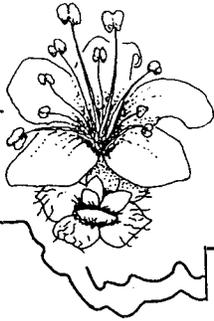


*Kelseya uniflora*



# Kelseya

Vol 7, No 4

SUMMER 1994

Newsletter of the Montana Native Plant Society

## ...WHAT LIST???

Bonnie Heidel

If you work with rare plant lists in Montana, then read no further – this article will tell you nothing new. But if you've ever wondered about the basis for referring to plants as sensitive, threatened or endangered in the state, then ...brace yourself for more than one answer because there is more than one list.

The Mother-of-All-Lists lies in the "Vascular Plants of Limited Distribution in Montana," produced by the Montana Rare Plant Project as a synthesis of available distribution information, published as a MT Academy of Sciences supplement (Lesica, Moore, Peterson and Rumely 1984). It provided the focus and starting point for systematically identifying rare species on all subsequent state and federal lists.

Under the Endangered Species Act, a national list of plants considered to be candidates for designation as threatened or endangered is periodically published in the Federal Register. The first edition, 1980, pre-dated the Montana Rare Plant Project, and included few Montana rare species. Until this summer, no Montana plant species had been designated as threatened or endangered, but the list of potential candidates has gone through expansion and winnowing episodes based on information including distribution, potential threats and taxonomic research. Twenty-seven species once considered potential candidates have been dropped from further consideration, while 24 Montana taxa are current candidates. One species, *Howellia aquatilis*, was listed as threatened as of July 1994. The national list is updated roughly every two years based on state input, the most recent list being the Federal Register Notice of Review dated 14 July 1994, commonly cited as: 59 FR 35860. List information is available from: U.S. Fish and Wildlife Service, 100 N. Park, Suite 320, Helena, MT 59601. Federal agencies – and any agencies receiving federal funding – are mandated to consider impacts to species listed under the Endangered Species Act. But potential candidate species have no protection status, though most are represented on sensitive species lists developed independently by federal land management agencies.

The USFS Region 1 compiled a list of sensitive and watch species that was first published in 1988 in a guidebook (USDA Forest Service 1988). It contains information on species' habitat, distribution, phenology, and federal status. Species considerations are based on scores assigned for factors relating to abundance, distribution, degree of threat, ecological amplitude, and trend in numbers. Note: The 1988 guidebook has been the basis for developing some sensitive species field guides for select national forests in Montana, and together they represent the only illustrated sensitive species field guides in the state. List information is available from: U.S. Forest Service, WLF, P.O. Box 7669, Missoula, MT 59807.

The Bureau of Land Management State Office initiated sensitive plant list compilation about 1990, but the current working list is still considered to be draft. Implementation of BLM Special Status Species Plant Policy is scheduled for fall of 1994. This policy will designate plants in sensitive and watch categories. Species consideration is based on threats, documented global or state rarity, and other factors. List information is available from: Bureau of Land Management, P.O. Box 36800, Billings, MT 59107-6800.

The single most complete publication on rare plants in the state is entitled "Sensitive, Threatened, and Endangered Vascular Plants of Montana" (Lesica and Shelly 1991). It includes species' habitat, distribution, phenology, and federal status. The publication includes "Montana status" information, and standardized Nature Conservancy state and global ranks. Use of the terms "sensitive, threatened or endangered" at the state level does not reflect official designations or have legal bearing, though the list as a whole is routinely consulted in private and public environmental assessments, management planning, and conservation efforts, as well as being considered by some state agencies in the course of developing management plans. Rare plant species on the state list are most often referred to as "state species of special concern".

***Howellia aquatilis* is now listed as a threatened species and will be included in the Endangered Species**

The state list contents are constantly updated based on survey, monitoring, and taxonomic studies, and are part of a centralized information system maintained by the Montana Natural Heritage Program. Species are considered for inclusion on the list based on distribution, abundance, potential threats, degree of endemism, and any other perceived factors influencing a species' persistence as a component of the Montana native flora. The list has undergone deletions and additions since publication of Lesica and Shelly (1991), and annual list updates are distributed each spring. The list includes all species under federal consideration, and it cross-references species' status on agency lists. The state species of special concern list is available, free, along with the Lesica and Shelly (1991) publication, which costs \$5, from: Montana Natural Heritage Program, State Library, 1515 E. 6th Ave., P.O. Box 201800, Helena, MT 59620-1800. Note: If you received the 1993 state list, you will automatically get the 1994 list update.

MNPS is seeking to organize annual winter meetings which would facilitate exchange of rare plant information and conservation strategies, share excitement in the evolving picture of Montana's rare flora, and take some of the trauma out of list-tending. If you are interested in a new Society committee which will organize such meetings, please drop a line! Send it c/o Bonnie Heidel, at MNHP.

## FROM THE PRESIDENT

### HIGH, DRY AND HANDSOME, MONTANA'S PRYOR DESERT - 7TH ANNUAL MNPS MEETING

In the wonderful, informative guide *Pryor Mountain Desert* (written by Don Heinze and Mark Taylor of the Artemisia Chapter), Don Despain welcomed us to the Pryor Desert with his elegant foreword:

"...take time to stand on a windswept ridge in this corner of the Big Horn Basin. Survey the cushion plants at your feet. Take in the junipers and other larger plants that stretch out before you. Take time to feel the rhythms of the Earth. Let the natural history flow through your heart. Let the wonder of it all seep into your soul and be glad that you can be here."

On June 10-12, 85 souls gathered from all corners of Montana and neighboring states to take in this harsh, beautiful landscape and its unique flora. Many of us camped on the open plateau above Bighorn Lake at Horseshoe Bend Campground. The spectacular view of red canyon walls at sunset stays with me still. And the weather was as it should be...dry!

The Artemisia Chapter is to be praised for organizing this outing and providing us with a great souvenir of the meeting: *Pryor Mountain Desert - A Montana Native Plant Society Naturalist's Guide*. This book was the brainstorm of Don Heinze, Mark Taylor, Rosanna Buehl and other enthusiastic Artemisia Chapter members. They started work last fall and enlisted the help of other experts in geology and botany to provide material. Chapters containing information on soils, climate, geology, birds, plants and plant communities gave us a thorough background of the area. A plant checklist was especially helpful on the field trips. As expected all copies sold out; however, a second edition is in the works with even more information on plants and animals, along with a botanical key to local families, genera and species. We'll let everyone know how to get it when published. Many thanks for the industrious effort!

During the three-day event there were field trips, a talk by Robert Dorn (renowned Wyoming botanist and author), an award presentation, an evening slide show by Don Heinze, and membership and committee meetings. Following are some highlights:

#### South Pryor Mountain

Don Heinze led two field trips in the Pryor Mountain Desert during the meeting, one on Saturday, June 11, and the other on Sunday, June 12. Both trips covered the same area, to enable those who visited Sykes Ridge on Saturday to see the lower-elevation flora as well.

The trips started at Gyp Springs, which is located near the geographic center of the desert and is perhaps the best spring in the area. The Bureau of Land Management has fenced this spring to protect the riparian vegetation from cattle grazing. The plants have responded well, producing a thick stand of streambank willows (*Salix exigua*) and narrow-leaf cottonwoods (*Populus angustifolia*). Peachleaf willow (*S. amygdaloides*) and Russian olive (*Eleagnus angustifolia*) - a weed tree - were also present. Unfortunately, Canada thistle (*Cirsium arvense*), a noxious weed, dominates the understory.

The rest of the trip concentrated on desert plant community types which often have sensitive plants in them. Sometimes the communities themselves are sensitive. For example, one community visited was a limber pine (*Pinus flexilis*)/Utah juniper (*Juniperus osteosperma*) type. Only rarely do these two conifers

mix, let alone dominate a community. Cushion prickly phlox (*Leptodactylon caespitosum*), a sensitive plant, is found in this community. Other sensitive communities seen were bud sagebrush (*Artemisia spinescens*)/Gardner's saltbush (*Atriplex gardneri*) and an excellent example of a bluebunch wheatgrass (*Elymus spicatus*)/cushion plant type. Other sensitive plants seen were Wind River milkvetch (*Astragalus oregonus*) and desert blazing star (*Mentzelia pumila*).

The trips ended in a location where we could view three of the four mountain ranges which cast the rain shadows and create the desert: the Beartooths, the Big Horns and the Pryor Mountains.

- Don Heinze

#### Sykes Ridge

Because of a wrong turn on the road up, only half the vehicles starting the trip actually reached the destination. We apologize for not being more organized, providing folks with a map, and for not limiting the group size on a long, difficult road. We hope in the future to learn from the past. Those who reached Sykes Ridge, led by Peter Lesica and Jennifer Lyman, were treated to a stunning display of high altitude wildflowers and grasses. Three regional endemics were in bloom: shoshonea (*Shoshonea pulvinata*), sweetwater milkvetch (*Astragalus aretioides*), and *Lesquerella novum*, soon to be published as *L. lesicii*, Pryor mountain bladderpod. Also spotted was our mascot *Kelseya uniflora*! Wild horses and bighorn sheep were among the fauna observed as well.

#### Somewhere below Sykes Ridge

Luckily, Steve Shelly was among the rerouted group and offered his botanical skills along with Walter Fertig, secretary and treasurer of the Wyoming Native Plant Society. Steve reports:

After breaking into several groups on the rough jeep roads heading up towards the crest of the Pryor Mountains, one contingent of desert plant enthusiasts took an impromptu hike on some dry limestone ridges below East Pryor Mountain.

The vegetation on these ridges is dominated by mountain mahogany (*Cercocarpus ledifolius*) and Utah juniper (*Juniperus osteosperma*), with lesser amounts of black sage (*Artemisia nova*) and bluebunch wheatgrass (*Agropyron spicatum*). We were treated to blooms of two species that are regional endemics in southcentral Montana and adjacent Wyoming: wooly prince's plume (*Stanleya tomentosa*) and Big Horn fleabane (*Erigeron allocotus*). Also of note were numerous individuals of hoary townsendia (*Townsendia incana*), a rare species that is peripheral in Montana. Other interesting finds included clustered broomrape (*Orobanche fasciculata*), wild buckwheat (*Eriogonum mancum*), twinpod (*Physaria acutifolia*), mariposa lily (*Calochortus nuttallii*), fairy trumpet (*Ipomopsis spicata*), and a wonderfully aromatic member of the mint family, false pennyroyal (*Hedeoma drummondii*). Two species of *Penstemon* also attracted lots of attention; stiffleaf penstemon (*P. aridus*) and fuzzytongue penstemon (*P. oriantherus*).

On the drive back to the campground we made several additional stops and saw profuse blooms of prickly pear cactus (*Opuntia polyacantha*), as well as several beautiful colonies of another peripheral species, larchleaf penstemon (*P. laricifolius*). A great afternoon was had by all as we enjoyed the warm desert country and the uniqueness of this corner of Montana.

### SPECIAL APPRECIATION AWARD

This year's MNPS "academy award" went to Peter Lesica, one of the founding members of MNPS. Peter has remained very active in our society since its beginnings, organizing the Clark Fork Chapter's indoor activities and field trips, writing newsletter articles, drafting our Conservation Guidelines and spearheading last year's annual meeting. He has a strong interest in conservation and is considered one of the leading authorities on threatened Montana plants. The Pryors seemed an appropriate setting in which to honor him because of his extensive research of the area's flora. He received an original drawing of *Kelseya uniflora* by Ellen Galligan, and presents from the Clark Fork Chapter as well as a rendering of himself as a rare plant species! Thanks, Peter.

### NATURAL HISTORY OF THE PRYORS

Saturday night we were treated to a talk given by Robert Dorn on the natural history of the Pryors. He generously donated proceeds from sales of his book, *Vascular Plants of Montana*, at the meeting. He too has had a long-standing interest in this area.

### NEW CHAPTER/NEW OFFICERS

This meeting also was the place we formally announced the newest chapter, *Maka Flora*, based in the northeast corner of the state. (See **Newest MNPS Chapter**, elsewhere in this issue). Terry Wamsley of Harlem is chapter president. New state officers who also began their two-year terms were Jennifer Lyman, secretary; Janet Johnson, vice-president; and Terry Wamsley, eastern representative for members-at-large. We look forward to this new energy on the board and thank the out-going officers for all their time and dedication.

### FUNDRAISING

Sales of books and an MNPS *Kelseya* decal (designed by Rosanna Buehl) during the annual meeting raised money for the state treasury. Books were donated by Robert Dorn, Jerry DeSanto, Alice Hamilton, Don Despain, and Shan Cunningham. The book, *Pryor Mountain Desert*, provided additional funds. Thanks to all these contributors for their generous donations.

As always, the annual meeting is a great time to renew friendships and discuss new ideas for future MNPS activities and projects. Members from the Wyoming Native Plant Society exchanged their experiences with me and I greatly appreciated their input. I was impressed when two different people approached me with ideas for future annual meetings and even volunteered to help organize them. This resulted in the '95 meeting place being announced as the Belt Mountains south of Great Falls! We've reserved a church camp there for the weekend of June 23, so mark your calendars. See you next year!

- Linda Iverson

### COMMITTEE ACTIVITIES

We're dedicating a special place in the newsletter for updates on committee activities and other statewide MNPS happenings.

Committees met during our Annual Meeting at various places in the campground on Sunday morning. Committees only meet once a year; after that work continues via the board of directors, by mail or phone, and at the chapter level. If you would like to get involved in these committee activities but were unable to attend the annual meeting, please give the chairperson a call (see *Board of Directors*, back page). Here are the latest progress reports:

### Landscape/Vegetation

A project started at last year's annual meeting, a *Guide to Montana Native Plant Gardens and Gardener's Guide*, is included in this issue. Rachel Potter wrote the questionnaire last fall and compiled the information received. Other members of the committee sent additional questionnaires out to nonmembers. Harvey Bjornle formatted the final version, making this truly a group effort. We hope to update as needed and possibly use this as a vehicle for collecting information for a gardening guide for natives. Thanks to everyone who answered our "Call for Gardeners"!

Next, we're looking at updating the **Native Plant Source Guide**. More sources for natives are springing up, and we need to know if there are enough to warrant the update. We discussed the time frame and computer availability, and are asking for chapter help to solicit nurseries and seed dealers.

We also urge chapters and individuals to get involved in volunteer reclamation projects or native plant gardens. The work done by the Clark Fork Chapter at the U of M Botany Annex garden is a shining example.

### Conservation

Statewide conservation efforts of the past year include:

1. Letter written to George Frampton, Assistant Secretary to the Department of the Interior, urging him to improve management of native plant habitat at Lonesome Lake, near Big Sandy. This 1200 acre lake and the 14,000 acres surrounding it form an island of native wetland and prairie adjacent to intensive farming and ranching. The Bureau of Reclamation and the BLM currently manage this area.

2. Letter written to Jim Miller, regional botanist for the U.S. Fish and Wildlife Service in Denver, critiquing the Federal Register Notice of Review that came out in September of '93. We urged accountability for accuracy in the threatened, endangered and sensitive plant species update.

3. Several members called the district ranger for the Deer Lodge National Forest to encourage him to enforce a road closure at Storm Lake. Four-wheel traffic was damaging the rare, peculiar moonwort, *Botrychium paradoxum*. The road was subsequently closed.

Conservation efforts often take the form of weed-pulls. Three chapters hold annual weed-pull outings to rid areas of noxious weeds. Others identify weeds for the public on field trips and have weed experts talk at their meetings.

In the past year, the Flathead Chapter has been instrumental in protecting a large population of lady's-slipper, *Cypripedium montanum*, from construction activity in Glacier Park.

Also, one of the members met with Baucus aide Bob Erwin, who is responsible for drafting language for the Reauthorization of the Endangered Species Act. He was urged to include native plant language in this Act.

Dennis Nichols, our western at-large rep, has taken on a few important conservation activities in his northwest corner of the state (Trout Creek/Noxon area). Dennis and Dan Lavell searched in Sanders county for the weed, *Conringia orientalis*, to determine if it was acting aggressively. Luckily, they concluded that it wasn't. Dennis is also tracking the Forest Service sensitive species, northern beech fern, *Thelypteris phegopteris*. The Noranda Mine in the Cabinet Mountains threatens this species. In still another instance, Dennis wrote to the district ranger of the Kootenai National Forest to urge him to consider the unique habitat of grand fir/wild ginger that occurs there and to prohibit logging in the

- continued on Page 9

## LOOSESTRIFE GROWERS ORDERED TO REMOVE PLANTS

The Flathead County Weed Board has ordered Paul and Elizabeth Sibley, owners of Gatiss Gardens in Creston, to destroy a patch of loosestrife which they claim is a non-reproducing relative of the noxious weed, *Lythrum salicaria*.

In a story for the Daily Inter Lake newspaper, Rick Hull reports the latest chapter in Flathead County's attempt to avoid establishment of this invasive species in its wetland areas. The Sibleys argue that the plants have been growing along their creek for 50 years without spreading, are sterile and therefore harmless. They believe their plants belong to the species *Lythrum virgatum*, which will not cross-pollinate with *L. salicaria*.

Purple loosestrife is an ornamental garden plant imported over a hundred years ago from England. It has escaped cultivation and become a damaging weed in wetlands and waterways across the northern part of the United States. The plant produces enormous numbers of seeds, and crowds out native aquatic vegetation - even overwhelming cattails. It reduces vegetative diversity and provides very little nourishment or shelter, compared to the plants it has displaced.

Although there are cultivated varieties ("cultivars") reported to be sterile, tests performed in other states have proved that these can occasionally produce fertile seeds, or can have pollen or seeds that are inter-fertile with "wild" loosestrife.

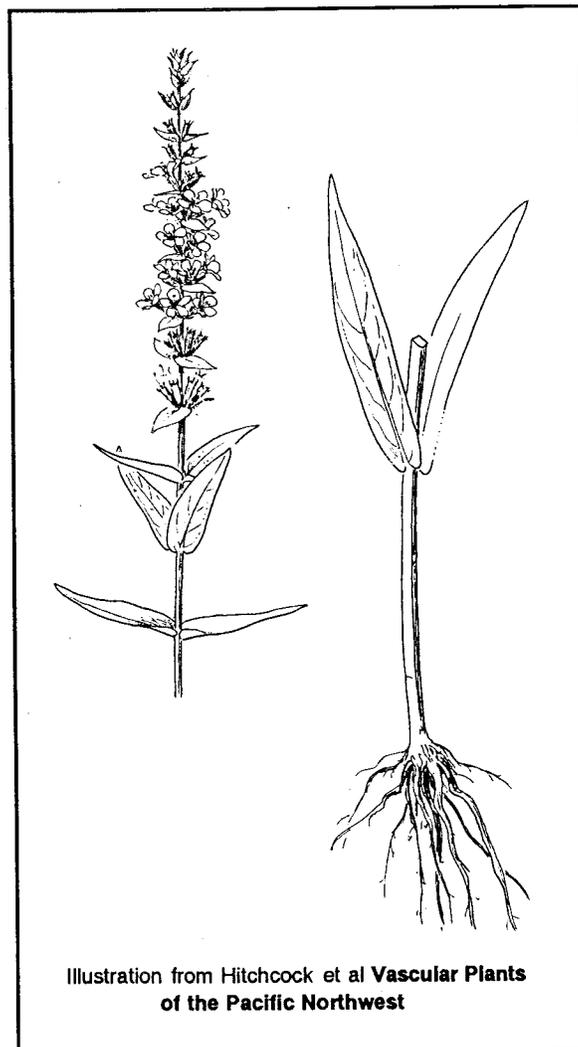
The Plant and Soil Science Department at Montana State University performed germination tests on seeds from the plants in the Sibleys' garden. In an initial attempt, the seeds failed to germinate in soil, but a further test in petri dishes resulted in sprouting of about 20% of the Sibleys' seeds. Further testing is underway to see whether these sprouted seeds will grow in soil.

Lake County has funded a two-year, \$43,400 program to control the weed in potholes and waterways (see "Loosestrife Pull," in the Spring KELSEYA). Minnesota, where loosestrife has been established longer, spends \$5 million a year in suppression attempts.

So far, reports Hull, Flathead County has escaped the problem. Two plants that were dug out of Ashley Creek have not reappeared, according to Jed Fisher of the County Weed Department. Other gardeners in Flathead County have voluntarily removed the plant from their gardens.

Following consultation with the US Fish & Wildlife Service, the Flathead Conservation District, and weed departments in Cascade and Glacier Counties [where other infestations of loosestrife occur], the weed board voted unanimously to order the eradication.

Sibleys have agreed to dig out the plants on their property by next May. Both the Flathead Chapter of MNPS and the Flathead Audubon Society chapter have volunteered to help with removal, replanting and whatever other assistance the Sibleys may need.



### STUDIES INDICATE LOOSESTRIFE CULTIVARS ARE FERTILE

Purple loosestrife (*Lythrum salicaria*) is a non-native plant that is extremely troublesome in freshwater wetlands across southern Canada and the northern third of the US.

It has been claimed that cultivars of this plant were sterile, so they have not been included in noxious weed legislation in some states. However, a University of Minnesota study found that 17 of 18 cultivars tested were fertile and fully capable of producing viable seed.

These cultivars, sold in nurseries in many areas, can serve as pollen and seed sources for the spread or reinfestation of loosestrife.

A paper on this study by Neil O. Anderson and Peter D. Ascher will be published in the *Journal of the American Society for Horticultural Science*.

Results of this study were used in an attempt to add loosestrife cultivars to Manitoba's Noxious Weed List. As an additional experiment, Cory Lindgren of the Manitoba Purple

Loosestrife Project planted individuals of the cultivar "Morden Pink" (formerly thought to be least likely to produce viable seed) in a patch of wild purple loosestrife. Four months later the cultivars had produced a large crop of seed. When tested, 77-96% of these seeds germinated.

For more info, contact Cory Lindgren at Oak Hammock Marsh, Box 1160, Stonewall, Manitoba R0C 2Z0 Canada, or call (204) 467-3269.

-----  
And the October 1992 issue of the *Canadian Journal of Plant Science* (Vol 72: 1305-1330) has an excellent and complete review of the biology, environmental impacts, and control options for purple loosestrife. However it doesn't include the Spring 1993 information about the progress of loosestrife biocontrol being carried out by the USDA project. Copies are available from Martha Orling at The Nature Conservancy, (703) 841-5346.

## BEWARE: PLANTS ON THE LOOSE!

The Flathead and Mission Valleys of Montana are under attack by non-native plants which are capable of out-competing the native flora, and are undesirable for economic purposes. While toadflax (*Linaria* spp.), knapweed (*Centaurea* spp.), goatweed (*Hypericum perforatum*) and Canada thistle (*Cirsium arvense*) invade the grasslands, purple loosestrife (*Lythrum salicaria*) has begun to infest our wetlands.

Purple loosestrife is not a difficult plant to identify, but those unfamiliar with this species should take care not to confuse it with fireweed (*Epilobium angustifolium*), blue vervain (*Verbena hastata*), or blazing stars (*Liatris* spp.). The target plant is a hardy perennial with long flower stalks encircled by purple floral masses. Multiple shoots grow from a woody root crown, and an extensive root system provides ample nutrients to the sky-bound vegetation.

Generally reaching a height of six feet, purple loosestrife may be found around any wet areas: lakes, ponds, rivers, streams, ditches, marshes, even wet meadows. To identify *Lythrum salicaria*, look for an edged or square stem; note its tapering leaves, which are most often oriented in twos or threes opposite each other on the stem; and from late June through August, observe the showy purple flowers.

Native to the continents of Europe and Asia, purple loosestrife was carried across the Atlantic on European ships in the early 1800s. From the Atlantic coast it has spread to every state north of the 35th parallel and the southernmost Canadian provinces. Although the most abundant populations occur in the midwest and northeastern states, the weed's rapid advance in the Northwest is creating mounting concern.

Often introduced to a region as a garden ornamental, *Lythrum salicaria* is capable of forming dense monoculture stands which replace vital wildlife habitat, yet provide minimal value in return. As these stands flourish, they block waterways and cause degradation of forage and reduction in protective cover for wetland-associated fauna, such as songbirds, waterfowl, and muskrats.

What should be done to spare Montana's wetlands from these undesirable effects? Short term control methods include spraying, cutting, water level manipulations, use of plant competitors, and manual digging. For long-term suppression researchers look to biological control agents - in this case, an array of insects.

Several years ago a single "wild" site of purple loosestrife was discovered in the Flathead Valley. Since its removal, annual

monitoring at this streamside location has revealed no regeneration or new seedlings. Nevertheless, with multiple stands immediately south in the Mission Valley, people in Flathead County should continue to prevent its dispersal into their wetlands by watching for and reporting any sightings of the purple terror.

In 1983 the presence of loosestrife in Lake County was first documented. Soon thereafter, a coalition of government and private agencies and individuals formed the Lake County Purple Loosestrife Committee. To date this noxious weed has not formed large, wide-ranging stands throughout Montana's wetlands; the Committee's goal is to prevent its continual spread and consequent loss of habitat.

Local efforts consist primarily of hand pulling and application of the herbicide glyphosate.

Establishment of long-term control for Montana was started in May 1993 with the release of a biological control agent, *Galerucella californiensis*, at the Ninepipe National Wildlife Refuge near Charlo, Montana. This leaf-feeding beetle, native to Europe, is primarily host-specific to purple loosestrife; in other words, the insects will forage and complete their life cycle solely on the targeted weed.

Steps to release a root-boring weevil and eventually several other agents are also progressing. By simultaneously stressing purple loosestrife from several angles, these insects should provide a far-reaching, superior control.

Authorization for release, however, requires extensive testing to determine an agent's effectiveness and to ensure host specificity. Additional years are often necessary after the initial release for the insects to expand to a vigorous population. During this interim, concerned individuals and agencies are striving to check the purple opponent.

For the past five years volunteer groups concerned about chemical control of weeds have "adopted" two wetlands, and each summer they have manually removed the existing *Lythrum salicaria*. The Flathead Chapter of MNPS has been actively involved in this suppression effort, and would welcome your help at their next pullout in August 1994 (details elsewhere in this issue. For questions about other control methods, you may contact Rachel Sykes at the National Bison Range, Moiese (644-2211). Prevent a purple loosestrife takeover!

- Rachel Sykes

---

## THE VALUE OF OLD GROWTH FORESTS

Only in the last few decades have we begun to look beyond the trees, attempting to understand the complexity and uniqueness of ancient forests. Old growth forests are ecosystems with enormous importance to both plants and animals:

- \* Forty per cent of the 373 wildlife species in Montana and northern Idaho prefer old growth forests for feeding and breeding.

- \* Of the 54 species of neotropical migratory birds that are in decline in Montana, 20 species are associated with mature and old growth forests. Scientists are not sure how much of the population decline of these birds is due to the loss or fragmentation of habitat on breeding grounds, wintering areas, and migration stopovers. Many biologists believe it's a combination of effects.

- \* It's the "specialists" of the plant world that are more likely to need old growth forest habitat: orchids that survive only on decaying matter; lichens that enrich the soil with nitrogen so that

other plants may grow; a plant resembling a candy cane, which lives off a fungus that, in turn, lives off ancient lodgepole pine trees and will die without those trees.

- \* Old growth forests are termed "conservators" - they conserve nutrients, soil, and carbon dioxide, and provide the purest water.

- \* Scientists are just beginning to discover the dynamics of insect populations and how insects self-regulate in old growth forests to reduce epidemics.

- \* In just the past few years a plant that was piled and burned as a "trash tree," the Pacific yew, has been found to be a potential cure for cancer. What additional medicinal and other secrets do the old growth forests hold?

-----  
- excerpted from **Montana Audubon News**, a publication of the Montana Audubon Council, Vol 2, No 3, Summer 1992

**Meetings**

**THURSDAY, SEPTEMBER 8, CLARK FORK CHAPTER:** 7:30 pm, Rm 307, Botany Bldg, U of M campus, Missoula. Peter Rice and Dave Dyer of the UM Division of Biological Sciences will speak on "Preserving the U of M Herbarium." See the accompanying article for further information.

**WEDNESDAY, OCTOBER 5, VALLEY OF THE FLOWERS CHAPTER:** 7:30 pm, Loft of the Plant Growth Center, MSU Campus. Bring plant slides from the summer to share. We'll discuss plans for the coming fall and winter meetings.

**THURSDAY, OCTOBER 13, CLARK FORK CHAPTER:** 7:30 pm, Rm 307, Botany Bldg, U of M campus, Missoula. Tom Mitchell-Olds of the U of M Division of Biological Sciences will speak on "Useless and Useful Mustards." There's a lot more than Grey Poupon in this family of plants. Tom has some fascinating stories of genetics and ecology.

**WEDNESDAY, OCTOBER 19, FLATHEAD CHAPTER:** 5:30 General meeting, 7:00 pm Program at the Fish, Wildlife & Parks Building in Kalispell. Jed Fisher, Supervisor of the Flathead County Weed District, will present a slide presentation reviewing area noxious weeds and control measures for those invaders.

**SATURDAY, NOVEMBER 5, BOARD OF DIRECTORS MEETING:** 10 am, Lewis & Clark Public Library, Last Chance Gulch, Helena. Bring lunch.

**Field Trips**

**EDIBLE & POISONOUS PLANTS OF THE ELKHORN MOUNTAINS, SATURDAY AUGUST 6**

Wildflowers, and edible and poisonous plants will be the focus of this trip led by Joe Elliott and Pat Plantenberg. Moderate hike of 6 miles. Depart at 8 am from K-Mart parking lot in Helena. Limited to 15 participants; contact Joe @ 442-2889 - bring water, appropriate footwear and garb.

**ANNUAL LOOSESTRIFE PULL, NINEPIPE NWR SATURDAY, AUGUST 6**

Another Gala Event! Don't miss the annual loosestrife pull at Ninepipe National Wildlife Refuge south of Flathead Lake. Co-sponsored by Flathead Audubon. Come help birds and native aquatic plants by reducing competition from the invasive, introduced *Lythrum salicaria*. Carpool from the IGA parking lot in Bigfork at 8 am, or meet 9 am at the Allentown Restaurant south of Ronan. Following a morning pulling loosestrife and a picnic lunch with gourmet desserts, the group will hear an update on project success of biological control by Bill West from the Bison Range. Call Neal Brown at 837-5018 for info.

**BEECH FERN RAMBLE, SATURDAY AUGUST 20**

Join Dennis Nicholls in exploring a site known to contain the Northern beech fern (*Thelypteris phegopteris*) on Little Cherry Creek south of Libby. Call Dennis at 827-4028 for meeting time and place.

**FALL ECOLOGY WALK AT KIRK HILL, SEPTEMBER 17**

Is there life after frost at Bozeman's Kirk Hill Nature Area? Join Jan Nixon for a look at the ways the plants and animals of Kirk Hill prepare for winter. Group size is limited; call Museum of the Rockies, 994-2251, for a reservation (there is a small fee).

**Field Trip Report**

**Plants on the Edge**

In late June, on a day awash in sunshine that pushed the mercury toward 90 degrees, a walk in the deep shade of a cedar forest sounded real good. Fortunately, we had planned just such an outing up the Bull River. Steve Shelly visited Noxon, in western Sanders County, where a dozen folks wanted to go see a plant that is on the edge—the edge of its range that is. At the invitation of local MNPS members Steve agreed to lead a walk up the Middle Fork of the Bull River to look for *Thelypteris phegopteris*, Northern beech fern. Known from only seven locations in the state, most all of which are on the Kootenai National Forest (two sites are in Glacier), the group was hopeful of spying this rare fern, and other associated plants in the moist red cedar and Western hemlock forests typical of the extreme northwest corner of Montana.

Indeed, we did find the fern, nestled among the large, graceful fronds of lady ferns (*Athyrium felix-femina*), side by side with oak fern (*Gymnocarpium dryopteris*) and grape fern (*Botrychium virginianum*) - not really a fern. The inquisitive group spent several hours identifying dozens of flowering plants in the area before returning to Noxon. The evening was highlighted by a slide show which Steve presented about other plants "on the edge". Steve defined three particular groups of plants that fit this description—peripheral species, disjunct species, and endemic species. The Northern beech fern, on the farthest southwesterly edge of its range here in Montana, was cited as a prime example of a peripheral species.

A trip to another beech fern site has been planned for August 20. Interested folks will go see the population threatened by a proposed mining operation on Little Cherry Creek south of Libby. The day on Bull River was excellent, and we extend our thanks to Steve Shelly for coming so far to spend the time with us.

- Dennis Nicholls

**Updated Publication:**

**ROCKY MOUNTAIN ENVIRONMENTAL DIRECTORY**

8850 O'Brien Creek Rd  
Missoula MT 59801  
(406) 543-3359

\$20.00, softcover or disk

The 1994-95 edition of this directory is now available, featuring information on citizen groups, environmental education programs and governmental agencies concerned with environmental issues in Montana, Wyoming, Idaho, Utah and Colorado.

The **Directory** is published as a softcover book and on computer floppy diskettes, as a project of the nonprofit *Global Action and Information Network (GAIN)*. All proceeds are applied toward the cost of updating the next version.

The 1994-95 edition includes over 1850 organizations, and the database will be available on selected computer networks by late 1994.

**Montana Recycling Hotline \*\* 1-800-823-MEIC**

Toll-free number for information on recycling and composting:  
what/where/how to recycle

## INVASION OF KILLER WEEDS SAVES HERBARIUM !!

- Peter M. Rice  
Division of Biological Science,  
University of Montana

Regional plant collections are typically maintained by herbaria at state universities. Over the last decade plant science research and teaching at universities has shifted from an emphasis on individual species and communities to the molecular level and plant assemblages at the landscape and ecosystem levels. Institutional support and outside funding for traditional herbarium activities declined with the move to biotechnology and geographic information systems.

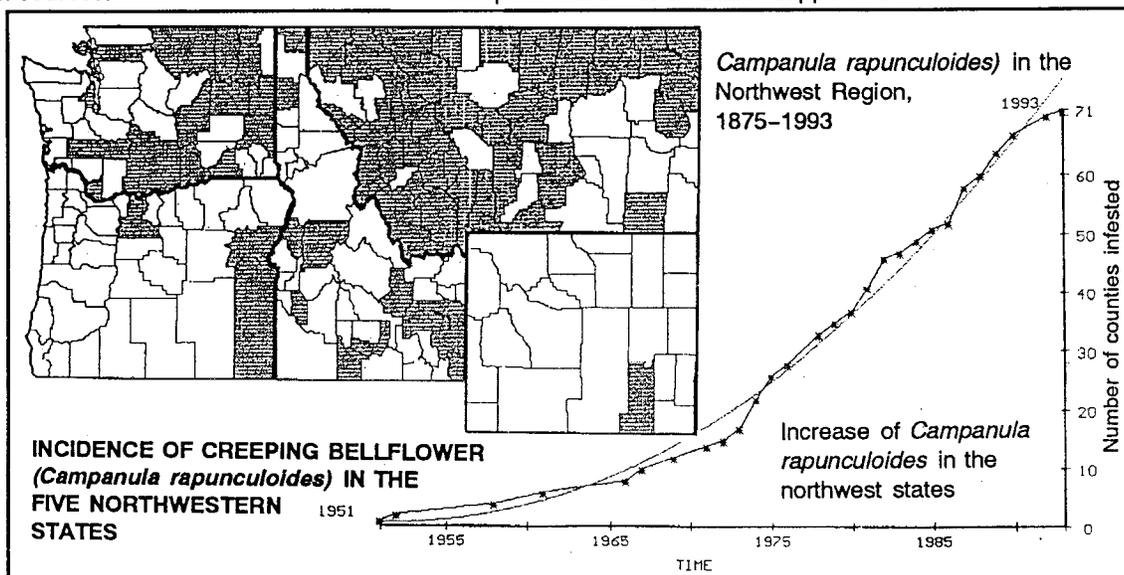
Support for herbaria may have reached a trough. Recently the National Science Foundation has begun to fund computerization projects at some of the larger national herbariums. The Systematic 2000 program uses herbarium collections to appraise biological diversity over large geographic areas.

The University of Montana Division of Biological Sciences recently received grants from the Montana Noxious Weed Trust Fund and the Forest Service to develop PC-based software for studying the distribution and invasion history of exotic plants in the Pacific Northwest using herbarium records as one of the principal data sources.

The INVADERS project software/database can be used to put entire herbarium collections into electronic form. The U of M Biological Sciences Division has purchased a computer and committed staff time to continue the INVADERS effort with the goal of computerizing the entire herbarium over the next 2-5 years. Modernization of herbaria by computer techniques can increase the accessibility of collections to a larger number of users with different interests. Appropriate software can quickly answer questions from an herbarium collection in a

manner similar to the way an on-line card catalog allows us to browse a library without going to the stacks or cases until we find a book or specimen sheet that we actually want to look at. The INVADERS software has a user friendly graphic interface that allows non-technical people to easily obtain species distribution maps and specimen label data from the collection (see the accompanying illustration).

The INVADERS program processes data on native plant species, including threatened, endangered and sensitive plants as efficiently as it handles data on exotic species. Volunteers are needed to build the database for the native plants at the U of M Herbarium. Technical or computing experience is not necessary to participate in this effort. The software is designed so that any person with an interest in plants can make a significant contribution to the project. Contact Peter Rice (243-2671) or Dave Dyer (243-4743) at the UM Botany Building if you would like to help or want more information. At their September 8 meeting, the Clark Fork Chapter will discuss computerization and future support for the UM Herbarium;



meet at 7:30 pm, in Room 307 of the Botany Building.

### NEWEST MNPS CHAPTER

Exciting news! The Maka Flora Chapter has officially formed. Maka Flora (pronounced "mah-kah") is the Dakota Sioux name for prairie. The chapter is based in Plentywood, a town 28 miles south of the Canadian border and 24 miles west of North Dakota - about as far northeast in Montana as you can get!

The chapter area includes Richland, Roosevelt, McCone, Sheridan, and Daniels counties. They currently have 15 individual members and one family membership. The chapter has four officers. Terry Wamsley is chapter president, and Al Joyes is chapter contact (see *Board of Directors*, back page).

This proves that people interested in native plants can be found in practically every corner of the state! We'll now have the opportunity to learn all about the flora of that region through field

trip reports and articles - maybe even by attending a trip there. Welcome, Maka Flora!

- LI

### WILDFLOWER BOOKS AVAILABLE ON TAPE FOR THE DISABLED

Two Montana wildflower books have recently been recorded in the Montana Talking Books Program of the State Library:

*Montana Native Plants and Early Peoples*, by Jeff Hart, narrated by Bonnie Heidel.

*Montana Wildflowers*, by Beverly Magley, narrated by Barb Harris.

These books can be ordered at no charge for all disabled patrons using the four-track cassette players distributed in the Talking Books Program.

## SPOTTED KNAPWEED INVADES UNGRAZED BUNCHGRASS COMMUNITIES

Weed invasion on rangeland, which results in deteriorating range condition, is often blamed on faulty management. Montana researchers initiated a study to determine if spotted knapweed could invade relatively undisturbed climax bunchgrass communities.

We selected two spotted knapweed patches adjacent to rough fescue communities on the Blackfoot-Clearwater Game Range near Ovando MT. The spotted knapweed patch at Site 1 was 200x30 feet. At Site 2 the patch was only 50x10 feet in size. Each patch was a potential seed source for the rough fescue area downwind. Deer and elk lightly grazed the area; livestock grazing, however, had been excluded for 30 to 40 years.

We placed a permanent stake three feet within the knapweed patches and stretched steel tapes from this location to areas in the rough fescue community. Plots were then established seven feet from the edge and at 14-foot intervals along each transect. We counted spotted knapweed plants annually on each plot from 1984 through 1987. During the four-year study, spotted knapweed moved 14 feet into the rough fescue community at Site 1, and seven feet into the community at Site 2.

In August 1986, we placed two seed traps parallel to the transects at each study site [and] collected seeds in September and October.

Seed trap results indicated that knapweed seed dispersal was concentrated near the infestations. About 50% of the total seed was disseminated within 2 feet of the knapweed infestation. We recovered only 12% of the seed more than five feet from the edge of the infestation. Average number of seeds recovered ranged from 43 seeds/ft<sup>2</sup> adjacent to the infestation to less than 1 seed/ft<sup>2</sup>

- John Lacey, Peter Husby, and Gene Handl

at a distance of ten feet. We attributed greater seed fall at Site 1 than at Site 2 to the larger knapweed infestation.

Knapweed seeds trapped in the rough fescue community suggest that seed production could support a faster rate of invasion than we observed. The relatively slow rate of knapweed encroachment may relate to environmental conditions that influenced seed or seedling mortality within the climax plant community. Soil disturbance, bare ground, and lower succession stages favor spotted knapweed invasion on rangeland. Until managers understand knapweed ecology, we recommend the following grazing management practices:

- alter the season of use
- do not overstock
- rotate livestock and allow plants to recover vigor before regazing
- leave adequate leaf area (stubble height) following grazing, and
- allow litter accumulation

Do not trust the competitiveness of the native plant community to keep out knapweed. Apply herbicide or other control treatments as soon as the initial knapweed plants are detected to prevent on-site seed accumulation.

-----  
Excerpted from **Knapweed**, Vol 5, #2, publication of the Cooperative Extension Service Interagency Knapweed Committee. The same issue contained an article by E.S. Davis and P.K. Fay, Dept of Plant & Soil Science, MSU, detailing their study which documents that spotted knapweed seed can remain viable in the soil for up to eight years.

### FLATHEAD CHAPTER MEETS "FROGWATCH"

Sam Manno, who first crossed our path at the Ninepipes Purple Loosestrife Pull in August, 1993, was guest speaker at the November Flathead Chapter meeting. Sam is the amphibian and reptile expert at the Craighead Institute in Missoula, and founder of "Frogwatch." Sam has a contagious, inspiring passion for these animals and cares for about 150 at home. He didn't bring any slides for the program - instead he had his frogs, toads, lizards, snakes and tortoises. As Sam started taking the animals out of the boxes and passing them around, the children all moved up to the front, and soon the adults were right behind them, equally eager to hold an animal. Most impressive were the huge, poisonous Cane Toad from Surinam, the gorgeous iguana, which felt like a beaded purse, and the 60-pound boa constrictor which draped over the shoulders of seven children at one time.

Sam is being forced to learn botany as he studies ecological

conjunction of the timing of amphibian egg laying with plant blooms. In 1993, however, it was so wet that plants bloomed all season! In our area, loss of habitat has had the greatest impact on the leopard frog. Once abundant in the Ninepipes Refuge, they are now rare, following a rapid decline in numbers in the 1970s. It was delightful to have so many young children at a meeting. We all learned a lot, and had more than a normal amount of fun! For more information on "Frogwatch," contact Sam at: Craighead Wildlife/Wildlands Institute, 5200 Upper Miller Creek Rd, Missoula MT 59803; 251-3867.

### FLORA OF NORTH AMERICA, Vols 1 & 2

Oxford University Press  
2001 Evans Rd, Cary NC 27513  
1-800-451-7556

-----  
These are the first two of the long-awaited volumes attempting comprehensive coverage of the vascular plants and bryophytes of North America north of Mexico. A total of thirteen volumes are planned and work on them is underway.

Volume One provides plant geography and history discussions. Volume Two covers all the ferns and gymnosperms, including massive changes for fern taxonomy.

Complete taxonomic coverage is provided, with many illustrations, as well as range maps for each species.

Those with serious botany interests may ask the Flora of North America group to add you to the mailing list for their newsletter. Write: FNA Newsletter, P O Box 299, St Louis MO 63166.

When ordering the Floras, please include \$2.50 shipping/handling for the first book, \$1 for each book thereafter. Montana residents do not have to pay sales tax, of course.

#### Late-breaking news...

#### ANNUAL MNPS CANOE TRIP

The eighth annual MNPS fall canoe trip will be hosted by the Flathead Chapter on Saturday, October 1, on the Swan River from Porcupine Bridge to Swan Lake.

Meet at the Morley Canoe shop on Swan Highway (half mile north of the 71-mile market on Hwy 83) at 11 am. Bring lunch, water, and appropriate weather gear. For info call Anne Morley at 886-2242 (if no answer, check with Pattie Brown, 837-5018).

**MONTANA NATIVE PLANT SOCIETY \*\*\* MEMBERSHIP APPLICATION/RENEWAL**

Date \_\_\_\_\_ New \_\_\_\_\_ Renewal \_\_\_\_\_

NAME \_\_\_\_\_ ADDRESS \_\_\_\_\_

CITY/STATE/ZIP \_\_\_\_\_ PHONE \_\_\_\_\_

- |   |   |
|---|---|
| <b>STATEWIDE MEMBERSHIP WITH CHAPTER AFFILIATION*</b>                   | <b>MEMBER-AT-LARGE (Statewide membership only)</b>                  |
| <input type="checkbox"/> \$12 I. Individual                             | <input type="checkbox"/> \$ 8 I. Individual                         |
| <input type="checkbox"/> 16 II. Family                                  | <input type="checkbox"/> 12 II. Family                              |
| <input type="checkbox"/> 28 III. Business/Organization                  | <input type="checkbox"/> 25 III. Business/Organization              |
| <input type="checkbox"/> 4 IV. Yearly chapter dues for Lifetime Members | <input type="checkbox"/> 150 IV. Lifetime member (one-time payment) |

Additional Donation \$ \_\_\_\_\_ (donations may be designated for a specific project if you choose)

**\*AREAS COVERED BY CHAPTERS:**

- ARTEMISIA CHAPTER** - Yellowstone and Carbon Counties; south-eastern/south-central Montana
- CLARK FORK CHAPTER** - Lake, Mineral, Missoula, Powell and Ravalli Counties
- FLATHEAD CHAPTER** - Flathead and Lake Counties plus Glacier National Park
- KELSEY CHAPTER** - Lewis & Clark and Jefferson Counties
- MAKA FLORA CHAPTER** - Richland, Roosevelt, McCone, Sheridan, and Daniels counties.
- VALLEY OF THE FLOWERS CHAPTER** - Gallatin, Park, Madison and Sweet Grass Counties plus Yellowstone National Park

All MNPS chapters welcome members from areas other than those counties indicated - we've listed the counties just to give you some idea of what part of the state is served by each chapter. More chapters are in the planning stages for other areas; watch for announcements of meetings in your local newspaper. Ten paid members are required for a chapter to be eligible for acceptance in MNPS. Membership in the MONTANA NATIVE PLANT SOCIETY is on a calendar-year basis, March 1 through the end of February of the following year. New-member applications processed before the end of September each year will expire the following February; those processed after the first of October will expire in February of the year after. Membership renewal notices are included in the Winter issue of KELSEYA. Anyone who has not renewed by the time the Summer KELSEYA is ready to mail will be dropped from the mailing list/MNPS membership roster.

**Your mailing label tells your**

**CLASS OF MEMBERSHIP** (I, II, III, IV - see above)  
**CHAPTER AFFILIATION** (ART = Artemisia; CF=Clark Fork; F=Flathead; K=Kelsey; MAK=Maka Flora; VoF=Valley of the Flowers)  
**DATE YOUR MEMBERSHIP EXPIRES:** If your label reads "x2/94" your membership expired February 28, 1994...use this coupon to renew your membership now! New memberships received after November 1, 1993, are good through 2/28/95, and the top line of your label should read "2/95." Please drop us a note if any information on your label is incorrect.

**MAKE CHECKS PAYABLE TO:** MONTANA NATIVE PLANT SOCIETY  
**MAIL TO:** Montana Native Plant Society  
Attn: Membership  
P O Box 8783  
Missoula, MT 59807

**HIGH, DRY AND HANDSOME...Committee Reports, continued from Page 3:**

roadless areas where it is found. Dennis finds time to do all this in addition to recently starting a local newspaper featuring many native plant articles. We really appreciate all your efforts, Dennis!

The conservation committee has many upcoming projects that include commenting on important issues that affect native plants, from range reform to the Endangered Species Act. Representatives from each chapter help them organize. Sally Orr is the committee chairman. Please inform her of any native plant-related issues of concern in your area.

**Education**

This committee discussed the establishment of a scholarship to fund native plant research, projects or products in keeping with the goals of the Montana Native Plant Society. To begin the fund, the amount of \$200.00 would be available to selected candidates. Those interested would submit a written application stating their proposal. Details for this process will be decided by the Board of Directors at their fall meeting. Availability of the scholarship will be announced through various statewide media, college and high school campuses, as well as *Kelsey* and other related organization newsletters. We hope first recipients can be selected

in time for summer 1995 projects. Constraints of time prevented us from discussing other areas of educational outreach in much detail, yet we concurred that many chapters are doing a great job in this area and we shared ideas that we can incorporate into our own procedures.

**Membership:** Things have changed in the membership department. All records have been moved from Bozeman to Missoula, where we've entered all names into a database that offers us more flexibility at the chapter and state levels. But, as with any big change, there're undoubtedly a few things that have slipped by us. So, please take a quick look at your label and send any corrections to your chapter membership person or to: Membership, P O Box 8783, Missoula, MT 59807.

*\* A big thanks of appreciation to Shella Sheldon of Henderson, Nevada for her invaluable help in entering member names into the database.*

**Newsletter Editor on Sabbatical**

Jan Nixon was on sabbatical for part of this summer, working on a project in Yellowstone National Park. Robyn Klein filled in as newsletter editor for this issue. Thanks Robyn!

**MONTANA NATIVE PLANT SOCIETY**  
**KELSEYA** Editor  
 P O Box 992  
 Bozeman MT 59771-0992

Non-Profit Org  
 US Postage  
 Paid  
 Bozeman MT  
 Permit No.  
 5

**ADDRESS CORRECTION REQUESTED**

**PLEASE NOTE:** If the top line of your label ends in "94", your membership expired 2/94. If your label reads COMP or COMP2, this is your LAST FREE ISSUE. Won't you send in your membership check today?

I.C.F. 2/95  
 PETER LESICA  
 929 LOCUST  
 MISSOULA MT 59802

(c) Copyright 1994  
 Montana Native  
 Plant Society



Printed on  
 Recycled  
 Paper

**MONTANA NATIVE PLANT SOCIETY**

The Montana Native Plant Society is a 501-C-3 (non-profit) corporation chartered for the purpose of learning more about plants native to our state and their habitats, and of sharing that knowledge. Contributions to MNPS are tax deductible, and may be designated for a specific project or chapter, or may be made to the general fund.

Your yearly membership fee includes a subscription to KELSEYA, the newsletter of MNPS, published quarterly. We welcome your articles, clippings, field trip reports, meeting notices, book reviews - almost anything, in fact, that relates to our native plants or the Society. **Please include a one- or two-line "bio" sketch with each article.** Drawings should be in black ink or good-quality photocopy. If you send clippings, please note the source, volume/issue and date.

**Changes of address** and inquiries about membership in MNPS should be sent to MNPS, P O Box 992, Bozeman MT 59771-0992. All newsletter material should be mailed to Jan Nixon at the same address, and may be typed or on disk (prefer 3.5") in WordPerfect 4.2 or better.

Advertising space is available in each issue at \$5/column inch. Ads must be camera-ready, and must meet the guidelines set by the Board of Directors for suitable subject matter: that is, be related in some way to plants or the interests of MNPS members.

**Deadline for the Fall issue is September 15;** please include meeting/field trip notices through mid-January '95. The Fall issue of KELSEYA will be mailed the second week of October.

**IF YOU MOVE, PLEASE SEND US YOUR CHANGE OF ADDRESS!**

**BOARD OF DIRECTORS**

<b>PRESIDENT</b> - Linda Iverson	Big Timber	932-5840
<b>PAST PRESIDENT</b> - Angela Evenden	Missoula	549-0040
<b>VICE-PRESIDENT</b> - Janet Johnson	Lolo	273-0375
<b>SECRETARY</b> - Jennifer Lyman	Billings	656-7869
<b>TREASURER</b> - Madeline Mazurski	Missoula	542-0262
<b>NEWSLETTER EDITOR</b> - Jan Nixon	Bozeman	585-9959

**DIRECTORS-AT-LARGE:**

<b>Eastern Montana</b> - Terry Wamsley	Harlem	353-2205
<b>Western Montana</b> - Dennis Nichols	Trout Creek	827-4028

**CHAPTER REPRESENTATIVES:**

<b>Artemisia Chapter</b> - Don Heinze	Billings	256-1624
<b>Clark Fork Chapter</b> - Anne Garde	Missoula	721-7627
<b>Flathead Chapter</b> - Terry Divoky	West Glacier	387-5527
<b>Kelsey Chapter</b> - Bonnie Heidel	Helena	444-0536
<b>Maka Flora</b> - Al Joyes	Westby	385-2579
<b>Valley of Flowers Chapter</b> - Robyn Klein	Bozeman	585-9134

**STANDING COMMITTEES:**

<b>Conservation</b> - Sally Orr	Big Timber	932-5938
<b>Education</b> - Blue Tanttari	Missoula	728-7417
<b>Landscaping/Revegetation</b> - Greg Hallsten	Helena	443-6141
<b>Newsletter/Publications</b> - Jan Nixon	Bozeman	585-9959

**PLEASE WELCOME THESE NEW MEMBERS**

**MONTANA**

**BIGFORK**  
 Sue Hanson

**BILLINGS**  
 Carl Yerrington

**BOZEMAN**  
 Sandra Givens

**HYSHAM**  
 Judi Knapp

**KALISPELL**  
 John Fraley

**LIVINGSTON**  
 Jim Peterson

**RED LODGE**  
 Nancy Krekeler

**WHITEFISH**  
 Walter Gernert

**OREGON**  
 ESTACADA  
 Gale Masters

**SOUTH DAKOTA**  
 HOT SPRINGS  
 Cindy Reed

**CARNIVOROUS PLANT CLUB OFFERS NEWSLETTER**

The Pacific NorthWest Carnivorous Plant Club has recently begun publication of a newsletter. Its editor plans to emphasize cultivation techniques for carnivorous plants growing in this part of the world. The PNWCP Club is an unofficial affiliate of the International Carnivorous Plant Society, and adheres to its guidelines.

To subscribe, or for more information write: P O Box 6112, Whitehorse, Yukon Y1A 5L7 Canada; or 8163 Elliot St, Vancouver, British Columbia V5S 2P3 Canada.