

### IRIS NEWSLETTER

Alberta Native Plant Council Box 4524, Station SE, Edmonton, Alberta T6E 5G4

**ISSUE 11** 

Fall 1991

#### **Editor's Note**

The Alberta Native Plant Council is looking for an infusion of fresh blood to a number of its committees! We need your input, your ideas, your energy!! All the committees are very active groups, with diverse and interesting objectives and projects currently in progress. But we could achieve a lot more with a little help from you, the members. (And according to our secretary, there are now about 135 of you!).

Call up one of the committees if you would like to participate. The Education and Information Committee is looking for a new chairman- any takers??

In other news, don't forget to jot down February 29th, 1992 on your calendar. This is the date for the next ANPC Annual General Meeting and Workshop. See this issue for more details on this event.

The western blue flag (*Iris missouriensis*) fact sheet is now at the printers, and will be available in the near future. This fact sheet provides information about the species including description, status and distribution, reproduction, habitat, economic and biological significance, limiting factors, management and outlook. The ANPC is funding the writing of the text.

Lorna Allen has compiled a list of potential additions to the rare flora of Alberta. Summaries for each species are currently being prepared.

Cliff Wallis and Elisabeth Beaubien are working on behalf of ANPC to state the risks to downstream habitat below the Old Man River Dam, as well as protection of a number of other habitats in the province. For more on the Old Man River Dam's impact on native plants, see this issue of IRIS.

The ANPC's Code of Ethics is also being refined by member volunteers . . . the membership brochure is being revamped . . . the Association of Alberta Landscape Architects are asking the ANPC for some sort of linkage with regard to use of native plantings . . . 14 status reports are still needed . . . have we piqued your interest yet?

Joan Williams

Questions, comments, submissions rethe newsletter?? Please write to: The Editor, ANPC, Box 4524, Station 'SE', Ed-

monton T6E 5G4.

# COUNCIL NEWS Alberta Native Plant Council Executive

Chairman: Elisabeth Beaubien (Dept. of Botany, University of Alberta)

Vice-Chairman: Cliff Wallis (Consultant, Naturalist)

Secretary: Lorna Allen (Biologist, Natural and Protected Areas, Alberta Forestry, Lands and Wildlife)

Treasurer: Julie Hrapko (Botanist, Provincial Museum)

Director (Northern Region): Dr. Joan Snyder

Director (Southern Region): Kathleen Wilkinson (Biologist, Consultant)

Director (Federation of Alberta Naturalists representative): Derek Johnson (Canadian Forestry Service)

Past Chairman: Dr. Peter L. Achuff (Dept. of Forest Science, University of Alberta)

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#### **COMMITTEES**

# Education and Information Committee

If you are interested in chairing this very active group, or would just like to join the Edmonton Plant Study Group or Education and Information Committee, please call Joyce Gould (449-6619 Edmonton).

#### **Conservation Action Committee**

If you are interested in participating in Conservation Action Committee activities, please contact the Committee Chairman, Cliff Wallis, 615 Deercroft Way SE Calgary (271-1408).

#### Rare Plants Committee

For further information, or if you would like to join the Rare Plants Committee, please contact Derek Johnson (436-8231) Edmonton.

#### Reclamation and Horticulture Committee

For further information, or if you would like to join the Reclamation and Horticulture Committee, please contact the Committee Chairman, Dana Bush (282-3975), or Kathy Wilkinson (278-3203) Calgary.

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### ANPC 1992 ANNUAL GENERAL MEETING

The 1992 Annual General Meeting of the Alberta Native Plant Council is planned for February 29th at the University of Lethbridge. The theme of the meeting will be *Plants of Southern Alberta - the Rare Ones and the Invaders*.

Sessions are being planned on rare plants and their habitats, invasive plants such as purple loosestrife and leafy spurge, and using native plants in southern Alberta cityscapes. Mark the date on your calendar. Everyone is welcome, so tell your friends about it.

We need volunteers to assist with the workshop - everything from food committees to manning displays. If you have ideas or want more information contact Cheryl Bradley, 625 - 18 St. S., Lethbridge, T1J 3E9 (328-1245).

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#### Rare Plant Species Status Reports: Four More in 1991

Over the past year, 4 status reports on rare Canadian plants found in Alberta have been completed by members of the ANPC. Reports for Hordeum pusillum, Halimolobos virgata and Draba kananaskis were prepared by Bonnie Smith of the University of Calgary and a report on Stellaria arenicola by Brett Purdy of the University of Alberta. This brings to 9 the number of Alberta plant species reports submitted to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Hordeum pusillum, or little rye grass, has been found in only one location in Canada. It is, however, fairly common in the United States. Bernard Boivin discovered it along the Milk River in 1952. Attempts to relocate specimens at and near the original location in 1991 were unsuccessful. Invasion of the site by crested wheatgrass may be partially responsible. *H. pusillum* has been recommended for extirpated status in Canada pending discovery of new sites.

Draba kananaskis was first found in 1970 by G.A. and D.G. Mulligan on a talus slope near Fortress Mountain, Kananaskis Valley. During the early 1980s it was found at two other locations in Alberta: by Peter Lee in the Upper Evans valley, Kananaskis Valley in 1980 and by Ian Corns near Maligne Pass, Jasper Nat. Park in 1977. The only other known location is one from the Kenai Peninsula, Alaska (1951). The species may be more widespread than collection records indicate, but its rugged, high-elevation habitat makes documenting this difficult. Four plants were relocated at its type location on Fortress Mountain in 1991. D. kananaskis has been recommended for endangered status, pending discovery of other locations.

Halimolobos virgata, another species in the mustard family, was first collected by John Macoun in 1894. He found it at 3 sites: Wood Mountain, Saskatchewan; Cypress Hills, Alberta; and Police Point, Alberta which is now within the city limits of Medicine Hat. The species was not reported again until the mid 1970s when John Hudson found it at 5 sites around Diefenbaker Lake (during the period 1974-1990) and one site on the South Saskatchewan River, north of Medicine Hat, Alberta in 1978. In 1991, one specimen was collected at the Riverhurst site near Diefenbaker Lake. Attempts to relocate H. virgata at any of the other sites in 1991 were unsuccessful. This may be due in part to the fact that the plant is a biennial and this was an off year. The Medicine Hat site has been disturbed and it is unlikely that the species still occurs there. H. virgata has been recommended for threatened status.

Stellaria arenicola, or sand stitchwort, is restricted to the Athabasca sand dunes in Alberta and Saskatchewan. There is only one location reported in Alberta, but in Saskatchewan it is locally abundant. The species was first named in 1935 by Hugh Raup and was studied in the late 1980s by Dr. Ellen MacDonald of the University of Alberta. Given that its habitat in Alberta is protected in an ecological reserve and that there is a proposed wilderness park for its habitat in Saskatchewan, S. arenicola has been recommended for rare status.

Across Canada, a total of 78 rare plant status reports have been completed for consideration by COSEWIC. This is about 1/4 of the way to completing the National Museum's list of rare plants. Of those for which status reports are still required, 14 occur in Alberta. These are: Aquilegia jonesii, Carex athabascensis, Conimitella williamsii, Douglasia montana, Draba ventosa, Erigeron pallens, E. radicatus, E. scotteri, Gentiana aquatica, Lewisia pygmaea, Oenothera caespitosa var. psammophila, Spar-

ganium glomeratum, Stephamomeria runcinata and Townsendia condensata. Beth Cornish, an ANPC member, has begun work on T. condensata. Due to funding constraints, COSEWIC is looking for cooperative arrangements with other funding agencies to complete these reports.

On behalf of the Alberta Native Plant Council, I am coordinating an effort to seek cooperative funding in Alberta. Anyone with the interest, time and qualifications to prepare a status report should contact me in Lethbridge at 625 - 18 St. S., Lethbridge T1J 3E9 or call 328-1245/Fax 380-4969.

Cheryl Bradley

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#### New Plant Records for Alberta

# A new orchid for Alberta! Spiranthes lacera var. lacera (Slender Lady's-tresses)

"Remarkable for its extraordinary gracefulness" wrote the famous botanist Frere Marie-Victorin (Flore Laurentienne, 1964), describing this plant. A delicate spike of tubular white flowers with green centres form a loose spiral on a stem about 30 cm long. Oval green leaves are clustered at the base. A few small groups of these orchids were seen in full bloom on July 17, 1991, in grassy areas between rock outcrops, on a cutline a few kilometres east of Fort Chipewyan.

C. Luer (The Native Orchids of the United States and Canada, excluding Florida, 1975), the authority on North America's orchids, uses the name Spiranthes lacera (Rafinesque) Rafinesque var. lacera for this plant. It is a variety of what Budd's Flora of the Prairie Provinces (1987) calls S. gracilis (Bigelow)Beck. As far as I know the species is reported from Canada's boreal forest as far west as Saskatchewan, but is previously not known from Alberta. S. romanzoffiana is the only other member of this genus in the Flora of Alberta (2nd ed. revised by J. Packer, 1983).

Apparently, this species can bloom from seed in 3 to 5 years (which is fairly rapid for a native orchid), and often spreads to become abundant where it occurs. It is pollinated by various species of small bees.

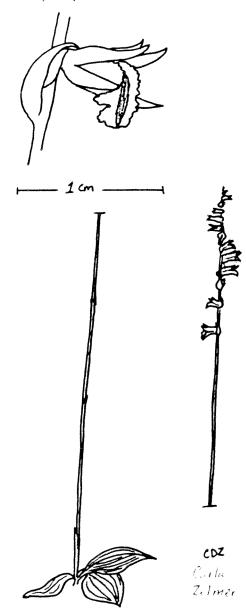
While the main goal of the trip north was to atlas birds and band peregrine falcons, I really enjoyed learning new plants. Many species were familiar from years spent in Quebec, and keying out plants in the safety of the tent was especially enjoyable as it provided an escape from the hungry hordes of mosquitoes and black flies waiting outside. Botanizing was exciting: the flora of this small northeastern corner of Alberta (Canadian Shield) is quite unusual in the province. Some Alberta plantsare only found in this area; others are found only here and in the mountains. For

a report onthe interesting plants of the area, see the "Kazan Upland Resource Assessment for Ecological Reserves Planning in Alberta", 1984, done by C. Wallis and C. Werschler for the Public Lands Division of Alberta Forestry, Lands and Wildlife.

Thanks to Carla Zelmer and Randy Bayer for help in identification. The plant specimen is deposited in the Vascular Plant Herbarium, University of Alberta.

Elisabeth Beaubien

A sketch of Spiranthe, Luises



#### Agoseris lackschewitzii (False Dandelion) Dr. Peter Achuff found the pink-flowered false

dandelion Agoseris lackschewitzii at Sunshine Meadows, in Banff National Park. This is a newly identified rare plant species for Alberta.

### Mimulus glabratus (Monkey-flower) and Linaria canadense (Toad-flax)

Cliff Wallis found the monkey-flower *Mimulus glabratus* doing well along the dam of a wet beaver pond in the mixed grassland habitat. This is the first Alberta record for the species.

Cliff also noted *Linaria canadense*, a Great Plains species, in Twelve Mile Coulee. Only two other species of toad-flax are listed in the <u>Flora of Alberta</u> (2nd ed. revised by J. Packer, 1983), *L. dalmatica* and *L. vulgaris*.

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### Other 1991 Plant Sightings of Note

Dave Sheppard discovered a few individuals of the monkey-flower *Mimulus floribundus* near the base of Whistler Mountain, while hiking with the Castle-Crown Wilderness Coalition on July 6th, 1991. The plants were found on a grassy slope, just outside the proposed Natural Area, and as far as Dave knows, is the first report of this species for the Castle area. The species is apparently rare in Alberta.

Dave also reported finding a small population of *Viola macloskeyi* while on an outing with Dave Reid of Hardy BBT, who is doing a rare plant survey for the proposed Westcastle Four Seasons Development. The plants were found on July 24th, 1991, in spruce forest in the valley bottom in an area that is to be developed for golf courses. According to [Dr. Job] Kuijt, this violet has been previously reported for Alberta only from Waterton.

Derek Johnson reported the fourth Alberta collection of the sedge *Carex loliacea* at Rainbow Lake, and relocated the moss *Herzogiella turfacea* on Watt Mountain.

Cliff Wallis reported finding the Stephanomeria runcinata (a composite) capital of Alberta, and a second provincial record of the sedge Carex hystricina in a spring area along the Red Deer River.

Kathy Wilkinson found two closely related species of *Sphaeralcea* in formerly seeded areas. *S. coccinea* or scarlet mallow, is presently the only species of *Sphaeralcea* recorded in <u>Flora of Alberta</u> (2nd ed. revised by J. Packer, 1983).

Did you have any interesting or unusal sightings of plants this year? The ANPC would like to hear from you.

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#### **UPCOMING EVENTS 1991-92**

### Conferences, Workshops, Meetings

Nov 14-15, 1991: California Riparian Systems III: Prog-

ress in Protection and Restoration. Lectures, talkshops, posters and field trips. Held in Sacramento, Calif. For more information, contact Dana L. Abell, conference coordinator, Univ. Extension, Univ. of California, Davis, CA 95616-8727, or call (916)757-8893.

Nov 14, 1991: Edmonton Plant Study Group Workshop. Meet in B521, BioSci. Bldg., Univ. of Alta. at 7:30 pm. Sponsored by ANPC and the Edmonton Field Naturalists' Club. For more information on meeting, call Margaret Flatman (451-0429 eves.) or Patsy Cotterill (481-1525 eves.).

Nov 21, 1991: Plant Adventures in the Andes. Pat Seymour, retiring Director of the Devonian Botanic Garden, and world traveller on botanical jaunts, will use slides to recall his latest exotica. Meet in Gallery 1 Lecture Room, Prov. Museum at 7:30 pm. Sponsored by ANPC and the Edmonton Field Naturalists' Club.

Feb 14-16, 1992: Third Prairie Conservation & Endangered Species Workshop - Integrating Land Use, People and Endangered Species. More than 40 workshops, a poster session, displays - topics include Prairie Conservation Action Plan; Agriculture & Wildlife Conservation Policy; biodiversity; soil and water conservation, endangered spaces campaign, and much more. Held at Brandon University, Brandon, Manitoba. Co-hosted by Rural Developement Institute, Manitoba Dept. of Natural Resources and Manitoba Naturalists Society. Registration by mail is encouraged by Jan 31, 1992; write to Rural Development Institute, Brandon University, Brandon, Manitoba R7A 6A9. Buses are being arranged from both Calgary, and Edmonton. For more information, contact Elisabeth Beaubien (438-1462 Edmonton), or Dana Bush (282-3975 Calgary).

August 6-9, 1992: Fourth Annual Society for Ecological Restoration Conference. Themes and debates will include park and forest management, restoration of urban and rural lands, regional landscape planning, political advocacy, ethics, the use of native plants, etc. Three days of field trips (2 trips are shared with the 13th Annual Prairie Conference). Held at Windsor, Ont.

# Protected Areas Management Program Seminars

The Protected Areas Management Program is an educational, training; and research centre based at the University of Alberta, in co-operation by the Canadian Parks and Wilderness Society. The program is dedicated to professional continuing education of parks and protected area managers through a multi-disciplinary and holistic approach.

The following professional upgrading seminars are being offered this winter under the theme *The Challenge* 

of Change for Protected Area Stewardship: Systems Thinking, Innovation, and Co-operation:

Nov 14-15, 1991: Reform and future in conservation education and interpretation. Speakers: Bob Peart, Jim Butler & panel. \$175, inclusive of materials. Course #4175.

Dec 6, 1991: Community action for protected area stewardship. Speaker: Bill Hammond. \$175, inclusive of materials. Course #4177.

Jan 9, 1992: Managing parks as human ecosystems. Speakers: Gary Machlis and Jean McKendry. \$195, , inclusive of materials. Course #4178.

Feb 28, 1992: Planning for ecological integrity. Speakers: Stan Rowe and Ted Mosquin. Course #4179.

Mar 1992: Public relations and protected areas stewardship. Speakers: Edna Einsiedel, Bert Einsiedel, and others. Course #4180.

Mar 20, 1992: Small protected area stewardship. Speakers: Jim Butler and Lesley Brown. Course #4181.

Other seminars being planned for 1992 include topics such as biodiversity: conservation strategies, writing skills for protected area stewards, cultural heritage interpretation, tapping the system for funding, volunteerism: empowering partners, philosophy and ethics of protected area stewardship, and legal issues surrounding protected areas.

To register, or for more information, write to Protected Areas Management Program, Faculty of Extension, 216 Student's Union Bldg., Univ. of Alta., Edmonton T6G 2J7, or phone/Fax (403)492-0627.

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#### **PUBLICATIONS**

Agriculture Canada. 1990. Fescue grasses of Canada. Can. Govt. Publishing Center, Ottawa. \$23 CND.

Argus, G.W. and K.M. Pryer. 1990. Rare Vascular Plants in Canada - Our Natural Heritage. Canadian Museum of Nature, Ottawa, Ont. 191 pp. + maps. [\$18.95 bookstores, or \$16.96 from The Museum Boutique, Can. Mus. of Nature, Bow 3443, Stn 'D', Ottawa, Ont. K1P 6P4]

- annotated list of 1,010 rare Canadian species.

Bird, C.D. 1989. Botany of the Drumheller-Horseshoe Canyon area. Pica 9(4): 3-14.

Imes, R. 1990. The Practical Botanist. Simon & Schuster Inc., Toronto, Ont.

- "an essential field guide to studying, classifying, and collecting plants"

Jomphe, M. 1989. Identification guide to the trees of Canada. Fitzhenry and Whiteside, Markham, Ont. 479 pp.

Morton, J.A. and J.M. Venn. 1990. A checklist of the flora of Ontario. Biol. Dept, Univ. of Waterloo. Waterloo, Ont. N2L 3G1. 218 pp. \$20 + shipping CND.

Taylor, R.J. 1990. Northwest Weeds. Mountain Press, Missoula, Montana. 177 p. \$15.50 CND.

Drought Tolerant Planting Bibliography (compiler B.M. Beck). 1990. Rancho Santa Ana Botanic Garden, 1500 N. College Ave., Claremont, Calif. 91711. 67 pp. \$14 US.

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# Water Management in Alberta - Challenges for the Future

Albertans have been asked to help develop Alberta's water management direction for the future. Five key challenges have been identified: involving the public in decision-making, planning for the future, protecting our surface and groundwater resources, using our water resources wisely, and cooperating with other governments.

A discussion paper can be obtained by writing to Alberta Environment, Corporate and Strategic Management Division, 3rd flr., Oxbridge Place, 9820 - 106 St., Edmonton T5K 2J6, or calling 1-800-661-5586 (toll-free).

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# Community Activists Plant Native Sod

Parkhill Community Association has begun a longterm project to reclaim a section of the Elbow River Valley Escarpment. The escarpment was seeded by the City of Calgary with crested wheatgrass, alfalfa and awnless brome leaving a boring hillside with very low diversity and colour.

This fall, 6 volunteers transplanted a 4 X 8 ft. section of fescue prairie onto the hillside as a test plot to see how much work was involved (a lot) and how well the sod would survive.

This spring the edges of a new bicycle/pedestrian path will be planted with native grass seed and plugs

of native flowers and shrubs. Further plots will test seed mixtures and sod taken from various locations.

Native sod has proven disturbingly easy to find, with new subdivisions around the city daily breaking good fescue prairie for houses. The developers and the city have been very cooperative about the transplant and seed collecting campaign.

Techniques for eradicating crested wheatgrass and brome on a hillside are more difficult as the community is reluctant to use herbicides. A number of alternatives are being considered such as repeated tillage lifting the sod.

Dana Bush

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#### Pillaging the Prairie

I admit it. I am a thief. I steal yards of unbroken prairie from untouched windswept hills. I hastily dig rough fescue and Parry's oatgrass, loading it into the back of a pick-up truck. I drive away with pockets bristling with seeds of gaillardia, smooth aster and wheatgrass.

I plead extenuating circumstances. I plead a lesser evil for a greater good. I am rescuing this prairie, days and hours in front of belly scrapers clearing land for new homes and 6-lane highways. Like a looter before an invading army, I load up precious jewels, rare manuscripts, multicoloured carpets, always one step behind those who abandoned them and one step before those who will destroy.

I plead innocence and make excuses, because a persistent voice tells me that this is not the answer. Transplanting native prairie may be good for public relations, it may be good for my conscience (and my well-muscledarms), but it fails to protect the ecosystem.

Neither sod transplants nor reclamation with native plants can honestly be said to restore native prairie. No matter what the technique, we lose birds, animals and insects, land area, diversity and complexity. It is second best. Conservation must come first.

We can never know how successful our restoration attempts are unless we can see the original, healthy ecosystem. The prairies, the boreal forest, and the rainforest must be maintained in good condition in large sites. Conservation is the baseline for any restoration or reclamation work. Conservation is important because we don't and may never know enough to fully restore the delicate balance and magic complexity of a natural ecosystem. The only way to protect it is to preserve it.

Beneath the goal of conservation lies a more basic issue-our consumption of natural resources. Unpleasant as the thought may be, our lifestyles are directly responsible for the loss of the aspen parkland, the

fescue and mixed grass prairies and the boreal forests. The hillside from which I plundered fescue prairie was slated for 2000 sq. ft. homes with 3-car garages. The boreal forests are cut to provide the walls, the floors and the book-lined shelves. The aspen parkland provides the very paper I write this protest on.

We must stop the army of development. We must remove their reasons for expansion. We must change ourselves to protect these jewels of the planet. Small houses, efficient appliances, single children, buses and bicycles. This is the base for conservation.

Dana Bush

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#### Nature Conservancy of Canada

If you own ecologically valuable land and would like it to stay that way, the Nature Conservancy of Canada can help you. Preservation through acquistion - Stewardships, Easements, Purchases, Gifts, and Bequests. For more information, contact the Nature Conservancy of Canada, 794A Broadview Ave,. Toronto, Ont. M4K 2P7 (416) 469-1701.

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### ANPC Reclamation Tour September 7th

The rain held off long enough to provide a pleasant day for the ANPC reclamation tour at Sunshine Village Ski Area on September 7th, 1991. Led by Brian Smythe, Mountain Operations Manager of Sunshine Village, and Gail Harrison of Canadian Parks Service, the tour included a trip to Larix Lake to see trail restoration, followed by a chairlift (now replaced by the Angel Express Quad Chair) and a discussion of topsoil and vegetation salvage operations at the lower terminal. Dr. Peter Achuff, former ANPC president, and who spent many years studying the vegetation of the Sunshine area, gave an impromptu but very informative discussion on the trail monitoring program, and pointed out a newly identified rare plant species for Alberta, Agoseris lackschewitzii (see "New Plant Records for Alberta" in this newsletter). I would like to thank Gail, Brian and Peter for their efforts, and the tour participants for taking part - I hope that you found the trip interesting and useful.

K. Wilkinson

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#### Articles

Excerpt from The Calgary Herald September 13, 1991: "During the last 3 years, Dow has been preparing a

Wildlife Greenbelt to surround its \$80 M. Hydrocarbons expansion in Ft. Saskatchewan. The initial stage of this unique undertaking is now complete. Wetlands have been retained. Terrain has been contoured and seeded with native Alberta grasses. A steady increase in wildlife is anticipated as the area continues to grow and develop. It's an innovative approach to establish a productive, wildlife habitat zonearound the plantsite. (Dow has) incorporated walking paths, interpretive boards, and a lookout platform in one section of the greenbelt." For more information on Dow's Wildlife Greenbelt, call 998-8028 or 1-800-661-3283.

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The following statements are excerpted from Oldman River Dam hearings on biodiversity, as they pertain to native plants and their habitats:

#### Government Policy and Legislation

Specific goals in the Green Plan include:

1. Maintaining and enhancing the health and diversity of our wildlife and plants."

Specific goals in the National Wildlife Policy include:

- 1. Maintaining and restoring ecological processes.
- 2. Maintaining and restoring biodiversity."

#### Oldman River Dam Impacts on Rare Species

"Eleven provincially rare species have been identified in the Study Area. One population of nationally rare *Stephanomeria runcinata* has been eliminated by filling of the reservoir while others are at risk from dam-related changes in hydrology of planned future developments. It is considered likely that more provincially rare species exist downstream in riparian environments which could be adversely affected by the Oldman River Dam project." (FEARO, 1991)

#### Oldman River Dam Impacts on Ecosystems

"From an environmental point of view, the loss would also be substantial, the greatest of any of the onstream sites." *Environment Council of Alberta* (1979)

"The concern over potential loss of native grassland is directly related to irrigation expansion made possible by the Oldman River Dam . . . About 2500 hectares of vegetation will be lost along the river valleys . . . It is possible that willow communities may be adversely affected . . . No information is available on unique or representative aquatic communities in the Oldman system which are threatened locally or regionally." (FEARO 1991)

"The operating plan of the Oldman River Dam is likely to have a significant impact on regeneration of riparian

poplars. " (EMA)

"There is no replacement for naturally functioning ecosystems... The impacts on biodiversity have been downplayed and the benefits of the Oldman River Dam to wildlife have been overstated by the proponent. There is no escaping the conclusion such impacts will be significant, regardless of mitigation efforts, and may be further-reaching than we can predict at this time . . . The Oldman River Dam is an ecologically destabilizing influence in an ecologically stable system that has evolved through millennia of sorting and adaptation. The potential consequences for biodiversity are profound . . . from the perspective of biological diversity, the option that best protects native plants and animals and their supporting ecosystem is removal of the dam." (Sweetgrass, 1991)

"The operational plan failed to address critical operational parameters such as protected drought and flushing flows; the potential amplification of natural flood events, which was stated as a possibility by project proponents; and the probable muting of many large flood events . . . fails to guarantee the maintenance of flows adequate for the heatlhy survival of the downstream riparian community. . ." "Critical areas of concern regarding the environmental impact of the Oldman River Dam are incorrectly or insufficiently analyzed and discussed by the proponents and may result in substantial damage to the environment . . . Because of the severe impacts documented at existing Alberta instream water supply projects, there is legitimate concern that the Oldman River Dam poses a serious threat to the riparian environment of the Oldman River." (Abbe, 1991)

#### Policy and Legislation Implications

"The Oldman River Dam will have profound impacts on biodiversity. This is at direct odds withe the Green Plan's and National Wildlife Policy's goals of ensuring that genetic viability shall not be compromised through safeguarding of habitats..."

"The impacts created by the Oldman River Dam are also at odds with the Green Plan's stated commitment to sustainable use of renewable resources; environmentally responsible decision making, and protection of special spaces and species."