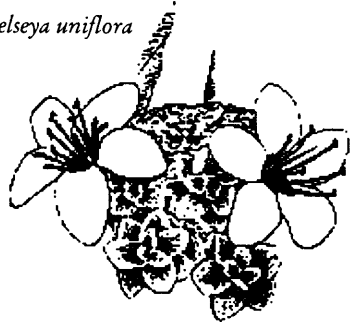




Kelseya

NEWSLETTER of the MONTANA NATIVE PLANT SOCIETY

OHV plan does not look good for native plants

By Kathy Lloyd

The Draft Environmental Impact Statement (DEIS) for Off-Highway Vehicles for Montana, North Dakota and part of South Dakota has been released by the Forest Service and the BLM (Bureau of Land Management) and is currently undergoing public review and comment. The Draft offers four alternatives in addition to a no action alternative.

As pointed out by Wayne Phillips in the Spring 1999 issue of *Kelseya*, on the surface the Agencies' willingness to address the OHV problem on public lands is commendable and encouraging. The problem is that NONE of the alternatives end motorized travel on the thousands of miles of user-created, and many believe, illegal trails and tracks that crisscross Montana and the Dakotas. Motorized use will be allowed to continue on tracks "where perennial

vegetation is devoid or scarce, or where wheel tracks are depressions in the ground but are vegetated."

The problems of enforcement are obvious with such convoluted definitions.

According to the DEIS, the final decision as to what roads and trails will be open to motorized use will be made at the local level sometime (as long as 10 or 15 years) in the future. There is concern that local land managers are not receiving direction and support from their superiors and that local battles to try to close user-created routes will be a painful process that puts local managers at the mercy of intimidation and threats. There could be a rush to "create" as many routes as possible before a decision is made so that they are included under the definition of "unclassified" routes and will be allowed to continue to carry motorized travel.

The DEIS also states, "The BLM and FS recognize in their respective resource management plans and forest plans, policy and manual direction that OHV use is a valid recreational activity. Resource conditions, including vegetation, watershed and wildlife habitat do not warrant prohibition of vehicle travel on all public lands, including all roads and trails."

Continued on page 2

Weeds We Invited

Peter Lesica

The invasion of exotic plants is emerging as one of the primary threats to native plant and animal communities worldwide. Invasive introduced plants cause a decline of native biological diversity often resulting in the loss of opportunities for activities such as botanizing, birdwatching, and boating.

Most people in the West are painfully familiar with invasive exotics and the problems they cause, whether it be spotted knapweed in Montana, cheatgrass in Idaho or tamarisk in Arizona. What is not so widely understood is that many of the most pernicious exotic plants in North America were intentionally introduced during the last 200 years. Indeed, Richard Mack, a plant ecologist at Washington State University who has been studying exotic plant invasions for many years, believes that deliberate introduction as crops, forages or ornamentals is the single most common source of naturalized exotic plant pests in the United States. Examples of these intentionally introduced plants run amok can be found throughout the West.

Tamarisk

Exotic woody plants can be especially troublesome because of their size and

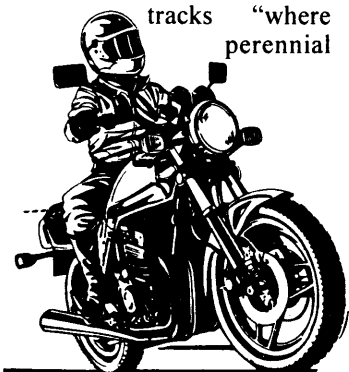
ability to alter the understory environment. Tamarisk (*Tamarix* spp.) is rapidly becoming the bane of the arid west's major rivers. It was first introduced into eastern North America in the early 1800's for horticultural purposes. Tamarisk was available in the western states by the middle of the last century from private and U.S. Department of Agriculture (USDA) nurseries. However, it wasn't until more than half a century later that westerners realized they had a problem on their hands. Tamarisk is now common along rivers and streams throughout the western states, often forming impenetrable thickets and replacing riparian forests that support biologically rich communities.

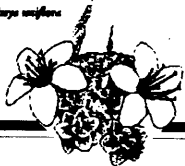
Russian Olive

Russian olive (*Elaeagnus angustifolia*) is another exotic tree increasing rapidly in the western states, but in this case we have deliberately planted them into native pastures and continue to do so today.

Since the early 1900's Russian olive was planted for windbreaks and wildlife habitat and has become extensively naturalized throughout the western United States, especially in riparian areas. It can replace native cottonwood forest under regulated stream flows, causing the loss of habitat for

Continued on page 4





FROM THE PRESIDENT

WAYNE PHILLIPS

Weeds

The MNPS Conservation Committee has formed a Weed Subcommittee, spearheaded by Peter Lesica and Kathy Lloyd. One of the objectives is to insure that input from the Native Plant Society is included in the development of the Montana Weed Management Plan, which is now underway. Kathy recently spent a couple of days in Great Falls meeting with the committees and individuals who are developing this plan, and attending the annual meeting of the Montana Weed Control Association at the Heritage Inn. The Montana Weed Management Plan is an ongoing effort, with a completion of the final plan due by October of this year. If you have an interest in assisting or commenting on the development of the Montana Weed Management Plan, please contact Peter or Kathy.

The 2000 Montana Noxious Weed Calendar is out and worth your effort to get a copy. The month of November is dedicated to native plants and the Montana Native Plant Society. Six beautiful bitterroot pictures by Drake Barton grace the calendar page, with the caption, "Native plants, like Montana's Bitterroot, are placed at risk by impacts

from Noxious Weed Invasion." The MNPS address and a brief statement of objectives is also included.

Dues are Due

...so, send you check today and don't miss a single copy of *Kelseyia* and the news from your far flung flower friends. Beat the bushes for more plant buddies, too. Membership chairman, Scott Mincemoyer, reported at the last Board Meeting that membership in the Society has dropped to 368. Scott reported Chapter membership as: Artemisia 10, Beartooth 14, Calypso 14, Clark Fork 80, Flathead 47, Kelsey 49, Maka Flora 18, and Valley of the Flowers 38.

Kelseyia Back on Track

Thanks to Dennis Nicholls for getting *Kelseyia* back on schedule, so you don't miss any of the Society news and scheduled activities. The MNPS Board expressed its thanks and support for Dennis, and the high quality newsletter he has been producing for us, by voting to pay Dennis for his services, subject to approval of the 2000 Budget at the next Board Meeting. You can lend your

support to *Kelseyia* by submitting your articles, Society news and scheduled events to Dennis on time. Deadlines for each quarterly edition are: March 10, June 10, September 10, and December 10. Thanks Dennis! for all your hard work and dedication to this vital link in our Society communication.

March Board Meeting

The MNPS Board of Directors will meet on March 4, 2000 at the Lewis and Clark County Library in Helena to conduct the business affairs of the Society. The meeting will begin at 10:00 am and conclude by 4:00 pm. Topics of special interest at this meeting will be approval of the year 2000 budget, small grants proposals, and plans for the annual meeting "Plants in Paradise" at Luccock Park June 23-25. This meeting is open to all MNPS members and guests, so come join us and participate in the business affairs of your Society. If you can't attend the meeting, but would like to express your opinions or make suggestions to the Board, please contact your chapter representative (see back page of this newsletter), or write or call me anytime.

Wayne can be reached at 2601 Third Ave. North, Great Falls, MT 59401 (406)453-0648 e-mail: mtwayne@juno.com

OHV Plan

From page one

For those of us concerned with native plant communities, wildlife habitat and watershed quality, the above statement is very troubling. The DEIS fails to adequately evaluate the effects of noxious weeds and other exotics on native plants and plant communities, as well as the economic effect the explosion of weeds on public lands has had and will continue to have in the future. The spread of weeds and weed seeds by motorized vehicles has been clearly documented.

Ecosystems most at risk from weed invasion are the same communities that are seeing increased use by OHVs and other motorized vehicles. Sagebrush, desert and thin-soiled grasslands and prairies have been highly impacted and disturbed. Riparian areas, sensitive stream sides and wet areas are also easily damaged.

The conservation community recommends that none of the proposed alternatives be adopted and that the agencies release another draft that includes an alternative similar to the policy on the Lolo National Forest or the standard that is in effect on Montana state

lands. The existing policy on the Lolo National Forest says, "Motorized vehicles will be limited to system roads and trails which are designated open in the Lolo Forest Travel Plan." The Montana Code Annotated 77-1-804 (6) states, "Motorized vehicle use by recreationists on state lands is restricted to federal, state and dedicated county roads and to those roads designated by the department to be open to motorized vehicle use." It seems pretty simple!

The conservation committee chair for the Society, Peter Lesica, has submitted a comment letter on behalf of the Montana Native

Plant Society. If you, also, are concerned about OHV travel on public lands and the resulting effects on native plants and other resources, please take the time to comment. The comment period ends February 24, 2000.

Comments can be mailed to:
OHV Plan
Lewistown Field Office
Box 1160
Lewistown, MT 59457-1160

or e-mail comments to:
ohvmail@mt.blm.gov
(include name and mailing address)

A Flawed Analysis?

This letter, addressed to agency officials in charge of the Off Highway Vehicle EIS from a Helena-area resource consultant & wife of a rancher, expresses concern for how the OHV plan fails to address long term impacts of spreading and establishing weeds on user-created OHV routes.

November 30, 1999

Dear Mr. Hamilton and Mr. Bosworth:

As proprietor of a natural resource consulting firm for the past 20 years, I have participated in several large, interagency EISs and EAs addressing resource concerns throughout the West. None concern me more than the OHV EIS currently out for review.

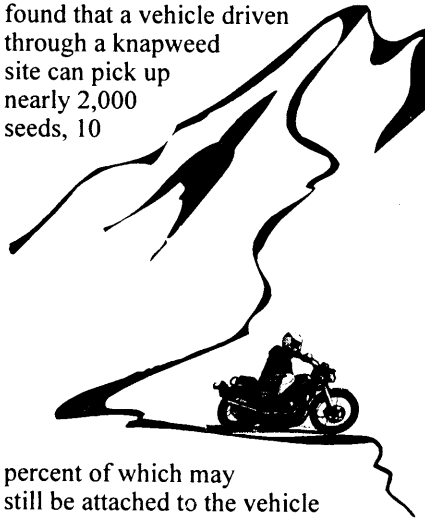
Perhaps the statement that alarms me most is contained on page 6 of the EIS summary document. It says: "The BLM and FS recognize in their respective resource management plans and forest plans, policy, and manual direction, that OHV use is a valid recreational activity. Resource conditions, including vegetation, watershed, and wildlife habitat do not warrant prohibition of vehicle travel on public lands, including all roads and trails."

If that is the premise upon which the analysis is based, I contend the analysis is flawed for three reasons: 1) the vastly accelerated spread of noxious weeds by wheeled vehicles and related economic effects; 2) accelerated resource damage in fragile areas, especially steep hillsides and riparian areas; and 3) the diminishment of the outdoor experience that OHV recreation causes for non-motorized recreationists.

It has been estimated that the economic impact of leafy spurge in Montana, North Dakota, South Dakota, and Wyoming totals \$129 million each year. In Montana, spotted knapweed control is estimated to cost the public and private sectors \$42 million annually. The Northern Region of the Forest Service spends about \$1 million annually on weed control of its \$160 million budget. This Forest Service allocation is barely enough to manage small infestations and cannot begin to address the weeds currently marching up almost every major drainage leading into our forest lands. On the Teton drainage alone, a major gateway into the used-to-be-pristine Bob Marshall Wilderness, and where ranchers have

initiated a private battle against leafy spurge and spotted knapweed, the offensive is being lost. It would probably take thirty times as much money to begin fighting the weed infestations threatening our public lands.

At a public open house on the OHV EIS, a Forest Service employee suggested that horses and hikers spread weeds, too. There is no doubt about this. However, horses and hikers cannot begin to match the rate of resource damage and weed spread that OHVs do. In a study conducted by MSU Extension, researchers found that a vehicle driven through a knapweed site can pick up nearly 2,000 seeds, 10



percent of which may still be attached to the vehicle after 10 miles of driving. Thus, seeds can be spread rapidly over hundreds of miles in a day. These same vehicles also prepare an instant seedbed by smashing existing vegetation and stirring up previously undisturbed soils. Humans and horses simply cannot do the damage, nor spread seeds at such a rate.

Leafy spurge and spotted knapweed are called 'vehicle weeds' for a reason; drive any major road in Western Montana, or any railroad track for that matter, and you will see the excellent seeding job that vehicles are able to achieve. Given this information alone, I contend the EIS is inadequate in analyzing the economic effects on the budgets of the Forest Service and the BLM from use of OHVs on public lands and their secondary effects of resource damage and weed infestation.

Further, the allocation of money for weed control and resource damage due to OHVs robs these same agencies of funds that could be spent on trails development and maintenance, resource enhancement for wildlife, and participation in research efforts to curb the spread of weeds. The

EIS lacks analysis of this secondary effect as well. Even a programmatic EIS should array such basic economic facts to determine adverse effects and meet the disclosure requirements of NEPA. I think careful analysis will show that cost of controlling the spread of weeds related to off-road vehicles is unsustainable by public agencies, and is, therefore, a potential significant long-term economic impact that warrants the choice of a more restrictive alternative.

Perhaps the greatest victim of our current land policies is bio-diversity. Reduction in plant diversity depletes habitat of forage value, cover, and water availability. Threatened and endangered species are particularly vulnerable to changes in habitat caused by weed infestations and intrusion into habitat, especially by noisy, ground-eating vehicles. Vehicles have a place: on roads. I will concede that they also have a place on designated routes where weeds can be controlled and monitored. They have no place off-road, or on trails created by their passage. I suggest that an alternative prohibiting off-trail or road vehicle travel, except under emergency circumstances for fire or rescue, should be the agencies' preferred alternative.

Public land managers are faced with a changing technology created and heavily promoted by mass media. All of us are lulled into thinking that because something exists and people buy it, we must accommodate the new invention into our lives. However, as land managers, the Forest Service and BLM need to examine each new technology and ask, "Is this good for the resource, and can we sustain the resource within our given budgets if this new technology is applied?" In the case of OHVs, the answer is no.

Land managers need to take a cue from one of their own, Gloria Flora, who was able to make a courageous decision and deny short-term economic arguments in favor of the lands she was hired to steward.

I urge you to adopt a preferred alternative restricting all off-road or off-designated-trail travel on public lands. I suggest an alternative that embodies the current policy now in effect on the Lolo National Forest.

Lisa Bay
Helena, Montana

Weeds We Invited

From page one

species such as cavity nesting and insectivorous birds. Although wildlife biologists believe Russian olive provides food and shelter for upland game birds on the plains, not all species benefit. Managers of Benton Lake National Wildlife Refuge in north-central Montana have observed that "conservation" plantings with Russian olive also provide habitat for predators such as crows and raccoons that significantly reduce the nesting success of ducks and other ground-nesting birds.

Grasslands & Wetlands

Much of semi-arid western North America is occupied by grasslands, and some of the most widespread troublesome exotics are grasses intentionally introduced for forage. During the first half of this century, range conservationists sought exotic species that could quickly restore vegetative cover on abandoned cropland and overgrazed pastures. Lehmann lovegrass (*Eragrostis lehmanniana*) was introduced from Africa into the southwestern U.S. in the 1930's for the purpose of restoring degraded grasslands. It quickly spread to adjacent rangelands and caused native species to decline, partly by increasing fire frequency. Grasslands dominated by Lehmann lovegrass support fewer species of native birds, rodents and grasshoppers than indigenous range and resist conversion back to native

What is not so widely understood is that many of the most pernicious exotic plants in North America were intentionally introduced during the last 200 years.

composition. Lehmann lovegrass is also less desirable for cattle forage than native species.

One of the greatest threats to the integrity of wetlands in the northern U.S. is purple loosestrife (*Lythrum salicaria*). It was originally introduced in the early 1800's for its medicinal and horticultural values. Since then, it has invaded nearly half a million acres of wetlands, mainly in eastern and middle North America. It is just beginning to invade in the west. It forms monocultures through aggressive reproduction by seed and underground stems. Purple loosestrife crowds out native plants and animals and causes a decline in waterfowl. Effects in the semi-arid west, where wetlands are a precious commodity, are likely to be severe. Nonetheless, purple loosestrife is still sold in many horticultural catalogs.

Yellow sweetclover (*Melilotus officinalis*) is another broad-leaved exotic that is becoming more and more common in the Northern Great Plains. In some years the hills of eastern Montana become yellow when it flowers. Yellow sweetclover is commonly seeded along with exotic grasses to restore rangelands and often invades native prairie when it is seeded into disturbed roadcuts. Like most legumes, it enriches the soil with

nitrogen. However, the dominant grasses of the Northern Great Plains are adapted to infertility. Although the effects of additional nitrogen on native grassland communities are not known, studies in Hawaii suggest that exotic nitrogen-fixing plants have the potential to disrupt entire ecosystems by favoring species adapted to nutrient-rich soils.

Foolish Intentions?

Some of these introductions, such as tamarisk and purple loosestrife, involve the escape and naturalization of garden or medicinal plants. However, many others are intentionally planted into native communities. Each year the Montana Department of Natural Resources and Conservation raises and sells at cost approximately 40,000 Russian olive trees. Yellow sweetclover is commonly planted as part of the USDA's Conservation Reserve Program and is a component of dense nesting cover planted by the U.S. Fish and Wildlife Service. A recent survey of nine U.S. Forest Service ranger districts in Montana by the Montana Native Plant Society found that over 80% of the area revegetated in 1994-96 was planted with mixtures of non-native or predominantly non-native

species, a total of two square miles of exotics planted each year throughout the state. The Natural Resources and Conservation Service advises private landowners to use exotics for re-vegetation. In addition to encouraging the use of these well-established exotics, the USDA also sends scientists abroad to bring back new exotic species for potential use in western rangeland re-vegetation.

There's good news and bad news here.

The bad news is that we are our own worst enemy. We have foolishly chosen short-term gain while ignoring long-term consequences. And although we are now paying the price for our foolishness, we continue to make the same mistakes.

The good news is that we can go a long way to stem the tide of damaging exotic invasions by simply being more careful with intentional introductions. The majority of plant introductions have not become invasive, and it would be best if only non-invasive species were used.

Unfortunately, whether or not a plant will become invasive is difficult to predict. Researchers have found that there is usually a "lag time" between when an introduced species first arrives and when it becomes invasive. The reasons for this lag time are unknown, but it can be as long

Continued on next page

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as 100 years, so it is not possible to rigorously test for potential invasiveness in a short period of time. Until we understand more about the ecology of invasiveness, exotic plants should be introduced with extreme caution. In addition, government agencies and private individuals need to curtail their use of exotics for re-vegetation and "enhancement," and give serious consideration to using native plants in their stead.

Re-vegetation Options

Using native plants for re-vegetation is not new, but unfortunately, it is not universal. There are many reasons to use native plants for re-vegetation. Natives, especially if collected locally, are adapted to the soils and climate of the region. Having evolved as members of the indigenous plant communities, they are not likely to become invasive or form monotypic stands. Perhaps most importantly, both plants and animals are more diverse in native vegetation compared to exotic plantations. Many

insects such as butterflies depend on one or only a few species of plants, so exotic plant

monocultures will be impoverished of these important animals. Native grasslands also have more diverse bird assemblages than exotic pastures. Furthermore, the higher diversity of native communities are thought to result in higher long-term productivity and stability.

The time has come to recognize the risks involved with using exotic plants and make the extra effort to use natives instead. The USDA has programs to propagate locally-adapted native species, and many private nurseries will custom-propagate for restoration projects. Federal and state agencies need to know that the public cares about this issue. Private landowners should be given the information and the options they need to make the right decisions. We all have too much to lose to continue with foolish quick fixes.

Further Reading: Williams, M. C. 1980. Purposefully introduced plants that have become noxious or poisonous weeds. *Weed Science* 28: 300-306.

Give
serious
consideration
to using
**Native
Plants.**



Conservation of Medicinal Plants

By Robyn Klein

There is a worldwide concern about the large amounts of plant material being harvested from the wild. It might interest you to know of the efforts to conserve wild medicinal plants.

UNITED PLANT SAVERS

The UpS is a grassroots organization started by herbalists. They have yearly conferences (one held last summer in the Bitterroot Valley). They have set up two lists of herbs they are most concerned about: the At Risk List and the Watch List. The "At Risk" list are species which are currently most sensitive to the impact of human activities. The intent of this list is to assure the increasing abundance of the medicinal plants which are presently in decline due to expanding popularity and shrinking habitat and range. UpS is not asking for a moratorium on the use of these herbs. Rather, they are initiating programs designed to preserve these important wild medicinal plants and making this concern known to the world. See their website: <http://www.plantsavers.com>

MEDICINAL PLANTS WORKING GROUP

Recognizing that commercial demands may cause overharvesting from the wild, the Medicinal Plants Working Group, including representatives from industry, government, academia, tribes, and environmental organizations, aims to create a framework for discussion and action on behalf of medicinal plants. The group's primary focus is to facilitate action on

behalf of species of particular conservation concern as a means to balance biological and commercial needs and, in the long term, minimize regulatory intervention. Within that framework, there may also be a need to provide public education on tribal interests and policies as these intersect with the conservation of plants. The Working Group intends to raise awareness of native medicinal plant issues and needs among partner agencies and cooperating organizations. See <http://www.nps.gov/plants/medicinal/>.

UNIVERSITY OF MARYLAND

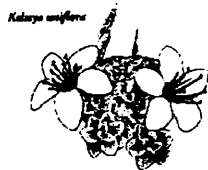
The Problem Solving Class of the Program in Sustainable Development and Conservation Biology at the University of Maryland was asked to conduct an investigation into the biology of and impacts of trade on four medicinal plants, and to assess whether any of them warranted inclusion into Appendix II of the Convention on International Trade in Endangered Species (CITES). They investigated *Serenoa repens* (saw palmetto), *Ulmus rubra* (slippery elm), *Cimicifuga racemosa* (black cohosh) and *Ligusticum porteri* (osha) by surveying available literature and contacting local and regional botanists, herbal medicine specialists and herbal companies. They concluded that *Ligusticum porteri* warranted CITES Appendix II listing because of regional and state protection measures, impacts of harvesting for an increasing medicinal demand, and lack of success in cultivating the plant.

Continued on page 7

CALENDAR

Get involved with an MNPS Chapter in your area, or join with other members for field trips and programs.

It's a big state. Let's share our adventures.



Be sure to write up a report of your programs and share the excitement of what you learn with the rest of us. Send your reports to: Montana Native Plant Society, Kelseya Editor, P.O. Box 1632, Noxon, MT 59853.

THE SEED BENEATH THE WINTER SNOWS, IN THE SPRING BECOMES THE ROSE.

ARTEMISIA CHAPTER

Billings

Call Clayton McCracken for information about programs for this chapter. 252-2807.

BEARTOOTH MOUNTAINS CHAPTER

Red Lodge

Jean Radonski, 446-3907

CALYPSO CHAPTER

Butte

Annie Green, 683-6594.

CLARK FORK CHAPTER

Missoula

February 10 – 7:30 pm. UM's Richard Sheridan, who has been conducting research on nitrogen cycling in the Caribbean will speak to us on the "Plant Ecology of the New World Tropics." Rm L14 in the Gallagher Business Building on the UM Campus.

February 29 – 7:30 pm. Peter Stickney will explore "Montana Liliaceae: The Bulbous Lilies." Bring a hand lens if you have one. Rm 303 Natural Sciences (Botany) Bldg, UM Campus.

March 9 – 7:30 pm. The suave and illustrious Drake Barton of Clancy will use his great slides to challenge our memories and get us pumped up for the upcoming wildflower season with "Wildflower Spring Training." Rm L14 in the Gallagher Business Building on the UM Campus.

March 27 – 7:30 pm. All the way from Helena, Montana's premier diatomaniac, Loren Bahls, will give us an "Introduction to Montana's Algae." Rm 203 Natural Sciences (Botany) Bldg, UM Campus.

Spring Field Trips

Thursday, April 6, 6:00 pm. Birds and Spring Wildflowers on Waterworks Hill with Anne Garde and Elizabeth Johnston. Meet at the Duncan Drive parking area at the base of Waterworks Hill. Call Kelly Chadwick (258-5439) for more information

Saturday, May 27, 1:00 pm. Butterfly and Plant Ecology on Mount Jumbo with Will Kerling and John Pierce. Meet at the east end of Cherry Street. Call Will (543-6321) or John (542-2640) for more info.

Saturday, June 10, 10:00 am. Fire Effects on the Mount Sentinel Plant Community with Peter Stickney. Meet at the "M" Trailhead. You'll need hiking shoes, a lunch and a hand lens if you have one. For more information call Pete (549-0063).

Thursday, June 15, 6:30 pm. Clark Fork Prairie weed pull. Help John Pierce defeat the alien hordes. Meet in the parking lot at the east end of 4th Street. Call John for details (542-2640).

Flathead chapter

Kalispell

Chapter meetings and programs begin at 5:30 and 7:00 p.m. respectively in the Conference Room of the Montana Logging Association building, 2224 Hwy 35, east of Kalispell. Parking and entrance are on the south side of the building.

February 16 – "Native Plants of the Flathead Indian Reservation," presented by JoAnn Bigcrane.

March 15 – "Winter Shrub Identification," with Steve Wirt

April 19 – "Aquatic Vegetation Classification," by John Pierce

May 17 – Herbarium Night, a hands-on evening to prepare for plant ID in the field. Topic and location to be announced.

KELSEY CHAPTER

Helena

March 7, 2000 7:00 p.m. at the Lewis and Clark Library in Helena. Sheila Morrison from the Clark Fork Chapter will present a program called "Raising Native Plants from Seed." The public is invited.

MAKA FLORA CHAPTER

Westby

Al Joyes, 385-2579

VALLEY OF THE FLOWERS CHAPTER

Bozeman

February 21 – 7:00 pm at Beall

Park Art Center. Leslie Marty and Susan Winslow from Bridger Plant Materials Center will discuss "Cultivating Native Plants Selected from Local Ecotypes for Mine Reclamation and Conservation Plantings."

March 20 – 7:00 pm NCRS State Biologist Peter Husby will present "Wetland and Riparian Ecology and Management," at the Beall Park Art Center.

June 23-25 – ANNUAL MEETING!!! Pre-registration and detailed information will appear in the Spring edition of *Kelseya*. The event will take place at Pine Creek south of Livingston. Those of you who want to plan ahead, there will be a field trip on Sunday, June 25 to Yellowstone that might require another overnight stay in the area.

GREAT FALLS AREA

February 21 – 7:00 pm at Montana Fish, Wildlife and Parks Regional Headquarters at Giant Springs. Program on mosses, lichens and liverworts in honor of Dr. Won Shic Hong, the eminent bryologist at University of Great Falls.

March 20 – 7:00 pm at Montana Fish, Wildlife and Parks Regional Headquarters at Giant Springs. Fay Benton presents a slide show on Montana wildflowers followed by an identification contest with prizes. Fay also has typed the complete plant list from the
Continued at top of next page

Blue Cloud field trip at the 1999 annual meeting and will send it to anyone requesting. Write Fay at 113 Dracut Hill Road, Vaughn, MT 59487 or call 406-264-5465.

WESTERN MONTANA

February 16 – 7:00 pm in the Heron Community Center, Dan Fager will present “Glaciers and Climate Change,” a report on the study of glacial activity in Glacier National Park. Dan is widely known as a premier researcher on this subject, and it will be a privilege to have in Heron. The community of Heron is located about 4 miles off Hwy 200 near the Idaho state line in extreme western Montana. This program is a fundraising

event for the Grandview Museum, a part of the Heron Community Center complex. For more information, contact Dave Kaestner at 847-2633.

June 17 – The “Annual Exploding Car Battery Hike.” Explore a remnant of the Kootenai National Forest’s former glory in “The Berray Mountain Cedars,” a grove of giant cedars and hemlocks high on a mountainside at the edge of the Cabinet Mountains Wilderness near Noxon. Pete Lesica will be on hand to lend his expertise on native plants identification and Dennis will lug along several car batteries ready to explode (wear old t shirts). For more details, contact Dennis at 847-2040.

Conservation of Medicinal Plants

From page 5

MEDICINAL PLANT ETHICS COMMITTEE (MPEC) OF AUSTRALIA

The National Herbalists Association of Australia (NHAA) has established the Medicinal Plant Ethics Committee which is devoted to the conservation, sustainability and ethical production of medicinal plants in Australia. Initial activities to be undertaken will include: develop a code of ethics for wildcrafters; baseline mapping of wild species; identify major players involved in native flora and invite them to contribute to the working group; develop a list of rare and endangered imported species and investigate their potential as cash crops; develop close links with indigenous groups through local land councils or other means; develop policies and public profiles on genetic modification issues; maintain an awareness of plant cloning techniques and impacts on biodiversity and existing gene pool; network with relevant groups such as the U.S. Medicinal Plants Working Group, United Plant Savers, and Seed Savers Network.

MONTANA

Here in Montana, the 1999 Legislature passed a three-year moratorium (SB 178) on the collection of bitterroot (*Lewisia rediviva*), *Echinacea angustifolia*, lady's slipper (all species of *Cypripedium*), *Lomatium dissectum*, osha (all species of *Ligusticum*), sundew (all species of *Drosera*), and *Trillium ovatum*. This law applies only to state lands. However, both the BLM and the U.S. Forest Service have a required permit system. Tribal lands may also have collecting regulations, especially for non-tribal persons.

With the exception of the state flower (bitterroot), it was felt that all these species are at risk of severe population damage because of current strong market demands. As part of this bill, the Governor has appointed an eight-member Wild Medicinal Plants Task Force. The task force is made up of representatives of the herbalist community (2), Native American Tribes (2), Montana university system (1), herbal products industry (1), Department of Agriculture (1), and the Department of Natural Resources and Conservation (1).

Submitted by Robyn Klein, Herbalist AHG Instructor, Sweetgrass School of Herbalism Editor, Robyn's Recommended Reading <http://www.avicom.net/~rrr>

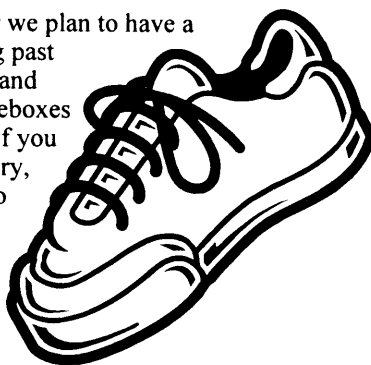
WINTER BOARD MEETING

SATURDAY
MARCH 4TH
LEWIS & CLARK
LIBRARY, HELENA
10:00 AM. OPEN TO
ALL MEMBERS
OF MNPS.

A CALL FOR SLIDES!

“A Blast from the Past”

At the Annual Meeting this summer we plan to have a Friday night slide show highlighting past annual meetings, chapter field trips and events. So go through your old shoeboxes and dig up some archival material. If you find any entertaining slides of scenery, plants or people, please lend them to Wayne Phillips (see his address on page 2). Write a description and your name on each slide. They'll be returned at or after the meeting. Thanks.



SIZE

12

Deadline for the Spring Issue of Kelseyia is March 10.

Please contribute articles, pictures, drawings, book reviews, poetry, reports and anything else to do with native plants that your friends in the Montana Native Plant Society would be interested in by then. Thanks!

How to Make an Herb Tincture

by Robyn Klein, Herbalist AHG

Our wondrous flora has always provided people with medicines to soothe and to heal. Knowledge about the usefulness of our wild flora has generally not been passed on to the present generation and so we are having to relearn it from books and herbalists today.

Tincturing

Making your own medicinal herb tinctures is very easy and inexpensive. The medicinal properties of herbs can be extracted and preserved in alcohol by using a process called "tincturing." Tinctures (or extracts) are easier to use than teas and sometimes the herb is extracted better in alcohol. Tinctures are more expensive than teas. Tinctures cost anywhere from \$6 to \$10 an ounce in stores. But you can buy or collect the herb yourself and make your own tinctures for as low as 50 cents an ounce. Homemade tinctures are just as good and sometimes higher in quality than those purchased over the counter.

The first concern is, of course, to make sure you have permission of the landowner to harvest the plant. Second is to make sure the plant is not endangered or in some way at risk in the particular area from which you are collecting. You should also know that a new law was passed by the Montana 1999 Legislature (SB 178) that has placed a moratorium on the collecting of seven herbs on state lands. To find information about this law as well as a list of recommended harvesting amounts of Montana herbs see this website: <http://www.avicom.net/~rrr/wildcrafting.html>.

Where to start

First, you start with either fresh or dried plant material. This is called the marc. The menstruum is the solvent used to make the tincture. The menstruum can be pure alcohol, a combination of alcohol and water, vinegar, or glycerin and water.

Most manufactured, commercial extracts (tinctures) are made using a ratio of 1:5 or 1:2. The ratio is the weight of herb to (fluid) volume of menstruum. This means that 1 part by weight of herb (in ounces) is put into 5 parts or 2 parts by volume (in fluid ounces) of a solvent mixture (which is usually a combination

of alcohol and water).

The percentage of alcohol to water used depends on the specific requirements of the herb. For more information on this, see my notes at: <http://www.avicom.net/~rrr/menstruum.html>.

Most people use 95% alcohol (180 proof), but you can also use vodka, which is 50% alcohol (100 proof). But, any alcoholic product which is below 45% is likely to be inferior and your tincture will eventually spoil.



The Overall Process

Here's the overall process: Chop the herb finely and weigh on a kitchen scale. Place the plant material in a sufficient size jar (leave 2 inches of room for menstruum). Cover the herb with your menstruum. Screw on the jar lid and store in a dark cupboard for two weeks. Then strain the liquid through muslin, wire strainer, and/or a coffee filter using a funnel and an empty jar. The marc (herb material) can be composted or tossed. Pour the liquid into an amber bottle and be sure to label the bottle with the date (month and year) and the name of the herb (use Latin name!). Store in a dark cupboard.

If we want to tincture a fresh plant, say peppermint, and we have collected and weighed 8 oz., we would want to use the 1:2 ratio. That means we'd need 2x the amount of the weighed herb to make up our menstruum (using volume

measurement). Thus, we'd pour 16 oz. of pure Everclear over our 8 oz. of fresh plant material. The general rule of thumb is to use 95% alcohol as the menstruum with all fresh plant material. The water contained in the fresh plant is considered part of the menstruum which will help to extract the water-soluble parts of the plant.

If our plant material is dried, we would use the 1:5 ratio. So, for 8 oz. of DRIED peppermint, we would want to use 40 ounces of menstruum. The general rule of thumb is to add water to the menstruum for dried plant material. Thus the alcohol percentage is usually between 50%-85% alcohol. Lower than 50% alcohol would not extract or preserve the product very well.

Taking Tinctures

Tinctures should be taken with a little water. Just for your information, a 5 ml dose (1 teaspoon) of an alcohol tincture contains as much alcohol as about 1/6 of a glass of beer or wine. Such a small amount is rapidly metabolized by the liver and consequently its effect on the blood alcohol level might not even be measurable. The body is naturally conditioned to exposure to small amounts of alcohol from ripe fruit and natural fermentation of food. Patients with mild liver conditions should not be adversely affected by a small amount of alcohol.

You can purchase single herbal extracts or formulas. Formulas are made by combining single herb tinctures in a specific ratio. For example: an immune tonic formula might contain 30% ginseng, 30% St. John's wort, 20% Reishi mushroom, and 20% ginkgo. You can easily make your own formulas by combining the single tinctures of your choice. However, it's easy to make terrible or ineffective combinations, so it's best to learn how to formulate herbs.

It is a whole other world to collect your own herbs and then to use them for your health. It brings one closer to the plants and you begin a whole different relationship with them. Be grateful for the herbs and be good caretakers of them.

Robyn lives in Bozeman and is a member of the Valley of the Flowers Chapter of MNPS. She spearheaded the effort to protect Echinacea and other herbs on public lands in Montana last year.



Kelsey

RHIZOMES

(news briefs from around the state)

Protesting CRP

MISSOULA – Last year the Montana Native Plant Society and Montana Audubon spearheaded formation of a coalition of 9 conservation groups to protest the negative impacts of part of the federal farm bill, the Conservation Reserve Program (CRP). CRP pays farmers an annual rental fee for taking marginal crop land out of production and planting it to perennial grass cover. Although CRP is intended to promote soil and wildlife conservation, it has caused the loss of native prairie in eastern Montana by encouraging some farmers to sodbust (see *Kelsey* Vol. 8, No. 3). In addition, some CRP acreage has been planted to invasive exotic species, such as yellow sweetclover or smooth brome. The coalition's letter to the Montana Congressional delegation and other influential senators and congressmen suggested eight changes that would help make the Conservation Reserve Program true conservation legislation. Other members of the coalition included the National Wildlife Federation, Defenders of Wildlife, Montana Partners in Flight, the Montana Chapter of the Wildlife Society, AERO, the Montana Chapter of the Society for Conservation Biology and the Big Sky Upland Bird Association.

Pete Lesica

All the info you might want about weeds

HELENA – The Montana Weed Control Association has put together a terrific package on the spread of weeds and their impacts to the ecology and economy of the state. To get your hands on the posters, brochures, buttons, calendars and flyers, look on the Internet at www.mtweed.org, or contact your local weed district.

Board Banter

A report on the Fall Board of Directors meeting

The MNPS board of directors met for the Fall board meeting at the Lewis and Clark Library in Helena in early November. Fourteen members were in attendance.

President Wayne Phillips began the day by welcoming Rachel Feigley as the new Small Grants Committee chairperson. The committee is currently looking over applications that were recently received for the Year 2000 Small Grants program, and will submit their recommendation to the board in the spring.

Publication of the newsletter got out of sync in the summer of 1999, so publisher Dennis Nicholls outlined an interim plan to get it back on schedule by the Spring edition, for which the deadline for articles will be March 10. The annual deadline schedule will be Summer – June 10; Autumn – September 10, and Winter – December 10.

Membership chairman Scott Mincemoyer reported that membership had dropped in the past year, so a "living lightly" category was added to the chapter membership dues of \$12 for an individual. Chapter memberships as of the Fall board meeting were: Artemisia – 10; Beartooth – 14; Calypso – 14; Clark Fork – 80; Flathead – 47; Kelsey – 49; Maka Flora – 18; Valley of the Flowers – 38. That leaves about 96 at-large members.

Reports were received from the various chapter and committee reps, including a report from Treasurer Madeline Mazurski. The 2000 budget will be finalized at the next board meeting in March, but the Society's finances are in good health. Total assets exceed \$20,000.

HAVE YOU ORDERED YOURS?

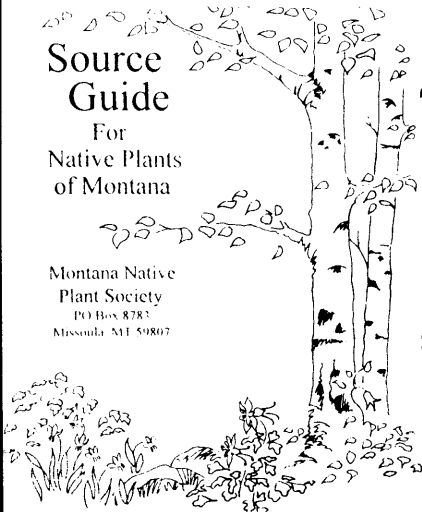
From the Landscape & Revegetation Committee
Second Edition of the

"Source Guide for Native Plants of Montana"

Contains detailed lists of where to get bareroot and containerized plants and seeds for 583 species of trees, shrubs, forbs, ferns, grasses, sedges and rushes.

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For
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RHIZOMES

(news briefs from around the state)

Sustainable Harvest & Use of Native Plants

REGINA, SK – The Native Plant Society of Saskatchewan will present a workshop at their annual meeting February 4 & 5 in Regina. The subject of the workshop has been of considerable interest to native plant enthusiasts in Montana recently because of the growing popularity of Echinacea and other medicinal plants. *Sustainable Harvest and Use of Native Plants* will be the topic through two days of meetings. Don Gayton, author of "The Wheatgrass Mechanism," will be the keynote speaker. In a brochure about the workshop, the NPSS states it "is interested in ensuring that harvesting of native plants can be carried out on a sustainable basis." Registration fees apply, depending on how much of the two-day event a participant wants to take in. Anyone interested in a trip across the border can contact Andy at (306)668-3940 or by email at info@npss.sk.ca for more about this workshop.

Spalding's Catchfly destined to be listed

BOISE – An article which appeared in the *Spokesman-Review* (Spokane, WA) in December stated, "The U.S. Fish and Wildlife Service has proposed listing the Spalding's Catchfly, a rare member of the carnation family found in four western states and Canada, as a threatened plant under the Endangered Species Act." *Silene spaldingii* occurs in Montana, and MNPS member and Conservation Committee chairman Pete Lesica has been instrumental in seeing this process through to the eventual listing of the plant. In a personal letter to *Kelsey*, Pete wrote, "What it all means is that *S. spaldingii* will probably become a federally listed species (Montana's 3rd) by the end of winter."

In Memory...

Warren "Herb" Wagner (1920-2000)

He was in wide demand as a speaker to groups of professional botanists and amateurs, and after the talk he was likely to sit down at a piano and entertain the astonished guests with lively honky-tonk playing.

Warren H. Wagner, Jr., known to all as Herb, died on January 8th, at the age of 79. He was probably the best-known botanist ever to work at the University of Michigan.

After Navy service in the Pacific during World War II, Wagner did his Ph.D. work at the University of California at Berkeley, spent one year at Harvard as an instructor, and came to the University of Michigan as Assistant Professor of Botany in 1951. His primary research focus was the systematics, hybridization, evolution, and evolutionary history of ferns and fernlike plants, but his interests went far beyond ferns, to include (among many other things) oaks and other difficult groups of flowering plants, butterflies, and minerals. His energy was boundless and his enthusiasm famously contagious, which made him one of the most successful teachers of both undergraduates and graduate students in the University.

After retirement, he continued to participate in the teaching of courses in plant systematics in both Biology

and Natural Resources; indeed, he taught more in retirement than many younger colleagues ever do. He chaired or co-chaired 45 doctoral committees and served as a member of over 240 graduate committees. He served a term as director of the Mattheae Botanical Garden from 1966 to 1971, but administration was never his strong suit. He had more fun stirring things up and getting people excited than smoothing over rough places and finding consensus solutions to little problems that did not really matter in the "big picture," which was one of his favorite phrases.

In the 1950s and 60s, working in collaboration with his wife, Dr. Florence S. Wagner, he published a series of elegant studies showing that ferns hybridize freely and that hybridization is a major source of new species in plants. That idea is now widely accepted, but 45 years ago it contradicted a dogma that had been imported into botany uncritically from zoology, and the Wagners' beautifully documented research helped botanists realize that the constraints of

plants' habits and habitats and reproductive styles made a different species concept appropriate for them.

Wagner's attempts to infer the ancestors of the Hawaiian fern genus *Diellia*, and his desire to teach undergraduates how to think about evolutionary history, led him to propose a method of deducing phylogeny that was radical at the time, and with characteristic missionary zeal he went around the country and the world exhorting botanists to abandon their traditionally sloppy approach to the inference of phylogeny and start using methods that are explicit and testable.

Wagner's success and influence were widely recognized during his life. His many honors included election to the National Academy of Sciences in 1985 and the Asa Gray Award from the American Society of Plant Taxonomists in 1990. He served as president of seven professional societies, including the ASPT (1966), the Botanical Society of America, the American Fern Society, and the International Association of Pteridologists.

He was in wide demand as a speaker to groups of professional botanists and amateurs, and after the talk he was likely to sit down at a piano and entertain the astonished guests with lively honky-tonk playing.

He was widely known among Montana botanists for establishing the Pacific Northwest (including northwestern Montana) as part of the highest *Botrychium* species diversity in the world. He conducted "infectious" Montana *Botrychium* workshops that were held in 1998 and 1999; sharing his insight, zeal, and passion.

Herb is survived by his wife, Florence, their children Margaret and Warren, both of Ann Arbor, and two grandsons. Condolences may be sent to: Dr. Florence Wagner, 2111 Melrose, Ann Arbor, MI 48104.

From: W.R. Anderson & the ASPT web site:

*<http://www.csdl.tamu.edu/FLORA/aspt/asptnew1.htm>
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Submitted by Bonnie Heidel

WELCOME THESE NEW MEMBERS

MONTANA

BARBARA HAMMONS, BIGFORK
BETTY STOWE, BIGFORK
JACY BROUILLETTE, BOZEMAN
DIANA COOKSEY, BOZEMAN
MONICA POKORNY, BOZEMAN
RICK BATES, BOZEMAN
LEA MCPHERSON, BOZEMAN
PETER HUSBY, BOZEMAN
BETH MACFAWN, BOZEMAN
BRIAN HOCKETT, DILLON
JOHN HOFFLAND, HELENA



JENNIFER THOMPSON, HELENA
DAVID JENSEN, LIVINGSTON
GRANT W. PATTERSON, MEDICINE LAKE
BETH MADDEN, MEDICINE LAKE
ERIC EDLUND, MISSOULA
MARIA NEWCOMB, MISSOULA
SUSAN LAMONT, WEST YELLOWSTONE

OTHER STATES

JOHNATHAN & FREDRIKA KLAY, SOUTH BEACH, OR
JIM & MARY MCKENNEY, LEXINGTON, MA
DR RONALD WEEDON, CHADRON, NE
FRANK M. DUGAN, PULLMAN, WA