



Native Plant News

Newsletter of the Native Plant Society of Saskatchewan Inc.

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Winter 1998

Potential for Growth in the Native Plant Industry

By Nora Stewart

The focus was on native plant production as growers, project managers and policy makers from the northern plains states and the prairie provinces gathered in Calgary November 2-4 for Native Plant Summit IV. The speakers, handouts and networking provided an opportunity to assess the state of the native plant industry.

The growers of seeds face difficulties in seeding, harvesting and processing the seeds of diverse sizes and shapes, often with inappropriate equipment. Those growing seedlings of grasses, forbs or woody plants may struggle with a lack of information on species characteristics, germination enhancement, or other problems created because many native plants have never before been used in horticulture. Issues of inventory, marketing and financing are typical of new ventures. With planning, persistence and a lot of patience growing natives can be a viable enterprise.

Overall, the demand for native seed outstrips the supply, but the needs of users are changing and growers must adjust. One trend is towards site-specific seed. A Montana grower collected seeds where strip mining was going to occur in Arizona, grew seedlings and then revegetated the area with these local plants. Another

tendency is for greater diversity in seed mixes. But having an inventory of a wide variety of species may be questionable economically when the demand for some is sporadic. Using on-hand mixes to grow showcase example gardens may help and be a smart marketing strategy. A grower may choose to do consulting and custom planting with a several-year maintenance contract to show that natives can be used successfully.

There is a myriad of buyers of native plant materials – large and small, knowledgeable and less so. These may be companies such as Ducks Unlimited revegetating land for wildlife habitat; consultants doing reclamation work for mining, oil or gas companies; landscape architects designing parks or highway right-of-way projects; or people who want wildflowers in their gardens. They may face high cost, a shortage or lack of seed or plants and lack of information on species ecology. They may not have the lead time necessary for producers to provide the preferred plant materials. A gap exists between what the growers can or could provide and what the contractors believe is available.

The pressure on project managers to use native plants is coming from a variety of regulators. For example, in the United States the surface mining act requires "...a diverse, effective and permanent vegetative cover of the same seasonal variety native to the area of land..."

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Win a Free Conference Registration

By now you should have received a membership renewal package which includes information on registration for our upcoming conference and a member survey. Those who return all three of these will be entered in a draw for one free two-day conference registration.

The deadline for this draw has been extended to **January 22, 1999**. Please contact the NPSS office if you missed this information package or if your company would like information on being a conference sponsor.

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YOUR BOARD

President's Message

By Dean Nernberg

Since our last newsletter, we have rolled out new editions of our brochures, including the membership brochure and recommendations for the collection and use of native plants. A new document on guidelines for rare plant surveys was produced with considerable work by Diana Bizecki Robson, one of our directors. This document will be an invaluable tool to help protect native plants during the environmental assessment process for proposed developments. Moreover, it will be of use to consultants and those interested in gathering information on rare plants. Another fine achievement for the Native Plant Society.

As your President, I have been active on a number of committees representing the NPSS. Namely the Prairie Conservation Action Plan Steering Committee, which is a consortium of agencies, organizations, and groups interested in prairie conservation. I sit on similar committees in Alberta and Manitoba. Also I am sitting on the Resource Conservation Committee (RCC) of the Advisory Committee on Saskatchewan Forages. The Advisory Committee meets annually and the RCC represents conservation issues in relation to the development of forages, whether they be introduced or native.

We have obtained a display unit for our NPSS educational display and improved the display with new Velcro banners. This was done in time for our participation at the Native Plant Summit IV in Calgary in November. Myself and a number of directors attended this very well organized and informative meeting on native plant production. Hundreds of people from

all over the Northern Great Plains of Canada and USA attended to hear the experiences of experts and share theirs.

Behind the scenes, the Board of Directors, Larry Goodfellow (Executive Director), and Trimension Group have been working hard on the activities and strategic direction for the NPSS as well as the marketing and promotional opportunities for the Society. Larry Goodfellow and I have initiated efforts to acquire long-term support and partnerships for NPSS.

Over the last while there has been a flurry of activity to prepare for our annual general meeting and conference. The theme this year is 'Native Prairie Management and Conservation'. With such a hot topic, it should be a very exciting meeting. Another plant identification workshop should prove to be popular and add to the energy and excitement. I hope to see you all out for this two day extravaganza. It is your chance to get together with many other native plant enthusiasts and provide input into the direction and activities of your Society.

Board Activities

The Board of Directors met November 16 for a regular meeting and the Executive Committee met December 15.

In the meantime the Annual General Meeting Committee has been busy preparing for this upcoming event. A number of great speakers are lined up for this event – make sure you get your registration in early!

End of the NPSS Fiscal Year

November 30 marked the end of the NPSS fiscal year. Copies of the financial statement are available upon request. Please contact our office for your copy.

The mission of the Native Plant Society of Saskatchewan Inc. is to promote understanding and conservation of native plants and their ecosystems by facilitating communication, research, and education.

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Executive Director's Message

By Larry Goodfellow

The last quarter of 1998 has been busy! A number of initiatives were undertaken by Trimension Group during this time: new and revised publications, increased marketing efforts, membership renewals, and planning of the upcoming annual meeting and conference.

Instead of expanding on these past efforts I wish to look to the New Year. We see this upcoming year as an exciting transition period for the Native Plant Society of Saskatchewan. The main objectives of the contract with our firm is to increase awareness of NPSS, provide more services to the native plant industry, and help the society move to a position of greater self-sustainability.

Trimension Group has worked with the board to determine the direction

for NPSS in the New Year and beyond. We would also like input from you – the members and supporters of NPSS. I would like to take this opportunity to encourage you to fill in the member survey that you should have received in December. Please contact the NPSS office if you need a copy sent to you. Your input is very important to us!

In the New Year watch for some exciting new developments. Towards the purpose of serving the native plant seed industry, Trimension Group expects to develop a listing service for buyers and sellers of native plant seeds. This is seen as a necessary step to expand this industry in Saskatchewan.

Another new development will be a resource centre for native plant information. We expect to have a number of publications available for order by the general public. The resource centre will also be able to identify other or further sources of

information within the province and beyond.

Both of these new developments will serve as the basis for another new item in 1999. A website will be developed to better serve the members and general public. It is expected that the listing service and publication lists will be provided on-line and accessible to anyone with access to the internet.

On behalf of Trimension Group I would like to take this opportunity to send all of the NPSS supporters our best wishes for the New Year.

Call for Nominations and Resolutions

Nominations for the 1999 NPSS Board of Directors can be forwarded to the Society office. We are also accepting resolutions to be presented and voted on at the upcoming Annual General Meeting.

MEMBER PROFILE

Jack Winniski

By Debbie Nielson

Jack was born of first generation Ukrainian Canadians on a small farm south of Jasmin, Saskatchewan. He attended school in Leross and went on to pursue his Bachelors Degrees in both Education and Arts at the University of Saskatchewan. He worked as an Agent-Operator with the CNR from 1958 to 1964. In 1964 he made a career change that saw him spend the next 30 years as a high school teacher in Social Studies in Melville. From 1975 to the present he has also been a part-time farmer raising grain, fodder, horses and trees.

In 1979, Jack and his wife Anne purchased 140 acres adjacent to

highway number 10, six miles southwest of Melville. This property is located on Pearl Creek which is a major tributary of the Qu'Appelle Valley. The desire to landscape the site in a manner that would complement its natural beauty led them to native plants. In excess of 30,000 trees representing 50 species have been planted there, the majority of which are fruit trees native to East-Central Saskatchewan. In addition to the fruit and ornamental trees for sale at "Pearl Creek Farms", Jack and Anne also run a U-pick operation, sell perennials, and process their fruit into jams and jellies.

Jack's favorite native plant is the pincherry as he feels it represents the beauty, hardiness and productivity of native fruit trees in Saskatchewan. It

also symbolizes what he feels is one of the biggest issues facing native plants – that is, aerial spraying. He says it has had a serious impact on his area with very few healthy pincherris still in existence because of it.

Jack's future plans include monitoring aerial spraying activities in his areas and encouraging farmers to apply chemicals in as safe a manner as possible. He also plans to spend more time developing his native fruit business.

If you would like a tour of Pearl Creek Farms or would like to contact Jack, call (306) 728-3976.

RESEARCH AND EDUCATION

Ducks Unlimited Celebrates 60 Years of Conservation

By Patrick Lang, Communications, Ducks Unlimited

Twenty five years of anything is cause to sit up and take notice. Fifty years is twice as good. But unless you're talking about weddings, 60th anniversaries don't usually mean much -- except in the case of Ducks Unlimited. Why is that? Because in a period of six decades DU has become the most successful waterfowl conservation company in the world.

The organization came to life in the drought and depression of the late 1930s with a modest budget and a big goal: to take \$100,000 of donated money and use it to restore 100,000 acres of prairie habitat. In a show of determination and can-do attitude, the small staff actually restored 155,000 acres that first year. It was a work ethic that would define the way the company would operate from then until the present.

In partnership with like-minded agencies, DU Canada steadily amassed a huge inventory of waterfowl habitat. By the start of our 60th year we had secured 3.4 million acres and protected an additional 15 million acres of prime wetland and upland habitat. These important areas are used by breeding and nesting ducks and geese, by shorebirds and wading birds, by mammals both large and small, and by a multitude of other wild creatures. In fact, more than 600 species of wildlife depend on DU Canada wetlands and uplands to meet some or all of their habitat needs. In addition, the wetlands secured and

enhanced by Ducks Unlimited create a healthier environment for people by reducing soil erosion, replenishing groundwater, absorbing floodwaters and purifying surface water.

Clearly, Ducks Unlimited is making a vital contribution to the health of our planet. To date our organization has invested more than \$850 million in our program to secure and improve wildlife habitat in Canada. During the first 40 years, most of that funding came from our sister organization in the United States. In the past 20, our base of funding support has broadened. In addition to funding from DU Inc. in the USA, we also receive large-scale financial support from local, state, provincial and federal governments through the North American Waterfowl Management Plan.

A third funding stream is home grown. More than 7000 volunteers throughout Canada host more than 850 DU events to raise over \$12 million each year in support of our habitat programs. Since our Canadian fund-raising program was launched more than 20 years ago, enthusiastic volunteers have raised more than \$125 million for the ducks. In the course of doing that they have also generated invaluable publicity which has helped make Ducks Unlimited the nation's best known and most respected conservation organization (Angus Reid Group survey).

With all these achievements to its credit, can DU Canada consider its job close to complete? Not by a long shot. While current waterfowl numbers are near their highest point since the 70s, devastating droughts will continue to happen. Drainage of wetlands is ongoing. The pressures on natural

spaces will get worse before they improve. Our objective as a far-sighted conservation company will be to carry on our successful programs -- securing wetlands, enhancing uplands, raising funds -- while finding new ways to provide more habitat for ducks and other wildlife.

In recent years, for example, we have realized that the only means of securing a future for North America's waterfowl is to influence land use on a large scale. Working with partners and landowners DU is restoring large blocks of native grass on idle lands, and encouraging wildlife friendly farming practices like delayed haying and rotational grazing. The result is small improvements to waterfowl habitat over large landscapes. We believe this will help create a significant increase in nesting success and, ultimately, in waterfowl numbers.

Numbers, after all, are important. Biologists tell us that a nest success rate of at least 15% is needed for duck populations to sustain themselves. And a sustained fall flight of 100 million ducks would be a good indicator that waterfowl populations and the habitats they depend on are in healthy condition. As always, we're investing our dollars and our expertise into specific programs that will be most effective in helping to produce those results.

As we head into our next 60 years we can celebrate both our achievements and our new direction, knowing we're doing everything we can to ensure the survival of those wild winged creatures which grace our skies and enrich our lives.

Endangered Species Advisory Committee Meets

By Diana Bizecki Robson

The Endangered Species Advisory Committee had its first meeting October 7, 1998. The purpose of the group is to advise Saskatchewan Environment and Resource Management (SERM) on protection priorities, recovery actions, endangerment prevention and implementation of species at risk programs. The committee would serve as a forum for addressing disputes. The committee members are also responsible for representing the concerns of their organization.

Organizations on the committee include: Nature Saskatchewan; Saskatchewan Wildlife Federation; Ecotourism Society of Saskatchewan;

Ducks Unlimited; Saskatchewan Stock Growers Association; Saskatchewan Mining Association; Saskatchewan Association of Rural Municipalities; Saskatchewan Wheat Pool; Council of Saskatchewan Forest Industries Association of Petroleum Producers, and of course NPSS. Diana Bizecki Robson is the representative for NPSS with Daryl Nazar being the alternate representative.

SERM will be proposing to list for protection nine vertebrate animals and six vascular plants this fall. The species and categories are as follows:

- Extirpated – Black-footed Ferret, Grizzly Bear, Greater Prairie Chicken, Eskimo Curlew, Small White Lady's slipper (*Cypripedium candidum*)
- Endangered – Burrowing Owl, Piping Plover, Sage Grouse, Whooping Crane, Swift Fox, Sand Verbena (*Abronia micrantha*),

Western Spiderwort (*Tradescantia occidentalis*), Tiny Cryptanthe (*Cryptantha minima*), Hairy Prairie-Clover (*Dalea villosa*)

- Threatened – Slender Mouse-Ear Cress (*Halimolobos virgata*)

More species will be examined in the spring. Eventually, hundreds of species may be protected under *The Wildlife Act*.

Government representatives stated that they would use the penalties outlined in *The Wildlife Act* as a last resort, preferring to achieve species protection through voluntary, co-operative programs such as conservation easements and the Representative Areas Network.

Anyone with questions, concerns or comments about wild species-at-risk can contact me at 306-652-9231 or dsrobson@sk.sympatico.ca.

Ducks Unlimited Canada Ecovar Program

Native grasses provide attractive wildlife cover. Once established, native grasses are long-lived, self-propagating and inexpensive to maintain. They are adaptable and hardy, and they are a good fit for DU's philosophy of promoting biodiversity.

In 1991, Ducks Unlimited launched Canada's first "ecovar" program. The goal was to establish adequate commercial supplies of seed through the development of ecovars to meet the growing demand for native grasses for revegetation projects.

Cultivars & Ecovars:

A cultivar (cultivated variety) is a plant selectively bred to achieve uniformity in plant growth and enhanced seed production compared

with wild stock. Most of today's agricultural crops, including tame grasses, are cultivars.

An ecovar (ecological variety) is an intermediate step between a tree native plant and a cultivar. Ecovars are the offspring of native plants that have been specially selected from a larger population for their ability to survive and reproduce in specific regions of the Canadian Prairies. Ecovars retain greater genetic diversity than cultivars.

The ecovar selection process is short. Plants may be chosen and their seeds sent to commercial seed production in as little as three or four years.

The Selection Process:

Native plants are gathered from sites across western Canada and transplanted at a variety of locations on the Prairies. Since each plant is adapted to thrive within a relatively narrow range of climatic and

environmental conditions, each collection of plants goes to a location within its own geographic range. The plants are transplanted in a pattern that allows cross-pollination among plants from different sites within the range, maintaining the bio-diversity within the species.

The plants are allowed a year or two to overcome the trauma of being transplanted. A selection of plants is then chosen from the larger population and moved to a separate, isolated plot to be used for seed production.

In subsequent years, seed is gathered from the ecovars and given to seed growers who eventually produce enough seed to supply commercial growers.

Plants are selected on a basis of seed production and seed vitality. Since the goal is to develop certified commercial seed to make commercial seed production economically viable.

Care is taken to maintain most, if not all, characteristics of the native parent. For that reason, traits important in forage species, such as biomass production, are less important characteristics to consider when selecting plants for ecovar development. The program is more concerned with maintaining a

biologically diverse population than with increasing forage production.

Partnerships make it work.

Monsanto became the founding sponsor of the ecovar development program with its generous contribution of \$100,000 in 1993.

Agriculture and Agri-Food Canada participates in the program at its research facilities at Brandon, Manitoba, in Saskatchewan at Swift Current and Saskatoon, and at

Lethbridge, Alberta. Development of shrub ecovars is taking place at the Prairie Farm Rehabilitation Administration's shelterbelt centre at Indian Head, Saskatchewan. Work is also underway at the Alberta Environmental Centre at Vegreville, Alberta.

The USDA Natural Resource Conservation Service, the University of Manitoba and the University of Saskatchewan are also partners in the ecovar development program.

Saving the Songs of the Prairie

By Tracy Neumann, Communications Specialist, Saskatchewan Wetland Conservation Corporation

The Saskatchewan Wetland Conservation Corporation is taking grassland songbirds under its wing through the Native Prairie Stewardship Program.

And that's good news for the conservation of two valuable resources.

Stephen Davis, manager of biological services for the Wetland Corporation, is working on a study on native prairie habitat and its relationship to the preservation of grassland birds.

"Grassland songbirds show more consistent and more severe population declines than any other groups of birds in North America," he said.

"We're trying to determine what value small parcels of native prairie have in relation to larger ones in the conservation of grasslands birds," he said.

Davis said the study began near Weyburn two years ago and will expand in the Missouri Coteau region of south central Saskatchewan. It

includes habitat areas ranging from 10 to 6,000 hectares.

And so far, species like the Baird's Sparrow, Chestnut-collared Longspur, Marbled Godwit and the Sprague's Pipit have been identified as 'area sensitive.'

"They don't really appear to be occurring in any great abundance in pastures less than a quarter section. In the case of the Sprague's Pipit it's over three quarter sections," said Davis, adding the Pipit has been declining at an alarming rate of 7.1 percent per year in Canada.

"Relative to other birds, it's a good indicator as to the health of native prairie. We found that it's not attracted to crested wheatgrass or brome and can only tolerate a limited amount of woody vegetation," he said.

But native prairie stewards can make a difference.

"As a rancher, anybody who is managing for native grass is managing for grassland birds," said Davis. "Grazing can be used as an extremely useful tool because some of these birds would likely disappear in some areas if there wasn't any grazing."

In terms of biodiversity, Davis said "Grazing is healthy because it creates

a mosaic of structural patches. Some birds are attracted to tall and dense vegetation while other birds like areas with sparse cover."

Unfortunately, pockets of native grassland are often isolated. Davis said this puts increased pressure on grassland birds because smaller parcels of habitat may be easier for nest predators to cover.

Along with this adversity, grassland songbirds may also experience high rates of brood parasitism by the brown headed cowbird.

"What a cowbird will often do once it locates a nest is remove one of the host eggs, come back some time later, and replace that egg that it took out with one of its own," said Davis.

Hatching earlier than the songbird's own young, cowbird nestlings often out-compete the other young for food and space.

Among these challenges of survival, grassland birds also face the perils of migration – flying up to 400 kilometres per night to reach their wintering grounds between the Tropic of Cancer and the Tropic of Capricorn. But here too, habitat areas are pressured by development.

“There are birds like the Swainson’s Hawk that travel all the way to the grasslands of Argentina. And the Grasshopper Sparrow – it’s a bird that will travel all the way to Ecuador,” said Davis.

“Saskatchewan has a huge role in the conservation of these birds because a good portion of many of their ranges are here in Saskatchewan,” he said. “The big thing is to keep the native prairie around.”

And that’s what Native Prairie Stewards are committed to doing.

For more information call Stephen Davis at 787-0711 or Glen McMaster at 787-8764.

Purple Loosestrife Update

By Angela Salzl

In an effort to help keep the river bank free of a noxious weed, students from Joe Duquette high school spent a warm September day uprooting purple loosestrife. Sponsored by Ducks Unlimited, the Greenwing Program was created in order to educate our youth about the environment. The students were working along the Saskatchewan riverbank in a purple loosestrife site recently discovered in the Meewasin Valley Authority. This site is located on the east bank of the South Saskatchewan River just downstream from the Idylwyld Bridge. Although 20 or more garbage bags of purple loosestrife were removed, this site will have to be monitored for many years since the

seed can lie dormant for more than 10 years. SPLEP urges all homeowner’s with purple loosestrife growing in their yards to remove it immediately to prevent any further spread.

Comprised of 500-1000 plants, this site is now the largest recorded on the riverbank in Saskatoon. Homeowners should be aware that this site as well as two others are close to a storm sewer outflow. Most likely seed from garden varieties growing in backyards is being carried to storm sewers by wind/and or runoff. Furthermore, it is proof that these garden varieties can and do produce viable seeds, which is in agreement with recent studies. Purple loosestrife populations have also been found near storm sewer outlets in Swift Current, Regina, and Moose Jaw. There is a risk that seed from populations located along Saskatoon’s riverbank may spread

downstream until it reaches the Cumberland Delta home to some of the best marshland in the world.

Purple loosestrife (*Lythrum salicaria*) is an aggressive perennial from Europe that was first introduced to North America over a century ago. Since its introduction it has been spreading westward across Canada and is now found in every province. In Saskatchewan, there are close to 40 confirmed sites. Unpalatable to most animals, it forms dense, impenetrable stands which chokes out native vegetation in most areas. For more information on purple loosestrife and its clean-up, please contact: Angela Salzl, Project Manager, Saskatchewan Purple Loosestrife Eradication Project: Tel: (306) 975-4101 Fax: (306) 975-4089

Crested Wheatgrass and Smooth Bromegrass

By Gord Pearse

This letter is in response to the articles regarding crested wheatgrass and smooth bromegrass written in the Fall 1998 Native Plant News.

I’ve been interested and fascinated by the rolling grasslands of the Northern Great Plains for many years. My favorite is those grasslands dominated by plains rough fescue, which is among the most beautiful places on earth. I am a producer of native and “exotic” grass seed, and work for one of the largest forage seed companies

in Canada as a seed production specialist. We contract, purchase, process, and trade native grass seed, but primarily focus on introduced grass and legume seed. With all the “bad press” that the NPSS and others have been giving the exotic grass species over the last few years, I feel I must respond to previous articles by stating how important and beneficial crested wheatgrass and smooth bromegrass have been to the Northern Great Plains. The following is my opinion, but it is not mine alone.

Are crested wheatgrass and smooth bromegrass invasive? Absolutely! Through years of selection and plant breeding, we have varieties that can compete very favourably with other grass species and weeds. These

species were developed for forage producers with many goals in mind – ease of establishment, cheaper seed (due to improvements in seed yield), improvements in adaptability, improved forage quality, even maturity, and so on. Most of these improvements make the plant more aggressive, which lead to higher productivity for the producer. This shouldn’t be a negative factor. I certainly would not seed any species that has been selected specifically for its ability to allow other grasses and weeds to flourish! By comparison, cultivars of northern wheatgrass and green needlegrass are very weak seedlings even with improvements.

Is there too much crested and brome in Saskatchewan? Probably.

Certainly there would have been better options than brome for seeding the roadside ditches, as extensive and irreversible invasion into native grass stands has occurred. But our government saved the taxpayers many millions of dollars by using brome rather than western wheatgrass, and on most ditches it doesn't really matter. Certainly in terms of pasture management, many cattle producers can't possibly graze all of their crested at the stage when it should be grazed, and have suffered loss of productivity because of it. However,

if introduced species are managed properly, cattle producers can improve the productivity and sustainability of their native stands by taking grazing pressure off these grasslands. Is this not a goal of every range manager and supporter of the NPSS?

It's a travesty to nature to sow a strip of crested wheatgrass through a native grass stand. However, it's a sin to have widespread erosion such as that which occurred in the 1930's. It was crested wheatgrass that saved much of southern Saskatchewan from blowing

into Manitoba. Although there were other species available, it was the one used because it established consistently and it was readily available at a relatively cheap cost. These are three attributes that our native species do not have even sixty years later!

Certainly there are problems with crested and brome, but to try to consider where our beef industry and the soils of Saskatchewan would be today without them.

CROSS POLLINATION

SaskPower's Shand Greenhouse

By Debbie Nielson

Shand Greenhouse was established as a wholly owned subsidiary of SaskPower in 1991. This state-of-the-art facility is located just east of Estevan adjacent to the Shand Power Station. One of the main objectives of the greenhouse is to increase public awareness of the relationship between electrical generation and the environment and to foster environmental protection through the propagation of native and non-native plant materials. By stressing conservation to extend resource use, while reducing the environmental impact of resource use, the greenhouse symbolizes environmental stewardship. Through the propagation of native vegetation for out-planting, the Shand Greenhouse also functions as a practical mitigation tool that reduces the amount of carbon dioxide released into the atmosphere as a result of the burning of coal for electricity generation.

Each year the greenhouse distributes between 250,000 and 300,000 native

and non-native tree and shrub seedlings throughout the province. Since 1991 over 1.3 million seedlings have been planted in various conservation, reclamation, and wildlife plantings. The majority (60%) have been distributed through the TREEmendous Saskatchewan program. Other clients have included Prairie Coal Ltd., PFRA, Ducks Unlimited, Cogema Resources, the Mixed Grass Prairie Habitat Restoration Project and SaskPower.

The Shand Greenhouse also has a number of other programs aside from tree seedling distribution which help to further its objectives. Among these is an annual school tour. Each spring, approximately 20 schools are visited and given a presentation about electricity, the environment and the important role trees play in our environment. The purpose of these talks is not only to make students more aware of their environment but to also encourage more tree planting and improve tree survival on school grounds where mortality is exceptionally high. The greenhouse also hosts grade 5 students from the local area for a number of activities dealing with the environment and

electricity. Activities have included nature hikes, propagation techniques in the greenhouse, simple forestry concepts and techniques, Indian storytelling and participating in actual tree plantings.

For the general public, the greenhouse keeps detailed cultural records of all the crops grown as well as performing some research related to crop production. This information is shared with other growers through various conferences and publications. The greenhouse is also actively involved with the TREEmendous Saskatchewan program and has played a considerable role in the past on the NPSS Board of Directors.

Through its many activities, the greenhouse plays an important role for SaskPower and the province of Saskatchewan. Not only does it provide a practical mitigation tool for carbon dioxide, but through its communication and technical efforts, helps to raise the awareness of people in Saskatchewan to the important relationship between energy and our fragile environment.

TRAVEL SASKATCHEWAN

The Rendick Elm Forest

By Diana Bizecki Robson

The Rendick Elm Forest, northeast of Hudson Bay, Saskatchewan, is one of Saskatchewan's hidden treasures. Ostrich ferns taller than people, rare plants, rushing water and cool misty air awaits visitors of this forests sanctuary.

Alex Rendick, the original owner of the land, worked together with the Saskatchewan Wildlife Federation and Nature Saskatchewan to preserve the 14.2 hectare (35.3 acre) of forest in 1989. The land is currently co-owned by SWF and Nature Saskatchewan.

The Rendick Elm Forest is a peninsula of land between the Red Deer River and Smoking Tent Creek. The high moisture and rich soil of the sanctuary has resulted in plants of unusual size, for example ostrich ferns

are over 6 feet tall. Tall meadow-rue (*Thalictrum dasycarpum*), cow parsnip (*Heracleum lanatum*) and (ouch) stinging nettle (*Urtica dioica*) have also reached extra heights. The forest is one of the few locations in the province where the rare nodding trillium (*Trillium cernuum*) can be found. Other rare plants at the site include blue monkey-flower (*Mimulus ringens*), Assiniboia sedge (*Carex assiniboinensis*) and red elderberry (*Sambucus racemosus* spp. *pubens*).

Nature Saskatchewan, under their Nature Sanctuary Inventory Project, is undertaking plant and animal inventories of this area. If you plan on visiting the site, they would appreciate receiving records of wildlife sightings. A plant species list for the area has already been developed with the help of numerous botanists and can be obtained by contacting the Nature Saskatchewan office (1-800-667-4668). Sightings of plants not already on this list should be reported.

Unfortunately Dutch Elm Disease (DED) threatens this preserve. If DED reaches the forest, the community will be changed forever. Help protect this area. Do not bring Elm firewood with you. To keep the site beautiful, healthy and pleasant to visit haul out your garbage, do not make fires, stick to the trails, and, most importantly, do not pick any plants or seeds.

To get to there, drive 24 km (15 miles) east of Hudson Bay along highway # 3. Turn left (north) past the stream. A small sign showing where to turn is present along the grid road. Drive north until the road ends (about 5 km or 3 miles). A sign marks the entrance to the sanctuary, although it is difficult to read since some hooligan set it on fire. There is a picnic table at the site but at present no washroom facilities.

FEATURED FLORA

Western Red Lily

Lilium philadelphicum var. *andinum* (a.k.a. Prairie Lily, Wood Lily, Saskatchewan Lily and Tiger Lily)

By Bonnie Lawrence and Anna Leighton, *Western Red Lily Project*

As our provincial floral emblem, the Western Red Lily is a wild flower difficult to ignore. Stylized versions, some with five petals instead of six, wave at us from the provincial flag and serve as a logo for provincial events. So much familiarity could lead to contempt, especially among wild flower enthusiasts who enjoy hunting for delicate beauties modestly hidden from view. The lily with its large,

showy, red-orange blossoms held well above the surrounding vegetation is an anomaly in this regard.

Most Western Red Lilies have single flowers, but two or three per stalk is not uncommon and four to six can be seen occasionally. The greatest number of flowers we have seen on one plant is seven, at Last Mountain Lake National Wildlife Area (LMLNWA) in 1997. The number of flowers produced by an individual plant can increase or decrease from year to year, in just about any sequence, for example, three flowers to one flower, two flowers to five, one flower to none.

The flowers vary in color from bright red to yellow, including pale salmon pink and a spotless yellow form, the Immaculate Yellow Lily (*L. philadelphicum* var. *andinum* forma *immaculatum*), which is a rare plant in the province. Red-orange is by far the most common.

In spite of its prairie affiliation, this lily seems singularly maladapted to prairie conditions. It grows from a small fleshy bulb 5 to 7 cm below the surface which sends up at most one stem per season. Damage to the stem spells the end of above ground growth for that year. Completely unarmed,

these palatable plants fall victim to many grazers and chewers. Deer seek out the mature flower buds; small rodents fell the plants for the growing stems and seed pods, and excavate the bulbs to fill their winter pantries. In a remarkable excavation of a prairie vole burrow, Stuart Criddle found 1176 *Lilium philadelphicum* bulbs among 2.6 kg of stored plant materials (1). This aspect of vole behaviour was known to the Saskatchewan Cree Indians who named the plant Mouse-root (2) and probably raided vole caches to gather quantities of these edible bulbs.

How does this plant survive on the Saskatchewan prairies? The answer appears to be in the reproductive potential of the bulb. This bulb usually consists of several dozen fleshy scales, each of which can produce a new plant. When animals transport and store lily bulbs, scales break off and start new plants. Other types of disturbance, such as trampling by animals, may do the same thing by breaking up the bulbs. Asexual production of this type produces populations of clones.

These plants are also prolific seed producers; 300 seeds per pod is not unusual. However, seed production is an unusual event in most years because flowering and seed success are closely tied to environmental conditions. This year provides a good

example of what can happen when the conditions are unsuited to lily growth. Many lily patches did poorly because hot, dry spring weather dried up the flowers before they could develop. The flowers that did bloom produced small pods for the most part. Populations may rely on the massive blooms, for which this species is famous, to maintain genetic diversity.

This species appears to have an interesting relationship with prairie fires. Observations at LMLNWA suggest that early spring fires can trigger massive blooms. They also promote seed production by removing surface vegetation that protects marauding voles and other mammals that chew down lily stalks. It is interesting to note that lily bulbs are usually found just 5 cm below soil, below the depth of heating by prairie fires (3).

The name Saskatchewan Lily suggests that this species is somehow unique to our province. In fact, *Lilium philadelphicum* occurs in five provinces and much of the United States (see map). Saskatchewan is toward the western edge of its huge range and is one of the locations where the ranges of the eastern (var. *philadelphicum*) and western (var. *andinum*) varieties overlap. The western variety is by far most common in Saskatchewan and is the one named as our floral emblem.

It is hard to say what the future holds for this species in our grasslands. Loss and fragmentation of native prairie into small pieces, curtailing certain management practices, such as burning, will continue to eliminate populations of lilies. Invasion by exotics, such as Smooth Brome, also poses a threat. The law that protects floral emblems specifies that it is illegal to pick, cut down, pull up, injure, destroy in whole or in part, whether in blossom or not, the plant that is the floral emblem of Saskatchewan. While this sounds comprehensive enough, it only applies to plants on public land, leaving a loophole large enough to drive a tractor through.

References:

1. Criddle, Stuart, 1947, *Microtus minor* and the Prairie Lily. *Canadian Field-naturalist*. 61:116.
2. Richardson, John. 1823. *Botanical Appendix*. In: Franklin, John. 1823. *Narrative of a journey to the polar sea, in the years 1819-20-21-22*. John Murray, London.
3. Archibald, O.W., L.J. Nelson, E.A. Ripley, L. Delanoy. 1998. *Fire Temperatures in Plant Communities of the northern Mixed Prairie*. *The Canadian Field-naturalist*. 112:234-240.

Did You Know...?

- The Prairie Ecozone occupies approximately 5% of the total area of Canada and Saskatchewan is home to half of this area.
- The Prairie Ecozone occupies approximately 38% of the total area of Saskatchewan.
- More than 80% of the province's economic activity is generated in this area.

Taken from Saskatchewan Prairie Conservation Action Plan, prepared by the PCAP Committee, 1998

Potential for Growth in the Native Plant Industry

...Continued from Page 1

Federal policy supports the use of native seed and seedlings on highway rights-of-way, and a federal conservation committee is trying to ensure that native plant species and communities be maintained, enhanced, restored or established on public lands. As a result of such policies, there are over 150 nurseries

and seed companies that specialize in natives in the western United States, and in some areas roadside wildflowers are a major tourist attraction.

The situation on the Canadian prairies is less clear-cut. Mainly there are recommendations that natives be used in revegetation on public lands but perhaps stronger regulations will be forthcoming, especially as a result of implementation of the goals of the Prairie Conservation Action Plan.

As Saskatchewan growers of native prairie plant materials develop equipment and techniques so they can produce more at a lower price; as contractors and project managers learn the values of these plants; and as regulators continue to promote their use, the industry could be, as forecast for the United States, one of the most rapidly expanding sectors of the economy.

NEW PUBLICATIONS

New NPSS Publications:

Native Plant Society of Saskatchewan Guidelines for Rare Plant Surveys

Diana Bizecki Robson

Recommendations for the Collection and Use of Native Plants

Contact the NPSS office for your free copy:

#104 – 110 Research Drive

Saskatoon SK S7N 3R3

Phone: 306-668-3940 Fax: 306-975-1156

Email: npss@innovationplace.com

New from UBC Press:

Wildflowers of Alberta

A guide to common wildflowers and other herbaceous plants

Kathleen Wilkinson

available November 1998

0-88864-283-0, \$24.95

Weeds of Canada and the Northern United States

A guide for identification

Richard Dickinson & France Royer

available November 1998

0-88864-311-X, \$40.00 (tent.)

Plant Swap

Information is being sought for a source for the following:

Flowering currant (*Ribes sanguineum*). Native to the Rocky Mountains, it is a large shrub with drooping clusters of red or pinkish flowers. It blooms in early spring, can be grown from cuttings or seeds, and is very showy.

Indian warrior or lousewort (*Pedicularis bracteosa*).

A lovely meadow plant with showy red or yellow flower clusters and ferny foliage. It grows as high as three feet and can be found from British Columbia through Alberta and south to Montana, Colorado, and California.

Please pass any information on through the NPSS office.

Events Calendar

Watch the Spring 1999 *Native Plant News* for details on the Summer Tour '99.

February 7, 1999

Beaver Creek's Old Fashioned Skating Party (1-4 pm)

Contact Beaver Creek Conservation Area. Phone: 306-374-2474

February 12-13, 1999

Native Prairie Management & Conservation, Saskatoon

Annual general meeting and conference of the NPSS. Please register by January 31. For more information contact the NPSS office.

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Submissions

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The submission deadline for the next issue is **February 15, 1999.**

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