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Sage Notes



... promoting interest in
Idaho's native flora.

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What caused that? Feeding damage provides key to insect identity and insects provide clues to plant differences.

Malcolm Furniss, Dept. of Plant, Soil and Entomological Sciences, Univ. of Idaho

Plants and insects are a world apart according to the biology books. I have also found that to be true among botanists and entomologists. However, I don't believe that this division is due to some dislike of the other's realm. Rather, I think that it stems naturally from the human make-up. In our work and hobbies, we make a choice - often dictated by circumstances or chance - then we follow along, learning ever more and - having learned more - seek to learn still more of what has no end. Time does not allow following and mastering two paths that are so different.

So, what is a nice entomologist like me doing in a place like this? Well, I'm not abandoning entomology - just seeking to introduce you devoted plant-types to some useful features involving insect-plant relationships: (1) you can tell a lot about the insect involved by the nature of damage done to the plant and (2) the presence or absence (host specificity) of an insect may identify plants that are outwardly similar but differ significantly in genetic makeup and other ways. I have come to this view partly from the work of others but mainly from my observations as a forest (and wildland shrub) entomologist continuously since 1952. Now, at age 76, my interest in the subject is undiminished. Hence the footpath reference at the outset. If it happened to me it likely has happened to you.

Feasting leaves clues -

Perhaps more often than is possible in the case of plants, insect taxa are defined by attributes in addition to their anatomy. Here, I refer to their behavior, particularly related to feeding. For example, caterpillars of some families of Lepidoptera are classified as leaf-rollers, leaf-tiers, leaf miners, skeletonizers, measuring worms, or carpenter moths. Likewise, beetles (Coleoptera) include leaf skeletonizers, bark beetles, wood borers, etc. The Hymenoptera include a family of leaf cutter bees that cut-out circular pieces from leaves that they use to line cells in which their larvae are reared.

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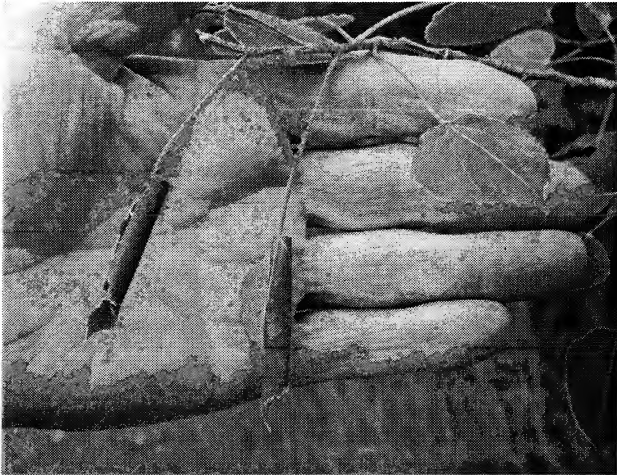


Figure 1. Solitary caterpillars (Tortricidae) rolled these aspen leaves into a shelter using adhesive silk threads secreted from a spinneret located on the underside of their mouth.

fossils on Bill Rember's property near Clarkia [see Kinnikinnick Chapter news]. They date back some 12 million years.

Insects as a bioassay of host plant differences

This subject will be illustrated by only a few examples, but assuredly, it pertains to thousands of plant-insect relationships world-wide. I believe that it is here that great benefit can be gained by the right mix of botanist and entomologist in elucidating fascinating genetic differences in similar-appearing plants. Oh, sure, I suppose you can do this sort of thing in a laboratory by other means but as Robbie Burns said: "Gae me a spark o' nature's fire that's all the larnin' I desire." He obviously would choose the outdoor route as I advocate here. Indeed, presence or absence of symptoms of insect feeding damage (including galls that may have other origin) can tell of genetic differences in an instant. Some of these relationships are known, but often obscure, while others remain to be discovered - as I continue to do wherever I go.

Differences in susceptibility or resistance to insects within and between plant species is attributed to plant anatomy, chemicals (attractants and repellents), and nutritional constituency. Anatomical difference in leaf pubescence alone accounts for the absence of a blotchleaf miner (Gracillariidae) on feltleaf willow, *Salix alaxensis*, in Alaska, as I discovered during a vast outbreak of that insect on other willow species. This tiny moth must cement its eggs to the under-leaf surface in order for the hatched larvae to enter the leaf. It cannot do that on *S. alaxensis* due to a mat of hairs [on underside of leaf], hence the common name "feltleaf."

Here in Moscow, I have studied a spruce budscale (Homoptera: Coccidae) that is abundant on every Norway spruce but absent on associated blue spruce and Engelmann spruce. This insect was accidentally introduced into the USA from Europe. Only females are here so all of its progeny are produced parthenogenetically (a step ahead of us humans although cloning is gaining headway). The immobile adults are wingless, so dispersal must occur in the

In all of these cases, the taxon concerned has a typical habitat (our worlds connect there!), and a specific type of feeding habit or injury to the host plant, whether it is a leaf or stem. The type of feeding injury is related to the insect's physical structure. The kind of mouthpart is involved, of course, and we're talking here basically about those with a pair of teeth inserted laterally on the head, particularly of the larvae of Lepidoptera, adults of which lack teeth and can only slurp-up liquids such as nectar like drinking soda through a straw. Body structure also plays a role in the case of measuring worms (Geometridae) that only have legs at both ends. This results in their holding-fast with their hind legs and "scooping-out" a section of leaf edge by reaching forward with their body, then eating backward. A groove in their upper lip keeps their teeth aligned on each side of the leaf.

Illustrated are some types of feeding injury by the insects mentioned as explained in the captions. I was interested to note several types of insect feeding damage apparent in leaf

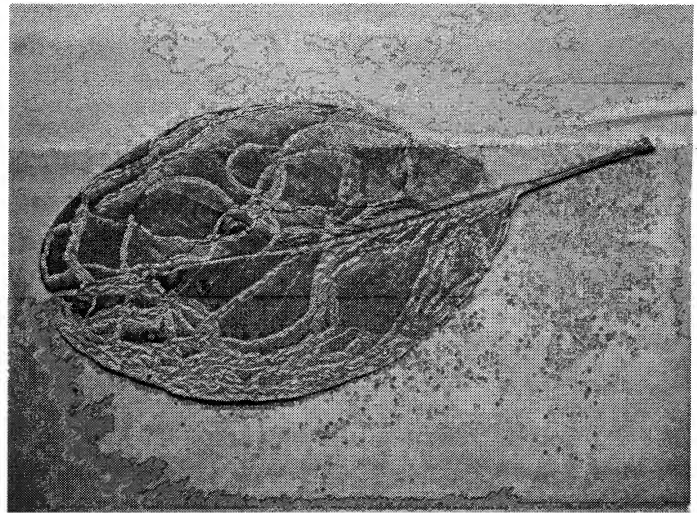


Figure 2. A leaf-mining caterpillar (Gracillariidae) created this intricate pattern by mining within the upper and lower leaf surfaces of this madrone leaf.

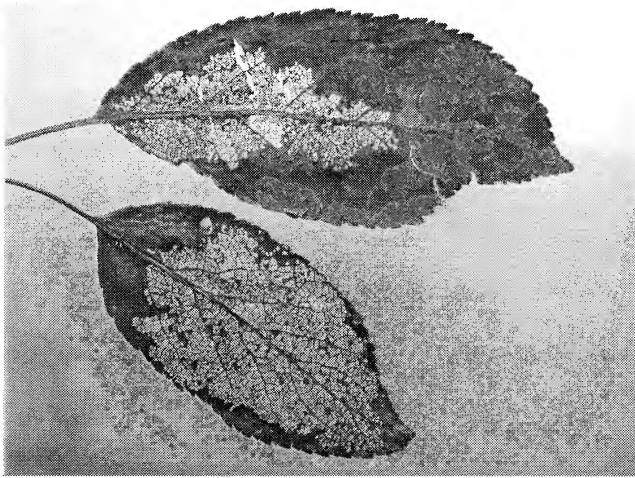


Figure 3. Feeding by caterpillars of the apple-and-thorn skeletonizer left veins intact. Similar damage is done to alder and willows by leaf beetle larvae (Chrysomelidae).

pitch!) results in masses of solidified resin on the outer bark especially at pruning scars. The other trees are free of infestation but each year more moths infest the two trees that now have dozens of pitch masses throughout their stems. Clearly, there is something different about the infested and un-infested trees. Of course, the choice of trees during the initial infestation may have been by chance and the behavior of their adult progeny (moth stage) resulted in re-infesting the mother tree. It is known that the female moth secretes a powerful sex attractant and she does not disperse readily due to her wing/body proportions (they are not agile fliers). So, this situation

nymphal stage, possibly via birds or flying insects but also perhaps by air currents. Look for the bud-like females in May as they enlarge to accommodate their complement of several hundred eggs. They are located at the previous-year's node. A few blue spruce on the University campus are green, not blue, and can be differentiated readily by the lack of this scale and absence of the characteristic drooping of branchlets evidently caused by a growth-stimulating substance introduced by the nymphs while sucking juice from their host. The scale is common on Norway spruce wherever that tree has been planted in cities throughout Idaho.

I have seven 40-year old ponderosa pine trees in my yard, two of which are chronically infested by solitary, white, larvae of a clear-wing moth (Sessidae) with the misleading common name "Sequoia pitch moth" (it occurs only on pines). Their activity (surrounded by viscous

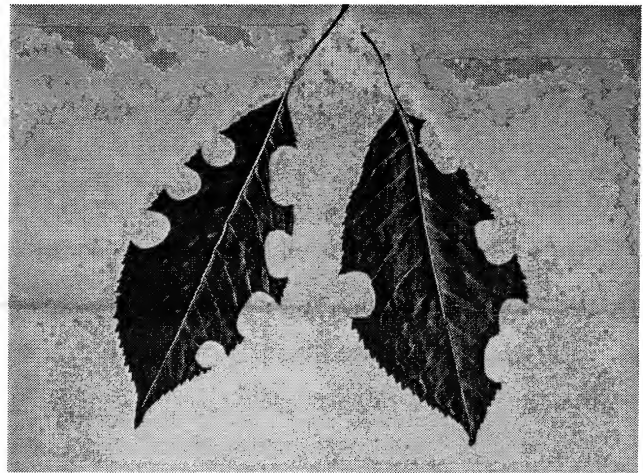


Figure 4. Large, rather circular notches in these cherry leaves were made by a leaf-cutter bee (Megachilidae). It grasps the leaf, chews around itself, and flies away with its prize.

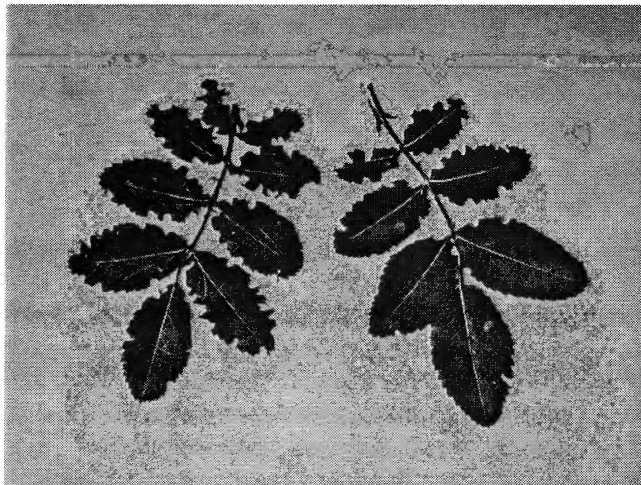


Figure 5. Notching around a leaf margin is the fingerprint of an adult weevil (Curculionidae) having fed there. Such notches are common on rhododendron and young pea leaves, as shown.

may, indeed, illustrate chemical differences among the pines that are inherent, or induced by infestation, or the apparent differences in susceptibility may be illusionary due merely to limited adult dispersal. Or, more likely, a combination of these factors may be responsible.

I will end this primer with the boreal spruce bark-beetle, which infests white spruce but not Engelmann spruce. The point of interest is that these tree species hybridize in parts of Montana. The beetle occurs as freely in the hybrids as in white spruce, indicating that the hybrid has a genetically-based chemical constituent derived from white spruce that attracts the beetle. Antibiosis in Engelmann spruce does not appear to be involved; at least I have been able to rear this beetle in

large numbers by *inserting and confining* paired adults in stem sections cut from Engelmann spruce (forgive me, I did this indoors). The beetle has not been found in wind-felled Engelmann spruce.

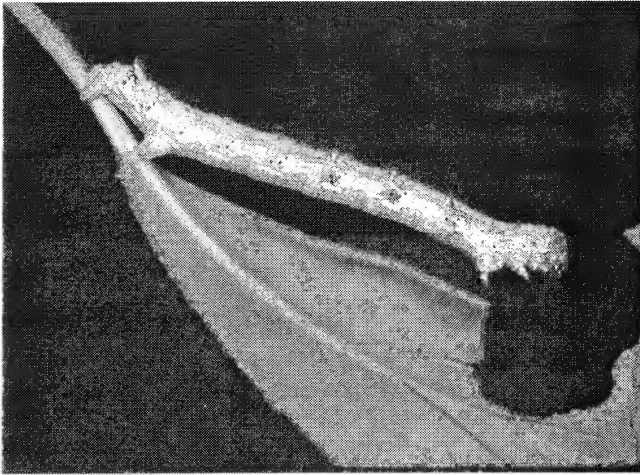


Figure 6. Measuring worms (Geometridae) have legs only on opposite ends. When feeding, they reach forward and chew down and backward creating a characteristic notch. Notches made by other insects differ in number, size or shape.



Figure 7. A leafblotch miner (Gracillariidae) infests many willow species in Alaska except feltleaf willow, which has a mat of hairs on the underleaf surface that prevents attachment of eggs there.



Figure 8. A "spruce budscale" insect (Coccidae) infests the nodes of Norway spruce, stimulating secondary branches to elongate and become pendent. It does not occur on adjacent blue spruce or Engelmann spruce.

In your forays, look for differences in insect damage between similar plants and when found, be prepared to collect and submit a sample for identification. Carry a vial or two of alcohol (rubbing alcohol will do) for insects associated with the damage and insert a pencilled (not ball point pen) label with the host, locality, date and collector. Plant material illustrating the damage may be pressed as usual or submitted fresh if done promptly. Send them and a note with other details to me, if you like, or to Frank Merickel at W.F. Barr Entomological Museum, University of Idaho, Moscow, ID 83844-2339. His phone: 208-885-7079.

\$70 in T-shirts taken, but not paid for, during Conference
The recent T-shirt sales should have netted over \$100 for the INPS small grants fund. However, no payment was made for 11 shirts taken at the Rare Plant Conference! That's a loss of around \$70, folks, and pretty damaging for INPS. Please spread the word: the T-shirts, unlike the mugs, were NOT a conference gratuity. As signs clearly stated, the price per shirt is \$7.50. You may contact a chapter officer, or contact Sonja Lewis directly: 438 E. 8th St., Moscow ID 83843, 208/883-2638, sal.e.forth@turbonet.com.

Forest Service Nurseries – Helping to “Bring Back the Natives”!

Edna Rey-Vizgirdas, Forest Botanist, Boise National Forest and Clark Fleege, Nursery Manager, Lucky Peak Nursery

Native seed that is both site-specific and source-identified is important for use in restoring public lands. Over the past decade, the demand for native seed has grown tremendously. This increased demand has arisen in part due to the enhanced awareness of native species and their importance in the ecosystem by land managers and the public. Events such as landscape scale stand-replacing fires have accelerated the need for available seed for revegetation efforts. In addition, growing concerns for sensitive species habitat have tipped the scales in favor of regeneration with native rather than exotic species in some areas. Furthermore, with the issuance of executive orders in 1994 and 1997, the Forest Service encouraged the use of regional native plants and discouraged the introduction of exotic species on national forest lands across the country. Forest Service nurseries can help bring us one step closer to achieving this goal.

In the past, barriers to utilizing local native plant materials have included cost considerations, availability, and the lack of knowledge regarding plant culture and propagation. As these barriers are overcome, the reliance upon non-native plant materials can be gradually reduced.

It's important to remember that not all areas need to be revegetated. For example, sites that have experienced a low intensity burn that supported relatively few weeds prior to burning probably do not need to be revegetated. However, areas where watershed, wildlife habitat, sensitive species, or water quality values may be compromised should be considered as high priority for restoration. Such sites may be subject to invasion by noxious weeds and other undesirable plant species. Weed management and monitoring plans should be developed and implemented to ensure that native species can become successfully reestablished (e.g., see Goodwin et al. 2002). Other high priority sites for restoration with native species may include research natural areas, botanical special interest areas, and wilderness areas.



Photo courtesy of Lucky Peak Nursery

Lucky Peak Nursery

Lucky Peak Nursery (LPN), a unit of the Boise National Forest, was established in 1959 to process and store conifer seed and to provide bareroot conifer seedlings for site-specific reforestation projects on National Forest lands in the Intermountain Region of the USDA Forest Service. Over the past forty-two years, since the first seedling crop was shipped in 1962, LPN has shipped over **226 million seedlings** for various site-specific reforestation and restoration projects on public lands throughout the intermountain West. While the vast majority of the production was two-year conifer seedlings for reforestation activities following timber harvests and wildfires, the production of native shrubs was an annual, yet not significant feature. For example, in 1972, LPN produced over 135,000 native shrubs including species such as serviceberry, deer brush, sumac, bitterbrush, chokecherry, and dogwood.

Over the past several years, the need to restore rangeland with native vegetation on public lands that have experienced extensive wildfire has gained considerable support. Currently, LPN is producing nearly one million bareroot big sagebrush seedlings for restoration projects on Department of Defense and Department of Energy sites in eastern Washington. In Idaho, the Bureau of Land Management and Idaho Department of Fish and Game annually request LPN to produce several thousand bareroot and container-grown bitterbrush seedlings for their specific needs.

LPN is building upon that strong tradition in native shrub production, and diversifying its production. Since 1999, LPN has produced three species of native grass for seed production for several projects on National Forest lands. One of the grass species was collected at the Missouri Mine spoil near Centerville prior to the reclamation work. This species, *Agrostis alba* (creeping bentgrass) tolerates the low pH of the spoil, and will be used during the revegetation efforts. Another grass species is a high elevation source of Idaho fescue. Seed collected near Pilot Peak on the Boise National Forest has been propagated at LPN, with the subsequent seed available for restoring denuded ridge tops north of Idaho City.



Photo courtesy of Lucky Peak Nursery

In 2002, LPN was asked to produce container-grown plants of various grass and forb species to be used in restoring a severely damaged mountain meadow on the Sawtooth National Recreation Area (SNRA). Those species include *Antennaria* (pussytoes), *Aster* (aster), *Balsamorhiza* (balsamroot), *Carex* (sedge), *Festuca* (fescue), *Penstemon* (penstemon), *Potentilla* (cinquefoil), *Senecio* (groundsel), and *Zigadenus* (death camas). This has been an extremely fascinating and rewarding project. The pre-germination treatments of all these species are not widely known. Through trial-and-error, LPN personnel, with the help of the USDA-FS Rocky Mountain Research Station, have been developing protocols for successful germination. Success of this small restoration project will lead to

more restoration projects on a grander scale on the SNRA and other National Forests.

Another example of these “non-traditional” Forest Service Nursery projects is one initiated by the Burns (OR) District of the BLM. In an effort to successfully revegetate vast rangelands in eastern Oregon with native *Crepis* (hawksbeard), LPN is producing *Crepis* plants that will be outplanted in LPN seedbeds with the purpose of using these plants as parent material from which seed will be collected, processed and shipped back to the Burns BLM office for broadcast applications.

Due to the historical success that we have enjoyed producing bareroot conifer seedlings, LPN is poised to make major contributions in native plant seedling and seed production.

Current and Future Projects

We are currently implementing a native seed collection and propagation project that involves collecting native forb, grass, and shrub seed from areas on or adjacent to the Boise NF. As part of this effort, Idaho Fish and Game staff and volunteers collected over 270 pounds of seed in 2002 alone! Some of this seed will be propagated at Lucky Peak Nursery to allow additional seed harvesting over the next few years. Seed will be cleaned and stored for future use on public lands throughout the Intermountain region.

This project will greatly enhance our ability to reseed and restore areas that have been affected by burning (by prescribed fire and wildfire) using locally adapted native plant species. In addition to fire rehabilitation, plant materials can also be used for mine reclamation and road obliteration projects. Additional benefits include wildlife habitat enhancement and decreasing the potential for the post-fire invasion of native habitats by noxious weeds.

The use of locally adapted plant materials can help increase the success of rehabilitation efforts and maintain the diversity of native plant and animal species. Through partnerships with nurseries, state and federal agencies, and the public, we hope that landscape restoration will continue to move from the widespread use of exotic species to a more holistic approach.

You can help “bring back the natives” by contacting your local Fish and Game, Forest Service, or Bureau of Land Management office to find out about their volunteer projects. There are usually many habitat restoration projects that need volunteers

to make the project a success. And, as a volunteer you can share in the pride of restoring an area for future generations and preserving some of Idaho's remarkable natural heritage!

Reference:

Goodwin, K., R. Sheley, and J. Clark. 2002. Integrated noxious weed management after wildfires. Montana State University Extension Service, Bozeman, Montana.

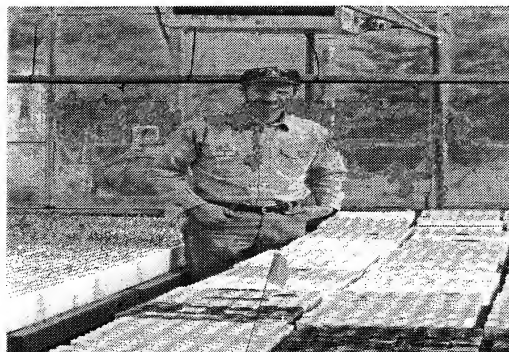


Photo courtesy of Lucky Peak Nursery

Lewis & Clark ~ Legends of American Botany

Reprinted with permission from Lawyer Nursery, Inc., Plains, Montana

Discover the marketing possibilities of a Lewis & Clark plant collection

The Lewis and Clark bicentennial celebration offers a unique opportunity for the nursery trade. No other event can highlight the bold level of botanical interest inspired by the Lewis and Clark expedition. Beginning in January of 2003, the celebration begins nationwide with talks, performances, interpretive exhibits, and traveling tours that will recreate the journey for tourists to follow. From Pennsylvania to Oregon, events are planned through 2006.

It all began in 1803, when Thomas Jefferson employed his personal secretary, Meriwether Lewis to lead the Corp of Discovery across the continent to find an efficient route to the Pacific Ocean and to observe and study new plant and animal life. Jefferson had a keen interest in botanical pursuits, noting that "No occupation is so delightful to me as the culture of the earth." In a letter to Lewis, Thomas Jefferson wrote about his botanical goals, "Objects worthy of notice will be: the soil and the face of the country, its growth and vegetable productions, the dates at which particular plants put forth or lose their flowers or leaf." The journey of botanical discovery began with those words.

"Meriwether Lewis added about 176 plant species to science."

Joined later by his friend, William Clark, who played the role of cartographer on the expedition, Lewis began to collect and diligently describe the plant life that Jefferson was captivated by.

Today, the Lewis and Clark Herbarium in the Academy of Natural Sciences in Philadelphia holds 239 botanical sheets of plants Lewis collected 200 years ago. Sources differ, but Lewis is attributed in adding about 176 plant species to science. These plants include species with ornamental, medicinal, edible, agricultural or utilitarian values.

The journals of Meriwether Lewis were quite detailed when describing important features of a plant, "its leaves are cauline, compound, and spreading" speaking of *Mahonia aquifolium*. He also described useful information on ecological ranges, seasonal changes, and Native American food or medicinal use of a plant. Journal notes and the plant plates still have a strong value for botanists to this date.

Lawyer Nursery has grown for you some of the top species discovered and documented during the journeys of Lewis and Clark. Interest in the bicentennial is keen, so now is the time to feature a marketing program utilizing these historical species. Assemble a retail display of flora collected by the pair. Plant a roadside collection of native species discovered during the expedition. Hold a plant seminar on these historical species. Offer a package of collected species with Lewis and Clark journal remarks listed on the plant tags. The possibilities are endless and await your creativity in this unique nursery stock marketing opportunity.

Editor's Note: Although this article appears as an advertisement, it is not. I personally was inspired to reprint it, and to think of Lewis and Clark's discoveries as I plant my own garden. I hope you find the information inspirational too.

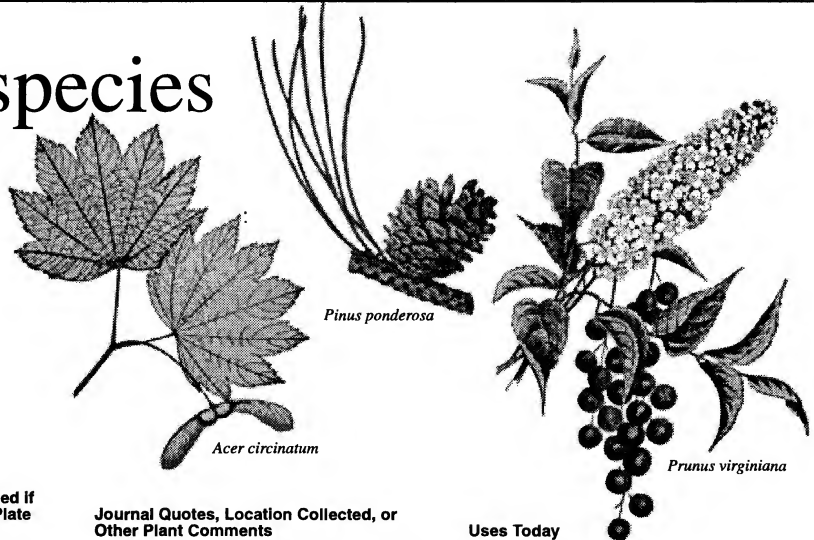
Lewis & Clark species

LAWYER NURSERY, INC.

"Lewis's journey across our continent has added a number of new plants to our former stock. Some of them are curious, some ornamental, some useful, and some may by culture be made acceptable to our tables."

- Thomas Jefferson

Listed below are some of the many interesting North American native plants Lewis & Clark discovered, collected, or observed that are available through Lawyer Nursery. You may use this chart for reference when assembling your Lewis & Clark plant list or when conducting additional research. Consult this stock listing or call our sales staff at 800-551-9875 for current availability.



Botanical name	Common Name	Date Collected if Herbarium Plate Available	Journal Quotes, Location Collected, or Other Plant Comments	Uses Today
<i>Abies grandis</i>	Grand Fir		Described Feb. 6, 1806 at Fort Clatsop, Oreg.	Christmas Tree, Timber, Ornamental
<i>Abies lasiocarpa</i>	Sûbálpine Fir		Lolo trail, Idaho, Sept. 15, 1805	Ornamental
<i>Acer circinatum</i>	Vine Maple	Oct. 1805	Collected along the Columbia River	Ornamental, Screens
<i>Acer glabrum</i>	Rocky Mtn. Maple		Encountered Aug. 13, 1805, Idaho	Ornamental, Reforestation
<i>Acer macrophyllum</i>	Big Leaf Maple	Apr. 10, 1806	"A large timber tree from the grand rapids of the Columbia."	Reforestation, Ornamental
<i>Amelanchier alnifolia</i>	Saskatoon Serviceberry	Apr. 15, 1806	Fruit eaten raw, cooked or mashed by Native American tribes	Wildlife, Edible landscaping, Ornamental, Windbreaks
<i>Amorpha fruticosa</i>	False Indigo	Aug. 27, 1806	Collected near Pierre, S.Dakota	Erosion control, Wildlife habitat, Ornamental
<i>Arctostaphylos uva-ursi</i>	Bearberry	Winter 1804-1805	Used in a mix for smoking	Erosion control, Wildlife habitat, Ornamental
<i>Ceanothus sanguineus</i>	Red Stem Ceanothus	June 27, 1806	Found near the foot of the Rocky Mtns.	Wildlife habitat, Ornamental
<i>Ceanothus velutinus</i>	Snow Brush	1805	"An evergreen...on the Rocky Mountains"	Ornamental, Reclamation
<i>Cornus sericea</i>	Red Osier Dogwood		Used in a mix for smoking	Erosion control, Wildlife habitat, Windbreaks, Ornamental
<i>Cornus nuttallii</i>	Pacific Dogwood		Found near the mouth of the Sandy River, Oreg.	Ornamental, Wildlife habitat
<i>Crataegus douglasii</i>	Douglas Hawthorn	Apr. 29, 1806	Lewis called it "deep purple haw"	Wildlife habitat, Ornamental, Windbreaks, Shelterbelts
<i>Elaeagnus commutata</i>	Silverberry	July 6, 1806	"Silver tree of the Missouri"	Wildlife habitat, Shelterbelts, Windbreaks
<i>Fraxinus latifolia</i>	Oregon Ash		Observed by Clark, Nov. 1805, Oregon	Timber, Ornamental
<i>Juniperus scopulorum</i>	Rocky Mtn. Juniper	Oct. 2, 1804	Collected in S.Dakota	Wildlife habitat, Revegetation, Shelterbelts, Windbreaks
<i>Larix occidentalis</i>	Western Larch		First observed, Sept. 1805, Bitterroot Mtns., Idaho	Timber, Ornamental, Reforestation
<i>Maclura pomifera</i>	Osage Orange	1804	First botanical specimen collected	Windbreaks, Reclamation, Timber
<i>Mahonia aquifolium</i>	Oregon Holly Grape	Apr. 11, 1806	"Mountain Holly."	Ornamental, Edible landscaping, Wildlife habitat
<i>Mahonia nervosa</i>	Cascades Mahonia	Oct. 1805	Was not distinguished from <i>M.aquifolium</i> until after the journey by Pursh	Ornamental, Edible landscaping, Wildlife habitat
<i>Mahonia repens</i>	Creeping Mahonia		Lewis thought this was the same as <i>M.aquifolium</i>	Ornamental, Edible landscaping, Wildlife habitat
<i>Philadelphus lewisii</i>	Wild Mock Orange	May-Jul. 1806	July sighting near Missoula, Mont.	Ornamental, Hedging
<i>Picea engelmannii</i>	Engelman Spruce		Noted by Lewis, Sept. 1805, Bitterroot Mtns., Idaho	Ornamental, Christmas Tree
<i>Picea sitchensis</i>	Sitka Spruce		Described by Lewis, Fort Clatsop	Timber, Ornamental
<i>Pinus contorta latifolia</i>	Lodgepole Pine		Noted by Lewis on Lolo trail, Idaho	Timber, Reforestation, Christmas Tree
<i>Pinus monticola</i>	Western White Pine		Described by Lewis, Feb. 6, 1806	Ornamental, Windbreaks
<i>Pinus ponderosa</i>	Western Yellow Pine	Oct. 1, 1805	"On river bottoms in rich land west of the mountains."	Christmas Tree, Timber, Reforestation, Ornamental
<i>Populus deltoides</i>	Cottonwood / Poplar	Aug. 1806	Wood used to make canoes and forts.	Windbreaks, Shelterbelts, Shade tree
<i>Prunus americana</i>	Native American Plum		Fruit often eaten on the journey.	Wildlife habitat, Revegetation, Edible landscaping
<i>Prunus emarginata</i>	Bitter Cherry	May 29, 1806	"The natives count it a good fruit"	Wildlife habitat, Revegetation
<i>Prunus virginiana</i>	Chokecherry	May & Aug. 1806	Fruit was added to corp's whiskey.	Ornamental, Edible landscaping, Wildlife habitat
<i>Pseudotsuga menziesii</i>	Douglas Fir		Lewis credited as first to describe.	Timber, Reforestation, Christmas Tree
<i>Purshia tridentata</i>	Antelope Bitterbrush	July 6, 1806	"A shrub common to the open prairie"	Wildlife habitat, Erosion control
<i>Quercus garryana</i>	Oregon White Oak	Mar. 26, 1806	"A sort of white oak"	Timber, Ornamental
<i>Quercus macrocarpa</i>	Burr Oak	Sept. 5, 1804	An oak "common to the prairies."	Wildlife habitat, Shade tree, Ornamental, Windbreaks
<i>Rhus trilobata</i>	Skunk Bush	Oct. 1, 1804	Found near S.Dakota	Wildlife habitat, Shelterbelts, Revegetation
<i>Ribes aureum</i>	Golden Currant	July 1805 & Apr. 1806	"Yellow currant of the Missouri"	Wildlife habitat, Shelterbelts, Revegetation, Windbreaks
<i>Ribes sanguineum</i>	Winter Currant	Mar. 27, 1806	One of four currants collected that were new to science.	Ornamental, Wildlife habitat
<i>Rosa arkansana</i>	Prairie Rose	Sept. & Oct. 1804	"The small rose of the prairies"	Erosion control, Wildlife habitat, Windbreaks
<i>Rosa woodsii</i>	Woods Rose		Lewis observed many Rose species, but only one Rose herbarium sheet exists.	Ornamental, Wildlife habitat, Windbreaks
<i>Salix exigua</i>	Coyote Willow		Observed by Lewis, Snake River, Wash.	Erosion control, Wildlife habitat
<i>Sambucus caerulea</i>	Blue Elderberry		Described by Lewis, Feb. 2, 1806	Ornamental, Wildlife habitat, Edible landscaping
<i>Shepherdia argentea</i>	Silver Buffaloerry	Sept. 4, 1804	"It is a pleasant berry to eat [with] the flavor of cranberry."	Wildlife habitat, Edible landscaping, Windbreaks, Shelterbelts
<i>Symphoricarpos alba</i>	Snowberry	date collected unknown	Found along the Lolo Trail, Idaho	Wildlife habitat, Ornamental, Erosion control, Windbreaks, Shelterbelts
<i>Thuja plicata</i>	Western Red Cedar		First observed, Sept. 20, 1805 on Lolo trail, Idaho	Ornamental, Timber
<i>Tsuga mertensiana</i>	Mountain Hemlock		Observed near the western coast.	Ornamental, Timber

Chapter News

Kinnikinnick Chapter

The Kinnikinnick Chapter ended 2002 with a successful Holiday gathering at the home of Gretchen Hellar, our first Kinnikinnick president, who served in 1998, the year we joined the INPS. The new year began with our meeting on January 25 that featured landscape designer Barbara Pressler and attracted more than 50 members, believed to be the largest attendance in Kinnikinnick's history!

February's speaker was Dr. Charles Benbrook speaking on "AgBioTech 101", bringing the chapter up-to-date on developments in agricultural biotechnology. For INPS members interested in this subject, you can find considerable information on Dr. Benbrook's website: <http://www.biotech-info.net>.

March found us making a simulated visit to "Fossil Plants of North Idaho", as Dr. Bill Rember introduced us to the fascinating fossil sites near Clarkia, ID, where plants are found in sediments of a lake formed some *15 million years ago!* For interested INPS members, Dr. Rember's website is www.mines.uidaho.edu/~tertiary/.

Now, in the fourth month of 2003, the Chapter is looking forward to its annual Arbor Day commemoration at our North Idaho Native Plant Arboretum on April 25, followed the next day by a program presented by USFS botanist Betsy Hammet, also a Kinnikinnick member.

Plans are still underway for our May meeting, the purpose of which is to call the attention of both members and the public at large to the most invasive noxious weeds and to the available means for eradicating them. Following an informative meeting on the morning of May 24th, the public will be invited to join members in a "weed pull" at a site where weeds are sufficient to demonstrate eradication techniques.

Other than the above programs and many ongoing activities of the Conservation Committee and other Kinnikinnick elements, the "landscaping interest group" formed last fall recently voted to become a full Landscape Committee. Initial co-chairs are past-president Eileen Atkisson and Parise Whitely who report that plans include helping members and the public (1) to identify and conserve native plants where residents find them on their property and (2) to encourage use of native plants in both public and private landscaping.

Calypso Chapter

Next meeting, Wed. March 5, 2003, at Life Care Center of Coeur d'Alene, 500 W. Aqua Drive, Hayden Lake, Idaho. Program will be the 57 minute video presentation, *Stopping the Coming Ice Age* (1989), Directed by Larry Ephron. Based on the book by Larry Ephron, *The End--The Imminent Ice Age and How We Can Stop It*, Celestial Arts Publishers, Berkeley, Ca. (1988), 233 pages with Index. For updates on this work, and its implications, visit: www.remineralize-the-earth.org. or contact Don Weaver, P O Box 620478, Woodside, Ca. 94062, or email: earthdon@yahoo.com

Sunday April 12, 2003: Tubbs Hill, Coeur d'Alene. (Rain or Shine) Meet at 10:00 a.m. at 11th Street Parking Lot.

Sunday May 18, 2003: Q'emlin Trails, Post Falls, 1 p.m. If RAIN, reschedule for May 25, 2003, at 1 p.m. Meet at Park Trail System Trail Head.

Saturday June 21, 2003, Marie Creek Trail, Fernan Ranger District, Coeur d'Alene. Meet at 9 a.m. at the I-90 Wolf lodge Exit parking area. This field trip was scheduled last year on Saturday July 13, 2002, but canceled due to heat and high fire danger.

Pahove Chapter

Although it's snowing in the high country, according to the flowering bulbs in our gardens, winter in Boise has already turned the corner to spring. There were even reports from the Owyhees of wild umbels blooming in January!

In January, a team of Pahove members planned February's annual "Rare Plant Conference." The conference had over 70 attendees who participated in active discussions and debate regarding the conservation status of hundreds of Idaho's rarest and imperiled plant species. The evening banquet speaker, author and botanist Wayne Phillips, gave an educational and entertaining presentation on "Plants of the Lewis & Clark Expedition."

In late February, Nancy Shaw of the U.S. Forest Service, Rocky Mountain Research Station, gave a presentation on "Native Broadleaf Herbs for Great Basin Restoration." Efforts to re-establish native vegetation in the Great Basin where seed sources have been lost due to wildfires and weed invasions are hindered by the low availability of native seed. Besides providing colorful beauty in the sagebrush-

steppe, broadleaf herbs are valuable for biological diversity and are seasonally important for sage grouse. Nancy highlighted interagency research to examine the ecology, genetics, and pollination biology of selected widespread species so aspects of seed production can be better understood. Results of this work contribute to greater production of native seed useful for healing the landscape.

Spring is shaping up to be a very busy time for the Pahove chapter. In March, Cindy Salo, a Research Ecologist with the U.S. Geological Survey, Biological Resources, will present "Old Grasses, New Trees: Invasive Plant Worlds." Based on her extensive field experience, Cindy will take us through Arizona's Sonoran Desert, Idaho's Snake River Plain, and the Saloum Region of Senegal, West Africa to look at plant transfers between the Old and New Worlds.

In early April, there will be a field trip entitled, "Pretty Primula, Awesome Onion, Mysterious Milkvetch: Early Spring Rare Plants in the Boise Foothills," to learn about our colorful, globally rare plants. There will also be a "Native Plant Landscaping Work Party" to assist the MK Nature Center with the development of their educational native plant gardens. April's activities will be capped by our annual fundraising event, the "Native Plant Sale," co-sponsored by the Northwest Earth Institute. Being planned for May is another annual event, the "Celebrate Wildflowers . . . Boise Foothills Wildflower Walks," co-sponsored by the Bureau of Land Management, U.S. Fish and Wildlife Service, and U.S. Forest Service. An overnight field trip to the Brownlee and Hells Canyon area is also in the works.

Sah-Wah-Be Chapter

Thanks to energetic organizing by Wendy Velman, Sah-Wah-Be Chapter had a truly impressive first meeting for 2003, filling the Holtes' house for a scrumptious potluck dinner and slideshow combining views of several trips to Ecuador by Karl and Ardys Holte and Brian and Sonia Schuetz. Ecuadore•a Sonia provided names for fruits and vegetables in the markets; Brian shared his damp but lovely master's degree study site, and Karl and Ardys highlighted tourist-y activities. Wendy and Karl are plotting another gathering to finish the slides, and have scheduled our annual meeting for 6:30 p.m., April 11 at North's Chuck Wagon. Bring your ideas for great field trips.

Folks interested in native plants from Ashton to Franklin, from Wayan to Aberdeen are welcome to contact Sah-Wah-Be Chapter president, Ruth Moorhead at mo0rruth@RuthMoorhead.net or at 208-233-5011 to learn what outings the group has planned.

White Pine Chapter

Joint Meeting of White Pine Chapter, Idaho Native Plant Association and Palouse Audubon Society. Wednesday, April 16, 2003, 7:30 pm. 1912 Building, East 3rd St., Moscow, Idaho

Topic: How and when can our organizations be useful participants in the forest planning process of the U. S. Forest Service, Clearwater and Nez Perce National Forests? Both of these forests are in the process of revising their Forest's strategic plans. Project-level plans are on-going as well. A major activity of our organizations has been to comment on such forest plans, but is this the most productive and helpful kind of participation? These topics will be presented by Ihor Mereszszak of the U. S. Forest Service. Public participation is welcome.

Loasa Chapter

Our meeting of January 13th was well attended-with 19 or more members and friends. A special thank you to Ray and Merri Neiwert for hosting us in their beautiful home. Our program was given by Kim Pierson, Sawtooth National Forest Botanist. Kim gave an excellent power-point presentation on *Castilleja christii* (Christ's Indian paintbrush), a beautiful rare plant known only from the summit of Mount Harrison in the Albion Mountains southeast of Burley, ID. Sawtooth National Forest and the US Fish and Wildlife Service are cooperating in the development of a new conservation agreement to help ensure the protection of this beautiful plant. Other features of Kim's discussion included information about the Mt. Harrison Research Natural Area (RNA) and the recently discovered tall forb community. More details will be forthcoming regarding forest protection of this rare plant community and the other special resource values associated with the summit of Mount Harrison.

Up Coming Meetings: March 5 6pm Taylor Building, Room 276 (College of Southern Idaho). Craters of the Moon National Monument comments workshop. An opportunity to learn about the

monument expansion and take part in the public comment process.

March 9 1pm Meet in Ridley's new store parking lot in Buhl, just off Highway 30 at the south end of town. Car pool to Hagerman Fossil Beds National Monument for look at early spring plants/flowers and soil crusts. Come prepared for weather; bring field guides, any snacks and beverages. Up to 3 mile hike (mostly downhill)- Immigrant Trail, with car-shuttle.

March 10 7pm Taylor Building Room 276 (College of Southern Idaho). Program will be announced next newsletter.

April 14 7pm Taylor Building Room 276 (College of Southern Idaho). Program to be announced.

Upcoming Events- (dates pending):

- Landscaping with Idaho's native plants
- Field trip- beautiful and rare cacti garden
- Field trip- hike; wildflowers & rare cacti in bloom- Trapper Creek RNA
- Native plant medicinal/cosmetic uses
- Lichens & Mosses, Biotic Soil Crusts walk/talk
- Riparian inventory and monitoring with field lab
- Range and grazing issues- how to determine utilization, impacts with field lab
- Camp Loasa- a combined family campout and plant identification workshop for all ages- come and learn with us this summer!

News and Notes

Idaho Native Plant Society News

INPS announces Education, Research, and Inventory Grant

Idaho Native Plant Society will make small grants available this year to support education, research, inventory, or other projects that contribute to the appreciation, understanding, or conservation of Idaho's native flora or vegetation. The deadline for submitting proposals for up to \$ 1000 is April 7, 2003. Proposals should clearly state project objectives, methods, products, and time table for completion of the project. For more information and specific proposal guidelines please contact grant committee members or go to the INPS website (www.idahonativeplants.org).

Education, Research, and Inventory Grant Committee members are: Annette Runnalls, Kinnikinnick Chapter; Sarah Walker, White Pine Chapter; Michael Mancuso, Pahove Chapter; and Steve Rust, INPS Treasurer.

By-Laws change approved for membership vote

The INPS Board of Directors approved a by-laws amendment for consideration at the July, 2003 annual membership meeting. The amendment, which affects the distribution of membership dues from the state organization to chapters, was approved at the Board's February 2003 meeting. The amendment to Article V, Section 4 regarding duties of the treasurer reads (using

strike-out to show words that are deleted and underline to show words that are added):

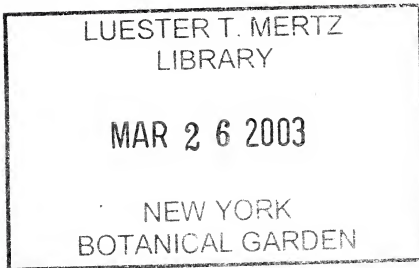
The Treasurer shall keep and maintain adequate and correct accounts of the transactions of the Society. He/she shall receive all membership dues of the Society and ~~monthly~~ at least quarterly remit to chapter treasurers their portion of all membership dues. The Treasurer shall have such other powers and perform such other duties as may be prescribed by the Board of Directors.

A similar amendment to the by-laws was approved by the Board in 1999 but not presented for a vote of the membership. Rationale for the change are: (1) the annual flow of dues is cyclic with the highest level of activity occurring in the beginning of the new year; (2) the change reduces the need for numerous, relatively small transactions between the state treasurer and chapter treasurers; and (3) the by-laws amendment would allow funds to be available to the chapters at anytime, but at least quarterly.

Idaho Native Plant Society
P.O. Box 9451
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Sage Notes is published four times a year in February, May, September, and December by the Idaho Native Plant Society, incorporated since 1977, under the laws of the State of Idaho. Editor, Mark Shumar. **Newsletter ads:** personal ads \$2; commercial ads \$5 for 1/8 page, \$8 for 1/4 page, \$15 for 1/2 page, and \$25 for full page. Ads should be sent with payment. **Submissions:** members and others are invited to submit material for publication. Articles in any form, even hand-written, are welcome, as is art work. Please provide a phone number in case there are questions. Material will not be returned. Send submissions directly to the editor, Mark Shumar, 6017 W Randolph Dr., Boise, ID 83709, or <mshumar@mindspring.com>. Submission deadlines are January 1, April 1, August 1, and November 1.

Officers: President, Kristin Fletcher; Vice President, Cleve Davis; Secretary, Kahne Jensen; Treasurer, Steve Rust; Member-at-large, VACANT; Past President, Karl Holte; Conservation Committee Chair, Chris Murphy; Small Grants Committee Chair, Steve Rust; Newsletter Editor, Mark Shumar. **Calypso Chapter**, P.O. Box 331, Careywood, ID 83809. President, VACANT; Vice President, VACANT; Secretary, Phil Hruskocy; Treasurer, Janet Benoit; Newsletter, Phil Hruskocy. **Kinnikinnick Chapter**, 1248 South Center Valley Road, Sandpoint, ID 83864. President, Bruce Vogelsinger; Vice President, Molly O'Reilly; Secretary, Annette Fraser-Runnalls; Treasurer, Patricia Stevens; Conservation, Molly O'Reilly; Newsletter, Michael and Phil Franklin; Arboretum, Sylvia Chatburn; Education, Pat Ramsey; Landscaping, Eileen Atkisson and Parise Whitley. **Pahove Chapter**, PO Box 9451, Boise, ID 83707. President, Chris Murphy; Vice President, VACANT; Secretary-Treasurer, Steve Rust. **Sah-Wah-Be Chapter**, 1646 Kinghorn Rd., Pocatello, ID 83201. President, Ruth Moorhead; Vice President, Brian Schuetz; Secretary, Barbara Nicholls; Treasurer, Harry Giesbrecht; Board Representative, Karl Holte. **White Pine Chapter**, PO Box 8481, Moscow, ID 83843. President, Al Stage; Vice President, Paul Warnick; Secretary, VACANT; Treasurer, Dennis Ferguson; Env. Impact & Forest Plan Comment, Angela Sondenaa; Publicity, Tyson Kemper; Newsletter, Nancy Miller; Landscaping & Restoration Plant Lists, Juanita Lichthardt; Past President, Sonja Lewis. **Wood River Chapter**, PO Box 3093, Hailey, ID 83333. President, VACANT; Vice President, Joanne Vassar; Secretary-Treasurer; Jo Ann Robbins; Member-at-large, Carol Blackburn. **Loasa**

Chapter, 780 Falls Ave. #390, Twin Falls, ID 83301. President; Miriam Austin; Treasurer, Merri Neiwert; Conservation, Steven Paulsen; Newsletter, Kent Fothergill.

The Idaho Native Plant Society (INPS) is dedicated to promoting interest in native plants and plant communities and to collecting and sharing information on all phases of the botany of native plants in Idaho, including educating the public to the values of the native flora and its habitats. In keeping with our mission, it is the intent of the INPS to educate its membership and the public about current conservation issues that affect Idaho's native flora and habitats. **Membership** is open to anyone interested in our native flora. Send dues to Steve Rust, Treasurer, 1201 N. 24th, Boise, ID 83702, and all **correspondence** to INPS, Box 9451, Boise, ID 83707. Website address: IdahoNativePlants.org.

Category	2003 Annual Dues
<input type="checkbox"/> Patron	\$35
<input type="checkbox"/> Individual	\$15
<input type="checkbox"/> Household *	\$20
<input type="checkbox"/> Student	\$8
<input type="checkbox"/> Senior Citizen	\$8

Name _____
Address _____
City/State _____
Zip _____ Telephone _____

Chapter affiliation? (check one)

- Calypso (Coeur d'Alene; please include \$6 newsletter dues)
 Kinnikinnick (Sandpoint; please include \$6 for Kinnikinnick Journal)
 Pahove (Boise) Sah-Wah-Be (SE Idaho)
 White Pine (Moscow) Loasa (Twin Falls)
 Wood River (Ketchum-Sun Valley; please include \$7 chapter dues)
 None. Those who do not live near a chapter are encouraged to join. We can put you in touch with other members in your area, and can coordinate with you on any state level activities you may wish to be involved in.

* Household memberships are allocated two votes

Idaho Native Plant Society

Treasurer's Report – January 2002 through December 2002

Introduction: Following is a summary of the expenditures and income of the Society during the period, January 1, 2002 through December 31, 2002. A brief discussion follows the summary.

Summary of Expenditures, Income, and Assets:

Checking Account Summary

Beginning balance (01/01/02)		260.66
	Additions	
Contributions		65.00
Membership dues		4710.50
RPC income		1390.00
	Subtractions	
Board meeting expenses		-530.52
Chapter dues received and forwarded		-96.00
Dues remittance		-784.02
ERI Grant		-350.00
Operational expenses		-83.13
PO Box and Bulk Mail Permit		-399.00
RPC expense		-1104.22
Sage Notes		-2590.15
Ending balance (12/31/02)		489.12
Summary of Assets		
Key Bank of Idaho		489.12
UBS PaineWebber Investment Account		2647.28
US Postal Service Postage Due Trust Account		53.57
Total Assets as of 12/31/02		3189.97

Discussion: Income during 2002 came from four sources: membership dues, non-dues contributions, investments, and proceeds from the annual rare plant conference (RPC) (see Figure 1).

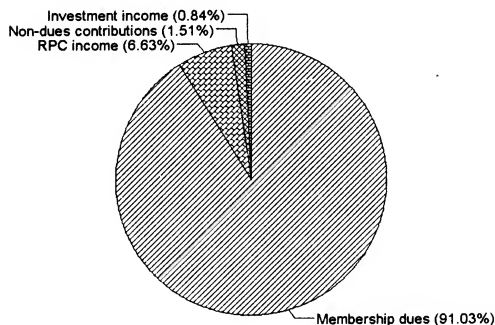


Figure 1. Relative distribution of 2002 income by source.

The largest source of income to INPS is annual membership dues payments. In Figure 2 the total number of individuals paying dues in 2002 and total dues revenue to INPS are summarized by chapter. Three hundred and sixty-six members paid dues in 2002. This represents a forty-five percent increase compared to 2001 (252 members).

The number of new and renewing members also serves as an important indicator of how the society is functioning to meet its objectives. There were 113 new INPS memberships in 2002; but 66 members who paid dues in 2001 did not renew in 2002, resulting in a net gain of 47 members.

Changes in membership varied between chapter. The greatest membership growth in 2002 was observed in Kinnikinnick Chapter (Figure 3). New memberships in the chapter far exceeded the number of non-renewing memberships in 2002.

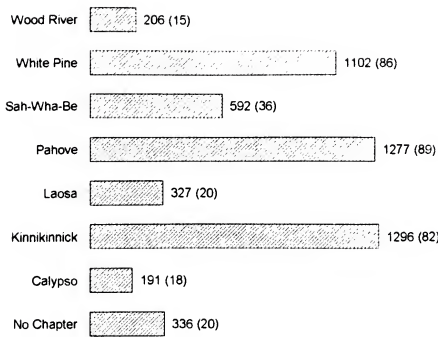


Figure 2. Total 2002 dues revenue and number of members (shown in parentheses) is summarized by chapter.

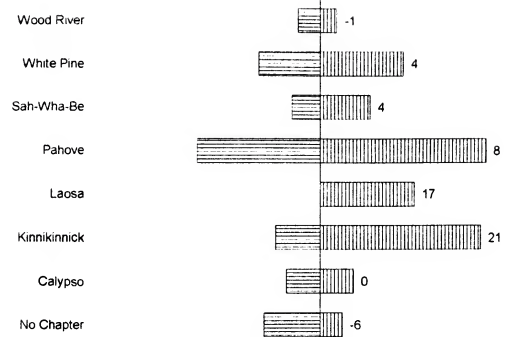


Figure 3. The number of members (bars on right side of vertical line) are compared by chapter to the number of non-renewing members (bars of left side of vertical line). Values show the net gain or loss in membership.

Cash flow associated with the annual rare plant conference successively bridges each fiscal year. Registration income for the 2002 annual rare plant conference began to accrue in fiscal year 2001. Expenses and income associated with the 2003 annual rare plant conference began to accrue in fiscal year 2002. Though the current 2002 checking account ledger shows a positive balance for the conference (RPC income, \$ 1390.00; RPC expense, \$ -1104.22). The 2002 annual rare plant conference actually netted a modest expense of \$ 65.88. Though the net income from the annual rare plant conference was down in 2002, the mean annual income during the years 1999 through 2002 remains \$ 242.02. Smaller, but significant sources of income to the Society in 2001 were non-dues contributions and investment income.

As in previous years, the largest single expense during 2002 was the preparation and mailing of Sage Notes (Figure 4). In 2002 four issues of Sage Notes were produced and distributed with an average cost of \$ 647.53.

In February 2002 the INPS Board approved a by-laws amendment establishing an education, research, and inventory grants process for consideration of the membership at the annual meeting. This amendment was accepted by the membership during the annual meeting held in Sandpoint, July 2002. Though a precursor to the formal approval of an education, research, and inventory (ERI) grants process, the Board elected to contribute \$ 350.00 to Kinnikinnick Chapter (listed above and below as ERI Grant) to support costs associated with its development of a native plant arboretum.

Board meeting expenses resulted from the conference calls which occurred in February and November 2002. The calls allowed individuals from around the state to connect and discuss Society business. Bulk mail expenses were higher in 2002 compared to previous years due to the cost of moving the bulk permit from Moscow to Boise. Operational costs in 2002 were incurred as bank service fees, for postage, and mailing labels.

The checking account summary (above) shows an amount for "Chapter dues received and forwarded". These funds are shown to accurately reflect the account balance as of December 31, 2002 but are not considered an actual expense. These funds were in the INPS account at the beginning of the fiscal year and were forwarded to the respective chapter early in 2002.

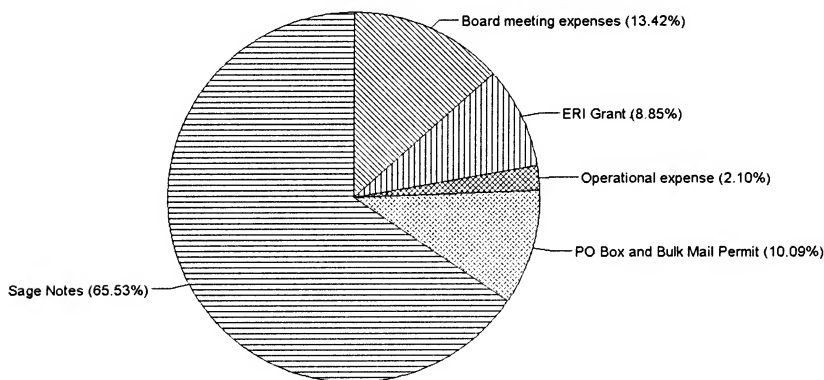


Figure 4. Distribution of 2002 expenses.

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Sage Notes



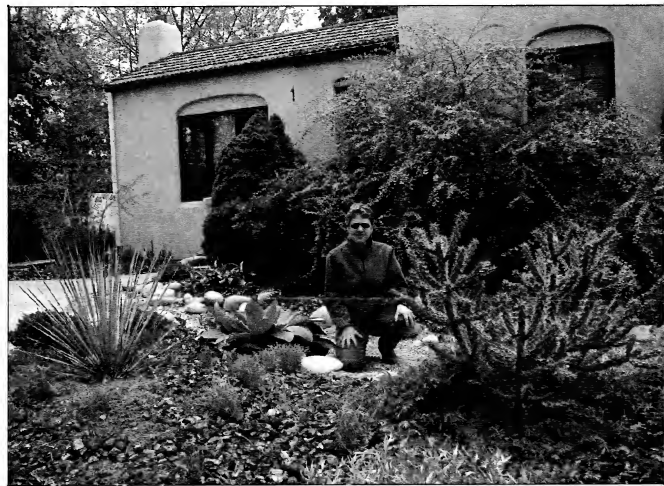
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Summer 2003 ❖ SAGE NOTES ❖ A Publication of the Idaho Native Plant Society Vol. 25 (2)

Beth Workman, New Lifetime INPS Member

By Ann Debolt, Pahove Chapter

Many INPS members, including those in Pahove, may have never had the pleasure of knowing or working with Beth Workman. Beth, a rather unassuming graphic artist by trade but a true plant enthusiast by passion, has contributed many hours to INPS over the years. I was first acquainted with Beth during an INPS field trip to plant bitterbrush on Squaw Butte back in 1986. It had recently burned in a 250,000-acre wildfire. Shortly thereafter, before many of us were thinking about much less doing it, Beth's drought tolerant, native-dominated East End landscape was beautifully featured in the Idaho Statesman. Her gardens, both at her residence and more recently her studio (see photo), have been featured during Boise xeriscape tours sponsored either by Pahove or other local organizations. A true conservationist, Beth has donated her time and talent to a variety of non-profit organizations over the years, and INPS has been one of the fortunate recipients. Pahove chapter plant sales, initiated about ten years ago, have benefited from Beth's donated plants, as well as from her idea and production of small laminated signs incorporating color photos of each species. They have been excellent marketing tools and saved us, during the heat of the sale, from repeatedly answering the question "What does this plant look like?" In 2001, when INPS decided to use color photos to modernize its original brochure, Beth was an obvious choice to help make it happen. Working at night and on weekends, Beth donated many hours to put together a beautiful product for us. When revisions were needed this spring, she was there again, in her calm, low-key way. Like the "job" of Sage Notes editor, production of the brochure required a lot of behind the scenes volunteer time and effort that most members are unaware of. So if you ever encounter Beth, please tell her how much you appreciate her contributions to INPS over the years. For all this and more, we would like to recognize Beth as a treasured lifetime member. Thank you Beth for all that you do for INPS!



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{ Articles contributed to Sage Notes reflect the views of the authors and are not an official position of the Idaho Native Plant Society. }

Researcher fights spread of cheatgrass

University of Nevada, Reno,
Office of Communications
(11/25/02)

Cheatgrass, an annual weed, has overrun many of Nevada's rangelands. It threatens native plant species and contributes to a vicious cycle. Cheatgrass fuels fire and fire, in turn, enables the increased growth of cheatgrass. The results are devastating to the Great Basin.

Direct economic impacts from cheatgrass include fire-suppression efforts, lost forage and grazing, lost infrastructure, such as fences and other physical structures, and reseeding efforts. Other impacts include erosion, loss of wildlife and recreation, increased road maintenance and destruction of local ecologies.

"If we don't get a handle on it, it will be an ecological disaster," says Robert Nowak, professor of environmental and resource science, who recently received \$2.9 million from the USDA to research and intervene into the cheatgrass fire cycle.

Nowak is working cooperatively with researchers from Oregon State University, Utah State University, the USFS Rocky Mountain Research Laboratory, USGS Forest and Rangeland Ecosystem Science Center, the USDA Agricultural Research Service, the Bureau of Land Management and the USDA Natural Resources Conservation Service to address the cheatgrass problem throughout the Great Basin.

Nowak's research has three essential components, which complement one another. The first component involves an ecological theory of how natural communities change. Nowak and his colleagues will engage in multistage restoration efforts, involving the planting of 25 native species at eight different sites around the Great Basin.

The second component will look at the plausibility of using multiple native plant species to successfully compete with cheatgrass for resources. The research will examine both shallow- and deep-rooted species that grow both early and late in the natural growing season in order to find an optimum combination of plants to compete with cheatgrass in each region around the Great Basin.

The third part of the research is to use one large-scale restoration site where researchers are trying to control the spread of the cheatgrass seed with well-timed grazing and burning. The reason for using a larger plot is ecological.

"The thought behind this is that what is occurring on a small plot is influenced by the surrounding area," Nowak says. "Therefore it is essential to monitor a larger plot of land."

By combining expertise and sharing resources, this multi-state, interdisciplinary consortium of research, education, extension and agency personnel will work on multiple levels to address the many areas affected by cheatgrass.

"Cheatgrass is a consequence of the global economy," Nowak

says of the weed. It arrived to the United States through trade in the early 19th century, and global changes are helping its spread today. The data is strong, saying that the increasing atmospheric carbon dioxide and the general warming that has been occurring across the Great Basin enable the continued growth and spread of cheatgrass.



USDA_NRCS PLANTS Database / Hitchcock, A.S. (rev. A. Chase). 1950. Manual of the grasses of the United States. USDA Misc. Publ. No. 200. Washington, D.C.

"We are poised to identify ecological principles and fundamental knowledge needed to manage invasive weeds and facilitate native plant restoration on Great Basin rangelands. We are looking to come up with solutions that are cost effective."

(By Nicole Klay and Robert Conrad, (775) 784-4724; bconrad@unr.edu)

Idaho Native Plant Society Annual Meeting

Where: Stanley Basin (North of Redfish Lake)

When: July 18, 19, & 20, 2003.

Idaho Native Plant Society welcomes you and your family to the spectacular Sawtooth Valley this summer to explore and appreciate the flora of this diverse area, from the meadows to the mountains. Enjoy the crisp and clear mountain air in the company of botanical enthusiasts from around the state--it is a great opportunity to meet fellow members, catch up on the latest activities, and relax around campfires enjoying the starry skies. The festivities will kick off Friday afternoon at 3 PM (meeting at Elk Creek Campground) with a field trip led by Sawtooth National Forest botanists Kim Pierson and Deb Taylor who will be introducing us to the common and rare plants of the Sawtooths. Weekend activities will include field trips to peatlands, forests, and more!

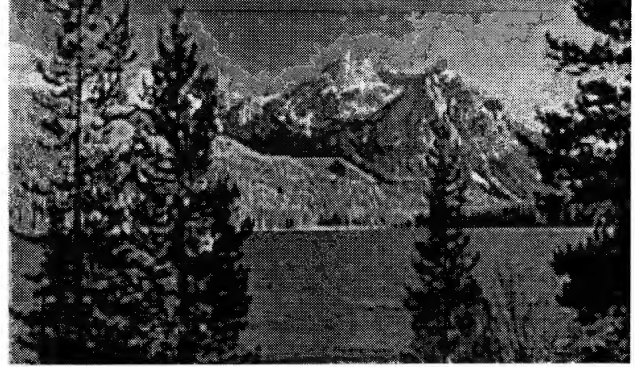


Photo courtesy of BLM

Where to stay: Two campgrounds have been reserved, Elk Creek Campground and Trap Creek Campground.

Directions: Elk Creek Campground is approximately 122 miles northeast of Boise, Idaho, off State Highway 21. On State 21, turn north at milepost 123, approximately 8 miles west of Stanley onto Forest Road 892. Elk is adjacent to State Highway 21. Trap Creek campground from Stanley, Idaho, take State Highway 21, west 12 miles. Take Forest Road 540 to Trap Creek Campground, located adjacent to State Highway 21. (These two campgrounds are somewhat across Highway 21 from each other. The only restriction is that we CANNOT set-up tents in the Elk Creek Meadow area. Keep tents in the trees if possible. Large family or wall tents will be difficult to set up 4 man and under are no problem. There is no restriction on the number of tents. Each site will hold up to 40 people. Parking space is somewhat limited if we have a lot of large outfits. We are allow to park as many vehicles as space allows and leave space of visitors and passers-by to use the restroom facilities.)

Hotels and Resorts in the area: I found two fairly informative website to direct people to:
<http://www.gonorthwest.com/Idaho/central/Stanley/stanley.htm> and
<http://www.travelhero.com/search.cfm/country/US/state/ID/city/STANLEY/hotels/reservations/aid/87/index.html>
and this one is from the Stanley Chamber of Commerce http://www.stanleycc.org/pages_service_dir/lodging.html

What we are going to do: There are numerous hiking opportunities, and we are scheduling at least a couple of Campfire Evening talks. Redfish Lake Visitor Center has many day and evening programs that we may be interested in. There will be a list available by the meeting.

FOOD: We would like to have a potluck Campfire Dinner on Saturday evening where everyone can enjoy the company of the crowd that gathers. All other food will be on your own.

Annual Society Meeting will be held Saturday afternoon at one of the group sites. The Business/Board meeting will be held at the Stanley Work Center (Forest Service Office) on Sunday Afternoon.

If there are any question or you need information please contact **Wendy Velman** at (208) 237-7549 or e-mail at pooh@ida.net

Lewis and Clark Nature Walks Featuring Plants on the Boise National Forest

In honor of the Lewis and Clark Bicentennial, the Boise National Forest is offering a series of nature walks this summer to highlight some of Idaho's remarkable native plants. About 100 of the plant species collected by Lewis and Clark can be found in the Boise National Forest.

The nature walks will be hosted at Frontier Point Recreation Center (the Bogus Basin Nordic Center), located approximately 17 miles north of Boise, on Saturdays from 10 a.m. to

12 p.m., on June 21, July 19, August 23, and September 20, 2003.

During these walks, you will have a chance to see some of the featured plants up close and personal. Discussions include the role that plants played during the historic expedition, and use by Native Americans as food, medicine, and building materials. "Come join us at Bogus Basin and help celebrate Idaho's unique natural heritage," said Edna Rey-Vizgirdas, Forest Botanist, Boise National Forest. "Walks are free and no pre-registration is necessary. We do recommend hiking shoes and a jacket."

For further information, contact Edna Rey-Vizgirdas at 208-373-4264.

Pahove Annual Native Plant Sale

By Ann Debolt, Pahove Chapter

The Pahove chapter, in partnership with Northwest Earth Institute (NWEI), held its annual native plant sale on April 26 at Boise's Hyde Park Mennonite Church. In spite of cool weather and spitting rain, 900 plants were sold in less than two hours. This was the tenth year for this Earth Day fundraiser, which raised nearly \$2,000 for the two groups.

Arrowleaf balsamroot, sulfur buckwheat, gooseberry-leaf globemallow, low pussytoes, and lovely penstemon were just a few of the species available, all grown by Buffalo-Berry Farm, a native plant nursery located near McCall. Nearly 15 INPS and NWEI volunteers helped make the sale a success and we couldn't have done it without them. Thanks go out to Lyn McCollum (sale chairperson), Ann Hausrath, Dave Hand, Linda Gossett, Paul Shafer, Zeke Willard, Ben and Diana Dicus, Leslie Fritchman, Valerie Geertson, Hilary Parkinson,

Roger Rosentreter, and Chris and Karen Colson for their assistance. In addition to plant sales, Pahove and NWEI, a sustainable living organization, also provide educational materials on landscaping with natives, water conservation, and voluntary simplicity. We were delighted by the public's interest in bringing interesting native and drought-tolerant species to Boise again this year, and would like to thank our many customers for their support. Their enthusiasm has been fantastic!

Chapter News

Kinnikinnick Chapter

The Conservation Committee of the Kinnikinnick Chapter has submitted extensive comments on the Forest Plan revision for the Idaho Panhandle and Kootenai National Forests. Special concerns were expressed about the rampant spread of weeds and the lack of language to protect sensitive plants.

On April 26th, USFS botanist Betsy Hammet (a Kinnikinnick charter member) used an effective power point projection system to lead the audience at

Kinnikinnick's meeting through the varieties of peatlands, their formation and the special ecology that is home to unusual and seldom-found plants in this area. On the day before, an open house at Kinnikinnick's North Idaho Native Plant Arboretum attracted more than 100 students and many adults to the City of Sandpoint's official Arbor Day commemoration, where Sandpoint's mayor received the Tree City USA banner from the Idaho Department of Lands for the seventh consecutive year.

During May, the Kinnikinnick Chapter was busily preparing for its first annual “Weed Awareness Day” on the last day of the month. Sixteen other Bonner County groups have joined the INPS Chapter in sponsoring the event, entitled “Pulling Together”. Four guest speakers are to focus in the morning on non-herbicide methods of eradicating weeds, but also will discuss techniques for spraying with herbicides. In the afternoon, participants are invited to join the speakers in the field for “hands-on” instruction in pulling noxious weeds.

The Chapter’s June 28th meeting will feature Dennis Ferguson, USFS Research Forester and longtime member/officer of the White Pine Chapter, who will present an “Introduction to Forest Habitat Types”. Following a two-month summer hiatus, monthly Kinnikinnick meetings will begin again in September.

Calypso Chapter

Field Trip Activities:

Marie Creek Trail, Fernan Ranger District – 9:00 a.m., Saturday, June 21, 2003. Meet at the I-90 Wolf Lodge Exit parking area. Bring a sack lunch and a beverage.

Crystal Lake/Latour Creek – 7:30 a.m., Saturday, July 12, 2003. Meet at the Fernan Ranger Station on East Sherman Avenue in Coeur d’Alene to carpool to the lake. The lake is south of Cataldo approximately 20 miles. The early meeting time is to avoid the heat and give us time to drive from Cd’A to the trailhead. This is a high altitude walk similar to Roman Nose Lake, but with dramatically distinctive species.

Gamlin Lake – 8:00 a.m., Saturday, August 16, 2003. Meet at the Super 1 Hayden parking lot to carpool to the site. Or, meet at the trailhead at 9:00 a.m. Gamlin Lake is a cedar forest/wetland habitat located approximately ½ hour east of Sagle. The trail is approximately 2 miles long.

Clarkia Fossils – 7:30 a.m., Saturday, September 6, 2003. Meet at the Fernan Ranger Station on East Sherman Avenue in Coeur d’Alene to carpool to Dr. Rember’s private fossil site. This will be an overnight trip for those who want to do two days. Day one will be a fossil dig at Dr. Rember’s site. Day two will be a trip to the Hobo Cedar Grove in the St. Joe National Forest. Dr. Rember has said we can camp on his property. There are also motels available in nearby Fernwood. This field trip is limited to 15 people.

Note: should any of the scheduled summer field trips be canceled because of heat, fire danger, etc. an alternate field trip is to Janet Benoit’s property near Careywood.

Pahove Chapter

The moist spring in southwest Idaho has created some beautiful carpets of wildflowers! An April 5th field trip to the Boise Foothills revealed several colorful early season species, including Aase’s onion (*Allium aaseae*), a globally rare endemic. On April 26th, Pahove Chapter and the Northwest Earth Institute had another successful native plant sale. This annual fundraiser is a great chance for gardeners to get hard-to-find, but easy to care for native plants for their efforts to decrease water and chemical usage at home. On May 10-11th, Pahove hosted a fun overnight tour of the Hells Canyon and Brownlee country, west of Cambridge. From the basalt rimrock to the canyon grasslands, this area had extraordinary spring wildflower displays of balsamroot, onions, phlox, biscuitroot, lupine, penstemon, and more!

Coming up August 16–17th, we will team up with the Idaho Greens for our second annual wilderness backpacking botanical exploration. This year we will visit the scenic Lava Lakes area north of McCall. White Pine members are invited to attend. For questions and reservations contact: Chris Murphy at wapitibugle@msn.com

Sah-Wah-Be Chapter

The Sah-Wah-Be Chapter is working hard on the logistics and planning for the INPS annual Meeting in Stanley. Stay tuned for more information about our southeastern Idaho chapter in future issues of Sage Notes.

White Pine Chapter

Tuesday, June 17, 6:30 p.m. Dissmore’s Grocery, No. Grand, Pullman. Magpie Forest. Leader: Dr Richard Old. Contact: Trish Heekin at Trish.Heekin@id.usda.gov, 208-883-8386

Saturday, June 28, 2003, 8 a.m. Eastside Marketplace on Hwy 8. Walker’s Park Cedar Grove. Co-Leaders: Juanita Lichthardt, Fred Johnson. Contact: Juanita Lichthardt, jjl@moscow.com, 208-882-4803

T-shirts and other INPS screen-print items: Sonja will be putting together another T-shirt order. If there

is enough interest statewide in other items, an order will be placed for other items as well. Sonja has prepared information with the various ballot choices. Please check it out below and let her know as soon as possible of your interest in various T-shirts, Outback hats, grocery tote bags, Polo shirts. The tote bags are sure handy for carrying flower and bird books on field trips or taking as gifts when visiting so they get my vote. She can be contacted at sal.e.forth@turbonet.com or 208-883-2638.

Seeds of the showy Mountain Hollyhock *Sidalcea spicata* available! Seeds of this dramatic 4-5' tall meadow perennial were donated by member Lillian Pethel last summer, and are available first come, first served. *S. spicata* is non-rhizomatous, and features spikes of pink or pinkish-lavender flowers. Sonja Lewis, 208-883-2638, e-mail sal.e.forth@turbonet.com is the contact if you would like a few seeds, or if you have cultivation information to share on this species! Thank you again, Lillian, for so thoughtfully and generously sharing these seeds.

Please continue to contribute Native Plants landscaping information. Several years ago the White Pine Chapter put out a guide: "Plants of Northern Idaho for Landscaping and Restoration." This was done largely due to the efforts of Juanita Lichthardt. The guide has not been widely distributed, but a printed version is available. It should also be available on the INPS website eventually. Because of a recent upsurge of interest in cultivating natives, our knowledge of their qualities and propagation is expanding rapidly. Juanita is willing to collect and organize any information each of you have on landscaping use of Idaho native plants such as wildlife uses, persistence, bad behavior, or diseases. This information could then be considered for inclusion in future editions of the native plant guide or on our future website. She looks forward to hearing from you. Material can be sent to her at jjl@moscow.com.

We maintain two email lists. One is for meeting notices and special announcements primarily. Contact nmiller@moscow.com if you are not receiving these email and wish to. The second list is for discussion of items of chapter interest, forwarded messages from other chapters, as well as meeting notices and special announcements. This list is hosted on UI's list serve. Again, contact nmiller@moscow.com if you wish to be on this second mailing list – or if you wish to move from one list to the other.

Loasa Chapter

June 16 at 7pm Taylor Building Room 276 (College of Southern Idaho) A slide show and presentation by Ervin R. Cowley, a BLM Rangeland Professional specializing in Riparian Ecology and Management. Riparian areas include those narrow ribbons of vegetation along streams and rivers- and are extremely important for proper watershed functions and as wildlife habitat. This is a rare opportunity for the chapter and members of the community at large to learn about some very important land management concepts.

Upcoming Events-

Field trip- hike, native wildflowers & cacti in bloom- Trapper Creek RNA (access is limited- delayed by wet weather- possibly late May or June?)

Native plant medicinal/cosmetic uses (July or August)

Camp Loasa- a combined family campout and plant identification workshop for all ages- come and learn with us this summer! Dr. Karl Holte, Professor Emeritus at ISU has graciously agreed to teach plant identification skills. Watch for lists of "class" supplies and details in upcoming issues! (most likely August)

IDAHO NATIVE PLANT SOCIETY

Education, Research, and Inventory Grant

2003 Announcement and Guidelines

The Idaho Native Plant Society (INPS) is pleased to announce the 2003 Education, Research, and Inventory Grant Program. Grants of up to \$1,000 will be awarded in 2003 to support projects that contribute to the appreciation, conservation, or advancement of knowledge of Idaho's native flora or vegetation.

The purpose of the INPS Education, Research, and Inventory Grant Program is to stimulate research, conservation, and educational activities which help foster an appreciation for Idaho's native plants and plant communities. These grants are intended to promote native plant conservation through better understanding of our native flora and the factors affecting their survival. Announcement of the grant is posted in *Sage Notes*, newsletter of INPS, each year as funds become available. The deadline for submitting proposals is June 20, 2003.

We encourage anyone who has a project that thinks it might qualify for the INPS grant program to consider submitting a proposal!

Grant Guidelines—Education, Research, and Inventory Grants are intended to support the direct costs of projects that contribute to the appreciation, conservation, or advancement of knowledge of Idaho's native flora or vegetation. Following are examples of the costs the grants may cover:

- Direct costs of travel, meals, and lodging for research, conservation or education projects.
- Supply and service expenses used for the sole purpose of the native plant project (laboratory chemicals, film, photocopying, phone, and computer time)
- Printing costs for public outreach projects or research publications.

Grant proposals should not include expenses for salary and personnel benefits, purchases of personal equipment, nor expenses that are non-essential to the project.

Application Procedure and Requirements—Funding proposals should contain the following information:

1. Project title.
2. Contact person. Please provide the name, organization affiliation, address, phone number, and e-mail (if available).
3. Project description. Describe the project objectives, methods, and final product. Explain how the project will benefit the appreciation, conservation, or advancement of knowledge of Idaho's native flora or vegetation. Describe how success of the project will be evaluated.
4. Itemized budget. Outline an overall project budget. Include the amount you are requesting from INPS (\$1,000 or less) as well as other funding sources.
5. Project time line. Please provide a time line for completion of the project. Include dates for all aspects of the project, including presentation of the project results.

Project proposals must pertain to native plants of Idaho. Preference will be given to proposals expected to generate information or public support that advances the conservation of native plants in the wild. Proposals which demonstrate initiative, cooperation with other organizations or agencies, or public outreach are also preferred. Please limit grant requests to \$1,000 or less.

Successful applicants will be required to submit a final report to Idaho Native Plant Society documenting project accomplishments and a brief summary of the project to be published in *Sage Notes*, newsletter of INPS.

Submit project proposals by e-mail to Steve Rust at srust@idfg.state.id.us or by post to:

Idaho Native Plant Society
ERIG Committee Chair
P.O. Box 9451
Boise, ID 83707

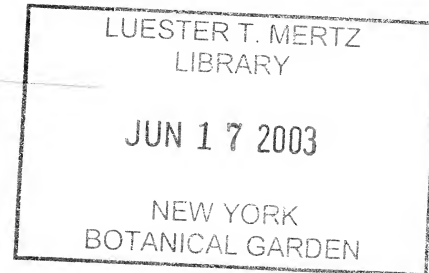
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Officers: President, Kristin Fletcher; Vice President, Cleve Davis; Secretary, Kahne Jensen; Treasurer, Steve Rust; Member-at-large, VACANT; Past President, Karl Holte; Conservation Committee Chair, Chris Murphy; Small Grants Committee Chair, Steve Rust; Newsletter Editor, Mark Shumar. **Calypso Chapter**, P.O. Box 331, Careywood, ID 83809. President, VACANT; Vice President, VACANT; Secretary, Phil Hruskocy; Treasurer, Janet Benoit; Newsletter, Phil Hruskocy. **Kinnikinnick Chapter**, 1248 South Center Valley Road, Sandpoint, ID 83864. President, Bruce Vogelsinger; Vice President, Molly O'Reilly; Secretary, Annette Fraser-Runnalls; Treasurer, Patricia Stevens; Conservation, Molly O'Reilly; Newsletter, Michael and Phil Franklin; Arboretum, Sylvia Chatburn; Education, Pat Ramsey; Landscaping, Eileen Atkisson and Parise Whitley. **Pahove Chapter**, PO Box 9451, Boise, ID 83707. President, Chris Murphy; Vice President, VACANT; Secretary-Treasurer, Steve Rust. **Sah-Wah-Be Chapter**, 5157 Whitaker Rd., Chubbuck, ID 83202-1619. President, Wendy Velman; Vice President, Brian Schuetz; Secretary, Barbara Nicholls; Treasurer, Harry Giesbrecht; Board Representative, Karl Holte. **White Pine Chapter**, PO Box 8481, Moscow, ID 83843. President, Al Stage; Vice President, Paul Warnick; Secretary, VACANT; Treasurer, Dennis Ferguson; Env. Impact & Forest Plan Comment, Angela Sondenaar; Publicity, Tyson Kemper; Newsletter, Nancy Miller; Landscaping & Restoration Plant Lists, Juanita Lichthardt; Past President, Sonja Lewis. **Wood River Chapter**, PO Box 3093, Hailey, ID 83333. President, VACANT; Vice President, Joanne Vassar; Secretary-Treasurer, Jo Ann Robbins; Member-at-large, Carol Blackburn; Board

Representative, Bill McDorman. **Loasa Chapter**, 780 Falls Ave. #390, Twin Falls, ID 83301. President; Miriam Austin; Treasurer, Merri Neiwert; Conservation, Steven Paulsen; Education Chair, Kim Pierson; Newsletter, Kent Fothergill.

The Idaho Native Plant Society (INPS) is dedicated to promoting interest in native plants and plant communities and to collecting and sharing information on all phases of the botany of native plants in Idaho, including educating the public to the values of the native flora and its habitats. In keeping with our mission, it is the intent of the INPS to educate its membership and the public about current conservation issues that affect Idaho's native flora and habitats. **Membership** is open to anyone interested in our native flora. Send dues to Steve Rust, Treasurer, 1201 N. 24th, Boise, ID 83702, and all **correspondence** to INPS, Box 9451, Boise, ID 83707. Website address: IdahoNativePlants.org.

Category	2003 Annual Dues
<input type="checkbox"/> Patron	\$35
<input type="checkbox"/> Individual	\$15
<input type="checkbox"/> Household *	\$20
<input type="checkbox"/> Student	\$8
<input type="checkbox"/> Senior Citizen	\$8

Name _____
Address _____
City/State _____
Zip _____ Telephone _____

Chapter affiliation? (check one)

- Calypso (Coeur d'Alene; please include \$6 newsletter dues)
 Kinnikinnick (Sandpoint; please include \$6 for Kinnikinnick Journal)
 Pahove (Boise) Sah-Wah-Be (SE Idaho)
 White Pine (Moscow) Loasa (Twin Falls)
 Wood River (Ketchum-Sun Valley; please include \$7 chapter dues)
 None. Those who do not live near a chapter are encouraged to join. We can put you in touch with other members in your area, and can coordinate with you on any state level activities you may wish to be involved in.

* Household memberships are allocated two votes