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NEWSLETTER

ALBERTA NATIVE PLANTS COUNCIL
Box 4524, Station SE, EDMONTON, ALBERTA, T6E 5G4

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LETTER FROM CHAIRMAN

The Alberta Native Plant Council (ANPC) is a newly formed organization with a main purpose of promoting knowledge and conservation of native plants in Alberta. Its origins are in the FAN workshop on "Endangered species in the prairie provinces" held at the Provincial Museum in January 1986. The session on plants drew more people than expected and, with the interest and enthusiasm expressed that day, discussions began on the formation of a plant conservation group. Informal meetings over the next year led to the establishment in July 1986 of the ANPC as an affiliate of FAN. The objectives of ANPC are to:

- 1) coordinate information and activities on native plants in Alberta,
- 2) inform governments, industry and the public on the management and protection of native plants,
- 3) encourage research on native plants, and
- 4) develop conservation actions and guidelines for the wise use and conservation of native plants.

The top priority of ANPC currently is rare and endangered plants which was the subject of our workshop in Edmonton on February 13. An account of that workshop begins on page 3 of

this newsletter. More than 50 people from many parts of the province attended and helped formulate an action plan for the council. I would like to thank publicly all those who participated and, in particular, the speakers and session leaders whose contributions made for a vital, lively workshop.

This is the first issue of the ANPC Newsletter which we plan to publish three times a year: spring, fall and mid-winter. The primary intent of the newsletter is to provide a forum for communication between the ANPC executive and the membership, and between the ANPC and other interested agencies, groups and individuals. We intend to cover native plant activities at the local, provincial, national and international levels with articles on certain topics in each newsletter. These topics include: ANPC News, Species of Concern, Habitats of Concern, Progress Reports on current activities, National and International News, and special articles on feature topics. We welcome your comments and contributions to the newsletter. Please send them to the Newsletter Editor, Box 4524, Station "SE",

Edmonton T6E 5G4.

The future activities of ANPC in implementing the action plan will require the full participation of the membership. Several committees are being established (e.g. Information and Education, Rare Plants, Conservation Action) and I invite (request?, implore!) each of you to become involved with a committee for this is the only way that we will be effective in accomplishing our objectives. For those of you who are not members, I invite you to join ANPC. Enclosed is a membership application; pass it on to someone else if you don't need it. Current ANPC membership is nearly 60 but we welcome more. There is much to do.

Thus, I welcome all of you, members and non-members, to the Alberta Native Plant Council and to this first newsletter, and I invite you work with us in conserving Alberta's heritage of native plants.

Dr. Peter Achuff

HABITAT OF CONCERN:

COTTONWOOD FORESTS - THE GREAT DISAPPEARING ACT OF THE 21ST CENTURY?

Much of the recent conservation research has placed a major emphasis on endangered species. While our continued abuse of habitats has often made this necessary, the broader aspects of loss of ecosystems often go unnoticed. Most of us recognize the gradual loss of native habitats in the settled parts of Alberta, however, many of us may be unaware of how quickly a significant resource can be

lost. History has shown us how once massive flocks of Passenger Pigeons disappeared in a short time span yet we seem to be of the impression that such a dramatic reduction in a plentiful species will never happen again. The results of recent research on cottonwood forests in southern Alberta may change such an optimistic view.

Bradley and Smith (1986) and Rood and Heinze-Milne (1988) provide startling evidence to show the dependence of riparian (riverside) cottonwood/poplar forests on various aspects of the natural flow regime. They also document major and rapid changes which have already occurred with altered flow regimes on rivers in southern Alberta and similar areas in northern Montana. In just twenty years (1961-1981), riparian poplar forest downstream of the St. Mary Dam declined by about 48% while the adjacent and undammed Belly River showed only a 1% reduction in poplar abundance.

Bradley and Smith point to significant flood events as a major controlling factor for plains cottonwood (*Populus deltoides*) while Rood and Heinz-Milne suggest that instream flows may also be important, at least for narrow-leaved cottonwoods (*Populus angustifolia*) and polar hybrids in southwestern Alberta. Cheryl Bradley (personal communication) believes that changes in sediment loading downstream of dams may be a key factor.

Dams for flow regulation and other purposes continue to be proposed and constructed yet we have seen no concrete evidence that there are ways of mitigating their impacts while still deriving the other benefits these projects promise. In a memo dated January 12, 1988, Dr. Stewart Rood suggests that "If the Oldman Dam is managed in a fashion similar to that of the St. Mary and Waterton Dams, downstream poplar decline is expected. The projected decline...would also probably occur downstream at least to Lethbridge." Mitigation may be possible, however, we have no reliable experience and insufficient knowledge to know what all the parameters affecting cottonwood reproduction and survival are.

Riparian habitats are some of the most threatened ecosystems in arid and semi-arid regions of the world (Wallis 1987). They are certainly very restricted in southern Alberta yet they constitute important deer habitat and some of the most productive breeding bird habitats in the grassland region. Almost three-quarters of the bird species which nest in that region use these

habitats at some point in their lifecycle. A variety of migrant birds also rely on these 'emerald threads'. Certain stretches of rivers like the lower Red Deer, Milk River Canyon, and the Belly and Oldman Rivers in the Blood and Peigan Reserves are of National significance because of the quality and extent of the riparian habitats.

The construction of the Oldman Dam raises important questions about the way we manage rivers. Attempting mitigation of the effects of the Oldman Dam is a giant and risky scientific and political experiment. Perhaps we should leave rivers like the Oldman alone for the time-being and conduct our experiments on already dammed streams such as the St. Mary River. We should determine if it is possible to bring cottonwoods back through altering the management of dams and we should develop legal and binding agreements which will allocate an adequate portion of river flows to growing riparian habitats.

Unless there is a change in the way we manage our precious water resources, Bradley and Smith suggest that cottonwood forests may become extinct by the end of the next century. The results from the studies on the St. Mary and Waterton show that the end may be much closer at hand!

Bradley, C and D. Smith. 1986. Plains cottonwood recruitment and survival on a prairie meandering river floodplain, Milk River, southern Alberta and northern Montana. *Canadian Journal of Botany* 64: 1433-1442.

Rood, S. and S. Heinz-Milne. 1988. Abrupt river valley forest decline following river damming in southern Alberta. *Canadian Journal of Botany* (in press).

Wallis, C. 1987). Critical, threatened and endangered habitats in Alberta. Pages 49 to 63 in "Proceedings of the Workshop on endangered species in the Prairie Provinces". Provincial Museum of Alberta Natural History Occasional Paper No. 9 Alberta Culture, Edmonton.

SPECIES OF CONCERN:

THE EXTINCTION OF PLANT SPECIES

Although the potential loss of endangered animals such as the bowhead whale or the whooping crane has been widely publicized, few people realize that thousands of plant species also are threatened with extinction. Of the approximately 380,000 species of flora in the world, 250,000 belong to one of the two groups of seed bearing plants from which much of the world's food, medicine and fuel sources are derived. According to some estimates, 25,000 to 30,000 of these critical plant species are in some degree of danger worldwide. The magnitude of the threat to the continued existence of all planetary flora can only be guessed at. Some biologists estimate that the rate of extinction has now increased to as many as

one species per hour.

Some areas of the world are in worse shape than others. For example: as many as one-half of the plant species native to Hawaii may be either extinct, threatened or endangered.

Loss of plant species results in loss of biological diversity, and such diversity is one of the most valuable natural attributes because it is at the root of ecosystem stability. Loss of species through extinction is a natural phenomenon but the impact of human activities on natural environments has exponentially

increased the rate of extinction over the past several hundred years.

Extinction is the most critical part of the plant protection problem, but from a selfish perspective, the overall problem is wider and deeper. The future of the species homo sapiens is intimately linked to diverse and abundant flora. The chain of life begins with microscopic plants. Larger plants provide food and shelter for many other organisms and drastic changes in their composition or distribution can have profound effects on all forms of life. A plant existing only as a hothouse relict or in a seed bank cannot contribute much to human or ecological welfare. It is therefore in our national self-interest to insure abundance as well as diversity in our natural legacy.

Excerpt from "The Greening of American Law? The Recent Evolution of Federal Law for Preserving Flora Diversity." by George Cameron Coggins and Anne Flieshel Harris, Natural Resources Journal 27 (2), Spring, 1987. pp. 247-307

FEATURE:

ALBERTA NATIVE PLANTS COUNCIL HOSTS RARE PLANTS WORKSHOP

On February 13, 1988, over fifty people attended the Alberta Native Plants Council's (ANPC) first workshop on Rare Alberta Plants. The all-day session was chaired by Dr. Peter Achuff, Chairman of the ANPC.

Cleve Wershler began the day's presentations by giving a slide presentation of Alberta's biogeographical regions, focussing on rare plant species.

A series of speakers followed until noon, presenting overviews of rare plant protection efforts at the International, National and Provincial levels. According to Elizabeth John (University of Alberta) there are three major problems concerning International rare plant protection including: lack of information and few experts; destruction and alteration of habitat resulting from population expansion, commercial exploration, the spread of introduced weeds and pesticides; and collection for local consumption and for international trade. Elizabeth then summarized the major International organizations that are concerned with rare plant species including: International Union for the Conservation of Nature (IUCN); Species Survival Commission (SSC); Conservation Monitoring Centre (CMC); Threatened Plants Committee (TPC); World Wildlife Fund (WWF); United

Nations Environmental Program (UNEP) and; Conservation on International Trade of Endangered Species of Wild Flora and Fauna (CITES). Cliff Wallis also described the popularity in the United States of state Native Plant Societies (these are now in 38 states).

Matt Fairbairns (Canadian Forestry Service) next reviewed Federal Government programs including those of the Canadian Forestry Service, Agriculture Canada, Parks Canada, the National Museums of Canada and the Committee on the Status of Endangered and Dr. George Argus's National Rare Plants Program. Cliff Wallis also mentioned the Canadian Wildflowers Society and David Leman the Prairie Conservation Action Plan of World Wildlife Fund's Wild West Program.

Julie Hrapko (Provincial Museum), Ken Morrison (Recreation and Parks) and Peter Lee (Natural Areas Program of Alberta Forestry, Lands and Wildlife) gave overviews of Alberta Provincial Government programs related to rare plants. The Provincial Museum has produced some rare plants publications, has a publicly accessible herbarium collection and co-sponsored the 1987 conference - Endangered Species in the Prairie Provinces - which included a workshop on rare plants. Fish and Wildlife Division has very little involvement in rare plants. Alberta Recreation and Parks indirectly protects some rare plants through habitat protection within Provincial Parks, Wilderness Areas and Ecological Reserves. The Natural Areas Program co-funds rare plant inventory and monitoring projects, directly devotes staff time for rare plant work and indirectly protects some rare plants within designated Natural Areas.

Several speakers then reviewed non-government groups involved in rare plant protection. According to Kim Sanderson, the Environment Council of Alberta's Provincial Conservation Strategy will assist in drawing attention to rare plants, especially through the objective of maintaining genetic diversity. Terry Thormin reviewed the rare plants interests of national (i.e. Canadian Botanical Association, Canadian Society of Environmental Biologists, Canadian Wildlife Federation, Canadian Nature Federation and the Canadian Parks and Wilderness Society) and provincial organizations (i.e. including the Alberta Forestry Association, the Orchid Society and local naturalist societies).

The afternoon portion of the workshop was broken up into four sessions which included: Role of the Non-Professional; Research; Education, and; Protection and Management. The final plenary session included an audio-visual slide show by Cliff Wallis, a summary of the afternoon sessions and an ANPC business meeting.

The executive of the ANPC is presenting developing an action plan following the input received at the workshop.

PROGRESS REPORT:

Assessment of Rare Plants in the Oldman Regional Plan Area

A recent assessment of rare plants in the 30,000 sq. km Oldman Regional Plan area of southwestern Alberta included Alpine, Subalpine, Montane, Foothills Parkland, Foothills Grassland and Mixed Grassland habitats.

A number of priority Alberta species had been selected in previous studies and included those whose survival in Alberta are important to their survival in Canada and North America.

The original collection sites of priority species were relocated; threats to their habitats assessed, and; literature on rare species monitoring reviewed. This study was jointly funded by the Natural Areas Program and Alberta Forest Service of Alberta Forestry, Lands and Wildlife, and by the World Wildlife Fund's "Wild West" Program. Cliff Wallis, ANPC Vice Chairman, conducted the study.

Based on the literature and herbarium review and the field studies, the

priority species were divided into four categories:

1. Recovery and Monitoring Plans Required - Includes Iris missouriensis (Western Blue Flag), Castilleja cusickii (Indian Paintbrush) and Cypripedium montanum (Mountain Lady's-slipper).

2. Threatened - Includes Astragalus lotiflorus.

3. Rare, but not threatened - Includes 15 species, of which the habitats of 3 (Haplopappus uniflorus, Oxytropis lagopus and Stephanomeria runcinata) are not yet secure within a protected area.

4. More information required - Includes 8 species.

Several other general recommendations were made in the course of this study:

1. Conduct all pre-field season interviews and herbaria examination prior to the growing season, and be prepared for unusually early breaks in the weather;

2. Sample over several years if climatic conditions appear to temporarily be suppressing plant

growth;

3. Focus field programs on a narrow range of habitats and species in order to obtain the most effective use of field time. BROADSCALE surveys help in initial determination of additional research needs but they are not the preferred method for a thorough assessment of potential habitat;

4. Cooperate with researchers in other disciplines who may be able to provide insights into rare plant habitats through identification of other environmentally significant areas;

5. Precisely label all collections to help future researchers. Species which are common now may not be in the future, therefore, this recommendation applies equally to common and rare species. The single biggest problem in initiating assessment and monitoring programs is the lack of sufficient label data;

6. Permanent plot establishment is important for long-term monitoring program, however, other methods should also be explored. These include random and selective sampling in similar habitats and periodic re-assessment of threats to actual and potential habitat.

ALBERTA FIELD TRIPS

Willflowers of Spring - Dr. George Scotter (434-8883) will show you an amazing variety of flowers and animals that abound in the Whitemud Ravine. Be sure to have good footwear. (May 14)

Big Sagebrush Natural Area - Join Alberta naturalists Cliff Wallis (Calgary 271-1408 and Matt Fairbairns (Edmonton 481-4814) at the Big Sagebrush Natural Area, north of Waterton National Park. Explore with them, this Nationally significant "botanical watershed". (Or telephone the Natural Areas Program at 427-5209 to register.) (July 23)

Nature Tour of the Cardinal Divide Area - Jim Lang (455-7021) will lead this trip to the Cardinal Divide which will include some easy hikes up into a high alpine meadow. (July 30 - August 1)

OUTSIDE ALBERTA

Workshop - The future of endangered plant species in the Northwest. The Nature Conservancy (US) and the Native Plant Society of Oregon at the Annual Meeting, Pacific Division, AAAS (American Association for the Advancement of Science), Oregon State University, Corvallis. June 18 - 22,

1988. For more information contact: Kenton Chambers, Department of Botany and Plant Pathology, OSU, Corvallis 97331.

Conference - Ecosystem Management, Rare Species and Significant Habitats. June 6 - 9, 1988. State University of New York, College of Environmental Science and Forestry, Syracuse, New York. In conjunction with the 15th Annual Natural Areas Conference and the 10th Annual Meeting of the Natural Areas Association. For further information contact: ESF Continuing Education, SUNY College of Environmental Science and Forestry, Syracuse, New York 13210 - 2784.