



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

The Plight of Whitebark Pine

Article and Photos by Michael Mancuso, Pahove Chapter

Have you ever hiked a high mountain ridge in Idaho? Or pitched your tent at upper timberline? If the answer is yes, you have likely stood within the shadow of whitebark pine (*Pinus albicaulis*)—a 5-needle conifer that inhabits high subalpine elevations in western North America (Figure 1, Page 4). Whitebark pine may reach 60 feet tall on favorable sites, or be reduced to stunted gnarled clumps at the harshest limits of tree growth. Trees typically have smooth grayish bark, and older individuals often take on a lollipop growth form. Whitebark pine is monoecious, producing separate pollen (male) and ovulate (female) cones (Figure 2, Page 4) on the same tree. It begins to produce cones at 30–60 years of age, but generally exceeds 80 years old before having large cone crops. The amount of cone production within a stand of trees can vary greatly from one year to the next. Cone scales do not open to release seeds like most other pines. Instead, whitebark pine relies on Clark’s nutcrackers, a jay-like bird, to extract seeds from the cones. Seed caching by the nutcrackers serves to disperse and sow the seeds. Whitebark pine is slow growing and has the capacity to attain great age. Trees greater than 400 years old are common and they may exceed 1000 years. The White Cloud Mountains of central Idaho have the most ancient known individual at >1260 years old.

Whitebark pine’s extensive distribution spans approximately 30° of latitude and 20° of longitude. From its northern limit in northern British Columbia, whitebark pine extends southward to include the northern coastal ranges, Cascades, Sierra Nevada, northern Rocky Mountains, Blue and Wallowa Mountains, and several Great Basin ranges in northern Nevada. In Idaho, whitebark pine occurs in mountain ranges from the Canadian border southward to those overlooking the northern edge of the Snake River Plain. The Caribou Mountains near Palisade Reservoir are the only area in Idaho south of the Snake River known to have whitebark pine. Overall, approximately 70% of the species' range is in the United States, the rest in Canada. Nearly 90% of land occupied by whitebark pine in the United States is federally owned or managed.

Whitebark pine is considered a keystone species in high mountain ecosystems because it increases biodiversity, contributes to watershed protection and stabilization, provides food and habitat for numerous wildlife species, and promotes post-fire forest regeneration. Whitebark pine also functions as a foundation species in many areas due to its role in sustaining biodiversity, fostering community development, structure, and maintenance, and modulating important ecosystem processes. In addition to these critical ecosystem roles, whitebark pine has important aesthetic and recreational values in mountain landscapes and a history of cultural use by Native Americans.

Unfortunately, whitebark pine is a species in serious trouble. The main conservation threats are

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www.idahonativeplants.org
contactus@idahonativeplants.org

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Letter from the President

Tired of any and all references to COVID-19, “the virus,” “pandemic,” or “the new normal”? Me too. I am hoping we are on the cusp of simply forgetting the disruptive issues of the past year. But I realize, we are not done yet. Last Friday, I received the first of two doses of the COVID vaccine. It was a little tough on me for a day or two—body aches, chills and fever—but quickly faded. Also, I realize recommendations include the need to continue living cautiously, even after receiving the vaccine. Still too many unknowns. But I have to say, my heart is lighter and my attitude much improved. I have started planning my next native plant foray. I hear plants calling; I feel a strong need to satisfy my plant cravings and feel that the time is quickly coming to break out of my self-imposed isolation. Caution remains, but excitement has returned.

Receiving the vaccine has also made me more positive when I consider the possibilities of pulling off an INPS meeting this summer. I know that many of you are much lower on the vaccine priority list and that there is still a possibility that we will not get deep enough into the process to be comfortable meeting in person. But there is hope. And I personally believe we need to continue planning with that in mind. Let’s assume control of the virus will allow us to visit with our INPS friends, learn from each other, feel the emotions associated with doing something we love and communally partake of the offerings of nature.

Hope to see you this summer.

Stephen Love,
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 2021: Week 1: June 14-19 – Idaho State University. Week 2: June 20-26 – Mackay, Idaho Field camp.

The first week will be based from the ISU campus in Pocatello, and entail a mix of classroom time and local field trips. A private cabin north of Mackay, Idaho, will serve as base for the second week, which will include daily field trips and group plant identification sessions. The course provides an opportunity to acquire or upgrade field plant identification skills. You will also learn how to identify unknown plants using keys and regional floras, how to collect and prepare botanical specimens, and be introduced to basic ecological concepts relevant to field botany and field techniques to measure selected vegetation attributes.

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, 2021. 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 Summer 2021 Class Schedule, select Biological Sci, Course Number = 4499; 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.

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/> •

Chapter News

CALYPSO CHAPTER

When: Chapter meetings will remain suspended until after full COVID-19 vaccine rollout. Meetings are normally held the first Wednesday of March, April, May, and October at 7:00 pm.

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

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

Upcoming Events

Field trips take place during the spring, summer, and early fall. Assuming reasonable COVID-19 levels, small-group outdoor plant walks will begin in April.

Antione Peak Plant Surveys: We will be conducting surveys to generate plant list for the conservation area near the Spokane Valley. Surveys will start at 10:00 am. Tentative dates are April 17, June 5, July 17, and August 28. Everyone welcome. Watch for details via chapter email.

April 24: Plant Walk. Meet at the Nature Conservancy's Cougar Bay Preserve on the east side of US 95 at the bottom of Mica Hill at 10:00 am.

Other trips: We are soliciting additional ideas for spring and summer field trips at this time. Chapter emails will provide details. Contact Derek to be added to the email list.

LOASA CHAPTER

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

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 pm. Times, dates, and topics are tentative. Current information will be sent to members via email. Events are also posted on the Pahove Chapter page of the INPS website: <https://idahonativeplants.org/pahove/>

Where: Meetings are usually held at the MK Nature Center Auditorium, 600 S. Walnut St, Boise; for the safety of our community, they will be on Zoom until further notice.

Contact: For more information about Pahove Chapter activities visit the website: www.idahonativeplants.org or email Karie Pappani at pahove.chapter.president@gmail.com

Upcoming Events

March 9: Josh Newman, USFS Forester "Bogus Basin Forest Management"

April 13: Jennifer Sowerwine "Biocultural Systems, Food Security, and Eco-cultural Restoration in the Klamath River Basin"

May 9: Wonderful Wildflower and Weed Show, Idaho Botanical Garden (2355 Old Penitentiary Road, Boise), 11 am–4 pm. Cost is IBG Admission; free for IBG members and reciprocal admission program. Face Masks Required.

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Figure 1: Whitebark pine in Pioneer Mountain, Idaho

white pine blister rust (WPBR; *Cronartium ribicola*), mountain pine beetle (MPB; *Dendroctonus ponderosae*), altered fire regimes, and climate warming. These threats may interact to compound or accelerate their impact. WPBR is an introduced fungal disease that has a complex life cycle involving five different spore types and two different hosts. The fungus infects the needles of 5-needle pines (entering through the stomates) via spores produced on an alternate host—usually species of currants/gooseberries (*Ribes* sp.). The fungus spreads into the branches and often reaches the main trunk. Orange-colored “blisters” containing fungal spores erupt through the bark from infected tissue in spring/early summer (Figure 3). Spores released from these “blisters” are then transmitted via wind dispersal to the alternate host to perpetuate the cycle. WPBR girdles the infected branches and trunks, damaging or killing the tree. Even if not killed by WPBR, the disease tends to reduce seed cone production on the tree. WPBR is present and affecting whitebark pine populations everywhere in the species’ range—except in the Great Basin. In Idaho, whitebark pine stands in the Panhandle and north-central part of the state have been the hardest hit regions.

MPB is a native bark beetle affecting multiple pine species and an important contributor to forest ecosystem dynamics. It is the most damaging insect pest for whitebark pine and typically targets mature, reproductive-aged trees. MPB outbreaks can cause extraordinary levels of tree mortality over large areas in only a few years (Figure 4). Beetle larvae feeding within the phloem (vascular tissue beneath the outer bark) girdle and kill the tree. Epidemic outbreaks of MPB have periodically occurred in the past to cause widespread death of whitebark pine. However, tree mortality during the most recent epidemic that began around the year 2000 and began to subside only a few years ago, appears to be unprecedented. Temp-

erature directly influences all stages (egg, larva, pupa, adult) of MPB development and survival. Recent warming trends have benefited beetle expansion and establishment into cold, high elevation whitebark pine habitats that were less affected in the past. Warmer winter temperatures now allow over-winter survival of all MPB life stages. They also allow a 1-year rather than 2-year beetle life cycle to be sustained. Field data collected from >1400 US Forest Service Forest Inventory and Analysis plots found 51% of all standing whitebark pine trees dead in 2016, reflecting the combined effects of WPBR and MPB.

Wildfire has historically been an important disturbance factor maintaining whitebark pine across the landscape. However, many whitebark pine populations have been adversely impacted by a century of fire suppression policies. In the absence of periodic wildfires, successional changes may convert stands formerly dominated by whitebark pine to more shade-tolerant conifer species such as subalpine fir (*Abies lasiocarpa*) and Engelmann spruce (*Picea engelmannii*). Furthermore, fires create



Figure 2: Whitebark pine cones

sites suitable for seed caching by Clark’s nutcrackers and improve conditions for whitebark pine establishment. Another aspect of altered fire regimes to consider is the likely future increase in frequency and severity of wildfires related to climate change. More loss of whitebark pine from severe wildfire may be especially detrimental due to largescale declines already incurred by the species from WPBR and MPB.

How climate change will directly or indirectly impact whitebark pine or any other species is complex. Whitebark pine may be especially vulnerable to a warming climate because it is adapted to cool, high elevation habitats. Habitat loss is expected throughout the species’ range. Projected climate changes will likely exacerbate threats whitebark pine already faces such as MPB outbreaks and wildfire.

In light of its documented decline, vulnerability to widespread and ongoing threats, and the scope and imminency of these threats, whitebark pine was added to the U.S. Fish and Wildlife Service (USFWS) Candidate list for possible listing under the Endangered Species Act (ESA) in July 2011. A species status assessment document prepared by USFWS in October 2018 summarized the “current and future condition of whitebark pine to assess the species’ overall viability now and into the future.” This report formed the basis for evaluating whether or not to list whitebark pine under the ESA. In December 2020, the USFWS published a proposed rule to list whitebark pine as a Threatened species under the ESA. Finalization of the proposed rule is now pending.

Under the ESA, a determination that a species is Endangered or Threatened can be made based on any of five factors: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. In its evaluation, the USFWS determined WPBR to be the primary stressor affecting the status of whitebark pine (Factor C), but also recognizing the species is being impacted by MPB (Factor C), altered fire regimes (Factor E), and the effects of climate change (Factor E). In Canada, whitebark pine was listed as an endangered species in 2012 under that country’s Species at Risk Act.

Federal listing highlights and magnifies the plight of whitebark pine, but conservation work on behalf of the species’ has been ongoing for many years. Much of the research and application focus has been on breeding programs to develop WPBR resistant whitebark pine trees for planting in restoration projects. Identifying and col-



Figure 3: WPBR on a whitebark pine in Pioneer Mountains, Idaho

lecting seed from whitebark pine trees that show signs of rust resistance are part of this process. Research continues to try and improve methods to protect potential rust-resistant seed source trees from MPB. Protecting and maintaining the genetic diversity of whitebark pine is a parallel component of the breeding goals. Basic information needs such as mapping the location of whitebark pine stands and assessing levels of WPBR and MPB are ongoing; as are monitoring efforts needed to assess the status of whitebark pine and evaluate the efficacy of restoration efforts. Silvicultural practices such as planting, daylighting, and prescribed burning are being employed



Figure 4: Whitebark pine stand decimated by MPB in White Cloud Mountain, Idaho

in numerous restoration projects. Two non-profit organizations, American Forests (www.americanforests.org) and the Whitebark Pine Ecosystem Foundation (whitebarkfound.org) are collaborating with various federal agencies and tribes across the western United States to develop a core-area restoration plan for whitebark pine. This strategic plan will identify selected areas within the United States for priority restoration of whitebark pine, allowing for the prioritization and focus of resources. It will take a coordinated, sustained effort like this to promote the recovery of whitebark pine. The ecological and cultural importance of whitebark pine in high elevation habitats can hardly be overstated. It will continue to take enormous effort and resources and the long-term dedication of many people to ensure your children and future generations have the opportunity to walk the mountains and marvel while in the shadow of whitebark pines. •

Vegetation Changes 40 Years Along Idaho's Salmon River

By Roger Rosentreter PhD, former Idaho Bureau of Land Management (BLM) botanist

Astract:

I observed and measured vegetation change in the flood zone and in the uplands of the Salmon River over a 40-year period (1980-2020). Most native plant species are still present today, but many are less frequent than they were in 1980. Noteworthy vegetation changes include an increase in exotic plant diversity and abundance—either they are new to the river corridor or they were rare or uncommon in 1980. Woody weeds are of a great concern since they are difficult to control. Reed canary grass, *Phalaris arundinacea*, also difficult to control, has converted some river sections to a new, non-native vegetation type. Reed canary grass has increased throughout the river corridor, but especially in the headwaters, including along the Middle Fork of the Salmon. This grass looks similar to several other grass species, so managers have not addressed this problem.

Introduction:

Observations of vegetation changes over the last 40 years can help guide management strategies for the future. Knowing the species that are displacing desirable plants and how they affect biodiversity, fisheries, and hydrology is critical to management. In particular, the rocky flood zone of the large Salmon River basin creates some novel habitats that have not been well described and could be disappearing as we stand by and watch.

The Salmon River is one of the longest undammed rivers in the lower 48 states (Rosentreter 1984). Much of the river and its surrounding habitat remain public lands in their natural state. The lower reaches of the Salmon River rely on seasonal flooding for moisture since this section of the river flows through a more xeric landscape than do the headwaters.

Salmon River topography includes many steep hills and narrow, often vertical, bedrock canyon walls. Due to the lack of dams on this river system, spring floods from snowmelt can increase flows up to 100x or more above winter low flows (Rosentreter 1984). In the lower reaches of the river, the mean high-water zone is about 5.5 meters, while the extreme flood zone is greater than 9 meters. Within this zone, bare rock, lichens, mosses, and a few hardy vascular plants form unique plant communities (Rosentreter 1984, 1992, 1994).

Moss community:

Aquatic mosses rely on bicarbonate CO₂, so they re-

quire natural aeration by rapids. Some streams and rivers, for example the Grand Canyon of the Colorado River, have such a high sediment load that the persistent abrasion of the rocks greatly limits or excludes aquatic lichens and mosses completely.

Rivers with moss species composition and zonation similar to that found along the Salmon River include North American northwestern rivers with natural flow regimes, and many of the streams that flow from the Andes in southern South America. Along the Bio Bio River in Chile, *Scouleria aquatica* is replaced by *S. patagonica* (see Rosentreter collections at Boise State University, Snake River Plain (SRP) herbarium).

Methods:

Intuitively controlled field surveys and site reviews at specific campsites and their adjacent hiking trails were conducted over the last 40 years by the author. At many of these sites, photo points were established. The author's herbarium collections were evaluated in consultation with other plant collectors. While these methods are more qualitative than quantitative, they remain helpful for a comparative time sequence. I also revisited sites where quantitative data were collected, but because the exact plot was not monumented, the resurvey information was only a relative change from the quantitative data taken at an earlier time (Rosentreter 1992, Bowker et al. 2004).

Results and Discussion:

The Salmon River boasts an especially large flood zone, since it is an undammed river system (Rosentreter 1984). Most of its headwaters and much of the shoreline of the lower reaches are protected as wilderness or open public lands. There is little human development along most of the river. The lower reaches contain plant communities that are declining or being displaced by non-native species.

The specifics on some of the Salmon River's declining native plant species and increasing non-natives are discussed below and in Tables 1 and 2. My observations on the causes of the decline in native vegetation changes are qualitative, but are hopefully beneficial for planning and land management purposes. Photographs were not as informative as anticipated. Forty years ago, some exotic species were only present in highly disturbed sites, but are now infrequent to common in many habitats, even

those with limited human disturbance. Riparian areas, by their very nature, are disclimax sites that experience periodic flooding, localized erosion, and landslides (Rosenreter 1992). Therefore, riparian corridors are prone to supporting disturbance-loving species. Examples of some of the exotic species of concern on the Salmon River are detailed below.

White mulberry trees appear to be native netleaf hackberry trees from a distance, but in fact, they are quite different. Netleaf hackberry trees support over a hundred native insects and its leaves are often covered with insect galls. White mulberry trees were introduced from China, in hopes of growing silkworms commercially, but the worms did not survive in our climate. All parts of the white mulberry are poisonous, except the ripe fruit, and no native insects are known to use white mulberry plants. Even the pollen of white mulberry is an irritant, and many states consider the tree noxious due in part to the pollen's allergenic properties. Domestic grazing animals and wildlife avoid white mulberry. In contrast, the native hackberry is sought after by wild turkeys, for the insects within the leaf galls. Many bird species benefit from all the insects it attracts, and bighorn sheep and deer will readily eat netleaf hackberry leaves.

White mulberry plants along the Salmon River rarely grow as trees, but more as thickets. White mulberry plants often become tangled woody thickets with the

roots extending from low water up to and beyond the rivers high water mark, but only if connected to a water source. Periodic flows knock back the branches, creating this entangled, 10 square meter area of multi-stemmed growth. Such areas were previously considered open rock or lichen habitat. Male and female flowers are usually on separate trees. Although few trees along the Salmon River appear to be females (fruit is rarely found), there must be some females since the species continues to increase in number. There are no studies to evaluate what this has done to fishery resources or other native animal or plant species.

Exotic species that superficially look like common desirable native plants seem to lack the management priority and detection concern that other exotic species garner. For example, lead plant was first noted in 1990, near the U.S. Forest Service jetboat dock on the Oregon side of the Snake River. At that time, there was only a single plant. Lead plant is now common in many areas along the Snake River, though it is still uncommon on the Salmon. Lead plant is a tall shrub with oily leaves and fruit. It forms a dense monoculture along some lower elevation drainages in Idaho, such as the Payette and the Boise rivers. Lead plant is unpalatable, and therefore increases when herbivores (wildlife, including beaver, and domestic livestock) eat its more palatable native plant competitors.

Table 1. Native plant species that have declined along the Salmon River between 1980 and 2020.


Common name	Scientific name	Species status notes
Netleaf hackberry	<i>Celtis reticulata</i>	Aging plants, drought, and competition from weedy exotic plants in the early stages of development.
Mountain mahogany	<i>Cercocarpus ledifolius</i>	Wildfire, drought, increased grazing pressure, since there are fewer edible shrubs in the winter for wildlife and livestock.
Riverbank wildrye	<i>Elymus innovatus</i>	Once common, but now weedy species fill that niche, so it is rare and has declined or disappeared on other river systems, such as along the Payette River.
Low goosefoot	<i>Chenopodium chenopodioides</i> syn = <i>C. botryodes</i>	Not found in 2020. Palatable, it may have been eradicated by herbivores.
Torrent sedge	<i>Carex lenticularis</i>	Less common, some plants lost to abrasive forces and not recolonized due to changes in soil conditions and competition with invasive species. Only occurs below mean high water.
Mannagrass	<i>Glyceria striata</i>	Tall palatable grass that grows along the river's edges.

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INPS Provides Comments on Draft Environment Assessment for Kilgore Gold Exploration



The Caribou-Targhee National Forest of the U.S. Forest Service released the "Draft Environmental Assessment, Kilgore Gold Exploration" for public comment. The Idaho Native Plant Society reviewed this document related to gold mining exploration activities in Idaho's Centennial Mountain. INPS became concerned that the proposed activity will have an impact on the local population of whitebark pine (*Pinus albicaulis*). The U.S. Fish and Wildlife Service is recommending that whitebark pine be listed as a threatened species under the Endangered Species Act. They anticipate its listing to become official by December of this year. Here are the comments we prepared and sent by letter to the Caribou-Targhee National Forest. •

Idaho Native Plant Society 

Idaho Native Plant Society
P. O. Box 9451
Boise, ID 83707
www.nativeplantsociety.org

Diane Wheeler, Geologist and Project Lead
Caribou-Targhee National Forest
1405 Hollipark Drive
Idaho Falls, Idaho 83401
diane.wheeler@usda.gov
comments-intermtn-caribou-targhee@usda.gov

Reference: Draft Environmental Assessment, Kilgore Gold Exploration

Ms. Wheeler:

The Idaho Native Plant Society is a non-profit organization with over 400 members dedicated to promoting interest in native plants and plant communities and collecting and sharing information on all aspects of botany relative to Idaho native plants. We thank the U.S. Forest Service for the opportunity to comment on the draft Environmental Assessment (EA) for the Kilgore Gold Exploration Project. We have concerns related to whitebark pine (*Pinus albicaulis*).

As pointed out in the draft EA, the U.S. Fish and Wildlife Service (USFWS) is proposing to list whitebark pine as a threatened species under the Endangered Species Act. The draft EA clearly indicates there will be impacts to the whitebark pine population within the project footprint. Distinctly unique ecological units are found within the main project footprint that specifically support the whitebark pine population in this region. We do not see any indication that USFWS has reviewed or approved the impacts to whitebark pine described in the draft EA. We urge the Caribou-Targhee National Forest to coordinate with USFWS on the impacts of this exploration activity and make adjustments as necessary.

We recommend the Caribou-Targhee National Forest take a longer-term perspective - when evaluating impacts to whitebark pine - than is presently incorporated into the draft EA document. We assume the goal of this exploration activity will be the eventual exploitation of any usable resources discovered. The USFWS anticipates the listing on whitebark pine by December 2021. We also assume that the exploitation of the mineral resource will have a larger footprint and thereby a larger impact on whitebark pine than the exploration. The draft EA should consider the reduced likelihood that this larger impact to whitebark pine will be

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permitted given this species likely status as an ESA threatened species. We see no point in conducting the exploration if the eventual exploitation will not be approved.

If you have questions concerning these comments, please contact the chair of our Conservation Committee - Derek Antonelli, ds.ca.antonelli@gmail.com, (208) 691-1070.

Sincerely,


Stephen L. Love, President
Idaho Native Plant Society

Copy to: Idaho Fish and Wildlife Office (ifwo@fws.gov)

First Population of Western Moonwort Discovered in Idaho



Harpo Faust, a graduate student at the University of Idaho, discovered the first known Idaho population of western moonwort (*Botrychium hesperium*) while completing work on the flora of Idaho's Selkirk Mountains during the summer of 2020. She discovered the western moonwort in the prism of the old Bog Creek Road along the Canadian border. The western moonwort is a species that grows in open, gravelly soils that occur in disturbed areas such as avalanche chutes and forest fire remains. Old road prisms make a good substitute for this kind of habitat. Unfortunately, the U.S. Forest Service and the U.S. Customs and Border Protection Service have plans already in place to upgrade Bog Creek Road to provide better access for border patrol. If road construction occurs without taking the western moonwort into consideration, it is likely the entire population will be destroyed. As a member of the North Idaho Rare Plant Working Group, Harpo brought the situation to the attention of the Idaho Native Plant Society. INPS prepared and sent the following letter to the USFS and USCBP. •

Idaho Native Plant Society 

Idaho Native Plant Society
P. O. Box 9451
Boise, ID 83707
www.nativeplantsociety.org

Ms. Kim Pierson, Deputy Forest Supervisor and Project Lead
Idaho Panhandle National Forests
3815 Schreiber Way
Coeur d'Alene, Idaho 83815

Mr. Joseph Zidron
Real Estate and Environmental Branch Chief
Border Patrol and Air and Marine Program Management Office
U.S. Customs and Border Protection
24000 Avila Road, Room 5020
Laguna Niguel, California 92677

Reference: Bog Creek Road Project

Ms. Pierson and Mr. Zidron:

The Idaho Native Plant Society is a non-profit organization with over 400 members dedicated to promoting interest in native plants and plant communities and collecting and sharing information on all aspects of botany relative to Idaho native plants. We thank the U.S. Forest Service and the U.S. Customs and Border Protection for your efforts to protect the environment of Idaho through the development of the Environmental Impact Statement for the Bog Creek Road Project. We wish to point out a change in conditions since the EIS was completed. A population of western moonwort, *Botrychium hesperium*, was discovered in the Bog Creek Road prism during the summer of 2020. This is the first and only population of western moonwort discovered within the state of Idaho. We understand reopening this road is important for protecting the border of the United States. We believe that with reasonable care during the construction phase for Bog Creek Road the population of western moonwort can be preserved.


The western moonwort population on Bog Creek Road was discovered by a University of Idaho graduate student working to define the flora of the Selkirk Mountains in northern Idaho. Western moonwort is considered a sensitive plant by the U.S. Forest Service in the state of Montana. Having only recently been discovered in Idaho, western moonwort is, of course, not yet on the Idaho sensitive species list. The North Idaho Rare Plant Working Group has

reviewed the status of the species and has recommended a rank of critically imperiled (S1) for the species. The Idaho Rare Plant Conference is expected formalize this rank when it next meets in 2022.

The western moonwort is a species that is found in gravelly soils of meadows, forest glades, avalanche chutes, vegetated talus/rock slopes, and old burns. Old road beds mimic these conditions and provide additional habitat for the species. The species can tolerate some disturbance and should be able to survive road construction if reasonable care is taken. For instance, blading this section of road with a grader would undoubtedly destroy the entire population, but brushing this section by hand would leave the majority of the population intact. With the low level of use proposed for the road, the population could survive indefinitely. We propose conducting a joint survey of the site to determine if hand brushing this section of the road can adequately prepare the road bed for its intended use. Other alternatives could be evaluated to find better options. At this same time the surrounding area could be surveyed for additional populations of western moonwort. Surveying during the weeks of July 19 or July 26 would be best for finding the moonworts.

If you have questions on this matter, please contact Derek Antonelli, ds.ca.antonelli@gmail.com, (208) 691-1070.

Sincerely,



Stephen L. Love, President
Idaho Native Plant Society

Table 2. Non-native and nuisance native species that have increased along the Salmon River between 1980 and 2020.

Common name	Scientific name	Species status notes
Winged pigweed	<i>Cycloloma atriplicifolium</i> (Spreng.) J.M. Coult.	Recent introduction to the river from the midwest. A weed in sandy soil, only along the lower reaches.
Witchgrass	<i>Panicum</i> spp.	Warm season grass, increases due to climatic warming.
Lead plant	<i>Amorpha fruticosa</i>	Branching shrub, low palatability, and abundant fruit, increasing mostly on controlled or dammed sections of the Snake River with potential to move up the Salmon River.
White mulberry	<i>Morus alba</i> Most of the plants are a hybrid of <i>Morus alba</i> x <i>rubus</i> . Most of the plants appear to not produce fruit; possibly male or sterile hybrids.	Larger trees and more abundant, both below and above high water (4x increase). This unpalatable plant is moving into a niche few other plants can survive due to its extensive root system. This eliminates the bare rocky zone that is characteristic of the lower Salmon river.
Mahaled plum	<i>Prunus mahaleb</i>	Increasing along the highway in the more accessible areas near Lucille, Idaho.
Mediterranean sage	<i>Salvia aethiopsis</i>	This species has greatly increased and is now a common "tumble weed" found within the canyon. Seed and plants are deposited by wind.
Poison ivy	<i>Toxicodendron rydbergii</i>	Increases perhaps due to climatic warming, only a slight increase. It is native but unpalatable to most animals.
Reed canary grass	<i>Phalaris arundinacea</i>	Invasive native/exotic perennial grass often introduced in hay. Once established, it will exclude all other plants, including willows and other desirable species. Uncommon in the 1980s, it has increased in the upper watershed in particular, due to the transport of domestic hay and low palatability (palatability is reduced once it heads out).
Horseweed	<i>Conyza canadensis</i>	More common.
Spotted knapweed	<i>Centaurea stoebe</i> L. ssp. <i>micranthos</i> (Gugler) Hayek, syn = <i>C. maculosa</i>	More widespread than before, seeds dispersed by wind. Low palatability.
Bouncing Bet	<i>Saponaria officinalis</i>	Increasing non-palatable soap plant.

Acknowledgements:

I would like to thank the many river companions who over the years have had to tolerate my plant adventures and collecting. I would like to thank my friend and colleague Joey Milan for several insect biocontrol monitoring trips down the Salmon River, and I also thank Ann DeBolt and Emma Casselman for comments on this manuscript.

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PAHOVE CHAPTER (Continued)

May 11: Derek Antonelli "Conifers of Idaho"

Annual Native Plant Sale: The Plant Sale is scheduled for April 23-25. Orders will be placed online and picked up at MK Nature Center. Details will be announced via email and on the Pahove Chapter page of the INPS website.

SAWABI CHAPTER

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

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

Contact: Geoff Hogander, ghogande@yahoo.com.

Upcoming Events

Annual Chapter Meeting: We are all looking forward to having in-person meetings and plant walks again. Hopefully the Annual Chapter Meeting in April where we plan our weekly outings can be held face to face. Notices with details will be emailed to members as the time approaches.

Statewide Annual Meeting: June 17–22. Things are progressing well since most of the groundwork was laid last year before we had to cancel. If you have an item to donate to the ERIG silent auction please let us know on your registration form. We already have two folks registered and are looking forward to seeing you all in Pocatello.

UPPER SNAKE CHAPTER

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

WHITE PINE CHAPTER

When: Meetings are held once a month at 7:00 pm except during the summer. Field trips can occur most any month. Please check the chapter website at www.whitepineinps.org for events which may be scheduled or finalized after *Sage Notes* is printed; or email chapter officers at whitepine.chapter@gmail.com.

Where: Great Room of the 1912 Building, 412 East Third St. in Moscow (between Adams and Van Buren).

Contact: INPS, White Pine Chapter, PO Box 8481, Moscow, ID 83843 or whitepine.chapter@gmail.com.

Past Events

February 17: Whitepine hosted a very informative and beautiful presentation via Zoom. Presenter: Douglas Shinneman, Research Fire Ecologist, U.S. Geological Survey on "The Dynamic Influence of Climate and Fire on Aspen Forests of the Western U.S." Dr. Shinneman is very knowledgeable about the habitat, species and needs of Aspen to thrive in a changing landscape.

Upcoming events

Due to COVID-19, we are doing all of our presentations online. There is a downside in not being able to gather yet in person. The upside is being able to welcome attendees from around the state and region via the online format. Other presentations for March and April are currently in the planning stages.

Annual Native Plant Sale: Week of May 11 through 17. Due to anticipation of continued restrictions due to COVID-19 and the continued focus on protecting the health of our community, we are planning an online sale. Information on the Plant Sale and upcoming presentations may be obtained by watching our website: www.whitepineinps.org and Facebook page, IdahoNativePlantSocietyWhitePineChapter. Another option is to send us an email: whitepine.chapter@gmail.com to request being placed on the mailing list.

WOOD RIVER CHAPTER

When: Meetings are held on weekday evenings and wildflower walks generally on Saturdays. Times are announced in local news outlets and also in the chapter newsletter. Events are also posted on the Wood River Chapter page of the INPS website.

Where: Each meeting's location is noted in the announcement.

Contact: Subscribe to the newsletter by emailing Lisa Horton at 1gypsy2016@gmail.com. Address questions about programs to Kristin Fletcher at naturewalker7@gmail.com.



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Palouse Prairie Field Guide

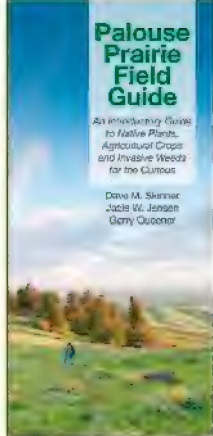
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Newsletter of the Idaho Native Plant Society • Promoting Interest in Idaho's Native Flora

Aase's Onion Monitoring in the Boise Foothills

By Michael Mancuso, Pahove Chapter

Aase's onion (*Allium aaseae*) is a low-growing plant with a striking display of small pink flowers that bloom in early spring (Figure 1). Its global distribution is limited to southwestern Idaho, primarily in the Boise to Emmett foothills, but also with a few disjunct populations near Weiser. Aase's onion occupies dry, relatively sparsely vegetated, well-drained, sandy soil slopes, usually within bitterbrush or bitterbrush–big sagebrush plant communities. Much of this habitat has been degraded by weed invasion and other disturbance over the years. Furthermore, portions of multiple Aase's onion locations have been destroyed, mainly due to urban development in the Boise foothills area. The majority of locations known to support Aase's onion in the Boise foothills occur fully or partially on private property. However, Ada County, City of Boise, State, and Bureau of Land Management lands also support substantial Aase's onion populations.

Aase's onion has been on the INPS Idaho Rare Plant List since the list inception in the 1980s. It is a conservation concern because of its restricted geographic range; the documented loss and degradation of habitat, especially in the Boise foothills; the vulnerability of its habitat to threats such as wildfire, weed invasion, sand mining, recreational impacts, and foothills development; and

the location of many occurrences on private land, where conservation options are typically limited.

Populations of Aase's onion in the Boise foothills are found within five City of Boise (COB) open space properties, including Camel's Back Reserve, Hillside to Hollow Reserve, Hulls Gulch Reserve, Military Reserve, and Polecat Reserve. The first systematic effort to document Aase's onion occurrences in the reserves and other portions of the Boise foothills took place in the early 1990s. A series of surveys in the reserves in 2008 updated much of this documentation and also discovered some new populations. Information collected during these previous surveys represent our "baseline" conditions for Aase's onion abundance and its habitat in the foothills.

In 2021, and as a response to growing conservation concerns, the INPS Pahove Chapter and COB/Department of Parks and Recreation teamed up to initiate a long-term monitoring program for Aase's onion in COB reserves. The monitoring program's objective is to provide COB land managers with information to assess the conservation status of Aase's onion and to inform any conservation actions that may be needed. The goal of the program is to collect Aase's onion population abundance and habitat condition trend information. These monitoring data can be used to prioritize invasive species management treatments, educate the public about rare plant conservation efforts in the foothills, and guide other possible proactive conservation measures. This project marks the first monitoring effort ever undertaken for Aase's onion in the Boise foothills.

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Letter from the President

I thank President Mike Mancuso for allowing me one last opportunity to communicate with the INPS membership at the end of my tenure as president. I feel a deep need to thank each of you for your support, and more importantly, your friendship during this period of my life. I especially wish to thank the members of the board and the other chapter officers for their collegiality. I have found extreme pleasure in working with people who are willing to dedicate precious time to a cause they obviously value.

Most of you will recall the months five years ago that followed my collision with a massive heart attack. For seven months, I was completely out of public circulation. My life and future hung in the balance. It would have been easy for me to give up on INPS service at that point. Also, it would have been logical for the board to replace me. But, due to ongoing support for me (or maybe hesitation on the part of everyone to take the organizational reins), the board and membership patiently awaited my return. I have never expressed this sentiment, but pending responsibilities associated with our organization were key to strengthening my will as I pushed toward recovery. Thank you all for your understanding and support during those very difficult months.

I plan to continue service to INPS. In my new role as vice-president, I will be heavily involved in overseeing the planning of our annual meetings. I am excited about the new opportunities this service will create for me personally. I look forward to my continued association with each of you. I have deep appreciation for this organization and the dedicated people working to advance its mission. Thank you for making my life more interesting and fulfilling.

Stephen Love,
INPS Vice President

2021 INPS Annual Meeting

By Geoff Hogander, Sawabi Chapter

The Annual Meeting of the Idaho Native Plant Society was hosted this year in Pocatello by the Sawabi Chapter, June 17-21. There were a few early arrivals on Thursday night, but Friday was the real start. Those who had ar-



Volunteer and members at the registration table.

rived by 10 am were taken on a tour of the Idaho Museum of Natural History which included the Ray J. Davis Herbarium, as well as a look in the basement collections for paleontology, geology and anthropology. A second tour started at 2 pm and included the same behind-the-scenes peek at what the museum stores and manages. Both tours allowed participants to visit the current exhibition "This is Idaho" which highlights why we love this state. The Board of Directors met via Zoom at the museum. Afterwards they joined others at the group shelter.

The potluck dinner at the group site was followed by Paul Allen's "Botany Bingo" that had us matching photos from his slide show to bingo cards he had made. Several folks won the prize of a deck of cards featuring wildflowers made from the same photos.



Paul Allen leading a plant walk.

Saturday activities featured plant walks to the Allen cabin in a mixed forest/steppe habitat, the Hells Half Acre Rest Stop on Interstate 15 in a lava flow, and walks through the Forest Service's Cherry Springs Natural Area along the Mink Creek riparian area. Later the catered dinner was followed by the Annual Meeting. Mike Mancuso was elected President and Janet Bala was re-elected as Secretary. The fund-raising auction for ERIG was concluded, generating more than a thousand dollars. We then honored Steve with a gift certificate to a local restaurant and several signed "Thank-you" cards. Karl Holte was also honored by the Sawabi Chapter for all that he has contributed to the chapter and students at ISU. Mike Merigliano's talk on "Tall Forb Plant Communities" wrapped up the evening. Dr. Merigliano is studying the impact of pocket gophers on tall forb communities that live at high altitude on north-eastern slopes that receive heavy snowfall.

Sunday activities included plant walks at the Pebble Creek Ski area; tours at the University of Idaho Plant



Talking plants.

Experiment and Research Station (hosted by Steve Love); two walks on Scout Mountain which included the Forest Service's Nature trail; and a more detailed look at the "bog" found next to the campground. Later that evening several of us sat around the tables finishing up the leftovers from the catered dinner and talking into the night.

Monday morning Paul Allen stopped by the site and picked up the folks who signed up for the car tour/plant walk along a Forest road off of Crystal Summit. After they returned, folks started packing up and headed back to their homes. •

The INPS-COB collaboration led to the establishment of 23 Aase's onion monitoring plots within the 5 COB reserves in Spring 2021. Data collection consisted of counting or estimating the number of Aase's onion plants and recording plant community, weed species, and disturbance factor information within a 1/10 acre circular plot. A series of photographs were also taken at each plot (Figures 2 and 3). The center point of each plot was documented by GPS coordinates. Moving forward, the plan is to resample the plots every three years.

A preliminary review of the 2021 monitoring dataset shows some Aase's onion sites doing quite well, but others barely holding on. Aase's onion abundance ranged from fewer than 10 to several 1000 individuals in a plot. Animal digging (mainly pocket gophers) and wildlife



Figure 2. Plot location in Hillside to Hollow Reserve. Photo by Michael Mancuso.

tracking (mainly deer) were the most common disturbances recorded in plots. Dog tracks and recreational trails were also recorded in multiple plots. Sampling tallied a total of 17 weed species in the plots. Cheatgrass was the only weed species found in every plot, with abundance ranging from dominant to sparse. Rush skeletonweed, a noxious weed species, was recorded in all but one plot, being common in most cases. Blue bachelor button, another weed of special note in the foothills, occurred in 61% of plots.

In addition to Aase's onion, the Boise area foothills support populations of three other rare plant species—Boise sand-verbena (*Abronia mellifera* var. *pahoveorum*), Mulford's milkvetch (*Astragalus mulfordiae*), and slickspot peppergrass (*Lepidium papilliferum*). In 2019, INPS and COB collaborated to collect monitoring data at 12 pre-existing Mulford's milkvetch monitoring plots located in the Boise foothills. These plots had not been sampled since 2008. I see the Mulford's milkvetch and



Figure 1. Aase's onion. Photo by Robert Moseley.

now the Aase's onion monitoring programs as opportunities for the INPS Pahove Chapter to be directly involved in rare plant conservation efforts in the Boise foothills. We have tentative plans to get monitoring efforts off the ground for Boise sand-verbena in 2022. If this happens, the Pahove Chapter would have an annual monitoring schedule rotating between the three species, ensuring the collection of updated monitoring data for each species every third year. Having such up-to-date information will help provide rationale for COB conservation efforts and hopefully make them more timely, efficient, and effective.

Boise and adjoining communities comprise one of the fastest growing urban areas in the United States. An extensive network of open space reserves and associated trail systems are main attractions to living and working in the area. The growing population is putting an unprecedented strain on open space resources, largely due to



Figure 3. Plot location in Military Reserve. Photo by Don Essig.

the popularity of these areas for a range of recreational opportunities. Disturbances associated with recreational use are leading to increased rates of erosion, weed

...Continued on Page 6

Plant Photography and Identification: Tips and Tricks

Article and Photos by Emma Casselman

Most of us have been on both sides of a plant photograph, and nothing is more disappointing than going back to identify a plant and realizing your photos are of no help identifying your new friend. Photos are a more eco-friendly and convenient method of collecting samples. While plant samples are often necessary for official records, photos are a preferred alternative that helps maintain larger populations and preserve smaller communities.

Photos on the phone

With the advancement of technology, most people have some sort of a camera phone with them when they encounter a new bloom. When taking photos on a phone, there are a few key things to keep in mind:

1. Focus. Making sure the photo you are taking is in focus is crucial to plant identification. Tapping the middle of your phone screen (on the image of the plant) will help tell the camera what it needs to be focusing on. Additionally, if you find your hands shake while taking photos it may be best to hold your phone closer to your body as this stabilizes the camera phone. Alternatively, you can also prop your phone up against rocks, purchase a pocket-sized tripod, or use anything else that may help stabilize your phone.

2. Subject matter. When taking photos of plants for identification it's important to get close-up photos of three things: the flowers or any reproductive parts of the plants, the leaves and how they are arranged on the plant, and a shot of the whole plant and its environment. These are the things that a plant identification book (or your resident botanist friend) will likely ask about. It is

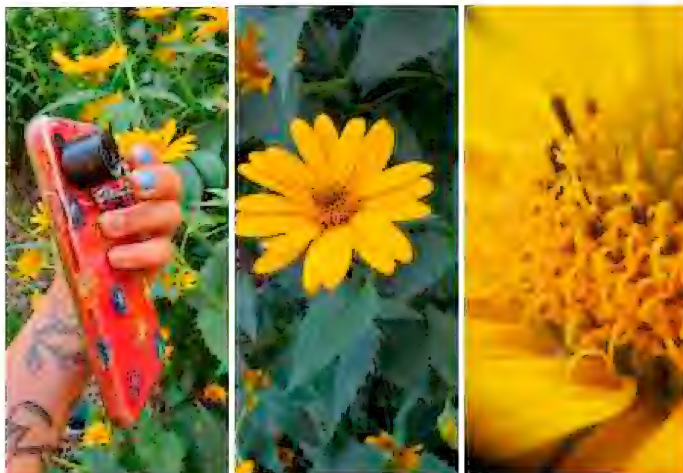


Figure 1. Phone/hand lens setup, photo without using a hand lens, photo using a hand lens.

also helpful to take photos from multiple angles so that all the plant's features are captured!

If you have a hand lens, try taking a photo through it! Although these photos are notoriously tricky to get into focus, it can produce great results (Figure 1). It is easiest to put the hand lens up to the phone lens, and then move them together closer or farther from the feature you wish to capture. Moving the phone/hand lens unit 'manually' focuses the camera.

3. Size reference. When taking photos of a plant it is always good to take a photo with an object next to the plant to gauge its height and width as seen in Figure 2. Not all of us carry around rulers to measure plants, but any object of known size will work. Common reference objects typically include the following: a ruler (often found in the front or back of a field guide), hand lens, coin, or a person (for taller plants).

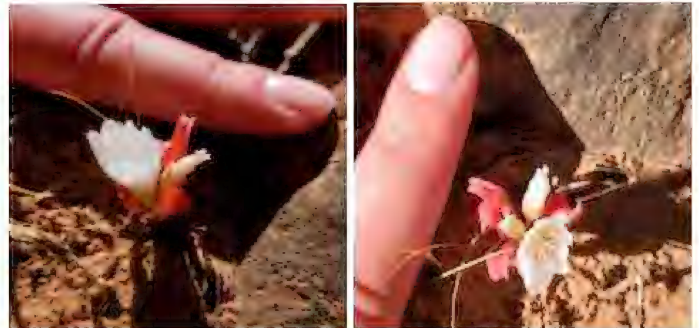


Figure 2. Example of a good reference photo containing an unknown plant.

4. Unusual features. If you notice anything unusual about the plant it is likely an identifying factor that should be documented, so take a photo of it! If the feature is too fine to appear in the photo, write a note describing its appearance and location on the plant.

Physical sample collection

Physical samples are often preferable to photos, so if there are enough individual plants (100 or more) that you can safely take a sample, do! Here are a few tips for how to take samples and preserve them for later identification:

1. Take Notes. Helpful things to take note of are the date, time, location (latitude, longitude, and altitude), the weather, and the surrounding habitat type. These can help you narrow what type of plant you have found through its geography and terrain.

2. Take a complete sample. Often when given a plant to identify, botanists are handed a singular leaf or flower

...Continued on Page 6

invasion, wildfire risks, and decline in native plant community integrity. These adverse impacts extend into foothills habitat occupied by Aase's onion and other rare plant species. Maintaining populations of Aase's onion in COB open space reserves is crucial to the species' long-term conservation. The same can be said for Mulford's milkvetch and Boise sand-verbena. Monitoring is just one of several roles INPS can be part of in helping the COB protect and maintain rare plant species populations on its reserves.

Plant Photography...Continued from Page 5

of a plant ('eco-scraps' if you will). To correctly identify a plant, the stem, flower, leaves, and sometimes the roots are needed. This allows us to observe things like leaf arrangement and flower form. Obviously, taking a whole plant as a sample is not always possible (for example, trees). Getting as complete a sample as possible like a branch, or large portion of plant, is helpful when going through the identification process.

3. Preservation. If you don't have the time or means to immediately identify your sample, there are a few methods of preservation. If you are hiking, plant samples can be stored temporarily in a paper or plastic bag before transferring them into a plant press for drying. Samples that need to be stored for longer periods can be kept in the fridge, or in the case of long-term storage, the freezer.

The Aase's onion monitoring project was collaboration and could not have happened without the support of Martha Brabec, COB/Department of Parks and Recreation ecologist. Success also required the dedicated assistance of INPS volunteers Dondi Black, Ann DeBolt, Don Essig, Michael Mancuso, Sallie Morse, and Jan Reed. Marta Soderlund with the COB also provided help with the project. •



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Figure 3. A complete sample with roots, leaves, flowers, and environmental collection data.

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Chapter News

CALYPSO CHAPTER

When: Chapter meetings will remain suspended until this fall. Meetings are normally held the first Wednesday of March, April, May, and October at 7:00 pm.

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

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

Upcoming Events

August 14: Moose Lake Plant Walk. Watch for details via chapter email.

August 28: Antione Peak Plant Surveys. We will be conducting surveys to generate plant list for the conservation area near the Spokane Valley. Surveys will start at 10:00 am. Everyone welcome. Watch for details via chapter email.

LOASA CHAPTER

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

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 pm. Times, dates, and topics are tentative. Current information will be sent to members via email. Events are also posted on the Pahove Chapter page of the INPS website: <https://idahonativeplants.org/pahove/>

Where: Meetings are usually held in the MK Nature Center Auditorium, 600 S. Walnut St, Boise. For the safety of our community, meetings will be held via Zoom until further notice

Contact: For more information about Pahove Chapter activities visit the website: www.idahonativeplants.org or email Karie Pappani at pahove.chapter.president@gmail.com.

Upcoming Events

Our 2020-21 season looked a bit different than other seasons in the past. Remarkably, our monthly presentations continued, even though we weren't able to gather in person. Those online presentations can now be viewed on the new Idaho Native Plant Society YouTube Channel (<https://www.youtube.com/channel/UCCuYDvZ49hQfFAAtXJc4JA>). Our plant sale, which was online again this year, was a huge success. The Wildflower and Weed Show, hosted this year at Idaho Botanical Garden, was also a big success. Thank you to everyone who participated in our presentations and events, purchased plants from our sale, and otherwise supported the Pahove chapter during this exceptional year.

The 2021-22 season will kick-off this September. Stay tuned for further details, which will be posted via email on the Pahove Chapter page of the INPS website.

SAWABI CHAPTER

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

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

Contact: Geoff Hogander, ghogande@yahoo.com.

UPPER SNAKE CHAPTER

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

WHITE PINE CHAPTER

When: Meetings are held once a month at 7:00 pm except during the summer. Field trips can occur most any month. Please check the chapter website at www.whitepineinps.org for events which may be scheduled or finalized after *Sage Notes* is printed; or email chapter officers at whitepine.chapter@gmail.com.

Where: Meetings will be held via Zoom until we can meet again in the Great Room of the 1912 Building, 412 East Third St. in Moscow (between Adams and Van Buren).

Contact: INPS, White Pine Chapter, PO Box 8481, Moscow, ID 83843 or whitepine.chapter@gmail.com.

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When: Meetings are held on weekday evenings and wildflower walks generally on Saturdays. Times are announced in local news outlets and also in the chapter newsletter. Events are also posted on the Wood River Chapter page of the INPS website.

Where: Each meeting's location is noted in the announcement.

Contact: Subscribe to the newsletter by emailing Lisa Horton at 1gypsy2016@gmail.com. Address questions about programs to Kristin Fletcher at naturewalker7@gmail.com.

Upcoming Events

August 7: West Fork of Prairie Creek. Abundant wildflowers and talus covered peaks make this a very picturesque hike. Hike difficulty rating: Medium Difficulty, around 4 miles in length and may involve a stream crossing. Meet at LCPL to leave by 8:45. Parking at the trailhead is limited, so we may carpool from the Prairie Creek road pull-off. Back at the car around 3.

August 20-22: 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. Cost per RV or tent will be \$25 inclusive of the two nights (or even if you only stay one night). To sign up, contact Lisa at 208-721-1798.

For more information on any hike, please email woodriverinps@gmail.com or call Lisa at 208-721-1798. •



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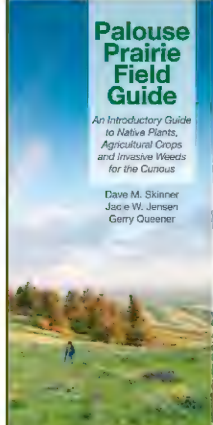

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Newsletter of the Idaho Native Plant Society • Promoting Interest in Idaho's Native Flora

2022 INPS Annual Meeting: Plants and History of Clearwater Forest Communities

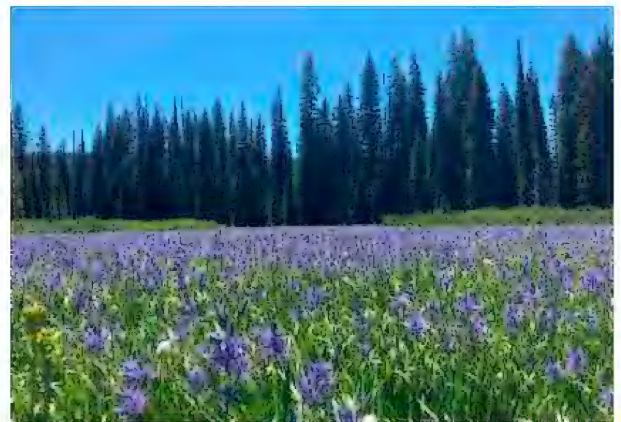
Article and Photos by Penny Morgan

When: June 23-27, 2022

What: Join your White Pine Chapter hosts to explore the fascinating flora with the natural and human history in the Clearwater River drainage! We will camp along the Wild and Scenic Lochsa River, adjacent to the Selway-Bitterroot Wilderness Area. Lewis and Clark traveled through here, as did many Native Americans before and since. The area is home to many coastal disjunct species and has a long history of fires, human use for recreation, timber production, fishing, and other delights. We welcome INPS members and non-member guests.

Our field trips will be fascinating! At Packer Meadows, see wet meadows where the Nez Perce, early trappers, and the Lewis and Clark expeditions camped. These meadows are home to more than 150 different plant species, including camas and sundews. Learn about the many native plants growing in the groves and the recent declining health of many western redcedar trees in this area. We will also explore habitats for many coastal disjunct species. Snow and weather permitting, attendees will experience the subalpine forest habitats to learn about whitebark pine ecology and restoration efforts while our field trip leaders highlight local history and scenery.

Where: We will gather at the Wilderness Gateway Campground on the Lochsa River along US 12, 122 miles east of Lewiston. We have reserved the Pavilion and all 26 campsites in Loop A for our meeting. If



An alpine meadow full of camas.

you wish us to hold one of these reserved campsites in Loop A, send us an email. We will include the cost for 4 nights in your registration; each site holds up to 8 people in 2 vehicles. If you prefer to reserve a campsite on one of the other loops or in another campground, you can visit recreation.gov or call (877) 444-6777. There are other campgrounds and some hotels, though none are nearby. We advise getting your campground reservations soon!

Info: Please visit the INPS webpage (<https://idahonativeplants.org/statewide-annual-meeting/>) to find more information. As we finalize details, we will post updates about the tentative schedule of field trips, costs, and other details. For more information, please get in touch with us at whitepine.treasurer@gmail.com.



Lush undergrowth found during the 2021 Annual Meeting.

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Letter from the President

Greetings to all INPS members. Somehow, I slipped past the security guards at the INPS Annual Meeting this past June to be elected the new INPS president. My first order of business is to offer a sincere thank you to my predecessor Steve Love for his 6 years of dedicated service. Under Steve's leadership INPS worked hard to meet its mission of advancing the understanding and appreciation of our native flora and preserving this rich heritage for future generations. Fortunately, Steve remains on the INPS Board as vice-president, where I am certain he will continue to be a voice for native plants and a source of ideas and thoughtfulness.

I also want to take this opportunity to recognize the other INPS Board members—Janet Bala, Karen Getsky, Vicki Henderson, Mel Nichols, and LaMar Orton. I look forward to working with them on helping INPS meet its commitments to Idaho's native plants and to the organization's membership. Without mentioning all the names, I want to say thank you to all officers, board members, and other contributors for the seven INPS Chapters. In many ways you are the glue that holds INPS together and allows the organization to prosper.

Peak wildflower season has come and gone now that the fall season is upon us. Still, it is a grand time to be in the hills and valleys enjoying the changing colors and late-season bloomers of our flora. Getting to know some of favorite plants during different seasons means you will never be alone on a hike, no matter the time of year. I hope everyone had at least a few opportunities to get out this past spring/summer for time in their favorite places and native plant habitats. With no shortage of sad and discouraging news in the world, time spent with and appreciating Idaho's native flora can be a source of delight, refuge, and both physical and mental restoration.

Please feel free to contact me if you have ideas to improve the programs and roles INPS plays to advance its mission and serve its members. You can also contact me if you have any concerns or would like to be more involved with INPS. Happy fall season!

Michael Mancuso,
INPS President

Citizen Science

Community Scientists Needed for Redcedar Research

Article and Photos by Joey Hulbert

Community science

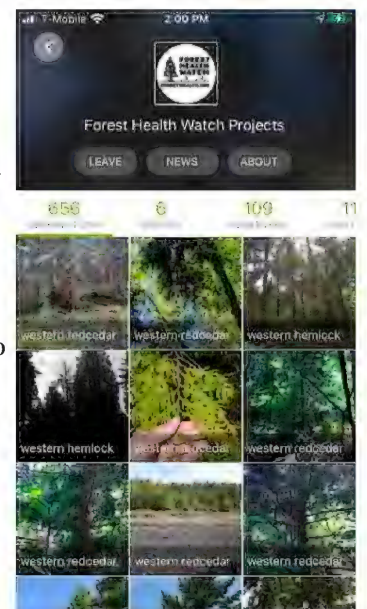
Members of the INPS are encouraged to participate in the Forest Health Watch program to accelerate research and promote understanding of the drivers and consequences of forest health issues. The pilot project invites community scientists to share observations of healthy and unhealthy redcedar trees to better understand the factors driving the dieback of this important tree species. Observations from the Inland Northwest are particularly needed to better understand the status of redcedar populations and the breadth of the dieback issue. *Sage Notes* readers can visit the Forest Health Watch webpage to sign-up as community scientists, learn more about the concerns for western redcedar, or find instructions for contributing to research.

Western redcedar

Western redcedar is a charismatic and important tree species in the northwest. Growing from California to western Montana, and north through most of British Columbia into to southeast Alaska, the tree species has an enormous footprint in the region.

Ecologically, redcedar is critical for services such as providing habitat, stabilizing shallow and floodplain soils, and regulating stream temperatures for species such as salmon. Redcedar usually grows in mixed stands, but pure redcedar groves can still be found and some of the stands with the highest density of redcedar are present in Northern Idaho.

Western redcedar has also played a critical role in the cultural and industrial heritage of the Northwest. It is often referred as the 'tree of life' because of the generous diversity of gifts it has provided to many indigenous communities since time immemorial. Redcedar was also



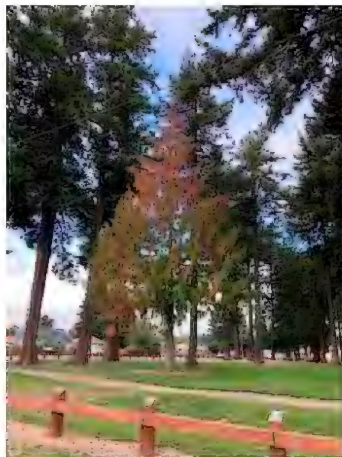
Screenshot of Forest Health Watch community science program on iNaturalist app.

a key component of the industrial development of many Northwest settlements, with many mills and wood product manufacturers at the center of most modern-day municipalities. Still today, Idaho towns such as Troy are thriving because of the specialty products created from western redcedar trees growing in the region.

Redcedar dieback

Many reports of increased levels of tree dieback (the slow death of woody plants) have been shared in recent years, particularly since 2015 when the Pacific Northwest experienced an unprecedented drought. The dieback is often characterized by ‘spike tops’ where the top has completely died, or by yellowing or thinning tree crowns characterized by their off-color tops and sparse foliage. Yellowing or thinning tree crowns are more frequently observed on the east side of the Cascades where spike tops are becoming more commonly observed throughout the west side.

Recent longer and hotter droughts in the region are generally recognized as the driver of the increased levels of dieback, but many questions remain. For example, researchers are eager to determine the best predictors of whether a tree will become unhealthy at local levels, but more observations are needed to confidently identify the most important parameters and site conditions for making decisions and recommendations. Knowing this information will help determine where to plant or protect redcedar and inform research about the factors to screen other redcedar populations for to find long-term solutions.



Western redcedar exhibiting a yellowing tree crown



Western redcedar exhibiting signs of 'spike top'.

How to contribute

You can help accelerate the research by sharing observations of healthy and unhealthy redcedar trees in the Western Redcedar Dieback Map project on iNaturalist. Observations can be shared using the iNaturalist mobile application or by uploading photos online through your internet browser.

1. Start by creating an account on [iNaturalist.org](https://www.inaturalist.org) on your computer. Optional—download the mobile app onto your smart device and log in.
2. After logging in to your account, browse to the Western Redcedar Dieback Map project.
3. Join the project. From your computer, click ‘Join this project’ on the top right of the project page. From your mobile device, click the ‘More’ (three dots) button, then click ‘Projects’ and search for ‘Western Redcedar Dieback Map’, then click ‘Join’.
4. Add an observation of a redcedar tree. Try to include three photos so others can confirm the tree is western redcedar: whole tree, the cones (if present) or the butterfly shaped bloom on the underside of the needles, and the stem/trunk and bark.
5. Tag the ‘Western Redcedar Dieback Map’ project in the observation settings. Tag the project when adding descriptive details to the observation. From your computer, type in the name of the project in the ‘Projects’ section. From your mobile device, click on ‘Projects’ button to see the projects you’ve joined, then toggle the project.
6. Once the project is tagged, you will need to answer a few questions about the health and location of tree. Answer the questions then press ‘Add’ (on your computer) or the back arrow (in the mobile app).
7. Share the observation!

The Forest Health Watch program also hosts monthly office hours to answer questions and help community scientists with using iNaturalist. It also offers monthly ‘research updates’ and quarterly biosecurity training presentations. To see and register for upcoming events please visit: <https://foresthealth.org/events>. INPS members are also welcome to contact Joey Hulbert at hulbe@wsu.edu with any questions or to schedule additional presentations within your communities. •



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Chapter News

CALYPSO CHAPTER

When: Chapter meetings will remain suspended until the COVID-19 outbreak subsides. Meetings are normally held first Wednesday of March, April, May, and October at 7:00 pm.

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

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

Upcoming Events

We need to plan events for all of 2022. Please submit your suggestions to Derek.

LOASA CHAPTER

Contact: Bill Bridges, bridgesbill34@yahoo.com

PAHOVE CHAPTER

When: Meetings are held on the second Tuesday of each month from September–April at 7:00 pm. Times, dates, and topics are tentative. Current information will be sent to members via email. Events are also posted on the Pahove Chapter page of the INPS website: <https://idahonativeplants.org/pahove/>

Where: Meetings are usually held in the MK Nature Center Auditorium, 600 S. Walnut St, Boise. For the safety of our community, meetings will be held via Zoom until further notice

Contact: For more information about Pahove Chapter activities visit the website: www.idahonativeplants.org or email Karie Pappani at pahove.chapter.president@gmail.com

Upcoming Events

The Pahove Board is currently putting together an exciting lineup of speakers for the 2021-22 season. Details will be posted online and announced via email once they are confirmed. Invitations to monthly Zoom presentations will be sent via email. Stay tuned and stay healthy.

SAWABI CHAPTER

When: Meetings through the winter will be taking place on the first Monday of the month at 7:00 pm.

Where: Meetings are held in the North Fork Room of the ISU Student Union Building.

Contact: Geoff Hogander, ghogande@yahoo.com

Upcoming Events

The December and April meetings will be the Christmas Party and the Annual Chapter Meeting respectively. After a short presentation on the "Plant Family of the Month," the guest speakers that we have lined up are:

October 4: Alissa Salmore on "Xeriscaping"

November 1: Bob McCoy on "Desert Wildflowers"

January 3: TBA

February 7: Robert Pitman on "Trees for Landscaping"

March 7: Dr. Bruce Finney on "Climate Change"

May 2: Chapter members Show and Tell

UPPER SNAKE CHAPTER

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

WHITE PINE CHAPTER

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/>.

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.



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

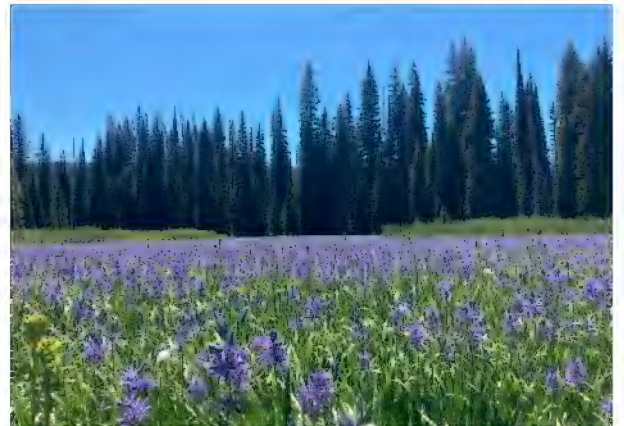
Annual Meeting of the Idaho Native Plant Society: Plants and Natural History of the Clearwater Forests

By Penny Morgan, White Pine Chapter

Come explore the fascinating flora with the natural and human history in the Clearwater River drainage. The White Pine Chapter will host you for socializing, botanizing, and learning together. We will camp along the Wild and Scenic Lochsa River, adjacent to the Selway-Bitterroot Wilderness Area. Lewis and Clark traveled through here, as did many Native Americans before and since. With habitats from moist forests to subalpine meadows, the flora is rich and diverse, including many coastal disjunct species that thrive both here and in the moist forests of the West Coast. Our area has a long history of fires and human use for recreation, timber production, fishing, and other delights. We welcome all INPS members and non-member guests.

Location and Directions: We will gather at the Pavilion and camp at the Wilderness Gateway Campground on the Lochsa River along US 12, 122 miles east of Lewiston and 95 miles west of Missoula, MT. Directions and distances to Wilderness Gateway Campground at MP 122 on US Hwy 12:

- From the north: US95 to Lewiston, then east on US12 (~134 miles from Moscow, 218 miles from Coeur d'Alene, 122 miles from Lewiston).



Camas (Camassia quamash) blooming in Packer Meadows with more than one hundred other wet meadowland fen species. Photo by Penny Morgan.

From southern Idaho, there are multiple options, including:

- North on US95 to Grangeville then Idaho 13 to Kooskia and then east on US12 (~71 miles northeast of Grangeville),
- North on I15, then west on I90 to Missoula, then south on US93 and west on US12 (95 miles from Missoula), or
- North on US93 from Salmon to Lolo then west on US12 (268 miles from Boise, 425 miles from Pocatello, 374 miles from Idaho Falls).

Registration: Please register soon using the form available online (<https://idahonativeplants.org/statewide-annual-meeting/>). Please complete the form and mail it to us with a check. On that form, you'll indicate to us whether you need one of our campsites, how many people you'll pay for dinner, and choose which of the all-day

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**UPPER SNAKE CHAPTER
(INACTIVE)**

kaser.kristin@gmail.com

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whitepine.chapter@gmail.com
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Vice President: VACANT
Secretary: Tom Besser
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President: Kristin Fletcher
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Letter from the President

An occasional dandelion or some small, annual weedy thing are the only flowers I have seen the past couple months in my Boise neighborhood. It makes early winter an easy time of year to get antsy waiting for the next wildflower season. Have faith, earth's tilt will once again become favorable for longer days, warmer weather, and the colors of Idaho's wildflowers. One of your best opportunities to experience the grandeur and diversity of Idaho's flora in 2022 will be the annual INPS meeting, scheduled for June 23-27. The meeting will be held in the Upper Clearwater River country, an area with a rich flora and compelling human history. You will almost certainly see plant species you have not seen before in Idaho. The White Pine Chapter is already hard at work to ensure the meeting is a fun and educational experience for all. I encourage you to place the meeting on your calendar. If you cannot spare time for the whole meeting, feel free to participate the days you can.

The start of a new year is often a time to reflect and make resolutions. I was fortunate to spend much of the spring and summer in the company of Idaho's flora, both for work and play. I saw some places with intact habitat and native plants doing fine. But I also walked places where the native vegetation and its associated biodiversity are in trouble and can use some help. A central tenet of the INPS mission is to foster an appreciation of our native flora and work to preserve this rich heritage for future generations. In this light, I propose a challenge to each INPS chapter—to choose and then take an active role in at least one native plant-related conservation project in your part of Idaho in 2022.

A first step may be some chapter-level discussion, perhaps followed by reaching out to coordinate and collaborate with a land manager/owner entity such as your local city, county, or land trust; or the US Forest Service, the BLM, the Idaho Department of Fish and Game, or other state agency. I suspect there is no shortage of short-term or long-term volunteer opportunities, whether it be a native plant restoration project, assisting a public native plant landscaping project, being part of an educational project, helping control weeds in sensitive or other priority areas, etc. Chapters will best know what opportunities may be available in their area and where to best expend their member's knowledge and energy. Our goal is to make a difference and have fun doing so. I will follow up with each chapter regarding the early stages of this challenge in a few months' time.

Lastly, I want take this opportunity to thank Emma Casselman for her efforts as *Sage Notes* editor the past couple years. Emma has recently started graduate school and will be stepping down from the editor position after this issue. *Sage Notes* will have a new editor starting in 2022.

Wishing everyone a healthy and rewarding New Year.

Michael Mancuso,
INPS President

In Memoriam

Dr. Doyle E. Anderegg (January 1, 1930–August 11, 2021)

By Roger Rosentreter, Pahove Chapter

Doyle Anderegg, Ph.D., of Moscow, Idaho, died peacefully on Wednesday, August 11, 2021, at the age of 91, after a long battle with Alzheimer's. He was an early Idaho lichenologist (1967–2002). Based in a small town in the Northern Rockies, it was difficult if not impossible during those years to find a local lichen flora. So, Doyle used his language skills and produced several (unofficial) translations of European lichen floras into English, including Josef Poelt's European lichen keys and Volkmar Wirth's "The Lichens, Baden-Wurttemberg." He was a true scholar and an educator. Like many of you who are reading this account, he sparked and encouraged knowledge and connections with lichens for many students. I recently spoke and emailed with several of his former students, who each enjoyed telling me of his enthusiasm for lichen and mosses. Doyle instilled curiosity in every student, and turned a discerning eye on every specimen. Details were important to him, and he shared that critical eye, teaching his students these skills.

I was a graduate student at the nearby University of Montana in Missoula when I first met Dr. Anderegg. In 1980, he quickly befriended me and helped me study herbarium specimens. He was eager to assist however he could. This was before email and the internet of course, and I wonder how it might be different if more modern communication existed back then. It took a full day to drive my little blue VW bug through the mountains between Missoula and Moscow back then, a mostly forested route with no large towns in between. We were lichen neighbors, even though we were separated by more than 400 km.

Doyle was at the University of Idaho for many years, first as a professor of biology and department head of biological sciences, and later as an associate dean of the College of Letters and Science. He was one of the earliest adopters of computers and programming in the Dean's office, where he developed a software program for student scheduling and helped the university select an early mainframe computer. As a lichenologist, he maintained an herbarium of samples collected in the local area and discovered at least one new species, *Cladonia andereggii*, named after him by Sam Hammer.

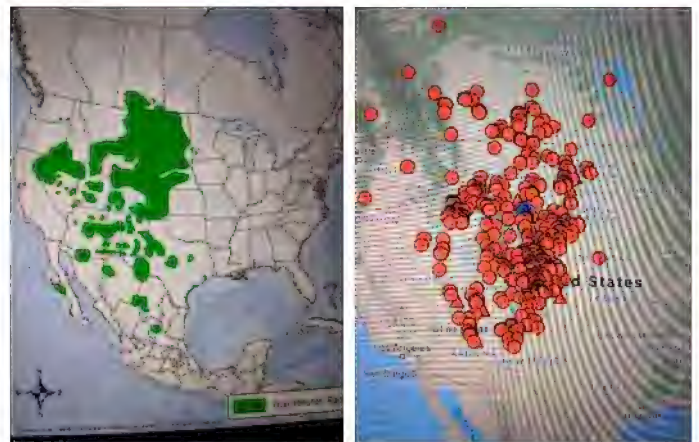
Doyle had numerous hobbies including archery, bow and rifle hunting, fly-fishing, gardening, and photography. He adopted the "Idaho way of life" and reloaded his own shotgun shells, fletched his own arrows, and tied his own fishing flies. He was also an avid bridge player,



Doyle Anderegg, Ph.D., by his computer screen connected to the main frame. Note the trophy elk antlers (for which he holds the bowhunting record in the Pope and Young record book) on the wall behind him.

competing in tournaments both before and after retirement, and was just a few points shy of Life Master status when he retired from competition.

Doyle once told me of his observations on big game and lichen herbivory—observations he never published, but which greatly influenced my awareness that many large ungulates such as deer, elk, bighorn sheep and moose will often eat lichens. He believed that the distribution of pronghorn antelope and the edible vagrant *Xanthoparmelia* overlapped at the local and regional level, since these lichens were an emergency food source when winter storms limited pronghorn access to vascular vegetation. Many years later, I investigated this relationship in southern Idaho (Thomas and Rosentreter 1992; see figure below). Doyle understood the importance of



Maps of the distribution of pronghorn antelope (left) and *Xanthoparmelia chlorochroa* (right) Antelope Range map provided by International Union for Conservation of Nature, Helen et al. 2000, (lichen distribution courtesy CNALH 2021).

...Continued on Page 11

field trips, if any, you'll attend on Saturday and Sunday. When you send in the form, please keep a photo or other copy of it, and look for an email back from us telling you we've got you registered.

Schedule:

June 23-27, 2022 (Subject to change) (All times Pacific)

Thursday, June 23

- Early arrivals can check in after 4 p.m.

Friday, June 24

- Check in for the meeting at the Pavilion, then botanize around camp on your own
- 6:00 p.m. Potluck dinner (bring a side dish to share, plates, utensils, & beverage; main dish provided)
- 7:00 p.m. Welcome, meeting overview and logistics
- 7:15 p.m. "The Evolution of the Pacific Northwest Mesic Forest Ecosystem—The Disjunct Story" presentation by Pam Brunsfeld

Saturday, June 25

- Field trips (Choose one)
 - Packer Meadow (all day)
 - Coastal Disjuncts (all day)
 - Selway Falls and Western redcedar (all day)
 - One or more of the on-your-own field trips (each about 1/2 day)
- 6:00-8:00 p.m. Silent Auction to benefit Education Research Inventory Grant (ERIG) Program
- 7:00 p.m. Dinner (Catered; indicate meal preference on registration form)
- 8:00 p.m. Annual meeting & keynote presentation (Topic and speaker to be announced)

Sunday, June 26

- Field trips (Choose one)
 - Packer Meadow (all day)
 - Whitebark Pine Ecology and Restoration (all day)
 - Coolwater Ridge (all day)
 - One or more of the on-your-own field trips (each about 1/2 day)
- 7:00 p.m. Evening is on your own and informal

Monday, June 27

- One or more of the on-your-own field trips (each about 1/2 day)
- INPS Annual Meeting ends at noon

Field Trips: Choose from full-day trips with botanist leaders and several half-day trips you can do independently. We will finalize carpooling and leave from the Pavilion for the all-day field trips by 8 a.m. each morning. Field trip leaders will focus on flora and ecology with great scenery, natural and human history for you to en-

joy. Bring a lunch, water, sun protection, and insect repellent for all field trips, wear good walking shoes, and bring hiking poles if you usually use them. We will provide species lists and other information.



Many plants thrive in the forest shade along the Nature Trail at Wilderness Gateway Campground. Photo by Penny Morgan.

All-Day Field Trips Led by Botanists :

(3 on Saturday, 3 on Sunday)

- **Packer Meadows** The flora is incredibly rich, with more than 150 wet-meadow and fen species, including roundleaf sundew (*Drosera rotundifolia*). The remarkable diversity of wetland communities includes grasslands, camas fields, wet sedge flats, forb-lands, shrub and conifer swamps, fens, and peatlands that support several northern boreal species. Native Americans, Lewis and Clark, many early trappers, and others have camped and foraged here. This unique botanical area is recognized in the new (draft) national forest management plan. This all-day trip is offered both Saturday and Sunday. About 1 1/2-hour drive each way with walking in a flat, wet meadow (rubber boots recommended). Turn east at the Lolo Pass Visitor Center at MP 174, 52 miles from Wilderness Gateway Campground, all on pavement except the last mile on a good gravel road. Water and bathrooms with multiple stalls and flush toilets are available at Lolo Pass Visitor Center. Pam Brunsfeld will lead this trip Saturday, and Mike Hays will lead it on Sunday.
- **Selway Falls, Forest Ecosystems, and Western Redcedar Health:** Learn about the ecosystem effects of salmon ferrying nutrients from the sea until they are blocked by impassible barriers like a waterfall. What are the major differences, from a plant's perspective, if you are growing above or below a waterfall? We will also observe the effects of climate

change on the health of western redcedar. The Selway Falls are beautiful. Visit an area burned in the 2014 Johnson Bar fire to see how the shrubs and forbs are recovering after fire and salvage logging (this optional extension will add about an hour, and it is a short drive on a gravel road from the Selway River Road). This all-day field trip includes 1½ hours of driving each way as it is 44 miles from Wilderness Gateway Campground to Selway Falls, with 7 miles paved then 19 miles gravel on a narrow, winding road. There is parking and a vault toilet at the trailhead above the falls. Led by Katy Kavanagh and Penny Morgan

- **Coastal disjuncts along the Lochsa and Selway Rivers:** This is an all-day field trip with short off-trail walks for disjuncts and other rare plants associated with the coastal environment. We'll stop at Split Creek (MP 112) for a shady walk across the Lochsa to see Pacific dogwood (*Cornus nuttallii*) and clustered lady's-slipper orchid (*Cypripedium fasciculatum*). We will visit Lochsa Historic Ranger Station where the story of a recent finding of the rare Maiden-hair spleenwort (*Asplenium trichomanes*) (only the 4th occurrence in Idaho) on a steep cliff provides an opportunity to learn about its habitat and very unusual presence here. We'll pull over at several side canyons along the Selway to explore cedar-ginger habitats for ferns, clustered lady's-slipper orchid (*Cypripedium fasciculatum*), Henderson's sedge (*Carex hendersonii*), phantom orchid (*Cephalanthera austineae*), Constance's bittercress (*Cardamine constancei*) and others. Some species will be in bloom, others fruiting. Other potential sites, depending on the results from pre-trip scouting, would be O'Hara Campground and trail, Swiftwater area and Smith Creek Road. Parking is limited at some sites, so trip is limited to six cars. Restrooms available along the way. Derek Antonelli will lead this trip.
- **Coolwater Ridge:** This full-day trip is designed for participants who want a bit more strenuous or lengthy hike with great wildflowers and views from over 6000' of the Selway River canyon below. Coolwater Lookout (6900' elevation) is on the ridge between the Lochsa and Selway Rivers. Some of the plants we should encounter include coiled lousewort (*Pedicularis contorta* var. *rubicunda*), high mountain penstemon (*Penstemon flavescens*), and moving polemonium (*Polemonium californicum*). Hikers may walk 3 miles up the road to the lookout and 3 miles back following the road that sidehills across a large, steep grassy area that usually has a spectacular floral display with beargrass (*Xerophyllum tenax*), Nuttall's

leptosiphon (*Leptosiphon nuttallii*), and many other species. On the ridge, we will look for *Carex californica*, whitebark pine (*Pinus albicaulis*) and Clark's nutcrackers. Driving time is likely 45 min to Idaho Point Junction. We will park at Idaho Point junction at a dispersed campsite with a spring and a very rustic outhouse. Hikers will then walk the rocky ridge road to view the floral display. Those who wish to can hike to the lookout. FS Road 317 Coolwater Road is gravel and steep and narrow with hairpin turns. Limited to 6 vehicles. Liz Martin will lead this trip.

- **Whitebark pine ecology and restoration:** Learn about the incredible whitebark pine ecosystem so important for wildlife, scenery, and watershed protection. The trees are threatened by changing climate, introduced white pine blister rust disease, native bark beetles and changing fire management. We will visit one of the few areas where we can see whitebark pine restoration using tree cutting and fire. We'll also enjoy the ridgetop subalpine flora and the view from the lookout at 7300' elevation. Flora will include beargrass (*Xerophyllum tenax*), grouse whortleberry (*Vaccinium scoparium*), pinegrass (*Calamagrostis rubescens*), elk sedge (*Carex geyeri*), bracted lousewort (*Pedicularis bracteosa*) and Hitchcock's woodrush (*Luzula hitchcockii*). The surrounding area has burned in wildfires, some recent, and we'll drive past fuel treatments. This is a full-day trip including ~3 hours each way, including 92 miles on US 12 from Wilderness Gateway and ~1-hour drive on a gravel road. At MP 163 on US12, turn south onto Elk Summit Road (FS 111), go 1 mile, then left on Beaver Ridge Road (FS 368). THIS TRIP MAY GET CANCELED IF SITES ARE INACCESSIBLE DUE TO SNOW OR ROAD CONDITIONS. Led by Penny Morgan and Steve Bunting. Parking is limited to 6 vehicles.



Star Solomon's seal (*Maianthemum stellatum*) is just one of the many species we'll find in the diverse understory of the mesic forests of the Clearwater River drainage. Photo by Nancy Miller.

...Continued on Page 6

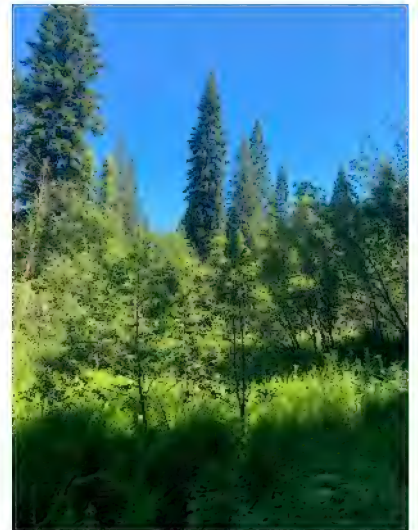
On-Your-Own Field Trips: These are listed in order of distances from the Wilderness Gateway Campground at Milepost (MP) 122 on US 12.

- **Lochsa historic ranger station:** 1930s Forest Service Ranger Station with a small museum. The 1920s log structures have been preserved and restored as an example of early Forest Service life and work. There is a shady 1-hour self-guided walking tour with information about the 1910 and 1919 fires. Drinking water, bathrooms, picnic tables. Located at MP 122, within one mile of Wilderness Gateway Campground on the other side of US12.
- **DeVoto cedar grove:** Paved 1/2-mile mostly-level walk at MP 165 on US12. The trail through the lush understory is deeply shaded by 500-year-old western redcedar trees. The grove is named for Bernard DeVoto, a Pulitzer Prize-winning historian and conservationist. You can also explore the unpaved loop trail on the other side of the road from the vault toilet.
- **Lomatium brunsfeldianum** (Brunsfeld's biscuitroot) is a narrow endemic recognized as a new species in 2012. Named after Dr. Steven Brunsfeld from the University of Idaho, who recognized this biscuitroot as a new species, it can be found most easily on a moss-covered rock wall seven miles north of Three Rivers, although it occurs in a few other areas in the region. We will give you more specific information during the meeting in 2022 if interested.
- **Walde Lookout:** From MP 88 on US12, climb FS Road 101 "Smith Creek Rd" to elevation 5200' where the rare endemic *Dasynotus daubenmirei* can be seen at the 1939 fire lookout and cabin. Named for WSU plant ecologist Rex Daubenmire. Other plant species of interest along the windy road to the lookout include clustered lady's-slipper, Henderson sedge, redwoods violet, vari-leaved collomia, Constance's bittercress, and Pacific dogwood. For a shorter route to see *Dasynotus*, take the road to Big Hill, and then you can stop to see the other species along the lower Smith Creek Rd.
- **Three Devils Picnic Area:** Here you can find most of the plants described by Lewis and Clark while at Long Camp (near Kamiyah) during the spring of 1806. There is a swimming beach, picnic tables, an outhouse and parking. Travel west on US 12 to MP 94. Fred Johnson and Doug Henderson often stopped here with their students.
- **Lolo Pass Visitor Center:** Museum displays about Lewis and Clark expedition and Nez Perce Chief Joseph, with books and maps for sale about the hu-

man and natural history of the area. There is a self-guided walking tour of the adjacent wetland, with interpretive signs. There are restrooms, running water, payphones, and plenty of parking. Packer Meadows is nearby (1 mile), if you missed the field trip, here's a chance to see the extensive camas meadows. Travel east on US 12 to MP 174.

- **Nez Perce National Historical Park sites:** There are multiple sites of interest along US12 to the west before you reach Lewiston, all with interpretive signs. The small museum and other historical sites at the Spalding site are highly recommended as you drive to or from the meeting. For more information: <https://www.nps.gov/nepe/index.htm>.

Accomodations: We highly recommend getting your reservations SOON as the area can be busy in June: We have reserved all 26 campsites in Loop A for our meeting (ONLY A FEW ARE LEFT!!!). If you wish us to hold one of these reserved campsites in Loop A for you, send us an email at whitepine.treasurer@gmail.com (you will pay \$45 total for all 4 nights when you register for the annual meeting; each site holds up to 8 people in 2 vehicles). We have reserved the Loop A campsites for Thursday, June 23 through Sunday night, June 26, with check-out by 2 PM Monday (4 nights). We also reserved the Pavilion June 23-June 27 (5 days) with check out at 10 PM on Monday, June 27.



Mesic forests are rich in species with many trees, shrubs, and forbs. Photo by Penny Morgan.

Alternatively, there are 60 campsites on other loops at Wilderness Gateway and other developed and dispersed campsites along US 12, many of which can be reserved and paid for in advance at recreation.gov or call 1-877-444-6777. (For these you pay in advance at recreation.gov, not to INPS.). Lochsa Lodge at Powell has cabins, a restaurant, a small store, and gas. Three Rivers Inn at Lowell has cabins and a small restaurant as well as rafting.

Some nearby towns have motels, bed and breakfast places, or RV parks. They include:

- Kamiah & Kooskia (57 and 48 miles, respectively, from Wilderness Gateway CG) are small towns with grocery stores, restaurants, and small hotels
- Lolo Hot Springs Resort (60 miles), Lochsa Lodge (40 miles), Three Rivers Resort (26 miles), Syringa (33 miles), all mileages from Wilderness Gateway Campground
- Missoula (95 miles from Wilderness Gateway Campground)

Potential Activities Outside of Our INPS Meeting:

- Float trip on the Lochsa River (white water)
- Fly fishing
- Bird watching
- Hiking
- Small resorts at Lolo Hot Springs, Powell, and Syringa
- It'se Ye-Ye (<https://crcasino.com/itse-ye-ye-casino/>) and Clearwater Casino run by the Nez Perce Tribe (<https://crcasino.com/casino/>)

- Hot springs: Several informal hot springs (Jerry Johnson, Stanley, others) require a hike in; many are clothing optional
- Nez Perce National Historical Park: (<https://www.nps.gov/nepe/index.htm>), highly recommended on your drive to or from the meeting •



Beargrass (Xerophyllum tenax) plants are beautiful in subalpine meadows and forests of the Clearwater River drainage. Photo by Nancy Miller.

Announcement

2022 Idaho Rare Plant Conference

The Idaho Native Plant Society's Rare Plant Conference is normally conducted every other year as a three-day, in-person conference. Issues related to Idaho's rare flora are discussed and Idaho's rare plant species are ranked to determine their protection requirements. Because of COVID-19, the 2022 conference will be conducted online and will be reduced in scope—only the species most in need of review will be ranked. While unfortunate, this online format does provide an opportunity for many INPS members who wouldn't normally be able to attend an in-person conference to observe the workings of this process. We hope to conduct a full in-person conference in 2023.

The online conference is scheduled for Monday, February 28, and Tuesday, March 1. The conference will start at 9:30 a.m. MST (8:30 a.m. PST) and end at 12:30 pm MST (11.30 a.m. PST) both days. Participation is free, however, advanced registration is required. Individuals signing up for the conference only need to provide name, email, and affiliation. This will allow us to control access to the conference and provide the participants with the meeting access codes and conference materials via email. We ask that you register by **February 21**. Here is the registration link: <https://www.signupforms.com/registrations/28245>. •

Hailey Native Plant Arboretum

Article and Photos by Linda Ries, Wood River Chapter

Twenty-five years ago the Blaine County Recreation District (BCRD) Native Plant Arboretum was established in Hailey with an Urban and Community Forestry grant from the Idaho Department of Lands. Hundreds of seedlings were planted by Silver Creek Alternative School and 4H members, and a drip irrigation system installed. As new plants were added over the years, there was a growing need to improve the plant signage for enhanced visitor experience and education.



Wood River Land Trust volunteers installed the 38 plant signs this past summer.

The Blaine County Recreation District in March 2021 received an ERIG grant for \$991 to create new plant signs. With these funds, thirty-eight individual plant signs were fabricated and installed throughout the Arboretum—prioritizing tree and shrub species. There was not enough funding to label all the native forbs and grasses, so this remains a future goal. All labor for this project and other additional supplies were donated. Volunteers from the Wood River Land Trust installed the signs and other volunteers helped research and edit the text, and edit and design the plant markers.

Kristin Fletcher of the Wood River Chapter of the Idaho Native Plant Society researched Sosoni or Bannock native plant names for many of the markers and shared this information with volunteer Linda Ries. Publications used included *Plant Communities Ethno-ecology*, and *Flora of the Idaho National Engineering Laboratory* by Jay E. Anderson, Kristin Ruppel, James M. Glennon, Karl E. Holte, and Ronald C. Rope. Ries used many native plant publications to prepare informational text for the signs. Publications used included *Wild Trees of Idaho* by Frederic Johnson, *A Guide to the Trees of Utah and Intermountain West* by Michael Kuhns, and *Plants of the Rocky Mountains* by Linda Kershaw, Andy MacKinnon, and Jim Pojar.

Lark Labels helped in the final edit of the 5 x 7 inch signs before production. Signs are made of laser engraved durable metal on twenty inch metal stakes. These signs are expected to be weather resistant for many years. These signs have already been a hit—particularly at the Idaho Founders Day celebration and several summer tours of the Arboretum.

We want to express our sincere appreciation for the support of Idaho Native Plant Society and ERIG. This funding has greatly enhanced the visitor experience at the Arboretum! Many visitors have benefited from learning more about Idaho and Rocky Mountain native plants. Project Managers are Linda Ries and Kris Stopher. ◦



2022 INPS ERIG Solicitation for Proposals

To support its mission, the Idaho Native Plant Society (INPS) annually grants awards through the Education Research Inventory Grant (ERIG) program. Since 2005, INPS has awarded over \$30,000 in grants of up to \$1000 that stimulate and lend support to educational, research, and conservation activities that promote an appreciation for native plants and plant communities in Idaho. Continuing in that tradition in 2022, INPS will partner with projects that contribute to the appreciation, conservation, and knowledge of Idaho's native flora and vegetation. The Idaho Native Plant Society encourages you to submit a proposal for projects that may qualify. The deadline for submitting proposals is **February 15, 2022**.



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

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

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

1. Project Title.
2. Contact Information: Name, address, phone number, organization/affiliation, and email address.
3. Project Description:
 - a. Outline the project objectives, methods, and final product.
 - b. Explain how the project will benefit the appreciation, conservation, or knowledge of Idaho's native flora or vegetation.
 - c. Where applicable, describe how the public will have access to the project.
 - d. Describe how project success will be evaluated.
4. Itemized budget: Outline an overall project budget, including the amount you are requesting (up to \$1,000). Include other funding sources.
5. Timeline: Please provide a timeline for completion of all major milestones associated with the project, including presentation of the results.

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

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

Chapter News

CALYPSO CHAPTER

When: Chapter meetings will remain suspended until the Covid-19 outbreaks subside. Meetings are normally held the first Wednesday of March, April, May, and October 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

We generally plan plant walks or similar activities once a month from April through September. We need to plan events for all of 2022. Please submit your suggestions to Derek. Watch for specific activity details in chapter emails.

LOASA CHAPTER

When: Meetings 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 p.m. Times, dates, and topics are tentative. Current information will be sent to members via email. Events are also posted on the Pahove Chapter page of the INPS website:

<https://idahonativeplants.org/pahove/>

Where: Meetings are usually held at the MK Nature Center Auditorium, 600 S. Walnut St, Boise: for the safety of our community, they will be on Zoom until further notice.

Contact: For more information about Pahove Chapter activities visit the website: www.idahonativeplants.org or email Karie Pappani at pahove.chapter.president@gmail.com

Upcoming Events

January 11: Pat Fields presented "Regional Miocene fossil floras, their biogeographic significance, and relevance to climate change studies."

February 8: Peggy Olwell will speak on the current status of the BLM's National Seed Strategy.

February 28: The abbreviated 2022 Idaho Rare Plant Conference will be held via Zoom. In lieu of a full conference with all the speakers, snacks, banquet, etc. we

are focusing just on rare plant rankings and changes that need to be made to the Idaho Rare Plant List, with presentations from both the Northern and Southern Idaho Rare Plant Working Groups. The 2022 Rare Plant Conference is open to all interested participants with free, advanced registration. For information, contact Beth Corbin, Derek Antonelli, Kristin Williams, or pahove.chapter@gmail.com. We are looking forward to a full Rare Plant Conference in 2023!

March 8: Lynn Kinter will present "Idaho's Wicked Plants—Painful, Poisonous, & Pernicious Species"

April 12: Israel Borokini, Topic TBD

April 22-24: Native Plant Sale tentative dates; more details to come

May 8: Wildflower Show; more details to come

SAWABI CHAPTER

When: First Monday of the month at 7:00 p.m.

Where: We are again holding our winter monthly meetings in the North Fork room of the Pond Student Union on the ISU campus.

Contact: Geoff Hogander, ghogande@yahoo.com

Upcoming Events

COVID continues to disrupt our activities, but we are making an effort to get back to our normal routines. Membership renewal forms for 2022 were sent out to members both current and recent past. Renewals can still be mailed to the chapter or completed online at the Idaho Native Plant Society website.

January: Trista Crook, Ray J. Davis Herbarium manager, will talk about lichens.

February: Robert Pitman will speak about trees for landscaping in Pocatello.

March: Dr. Bruce Finney of ISU will talk about climate change.

April: The chapter annual meeting is tentatively scheduled for April—hopefully we will be able to elect new officers and plan for our usual spring and summer plant walks.

May: Our May meeting is typically a show and tell presentation of member's pictures of their activities and plant observations from the past year.

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.

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/>.

Upcoming Events

January 20: Dr. Eva Strand presented “Dyeing Wool with Idaho Native Plants” at 7:00 p.m. via Zoom. A recording will be posted on the White Pine Chapter YouTube Channel.

We will update other presentations throughout winter and spring as they are confirmed.

Mid-May: Annual Native Plant Sale

June 23-27: State annual meeting in the Clearwater River drainage.

WOOD RIVER CHAPTER

Contact: Subscribe to the newsletter by emailing Lisa Horton at 1gy2016@gmail.com. Address questions about programs to Kristin Fletcher at naturewaler7@gmail.com. •

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In Memoriam...Continued from Page 3

lichens to wildlife all around him as he hiked the mountains of Idaho.

Doyle Anderegg was predeceased by his wife of 57 years, Jeanne Anderegg, and is survived by his children, Alice Sutton and Carolyn Rowland. •

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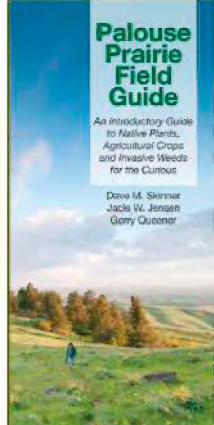

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