. This grove of giant western red cedars (*Thuja plicata*) has been established since the time of Columbus. The grove experienced a forest fire in 2015, and it was interesting to see how resilient this habitat was to the effects of fire. The afternoon walk was up Coal Creek and provided a good example of the mesic forests of north Idaho. The birders in our group were impressed by the American dippers being very active in the creek.

Saturday evening incorporated the official portions of the Annual Meeting. The evening started off with a dinner catered by the Snake Pit, a company that has been in business since the 1880s Gold Rush days. Dinner was followed by an INPS business meeting. Members elected officers and discussed Society business. The evening concluded with a keynote talk by Jack Nisbet that covered the many contributions John Leiberg made to the understanding of the area's flora. A light rain forced the entire group under the canopy of a few trees, but we managed to stay dry and cozy.

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Letter from the President

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Membership in the Idaho Native Plant Society brings a unique set of rewards. It gives us a chance to rub shoulders with like-minded people, provides opportunities to learn about our unique and fascinating Idaho flora, and allows us to have influence in worthwhile conservation causes. Wherein a single connoisseur of incredible natural habitats has limited influence in conserving what we love, a unified group can bring a concentrated force. Being a member is rewarding in a number of positive ways.

Although we are an organization of volunteers, many dedicated people take the time to make things work. The INPS Board of Directors is made up of these kinds of people. We are currently in the midst of discussions that will hopefully result in stable, yet more responsive, organization. We are working to find ways to increase our contributions to the Education, Research, and Inventory Grant fund such that we are in position to strengthen native plant research and education. We are having discussions related to Society fiscal health and working to come up with ways to keep a stable budget. We are also working on solutions to communications issues that seem to plague complex organizations (with effective chapter-level function underlying statewide administration) with a goal to improve information flow from the state organization to individuals within our society. If you have any suggestions concerning any of these issues, please write to me or contact your chapter president.

In the meantime, I am going in search of the elusive *Penstemon salmonensis*. I hope you too have a native plant objective. Makes life much more interesting.

Stephen Love,  
INPS President

Announcement

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**2018 Botanical Foray Plant Identification Workshops**

After a successful 11th Annual Idaho Botanical Foray last June, we have hundreds of plants that need to be identified. There will be upcoming Identification Workshops that you are all invited to attend if you would like to share in the identification of those plants. All are welcome regardless of experience. For more information, please contact Don Mansfield ([dmansfield@collegeofidaho.edu](mailto:dmansfield@collegeofidaho.edu)) or Beth Corbin ([botanybeth@gmail.com](mailto:botanybeth@gmail.com)).

November 1, 6:00 pm: College of Idaho Herbarium, Boone Hall  
December 6, 6:30 pm: SRP Herbarium, BSU (Science Building, 2nd Floor)  
February 7, 6:30 pm: SRP Herbarium, BSU (Science Building, 2nd Floor)  
March 7, Time and location TBA

Correction

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In the June 2018 issue of Sage Notes, the article titled "2018 INPS Rare Plant Conference," Table 1 on page 5, incorrectly included *Drosera anglica* as being dropped from the INPS Rare Plant List. It should have been *Drosera intermedia* shown as being removed from the list.

## Eleventh Annual Idaho Botanical Foray

Article and Photos By Don Mansfield, Pahove Chapter

From May 31 to June 4, 2018, at least 30 folks with a passion for plants from as far as Wisconsin gathered at the Pioneer Campground by the Soldier Mountain Ski Area north of Fairfield, Idaho, to botanize in Camas, eastern Elmore, western Blaine and northern Gooding and Shoshone Counties. Each day two to five groups of seasoned and aspiring botanists searched new areas to voucher Idaho's diverse and amazing vascular flora. At the end of each day's exploration we returned to camp to press plants, meet with old acquaintances, and make new friends.

Each morning participants could choose which group to join for the day. Some groups undertook lengthy hikes; others did not venture far from cars, but stopped at many places along the way. All groups collected plants from habitats as diverse as desert scablands, lush wetlands and marshes, coniferous forests, prairies, various sagebrush



Pressing plants collected during the foray.

scrublands, and riparian meadows and woodlands. Over the course of four days we visited places such as Castle Rocks by Cat Creek Summit, Soldier Mountain foothills and Soldier Creek, Smoky Mountains, Sawtooth Methodist Camp, Big Beaver ACEC, Magic Reservoir, Fir Grove Mountain and Monument Gulch in Bennett Hills, South Fork Boise River, Wells Summit, Rock Creek, Bennett Mountain Road, and near Little Camas Reservoir. In the four days we gathered more than 900 unique collections, most of which were in triplicate so multiple herbaria can hold permanent records of our flora.

There are always some unusual plants that appear in our collections. This year, for example, we found a biscuitroot right in the campground that defied identification even by Don Mansfield, Jim Smith, and Mary Ann Feist, who recently named a new biscuitroot species after former governor Cecil Andrus. That new biscuitroot (*Lomatium andrusianum*) also was collected this year by the group at Rock Creek in Blaine County. The oddball new biscuitroot from the campground appeared to be *Lomatium ambiguum* with its tuberous root and leafy stem, but



From left to right: Dave Tank, Sam West, Samantha Seabrook-Sturgis, Cara Hastings, Bryan Carrier, Jim Smith, Sarah Herzog, Emmitt Ambert, Bob McCoy, Chris McCoy, Don Mansfield, Barbara Ertter, Brenda Morales, Mary Ann Feist, Eli Rolapp, Rosemary Smith, Anne Halford, Janet Bala, Sandy Smith, Abigail Selzer, Danielle Trawick, Allison Buiser, Beth Corbin, Rick Williams, Sophia Neumann, Pam Reschke, Rose Lehman, Brittini Brown.

it had uncharacteristic involucre bractlets, indicating that it obviously does not read our current literature about how biscuitroots are supposed to behave! Also in Rock Creek drainage, we found a rare *Eriogonum crosbyae* on a volcanic ridge. In the Bennett Hills south of Camas Prairie we found such oddities as the tiny *Chorizanthe watsonii*, and the large, inflated-stemmed *Caulanthus crassicaulis*. And in the wetlands *Eleocharis bolanderi* appeared. *Artemisia papposa* was known from Camas Prairie and that was observed again this year in a new population. We saw that *Eriogonum thymoides* is more widespread in the area than some had thought. Dave Tank from University of Idaho, who studies paintbrushes, noted that we extended the range of *Castilleja tenuis* (formerly *Orthocarpus tenuis*). Interestingly, we found many populations of a plant currently on Idaho's Rare Plant List, *Astragalus adanus*, east of its known range. We will likely need to reconsider that species' status in an upcoming Rare Plant meeting.

As has been the case with the prior ten Idaho Botanical Forays, we celebrated each evening around the campfire, shared stories, and enjoyed what has become our traditional Saturday night potluck dinner. A good time was had by all.

Keep your eyes peeled (in forthcoming Sage Notes and the INPS website) for announcements of the Twelfth Annual Foray, which will be scheduled for the summer of 2019. At this time it looks like the University of Idaho will host the foray somewhere in Northern Idaho. Seasoned and novice botanists alike can enjoy getting to know the plants of our diverse and beautiful state. No prior knowledge of plants is required, but you will be guaranteed to be surprised by what we collectively find. Come join us, no matter what your background. •

Sunday was another day for field trip activities. Part of our group, led by Val Goodnow and assisted by LeAnn Abell, traveled up to the ridges associated with Bloom Peak to see the Bloom Peak douglasia (*Douglasia conseruatorum*). This is the only place in the world to find this rare species. Another group led by Derek Antonelli hiked up to Revett Lake. The trail up to this scenic subalpine lake showcased many interesting plants. A third group visited Graham Creek. This field trip was led by Jill Roche. The participants on this walk were excited by Jill's interpretation of the characteristics of the area's mesic forest.

Back at camp on Sunday evening, some folks engaged in an informal plant identification session, while others had interesting conversations around the campfire. We all stuffed ourselves with leftovers from the two previous nights.

On Monday morning before breaking camp a small group took a quick field trip to the Montford Creek Research Natural Area (RNA). This RNA was established to preserve a portion of old growth western white pine (*Pinus monticola*) forest for comparison to managed forests. We were looking for the rare and elusive deer fern (*Blechnum spicant*). It turned out to be too elusive for us, but we found a lot of other cool plants.

INPS Annual Meetings are always a good time. The 2019 Annual Meeting will be hosted by the Pahove Chapter. It will be held in the McCall area next July. Be watching for details and plan to attend! •



Bloom Peak douglasia.  
Photo by John Lee.



Author and naturalist Jack Nisbet led the field trip to the Twin Crags/Mount Wiessner area. Photo by Marilyn George.



The Settler's Grove of Ancient Cedars is a lush forest dominated by giant western red cedar trees. Photo by Nancy Miller.



Field trip to the Twin Crags/Mount Wiessner area. The site provided magnificent views of the Coeur d'Alene Mountains. Photo by Karen Williams.



Connie Antonelli at the base of a fallen giant western red cedar. A forest fire swept through Settler's Grove of Ancient Cedars in 2015. Some tree were killed, but the forest still thrives. Photo by Nancy Miller.



Coal Creek provided a good example of north Idaho mesic forest habitat. Photo by Nancy Miller.



Jill Roche led the field trip up Graham Creek. Photo by Karen Williams.



Jack Nisbet provided a fascinating account of John Leiberg's work to document the regional flora at Saturday evening's keynote talk. Photo by Nancy Miller.



The Montford Research Natural Area was established to preserve an example of old growth western pine forest. Many of the trees may have been killed by white pine blister rust. Photo by Dave Noble.



Some of the group that participated in the hike to Revett Lake. Photo by Dave Noble.



Something seems to have the group stumped at the informal plant identification session on Sunday evening. Photo by Karen Williams.

## Reflections from the INPS 2018 Annual Meeting

By Alice Crocket, Pahove Chapter

My walking and hiking choices for the 2018 INPS Annual Meeting included Settler's Grove of Ancient Cedars on Saturday morning, Coal Creek on Saturday afternoon, and Revett Lake on Sunday morning. These excursions, interspersed with plant scavenger hunts, the Annual Meeting/Presentation by INPS President Steve Love, guest keynote speaker Jack Nisbet's program on the Swedish-American botanical collector John Leiberger, informal plant identification sessions, and potlucks at Bumblebee Campground, filled our days and evenings with camaraderie, native plant specimens/information, and a year's worth of catch-up. Our registration packet contained plant lists and area maps; knowledgeable botanists led and inspired us.

On Saturday morning at Settler's Grove of Ancient Cedars, colorful butterflies were mud-puddling (absorbing salts and amino acids from the soils) at the trailhead. We entered the grove through a welcoming wooden arch. The giant western red cedars that date back to when Columbus landed began to emerge and tower (some at 120 feet) above the 3.3-mile trail. We crossed the clear West Fork Eagle Creek several times on wooden foot-bridges.



My husband Alan took a picture of me hugging a western red cedar—more of a wingspan hug, because the tree was so huge. The air was hushed. All along the path, were shade-loving plants. (And they were on our plant lists, too.) In the heart of the cedar grove there were several benches spaced discretely for sitting, contemplation and musing. “A place to visit again,” I thought.

Our hike on the Coal Creek trail on Saturday afternoon and our hike to Revett Lake Sunday morning were filled with more native plants. We carpoled on Sunday with friends Beth and Ray Corbin. They had chosen other



Saturday hikes and had not been with us when we went to the ancient cedar grove. After hiking to Revett Lake and finishing in early afternoon, we asked our friends if they would like to stop at the ancient cedar grove on the way back to Bumblebee Campground. After all, it was, sort of, right on the way. They said “Yes!”

The parking lot had considerably more cars than it had Saturday early morning. Butterflies were still plentiful. We walked through the wooden arch and into the grove. As we neared the center of the grove, we heard the soft beat of hand rattles. We looked up and saw four young women standing; each was holding and shaking an Indian hand rattle. They were separated from each other and each faced one of the four directions, east, north, west and south. They gently shook their rattles. They were blessing Mother Earth. We continued on to where the trail narrowed and eventually ended. We took pictures and treasured the ancient cedars before us. After our hike we returned to the trailhead. There stood the four “blessing” women. They were visiting quietly with each other. Butterflies rested on their hands, heads, shoulders and torsos. I softly thanked them for their earth blessings. One of them gently said, “Here is another blessing,” and transferred one of her resting butterflies to my waiting hand.

The conference was excellent, but the “blessing” was the best! •

## The Life of a Retired Botanist

By Pamela Brunsfeld, White Pine Chapter

I hadn't planned to be a botanist, it all started so innocently. I was going to be a doctor. I was taking the necessary biology courses at the University of Idaho, but two things happened that altered my plans. First, I had two botany professors, Richard Naskali and Doug Henderson, who inspired me so much I thought I would like to be a botanist. But I had to become a doctor. That was the plan. Then it was my senior year and I had taken every course necessary to complete my biology degree except the one I dreaded most—Animal Physiology. Within the first few days of class, the professor announced we would be “pithing” frogs—looking into their little eyes, sticking some poker in their brain resulting in a lobotomy, and then doing horrible things to them. I couldn't do it. One of my classmates volunteered to help me. “Nope” said the rather unpleasant professor and instructed me to leave. Thus, began my career as a botanist.

I loved working as a Forest Service botanist, consulting in Brunsfeld Botanical with my late husband, becoming director and curator of the University of Idaho Stillinger Herbarium and working with my own summer crews, teaching Systematic Botany, and giving presentations. It just feeds on itself until one day you realize you are a halfway decent botanist, and you love it! You discover the thing that made you take the path to become a botanist was one of the best things that ever happened to you. But wait a minute. All this time goes by and suddenly you are OLD! And that means retirement.

At first, I did not like retirement. I didn't know what to do. Then I realized I had an addiction to plants. I had to get back to what I loved, but how should I go about it? My husband, best friend, constant field companion, and botanist extraordinaire had passed away from cancer a decade ago. Some people are just fine going solo, but I'm deathly afraid of bears and needed someone to talk to besides my dogs, who attract bears! Goal number one was to find a partner who would slam on the brakes when instructed, back up when instructed, go anywhere I told him to look at plants, be tolerant of me spending hours looking at plants, not be afraid of bears, love dogs, and crave adventure. After searching high and low for many years I found a potential candidate. He was a photographer so could take pictures while I botanized; he had a chemistry background so liked science; found what I did interesting; and he loved adventure...and dogs.

We went to Europe. I wanted to look at Mediterranean plants, and oh, historical stuff, too. By now my



partner was actually looking at and asking questions about plants. There was hope. We found ourselves wandering around Crete and I heard a scream. In an open area, I saw my partner on the ground writhing in pain. I was sure he had been bitten by a snake, hopefully not poisonous—but probably so. I rushed into this field of Cucurbitaceae, with these interesting cucumber-like fruits. Trying not to stop to examine the fruits, I discovered this fruit had been the source of his enormous pain. This plant new to me (yay!) was *Ecballium elaterium*, the squirting cucumber. When ripe, the fruits “squirt” their seeds 10 to 20 feet within seconds. He had touched one, it fired at him, he pulled his hand back rapidly, and ended up with shoulder bursitis for well over a year. What a great seed dispersal mechanism!

I hate winter. Many botanists suffer Seasonal Affective Disorder, and I was one of those them. The Superbloom in the Southwest deserts was going to happen, and we were going. We purchased a trailer, headed south, hit an ice patch, our trailer smashing into the guard rails, but it was certainly good enough to get to those flowers! Even with a broken trailer I was in botany heaven for over a month. I had been to the desert before to look at plants in a “regular” year, but this time every inch of the desert floor seemed covered with these fleeting, stunningly beautiful annual wildflowers. We had to leave our trailer in southern Utah at the junk yard. There was only one solution to this problem the following year. We bought another trailer, did it all over again, without trailer incident. Now this is a tradition, period.

Most people think being a botanist is just picking flowers. Not only is there a lot of science to it, but also a lot of adventure aka danger. Once I was shot at doing a rare plant survey. Once I picked up a plant press and there was a rattlesnake under it. Once I was folding up a tent in Arizona and there was a large scorpion under it. And of course many flat tires in the middle of nowhere, including three in one day! Rattlesnakes, scorpions, flat

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## The 2018 Education, Research, and Inventory Grant Awardees

By Bob McCoy, Sawabi Chapter

For those of you not familiar with the Education, Research, and Inventory Grant (ERIG) Program, it is one of the means through which the Idaho Native Plant Society provides outreach and furthers its goals of promoting Idaho's native plants and their understanding, appreciation and conservation. Each year the ERIG committee solicits and selects proposals that foster these goals. Proposals that are selected may be awarded up to a \$1000 grant each for their projects. Projects that have been selected are a diverse group, and include school and library gardens that feature native plants, botanical gardens, and research by professional botanists and botany students. Their impact will be both short-term and extend many years into the future. ERIG awards disseminate our goals to a much wider community than we would otherwise be able to reach and are an excellent value providing tangible benefit.

In 2018, INPS received eight grant applications, with six receiving awarded funds. The awardees are as follows:

The Ada Community Library Victory Branch (\$600) is transforming existing tiered flower beds at the entrance to the library to create an educational pollinator garden. They are working with biologists from the U.S. Fish and Wildlife Service Idaho Office to create a garden made up of Idaho native plant species that will serve to attract and feed various pollinators and educate the public about the value and need for such landscapes in our community. Once the plants are in, the library will create an educational pamphlet and install instructional signage. It will also host programming in the library on related topics.

The Sawtooth Botanical Garden (\$465) in the Wood River Valley is expanding and improving Carol's Wildflower Garden and the Montane Garden to create thriving examples of native plant landscapes. A native garden that is flourishing, healthy, and beautiful will inspire others to include native plant species in their own gardens. By expanding the species represented, the garden will offer increased educational opportunities to the public.

The City of Dover (\$465) is diversifying its native plant gardens by engaging volunteers and staff to continue populating its established native gardens and identifying plants for the enjoyment of visitors. Additionally, they have StoryWalk kiosks at the entry and throughout the

Park that are used for educating visitors about the plants within the gardens. Funds are being used for the purchase of native plants and identification placards.

A graduate student at the University of Ohio, Rosa

Rodríguez-Peña, is studying the Role of Pollinator-Mediated Selection in Penstemon Flower Morphology and Genetic Diversity (\$615). Her field studies are conducted over the range of the genus in the United States including Idaho. She is using her grant for travel and lodging expenses. Her objectives are:

- (1) To identify the relationship between flower morphology and geographic distribution; determining if populations that are closer to each other show fewer morphological differences.
- (2) To determine how the changes in functional pollinators influence flower morphology.
- (3) To estimate the affect of pollinators in maintaining genetic diversity and reducing genetic differentiation between populations.



Penstemon glandulosus.  
Photo by Rosa Rodríguez-Peña.



The GLORIA team on the crest of the Lemhi Mountains. Photo by Beth Corbin.

The Global Observation Research Initiative in Alpine Environments (GLORIA) (\$540) is a program to establish and maintain a worldwide, long-term monitoring network for comparative study of climate change impacts on high mountain vegetation biod-

iversity. The first GLORIA sites were established in Europe in 2001. In the United States, GLORIA is now established in several western states, with Idaho a recent addition to the contingent. Botanists and volunteers (including several INPS members) participated in establishing GLORIA research plots in the Lemhi Mountains this summer. The ERIG funds were used to help defray volunteer's travel and meal expenses.

The Salmon Valley Stewardship (SVS) (\$465) requested support for aspen monitoring and restoration in the Salmon Valley, Idaho. Support from ERIG is being used to increase SVS's capacity to document restoration activities, engage citizen scientists, and provide training for local youth and adults. Funds will also be used for costs associated with aspen interpretive signs and a kiosk, including costs for printing and building supplies.

Retired Botanist.....Continued from Page 7

tires, but the worst danger is “the botanist” trying to do crazy things to get to those plants. This means climbing on ledges you have no business being on, jumping across rivers that if you missed you would be carried away, going into grizzly country and putting your bear spray in your pack because it is getting in the way of the two hands you need to collect plants, going on a ridgetop to collect plants when thunderheads are moving in, and finishing your hike with a headlamp then your phone light because your timing was off (too many cool plants, their fault). I had been on a ridgetop where lightning struck a minute later; I got lost both in the vehicle and on foot; I've startled herds of elk and hoped to not to be trampled.

These 2018 ERIG awardees represent diverse projects ranging from local community, volunteer-based efforts that acquaint citizens with the value, horticultural potential, and heritage of Idaho's native plants, to world-spanning efforts by professional scientists to evaluate the impact of climate change. By partnering with projects such as these, your donations to ERIG are greatly leveraged and provide benefit to both Idaho and the world beyond. You are making a difference. This winter, when you renew your annual membership, please consider making an additional contribution to the ERIG program. You may also donate at any time on the ERIG webpage: <https://idahonativeplants.org/erig-news/> •

Then there is the fear of bears, the result of reading “The Night of the Grizzlies” my first year as a botanist in Glacier National Park. Then you realize you are not just a good botanist, but also an Indiana Jones adventure junkie. So now you have two addictions you must satisfy...for the rest of your life.

You never make a lot of money, but you can't buy memories. So, my advice to plant-lovers, from novice to professionals—when you get “old,” get out there, learn some new plants, have fun, make good memories. What a great life and there are always so many more plants to learn. •

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## Native Sagebrush Steppe Restoration at Deer Flat NWR

By Bob Christensen, Retired Biologist and President of Friends of Deer Flat Wildlife Refuge

### Introduction

The Friends of Deer Flat Wildlife Refuge (Friends) began a project to restore native vegetation near the Deer Flat National Wildlife Refuge (NWR) Visitor Center, along the shoreline of Lake Lowell, in Nampa, Idaho. The objective of the project is to improve vegetation biodiversity, create better wildlife and pollinator habitat, and improve public awareness of native plant communities. The first phase of the project (Plot No. 1) was initiated in 2016 and has been largely completed except for continued maintenance of the site. This phase was funded by grants provided by the Idaho Native Plant Society's ERIG program (\$400) and the National Fish and Wildlife Foundation (\$2061). The work was implemented through the help of refuge volunteers who have donated over 300 hours. In addition, the refuge staff helped by contributing 54 man- and equipment-hours.



In addition to being adjacent to the visitor center, the project site is located along several trails which are heavily used by refuge visitors. This restoration project will promote and enhance local interest in Deer Flat NWR. It will enhance the natural history learning experiences for refuge visitors, including local school children, scouting groups, families, and wildlife enthusiasts. It will help educate local communities about the valuable natural resources that reside at Deer Flat NWR. Based on knowledge and experience gained in the pilot restoration project, the Friends plan to expand restoration efforts in the future to additional parcels of land on the refuge.

### Site Description and History

The soils in Plot No. 1 are Vickery-Marsing silt-loams. They are shallow, underlain by gravel, and caliche is



Mowing Plot 1 prior to seeding with bunchgrasses.

reported at 1-3 feet depth. Area elevation is between 2500 and 2600 feet. Past disturbances such as fire have led to a predominance of non-native plant species such as cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola kali*) and *Kochia* spp. Average annual precipitation for the area is 9.7 inches, much of it coming as winter snow. Originally, the project area vegetation was dominated by native shrubs including basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*), four-wing saltbush (*Atriplex canescens*), and rubber rabbitbrush (*Ericameria nauseosa*). Native grasses on the site included species such as bluebunch wheatgrass (*Pseudoroegneria spicata*), needle and thread grass (*Hesperostipa comata*), Sandberg bluegrass (*Poa secunda*), and bottlebrush squirreltail (*Elymus elymoides*).

### Project Methods

During the 2016 growing season, the restoration site was alternately treated with Roundup and then mowed to keep the cheatgrass and other weedy species under control. In choosing plants for our restoration site, we wanted to include native shrubs, grasses and forbs. We took into consideration species used in previous restoration efforts on the refuge, but altered those lists somewhat after discussions with area land managers, botanists, and seed companies. During October of 2016 we drill-seeded a bunchgrass seed mix (purchased from Sun Mountain Natives, Moscow, Idaho) on Plot 1 which contained the following proportions (PLS/acre): bluebunch wheatgrass (2.5), bottlebrush squirreltail (1), Idaho fescue (*Festuca idahoensis*) (1), Indian ricegrass (*Oryzopsis hymenoides*) (1), and Sandberg bluegrass (1).

Later in the fall of 2016 we collected seed on the refuge uplands from basin big sagebrush and fourwing saltbush, as well as some seed from silver sagebrush (*Artemisia cana*) grown on an adjacent property. The shrub seed collections were taken to the Forest Service's Lucky Peak Nursery for cleaning and later sent to Buffalo Berry Farms (now Twin Peaks Nursery) in McCall, Idaho, to have them produce containerized seedlings. During the period of November 4-10, 2017, the nursery-grown containerized seedlings were planted (and watered) in Plot 1 with the following amounts (seedlings): basin big sagebrush (1260), silver sagebrush (598), four-wing saltbush (131), and assorted bunchgrass plugs (982).

Seven study plots (50' by 50') were set up to record the species and density of the various shrubs, and four study plots (10' by 50') to record the number and density of bunchgrass plugs. Starting in April 2018, the plants were hand-watered and weeded (as needed) each month of the growing season (as of July 2018 when this article was written). Also in April, 500 bitterbrush (*Purshia tridentata*) plants (bare-root stock which had been stored



Planting Day, November 4, 2018.

overwinter in a freezer) were planted on the site. The plants were made available by the Bureau of Land Management through the Idaho Fish and Game Department.

## Results

In May of 2018, the Friends and refuge staff conducted a visual review of the planted area and found that the seedlings were doing well and had put on substantial growth, especially the sagebrush—many doubling in size (height and breadth). By conducting counts in the study plots, we were able to determine that winter survival rates were very good for all of the plants that had been grown in the nursery (average survival rate): sagebrush (92%), saltbush (85%), bunchgrass (85%).

The losses that did occur were primarily due to poor planting techniques, mechanical damage from weeding



Newly planted & watered sagebrush seedling, November 4, 2017.

around plants, and animal depredations (pocket gophers and mule deer). Subsequent observations, during watering sessions, have revealed healthy growth in all surviving hand-planted shrubs and grasses. Unfortunately, none of the bitterbrush plants survived more than a few days. (They possibly had been in the freezer too long.)

A note about the bunchgrass that was drill-seeded in October 2016: there was no apparent production of grasses from this effort during 2017—even after a very wet winter. We counted this seeding effort as a total loss. However, much to our surprise and excitement, the grasses began to emerge in early 2018; but with patchy success, depending on the variable soil conditions in Plot 1.

The vegetation composition in Plot 1 is already noticeably different from the dense cheatgrass carpet that previously existed. Although invasive grass species are still prevalent, they are less dense and vigorous. Some kochia and Russian thistle are emerging on the site, as well as other weedy species. But we also have some desirable annuals showing up, such as yellow sweet clover, sunflower, and wild onion. The planted native species are becoming more visible with each passing month.

The Friends have initiated a second phase of the restoration project by preparing a second 3-acre parcel of

Continued on Page 13



A robust four-wing saltbush, July 2018.

## Great Plains Grassland Summit, April 2018

By Vicki Henderson, Pahove Chapter

In April of this year, I traveled to Denver to attend the Great Plains Grassland Summit. Funding for the trip was provided by an Education and Enrichment Award presented by the INPS Pahove Chapter. Thank you for allowing me this great experience to learn about the benefits and the challenges, management priorities, and research needs facing our National Grasslands today.

Attendees at the summit were from a very diverse group, and included representatives from government agencies, university professors and students, city and state agencies, tribal councils, conservation groups (such as INPS, Ducks Unlimited, Humane Society, Xerxes Society, American Bird Conservancy, The Nature Conservancy, World Wildlife Fund and more), and private companies and landowners.

The summit goals were presented by Deborah Finch, program manager at the Rocky Mountain Research Station, with six plenary speakers presenting information pertaining to the following themes: (1) working lands; (2) invasive species, native species; (3) wildlands and prescribed fire; (4) energy development; and (5) weather, water and climate. Each of the above groups met several times during the summit to put together a concise listing of what they considered to be their greatest opportunities, management priorities, research needs and barriers, and then plans to begin addressing them. Detailed reports from each of the working groups are scheduled to be published at a later date in the *Rangeland Ecology and Management Journal*: <https://www.journals.elsevier.com/rangeland-ecology-and-management>.

Breakout sessions featuring each of the themes were held to seek input from attendees to assist in decision making regarding the future management of grasslands. As a representative of the INPS, I attended the invasive and native species session. Employees of Denver Botanical Garden, U.S. Forest Service, U.S. Geological Survey, Natural Resources Conservation Service, a private land owner, an employee of a seed company, and an economist also participated in this session. Because of the large size of this group, it was broken up into smaller groups to discuss topics of concern. Each group was tasked to discuss a major challenge regarding native and invasive species, and include a history of prior management, define the opportunity and research necessary to resolve the challenge, and discuss what steps managers, scientists and stakeholders can take to work more effectively together.

Collaboration was the key word used over and over during the summit. In order to resolve conservation and other issues facing the Great Plains, government agencies, NGOs, researchers, and landowners must collaborate, by sharing their resources, communicating successes and failures, and allow for compromise. In Idaho, we are battling the same issues as in the Great Plains. Hopefully, the discussions and conclusions of the summit groups will be of great benefit to our state as well as those in the Great Plains.

As a concerned citizen, (not a botanist, biologist nor researcher), I want to thank the INPS Pahove chapter for allowing me this “once in a lifetime” opportunity—it was a great learning experience!

For more information on the Great Plains Grasslands, see: [www.savingthewest.org](http://www.savingthewest.org).

### Main presenters and topics

Working Lands: Conservation Grazing to Sustain Watershed Function, presented by Kenneth Tate from the University of California, Davis. Although livestock grazing has been linked to water pollution, degradation of soil structure, etc., Tate maintains the negative outcomes are results of poor management strategies. Conservation grazing strategies can enhance soils, reduce invasive plants, improve water quality, and stabilize wetlands.

Plant Invasions on Great Plains Grasslands; Status, Successes and Moving Forward, presented by John Gaskin, U.S. Department of Agriculture Agricultural Research Service, Montana. Gaskin reviewed the reasons why controlling invasive species is so difficult: including soil disturbances, conflicts between many different stakeholders, and bureaucracy. He noted failures to resolve problems were caused by a lack of collaboration between groups such as various government agencies, researchers, and land managers. The common approach for controlling invasive species has been to target the heaviest invasions and use the least amount of resources to remove the greatest quantity of the target species.

However, native plants and seed sources may be insufficient for native species to recover. He suggested another way to handle invasive species would be to prioritize keeping invaders out of uninvaded habitat, and to preserve these habitats by pushing back invaders. Tools used to fight off invasive plants include herbicides, biocontrols, mechanical removal, fire, grazing, and integ-

rated weed management strategies. For more information on native prairies and invasive plant species see: <https://catalog.data.gov/dataset/native-prairie-adaptive-management-npam>. An Invasive Plant Management Decision Analysis Tool is available at <https://ipmdat.org/>

Other presenters and topics

Thinking like a Grassland: Challenges and Opportunities for Biodiversity Conservation in the Great Plains of North America, presented by David Augustine, U.S. Department of Agriculture Agricultural Research Service.

Wildland and Prescribed Fire: Fire and Grassland: Is Fire a Tool or a Critical Ecological Process? presented by Sam Fuhlendorf, Department of Natural Resource Ecology, Oklahoma State University.

Weather, Water and Climate: Regional Co-Design and Co-Production of Research and Management Actions to Support Climate Change Adaptation Strategies for Managing Natural Resources in the Northern Great Plains, presented by Dennis Ojima, Colorado State University.

Energy Development in the Great Plains: Ecological Implications and Restoration Opportunities, presented by Jacqueline Ott, U.S. Forest Service, Rapid City, South Dakota. •

Dear Flat Restoration.....Continued from Page 11

land immediately to the north of Plot 1. Plans are to plant Plot 2 in the fall of 2018. Furthermore, the Friends and refuge staff have collaborated to create a brief interpretive brochure to educate visitors about native sagebrush-steppe plant communities. Copies of the brochure are on display in the Refuge Visitor Center.

#### Lessons Learned

1) The control of cheatgrass is very problematic because it is such a persistent competitor against all other plantings. We did not use the inhibiting bacteria as initially planned knowing previous trials on site and elsewhere did not show noticeable success rates and USFWS has strict rules concerning use of such agents.

2) Drill-seeding the bunchgrass seed did not work as well as we had initially hoped, but it did start germinating the second spring.

3) Friends members and the general public are interested in habitat restoration projects and many are generally willing to participate in hands-on activities. This interest was apparent when specific persons were invited and consented to lead groups of 5-10 volunteers during the main planting event on November 4, 2017.

4) Because of the dense/compact soils on the project site, digging with shovels during planting was required rather than using other planting tools. The digging effort soon wore out the enthusiasm of some volunteers. We did try out a power auger on one follow-up planting day, but the effort required was also quite prohibitive because of the hard soils and we could barely keep ahead of one or two planters. Case in point, we will try some better soil

preparation on the next site; i.e. possibly disking and harrowing, to break up the soil for easier digging. Also, we will try to reduce the number of plants to be planted during any one session.

5) We did learn from literature sources and from people in the know, that by watering our seedlings as we plant them and following up with periodic watering during the first year, we will greatly increase their survivability. Our expectation is an 80% survival rate through the first year. Monitoring our study plots and photo points will give us an accurate record of how well the plants survive and how well they grow.

6) One additional note: The Friends plan on planting nursery-grown perennial forb seedlings on both Plots 1 and 2 in the fall of 2018. •



Sagebrush and bunchgrass seedlings growing among the ever-present cheatgrass, May 2018.

## Chapter News

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### 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 conference room of Idaho Department of Fish and Game, 2885 W. Kathleen Ave., Coeur d'Alene.

Contact: Derek Antonelli, [ds.ca.antonelli@gmail.com](mailto:ds.ca.antonelli@gmail.com)

#### Upcoming events:

October 3: Derek Antonelli will present on the structure and diversity of ferns.

### 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](mailto: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 Karie Pappani at

[pahove.chapter.president@gmail.com](mailto:pahove.chapter.president@gmail.com)

#### Upcoming events:

October 9: Barbara Ertter will speak on “Yukon Botany: Bennett's BABY, Canadian Oil, and of course Potentilla.”

November 13: Sean Finn with the Native Plant Network will talk about community and school group native plant projects across the Treasure Valley.

December 11: Movie Night (TBD).

#### Board Position Openings:

The Pahove Chapter is seeking a new board president. Our current president, Karie Pappani, has served the chapter exceptionally for 7+ years, and the time has come to select her successor. Additional board members, including someone to help with memberships, are also sought. Interested individuals are encouraged to contact the board at [pahove.chapter.president@gmail.com](mailto:pahove.chapter.president@gmail.com).

### 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: Paul Allen, [pokyallen@hotmail.com](mailto:pokyallen@hotmail.com)

#### Upcoming events:

September 22: Plant walk to Goodenough Canyon just south of Pocatello. We'll meet there at 10:00 am, and after the walk have a picnic get-together. Bring your own picnic. Since this is a fall colors walk, the date is subject to change, but the local membership will be informed by e-mail if it is.

October 15: Paul Allen will present on his trip last spring to New Zealand.

November 19: Geoff Hogander will present on his trip to South Africa.

December: This will be the annual Christmas dinner, the date and location TBD.

### UPPER SNAKE CHAPTER

The Upper Snake Chapter is currently inactive.

Contact: Rose Lehman, [jojorose@cablone.net](mailto:jojorose@cablone.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 event calendar at [www.whitepineinps.org](http://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](mailto: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](mailto:whitepine.chapter@gmail.com)

#### Upcoming events:

October 11: Tanya Cheeke, Assistant Professor of Biological Sciences at Washington State University, will be speaking on transplanting mycorrhizal fungus to help restore prairie ecosystem. She has researched the role of mycorrhizal transplants in successfully restoring tall

grass prairie in Kansas. Native plant species are often more dependent on mycorrhizal fungi than are invasive species. When the fungi are disturbed, mycorrhizal-dependent native plants do not compete well with invasive species. She and her team are now testing the mycorrhizal responsiveness of some of the local Palouse prairie plants. This program is jointly sponsored by the White Pine Chapter and the Palouse Prairie Foundation. November 29: Penny Morgan, Professor and Senior Fire Ecologist in the Department of Forest, Rangeland and Fire Sciences at the University of Idaho, will be speaking on the fire history and ecology of forest edges and forest islands in the Palouse Prairie.

### 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: John Shelly at [boshelly@cox.net](mailto:boshelly@cox.net) for information about field trips and presentations. Also, check the Sawtooth Botanical Garden website ([sbgarden.org](http://sbgarden.org)) for updates on presentations. •




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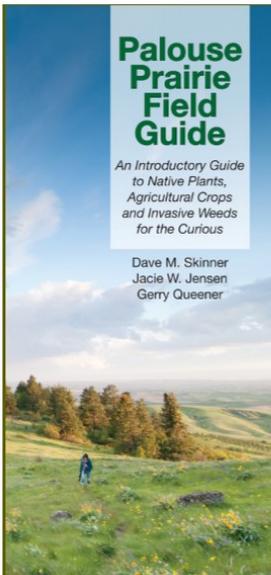
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