



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

Native and Rare Plant Project Updates for BLM Public Lands

By Anne Halford, BLM Idaho State Botanist

Spring is fast approaching and the hope for a floriferous and more in-person season of botanizing is on my mind. What about 2021? Despite the Zoom meetings, heat and smoke—the field work and partnerships that we were able to accomplish, and foster, are still making a difference in 2022. One of the key roles for the BLM Idaho Plant Conservation and Restoration Program (PCRP) is to ensure field staff have access to the best available science and tools to facilitate the sustainable ecological stewardship of Public Lands. This work aligns with BLM directives like the National Seed Strategy that address the use and development of native plant materials to meet wildlife, rare plant, pollinator and general plant community objectives—with the nexus of climate change.

Rare Plants

The Threatened and Endangered (T&E) program specific to rare plants comprises at least 80% of the general workload for the BLM state botanist and 20-30% of the work by BLM District and Field

Office staff (Table 1). Surveys and monitoring for rare plants comprise most of the field work necessary to acquire information to assess impacts via the National Environmental Policy Act (NEPA) process. In 2021, 57 rare plant species were surveyed for various fuels, minerals, range, forestry and recreation projects (Table 2).

Key Highlights

- Surveys in BLM special management areas like the Oolite ACEC in the Bruneau Field Office, with help from Ann DeBolt and Boise State University Ph.D. candidate Clara Buchholtz, to assess rare plants as part of baseline work to analyze recreational impacts to habitat that will be addressed in an upcoming Bruneau Field Office Environmental Assessment
- A rare plant risk assessment survey contract with the Institute for Applied Ecology in the Twin Falls District Shoshone Field Office for 57 rare plant Element Occurrences (EOs)
- Slickspot peppergrass Habitat Integrity Monitoring of 50 EOs
- Whitebark pine (*Pinus albicaulis*) inventories and monitoring in the Herd Creek ACEC and on the Continental Divide in the Salmon Field Office
- Monitoring and out-planting of propagated MacFarlane's four o'clock (*Mirabilis macfarlanei*) seedlings in the Cottonwood Field Office
- Monitoring of Ute's ladies tresses (*Spiranthes diluvialis*) EOs in the Upper Snake Field Office

Partnerships are an essential component of completing this work. They included monitoring

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Letter from the President

The INPS is dedicated to collecting and sharing information about Idaho's native plants and vegetation, and preserving this rich floristic heritage for future generations. One of the ways the organization meets this commitment is to sponsor the Idaho Rare Plant Conference. The conference provides a forum to review and update the INPS Idaho Rare Plant List on a regular basis. Keeping the list up-to-date increases its usefulness and credibility, especially for land management agencies tasked with maintaining rare plant species populations. The conference is typically attended by a mix of botanists, ecologists, and other people interested in Idaho's rare plant species. Affiliations range from federal and state agencies, to consulting firms and other private entities, colleges/universities, and the general INPS membership. Regardless of background or affiliation, everyone shares an advocacy for rare plant conservation.

The 2022 Idaho Rare Plant Conference was held February 28 and March 1 using a virtual meeting format that accommodated ongoing COVID-19 concerns. Although an abridged version compared to past in-person meetings, the conference met its objective to review over 25 species most in need of discussion and conservation ranking. I want to thank everyone involved in making the conference a success. Brittini Brown and Kristin Williams deserve special recognition for leading the conference organizing effort, as do Beth Corbin and Derek Antonelli for their leadership roles in the Southern and Northern Idaho Rare Plant Working Groups, respectively. This was the 30th Idaho Rare Plant Conference. The INPS has been a sponsor since the very first one on November 30, 1984, held in a Boise motel conference room. The nearly 40 year legacy of being part of the Idaho Rare Plant Conference is something INPS can be proud of, even as we recognize challenges to the conservation of Idaho's rare plants are ongoing and in many places accelerating.

Which leads me your INPS membership. Your membership supports INPS efforts such as the Idaho Rare Plant Conference. If you have recently renewed your INPS membership, thank you. If it something you've been meaning to do, now is good time to go to the INPS webpage and renew online, or complete the membership form included in this issue of Sage Notes and mail it along with your dues. INPS is a team effort. To be an effective advocate for native plants and their habitats throughout the state, to be at the forefront of educating the public about native plants, and at the same time to be helping to promote a deeper understanding and appreciation of our native flora, and to be able to support research and education projects that benefit Idaho's native plants—INPS needs you.

To finish this letter, I want to welcome Karie Pappani as the new Sage Notes editor. Karie's acceptance of the position did not even require arm-twisting, or promises of jewels and fame. Thank you Karie.

The early spring wildflower season is beginning. Enjoy the show.

Michael Mancuso,
INPS President

Announcement

Botany Field Camp

Idaho State University/Idaho Museum of Natural History is offering a 2-week, 3-credit botany field class for Summer 2022:

Week 1: June 13-18 – Idaho State University

Week 2: June 19-25 – Mackay, Idaho Field Camp

The course provides an opportunity to acquire or upgrade field plant identification skills. You will learn how to recognize common plant families in the field; how to identify unknown plants using keys, regional floras, and other resources; how to collect and prepare botanical specimens; and be introduced to basic field techniques to measure vegetation.

The first week will be based from the ISU campus in Pocatello, and the second week from a private cabin near Mackay, Idaho. The course includes a mix of lectures, group plant identification sessions, and local field trips both weeks.

The course is open to students from ISU and other universities and colleges, as well as non-degree seeking individuals and professionals. Preference will be given to

individuals who register by April 30, 2022. Expect to spend at least half of your time on field trips to a variety of locations and habitats.

You can register for the class at:

<https://www.isu.edu/registrar/>. In the Class Schedule section, select Summer 2022; then select Biological Sci, Course Number = 4499/5599; Course Title = Botany Field Camp. The class is 3 credits of upper division botany and includes an additional \$700 fee to pay for field trips transportation, room and board at the private field camp, and supplies. Housing may be provided for anyone traveling to Pocatello to take the class.

The course instructors are Michael Mancuso (mmancuso219@hotmail.com) and Trista Crook (tristacrook@isu.edu). Please email the instructors if you have any questions or want more information about the class. Join us for exploring and learning the Idaho flora!

More information about the class is available at:

<https://www.isu.edu/imnh/imnh-collections-and-research/life-sciences/botany-field-camp-2022/> •

Society News

INPS Grows Social Media Outreach

By Anna Lindquist, Pahove Chapter

Love it or hate it, a large part of communication and information these days comes via social media. Especially during the past couple of years, social media has been an avenue for folks to stay connected and find community in an isolating time. That is why, last year, INPS branched into new territory with an Instagram account!

Though Facebook is king in terms of number of users, research shows that younger users engage more actively with Instagram. The need to reach and support a younger audience of botanical enthusiasts is evident in studies such as the 2015 Kramer and Havens article, "Report in Brief: Assessing Botanical Capacity to Address Grand Challenges in the United States." Their research found that nearly 50 percent of federal botanists surveyed intended to retire within 10 years—and that was in 2015. Yet, a decline in the number of botanical programs, course offerings, and training has led to a large gap between the botanical expertise needed to fill in these vacancies, and the botanical expertise available.

While Instagram cannot make up for the lack of funding and training for young botanists, ecologists, and plant scientists, it does extend the reach of our INPS community. In just three months, we have over 300 followers on Instagram! Posts have included announcements featuring upcoming webinars, spotlights on a few INPS chapters, and posts every Friday for #florafriday. If you do not have an Instagram account, never fear! Posts to Instagram are also shared to the INPS Facebook page. Coupled with the Facebook page, we hope the Instagram account can help INPS share the joys of Idaho native plants with a wider and diverse audience. But, someone much younger than this millennial will need to accept the challenge of taking on an INPS TikTok...

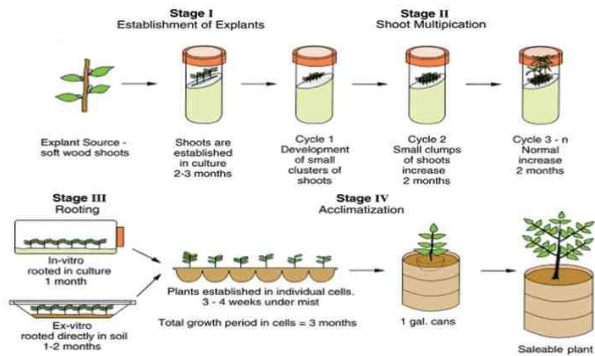
To see the account, go to:

<https://www.instagram.com/idahonativeplantsociety> •

and surveying expertise from Idaho Department of Fish and Game (IDFG) botanists Lynn Kinter, Jennifer Miller, Juanita Lichthardt, Kristen Pekas, and Janice Hill, via existing BLM State Office and District Cooperative Agreements, and botanist Karen Colson from the Fish and Wildlife Service who has helped facilitate and fund such work as well.

Research and Restoration

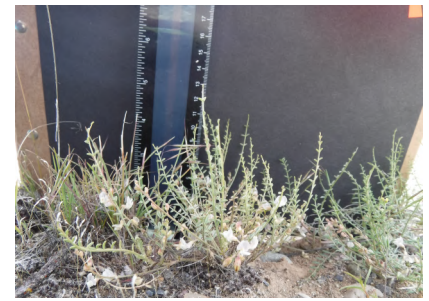
Support of research to address applied management questions is an important nexus to the work the Idaho PCRP program facilitates. An on-going project that is providing salient information to aid in the conservation and recovery work for MacFarlane’s four o’clock is via a BLM Cooperative Agreement with the University of Idaho (Plant Physiologist Dr. Bob Tripepi and lab lead Jenny Kerr) to research methods to increase propagules of this target species as well as rare *Calochortus* species (*Calochortus macrocarpus* var. *maculosus* and *C. nitidus*). They have been able to produce numerous propagules of these target species via a method termed micropropagation, which enables mass propagation of plants using various plant parts, e.g. root nodules, leaves, stem cuttings, etc., that are placed in an aseptic (sterile) culture using controlled levels of nutrients, hormones and light.



Stages of micropropagation (Aryal, 2019)

Their work was presented at the Botanical Society of America Botany 2021 Virtual! conference. By understanding the methods to allow for more rapid propagation of rare plant material, as well as determining which container size and shape are most optimal to use to transport plants to the field for restoration, the better options we have to increase rare plant recovery now and in the future. Thanks to the MacFarlane’s four o’clock stem cuttings provided by Ann DeBolt and Craig Johnson from the BLM Cottonwood Field Office, there will be 558 plants available to plant this spring. In fall of 2021, 66 seedlings were out-planted into a designated transplant location site in the Cottonwood Field Office.

However, increasing the number of plants on a site isn’t sufficient, especially where invasive weeds are prolific. To ensure there are adequate safe sites for rare plants to thrive, we are initiating work through a recently established Interagency Agreement between the FWS and BLM that will focus on integrated weed management treatments in the Long Gulch EO. The number of documented plants at this EO was 1,200 individuals (genets) (IFWIS 2020) in 2014. Although this EO currently contains many plants that appear to be vigorous (Prive, S., Whitridge, H. 2021), it is at continued risk due to increases in invasive weed density and species, including a rise in common crupina (*Crupina vulgaris*). By focusing on multiple weed and restoration interventions over a five-year period we anticipate that this more consistent and robust approach will be effective in changing the ecological trajectory of this population and associated plant community.



Astragalus oniciformis. Photo by B. Marcella Means.

Additional research and partnerships being supported by the Idaho PCRP program include:

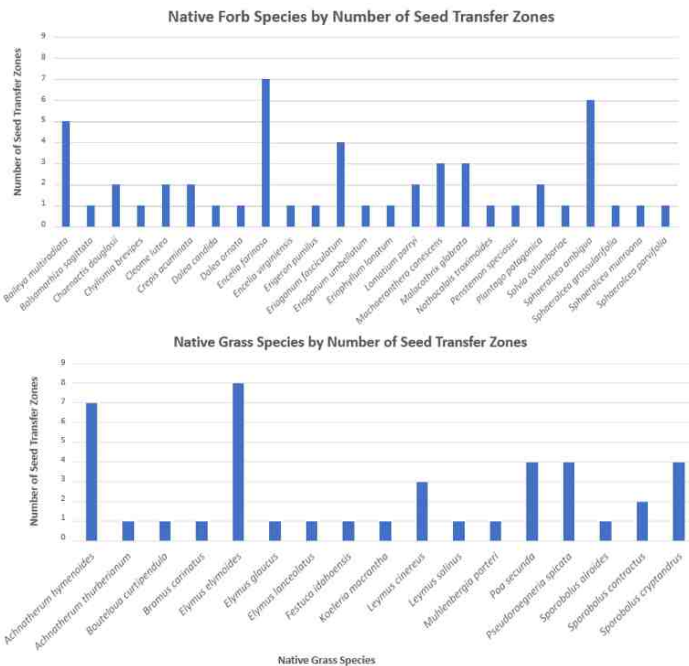
- A Cooperative Agreement with the University of Montana to determine the ability of whitebark pine in Idaho to contend with climate change, bark beetles, and white pine blister rust; to inform management decisions, including future restoration efforts like using genetically resistant whitebark pine plant stock
- A Cooperative Agreement with Boise State University to determine rates of spread of native forb and shrub species during restoration efforts by modeling seed dispersal rates of target species
- An Interagency Agreement with the Caribou Targhee and Salmon-Challis Nat’l Forests—focusing on Special Management Area Stewardship—Reference Plant Communities, Rare Plants and Pollinators (Rose Lehman, Michael Mancuso and Dr. Jim Cane)

Restoration projects round-out the final component of the Idaho PCRP program accomplishments in 2021 and span the breadth of commercial native seed production to “seed” our BLM Regional Seed Warehouse—making more genetically appropriate seed available to the field, to working with the BLM and Institute for Applied Ecology (IAE) partnership to produce thousands of site adapted sagebrush plants for post-fire restoration projects.

A total of 121,000 container plants of 13 species produced as follows:

- 40,000 *Artemisia tridentata* ssp. *wyomingensis* (Lucky Peak Nursery for the Morley Nelson Snake River Birds of Prey NCA)
- 75,000 *Artemisia tridentata* ssp. *wyomingensis* (BLM and IAE, Sagebrush in Prisons Project for various post-fire sites)
- 700 shrubs, grasses and forbs of the following species; *Achnatherum hymenoides*, *Krascheninnikovia lanata*, *Chrysothamnus viscidiflorus*, *Eriogonum strictum* and *Sphaeralcea coccinea* (For the Morley Nelson Snake River Birds of Prey NCA)
- 125 *Populus balsamifera* and additional species (For riparian and/or cottonwood and upland restoration in the Upper Snake Field Office)
 - a. 125 *Populus angustifolia*
 - b. 250 *Salix geyeriana*
 - c. 250 *Salix planifolia*
 - d. 30 *Salix exigua*
 - e. 80 *Cornus sericea*
 - f. 5000 *Purshia tridentata*

landscapes and people with whom they work. May this field season reap more of this essential work!



Seed in production by Seed Transfer Zone

U.S. Department of the Interior
Bureau of Land Management

Current IDIQ Contract Metrics Since 2019

STZs – Seed Transfer Zones

Total species	42
Total taxa (species x STZs)	94
Total unique STZs	40
Total provisional STZs	23
Total empirical STZs	15
Total genetic STZs	2

Regan Murray – BLM SOS contractor 6/2021

Douglas false yarrow – BLM SOS Smug Mug Photo

Showy penstemon – BLM SOS Smug Mug Photo

West-Wide Native Forb and Grass Seed Production Indefinite Delivery, Indefinite Quantity Contract (IDIQ)

The majority of native seed which can take up to 3-4 years to produce in larger volume, e.g. 500-1,000 Pure Live Seed (PLS) pounds, will become available in 2023-2025, but as of December we've received 4,000 PLS pounds of two native grass species: *Elymus glaucus* and *Bromus carinatus*.

Conclusion

In closing, there has been extensive work and partnership accomplishments in 2021 by the Idaho BLM District and Field Office Staff, our stellar partners, and of course, via support from the BLM National PCRP Headquarters Lead Peggy Olwell and staff. All of their stalwart commitment to Public Lands stewardship is evidenced by the scope of projects they work on, the on-the-ground treatments and outreach they do and their connection to the

References

Prive, S., Whitridge, H. 2021. MacFarlane's four o'clock (*Mirabilis macfarlanei*) Monitoring Report—Understory Consulting. Contract funded by FWS and report submitted to the BLM Coeur d'Alene District Office.

United States Department of Interior Fish and Wildlife Service. 2000. Revised Recovery Plan for MacFarlane's four o'clock (*Mirabilis macfarlanei*).



WSA. Photo by Hannah Alverson.

Sun Peak ACEC looking north, Pioneer Mountains. Photo by Anne Halford.



... More on Page 6

Table 1. BLM Idaho PCRPs Points of Contacts.

Contacts	State/District and/or Field Office
Amy Stillman - astillman@blm.gov	Boise District Botanist (Emergency Stabilization and Rehabilitation Program)
Ann Marie Raymondii - airaymondii@blm.gov	Morley Nelson Snake River Birds of Prey Ecologist
Anne Halford – ahalford@blm.gov	Idaho State Office Botanist and PCRPs Lead
Craig Carpenter - clcarpenter@blm.gov	Bruneau Field Office Ecologist
Craig Johnson - cajohnson@blm.gov	Wildlife Biologist Cottonwood Field Office
Danelle Nance - dnance@blm.gov	Shoshone Field Office Fuels Ecologist
Elizabeth (Elle) Kramer - ekramer@blm.gov	Jarbidge Field Office Ecologist/Botanist
Hannah Alverson - halverson@blm.gov	Salmon Field Office Fuels Specialist
Helen Meir - hmeier@blm.gov	Boise District Ecologist Emergency Stabilization and Rehabilitation Program
Jason Theodozio - jtheodozio@blm.gov	Burley Field Office Range Conservationist
Jessa Davis - jcdavis@blm.gov	Owyhee Field Office Ecologist/Botanist
Karen Kraus - kkraus@blm.gov	Pocatello Field Office Natural Resource Specialist
LeAnn Abell - labell@blm.gov	Coeur d'Alene District Botanist
Matt Clarkson - mclarkson@blm.gov	Upper Snake Field Office Natural Resource Specialist
Samantha Seabrook-Sturgis - sseabrooksturgis@blm.gov	Shoshone Field Office Natural Resource Specialist

Table 2. Rare Species Surveyed and/or Monitored for in 2021 by BLM Districts and Field Offices.

Common Name	Scientific Name	Common Name	Scientific Name
twinleaf onion	<i>Allium anceps</i>	Shockley's buckwheat	<i>Eriogonum shockleyi</i> var. <i>packardiae</i>
tall swamp onion	<i>Allium validum</i>	agave-leaved sea holly	<i>Eryngium alismifolium</i>
candystick	<i>Allotropa virgata</i>	Blandow's helodinium	<i>Helodinium blandowil</i>
Goose Creek milk vetch	<i>Astragalus anserinus</i>	manybranched ipomopsis	<i>Ipomopsis polycladon</i>
Fairfield milkvetch	<i>Astragalus atratus</i> var. <i>inseptus</i>	moss rush	<i>Juncus bryoides</i>
two-grooved milkvetch	<i>Astragalus bisulcatus</i> var. <i>bisulcatus</i>	Davis's peppergrass	<i>Lepidium davisii</i>
threeleaf milkvetch	<i>Astragalus gilviflorus</i>	slickspot peppergrass	<i>Lepidium papilliferum</i>
Mulford's milk vetch	<i>Astragalus mulfordiae</i>	flowering quillwort	<i>Lilaea scilloides</i>
Picabo Milkvetch	<i>Astragalus oniciformis</i>	inchhigh lupine	<i>Lupinus uncialis</i>
Payson's milkvetch	<i>Astragalus paysonii</i>	Oregon bluebells	<i>Mertensia bella</i>
Osgood Mountain milkvetch	<i>Astragalus yoder-williamsii</i>	spacious monkeyflower	<i>Mimulus ampliatus</i>
deerfern	<i>Blechnum spicant</i>	bank monkeyflower	<i>Mimulus clivicola</i>
lance-leaved moonwort	<i>Botrychium lanceolatum</i>	MacFarlane's four o'clock	<i>Mirabilis macfarlanei</i>
Mingan moonwort	<i>Botrychium minganense</i>	Simpson's hedge-hog cactus	<i>Pediocactus simpsonii</i>
northern moonwort	<i>Botrychium pinnatum</i>	Thompson's Peteria	<i>Peteria thompsoniae</i>
least moonwort	<i>Botrychium simplex</i>	heated phacelia	<i>Phacelia inconspicua</i>
blue grama grass	<i>Bouteloua gracilis</i>	least phacelia	<i>Phacelia minutissima</i>
leafless bug-on-a-stick	<i>Buxbaumia aphylla</i>	whitebark pine	<i>Pinus albicaulis</i>
green bug-on-a-stick	<i>Buxbaumia viridis</i>	Cusick's primrose	<i>Primula cusickiana</i>
California sedge	<i>Carex californica</i>	turtleback	<i>Psathyrotes annua</i>
many-headed sedge	<i>Carex synchocephala</i>	bug-leg goldenweed	<i>Pyrrocomma insecticruris</i>
Iceland-moss	<i>Cetraria subalpina</i>	thin leaf goldenhead	<i>Pyrrocomma linearis</i>
twisted cleomella	<i>Cleomella plocasperma</i>	naked rhizomnium	<i>Rhizomnium nudum</i>
Case's corydalis	<i>Corydalis caseana</i> var. <i>hastata</i>	Mendocino sphagnum	<i>Sphagnum mendocinum</i>
clustered lady's-slipper	<i>Cypripedium fasciculatum</i>	Ute's ladies tresses	<i>Spiranthes diluvialis</i>
fringed water-plantain	<i>Damasonium californicum</i>	evergreen kittentails	<i>Synthyris platycarpa</i>
Bach's calicoflower	<i>Downingia bacigalupii</i>	western germander	<i>Teucrium canadense</i> var. <i>occidentale</i>
Lewis' buckwheat	<i>Eriogonum lewisii</i>	Idaho barren strawberry	<i>Waldsteinia idahoensis</i>

The Snake River Plains Herbarium (SRP) at Boise State University

By Jim Smith, Director, Snake River Plains Herbarium

Herbaria are valuable resources for education and research on plants, their identification, distribution, and changes that occur with invasives and climate change. The herbarium at Boise State University, known as the Snake River Plains herbarium (SRP) is one of the four active and large collections in Idaho. In this article, I outline the size of the collection, current conditions and where the herbarium makes contributions to botanical knowledge in Idaho and beyond.

The collection of vascular plants has grown from ca. 6000 in 1992 to over 76,000 in 2022. In addition there are about 1000 bryophyte collections and when Roger Rosentreter donated his private lichen collection, SRP gained ca. 15,000 lichens that has grown to over 16,000 at present. There are also about 300 macrofungal collections.

All collections are currently housed on the second floor of the Science building on the BSU campus. Space is tight, both within the cabinets and floor space for the cabinets—there will be a need to expand both in the next few years if the collection continues to grow at its current rate. There is some additional space on the first floor of the building for drying plants (two dryers and ca. 24 plant presses are housed there), and a prep room for incoming material to be mounted, accessioned, and sorted prior to imaging and filing.

With the support of the NSF grant, SWITCH: South West Idaho, The Complete Herbaria, SRP imaged all of its holdings and shares the images and associated database online through the Consortium of Pacific Northwest Herbaria (<https://www.pnwherbaria.org>). This includes

all new specimens that are added, thus all collections are imaged.

SRP initiated the Idaho Botanical Foray and has served as the host in 2008, 2009, 2013, 2017, and 2021. The foray has served as an excellent means of bringing botanists and plant enthusiasts together from throughout the state and beyond and to fill the "gaps" of botanical knowledge in the state.

New collections are added through the collecting efforts of many of the local botanists (Drs. Smith, Ertter, Davidson, and Rosentreter), exchange with national and regional herbaria, the Idaho Botanical Foray, as well being one of the herbaria that holds vouchers for the Flora of the World project (<https://floraoftheworld.org>). The latter brings in collections from throughout the world and as a result SRP is often one of a few US herbaria to have collections of these taxa and the only one in the Pacific Northwest (search for Kew).

Staffing is in short supply. Currently Jim Smith, who is a professor at Boise State, serves as the director of the herbarium and is the only permanent paid staff. The SWITCH grant allowed hiring a Database Manager for three years and several undergraduate students to image and process collections, and occasional support from the BLM has enabled some undergraduates to assist in the collections processing as well as imaging satellite BLM collections from other parts of the state (Salmon office and Twin Falls office BLM herbaria most recently). Volunteers have supported the herbarium periodically and SRP is always grateful for their participation. •

The Harold M. Tucker Herbarium...Continued from Page 9

ated in 2021 at the Burke Museum at University of Washington, in which thorough botanical inventories are undertaken on major high peaks with potential alpine flora. In the IDAHO PEAKS project just getting underway, several peaks that have barely, if at all, been explored are being targeted for botanical inventory in the summer of 2022. Get involved if you are interested in this project.

There are always plant collections to be mounted, field trips, rare plant research opportunities and even art to sell at the HMT Herbarium at The College of Idaho. We are always eager to engage volunteers to work on these or other activities in support of the herbarium. If you care to contribute, please contact me (dmansfield@collegeofidaho.edu). •

The Harold M. Tucker Herbarium (CIC) at The College of Idaho

By Dr. Don Mansfield, Curator, Harold M. Tucker Herbarium

Brief History

I've spent the past 32 years in Idaho working at The College of Idaho as a professor of biology and now recently retired with the self-appointed title of Professor and Curator Emeritus of the Harold M. Tucker Herbarium (HMT Herbarium). Botany has been at the heart of the study of biology at The College of Idaho since its inception in 1891. Throughout its history, the college has been a liberal arts college whose mission is to educate its students in the breadth of humanities, arts and sciences and to teach students to think critically and deeply. The college's founder and first botanist, William Judson Boone, collected plants in the tradition of natural historians who understood the value of collections as the only means by which we can begin to sort out the evolution of plant diversity or even know the plants in a particular area. He also knew that to be well-educated, students needed to understand the natural history of this place in which we live, which meant an understanding of the plants that support life here. He established a small herbarium to further the liberal arts education of the college's students. In the same tradition all botanists at the college since Boone—Harold M. Tucker (1936-1959), Patricia L. Packard (1959-1989) and I (1989-2021)—have continued to explore our region with students, alumni and friends to further our understanding of the area's plants.

The Herbarium

The Harold M. Tucker Herbarium now houses approximately 60,000 vascular plant collections with an emphasis on southwestern Idaho and adjacent counties in Oregon and Nevada. The herbarium serves a core mission of the College to "exercise stewardship." While serving as both an educational resource and a research facility, the HMT Herbarium contains collections made by novice and professional botanists including many who are reading this article now. These collections provide needed documentation for several local and regional floras currently in use, including the eight volume *Intermountain Flora*, *Flora of the Pacific Northwest*, *Flora of Oregon*, *Flora of Steens Mountain*, to name a few. The collections also serve federal and state land managers with data to guide policy formulation in a region that is more than half public lands. Likewise, these data are valuable to botanists from the Idaho Native Plant Society who are tracking populations of rare plants and researchers studying taxa in the region.

As with any herbarium, budgets are needed to support basic material needs, such as cabinetry, mounting supplies, file folders, label papers, printers, etc. As a private, independent, liberal arts college, with the mission of educating undergraduate students, The College of Idaho receives no direct government support. The Biology Department of the college has a small budget to supply some of the material needs (paper, glue, file folders), but most support has come through private donations (for such things as cabinets, paper cutters, etc.) and grants to me or my predecessors. The college's work study program supports a few hours per week of stipend to students to assist in mounting and data entry. And the college generously supplies IT support. No salaries are or have been paid to any faculty members for the purpose of work done to build, maintain, curate or otherwise manage the herbarium. All of that work is done by volunteers.

Between 2010 and 2015, the HMT Herbarium was digitized using funds from a National Science Foundation grant procured by me and Dr. Jim Smith at Boise State University. As a result of this infusion of funds, the college of Idaho hired a recently minted botany BS recipient, Alexa DiNicola, to collaborate with the Consortium of Pacific Northwest Herbaria to share data from the HMT Herbarium, BSU's Snake River Plains Herbarium, and several of the herbaria of government agencies throughout our region (e.g. Boise District Bureau of Land Management (BLM), Vale District BLM, Rocky Mountain Research Station, and Craters of the Moon National Monument and Preserve). The data and images of plants in all these herbaria can now be found online at <https://pnwherbaria.org/>.



Bulletin Board outside the HMT Herbarium at The College of Idaho.

Work ongoing in the Herbarium (The Plant Lab)

Dr. Barbara Ertter, a Research Associate at the college, volunteers by contributing collections often over-

looked by even the most astute botanists. She recently was lead author on a paper describing a new variety of a spring beauty (*Montia parvifolia* var. *batholithica*) found exclusively in the batholith of Central Idaho (and into Montana). She is currently working on a website called *Treasures of Boise Front* (<https://boisefrontnature.com/>) that guides hikers and wildflower enthusiasts to the flora of our immediate surroundings.

Beth Corbin volunteers by entering data, updating data, georeferencing specimens, and leading Idaho Native Plant Society's Southern Idaho Rare Plant Working Group in its important role of locating and coordinating the tracking of plants (by her and other volunteers) that may be deemed rare by the Idaho Rare Plant Conference (<https://idahonativeplants.org/rare-plant-conference/>). Beth also is engaged in the final stages of a research project aimed at clarifying the taxonomy of a group of wild buckwheats (*Eriogonum* spp. referred to politely as the "yellow-headed buggers") from the Wallowa Mountains to Montana across central Idaho.

Carol Prentice volunteers by processing (identifying, labelling, databasing) three decades of past collections from botanical surveys performed by her and/or Dr. Packard. Carol is also engaged in rare plant research and was also involved in the *Montia* study.

Sandy Smith volunteers by researching rare plants and helping to add information to the pnwherberia.org database.

I am currently working on research projects in two areas: 1) evolution and taxonomy of a group of plants called the "PENA" (Perennial Endemic North American) clade in the parsley family (Apiaceae) that include biscuitroots (*Lomatium* species) and spring parsleys (*Cymopterus* species) and 2) flora of the Owyhee region.

1) In collaboration with Drs. Jim Smith at BSU, Mary Ann Feist at University of Wisconsin, and Mark Darach, we are examining the evolution and taxonomy of PENA plants using a combination of approaches: cladistic analysis using genetic (DNA sequence) data, morphological data, ecological data (principally soil and climate variables), and geography to understand the origin and evolution within the group. In this project, students at The College of Idaho are involved in examining morphology of two groups of ethnobotanically important *Lomatium*s—Reina Watkins is studying *L. cous* and Ian Clifford is studying *L. dissectum/multifidum*. Also, a PhD student and two M.S. students at BSU are dedicated to the project, as are undergrad students at the University of Wisconsin.

2) I (with many students and volunteers) have been collecting plants in the Owyhee region for several decades and I am writing a book on the flora of the Owyhee region. As a result of this work, many new taxa have been discovered in the Owyhee region and described in recent years (e.g. bentonite biscuitroot (*Lomatium bentonitum*), Paiute biscuitroot (*Lomatium ravenii* var. *paiutense*), and narrow-leaved monardella (*Monardella angustifolia*) and some new forms of Greene's goldenbush (*Ericameria greenei*). In addition, we have seen several species for the first time in the Owyhee area as a result of both continued exploration and careful examination of collections made years ago (e.g. Thompson's woolly locoweed (*Astragalus mollissimus* var. *thompsonii*), a variety of whitetip clover (*Trifolium variegatum* var. *major*), brightwhite (*Prenanthes exigua*), thymeleaf mesamint (*Pogogyne serpylloides*), and several others.



Habitat of *Nevada holmgrenii* in the Boulder Mountains. Photo by Bob Moseley.

Idaho Botanical Forays

Since Jim Smith at BSU initiated the Idaho Botanical Forays (IBF) in 2008, we at The College of Idaho have hosted forays for botanists (and amateur and "wanna be" botanists) from throughout the state in 2010, 2014, and 2018. This summer (July 7-11, 2022 at a campground near Yellow Pine) we will host the 15th annual IBF. This is an opportunity for botanists of all persuasions to gather and explore poorly- or never-botanized areas. Forays are open to all and we encourage anyone with an interest in exploring Idaho's wonderful plant diversity to contact me (dmansfield@collegeofidaho.edu) and join us this summer.

25 IDAHO PEAKS

A group of Idaho Native Plant Society members are building on the 50 PEAKS of Washington project initi-

...Continued on Page 7

The Ray J. Davis Herbarium (IDS) at Idaho State University

By Trista Crook, Collections Manager of Life Science, Idaho Museum of Natural History

Thanks to the help of volunteers and students, and the hiring of a new collections manager, Trista Crook (the author), The Ray J. Davis Herbarium (IDS) has been functioning throughout the pandemic. Over the course of the past year, we've added over 700 specimens to the collection. We received word that a couple of publications about the origins of ornamental plants used specimens from IDS. Another researcher published a paper on the biogeography and ecological niche evolution in Diapensiaceae that used specimens from our collection.



Paul Allen, Karl Holte, Jim Glennon, and Bob McCoy identifying plants collected during the 2020 Foray. Photo by Trista Cook.

Karl Holte's key class, consisting of a core group comprised of Paul Allen, James Glennon, Karl Holte, and Bob McCoy, has helped immensely by identifying specimens collected during the 2020 Idaho Botanical Foray. Since a hiring freeze put a hold on filling the curator position, Rick Williams and Janet Bala have generously volunteered in the herbarium during their retirement. Our cabinets are full, so we are shifting the collection, and thanks to a generous donation from the INPS Pahove Chapter and others, we hope to purchase a cabinet this year to help with crowding, and to purchase material to fix the door seals on other cabinets.

During 2021, I led 15 tours for 146 people, helped a high school teacher start a classroom herbarium, co-taught a botany field course with Michael Mancuso, and gave talks on lichenology to biological illustration students at ISU and to the Sawabi Chapter.

Science Trek is returning to the museum with an expected attendance of over 100



Intern, Holly Forster, mounting plants. Photo by Trista Crook.

3rd-5th graders. I plan on having them make mini-mounts—small herbarium specimens that they mount themselves with a label containing all of the information found on a typical herbarium specimen. Not only will this help them learn how herbarium specimens are processed and the value of labels, but they will be able to take their specimens home with them.

The museum opened a new exhibit in May 2021 called "This is Idaho" highlighting the state's flora, fauna, geology, and anthropology. The exhibit includes flip books of common Idaho plants in each ecoregion of Idaho, a guide to conifer identification, and interactive touch screens that allow guests to view images and facts about Idaho's plants and animals.

Due to an abundance of exchanges, gifts, and the Idaho Botanical Foray 2020, there is ample work for students. Interns mount, digitize, transcribe, and file these specimens. Fortunately, I was just given permission to hire a few more student workers, which will make the stacks of specimens more manageable. My own daily work involves identifying plants and lichens that I collected last summer, georeferencing, reviewing transcriptions, annotating specimens to currently accepted names, replacing old folders with acid-free ones, filing, and updating the collection to APG IV. Hopefully the future will bring more volunteers and students working in the collection, as well as a new curator. •



Collections Manager, Trista Crook, reviewing transcriptions of specimens. Photo by Holly Forster.



Work Study Student, Olivia Holmes, imaging plant specimens. Photo by Holly Forster.



Rick Williams and Janet Bala identifying plants collected during the 2020 Botanical Foray. Photo by Trista Crook.

Herbaria Update

The Stillinger Herbarium (ID) at the University of Idaho

By Derek Antonelli, Calypso Chapter

The University of Idaho Stillinger Herbarium was established in 1892. It represents a 130-year investment in the study of Idaho's flora. The herbarium houses 183,000 vascular plant specimens, 6,500 moss specimens, 6,400 liverwort specimens, 10,000 lichen specimens, and 15,000 fungi specimens. The herbarium collections support research in systematics, ecology, floristics, conservation biology, and natural resource management. The herbarium is a great tool for formal and informal teaching and learning at the University of Idaho. The Stillinger Herbarium recently moved into a new location in the Mines Building at the university. This move allowed all of the herbarium collections to be housed at a single location. See the "Moving the Stillinger Herbarium" article in the June 2020 issue of *Sage Notes*.

In 1957, Charles and Nettie Stillinger established the Stillinger Trust to support the herbarium. The trust provides resources to procure specimens and library materials, fund expeditions for faculty, staff and students, and supports graduate student research through fellowships. For more information on Stillinger research assistantships and expedition funds, contact the University of Idaho Office of Research and Economic Development.

As a participant of the Consortium of Pacific Northwest Herbaria (CPNWH), all the specimens stored at the Stillinger Herbarium can be viewed online. The herbarium personnel produce high quality images of the collected plants that are added to a searchable database along with complete specimen information. You can search through the Stillinger Herbarium (and all other regional herbaria) specimens in most any fashion you can imagine (species name, location, collector, etc.). The CPNWH database can be accessed at this address: pnwherbaria.org.

Data from the herbarium is vital to many activities. Idaho Native Plant Society's own effort to protect Idaho rare

plants would be impossible without access to herbaria information. Many government agencies and public organizations use information from herbaria, including US Forest Service, Bureau of Land Management, US Fish and Wildlife Service, Idaho Department of Fish and Game, tribal governments, and conservation organizations. The information can be used to identify areas of high conservation value to be protected, document historical plant ranges, and map new sites of weed infestations. Recently a letter was written to the University of Idaho supporting the herbarium and expressing its great value to the botanical community at large. The letter was endorsed by an impressive list of 101 botany professionals and amateur plant enthusiasts from all over the United States.

The faculty director and the full-time herbarium collections manager have both recently taken positions at another university leaving the Stillinger Herbarium shorthanded. A graduate student is currently fulfilling the role of collections manager on a part-time basis and is doing a good job keeping the day-to-day operations of the herbarium going. The University of Idaho is actively looking for a new herbarium director from among its current faculty members in the Colleges of Agriculture and Life Sciences, the College of Natural Resources, and the College of Science. The faculty herbarium director is the individual who determines the long-term vision for the herbarium. The new herbarium director will determine the ongoing requirements for a collections manager to implement the long-term vision.

There are a number of herbaria throughout Idaho. Herbaria are fascinating places for native plant enthusiasts. You should consider visiting a herbarium near you. •

Carol Blackburn (1935–2021)

By Kristin Fletcher, Wood River Chapter

Carol Blackburn was my dear friend, camping buddy, conference pal, botany instigator, garden advisor and all around naturalist mentor. At a crucial juncture in my life, she nudged me, hard, onto the path of natural history and botany. She influenced not just me, but many others, as you'll see, and maybe just a little bit because of her rascally and independent ways! As her friend and colleague Dr. Jo Ann Robbins once said, "Any experience with Carol was special." There was no one quite like Carol Blackburn!



Carol and friend Rubinka among arrowleaf balsamroot in Mink Creek area, Pocatello. Photo by Kristin Fletcher.

Born in Petaluma, California, on December 15, 1935, Carol grew up in the communities of Calistoga, Point Reyes Station, Hastings, and Rodeo, fondly recalling their cultural and culinary diversity and the tule elk, a California subspecies that roams what is now Point Reyes National Seashore. In 1959, she received a Bachelor of Science in Wildlife Management from Humboldt State University, the program's second female graduate. She once noted wryly that she would have been the first but a particular class was only offered occasionally and she had to wait a semester.

Carol worked on various governmental wildlife studies and was also an avid outdoorswoman, traveling to Austria for mountaineering trips and hiking and rock climbing in Yosemite with the Sierra Club. She was a member of the second cohort of the newly created Student Conservation Association, working in Teton National Park. It was here she met her crew boss and future husband Fred, a Washington D.C native, artist, fellow naturalist and conservationist whom she married in 1967 in Moose, Wyoming.

After a few years as snowbirds traveling between the Southwest and Jackson Hole, they settled with their two very young children, Will and Anne, into a two-room log cabin at the Bar BC Ranch, an historic dude ranch grandfathered into the park when it was founded in 1929. They became deeply connected with Mardy and Olaus Murie, founders of the Wilderness Society, and the conservation community that surrounded them, a conviction that Carol pursued for the remainder of her life.

Needing stability for their growing family, Carol and Fred settled in Hailey, Idaho, in 1979 where Carol began her career as a professional gardener and found time to quilt, weave, teach herself natural plant dyeing, and explore her surroundings with family and friends.

Both Will and I identified all sort of trees, birds, etc. since it was just what was talked about over dinner —what birds and plants and such had been seen that day. And I did some natural plant dyeing with mom at the Northern Rockies Folk Festival in Hailey.
~ Anne Blackburn, daughter

An outstanding master gardener, Carol was widely sought after for her horticultural wisdom in planning and maintaining many types of high-altitude gardens.

After I arrived as the new extension agent, Carol appeared and became an ever present force in my life. I was expected to vitalize the Master Gardener program and Carol, already a Master Gardener, proved to be a wellspring of ideas. She volunteered with me many lonely Tuesday afternoons sitting in the stairwell outside the tiny extension office at the old courthouse in Hailey. It was the first "plant clinic" where locals could bring their gardening problems and Carol was the go-to gal who could solve most any problem! Looking back, I learned so much and enjoyed her understated way of explaining things—always with as many examples as the listener wanted. ~ Dr. Jo Ann Robbins, retired University of Idaho Blaine County Extension Agent

Carol also had a way of taking on and completing projects without expecting (or receiving) any accolades or credit. In those free hours at the extension office, she created an illustrated guide to the noxious weeds of Idaho. At the time, there was a list of noxious weeds, complete with scientific description, but no illustrated guide. She copied, clipped and assembled black and white detailed line drawings of the noxious weeds to add to the descriptions. After all, what landowner would be able to identify a weed strictly by some stuffy description! Armed only with a rudimentary copy machine and the illustrations of weeds in the references at the extension office, it proved to be a challenge. There was no Internet to lean on! Ultimately, that guide was copied by the hun-

dreds and handed out for free to anyone who was interested. Carol's resource became obsolete when the Idaho State Department of Agriculture published (finally) a guide to Idaho noxious weeds complete with color photographs. Carol had seen a gap in knowledge and resources, and filled it in. That was Carol's way.

Carol earned an enviable reputation as a specialist in Idaho native plants, rare species and invasive species. She conducted numerous botanical surveys for The Nature Conservancy, Bureau of Land Management, Wood River Land Trust, and other federal and private entities. She was also very active with the Hailey Native Plant Arboretum, Friends of the Howard Preserve and the Bellevue Tree Committee.



Carol teaches field botany for the Wood River Land Trust. Photo by Keri York.

Carol was crucial in the establishment of Arboretum in 1996. The Douglas fir she donated towers over the path 25 years later, a sign of her belief in the value of native plants! We hope to install a stone bench under that tree this year in her memory. ~ Linda Ries, forester, arborist and manager of the Hailey Arboretum

I remember a special camping trip Carol and I made together, just the two of us, when we were collecting plants in very remote areas during a botanical survey of Craters of the Moon National Monument and Preserve. Carol knew that THIS plant is a mystery and should be collected and THAT plant is known and could be left alone! On the trip she shared stories about her past, about the Bar BC days, personal stories of a life hugely well lived. I took lessons on how to live a better life from her, what really matters and what is not to be fussed over. ~ Steve Popovich, retired Idaho Bureau of Land Management Shoshone District botanist

Carol was a tremendous resource for the Wood River Land Trust, completing over 30 plant surveys on WRLT properties, leading wildflower hikes, and serving as a prominent member of the Friends of the Howard Preserve. I first met Carol in 2008 when I started at the Land Trust and had many fun days in the field learning from her. It was never a dull mo-

ment when Carol was around, and she had at least one story for every new plant we'd find! ~ Keri York, Wood River Land Trust Lands Program Manager

It was such a treat to do the Craters of the Moon field trip with Carol and the Wood River Chapter a couple years ago, especially after I had used so many of her plant collections from that area when I was studying the rare plants there. I am grateful for all her botanical efforts and expertise through the years. Our native plants would thank her if they could. ~ Lynn Kinter, Idaho Department of Fish and Game Lead Botanist

Carol was the Horticultural Specialist for the Sawtooth Botanical Garden for more than a decade, creating Carol's Wildflower Garden from seeds she collected during hikes and serving as a key advisor on the Site Committee.

Carol was instrumental in the development of the Sawtooth Botanical Garden. Her deep knowledge, experience, love and understanding of native plants laid the foundation for the design and implementation of the areas and plantings at SBG. Over the years we had many horticultural conversations; she, constantly pushing the envelope of what was typically expected of native plants and wildflowers in our area. Always she worked, diligently and passionately, in and for the Garden. Her knowledge was second to none. ~ Marty Lyon, landscape architect and former SBG board member

She was an active participant at the annual Idaho Rare Plant Conference hosted by the Idaho Native Plant Society and helped found the Wood River Chapter in the late 1980s, leading numerous field trips and serving as an officer in many capacities until her retirement.

Carol never let her favorite rare plants get short-changed during the Idaho Rare Plant Conferences. Her efforts as an advocate for native plants, birds and other critters, and the earth we all depend upon will be a lasting legacy. ~ Michael Mancuso, botanical consultant and current president of the Idaho Native Plant Society

Carol was an essential part of our chapter from the very beginning and always our most knowledgeable member. She wore her expertise lightly and shared it freely. We all learned so much from her. Refusing to

...Continued on Page 14



Carol teaches field botany for the Wood River Land Trust. Photo by Keri York.

be called 'president,' nonetheless, she held our chapter together singlehandedly for many years until others finally stepped in to take leadership positions. ~ Kristin Fletcher

In 1995, when she was 60 years old, Carol returned to academia to obtain a second Bachelor's degree, this time in Landscape Horticulture, at the University of Idaho and put it to good use in gardening projects modest and grand for the rest of her life.

Carol's advisor remembers her as an eager student well-liked by her much younger fellow students. I'm sure she conveyed as much information to professors and students as she gained from them.

~ Jo Ann Robbins

I really got to know Carol well when we were professional gardeners at the 3-acre Dumke estate in Sun Valley. She was solely responsible for the Perennial Garden, a huge, high profile, terraced wonder over 150' long. But, just like Carol, she also kept her eye on a wheelchair-bound neighbor's yard, doing the spring cleanup each year, pruning and hauling the debris away, at no charge, of course, just because it needed done, and she could do it. ~ Kristin Fletcher

Friends and family remember her as a fiercely independent thinker, avid outdoorswoman, voracious reader and researcher, textiles artist and collector, and a passionate advocate and tour guide for the land she knew and loved so well.

After Carol passed, Will and Anne condensed her book collection down to well over 20 boxes, her native and cultivated seed collection all meticulously labeled into 12 boxes and her quilt and sewing collection into 22 very full boxes! ~ Kristin Fletcher

She was a generous friend to many, dropping off a slice of especially tasty cake fresh from the oven, a potted plant or an article she had just read, providing a safe haven for many a stray cat and migrating songbird, and was renowned for her hand-written notes to friends near and far.

When I moved away from Idaho, Carol kept in touch regularly with letters for the last 19 years! Old school, hand-written letters, the best kind. I always enjoy reading those letters and hearing the latest updates about her grand adventures, which flowers are coming out first in the spring, if the Sandhill cranes are in good showing that year, how the yard's critters, mice, and cat were doing, and—always—about how the birds and squirrels outsmarted her with the fruit trees! Carol gave a lot to the world and asked little in return. Each year I remember her when I see the first spring flowers no matter where I am.

~ Steve Popovich

Carol Blackburn passed away November 30, 2021, a few days after a lovely Thanksgiving at her home with son Will, daughter Anne and friend Kristin. She had been recovering steadily in an assisted living facility following a relatively modest hip surgery resulting from a fall, but her passing happened unexpectedly fast. Anne, Will and I believe she simply decided it was time to leave this ol' world and all its troubles behind.

Will and I are grateful we were with her for a final celebratory meal at her house in the company of her cats and all of the books and plants and rocks and bones that were her natural habitat.

~ Anne Blackburn

I think we can all agree that Carol lived such a modest yet large life. ~ Ann deBolt, Retired Boise District Bureau of Land Management botanist and Idaho Botanical Garden Natural Communities Specialist •



Carol enjoys the view along Slate Mountain Trail near Pocatello. Photo by Kristin Fletcher.

Keeping Mount Harrison Colorful

By Karen Colson, Idaho Fish and Wildlife Office, U.S. Fish and Wildlife Service

The top of Mount Harrison in summer is one of the most colorful places in Idaho—a sea of blue, purple, pink, and red wildflowers carpet the mountaintop. But it is the bright yellow paintbrush that has drawn the most attention. This unique endemic plant, Christ's paintbrush (*Castilleja christii*), was once in danger, impacted by the highly aggressive, nonnative, rhizomatous grass smooth brome; off-highway vehicle use; trespass livestock; and recreation activities. This was particularly concerning given Christ's paintbrush is only known from this single population on the summit of Mount Harrison in Cassia County, Idaho.



Castilleja christii flowers on Mt. Harrison, July 28, 2004. Photo by Gina Glenne.

By 1980, its habitat became so degraded that Christ's paintbrush was designated as a candidate species for Federal listing under the Endangered Species Act. However, a Candidate Conservation Agreement and strong partnership between the Sawtooth National Forest and the U.S. Fish and Wildlife Service, Idaho Fish and Wildlife Office (IFWO), as well as significant support and expertise from the Idaho Natural Heritage Program, Boise State University, Red Butte Garden, and many other partners and volunteers, turned that around.



Castilleja christii plants on Mt. Harrison, July 28, 2004. Photo by Gina Glenne.

Numerous conservation actions were successfully implemented, and long-term monitoring programs were established to document their effectiveness. Some of these actions included establishing a Botanical Special Interest Area atop Mount Harrison, fencing to prevent livestock

trampling, strategic placement of boulders to prevent off-road vehicle damage, creation of an interpretive area on Mount Harrison and, perhaps most significantly, an adaptive eradication program which greatly reduced smooth brome without harming the paintbrush population. This effort also included strategic plantings of Christ's paintbrush and other native plants into bare spots that were once occupied by the invasive smooth brome.



Christ's paintbrush monitoring Photo courtesy USFWS.

As a result of these diverse actions, Christ's paintbrush was removed from candidate status in 2012. However, until techniques are developed to completely eradicate smooth brome, treatments to keep it from reinvading the habitat are ongoing. To demonstrate our continued collaborative commitment to the long-term viability of this endemic plant, a Memorandum of Understanding was recently signed between the Sawtooth National Forest and IFWO. This strong conservation partnership will help ensure Christ's paintbrush continues to keep Mount Harrison colorful. •



Christ's paintbrush identification. Photo courtesy USFWS.

The 2021 ERIG Grant Program

By Bob McCoy, Sawabi Chapter

The Idaho Native Plant Society uses the Education, Research, and Inventory Grant (ERIG) Program as one of its primary vehicles for achieving its goals: Promoting interest in native plants and plant communities and collecting and sharing information on all phases of the botany of native plants in Idaho. We seek to foster an understanding and appreciation of our native flora and to preserve this heritage for future generations. The Society provides funds to educational organizations, public information forums and academic researchers, among others. Past grants have funded native plant garden projects at elementary schools, signs and kiosks for public education sites and international research projects. Each year we solicit applications from interested parties and become partners in their endeavors. Grants are for an annual maximum of \$1000. Some recipients with ongoing projects have applied for and received grants in successive years.

Applications are received in January and scored for suitability while considering the following criteria: completeness, estimated likelihood of completion, contributions to the Society's goals and the funding available for grants for the year. Each ERIG committee member submits their scores which are averaged and used to award grants within the available funding. The INPS board provides final grant approvals.

By combining your contributions with others in the Society, your donations are leveraged by the ERIG program to meet the goals of the Society and provide a legacy of interest, knowledge, and conservation of Idaho's native plants. Please consider the ERIG program for your donations.

The following are summaries from the applications that have been awarded grants for 2021:

Blaine County Native Plant Arboretum

Increase the signage and interpretation of the Arboretum near Hailey, with signs listing scientific and common names and cultural and ecological information for over 40 species. Some signs will have QRI codes to provide more detailed information and pictures of the plants online. This will greatly enhance the use of the site by individuals as well as provide enhanced opportunities for groups. The application lists three other arboretum objectives but ERIG funding would be applicable to only this one. **Grant amount: \$990.42**

Orton Botanical Garden

This project would produce two tri-fold brochures about Idaho native plants for assisting visitors exploring OBG and/or encouraging further inquiry. The first will feature some Lewis and Clark discoveries, along with many trees, shrubs, and flowering plants native to Idaho. The second pamphlet will explain the Garden's unique, large collection (25+) of Idaho native buckwheats (*Eriogonum* spp.), along with several endemics.

Grant amount: \$640

Establishing Archaeological Identification Criteria for Edible Roots within Native American Cuisines (Molly Carney, Washington State University)

This project is part of a longer, lifelong research commitment to the edible plants of the Interior Northwest. Previously, identification criteria were established for many of the edible and poisonous bulbs across the greater Northwest and these have been used to identify patterns of camas cultivation in the Pend Oreille Valley of Washington and Idaho. This project will be an extension of that research and will provide high-quality microscopic images of interior root and rhizome anatomy. Systematic images and descriptions of these plants would contribute both to the fields of systematic botany and archaeology. The grant would be used to cover lab expenses. **Grant amount: \$1000**

Native Plant Garden (Montessori Public Charter School, Idaho Falls)

The grant will be used to provide native plants and capital equipment (shovels, rakes, hoes, etc.) to establish an educational school garden. An eventual aim would be to provide native plants to the community.

Grant amount: \$912.45

An Updated Floristic Summary of the Caribou-Targhee National Forest and Curlew National Grassland in Southeastern Idaho (M. Daines, BYU Idaho, Pittsburg State Univ.)

The main goal of this project is to update (based on voucher specimens) the vascular plant species occurring on the Caribou-Targhee National Forest and the Curlew National Grassland (C-T/CNG henceforth). A secondary objective is to document in detail the distribution of three plant species of concern in the area, tentatively targeting

Ericameria winwardii, *Thelypodium paniculatum*, and *Oreocarya* [*Cryptantha*] *breviflora*.

Grant amount: \$1000

Flora and Fauna Trail Interoperative Sign Proposal (Palouse-Clearwater Environmental Institute, Moscow)

With this funding, we will create interpretive signs for future visitors at PCEI's Nature Center. These interpretive signs will serve to educate visitors about Idaho's native plants that provide food and habitat for wildlife that reside in forest, upland, and wetland ecosystems. This will entail creating one sign with an overview of native Idaho plants and an invitation to learn while walking around the interpretive, self-guided, Flora and Fauna Trail Loop. Additionally, three interpretive signs will be installed along regularly maintained trails in the Nature Center to educate visitors while providing an interactive experience. The three signs will feature forest, upland, and wetland ecosystems, identifying native plant species in situ while educating visitors about the species' role in the larger ecosystem. These signs will be designed to complement the existing signage in the John Crock Learning Nursery, our on-campus native plant nursery, thus encouraging visitors to walk through the nursery and provoke further learning about Idaho's native plants.

Grant amount: \$1000

Native Plant Demonstration Garden Signage Project (University of Idaho Extension-Twin Falls County)

The University of Idaho Extension-Twin Falls County Office in cooperation with the Magic Valley Master Gardener Association over the years has installed two

native plant demonstration gardens at our county facility (penstemon and buckwheat gardens). We will be installing a native plant pollinator demonstration garden in 2021 with a grant from the Idaho Botanical Gardens. These demonstration gardens are located at the Twin Falls County West Building on Addison Ave W in Twin Falls. These gardens are in a high traffic area and visible from the major roads.

Our penstemon demonstration garden which contains 21 species of penstemon as well as rabbitbrush, hyssop, and sacaton needs new signage as the signs that were used upon installation did not weather well. The buckwheat demonstration garden which contains 12 species of buckwheat as well as pussytoes and aster has yet to have signage installed. To make these gardens more user friendly to the public, we are using grant funding to install engraved signs that will better withstand the weather conditions. **Grant amount: \$1000 •**

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Chapter News

CALYPSO CHAPTER

When: Chapter meetings will be held May 4 and October 5 at 7:00 p.m.

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

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

Upcoming Events

Watch for details via chapter email.

April 23, May 21, and July 16: Antoine Peak Plant Surveys. Will be conducting surveys to generate plant list for the conservation area near the Spokane Valley. Surveys will start at 9:30 am. Everyone welcome.

April 4: Q'melin Park Plant Walk.

May 7: Turnbull National Wildlife Refuge Plant Walk. This will be a joint activity with the NE Washington WNPS Chapter.

June 11: Plant Walk. Location TBD. Forward ideas to Derek.

June 23 to 27: INPS Annual Meeting. Event will be held along the Lochsa River. Registration is required. See INPS website for details.

July 7 to 11: Idaho Botany Foray. This is the annual plant collecting expedition. This year's foray is sponsored by The College of Idaho and will be held in the Yellow Pine area. Contact Derek for details.

July 23: Moose Lake Plant Walk. We had to cancel last year's trip to Moose Lake because of forest fires.

August 13: Mountain Plant Hike. Location TBD. Forward ideas to Derek.

LOASA CHAPTER

When: Meetings are held third Thursday of each month at 7:00 p.m.

Where: Taylor Building, Room 247, College of Southern Idaho, Twin Falls.

Contact: Bill Bridges, bridgesbill34@yahoo.com

PAHOVE CHAPTER

When: Meetings are held on the second Tuesday of each month from September–April at 7:00 p.m. Times, dates, and topics are tentative. Current members receive email notice of each meeting and other activities, Events are also posted on the Pahove Chapter page of the INPS website: <https://idahonativeplants.org/pahove/>

Where: Meetings are held at the MK Nature Center Auditorium, 600 S. Walnut St, Boise. During 2021-22, for health precautions, meetings have been Zoomed, with each recording on Pahove's webpage.

Contact: Karie Pappani, pahove.chapter.president@gmail.com

Past Events

March 8: View Lynn Kinter's terrific Zoom presentation, "Idaho's Wicked Plants—Painful, Poisonous & Pernicious Species" on our webpage.

Upcoming Events

April 12: Israel Borokini will describe "An unconventional career journey from warm tropical to cold desert ecosystems." His diverse career trajectory from Nigeria to Berkeley has explored and integrates ecology, evolution and conservation biology. He also will showcase his homeland, Nigeria and many of its native plants. Note: This meeting will be both in-person at MK Nature Center and Zoomed!

April 22-24: (Dates tentative, depending on plants' readiness) Online Native Plant Sale. Timely email updates, including volunteer opportunities, plant list, and ordering procedures will be sent. Members receive one day early purchasing access.

May 8: Wildflower Plus Show at Idaho Botanical Garden. A splendid event for Mother's Day celebration! Details to follow.

SAWABI CHAPTER

When: Meetings are held on the first Monday of the month at 7:00 p.m.

Where: We have resumed our meetings in-person in the North Fork room of the Pond Student Union Building on the ISU Campus.

Contact: Geoff Hogander, ghogande@yahoo.com

Past Events

March 7: Dr. Bruce Finney of the Biological and Geosciences Department of Idaho State University spoke on Climate Change.

Upcoming Events

April 4: Chapter Annual Meeting. We will elect new officers and board members. Open positions are President, Vice-president, Secretary and Treasurer. This is the meeting where we plan our spring and summer plant walks that we anticipate starting again after a year of reduced activity due to COVID-19. Time and place will be emailed to all current members.

April 16: The Chapter is planning to staff a booth at the Annual Portneuf Valley Environmental Fair in Pocatello at Caldwell Park. We will have plant starts, brochures and membership information to hand out. We have inherited some members from the Upper Snake Chapter which has gone dormant again in spite of the strong efforts of Kristen Kaser. Their names have been added to our email list and we welcome their participation.

May 2: The May meeting is traditionally when our members share their photos of our native Idaho plants and animals and members are encouraged to bring a thumb drive with their favorite pictures. Several of our members have made plans to attend the INPS Annual meeting on the Lochsa River from June 24–27 and we look forward to seeing you there.

UPPER SNAKE CHAPTER (INACTIVE)

Contact: Kristin Kaser, kaser.kristin@gmail.com

WHITE PINE CHAPTER

When: Meetings are typically held the third Thursday of the month, September through April. Current information is posted on our chapter webpage:

<https://www.whitepineinps.org/WPschedule.html>

Where: We are currently holding all meetings via Zoom. Recordings of all talks are posted on the White Pine Chapter YouTube Channel.

Contact: INPS, White Pine Chapter, PO Box 8481, Moscow, ID 83843 or whitepine.chapter@gmail.com. Visit the chapter website for upcoming event information: <https://www.whitepineinps.org/>.

Past Events

March 17: Alissa Salmore presented on “Landscaping with Native Plants.”

Upcoming Events

April 21: Nancy Miller will present “Native shrubs for the Palouse” at 7:00 pm PDT.

May 13-15: Annual Native Plant Sale

June 23-27: State annual meeting based at Wilderness Gateway Campground on the Lochsa River. Registration required. Presentations and field trips will focus on the natural history of the Clearwater River Drainage. More information can be found at <https://idahonativeplants.org/statewide-annual-meeting/>.

WOOD RIVER CHAPTER

Contact: Subscribe to the newsletter by emailing Lisa Horton at 1gypsy2016@gmail.com. Address questions about programs to Kristin Fletcher at naturewalker7@gmail.com. Visit our chapter website: www.woodriverinps.wixsite.com/wrinps

Past Events

March 9. Kathy Richmond, Challis resident and nationally recognized mushroom expert, spoke about mushrooms, both toxic and edible. Her recorded talk will be available through our website and also via the State INPS Youtube channel. Kathy will also lead a mushroom field trip for our INPS chapter in early to mid-May.

Upcoming Events

More details can be found on our chapter website, www.woodriverinps.wixsite.com/wrinps.

Early April: Saturday Pop Up Walk for Members Only

April 22 or 23: Plant Treasures Close to Home hike. Explore the alleyways of Hailey. You may be surprised at the variety of plants we will see. We can talk about garden escapees, invasive plants, Idaho natives and more. This “hike” will be around a mile but rated easy because the terrain can be a little uneven. Allow 2 hours. Meet at the HP&R lot. The date and time are contingent.

May 14: Deadly, Poisonous and Edible Mushrooms. This hike is led by internationally known mushroom expert Kathy Richmond as a follow-up to the Zoom talk she did for us in March. Meeting place, hike location and meeting time TBA.

June 11: West Side of Dollar Mountain. June is the crossover time when you can see both late spring and early summer wildflowers so join us to learn about them in a place that we love for botanizing. Medium difficulty (rated for steep path and altitude) hike of around 2 miles. The walk includes intermittent streams and sagebrush ecosystems. Sometimes we see camas lilies in a really wet spring year! We will meet at HP&R for leaving at 9 am, please arrive by 8:45 am.

June 23-27: INPS Annual Meeting on the Lochsa River in northern Idaho. Our chapter has booked a group camping site. If interested, call Lisa at 208-721-1798 for details.

July 15-17: Members Only Campout at Trap Creek, west of Stanley. We will be exploring the Bear Valley area on Saturday, camping 2 nights at Trap Creek group site. The highlight will be a visit to a wet hillside guided by State INPS President Mike Mancuso. Cost per RV or tent will be \$25 inclusive of the two nights. To sign up, contact Lisa at 208-721-1798. •

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- Sawabi (Pocatello)
- Upper Snake (Idaho Falls) - *Inactive*
- White Pine (Moscow)
- Wood River (Ketchum/Sun Valley)
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Memberships run calendar year. New memberships enrolled after June 1 include the following year. **Renew or join online:** <https://idahonativeplants.org/membership/>

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Layout Editor: Jody Hull

sage-editor@idahonativeplants.org

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