



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

Festive Flora

By Karie Pappani, Pahove Chapter

It's the time of year when holiday cheer and merriment are accompanied with traditional festive flora. Images come to mind of poinsettia, mistletoe, ivy, holly, cyclamen, Christmas cactus, Christmas rose (otherwise known as snow rose or Lenten rose), amaryllis, and shrubs hosting winter berries. Melissa Petruzzello describes some of these plants in her article on Page 5.

Purchasing a poinsettia or Christmas cactus for the holiday season is easy to do as they are found in most every store this time of year. Poinsettias and amaryllis come in an amazing array of color variations to suit you—red, white, cream, striped, speckled, and more. And you can even buy, plant, and grow your own Christmas rose in Idaho. This winter blooming perennial actually hails from the mountains of Europe, and according to legend, it sprouted in the snow from the tears of a young girl who had no gift to give the Christ child in Bethlehem. (*A word of caution, all parts of this plant are poisonous to people and pets.*)

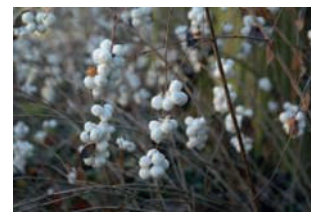
In Idaho, we have mistletoe growing on Douglas fir and multiple other tree species, and we are

fortunate that Idaho is home to a plentiful assortment of festive evergreen trees. However, we lack the classic red, green, and/or white colored iconic flora, like poinsettia and holly, that grow naturally in other countries. But there are several native plants fitting for the category of festive flora of Idaho. Can you think of any others? Please share them with us! •



<https://www.tnnursery.net>

Red-osier dogwood (*Cornus sericea*) with its vibrant red twigs and branches is a stark contrast in color to the surrounding riparian trees and shrubs with brown trunks and fallen leaves.



<https://gardencity.cymru>

Snowberry (*Symphoricarpos albus*) has berries that look like little snowballs.



Photo © Dave Powell, USDA Forest Service,
www.forestryimages.org

Creeping Oregon grape (*Mahonia repens*) with its spiny and shiny leaves is reminiscent of holly.

In this issue:

Festive Flora.....	1
Letter from the President.....	2
Updates from the Ray J. Davis Herbarium.....	3
Merry and Bright: 8 Jolly Christmas Plants.....	5
Recognizing Four Notorious Plant Species.....	6
Research in Eriogonum subgenus Ganysma	8
In Memoriam: Nancy Cole (1959-2025).....	10
Book Reviews & Announcements.....	12
Plant Conference Announcements.....	13
Chapter News.....	14
Fire Effects on Lichen Biodiversity.....	15

Continued on Page 4...

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Letter from the President

Idaho became our nation's 43rd state on July 3, 1890. It needed an official state seal. The competition to design the Great Seal of the State of Idaho was won by Emma Edwards, the only female to design an original state seal. Although updated in 1957, the new seal kept many of the original features. And if you look closely, you will see syringa (*Philadelphus lewisii*) in both the original and updated versions. Adjacent to the woman holding the scales of justice in one hand and a spear tip with the cap of liberty in the other hand



are the white, four-petaled flowers of syringa poking above stalks of wheat. Its presence on the state seal points to syringa being a floral emblem for Idaho decades before being officially designated as the Idaho state flower in 1931 by a single sentence: State flower designated. "The Syringa (*Philadelphus lewisii*) is hereby designated and declared to be the state flower of the state of Idaho" (Idaho Statutes Title 67–State Govern-

ment and State Affairs, Chapter 45–State Symbols, 67-4502). I can hardly think of a more fitting state flower than syringa. It occurs across Idaho in habitats ranging from open forests to canyon slopes, shrubfields, and riverbanks. The stunning flowers produce a citrus-like fragrance that reflect another common name for the species, mock-orange. In good years, the flowers can cover the shrub so profusely as to nearly hide the stems and leaves. Syringa is valued by pollinating insects, and also for its horticultural appeal, as highlighted by Roger Rosentreter's article in a previous *Sage Notes* reminds us.

The state seal also includes the state motto, *Esto perpetua* ("Let it be perpetual"). This aligns with a core component of the INPS mission, namely, to expand understanding and appreciation of Idaho's native flora and to work to preserve this rich botanical heritage for future generations. With the end of another year upon us, I want to thank everyone for their INPS membership. This letter is also a reminder to please continue your support by renewing your membership for 2026. In addition, if you have friends who value native plants, talk to them about becoming an INPS member. We need our collective voice to be as loud as possible to ensure the Idaho landscape retains its full complement of native plants far into the future. Let our native plants be perpetual.

Sincerely,
Michael Mancuso

A native Ponderosa pine at the edge of burned trees from the 2024 Wapiti fire in Grandjean, Idaho, immediately adjacent to a yurt that also did not burn. Original watercolor by Cynthia L. Coulter ©2025. Used with permission.



Announcements

Updates from the Ray J. Davis Herbarium

By Indah B. Huegele, PhD, Life Sciences Collection Manager, Idaho Museum of Natural History

The Herbarium thrives with help of volunteers

I had the honor of starting as collections manager of the Ray J. Davis Herbarium in April 2025. The Herbarium had not had a full-time collections manager for a few years, so we had a lot of catching up to do! This year, we processed and added over 1475 specimens to the collection, including specimens collected during the annual Idaho Botanical Foray in 2024, gifts from other herbaria, and new collections made by Idaho State University (ISU) researchers. All of this would not be possible without the support of our incredible volunteers and student employees; since July, we have accrued over 270+ hours of volunteer time towards keying, preparing, and curating specimens. The patient work of every volunteer makes a lasting impact, as these specimens will last for decades—if not centuries—to come. In an effort to give back, we try to give volunteers and students a chance to learn a variety of skills, practice mentorship, and spearhead their own projects. It has been inspiring to meet so many amazing individuals, people of many different ages and wildly different backgrounds, who come together and contribute to something timeless.

The Sawabi Chapter of our Idaho Native Plant Society accomplished a tremendous feat in helping us identify 235 species that were collected during the Idaho Botanical Foray in 2024. Not stopping there, they continue to aid the Herbarium by helping us reorganize our space and unravel little mysteries in our collection. Their enthusiasm for plants is infectious. It is no wonder that they manage to attract a lively group of plant enthusiasts to attend a Plant Discovery Class at the herbarium every Friday.

Improving exhibits, collections, and gardens

We are incredibly lucky that the Institute of Museum and Library Services, despite being cut in March this

year, has granted us funding to move our collection into a new compactor system. Space is a precious resource for any museum collection; having a compactor system will give our collection room for future expansion and as well as freeing up vital space for exhibits. It's a win-win situation for both the public and behind-the-scenes sides of our museum!

We have also gained partial funding to revamp our native plant garden, which is actively used by classes, summer camps, and students looking to decompress. Through the changes in landscaping, we will not only improve the usefulness of this resource, but also set a fresh tone for our museum entrance.

Celebrating natural history

Museums, like libraries, exist not only to protect our collections, but also to be actively used. We have worked hard to participate in community events, lead summer camps, host classes, give tours, and provide reference material to researchers both from and outside of ISU. This year, some of our volunteers created the Portneuf Pollinator Partnership, an organization dedicated to promoting practices and gardening techniques that can create more habitable environments for our local pollinators. Tabling events alone have helped us reach over 1800 people in our Idaho community this year.

A bright future

The Ray J. Davis Herbarium has been serving as a repository for Idaho plants for over 94 years. There's something special about working at a place with so much history. It's my hope that, with the help of our incredible Pocatello community, that the Ray J. Davis Herbarium can continue to serve as a cornerstone for incredible student careers, forge lifelong friendships, and set the stage for many more stories to come. •



Idaho Native Plant Society

SCHOLARSHIP PROGRAM!

AMOUNT: 2 awards at \$2000 each

DEADLINE: March 15, 2026

[HTTPS://IDAONATIVEPLANTS.ORG/SCHOLARSHIP-NEWS/](https://IDAONATIVEPLANTS.ORG/SCHOLARSHIP-NEWS/)



Photo by Karie Pappani.

Big toothed maple (*Acer grandidentatum*) with its flush of reddish leaves, is a glorious sight during the fall transition to winter.



<https://www.gardenia.net/plant/rhus-trilobata>

Skunkbush sumac (*Rhus trilobata*) also puts on a bright fall/winter display.



<https://inside.ewu.edu/ewflora/sorbus-scopulina/>

Mountain ash (*Sorbus scopulina*) has glossy orangish/red berries which persist into winter.

Mosses with bright green foliage and dainty, whimsical reddish sporophyte stalks hoisting capsules atop.



UkrBIN

Naked rhizomnium moss (*Rhizomnium nudum*)



Biopix: JC Schou
<https://bryophyteportal.org/>

Nodding-thread moss (*Pohlia nutans*)



Juniper haircap moss (*Polytrichum juniperinum*)



https://en.wikipedia.org/wiki/Polytrichum_juniperinum

<https://www.british-bryologicalsociety.org.uk>

Ferns with shimmery water droplets on leathery fronds remain green throughout the season.



Northern maidenhair fern (*Adiantum pedatum*)

<https://idfg.idaho.gov/species/taxa/44323>



Western sword fern (*Polystichum munitum*)
Sword ferns are also known as Christmas ferns.

<https://nativeplantspnw.com/>



Bracken fern (*Pteridium aquilinum*)

<https://intocascadia.com/2016/10/28/an-easy-guide-to-ferns-of-the-pacific-northwest/>

Merry and Bright: 8 Jolly Christmas Plants

By Melissa Petruzzello, Encyclopedia Britannica

Deck the halls, trim the tree, and sneak a kiss under the mistletoe! A surprising number of plants are involved with making Christmas merry. Here are eight festive plants that are commonly used as decorations throughout Europe and North America.

Holly



European holly (*Ilex aquifolium*)

A number of hollies (*Ilex* species), mainly hailing from Europe or North America, are used as Christmas decorations for their waxy evergreen foliage and winter-ripening fruits.

Poinsettia



Native to Mexico and parts of Central America, the vibrant poinsettia (*Euphorbia pulcherrima*) features showy petal-like bracts that resemble enormous flowers. Red is the most common color, but varieties with pink, yellow, mottled, or striped bracts have also been developed.

Douglas fir



Douglas fir tree (*Pseudotsuga menziesii*) with cones in North Cascades National Park, WA

In North America the Douglas fir (*Pseudotsuga menziesii*) is one of several species of conifers used as Christmas trees. Many species of true fir, including the balsam fir (*Abies balsamea*) and Fraser fir (*A. fraseri*), are also used.

Christmas cactus



Christmas cactus (*Schlumbergera bridgesii*).

Native to Brazil, the winter-flowering Christmas cactus (*Schlumbergera × buckleyi*) bears red or pink flowers around late December in the Northern Hemisphere.

Mistletoe



Semiparasitic European mistletoe (*Viscum album*) growing on an apple tree

European mistletoe (*Viscum album*) and its North American counterpart, Eastern mistletoe (*Phoradendron serotinum*), are parasitic plants that became associated with Christmastime romance.

Norway spruce



The Norway spruce (*Picea abies*) is a common Christmas tree in many places. Blue spruce (*P. pungens*) and white spruce (*P. glauca*) are also used.

Norway spruce cones (*Picea abies*)

Christmas rose



Christmas rose (*Helleborus niger*)

Depending on the climate, the cheery Christmas rose (*Helleborus niger*) can produce attractive white or pink flowers in December. In some places, blossoms even emerge from snow.

Cedar



Western red cedar (*Thuja plicata*)

Various evergreen trees known as cedars, including the western red cedar (*Thuja plicata*) and the incense cedar (*Calocedrus decurrens*), are commonly used in Christmas wreaths and garlands for their long-lasting and fragrant foliage.

Petruzzello, Melissa. "Merry and Bright: 8 Jolly Christmas Plants". Encyclopedia Britannica, 13 Jun. 2025, <https://www.britannica.com/list/merry-and-bright-8-jolly-christmas-plants>. Accessed 20 November 2025.

Recognizing Four Notorious Plant Species

By Michael Mancuso, Pahove Chapter

The Idaho flora contains over 3000 plant species. No one can claim to know and recognize them all. However, there are some plants everyone in Idaho would benefit to learn and recognize regardless of their interest in botany. I want to highlight four of them here.

The first is **western poison ivy** (*Toxicodendron rydbergii*), a plant many of you may already have unpleasant first-hand knowledge about. It is a widespread member of the Sumac plant family (Anacardiaceae), native to Idaho and much of the western United States, extending into Canada and Mexico. Poison ivy can be found in habitats as variable as woods, rocky slopes, and riparian habitats. Knowing how to recognize this species can save you from developing an irritating, itchy skin rash after touching the plant. This is because poison ivy produces urushiol,

an oil causing a contact dermatitis allergic reaction in most people. You can count on being annoyed to fairly miserable for a week or two if you get a poison ivy rash. Once, walking up a popular trail in southern Idaho, I came across a group of teenagers wearing only bathing suits and sandals rambling in and out of abundant poison ivy growing along a creek. They were not familiar with the plant, but I knew they soon would be in most unfortunate ways. Western poison ivy is a rhizomatous shrub up to about 5 feet tall (sometimes taller) with leaves alternately arranged on the stem (Figure 1).



Figure 1. Poison ivy plant. Photo by Barbara Ertter.



Figure 2. Poison ivy leaves consist of 3 glossy leaflets. Photo by Matt Lavin (Flickr Creative Commons).



Figure 3. Berry-like fruits of poison ivy. Photo by Barbara Ertter.

The leaves consist of three leaflets, accounting for a popular saying “leaves of three, let them be” (Figure 2). These leaves tend to have a reddish tinge early in the season, but are green in summer, before turning yellow, orange, or red in the fall. The leaflets come to a rather sharp point at the tip and can have a glossy appearance. The margins may be smooth or have some small teeth. The small, greenish-white flowers are arranged in clusters and develop into yellowish-white, berry-like fruits (Figure 3). Fruits remaining on the plant alert you to the plant’s presence even after the leaves have fallen. The related species, poison oak (*Toxicodendron diversilobum*), does not occur in Idaho, being found further west.

Western water hemlock (*Cicuta douglasii*) and **poison hemlock** (*Conium maculatum*) rank among the most deadly poisonous plant species in North America, making them also worth learning to recognize. Both species are in the carrot family (Apiaceae), with water hemlock being native to Idaho, whereas poison hemlock is a European introduction. Water hemlock is a perennial that occurs in marshes, along streams and lakes, and in other wet, generally native habitats. In contrast, poison hemlock is a biennial found along irrigation ditches and other moist disturbed places. Both are stout, hairless plants with tuberous roots and hollow stems that can reach six feet tall, or even closer to 10 feet for poison hemlock. The stems of poison hemlock have purple blotches (Figure 4), a character absent in water hemlock. Leaves for water hemlock are 1–3 times pinnate with more or less lance-shaped leaflets (Figure 5). Poison hemlock leaves are also pinnately compound, but the leaflets are smaller, more delicate, and fern-like in appearance (Figure 6). Flowers for both species are small, white, and arranged in compound umbels (Figure 7). All



Figure 4. Purplish blotches on stems of poison hemlock. Photo by Barbara Ertter.



Figure 5. Water hemlock leaves. Photo by Jerry Oldenettel (Flickr Creative Commons).

parts of both species are poisonous, especially the roots. You certainly do not want to be tasting a sample of either, or even handling them without wearing gloves. Water hemlock produces cicutoxin, a very potent neurotoxin that causes a series of unpleasant symptoms and eventually violent convulsions and respiratory failure. Poison hemlock contains several toxic alkaloids that also produce a brutal list of symptoms by affecting the respiratory, nervous, gastrointestinal, and cardiovascular systems.

Finally, I want to remind everyone how to recognize **goathead** (*Tribulus terrestris*), one of the most obnoxious species on Idaho's noxious weed list. Puncture vine is another common name for this species, as it is responsible for countless bicycle flat tires, injured pet paws, and screams if stepped on while barefoot. Native to the Mediterranean region, goathead was inadvertently introduced into North America sometime around 1900, probably as a contaminant in sheep wool. In Idaho, it is most prevalent in the Snake River Plain, but has a distribution that includes a majority of counties in the state. It can be found in pastures, cultivated fields, urban wastelots, railroad tracks, road-

sides, and other disturbed areas, especially those with dry, sandy soils. Goathead can be recognized by its annual, prostrate, mat-forming habit; hairy stems spreading up to three feet in diameter; opposite

leaves consisting of three to nine pairs of oblong leaflets; yellow flowers with five petals; and the hard fruits, each segment with two large spines and numerous smaller spines (Figures 8, 9, 10). Goathead is in the caltrop family (Zygophyllaceae). And just what is a "caltrop"? It is a three or four-spiked device designed so that one spike always points upward from a stable base (Figure 11). In ancient times caltrops were scattered across the ground as a weapon to slow the advance of enemy troops and their animals such as horses and camels. Today, goathead fruits continue to be a major nuisance to bicyclists, pets, and livestock. Recognizing goathead is a first step in controlling and removing the species from your property, favorite trail, or anywhere else you encounter it. Make sure you remove plants before the spiny seeds mature and begin to shed.

Although knowing all 3000 plants in the Idaho flora is unrealistic, learning to recognize your personal favorites plus a handful of other important species seems completely doable. •



Figure 6. Poison hemlock leaves. Photo by Terry Howes (Flickr Creative Commons).



Figure 7. Water hemlock with compound umbel inflorescence. Photo by Barbara Ertter.



Figure 8. Goathead with spreading, prostrate stems and leaves consisting of multiple leaflets.



Figure 9. Goathead with yellow flower solitary in leaf axil; also note the hairy stem and leaves. Photo by Barbara Ertter.



Figure 10. A maturing goathead fruit. Photo by Barbara Ertter.



Figure 11. Example of a caltrop. Photo from Wikipedia.

Research in *Eriogonum* subgenus *Ganysma* with a Focus on the *E. deflexum* group (Polygonaceae)

Article and Photos by Mahima Dixit

Introduction

Eriogonum Michx. (wild buckwheats) is a large and diverse genus, with 252 species and 445 minimum-rank taxa (species including varieties; hereafter “taxa”) occurring in North America (Columbus 2022; NatureServe). Within *Eriogonum*, I am studying subgenus *Ganysma* (62 currently recognized species, 74 taxa)—a group of mostly annual, desert-dwelling species. I am particularly fascinated by the *E. deflexum* group (11 species, 16 taxa) within this subgenus which shares the trait of upside-down flowers! Until recently, most of the species in *Eriogonum* have been classified mainly based on morphological traits (*Flora of North America*; Reveal 2005). With that, knowledge of evolutionary history is largely incomplete, especially within subgenus *Ganysma* (Kempton 2012; Pearman 2021). For my dissertation research, I am using phylogenetics, the study of evolutionary history, to shed light on species relationships within this group and address multiple objectives.



Kanab, Utah

Objectives

The objectives of my study are to 1) sample all of the members of subgenus *Ganysma* to understand species relationships on a molecular level, 2) for the *E. deflexum* group, assess what are currently recognized as species and varieties using morphology, ecology, and phylogenetics, recommending changes if need be, 3) inform conservation efforts by identifying taxa in need of protection, and 4) study the phytochemistry (chemistry of plants) of subgenus *Ganysma* taxa to see if there are any patterns across the group.

Methods

The three main methods for my research are fieldwork, lab work, and data analyses. Prior to conducting fieldwork, I look at documented localities from databases such as *Consortium of California Herbaria* (CCH2), SEINet, and iNaturalist to plan target sites. Given that the taxa in subgenus *Ganysma* occur throughout western North America, my fieldwork involves cross-country travel via car, mostly camping along the way.



Eriogonum rixfordii

These taxa also flower at different times in the year, so my fieldwork has been year-round with an emphasis in the summer months (June–August). At each site, the



Eriogonum deflexum var. *deflexum* close up.

sampling process includes pressing plants for vouchers and collecting leaf and/or stem material for molecular and chemical analyses (placed in silica gel). Additionally, photographs and detailed notes are taken of the locality, habitat, and plants.

Back in the lab, DNA is extracted and prepared for sequencing at the California Botanic Garden’s molecular lab. The samples are then sequenced at the University of California, Riverside. Once DNA sequences are acquired, I analyze them to generate a phylogenetic tree (like a family tree). For phytochemistry, I am collaborating with the Department of Natural Sciences in Claremont, CA to conduct chemical extractions and run samples through liquid chromatography-mass spectrometry. When I obtain these data, I will analyze them using various databases and R-packages (statistical computing software) to uncover any patterns between species based on the phylogeny (Wink 2020).



Preliminary Results

So far, I have spent almost three field seasons traveling across the western United States to sample populations of subgenus *Ganysma* with an emphasis on members of the *E. deflexum* group. From these samples, I extracted and prepared samples for four sequencing runs (each contain a batch of 96 samples) and generated an updated phylogenetic tree. These results reveal a lot, but here are three main takeaways:

- (1) Subgenus *Ganysma* is not monophyletic—the section highlighted in blue represents species in *Eriogonum* subgenus *Eucycla*, showing that subgenus *Ganysma* does not share one common ancestor.
- (2) The *E. deflexum* group is also not monophyletic. The stars indicate members of this group, and they appear in three clades, or groups. This shows that the trait of upside-down flowers evolved more than once in subgenus *Ganysma*. This leads me to wonder why this trait has evolved in this genus!
- (3) The species *E. deflexum* is not one species. *Eriogonum deflexum* has three currently recognized varieties indicated by the green boxes, and var. *deflexum* is not closely related to the other varieties (vars. *nevadense* and *baratum*). Furthermore, var. *rectum* is currently considered a synonym (or taxonomically the same thing) of var. *deflexum*, but it does not resolve as closely related to var. *deflexum*. To say the

least, there needs to be some changes in what is considered a species and variety!

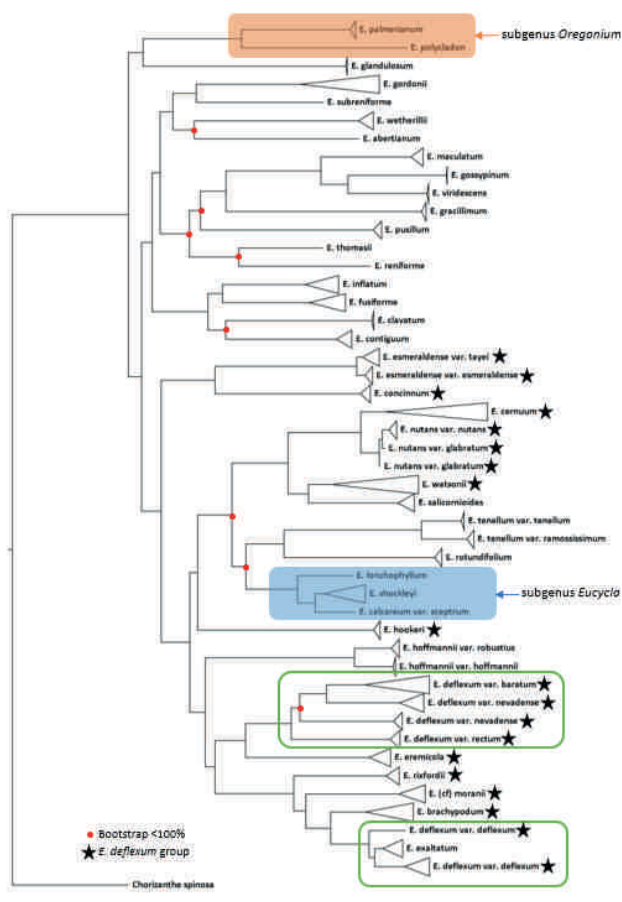
On the chemistry side of things, I have conducted a pilot study using *E. inflatum* (desert trumpet buckwheat), and found a lot of cool compounds! One of them is rutin, which is a flavonoid known to have anti-inflammatory and antioxidant properties (Hussein & El-Anssary 2017).

Next Steps

I am currently wrapping up fieldwork for this season with about five more taxa left to sample to fully represent subgenus *Ganysma*. As I form a more robust phylogeny, I will work on any recommendations regarding taxonomy. Lastly, I am going to begin processing the phytochemistry samples. Once I have all of these data, I will analyze the phytochemistry with the phylogeny. Thanks to the generosity of organizations such as the Idaho Native Plant Society and its Education, Research, Inventory Grant (ERIG) program, I was able to make substantial progress in my research and have the support to complete my project! •

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Nancy Cole (1959-2025): Fond Remembrances of a Life Well-Lived

Article by Ann DeBolt, Pahove Chapter

The Idaho Native Plant Society lost a longtime and special member on January 14, 2025, when Nancy Cole passed away unexpectedly while in Honduras on a natural history excursion. Nancy was only 66, making this loss all the more tragic. I first became acquainted with Nancy when we drove to Northern Idaho in 1989 for the INPS annual meeting outside of Orofino in the Clearwater National Forest. We visited the Aquarius Research Natural Area, designated for its old-growth western redcedar/western hemlock forest, largest red alder-stand east of the Cascade Range, and many endemic and coastal disjunct plants. Nancy had recently been hired as the Plant Ecologist for Idaho Power Company (IPC), and I was the Bureau of Land Management District Botanist in Boise. It was exciting times in those early years of our botanical careers. For the next 9 years, from 1990-1999, Nancy served as the chair of Idaho Rare Plant Conference Planning Committee (RPC), with many of us now-aged botanists serving our various roles on that committee along with her. The RPC met annually in that era of inter-agency cooperation, when we enjoyed much support and enthusiasm, with RPC in-person attendance numbering around 100 participants.

At IPC, Nancy was responsible for Federal Energy Regulatory Commission (FERC) relicensing-related studies of all botanical resources for five mid-Snake River hydroelectric projects (Shoshone Falls Dam to Swan Falls Dam) in Southwestern Idaho, including study design, data collection, statistical and GIS-based data analyses, and reports. Reports covered wetland, riparian and upland plant community analyses and descriptions, inventories and management recommendations for sensitive plant species and noxious weeds. In 1990, Nancy was chosen to be the featured IPC employee in television and newspaper advertising cam-



INPS field trip to Rocky Comfort Flat RNA in 1991. Photo by David Towner.

paings. It was always fun to see a familiar face on the TV screen and watch her “wipe her brow” while hard at work on the middle Snake River in those old commercials.

During her IPC tenure, Nancy contributed to countless reports and publications, and in 1997, she was the recipient of the TWIN award, Tribute to Women in Industry. Nominated by fellow IPC employees, this award was sponsored by the Women and Children's Alliance and was quite an honor for a most deserving recipient.

Nancy was co-coordinator of two INPS annual meetings, responsible for site selection and program development. The 1991 meeting was held in Southern Idaho, near Hagerman, and Nancy led field tours of upland vegetation along the middle Snake River, where IPC was working on dam relicensing. The 1997 meeting was held in the Albion Mountains in southern Idaho, when field trip mem-

bers assisted Idaho Natural Heritage Program staff with *Castilleja christii* monitoring on Mt. Harrison.

Nancy served as the Sawabi Chapter secretary in 1990, as a statewide board-member-at-large from 1990-2000, and newsletter technical editor in 2001 and 2006. During these years, she gave presentations about her vegetation work on the Middle Snake River for IPC, about native plant landscaping, and she assisted me many times during National Wildflower Month in leading public wildflower trips in the Boise foothills. Nancy also led ethnobotany walks for Idaho Archaeology Week, and taught the Silver Sage Girl Scout Council about poisonous plants.

In the Wood River Valley, Kristin Fletcher, current chapter board-member-at-large and former INPS state president told me that “Nancy was directly responsible for the fact that our chapter was even founded! Bill McDorman wanted to start a wildflower group and had a big slideshow in Sun Valley or Elkhorn. I'd say a hundred or more people showed up! Bill was a great idea person, and he generated interest and some folks, including me, wanted to start some sort of a group. Somehow Nancy heard about our efforts and reached out to me because she knew me from the rare plant conference, asking if we would be interested in forming a chapter. Most folks said



Data collection on middle Snake River in 1992. IPC photo.



At *Mirabilis macfarlenei* site on Salmon River in 1989. Photo by Diane Pavsek.

no, we wanted to be on our own, but Nancy offered to talk to us about the benefits of being a chapter rather than a standalone group. Even after she talked with us there was some real hesitancy among some so she offered to make me a member-at-large so that I could experience first-hand how the Society worked to help in making the decision. Eventually, we decided



Nancy on Cuddy Mountain in 2005.
Photo by David Towner.

it made more sense to be a chapter rather than a small independent group of people. And voila!" I love this little bit of history about Nancy that I hadn't known before.

Nancy grew up in Pocatello, where she earned her Bachelors' (Botany) and Masters' (Botany/Plant Ecology) degrees at Idaho State University. Her 1987 Master's thesis was titled "The growth and water relations of *Leymus cinereus* following a prescribed burn." She was a student of the late ecologist Dr. Jay Anderson, who spent decades studying sagebrush-steppe vegetation at Idaho National Lab (INL). After graduate school, Nancy became the first statewide Science Coordinator for the Idaho Chapter of The Nature Conservancy from 1988-1989. Her role was to identify and develop management plans for critical riparian and wetland habitats in Idaho. According to Cindy and Lou Lunte, recently retired from the Idaho



Rare plant survey in 2008. Photo by Michael Mancuso.

TNC, "Nancy traveled around the state, by herself, accessing remote locations with minimal equipment and little support, only to tromp through inhospitable locations often filled with muck, stinging nettles and biting insects. She was a skilled botanist and indomitable in the face of setbacks and hardships, producing detailed reports on everything she found. She traveled from the depths of Hells Canyon to the easternmost part of the state at Formation Springs, south to Thousand Springs and many other places in between, helping to formulate effective strategies to protect these biologically diverse places. She shared her love of plants and wild places with everyone she met, and did so with a large welcoming grin on her face."

After Nancy left IPC, she was even busier as a mother of two children and with a new life partner, David Towner. While raising children, she was very involved

(no surprise there!) with their school, The Children's School, where she served on the Parent Education Committee among other board member responsibilities. Nancy designed, executed and maintained a native plant garden utilized by teachers and students for science, history, and art instruction at Adams Elementary, once the children moved over to that school. These are just a few examples of committees she served on and functions she organized as a devoted and engaged parent.

Once the children were older, Nancy began her own business, Cole Ecological Services, in 2008. Some of us were fortunate to reconnect with her during this time and for several years after, when we assisted with rare plant surveys for *Allium aaseae*, *Astragalus mulfordiae*, *Texosporium sancti-jacobi*, and *Lepidium papilliferum* in the Boise foothills and surrounding areas. These were good times for being outside in the Boise foothills, prior to the insane growth of recent years.

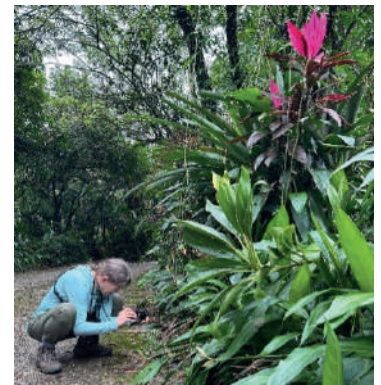


At upper Pahsimeroi in 2020. Photo by David Towner.

More recently, Nancy and David became involved with BSU's Idaho Bird Observatory (IBO), conducting Short-Eared Owl Surveys, assisting with riparian restoration and planting at the Diane Moore Nature Center, taking kids to the Lucky Peak banding station, and creating animated decoys for Northern Goshawk research. Nancy also created incredible quilts, made delicious (mostly) wines, grew a superb garden, rescued a pair of Russian tortoises, and became a grandmother. Wow. What a life!

Nancy leaves behind her spouse of 24 years, two children, one granddaughter, her parents, a brother and a sister, and countless friends. A "Nancy Cole Fund" has been established at IBO to support two programs of special interest—the "Hummingbird Fund" and the "Research Fund," should you wish to make a contribution.

It was an honor to prepare this Memoriam for Nancy, who, as you just read, was truly a remarkable person. Enormous thanks to those who contributed. They are recognized above. I am deeply saddened once again, by our collective loss. •



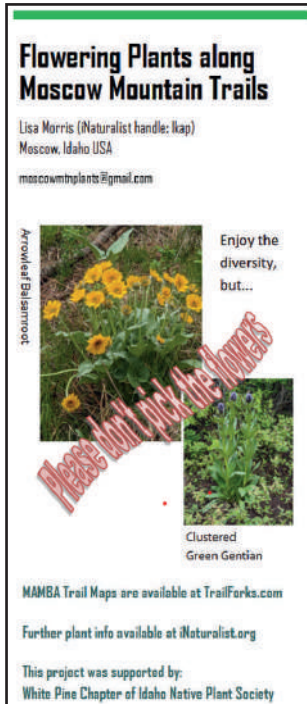
Botanizing in Honduras in 2025.
Photographer unknown.

Book Reviews & Announcements

Flowering Plants along Moscow Mountain Trails

Review by Penny Morgan

Flowering Plants along Moscow Mountain Trails will make a great gift. This laminated picture guide includes



100+ native wildflowers, organized by flower color. Author Lisa Morris hopes her photos of both common and not-so-common native plants will inspire you to walk the trails and marvel at the biodiversity in our backyard. Beauty abounds with 12 orchids, 8 wintergreens, and many other delights.

Buy it as a gift for yourself and others. Carry it with you as you explore the vast network of trails built and maintained by the Moscow Area Mountain Bike Association and the Palouse Land Trust. Please be respectful of private lands as the trails cross

through multiple habitats. Photos are from spring, summer, and fall, so you are likely to find this guide useful whenever you are out. Development and initial printing of the guide was funded by a grant from the White Pine Chapter of the Idaho Native Plant Society. This guide will be for sale soon at Hyperspod, Bookpeople, and other local stores in Moscow. All income from sales will be donated to local organizations including the White Pine Chapter of INPS, Moscow Area Mountain Bike Association, and the Palouse Land Trust.

Lisa Morris is a self-taught plant enthusiast. Her endless curiosity and energy lead her to explore nearby trails almost every day, no matter the season. Using her phone, she takes photographs and uses iNaturalist.org to help identify and learn more about the plants she finds on her hikes. She delights in the plants, fungi, mosses, convergent lady bugs, ice crystals, people, and all she finds along her way. Join Lisa this spring and summer when she leads hikes to help people learn about native plants. Lisa is a member of the Idaho Native Plant Society and affiliated with the White Pine Chapter. Email questions and comments to Lisa at moscowmtnplants@gmail.com. •

Nevada Vascular Plants: An Annotated Checklist of the State's Biodiversity

Review by Emma Wynn

The plants of Nevada have never looked so good!

Arnold Tiehm and Jan Nachlinger have created the

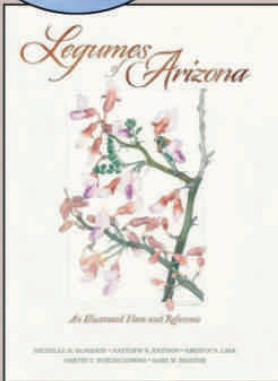


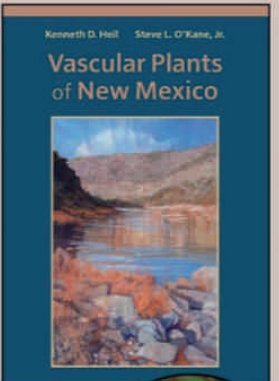
state's first vouchered catalog of our amazing plant diversity: *Nevada Vascular Plants: An Annotated Checklist of the State's Biodiversity*. This checklist, building on decades of collection and study, provides detailed information on 3,647 plant taxa found in Nevada's diverse mountain ranges and valleys, including cited voucher specimens and county-level distribution.

Preorder your copy here: <https://shopbritpress.org/products/nevada-plants-an-annotated-checklist-of-the-state-s-botanical-diversity> •



New Fabaceae keys for Arizona & New Mexico!





Jason Alexander, Biodiversity Informatics Manager at the University & Jepson Herbaria, was recently involved in the writing of new Fabaceae keys for two state floras.

Congratulations, Jason! 



Astragalus prussii var. prussii (© Steve Matson)

(Reviews on following page.)

Book Reviews & Announcements

Legumes of Arizona: An Illustrated Flora and Reference

By Michelle M. McMahon, Matthew B. Johnson, Kirsten N. Lake, Martin F. Wojciechowski, and Mark W. Bierner

The legume family (Fabaceae) is vital ecologically, economically, and agriculturally—and especially significant in Arizona's arid landscapes. This comprehensive manual covers all legume taxa in the state, native and cultivated alike, with a unified key that simplifies identification across genera. Alongside taxonomy, it includes details on cultivation, landscaping, ethnobotany, and current uses, making it an indispensable reference for botanists, land managers, and anyone working with desert-adapted plants. •

More information: <https://shopbritpress.org/products/legumes-of-arizona>

Vascular Plants of New Mexico

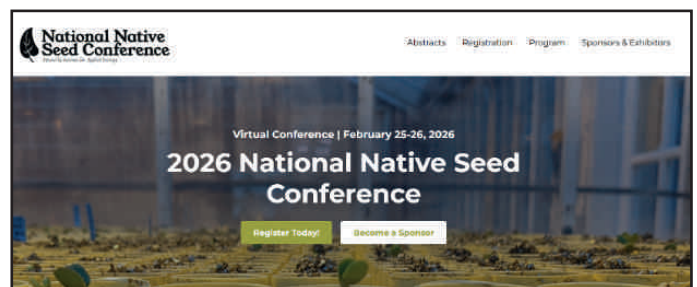
Edited by Kenneth D. Heil and Steve L. O'Kane, Jr.

A multi-decade effort involving over sixty contributing botanists, *Vascular Plants of New Mexico* is an exhaustive treatment that contains taxonomic keys, plant descriptions, plant community types, elevation ranges, and general plant distributions, along with endemic and/or threatened status, of more than 4,000 known vascular plants in New Mexico.

In addition, this guide is enriched with color photographs of New Mexico vegetation, color plates of more than two hundred of the rarest species, and nineteen oil paintings by New Mexican artist Rod Hubble, capturing the stunning variation and beauty of the landscapes. Appropriate for plant enthusiasts, amateur botanists, professional biologists, consultants, academics, ecologists, and land management personnel, this book includes user-friendly keys and readable, consistent taxonomic treatments by expert authors. •

More information: <https://press.uchicago.edu/ucp/-books/book/distributed/V/bo237308748.html>

Plant Conference Announcements



Chapter News

CALYPSO CHAPTER

The public is invited to all chapter activities. Activities are subject to change—watch chapter emails for updates. Contact Derek Antonelli to be added to our email list.

When: The next chapter meeting will be on Wednesday, March 4, at 7:00 pm. Chapter meetings are held the first Wednesday evenings of March, April, May, and October. Summer plant walks are held monthly, April–August.

Where: Meetings will be held in the IDFG Hunter Education Building, 2885 W Kathleen Ave, Coeur d'Alene.

Contact: For more information about Calypso Chapter activities, contact Derek Antonelli at ds.ca.antonelli@gmail.com, (208) 691-1070.

LOASA CHAPTER

When: Regular meetings are paused currently.

Contact: For more information about Loasa Chapter activities, please contact Bill Bridges, bridgesbill34@yahoo.com.

PAHOVE CHAPTER

Pahove election results are in! In a predictable gesture of confidence, all chapter office nominees have secured their uncontested positions. Special thanks to Kirsten Severud for seamlessly transitioning the election process to online.

When: Chapter meetings and presentations are now held the second Wednesday of each month at 7:00 pm.

Where: Our new meeting location is Idaho Fish & Game Headquarters (IDFG HQ), 600 S. Walnut St. (no longer at the MK Nature Center). Current information and more details on presentations and other chapter activities will be sent to members via email, and also be posted on the Pahove Chapter webpage: <https://idahonativeplants.org/pahove/>. Meetings and presentations will also be held via Zoom for those who can't make it in-person. If you have to miss the presentation entirely, they are also usually uploaded to the INPS YouTube channel (@idahonativeplantsociety3927). This is a treasure trove for anyone who wants to go back and revisit some of their favorite presentations of the past.

Past Events

November 12: The first presentation at IDFG HQ was a success. Jessica Irwin's informative presentation "Lava Fire Recovery: Window to a Changing Flora" is now available on the INPS YouTube channel.

December 10: Rachel Newton gave a presentation on the plants of Southern Chile.

Upcoming Events

January 8: Nate Collins and Josie Meyer will present on "Bogus Basin Forest Stewardship and Sustainability."

February 11: Sam Brockway will give a presentation, "Noxious Weeds of Ada County."

March 11: Barbara Ertter and Carol Prentice will present "A Botanical Web of Historical Women in Idaho and Beyond."

SAWABI CHAPTER

We welcome the public to our chapter's informative spring programs and warm weather plant walks.

When: All plant walks and spring programs are no longer prescheduled but will be announced via email.

Where: Programs are presented in Pond Student Union Building classrooms, ISU Campus, Pocatello.

Contact: For more information contact Paul Allen at pokyallen@hotmail.com.

WHITE PINE CHAPTER

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

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

Where: Meetings are held in-person in the 1912 Center Lecompte Auditorium (2nd floor) in Moscow. Video recordings of meetings will be available on our YouTube channel (@whitepinechapterinps9555) a few days after each meeting.

Contact: For more information about White Pine Chapter activities, contact us at INPS, White Pine Chapter, PO Box 8481, Moscow, ID 83843 or whitepine.chapter@gmail.com. Visit the chapter website for upcoming event information.

Upcoming Events

January 20: Presentation by Richie Thaxton, PhD student, Idaho Tree Ring Lab, University of Idaho, "The Amazing Nettle Hackberry: A Mixed-Method Approach to Understanding Changes in *Celtis reticulata* Populations on the Lower Salmon River, Idaho." 7:00 pm at the 1912 Center.

March 17: Presentation by Nancy Miller, INPS board member, "Plants and Birds of Iceland." 7:00 pm at the 1912 Center.

WOOD RIVER CHAPTER

The Wood River Chapter includes all of Blaine County.

When: We love to get out on trails throughout the year but generally focus on speaker presentations in the cold months and field trips in the warm(er) months. Most of our events are open to all...please join us! Besides scheduled events, we offer pop-up events at the last minute, which we announce via our email newsletter.

Where: Please see our website or email newsletter for detailed information on all of our upcoming events.

Contact: For more information about chapter activities, visit our webpage, <https://idahonativeplants.org/woodriver/>. You can also contact us and subscribe to our newsletter: woodriver@idahonativeplants.org

Past Events

December 13: The Annual Meeting and Holiday Party was held at the Hunger Coalition. Our board was busy planning events for the coming year! •

Fire Effects on Lichen Biodiversity in Longleaf Pine Habitat

Roger Rosentreter, Ann DeBolt and Brecken Robb

Abstract

Longleaf pine forests are economically important habitats that stabilize and enrich the soil and store carbon over long periods. When mixed with oaks, these forests provide an abundance of lichen habitats. The tree canopy lichens promote greater moisture capture and retention and encourage canopy insects. Ground lichens limit some vascular plant germination and growth, promoting a more open and healthy pine community. There is a longstanding mutualistic relationship between longleaf pine habitat and lichens. Longleaf pine habitat has a long history of natural summer burning, which promotes a diverse understory and limits tree densities. Lichen diversity exceeds vascular plant diversity in many mature longleaf pine habitats, yet information on the impacts of prescribed fire on lichen species in these habitats is limited. We assessed lichen diversity and abundance before and after a prescribed ground fire in a longleaf pine/wiregrass habitat near Ocala, Florida. Pre-burn, we found greater lichen abundance and diversity on hardwoods, primarily oak species, than on pines. Post-burn, lichen abundance on hardwoods dropped overall by 28%. Lichen abundance on conifers dropped overall by 94%. Ground lichen species were basically eliminated, with a 99.5% loss. Our study provides insights into retaining lichen diversity after a prescribed burn. Hardwood trees, whether alive or standing dead, help retain lichen biodiversity after burning, whereas conifer trees do not support as many species. Landscapes may need to be actively managed by raking pine needle litter away from ground lichen beds, moistening the ground, or removing some lichen material before the burn and returning it to the site post-fire. Based on these results, we suggest retaining some oaks and conducting burns in a mosaic pattern that retains unburned areas. This will allow for lichens to recover between burns, significantly enhancing biodiversity and the ecological health of these longleaf pine communities.

Keywords: prescribed fire; ecology; Florida; restoration; oaks; management

Citation: Rosentreter, R.; DeBolt, A.; Robb, B. Fire Effects on Lichen Biodiversity in Longleaf Pine Habitat. *Forests* 2025, 16, 1385. <https://doi.org/10.3390/f16091385>

Full Article: <https://www.mdpi.com/1999-4907/16/9/1385>

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Idaho Native Plant Society Membership Form

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- ☐ Loasa (Twin Falls)
- ☐ Pahove (Boise)
- ☐ Sawabi (Pocatello)
- ☐ Upper Snake (Idaho Falls) - *Inactive*
- ☐ White Pine (Moscow)
- ☐ Wood River (Ketchum/Sun Valley)
- ☐ No Chapter

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