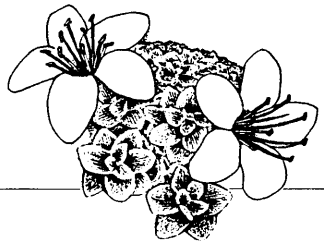
Kelseya uniflora



Vol 10, No 1

AUTUMN 1996

KELSEYA

NEWSLETTER OF THE *MONTANA NATIVE PLANT SOCIETY*

Montana Native Plant Society...*It Can't Be Ten Years Already!*

- Peter Lesica
(with help from Kathy Ahlenslager
and Virginia Vincent)

(Note: With this issue, KELSEYA begins its tenth year of publication, and the Montana Native Plant Society begins its tenth year of existence. Many people had a hand in getting the organization started; many of those are still active - even some whose personal or professional lives have taken them away from Montana. To all of you who put so much energy and time into bringing MNPS into being: *THANK YOU*.

Some would say that the founding of the Montana Native Plant Society is shrouded in mystery, and it is true that many of the important details have heretofore been known only by a few. In the interest of posterity, I have decided to divulge what went on in dimly lit herbaria in the wee hours of the morning. How MNPS was born is a tale that must be told.

Of course we would all like to think that the Montana Native Plant Society was founded by some hero pulling the sword from the stone, but if there is any hero to this story it's guilt. Let me explain. We all know about newsletters, annual meetings and field trips, but here's the rest of the story.

It was autumn of 1986. Jerry Davis, a new professor of botany at the University of Montana, had just finished his PhD at the University of Washington, where Art Kruckeberg was one of his advisors. On a number of occasions Art complained to Jerry that there was no native plant society in Montana and that it was up to Jerry to start one now that he taught at UM. Jerry felt the pressure, but he knew that one quick way to assuage guilt is to pass it on.

Every once in a while I would stop by Jerry's office to shoot the breeze, and he would mention that Montana needed a native plant society and why didn't I start one? Well, I can handle a little guilt, and I could have comfortably entertained the idea in my mind for a long time, but I made one mistake. I told the UM herbarium collections manager, Kathy Ahlenslager, about it.

Kathy is an energetic person and very tenacious (perhaps sometimes even obsessive). Jerry briefly mentioned the subject to me once or twice, but Kathy was more heavy handed. Every time I walked into the herbarium, she would pleasantly greet me by asking, "So, when are we going to start the native plant society?" I could ignore Jerry, but this was not an option with Kathy. She'd had a taste of the California Native Plant Society and yearned for field trips led by enthusiastic savants.

After a few months of pressure I realized that, in the long run, it would be easier to help start a native plant society than bear the burden of guilt I incurred every time I wanted to look at a plant specimen. So Kathy and I called up Virginia (always-willing-to-help) Vincent, a seasonal fire lookout, and we got to work in mid-November.

The first thing we needed was a membership. We asked a number of plant-head friends for names of people they thought would be interested. We wrote these people and included cards they could return if they were interested in joining a native plant society. The three of us sat in the herbarium, stuffed envelopes, typed address labels, licked stamps, and sent them off to 170 people. The former Botany Department at the University of Montana graciously covered postage for that long ago mailing.

Now that guilt had done its job and gotten things going, I remember how pleasantly surprised we were at the response. Both Shelly Bruce of Bozeman and Mike Chessin of Missoula said that they'd wanted to start a native plant society too! With support growing it was time to seek out officers for a Board of Directors. By April 1987 a board of directors was nominated and in May a slate of five was selected.

But summer was coming on. Kathy worked as a naturalist in Glacier National Park; Virginia had her lookout to attend to; and I always spend my summers on the road, cruising for posies and ferreting out ecological anomalies. I was willing to let things go until the next year but Kathy said, "we can't wait until next year, when we're off to such a good start." We would have been guilty of failing to strike while the iron was hot.

We decided to have an organizational meeting and potluck supper that summer. If we're going to have to go to a meeting in the summer, you might as well get some good food out of it. We hurriedly sent out 250 postcards and then headed for the hills. About 40 native plant people from the western half of the state gathered in Missoula's Bonner Park on August 29 to talk about founding a Montana Native Plant Society. Just before the potluck, the newly-elected board members met at Kathy's house and decided who would take each office. Kathy became our first president, Shelly Bruce was vice president, Wayne Phillips agreed to serve as secretary, and John Pierce as treasurer.

Art Kruckeberg, who was visiting his daughter in Polson, came down and gave us a pep talk at the park, sharing some of his experiences from the early days of the Washington Native Plant Society. We ate a bunch of food and went home happy.

That September we had the first annual MNPS canoe trip on the Swan River. People came from Missoula and Helena as well as the Flathead, and Kelly Chadwick learned to face forward in a canoe.

Many Native Plant Society members have also been members of the Audubon Society. Cary Lund from Helena was one such member. He is a lawyer and helped draw up the Helena Audubon's bylaws and articles of incorporation. He volunteered to guide us through the process, doing much of the work himself.

Kathy and I gathered examples of bylaws from other native plant societies and put together a draft set for Montana. We sent these around to board members for suggestions. On November 19, 1987, less than one year after our original mailing, we filed articles of incorporation and received non-profit tax status. Our incorporation allowed us to open a bank account and finally cash the checks of 120 paid members. Cary and our officers continued to work on the by-laws, which were signed on February 10, 1988.

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From the President

Happy Anniversary, MNPS!

This issue marks the beginning of our 10th year as a native plant society, spanning a decade as an information, education, and conservation group. MNPS formed to appreciate and preserve Montana's diverse floristic bounty that contributes to some of the most stunning scenery found anywhere in the world. We act as the main public nonprofit organization dedicated to this special plant resource that in turn contributes to the healthy and viable natural world we live in. Our lives have been enriched by the experiences we've shared by belonging to MNPS. The potential for more is infinite!

The Last Decade Gives Us Six Chapters

MNPS blossomed during our first decade. Starting with the initial chapter in Missoula, we added two more chapters -- in Bozeman and Kalispell -- then on to Helena in 1989, Billings in 1992, and Plentywood in 1994. All of the chapters remain active today, although Artemisia in Billings had to scale back when its founder, Don Heinze, left the state. I hope they won't be dormant for long, because nearby Beartooth Plateau and Pryor Mountains need our attention.

Others areas in the state that might consider forming chapters are the Butte/Anaconda/Dillon area and the Lewistown area. Chapters serve to give local access to native plant information. The many chapter accomplishments and activities are too numerous to mention: lectures, workshops, field trips, plant sales, and generally BEING THERE for the plants.

Our At-Large representatives provide outreach to the members with no chapter affiliation. With such a big state, there are still counties with no members at all. The reps answer concerns, convey information about MNPS, and represent the non-chapter-affiliated on the Board of Directors.

Statewide Accomplishments

Specific standing committees, formed in the early days of MNPS, continue to further efforts in their areas of interest. Several projects and publications have come from these committees.

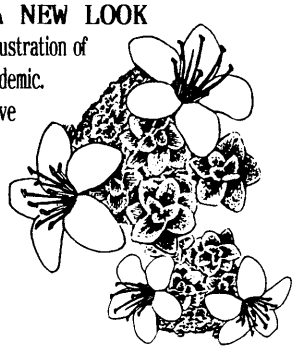
The Conservation Committee drafted Guidelines for Collecting Native Plants, continues to provide informative articles in KELSEYA, and responds and comments on many issues that affect native plant populations and habitats.

The Landscape Committee created a *Source Guide for Native Plants* that has been very helpful to folks looking for specific natives to grow or propagate from seed. The *Gardens and Gardeners List* gives us the names of gardeners in the state whose experience ranges from dabbling to earning a living with native gardening. Also on this list are the public gardens that display natives.

The Education Committee started the small grant for native plant research, which then led to another specific committee to deal with grants and endowments for more native plant studies. Programs for the schools and possibly a video are in the works.

Other projects that MNPS has been involved in include a rare plant poster sponsored and funded by several federal, state, and private organizations; the continued upkeep and planting of the University of Montana native garden and John Toole Park; a set of six beautiful notecards by the members of Artemisia Chapter; a booklist for native plant references; a descriptive MNPS brochure; and the 1995 Rare Plant Conference. These projects, as well as behind-the-scenes activity by the committees, demonstrate our increasing dedication to working for native plants. **- Linda Iverson**

OUR MASTHEAD GETS A NEW LOOK



Our thanks to Bonnie Heidel for the new illustration of our mascot plant, *Kelseya uniflora*, a regional endemic.

Many plant societies around the country have selected a plant name for their newsletter: Colorado has *Aquilegia*, Washington state has *Douglasia*, Pennsylvania has *Bartramia*.

Stay tuned for the next issue of KELSEYA, to find out more about *Kelseya uniflora* and its discoverer, Francis Kelsey.

<<CONSERVATION BULLETS▷▷▷

WILDCRAFTING...WHAT'S HAPPENING IN MONTANA?

Wildcrafting is undoubtedly as old as humanity. It was a mainstay of our hunter-gatherer ancestors and continues to be important in many aboriginal cultures today. The term "wildcrafting" generally refers to harvesting wild plants or plant parts for culinary or medicinal purposes. The popularity of wildcrafting in modern cultures is evidenced by the large number of books on edible and medicinal plants, and nearly all of us have picked wild huckleberries, strawberries or raspberries. At first glance wildcrafting appears harmless enough, but with an increasing human population and dwindling natural and semi-natural vegetation, problems are becoming apparent.

In eastern North America ginseng (*Panax quinquefolia*) has been wildcrafted for over a hundred years for medicinal purposes. This once common plant is now rare throughout its range due to collecting. Here in Montana harvesting huckleberries (*Vaccinium globulare*) is becoming controversial. In some areas biologists feel that commercial harvesting may be depriving wild animals, such as bears, that depend on huckleberries for survival. Our enjoyment of huckleberry pie and jam may come at the cost of lower bear populations. The Montana Native Plant Society is currently helping to fund research on huckleberry cultivation which may eventually provide a solution to this dilemma.

Purple coneflowers (*Echinacea* spp.) are native to the Great Plains of North America. The plant is used medicinally by Native Americans, and large quantities are now sold to wholesale buyers. *Echinacea angustifolia* occurs throughout much of eastern Montana and is being commercially wildcrafted on the Fort Peck Indian Reservation. This harvest is causing environmental degradation and resulting in controversy among tribal members. A wholesale buyer in North Dakota stated that because coneflower occurs naturally, there is no danger of harvesting it to extinction. Nonetheless, it seems that purple coneflower may well be on its way to becoming the ginseng of the Plains (see **Wotanin Wowapi** newspaper for May 9 and May 24, 1996).

Pipsissewa (*Chimaphila umbellata*) is used to make soft drinks and is being commercially wildcrafted in western Oregon and Washington. Collectors harvest the spreading underground stems. Where pipsissewa is common, commercial wildcrafting causes large-scale disturbance of the forest floor. Although the US Forest Service issues commercial collecting permits for pipsissewa gathering, the long-term effects of commercial wildcrafting are not known, and there are no management plans that address these impacts. In addition to pipsissewa, beargrass (*Xerophyllum tenax*) leaves and huckleberry branches are being mass collected for commercial floral arrangements. There is no evidence that any of these plants are currently being commercially wildcrafted in Montana. However, Gregg Tilford, a Darby wildcrafter, believes that it is only a matter of time because Washington and Oregon are rapidly being depleted.

It is important that land management agencies such as the US Forest Service, Bureau of Land Management, Montana Department of State Lands, and the various Native American tribes consider the ecological and cultural impacts of commercial wildcrafting and develop plans that permit collecting only in a sustainable and undetrimental manner. The Montana Native Plant Society has developed a set of guidelines for collecting native plants, and these could serve as a starting point for management plans.

ALERT: Invasion of *Tamarix* in Montana

- Anna Sala (University of Montana) and Bonnie Heidel (Montana Natural Heritage Program)

Tamarisk is an alien shrub that has wreaked riparian havoc in the West, and is still being sold commercially in Montana. We've compiled background information below, and encourage members to send any new distribution information or threats to the Tamarisk Task Force which is considering whether it warrants noxious weed status in Montana.

Description

Deciduous species of the genus *Tamarix* (common names include tamarisk and saltcedar) are shrubs or small trees native from the Mediterranean and Eurasia that were introduced in the United States as ornamentals early in the 1800s. The taxonomy of *Tamarix* is complex, and while only *T. ramosissima* is recognized in the Montana flora (Dorn 1984), it is possible that closely-related species such as *T.gallica* and *T.chinensis* are present as plantings or escapes. They are difficult to distinguish from one another, but all invade riparian habitat. For simplicity, we will refer to these species as *Tamarix.*

Tamarix is a deciduous shrub or small tree, 3-10 (20) feet tall. Its leaves are small and scale-like, on highly-branched slender stems. Bark on saplings and stems is reddish-brown. The flowers are pink to white, five-petalled, and smaller than 0.1 inch in profuse finger-like clusters. They produce abundant, minute seeds.

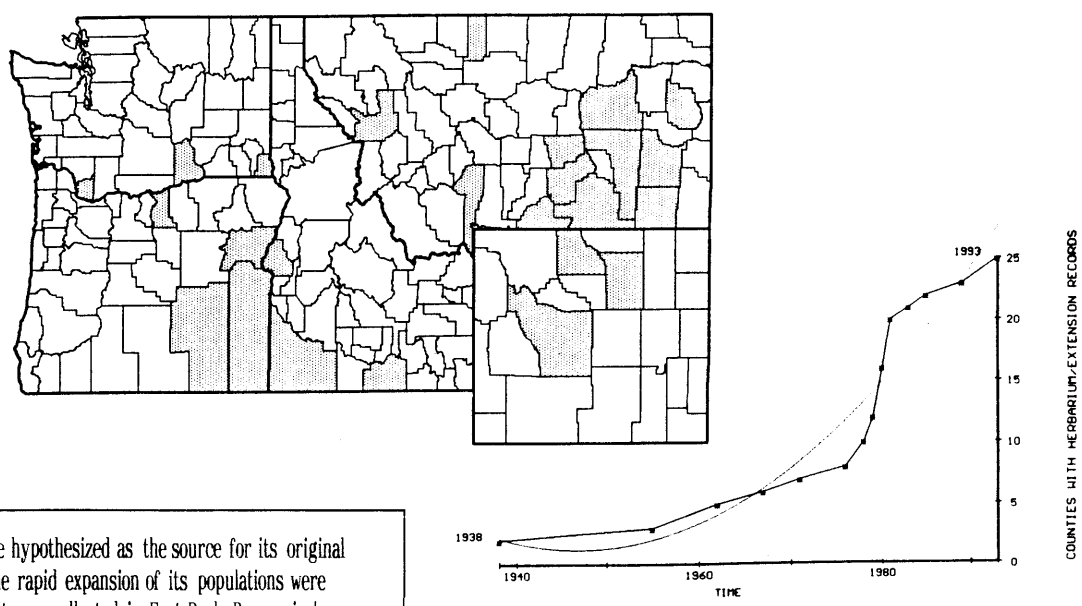
Distribution and Spread

Tamarix was introduced to the United States in the mid 1800s. It escaped cultivation in southwestern states in 1870, rapidly spreading throughout the region from 1920 to 1940. Its range expansion into the Pacific Northwest has been documented from herbarium collection records and state Extension Services in Idaho, Montana, Oregon, and Washington (*Figure 1*, courtesy of Rice 1995). These data indicate a rapid northward invasion in spite of the fact that its distribution was believed to be limited by low temperatures (Brock 1994).

We lack an understanding of climatic controls on seed germination and seedling establishment and growth in northern areas, and its dispersal and recruitment potential. In Montana, it was first reported along the Bighorn and Yellowstone Rivers in 1961 (Robinson 1965). Plantings were hypothesized as the source for its original invasion along the Yellowstone River, and the rapid expansion of its populations were documented (Swenson and Hendricks 1982). It was collected in Fort Peck Reservoir by the previous authors, and identified as a management problem on the Big Horn River impoundment by Knight et al (1987). It is currently documented from twelve counties in Montana (Figure 1). Recent breeding bird surveys on the lower Yellowstone River have documented *Tamarix* invasion of bare sandbar and shoreline habitats needed for nesting (Rob Ament, pers. comm.).

Idaho, Montana, Oregon, Washington and Wyoming
Counties Reporting *Tamarix* spp, 1875-1995 (Rice, 1995)

Figure 1



Increase of *Tamarix* in Northwest States

Causes of Spread

Key biological characteristics contributing to the spread of *Tamarix* include: (1) profuse production of easily-disseminated seeds throughout much of the growing season, (2) the ability to germinate and survive in highly saline soils, (3) the ability of seedlings to tolerate desiccation and inundation, (4) high root growth rates following seedling establishment, (5) active resprouting, and (6) the ability to extract water from the water table or from unsaturated soils.

Abiotic factors also contribute to its spread. Dams prevent natural flood flows and sediment delivery, which are essential for the establishment of many native riparian species. Irrigation has resulted in an increase of water and alluvial soil salinity due to the leaching of salts from agricultural fields. Reduced flows and high evaporation rates of large reservoirs that collect saline water from irrigation return have resulted in a substantial increase of salinity of river water downstream of dams. Depressions of the water table due to river diversions, water pumping, and flow regulations have also been reported to have a significant negative impact on native woody riparian species sensitive to water availability.

Consequences

Tamarix is a fast-growing, prolific species that quickly develops extensive and impenetrable stands that out compete native vegetation. The salt-excreting glands characteristic of *Tamarix* species increase soil surface salinity, and reduce the germination of native salt-sensitive species, thus accelerating the replacement of native riparian species by saltcedar. Dense saltcedar stands are known to consume large amounts of water, and have been associated with declines in streamflow and water table depth.

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CALENDAR

MEETINGS

SATURDAY, NOVEMBER 2, MNPS BOARD OF DIRECTORS: 10 am, Meeting Room of the Lewis & Clark Library, Last Chance Gulch, Helena. Everyone is welcome to attend - not just officers and directors. Bring a sack lunch.

WEDNESDAY, NOVEMBER 6, VALLEY OF FLOWERS CHAPTER: 7 pm, Community Meeting Room of Emerson Cultural Center, 111 S Grand, Bozeman. Tulli Kerstetter, MNPS state vice-president and research associate at MSU, will present a program entitled, "Life Almost Without Sex: Montana's Own Front Range Fleabane" -- a look at one of Klaus Lackschewitz's additions to Montana's list of endemic native plants.

THURSDAY, NOVEMBER 14, CLARK FORK CHAPTER: 7:30 pm, Room 307, Botany Building, UM campus, Missoula. "The Effects of Alberton Chlorine Spill on the Conifer Forest," presented by Maarten Schreuder and Dr Carol Brewer from the UM Division of Biological Sciences.

WEDNESDAY, NOVEMBER 20, FLATHEAD CHAPTER: 5:30 pm, general meeting (everyone's welcome); 7 pm, program. Lone Pine State Park, 5 miles SW of Kalispell. Peter Lesica will discuss the natural history of the Spalding's catchfly and the petition to have it listed under the Endangered Species Act. Call 857-2024 for directions.

WEDNESDAY, DECEMBER 4, VALLEY OF FLOWERS CHAPTER: Emerson Cultural Center, 2nd floor meeting room, 111 S Grand, Bozeman. Business meeting at 6:30 pm, followed by a program at 7 pm presented by Janet Ellis of Montana Audubon Society in Helena on "Cottonwood Communities and Montana's Wetlands." Janet will discuss the importance of wetlands in the landscape and of cottonwood gallery forests in particular.

THURSDAY, DECEMBER 12, CLARK FORK CHAPTER: Christmas potluck at John Pierce's house at 737 Locust in the lower Rattlesnake. Bring a potluck dish, your own utensils, and four or five slides of your favorite summer trips or favorite summer flowers.

WEDNESDAY, DECEMBER 18, FLATHEAD CHAPTER: Annual holiday potluck and party at Neal and Pattie Brown's house! Happy hour starts at 6 pm; 7 pm, potluck. Bring a dish and a small gift for traditional exchange. Call 837-5018 for directions.

WEDNESDAY, JANUARY 15, FLATHEAD CHAPTER: 5:30 p.m., general meeting (everyone's welcome); 7 p.m., program. Lone Pine State Park, 5 miles SW of Kalispell. Sandy Tardiff of the Flathead Lake Biological Station will discuss the effects of grizzly bear digging on subalpine meadow plant communities in Glacier National Park. Call 857-2024 for directions.

KELSEY CHAPTER in Helena is still alive and well and is busily planning the fall and winter season. Please watch the local paper for announcements concerning events and program. Call Kathy Lloyd at 449-6586 if you have questions or ideas.

ARTEMISIA CHAPTER, Billings area, also has programs in the planning stages for late fall/early winter. Stay tuned....

CALENDAR COORDINATOR

Tulli Kerstetter, MNPS vice president, is now serving as coordinator for all meeting and field trip notices, field trip reports, and chapter activity writeups. Please send them typed or on disk (see back page for specs) no later than **December 20** for inclusion in the Winter issue of the newsletter, to: KELSEYA, Attn: Tulli Kerstetter, P O Box 6444, Bozeman MT 59771-6444.

FIELD TRIP REPORTS

MAKA FLORA SUMMER ACTIVITIES

The prairie is a wonderful place in the summer, and the Maka Flora Chapter made the most of the field trip season.

In June we visited a springfed woody draw site called Kane's Grove, located south of Culbertson. In addition to woodland habitats, we were able to move up to the surrounding bluffs and observe a good array of plants and grasses, including such beauties as *Gaillardia* and *Geum triflorum*.

In July we were led on a wetland tour of the Medicine Lake Wildlife Refuge by staff botanist Mike Rabenberg. We were introduced to the world of aquatic flora during an entertaining and educational day. Mike also demystified sedges, and we were able to do hands-on examination of free-floating and submergent water plants.

Maka Flora closed the season in August with a well-attended trip to the Big Muddy Valley, located just into Saskatchewan. This was a combination botany/paleontology tour which included a stone turtle effigy and the Roan Mare Coulee buffalo jump where bone fragments literally lay exposed on the surface.

Thanks to everyone who helped with the summer events as well as those who participated! **- Al Joyes**

CLARK FORK ACTIVITIES

On a warm Friday evening in late July five members of the Clark Fork Chapter met at Twin Lakes Campground in the Big Hole drainage of far southwestern Montana. Before dark we took a walk in the wet meadow adjacent to the campground and found numerous species of acid-loving sedges and wildflowers, as well as a population of Hall's rush (*Juncus hallii*), a rare plant previously unknown from Beaverhead County. After this brief foray we settled in for the night only to have our campground invaded by a herd of primitive, nocturnal humanoids announcing their arrival with prolonged revving of their mufflerless pickup trucks and dirt bikes. Some of us retreated to more tranquil surroundings, while others just gritted their teeth. Saturday morning we were joined by an early-rising Flathead member who helped us survey the Hall's rush population. We then went to explore a nearby wetland where we quickly discovered two more rare, acid-loving plants: primrose monkeyflower (*Mimulus primuloides*) and one-flowered gentian (*Gentianopsis simplex*). All three of these rare plants are listed as sensitive by the US Forest Service. We also found a small patch of bluefly honeysuckle (*Lonicera caerulea*), a low shrub that inhabits boggy areas and is known in Montana from only a few sites. After lunch we took to higher ground and spent the rest of the day in the grasslands and forests on the lower slopes of the mountains, looking at the mariposa lilies (*Calochortus eurycarpus*).

ANNUAL CANOE TRIP: GOOD WEATHER, FOR A CHANGE

The tenth annual MNPS canoe trip was held on Saturday, September 28. Two canoes from the Missoula area and one from the Flathead put into the Swan River about a mile below Ferndale. It was a perfect day, warm and sunny. After a rough quarter mile we landed at the country estate of Neal and Pattie Brown where we had a sumptuous repast, toured the grounds and ogled the dead rodent refrigerator magnets for which Pattie is world renowned. Soon we put back into the placid waters of the Swan with Neal and Pattie in the lead. We floated over magnificent beds of 20-ft tall *Potamogeton natans* and took out just above Bigfork. We feel confident that Pattie can now distinguish *Hippuris*, *Myriophyllum*, and *Elodea*, and that Kelly can pronounce them.

ANNOUNCEMENTS

GREAT PLAINS SEED EXCHANGE '96

The Great Plains Native Plant Society holds an annual seed exchange among its membership, and has issued the following guidelines for this year's exchange:

- Seeds donated must be from plants native to the Great Plains of North America.
- Donations must be postmarked by **NOVEMBER 15, 1996**. You may send later-ripening seeds after this date if you have already submitted your list of donations.
- Participants must be members of the Great Plains Native Plant Society [address below]. Membership dues may be sent at the same time as your seeds.
- Participants who donate seed from three or more species will be listed as donors.
- Donations should be submitted in small paper envelopes clearly labeled with the Latin name of the plant, the location and elevation where collected, and the donor's name and address. A separate sheet listing the species being donated and the donor's name and address must accompany each shipment. Please add a note indicating whether the seeds are collected from the wild or are from cultivation. Mail your donation in a padded envelope or small box to the address below.
- An order list will be sent to all members during December.
- Each donor may select five species for $2.00, and any additional species at $0.50 each. Non-donors may select up to ten species at $1.00 each. Donors' orders will be shipped before non-donor orders.

Membership in the Great Plains Native Plant Society is: Individual, $15.00; family, $25.00; key, $50.00; and supporting, $100.00. There are also life memberships ($500 and $1,000 levels) available. Write them at: Great Plains Native Plant Society, P O Box 461, Hot Springs SD 57747. Questions? Call (605) 745-3397. Send seed donations to the same address.

THE PRAIRIE READER

A recent issue of *Minnesota Plant Press*, newsletter of the Minnesota Native Plant Society, mentions a new periodical that may be of interest to our readers, especially in the eastern part of the state: *The Prairie Reader*, a quarterly publication which provides a forum for discussion of prairie biology/ ecology, preservation, and restoration.

Camille LeFevre is publisher and editor. Subscriptions are $18/year (4 issues), or you may request a sample issue for $5.00. Order from: The Prairie Reader, P O Box 8227, St Paul MN 55108.

OROBANCHE ALERT

A recent newsletter of the Northern Nevada Native Plant Society, Vol 22(4), carried the following item regarding a NNNPS member who:

"...found *Orobanche corymbosa* parasitizing *Monardella glauca*. Previous reports of *Orobanche* have it parasitizing members of the Sunflower Family. Not only was it on *Monardella* but it had an adverse affect on the plants. They were extremely ill-looking, stunted, never going to bloom, and probably only making it because of rhizomatous connections to other healthy monardellas." She also reported that she once found *Orobanche* on *Eriogonum*.

Orobanche corymbosa
Illustration from Hitchcock et al, 1959

"If anyone encounters *Orobanche* this summer pay attention to the host plant. We would like to hear if it is [parasitizing] other than a member of the Sunflower Family."

Montana hosts several species of *Orobanche*: *O. corymbosa*, *O. fasciculata*, *O. uniflora*, and *O. ludoviciana*. Most of our species are also parasitic on members of the Asteraceae, especially *Artemisia*. Here's an interesting relationship to keep an eye out for, as you're rambling around next spring and summer. If you spot an unusual broomrape host, we hope you'll write it up for KELSEYA, of course. And you can contact NNNPS at P O Box 8965, Reno NV 89507-8965.

BOOK REVIEW▷▷▷ RANGELAND HEALTH: PRETTY CONCEPT, ELUSIVE MEASUREMENT

- Richard Prodgers

Rangeland health is a burning land management issue in the West Even among grazing apologists, few deny that damage to rangelands has been widespread and frequently devastating. Among disruptions of Montana's natural flora, livestock grazing ranks far ahead of farming, road construction, logging and mining. However, evaluations by trained professionals have varied greatly.

The National Research Council, an arm of the National Academy of Sciences, undertook the task of defining rangeland health and prescribing practical and applicable methods for evaluating it (its claim) in the 1994 book **Rangeland Health: New Methods to Classify, Inventory, and Monitor Rangelands** (National Academy Press, ISBN 0-309-04879-6, $26.00). The committee of authors consists mostly of professors at land-grant colleges and USDA bureaucrats.

Rangeland health is defined as the degree to which the integrity of the soil and the ecological processes of rangeland ecosystems are sustained, independent of how a rangeland is managed. The outlook is utilitarian: society is served by the ability of rangelands to produce commodities and to satisfy values. "If rangeland health is conserved, then the capacity of the site to produce different mixes of commodities and values is conserved." This nonjudgmental attitude recognizes that the distinction between resources and "neutral stuff" changes through time. Ultimately, however, this book calls for judgments aplenty.

The committee decided that the mission of the federal agencies that manage public rangelands (Forest Service and Bureau of Land Management) or provide assistance in managing private rangelands (Natural Resource Conservation Service, the former SCS) should be to determine the location and proportion of rangelands that are healthy, at risk, or unhealthy. These categories, while modeled along continua, are in fact discrete classes divided by thresholds which are, alas, defined mostly anecdotally in terms of irreversible rangeland degradation recognized after the fact. Boundaries between the three categories of rangeland health are to be made based on capability to produce commodities (overwhelmingly, cows) and to satisfy values (more broadly and less consumptively defined now than in the past, and on the reversibility of changes between the states.

Three criteria based on multiple indicators are recommended to assess rangeland health: soil stability, nutrient cycling/energy flow, and recovery mechanisms. This brings us to the heart of the matter: what is to be measured, how, and how will multiple indicators of the three criteria be integrated unambiguously to evaluate rangeland health? For now, we will not question whether federal employees/agencies are up to the task.

A recent development in the nebulous world of "ecosystem management" demonstrates how critical it is that we define our objectives concretely and measurably. In Kalispell, University of Idaho professor Jay O'Laughlin told forestry professionals that ecosystem management is too vague a concept, and too difficult to measure, to be useful for the

- continued on Page Six

RANGELAND HEALTH, continued from Page Five:

forestry industry. "My main point," he said, "is simply this: healthy forests and sustainable ecosystems are not suitable concepts to serve us because of measurement problems." Uh oh. Let us look then to the multiple indicators of range health.

Soil stability and watershed function probably are most reliably measure - measured, that is, by trained and seasoned professionals. Indicators include pedestaling, rills and gullies, scour/sheet erosion, sedimentation/dunes, and amount of the A-horizon remaining. Nothing new here. In a healthy rangeland, there is no evidence of soil movement; an unhealthy state is identified by soil moving off site. I have butted heads enough with federal land managers to know that the argument will come over what is "natural" versus what is a consequence of management practices. In short, we are a hundred years too late to nail this one.

At the mention of nutrient cycling and energy flows, I imagine the eyebrows of the professionals among our readers arching. The terms are "ecologically correct," but we know they will be inferred - however accurately - from more easily measured vegetational parameters. Four indicators are listed. Distribution of plants and litter is little more than the complement of the amount of bare soil, long measured as an adjunct of plant cover. Rooting depth, another indicator, is not necessarily linked to energy flow, and nutrient cycling from deep in the soil may enhance fertility or, by bringing salts, selenium, etc, to the surface harm soils or plants. Photosynthetic period is another indicator that sometimes, but not always, related to productivity; and enhanced productivity can itself be a mixed blessing, e.g., negatively related to diversity. Taken together, the factors relating to nutrient cycling and energy flow are so numerous, and they interact so variously, that inferring them from the above indicators (they re not really measurements) is questionable. In addition, the requisite amount of autecological and synecological information is unlikely to be mastered by multifaceted bureaucrats.

The significance of functioning recovery mechanisms likewise is undeniably important, but hard to quantify. The NRCS suggests looking at age class distribution but field age classes may be weakly related to actual age, and episodic events such as wildfire and drought can create persistent even-aged stands that either resist or adapt well to many disturbances. Plant vigor, another indicator, was more frequently used in earlier days of range inventory, but has been less popular recently because ratings are subjective and related to site quality/seasonal precipitation as well as management practices.

Germination and the presence of microsites is another proposed indicator. Germination emphasizes sexual reproduction, which is notoriously unreliable for many perennials, and the abundance and composition of seedlings is frequently unrelated to mature plants' composition.

Summing up, the desire of the authors to move rangeland evaluations beyond descriptive factors to the hard-science world of function is understandable. Unfortunately , function often is unamenable to perfunctory measurement, and the complexity and variety of rangeland ecosystems make generalizations only partially true. Professional judgment, experience, and even intuition play major roles in the NRC formula, which raises the issue of assessment repeatability. Further, reliance on professional judgment runs counter to the management of federal bureaucracies, which tend not to reward professionals who stay in one area/position, honing their skills.

Professors love to lecture, and this book provides a find historical overview of rangeland assessments and briefly discusses inadequacies of current inventory methods. It should be a standard reference for range professionals and reclamators alike. Overall readability is good, although the keen-minded will find it repetitious and at times you may think the editors' red pencils broke. For example, the rather minor distinctions between range condition, developed decades ago by Dyksterhuis at the SCS, and ecological status, more recently adopted by the BLM and USFS, are well described in the text and summarized in a table of rangeland reference terms. But in this book you will never see the words *range condition* without, in parentheses, *SCS*, nor the term *ecological status* with parenthetical reference to the USFS and BLM. Since both terms are used throughout the text, this can get pretty tedious, particularly when this pair of reference appears up to four times in a single paragraph.

Left unaddressed are the sad facts that public lands grazing generally can be described as subsidized land degradation, and grazing policies and particulars are more often set by partisan politicians than by trained professionals (who too often envy ranchers). Taxpayers have long financed conservation measures and "range improvements" to dubious effect. You cannot read this book without wondering whether "range science" - long taught at many western colleges and universities - has been an oxymoron.

TAMARIX ALERT, continued from Page Three:

What You Can Do

If you find tamarisk growing in the wild, in a county where it has not previously been reported [see map on Page Three], please make a documenting collection of it for submittal to the university herbaria, and report it to that county's weed supervisor. Please convey the collection information to the Tamarisk Task Force:

Tamarisk Task Force
c/o Vince Thomas, Rosebud County Weed District Supervisor
P O Box 962
Forsyth MT 59327

Any observations on management problems associated with *Tamarix* should likewise be reported to the task force.

SELECT REFERENCES:

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VALLEY OF FLOWERS CHAPTER - Gallatin, Park, Madison and Sweet Grass Counties plus Yellowstone National Park

All MNPS chapters welcome members from areas other than those indicated - we've listed the counties just to give you some idea of what part of the state is served by each chapter. Additional 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 October each year will expire the following February; those processed after November 1 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.

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TEN YEARS, ALREADY! continued from Page One:

Fall of 1987 also saw the first issue of our at-the-time un-named newsletter. We sent out 250 of them, hoping for more members. Virginia Vincent, also an Auduboner, volunteered to do it. She typed up the first two issues on my computer and got John Strommes, a reporter at the Missoulian, to do the layout. It was a lot of work.

Virginia always contended that it was easier to use a typewriter and cut-and-paste than to use a computer. When Kathy and I strongly suggested that she learn to use a computer. Virginia set her jaw, dug her heels in, and said, "no computers!" Kathy jerry-rigged the third issue on the UM herbarium computer and Neanderthal printer.

The newsletter was named in the winter of 1988 through a mascot contest. Greg Fraser and yours truly both nominated *Kelseya uniflora*, one of 16 nominations. By the summer of 1988, Jan Nixon took over as newsletter editor, and it was smooth sailing.

The Bozeman, Missoula, and Flathead chapters were consolidated the winter of 1988-89, with the Helena chapter forming not long after. That spring we had our first official MNPS annual meeting in Bozeman. I drove over in the rain and drove home in snow. Nonetheless, committees were formed and the Montana Native Plant Society was off and running.

- -

Coming next issue: Francis Kelsey, tireless early collector of Montana's flora, discovered a small limestone loving, mat forming member of the Rose Family, which was described and named as *Kelseya uniflora* in his honor. Peter Lesica researched Kelsey's accomplishments and related them in the fledgling MNPS newsletter's Volume 1, Number 2. We'll reprise that article next issue, to answer the burning question: *why KELSEYA?* - JN

MONTANA NATIVE PLANT SOCIETY
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I. CF. 2/97
PETER LESICA
929 LOCUST
MISSOULA MT 59802

MONTANA NATIVE PLANT SOCIETY

The Montana Native Plant Society is a 501-C-3 (not-for-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 line or two of "bio" information 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.

All meeting and field trip notices, field trip reports or announcements should be ailed to KELSEYA, Attn: Calendar, P O Box 6444, Bozeman MT 59771; articles should be ent to Terry Wamsley, P O Box 1304, Harlem MT 59526. All items should be typed or on sk - prefer 3.5" - in WordPerfect 4.2 or better, or in a generic ASCII file.

Changes of address and inquiries about membership in MNPS should be sent to MNPS, Attn: Membership, P O Box 8783, Missoula MT 59807-8783. General correspondence should also be sent to the Missoula 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 WINTER issue is DECEMBER 20; please include meeting/field trip notices through **mid-February 1997**. The Winter issue of *KELSEYA* will be mailed the third week of January.

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MNPS SEEKS PROPOSALS FOR 1997 SMALL GRANTS

The Montana Native Plant Society announces the second annual small grants program for research, study and appreciation of Montana's native plants. A total of $500 will be awarded in 1997 to fund projects supporting conservation of native plants in Montana. The grant competition is open to residents of Montana and MNPS members. In order to fund multiple projects, preference will be given to proposals requesting less than $500; however, all proposals up to $500 will be considered.

Proposals need to be submitted in writing to the Chair of the Grants Committee by **January 15, 1997**. Submissions should not exceed three pages in length, double-spaced, and should include: project title, project description (objectives, methods, final product), explanation of how project will benefit native plant conservation in Montana, time schedule, total project budget and amount being requested of MNPS, and a brief statement of applicant's qualifications.

Send five copies of the proposal to:

MNPS - Chair, Grants Committee
P O Box 8783
Missoula MT 59807-8783

Proposals will be reviewed by the Grants Committee and recommendations for grant awards will be presented to the MNPS Board of Directors for final approval. Applicants will be notified of grant awards by March 30, 1997.

Successful applicants will be expected to summarize the results of their project for publication in a future issue of KELSEYA.

Please contact Angela Evenden, Chair, MNPS Grants Committee, for further information at (406) 542-4173, or the address given above.