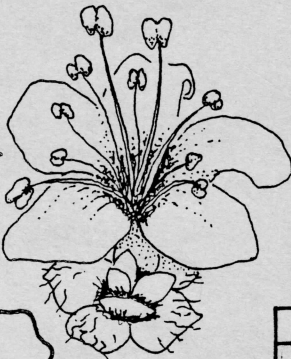


*Kelseya uniflora*

# Kelseya

SPRING 1992

Newsletter of the Montana Native Plant Society

## MONTANA'S MOST DIMINUTIVE ALPINE PLANTS

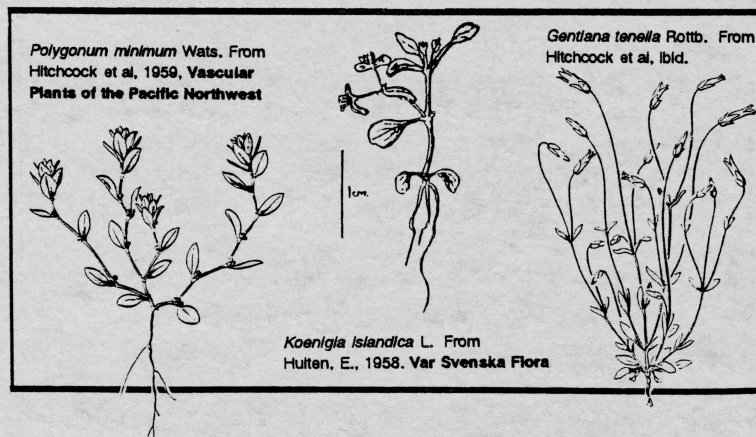
- Douglas N Reynolds

The vast majority of plant species in alpine and arctic areas are perennials. The standard explanation is that few species have evolved that can develop rapidly enough from germination to produce seeds during a single short, cold summer. However, there are a few annual species known from almost every arctic or alpine flora. They are some of the most interesting examples of plant adaptation to severe environments.

One of the best-studied alpine annuals is *Koenigia islandica*, found in Montana in the Beartooth Mountains. This species has an incredible world-wide distribution which ranges from the northern tip of Greenland (82° north) down into the Rockies, the mountains of Scotland, and the Himalayas, to a disjunct population at the southern tip of South America in Tierra del Fuego (55° S). It has never been found between Colorado and Tierra del Fuego, a distance of over 6000 miles. How did this species get from Colorado to South America? Did it once occur down the Cordillera of North and South America and has since disappeared from intervening areas? Or was it carried by a constipated tern (a bird known to migrate between the Arctic and Antarctic)? No one knows.

Because of its small size and scattered distribution, *Koenigia* was not even discovered in the United States until 1953, when it was recognized and collected in Colorado by a visiting European botanist. Presumably, others had always taken it to be a seedling of some other species.

How does this species successfully germinate, grow and produce seeds at elevations of 10,000 feet in less than eight weeks? It has a variety of morphological and physiological adaptations that allow it to complete its life-cycle in an environment where most species require several years before they can reproduce successfully.



*Polygonum minimum* Wats. From Hitchcock et al, 1959, *Vascular Plants of the Pacific Northwest*

*Gentiana tenella* Rottb. From Hitchcock et al, *Ibid.*

*Koenigia islandica* L. From Hulten, E., 1958. *Var Svenska Flora*

habitats which stay wet all summer. The best place to find it is below late-lying snowbanks or along stream or pond edges. Because of its low stature, it cannot compete for light with larger species, and thus it most often occurs in saturated gravels or beds of moss where few other, higher plants grow. Its seeds germinate at temperatures near freezing and one can find it already germinated before the last few inches of snow have melted away in spring. It develops very quickly and after four weeks of producing just a few leaves, it flowers. Ripe seed is ready to disperse after about six weeks.

Measurements have shown that the characteristics and rates of its photosynthesis are not very different from other alpine species. Like them, it can photosynthesize at low temperatures. What it does differently is to put its energy into a few small flowers right away, rather than into a big root system and persistent plant body as do alpine perennials. In the harsh alpine environment, perennials do not successfully reproduce in some years because a shorter or colder summer limits pollination or the time available to ripen seeds. Perennial species, however, persist over the winter, and can reproduce in a future summer when conditions may be more favorable.

This is not possible for an annual like *Koenigia*. It must germinate and produce some viable seed almost every year or its populations will go extinct. *Koenigia* has a very high seedling

- continued on page 6

## FROM THE PRESIDENT

I hope all of you are enjoying the spring weather bestowed upon us here so early in the northern Rockies. The first weekend in March your officers and directors ventured to Bozeman for our winter Board meeting. Here is a brief summary of the items and issues that the Board is presently dealing with.

### 1992 MONTANA NATIVE PLANT SOCIETY STATEWIDE CONFERENCE

First of all, I would like to invite all of you to come to the statewide conference in Bozeman May 1 to 3. The Valley of the Flowers Chapter is hosting the conference this year and has put together an exciting meeting featuring "Natural Areas of the Greater Yellowstone Ecosystem" (see flyer included with this newsletter for more information).

### PROPOSED BYLAW CHANGES

The Board of Directors is recommending three Bylaw amendments to the membership for approval. These Bylaw changes are described elsewhere in this issue. A membership vote on these changes will be held at our May meeting. Copies of the existing Bylaws are available from any Board member.

### STRATEGIC PLANNING

A couple of Board members have volunteered to work on future goal setting and strategic planning for the state level of our organization.

MNPS is steadily growing in overall membership and participation in chapter meetings and field trips. However, there are many other types of activities that our Society could support or become involved in. The extent of existing and additional activities depends on the commitment of time and energy of individual members. It is my feeling that the Montana Native Plant

Society can fulfill a very important role in supporting efforts and activities related to the conservation of native plants in the extensive natural environments still present in our wonderful state of Montana.

Presently, there are no other organizations with the principal purpose of learning more about Montana native plants and the ecosystems upon which they depend, and sharing this knowledge with members and others. Some activities that the MNPS could consider taking on include: 1) development of a scholarship and/or special project fund to support the study of Montana native plants, educational projects etc. 2) volunteer projects with land management agencies -- such as protection of rare plant habitat and natural areas, and 3) taking a stronger voice in promoting the importance of conserving plants in their native environments. If any of you out there have ideas that you would like us to consider please contact myself or one of the Board members. This is your Society -- so please let us hear from you!

### EDUCATION COMMITTEE

We will be again sponsor one camper at the Lubrecht Natural Resources Camp this summer. The state organization and Clark Fork Chapter are jointly sponsoring this summer's camper.

### NEW CHAPTER -- MAYBE?

Montana Native Plant Society members in the Billings area are talking about forming a chapter. A meeting to explore interest in this idea is scheduled for April 6 (see MEETINGS, page 4). All that is needed to form a local chapter is ten individuals and commitment! If anyone else is interested in forming a chapter, please don't hesitate to call upon one of your officers or Board members.

I look forward to seeing all of you at the Bozeman meeting in May!  
- Angela Evenden

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### Montana Medicinals...

#### ST JOHN'S WORT (*Hypericum perforatum*)

St John's wort is a roadside perennial found in the western and southwestern parts of the state. Liking disturbed areas, it stands erect, 1-4' tall, arising from a woody, branched rootstock. The oblong leaves are 1" or less long, and are opposite and simple. Bright yellow flowers with five petals and five sepals bloom in terminal panicles. Petals, sepals and leaf margins may be spotted with tiny black dots.

Flowers of St John's wort bruise red when pinched and the plant has a turpentine odor. The genus name *Hypericum* is Greek: "above an icon." Medieval Europeans hung sprigs of St John's wort above religious images to ward off malevolent spirits. With the spread of Christianity across Europe the plant became associated with St John the Baptist. The secretion of red oils from its bruised flowers was analogous to the midsummer beheading of the Saint. His June 24th birthday, St John's Day, was thought to be the most potent day to harvest the herb.

Its ancient reputation as a guardian herb may be due to St John's wort's wide range of medicinal uses. It was used early as a wound healer, especially for puncture wounds inflicted by knife or sword. The presence of glycosides, substances with pronounced physiological action on animal tissue -- in the plant's aerial parts aids its use as a liniment. External application eases the pain from neuralgia, arthritis, bruises and mild burns.

It is taken internally as a tincture or tea, as an expectorant,

sedative, and pain reducer; it is helpful in treating insomnia and tension, and is often prescribed for menopausal changes.

Current pharmaceutical research is focusing on the plant's effects on the nervous system. The anti-bacterial action of St John's wort is being studied in Germany for use as a food preservative. This widely naturalized European herb has been known to cause photosensitivity in livestock when eaten in large quantities. For this reason, consumption of the herb is recommended only in moderate amounts by all individuals.

- Kim Erica Schleicher

### HELP NEEDED WITH WILDFLOWER VIEWING AREAS ON THE DEERLODGE NATIONAL FOREST

The Deerlodge National Forest plans to develop a wildflower viewing or interpretive area on the Forest. Several areas across the Forest may be suitable and need further evaluation. To aid in this process, volunteers (individuals or groups) are needed to "adopt" a site, which would involve several trips to the area throughout the summer to document species and blooming sequence.

Two of the selected areas are meadows in the Fleecer Mountains southwest of Butte, and the South Boulder drainage in the Tobacco Roots. Anyone interested in volunteering or needing more information should contact: Betsy Follman, Jefferson District Wildlife Biologist, at the Boulder Work Center, P O Box 116, Boulder, MT 59632, or call 225-3391.

## YELLOW IS THE COLOR OF SPRING

– Peter Lesica

For three years I lived each spring on Finley Point, a peninsula on the southeast side of Flathead Lake. During April and May I went for walks along the road through the open ponderosa pine/Douglas fir forest at least every other day and recorded when I first saw a wildflower blooming. By doing this, I noticed an interesting pattern. In April, nearly half of the species that came into bloom had yellow flowers, while in May fewer than ten percent of the species had yellow flowers (see below). Why should yellow-flowered species be proportionately so much more common in the early spring than later?

We know that flowers generally serve the function of attracting pollinators. In Montana, these pollinators are insects or sometimes hummingbirds. During much of the year and in most habitats, bees are the common and most efficient pollinators. Workers of colonial species, such as bumblebees, tirelessly visit flower after flower in order to gather nectar and pollen to feed their young. Nonetheless, during very cold and cloudy weather, flies may be more active than bees. More importantly, native bees start their colonies anew each year. Thus, in early spring, only the queens are present, and they are busy selecting a site for their colony or building a nest. As a result, they may be just as important as bees for pollination in early spring.

How does this help explain the abundance of yellow-flowered species? Researchers who study insect behavior have shown that, in general, flies are attracted to yellow more than to other colors, while bees are most attracted to blue and white. Have you noticed that fly-catching strips are usually yellow? Although we can't know for certain, these observations suggest that the abundance of yellow-flowered plants in early spring may be due to the relatively greater availability of flies to act as pollinators. Once warmer weather arrives and bees are more abundant, we see fewer yellow-flowered species relative to the number with blue or white flowers. It would be interesting to know whether this pattern is apparent in other plant communities. Very few marsh species bloom before native bees are present in large numbers, so we would not expect to see the same relationship. Are there disproportionately large numbers of early yellow-flowered species in prairies or alpine meadows?

Wildflowers observed first blooming in April and May in open pine/fir forest on Finley Point in 1980-1982. Flower color is not independent of month ( $\chi^2=7.30$ ,  $p<0.01$ ).

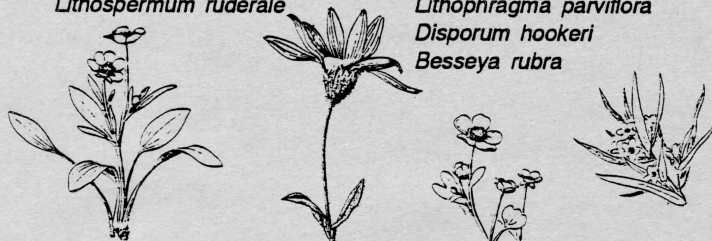
### APRIL

#### Yellow

*Ranunculus glaberrimus*  
*Fritillaria pudica*  
*Lysichiton americanum*  
*Lomatium triternatum*  
*Berberis repens*  
*Arnica cordifolia*  
*Balsamorhiza sagittata*  
*Lithospermum ruderales*

#### Non-Yellow

*Lithophragma glabra*  
*Montia parvifolia*  
*Collinsia parviflora*  
*Dodecatheon conjugens*  
*Arabis nuttallii*  
*Microseris gracilis*  
*Montia perfoliata*  
*Lithophragma parviflora*  
*Disporum hookeri*  
*Besseya rubra*



### MAY

#### Yellow

*Senecio integerrimus*  
*Arnica sororia*

#### Non-yellow

*Antennaria neglecta*  
*Fragaria virginiana*  
*Cerastium arvense*  
*Viola adunca*  
*Arabis holboellii*  
*Clematis columbiana*  
*Lupinus sericeus*  
*Antennaria microphylla*  
*Delphinium bicolor*  
*Brodiaea douglasii*  
*Zigadenus venenosus*

*Geum triflorum*  
*Galium aparine*  
*Castilleja hispida*  
*Smilacina racemosa*  
*Polemonium pulcherrimum*  
*Vicia americana*  
*Geranium viscosissimum*  
*Commandra umbellata*  
*Smilacina stellata*  
*Phacelia linearis*  
*Gnaphalium microcephalum*  
*Thalictrum occidentale*  
*Calochortus apiculatus*  
*Calypto bulbosa*  
*Penstemon albertinus*  
*Potentilla glandulosa*

## RESEARCH NATURAL AREAS UPDATE, US FOREST SERVICE NORTHERN REGION

The Northern Region reports that Forest Service Chief F. Dale Robertson has recently approved the establishment of two new Research Natural Areas on the Kootenai National Forest in northwestern Montana. The two new areas are: Hoskins Lake RNA (Three Rivers Ranger District) and Wolf-Weigel RNA (Fisher River Ranger District).

The Research Natural Area (RNA) designation is utilized by several Federal land management agencies, including the Forest Service, to protect representative and unique examples of our natural ecosystems. The goal of RNA management is to allow for the perpetuation of natural ecosystems and their features. These are areas where natural processes are allowed to operate without human interference. RNAs provide sites for long-term ecological monitoring and study which lead to better understanding of ecosystem composition, structure and function over time. Another value of RNAs is that they can serve as reference areas for monitoring long-term effects of land management practices.

Below is a brief description of the two new RNAs:

### Hoskins Lake RNA

The Hoskins Lake RNA comprises 380 acres of forested mountainous terrain in the Yaak River drainage of the Kootenai Forest (3500 feet elevation). This RNA was selected for its excellent representation of the Engelmann spruce/queencup beadleily (*Picea engelmannii/Clintonia uniflora*) habitat type which occupies benches and gentle slopes of the Natural Area. The principal aquatic features within the RNA are two lakes, one shallow with emergent vegetation, and Hoskins Lake which is 33 acres in size and about 30 feet deep.

### Wolf-Weigel RNA

The 250 acre Wolf-Weigel RNA is located along the western edge of the Salish Mountains at approximately 4000' elevation. The RNA features a gorge, a steep-sided basin, and a wetland area dominated by willows (*Salix* spp.) and sedges (*Carex* spp.).

The RNA also encompasses adjacent uplands in lower Weigel Creek and upper Wolf Creek drainages.

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**MEETINGS**

**WEDNESDAY, APRIL 1, VALLEY OF THE FLOWERS CHAPTER:** 7:30 pm, Herbarium classroom, 4th Floor of Lewis Hall, MSU Campus. Matt Lavin, Curator of the Herbarium, will discuss "Legumes of Montana...and Beyond," with slides and herbarium specimens.

**MONDAY, APRIL 6, BILLINGS:** 7 pm, Bair Science Center, Room 104, Rocky Mountain College. Organizational meeting for a **Billings-area chapter!** Don Heinze of the Bureau of Land Management will give a presentation on the Meetetse Spires Natural Area.

**THURSDAY, APRIL 9, CLARK FORK CHAPTER:** 7:30pm, Room 307, Natural Science Bldg, UofM campus. Rachel Potter, Park Service resource management specialist, will talk about her work "Restoring Native Vegetation in Glacier National Park."

**WEDNESDAY, APRIL 15, FLATHEAD CHAPTER:** 7 pm, Fish, Wildlife & Parks Bldg, Kalispell. Jay Windfield, a biological technician for the Flathead National Forest, Spotted Bear District, will speak about range management and "all things related to range" in the Bob Marshall Wilderness. For more info, call Terry Divoky at 387-5527 (evenings).

**SATURDAY, APRIL 25, MUSEUM OF THE ROCKIES:** Basic Plant Identification Workshop, 1-4 pm. What features do you need to observe in the field? Does knowing family characteristics help? How do you use a technical key? What about basic dissecting and microscope skills? For all this and more, make a reservations by calling 994-2251 (small fee).

**THURSDAY, APRIL 30, CLARK FORK CHAPTER HERBARIUM NIGHT:** 7:30 pm, Room 303, Natural Science Bldg, UM campus. Can you tell a horsetail from a horse turd or a club-moss from a club sandwich? Stay informed on Pteridophyte politics. Join Peter Lesica in "The World of Fern Allies."

**NOTE: No Valley of the Flowers Chapter meeting in May...we expect to see you ALL at the Annual Meeting, May 1-3!**

**THURSDAY, MAY 14, CLARK FORK CHAPTER:** 7:30 pm, Room 307, Natural Science Bldg, UM campus. Sheila Morrison will premiere her MNPS slide show. Come see yourself on the **BIG SCREEN!**

**TUESDAY, MAY 19, FLATHEAD CHAPTER:** 7 pm, Room 311, Science & Technology Bldg, Flathead Valley Community College, Kalispell. Basic Wildflower Identification and Keying Workshop - for beginners or those wanting to brush up their skills. Note change of day from regular Wednesday meeting! Our last meeting until **OCTOBER**. Call Rachel Potter (892-2446) for more info.

**THURSDAY, JUNE 11, CLARK FORK CHAPTER SPRING POTLUCK:** 6:30 pm at the Greenough Park Pavilion, near the north end of Monroe St. Bring plates, utensils, and a dish to share.

**FIELD TRIPS**

**PRAIRIE WILDFLOWERS AT RATTLER GULCH, SATURDAY APRIL 25:** Walk around the open hills and canyons near Drummond with Peter Lesica. Meet at the UM Fieldhouse Parking lot at the end of 6th St, across from KUFM at 10:30 am. We'll carpool from there. Bring lunch and water. For info call Anne Garde, 721-7627.

**CELEBRATING NATIONAL WILDFLOWER WEEK:** On Sunday, May 10, Wayne Phillips will lead a wildflower walk at Giant Springs Park, near Great Falls. Meet at the Giant Springs

Fish/Wildlife/Parks headquarters building at 2 pm. For more information, call Wayne at 453-0648 evenings.

**WORK PROJECTS AT KIRK HILL NATURE AREA, APRIL 18, MAY 9 & JULY 9** Kirk Hill is located six miles south of Bozeman on S 19th Road. Several work days are planned: **Saturday, April 18**, 9 am at Museum of the Rockies, to finish assembling and varnishing plant ID signs; **Saturday, May 9**, 9 am at Kirk Hill, install the signs; **Thursday, July 9**, 6:30-dark at Kirk Hill, the fifth annual Knapweed Pullout - see July 9 for details. Call Jan Nixon at 587-0120(wk) if you can help out.

**WORK PROJECTS IN GLACIER PARK, EVERY FRIDAY, MAY 15-SEPTEMBER 18:** 9 am-4:30 pm, work projects are available for volunteers, such as taking cuttings, thinning seedlings, weeding, basic carpentry, potting up rooted cuttings or ??? Call Dale Wick or Joyce Lapp (888-5441) for more info; there may be earlier, later or additional dates.

**EAST SHORE RESEARCH NATURAL AREA, SATURDAY MAY 16:** An easy 3-mile hike from Ferndale to Woods Bay past a series of ponds and lakes. Six habitat types are represented in this Natural Area. Contact Anne Morley, 886-2242, for more info.

**TRILLIUM TIME AT KIRK HILL, SATURDAY MAY 16:** Join Jan Nixon from 1-4 pm at the Kirk Hill Nature Area, S 19th Road, Bozeman. Group size is limited and registration is required; call Museum of the Rockies, 994-2251 (small fee).

**GLACIER NATIONAL PARK PLANT NURSERY WORK DAY, SATURDAY MAY 30:** 9 am-4:30 pm, come for an hour or two or all day. Bring gloves, raingear and lunch. Follow signs to nursery in Park headquarters in West Glacier. Call Dale Wick or Joyce Lapp (888-5441) to arrange free camping.

**TRACKING FIRE RECOVERY IN YELLOWSTONE, SUNDAY MAY 31:** Join Valley of the Flowers Chapter in surveying their fire-recovery sites in the northwest corner of Yellowstone Park. Meet in West Yellowstone by the City Park Fire Station at 9 am, or 9:30 am at the parking pullout about five miles south of Divide Lake on Highway 191 (look for the "Wildflower Walk" sign). Bring water & lunch. Call Sharon Eversman (586-6788) for more info.

**ORCHIDS OF KIRK HILL, THURSDAY, JUNE 11:** 6:30-8:30 pm at the Kirk Hill Nature Area, S 19th Road in Bozeman. Join Jan Nixon to see how many of the five species of orchids which grow in the Nature Area we can spot. Group size is limited and reservations are required; call Museum of the Rockies at 994-2251 (small fee).

**WEST FORK BUTTES PROPOSED BOTANICAL AREA Knapweed Pull, SATURDAY JUNE 6:** The proposed botanical area harbors excellent-condition bunchgrass communities and habitat for several rare plants. The only occurrence of Payson's bladderpod (*Lesquerella paysonii*) in Montana is found here, along with populations of Missoula phlox (*Phlox kelseyi* var. *missouliensis*) and a rare *Orobanche*. Knapweed (*Centaurea maculosa*) is just beginning to invade lower portions of the proposed botanical area. Susan Rinehart, Deerlodge NF Botanist, is organizing the Saturday knapweed pull. Besides wonderful scenery and an opportunity for satisfying hard work - specialists will be on hand to assist with plant identification

and explain Forest Service efforts in botany and plant conservation. Please contact Susan Rinehart, Deer Lodge Ranger District, 91 Frontage Road, Deer Lodge, MT 59722 or call (406) 846-1770 for information on time and meeting place. Come volunteer for those rare plants!

**WEST BOULDER VALLEY AND BURRIS FLATS, SATURDAY JUNE 6:** Observe changes in plant life while going from dry, sweeping grasslands up to a marshy meadow, all in the West Boulder Valley, southwest of Big Timber. Bring water and lunch. Call Linda Iverson (932-5840) for specifics.

**SQUEEZER CREEK NATURE TRAIL, SATURDAY JUNE 13:** Joint trip with Flathead Audubon Society to compile a bird and plant list for this short loop trail on the Swan River State Forest. Meet at 9 am at the Morley Canoe Shop, Swan Lake, south of Milepost 72 on Hwy 83. Contact Anne Morley (886-2242) for more information.

**FIFTH ANNUAL KNAPWEED PULLOUT, THURSDAY JULY 9:** 6:30 pm til dark, at the Kirk Hill Nature Area, S 19th Road in Bozeman. This is a joint project of Valley of the Flowers Chapter with Museum of the Rockies staff and volunteers. Ice-cold lemonade will be provided! Call Jan Nixon at 587-0120 for more information; bring a digging tool (a screwdriver works well) and gloves if you want them.

**RAILS TO TRAILS, SATURDAY JULY 18** Join Don Snow to help in compiling a plant list for a one-mile section of the converted railroad right-of-way, west of Kalispell. Call 756-5684 for meeting place and time.

**MIDSUMMER WILDFLOWERS OF KIRK HILL, THURSDAY JULY 2:** 6:30-8:30 pm, Kirk Hill Nature Area, S 19th Road, Bozeman. Group size is limited; reservations are required. Call Museum of the Rockies, 994-2251 (small fee).

**PINE BUTTE SWAMP PRESERVE, JULY 18-19:** (NOTE THE NEW DATES SINCE THE LAST NEWSLETTER) Meet on Friday evening, July 17, at the Forest Service's Mill Falls Campground on the South Fork of the Teton River, west of Choteau. If you're not able to make it Friday evening, please rendezvous with the group at the campground by 9 am on Saturday morning. Limited motel space is available in Choteau (make arrangements on your own). Trip leader is Wayne Phillips (453-0648). To reach the South Fork Road from the paved road west of Choteau, watch for the Forest Service sign, and cross the Teton River on the bridge before you reach the mouth of the canyon (approximately three-four miles before).

**NOTE: Late summer field trips will be on the final version of the field trip list, and will be available at the Annual Meeting, and listed in the next newsletter.**

**MONTANA COMMUNITY FORESTRY COUNCIL ESTABLISHED**

The Montana Community Forestry Council held its first meeting on February 6 in Helena. The Council was established to provide advice to the State Forester on community forestry needs and direction for the Montana Community Forestry Program. The Montana Native Plant Society, along with other agencies and organizations, was invited to be a voting member of the Council, and is represented by

Greg Hallsten, chair of the MNPS Landscaping Committee.

The Community Forestry Program, established in the Division of Forestry of the Montana Department of State Lands through a grant from the US Forest Service, is designed to provide technical assistance to Montana communities on planting and maintenance of trees and other vegetation. The program also assists communities in applying for grants to support such activities, and to devise pilot and demonstration programs. Mark Duntemann has been hired as Community Forestry Specialist at the Division Office in Missoula to manage the Program. Additional personnel will be hired to provide regional support.

At the Council's March 5 meeting, a draft of the Program's implementation plan was reviewed and revised. The plan is based on a report to the State Forester by Dr Sid Frissell, Dean of the School of Forestry at the University of Montana. The plan recognizes the need to emphasize vegetation in a holistic manner rather than stressing tree planting and management only. The value of plant species diversity in community settings is important, and the need to encourage the use of native species is supported overwhelmingly by both the plan and the Council. MNPS is fortunate in being able to participate in the Community Forestry Council. The fact that we were invited is an open recognition of the importance of native plants in the community environment. Membership on the Council is an opportunity for us to broaden this recognition and help to encourage wider use of native species in our communities. We hope MNPS members across the state will find occasion to further these goals.

- Greg Hallsten

**THERE'S ALWAYS MORE TO LEARN**

If attending Plant Society meetings and going on field trips has whetted your interest in learning more, here are some classes being offered this spring and summer:

**Glacier Institute, P O Box 1457A, Kalispell MT 59903; 756-3911:**

- "Native Plants Walk" July 18
- "Discovering Wildflowers" July 26
- "Alpine Wildflowers" July 27-28
- "Go Beargrass-ing in Glacier" July 29-31
- "Land Above the Treeline" August 21-22

**Museum of the Rockies, Montana State University, Bozeman MT 59717; 994-2251:**

- "Basic Plant Identification Techniques" April 25

**Yellowstone Institute, P O Box 117, Yellowstone National Park WY 82190; (307)344-7381, ext 2384:**

- "Wild Edible Plants and Medicinal Herbs" June 19-21
- "Alpine Wildflowers" July 11-12
- "Alpine Ecology" July 20-August 1

**Teton Science School, P O Box 68, Kelly WY 83011; (307) 733-4765:**

- "Field Botany: Flora of the Tetons" June 18-21
- "Identifying Wildflowers through Drawing" June 22-23
- "Wildflowers" July 26

Many of the classes fill up well in advance, so if your interest is tweaked by any of these, contact the organization immediately for availability and registration information. Cost of the classes varies, as does the level of difficulty - although the emphasis is on the enjoyment of learning in a relaxed atmosphere. You may also want to contact your local college or university to see what classes may be offered by them (usually for academic credit).

Good learning!

- JN

## ALPINE ANNUALS, continued from Page One...

survival rate; usually more than 80% of the seeds that germinate survive to reproduce. Its flowers are self-pollinating so that it can produce seeds regardless of whether pollinators are available. Still, given the shortness of the alpine summer, plants typically reproduce only a few seeds before they die as cold and snows return in September. While most of these seeds will germinate after snowmelt the next year, a small percentage remain alive, viable, and ungerminated in the soil. These may germinate in a future year and reestablish the population, should reproduction fail during a given year.

There are several other annuals known from the alpine areas of Montana. In the Beartooth Mountains, several annual species of buckwheat (*Polygonum douglasii*, *P. engelmannii*, and *P. minimum*) are more common below timberline, but a few populations occur in the alpine. These species share many of the same adaptations as *Koenigia*, such as small size and rapid development of flowers. Unlike *Koenigia*, which probably colonized the Rockies by migrating from the Arctic, these species probably colonized the alpine by moving upwards from lower elevations. An indication of this is that they prefer warmer and drier alpine habitats than *Koenigia*.

Another alpine annual which has probably come to Montana from the Arctic is *Euphrasia arctica*, which was found by Peter Lesica in Glacier National Park, the current southern limit of its known range. Like the other alpine annuals, it is a very small plant and produces just a few seeds each year before dying.

There are a number of other alpine species which are frequently cited as being annual, probably on the basis of their small size and simple root system. My observations have shown, however, that species like *Draba stenoloba*, *Androsace septentrionalis*, *Gentiana prostrata*, and *Gentiana* [or *Gentianella*] *tenella* are not annual - in the alpine zone of the Beartooth

Mountains, at least - and require at least two summers to flower and produce seeds.

Alpine annuals may not have the showiest flowers in a mountain meadow, but bend down and look closely when you are out hiking the high country, to find some of the most interesting and unusual species in the mountains.

Doug Reynolds is Asst Professor in the Department of Natural Science, Eastern Kentucky University, Richmond KY. He has spent part or all of his summers for the past ten years studying the flora and ecology of the Beartooth alpine. He also taught at the University of Montana's Research Station at Yellow Bay, Flathead Lake, for two summers.

### Further reading on alpine vegetation in general and alpine annuals:

Billings, W.D., 1979. Alpine Ecosystems of Western North America. Pp 6-21, IN: **Special Management Needs of Alpine Ecosystems**, D.A. Johnson, ed. Society for Range Management, Denver CO, 100 pp.

Johnson, Philip L., 1962. The Occurrence of New Arctic-Alpine Species in the Beartooth Mountains, Wyoming-Montana, **Madrono** 16(7): 229-33.

Johnson, P.L., and W.D. Billings, 1962. The Alpine Vegetation of the Beartooth Plateau in Relation to Cryopedogenic Processes and Patterns. **Ecological Monographs** 32(2): 105-135.

Reynolds, Douglas N., 1984a. Populational Dynamics of Three Annual Species of Alpine Plants in the Rocky Mountains. **Oecologia** 62: 250-255.

Reynolds, D.N., 1984b. Alpine Annual Plants: Phenology, Germination, Photosynthesis and Growth of Three Rocky Mountain Species. **Ecology** 65(3): 759-766.

## RNA UPDATE, continued from Page Three...

Vegetation of the RNA varies from old-growth subalpine fir, Engelmann spruce, western larch and Douglas-fir to earlier seral species. Principal forest type represented within the RNA is the subalpine fir/twinflower (*Abies lasiocarpa*/*Linnaea borealis*) habitat type.

For additional information on these areas contact Lou Kuennen, Natural Areas Coordinator, Kootenai National Forest, 506 U.S. Highway 2 West, Libby, MT 59923.

- Angela Evenden

## Chapter Activities...

### DESIGNING NATIVE SEED MIXES

On February 10, Lisa Larsen and Patrick Plantenberg led a workshop meeting for Kelsey Chapter on designing native seed mixes. The impetus for the meeting was a request by Lewis and Clark County Commissioner Linda Stoll-Anderson for advice on native species to use for revegetating roadsides in the county.

Lisa and Patrick discussed such topics as site characteristics, species adaptations, seeding methods and rates, and seed cost/availability. Chapter members and interested townspeople suggested likely locations for experimenting with native plantings and a long list of their favorite species. A selected group of these grasses and forbs was put together based on site adaptations and seed availability, seeding rates were calculated, and the cost of the mix was estimated.

### \*\* EPA WETLANDS PROTECTION HOTLINE \*\* 1-800-832-7828

Operates Monday thru Friday, 9 am to 5:30 pm Eastern Time to answer questions and requests for information about the values and functions of wetlands.

### \*\* MONTANA RECYCLING HOTLINE \*\* 1-800-823-MEIC

A toll-free number (that's 823-6342) for information on what/where/how to recycle your household and office waste, hazardous household or garden waste, composting etc. You CAN make a difference - call them to find out how!



### NATIONAL FOREST MANAGEMENT ACT S-1696

This bill, introduced by Senators Max Baucus and Conrad Burns, has already passed the Senate Energy and Natural Resources Committee. A diverse group of individuals and organizations has recently formed in response to this proposed bill. Write Beth Metzgar at the Montana Conservation Coalition, 1001 S 4th St West, Missoula MT 59801, for up-to-date information on this proposed legislation.

# 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> |
| ___ \$12 I. Individual                                | ___ \$ 8 I. Individual                             |
| ___ 16 II. Family                                     | ___ 12 II. Family                                  |
| ___ 28 III. Business/Organization                     | ___ 25 III. Business/Organization                  |
| ___ 4 IV. Yearly chapter dues for Lifetime Members    | ___ 150 IV. Lifetime member (one-time payment)     |

**\*AREAS COVERED BY CHAPTERS:**

- \_\_\_ 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
- \_\_\_ 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 area. 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 June each year will expire the following February; those processed after the first of July will expire in February of the year after. Membership renewal notices are included in the Winter and Spring issues of KELSEYA. Anyone who has not renewed by the time the Summer edition of KELSEYA is ready to mail will be dropped from the mailing list/MNPS roster.

**Your mailing label tells your**

**CLASS OF MEMBERSHIP** (I, II, III, IV - see above)

**CHAPTER AFFILIATION, if any** (CF = Clark Fork; F = Flathead; K = Kelsey; VoF = Valley of the Flowers)

**DATE YOUR MEMBERSHIP EXPIRES:** If the top line on your label reads "x2/92" your membership expired February 29, 1992...please send in your renewal today! New memberships received since July 1, 1991, are good through 2/28/93, and your label should read "x2/93." 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  
P O Box 992  
Bozeman MT 59771-0992

**PLEASE WELCOME THESE NEW MEMBERS:**



**MONTANA**

- BELGRADE**  
John Lacey  
Sas Swigert
- BILLINGS**  
Jean & Carl Radonski  
Cindy S Spear  
Gary Thompson &  
Judy McCarthy
- BOZEMAN**  
Rebecca Schanz  
James & Mary Jacobs
- CORVALLIS**  
Louise Grout
- DEER LODGE**  
Susan Rinehart
- GREAT FALLS**  
Lewis & Clark Natl Forest
- MANHATTAN**  
Donna S Lovell
- MISSOULA**  
Will Butler  
Suzanne Kernek  
Beth Wright
- RONAN**  
Montana Waterfowl Assn  
(Cathy Miller)

- TROY**  
George & Kimberly  
Finley
- WEST GLACIER**  
Sue Olin
- WHITEHALL**  
John Hamann

**IDAHO**

- HAILEY**  
Carol Blackburn

**WASHINGTON**

- SPOKANE**  
Washington Water Power  
(Rad Pharness)

**CANADA**

- EDMONTON, ALBERTA**  
Alberta Native Plant Council



**A VOW TO PROTECT ENDANGERED SPECIES**

In an article from *HerbalGram* #20, Spring 1989, the following organizations vowed to do what they could to protect endangered plants, specifically those found in the medicinal and culinary markets.

The Herb Research Foundation, the American Botanical Council, The American Herbal Products Association, and the International Herb Growers and Marketers Association offered their full cooperation and support of activities to protect medicinal, aromatic and other economic plants from depletion due to overcollection, the destruction of rain forests and other habitats, or any other development pressures. These groups will assist in any way they can, including outright bans on collections of endangered species.

These organizations have already moved to cease the collection of wild Lady's-slipper roots (*Cypripedium* spp) from the forests of the eastern United States. Lady's-slipper root has a long history of use as a sedative and nerveine.

Though not formally mentioned, Purple Coneflower (*Echinacea* spp) is also considered by many herbalists as in danger of being overharvested. Thus there is a hesitancy - if not outright refusal - on the part of many herb buyers to accept wildcrafted species of Coneflower. Many herb farms now cultivate *Echinacea purpurea* and *E. angustifolia* for the medicinal herb markets. *E. pallida*, one of Montana's species, has been used by the Northern Cheyenne, Crow and other Native American tribes for its analgesic properties.

- Robyn Klein

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

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**PLEASE NOTE: If your label reads x2/92, your membership expired the end of February. If your label reads COMP or COMP2, this is your LAST FREE ISSUE. We don't want to lose you ... won't you send us your check today?**

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Plant Society



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**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, which is published quarterly. We welcome your articles, clippings, field trip reports, meeting notices, book reviews, cartoons or drawings - 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 done in black ink with a fine-point pen. If you send clippings, please note the source, volume/issue and date. We especially need short (one to three paragraph) items which can be tucked in anywhere.

Changes of address and inquiries about membership in MNPS should be sent to MNPS, PO Box 992, Bozeman, MT 59771-0992. All newsletter material should be mailed to Jan Nixon at the same address.

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 Summer issue is JUNE 10;** please include meeting/field trip notices through early October. The Summer issue of KELSEYA will be mailed the last week of June.

**BOARD OF DIRECTORS**

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**STANDING COMMITTEES:**

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<b>Membership/Outreach</b> - currently vacant		
<b>Newsletter/Publications</b> - Jan Nixon, temporary chair	Bozeman (wk)	587-0120

**MNPS SOURCE LIST FOR NATIVE SEEDS AND PLANTS**

For your spring planting needs, MNPS now has available the **Montana Native Plants Source Guide**, an updated list of nurseries, seed companies and individuals retailing native plants and/or seeds. Companies dealing strictly (or primarily) in a wholesale capacity have not been included at this time.

There is a charge for some of the suppliers' catalogs (between \$1 and \$3), but many have good information on the plants and on seed germination techniques. Gardening with natives is a very rewarding experience, and a great chance to learn about seed germination and plant-habitat requirements.

Cost of the **Source Guide** is \$3.00, which includes postage; send your order and check to Linda Iverson, HC 88, Box 3733, Big Timber MT 59011. We also have available a book list with many sources for information on how to garden with natives. This book list is free (on request) when you order the **Plant Source**

**Guide** from Linda. For the book list only, send her a stamped, self-addressed #10 (business-size) envelope with your request. The **Source Guide** and book list will both be available at the Annual Meeting in Bozeman.

We think you'll find the **Guide** a treasure trove of information, and we welcome your feedback. We will continue to update and add to the list, so any contributions of additional sources are encouraged. Growers or seed sources in-state are most desirable, since those further afield are almost certainly dealing in different ecotypes, even though the species is the same.



**1992 MEMBERSHIPS EXPIRED ON  
FEBRUARY 29**



**PLEASE TAKE A MOMENT TO MAIN IN YOUR  
MEMBERSHIP RENEWAL TODAY!!**

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