



INRS NEWSLETTER

Alberta Native Plant Council

Box 4524, Station SE, Edmonton, Alberta, T6E 5G4

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SPRING 1988

SPECIAL PLACES:

The Candidate Big Sagebrush Natural Area

Located 15 km south of Beaver Mines and 40 km southwest of Pincher Creek, the candidate Big Sagebrush Natural Area and immediate surroundings are home to 319 species of vascular plants, including 11 nationally and 25 provincially rare species. The size of the flora, and the number of rare species is exceptional for such a small site.

Alberta Native Plant Council member, Matt Fairbarns, conducted a study of this site in 1986 for the Natural Areas Program of Alberta Forestry, Lands and Wildlife.

The site is on the dry southwest slopes of Whistler Mountain and supports a mixture of open and closed coniferous forest, rockland and shrubland habitats. Several of the shrub communities are dominated by Alberta's largest population of *Artemisia tridentata* (Big Sage). This species is rare in Alberta, although it is widespread in the interior dry belt of British Columbia and throughout the western United States. The Big Sagebrush Natural Area communities appear to be unique since there are different species associated with the Big sagebrush here than outside Alberta. However, other plants of the Palouse flora of the intermountain regions of B.C., Washington and Idaho are present. The rare flora also includes *Tellima grandiflora* (Large-flowered Fringecup), the first and only record of this species in Alberta. Previous records of this species indicate a distribution mainly along the Pacific Coast. The record at the Big Sagebrush site may represent a range extension across the Rockies, the Purcells and possibly most of the Selkirk Mountains. As it was found in an isolated location, it was probably not introduced by people.

The candidate Natural Area is not typical of Alberta's Rocky Mountains, even in southwestern Alberta. Rather it is a unique meeting place for species of the Pacific, Palouse, Mixed Grasslands and Cordilleran biomes, and is of National significance.

The site should be protected and managed to ensure its perpetuation. In recognition of this, the Alberta Native Plant Council has written the provincial government several times, recommending designation as a Natural Area under the Wilderness Areas Ecological Reserves and Natural Areas Act. Coun-

cil has also offered to become volunteer steward for the site as consistent with public involvement on other Natural Areas. The site has been recognized for its conservation values within the government's 1985 Castle River Sub-Regional Integrated Resource Plan, however, no action has yet been undertaken by the government to formally protect the site by establishing it as a Natural Area.

On July 23 join Alberta naturalists Cliff Wallis (Calgary 271-1408) and Matt Fairbarns (Edmonton 481-4814) at the Big Sagebrush Natural Area for a fieldtrip. (Or telephone the Natural Areas Program at 427-5209 to register.)

HABITAT OF CONCERN:

Old-growth Forests - Unhealthy Ecosystems or Vibrant Remnants of Our Natural Heritage?

In the late 1800's, the United States Congress vigorously debated whether to allow any timber cutting in the newly created national forest reserves. Some congressmen were ardent believers that logging was essential to maintain a 'healthy forest'. They argued that forests "cannot be preserved if you leave ripe trees to decay and die and the young trees to dwarf for want of room to grow".

Today in Alberta and elsewhere, many foresters and land managers still consider all old growth forests to be 'decadent', 'overmature' and 'reservoirs of insects and disease' and apply other negative, subjective, value-ridden labels. This viewpoint sees forests basically as 'fibre' factories and as such does all that it can to maximize fibre production and its harvest and utilization by industry. Such an attitude also promotes the myth that old growth forests are public safety and health hazards.

These attitudes are so prevalent that old growth forests are disappearing rapidly from North America. There seems to be a general absence of common sense in the preservation of these habitats: old growth forests would be in fine shape without active management, as they were historically.

Forest managers have pursued a policy of harvesting old growth forests as rapidly as market demand, technology and sustained-

yield principles allow. Consequently, the current debate, whether old trees should be cut or allowed to grow old and die naturally, has taken on heightened urgency as the last of what once were considered inexhaustible old growth forests are now rapidly approaching depletion.

The American Wildlife Society estimates that old growth forests in the United States have been reduced to less than 2% of the original forested area. No estimates of the amount remaining in Alberta are available, however, these forests are undoubtedly being depleted.

The last stronghold of old growth forests in western North America lies in the moist and fertile mountains of Washington, Oregon, northern California, British Columbia and southeast Alaska, with adjoining jurisdictions such as Alberta containing lesser amounts. However, just a small fraction of the old growth forests that covered this area early this century has survived to the present. In a good portion if not all of this region, more than 80% of the original old growth forest already has been logged.

Land managers in general are continuing to pursue a policy of rapidly liquidating old growth forests. In several jurisdictions, recently released forest plans reveal government intentions to cut over 50% of the remaining old growth over the next 50 years. Old growth forests in several other areas have an even sadder future. In western Oregon, for example, over 10% of the remaining federally owned old growth forests are projected to be cut within the next two years and to be reduced by 54% over the next 10 years.

The arguments for continuing to devastate these habitats, in addition to "managing them for their own good", are often economic. Most of these economic arguments however, are based on 'flat-earth' economic theories and 'creative' accounting - resulting in unbalanced balance sheets which do not reflect true benefits and costs. Often, heavy government subsidies, both direct and indirect, provide the only incentive to destroy these areas. In one forest area in Alaska, government subsidies to log amount to net annual losses to the American taxpayer exceeding \$50,000,000 per year, amounting to an annual government subsidy of \$36,000 for every logging job created. The New York Times called this American "federal program so wrongheaded it's likely to provoke profanity from any fair-minded person. What logic is there in asking the taxpayer to cover wages of workers hired to chop down 500 year old trees that hardly anyone wants to buy?"

There is a substantial and expanding list of reasons why old growth forests are valuable ecologically. Old growth forests are stable communities notwithstanding traumatic disturbances such as crown fires or windstorms that can destroy them and initiate replacement. As stable environments, old growth forests support highly specialized and adapted organisms (cavity nesting birds, canopy dwelling animals and understory saprophytic plants). As well as there being endangered and threatened plants and animals which depend on old growth forests for their survival, such habitats often can provide shelter, hiding cover or a preferred temperature regime for common species, such as large ungulates. These factors are often locally important in the survival or abundance of deer and elk. For some species such

as the woodland caribou, these habitats provide specialized foods necessary for this species' survival.

There is also a human attraction to old growth forests. Old growth stands impress most people with the size and age of the trees, the characteristic quiet within the stand and a perspective in which the scale of the forest overwhelms the individual person. People are attracted too by the notion of old growth forests as a remnant of their local, regional, provincial or national legacy.

Scientific and general public interest in preserving old growth forests is building. It is a topic in which powerful undercurrents are stirring. Many conservationists believe that the preservation of the remaining old growth forests is one of the major emerging environmental issues in western North America. However, traditional but archaic management policies and powerful but misguided economic interests constitute formidable obstacles to substantial improvements in the preservation of these areas.

In Alberta, even though there are some regional pressures (particularly in southwestern Alberta) to cut the remaining old growth forests, there is, in general, no short or long term economic requirement to do so. This is mainly due to progressive reforestation practises which are of a standard greatly exceeding British Columbia and many other jurisdictions. In Alberta we have a real opportunity to be leaders in old growth forest preservation and management. There are still remaining some substantial areas of old growth forest which have not been logged. However, we have reached the time where it is critical that we conserve at least some of Alberta's remaining old growth forests by design rather than by default.

Just as war is too important to be left to the generals, so forests are too important to be left to foresters. And for many of the same reasons - just as war can only be one aspect of national policy, timber management for 'fibre' production can only be one aspect of resource management policy. A broader forest management policy is needed in Alberta in which old growth forests have a legitimate and valued role.

Each day many hectares of old growth forest are lost forever
And we are fast running out of both time and trees!

(Substantial portions of this article are an excerpt from the Natural Areas Journal, Volume 8, Number 1, January 1988, particularly from Articles by Glenn Patrick Juday and H. Michael Anderson.)

FEATURE:

Protecting Rare Plant Species Versus Protecting Their Habitats: The American Example from a Legal Standpoint

In 1803, the last wild specimen of *Franklinia altamaha*, a beautiful tree with showy white blossoms, was cut down to provide additional acreage for farming. The plant was the first

in the United States known to have become extinct as a result of human activity and there have been many others since. Its unique genetic makeup and whatever scientific, economic or aesthetic benefits it might have conferred were irretrievably lost.

Obviously the U.S. cannot return to a prehistoric, pristine state of nature. Equally obviously, it should not allow the genetic endowment of its environmental heritage to disappear. In recognition of this latter belief, American society has used three main strategies to conserve rare and vulnerable plant species:

1. protection of individual plant species;
2. protection of plant habitat;
3. establishment of gene banks or botanical gardens.

Legislative efforts at the state, national and international level have been directed chiefly toward the protection of individual species. Only private organizations, especially The Nature Conservancy, have emphasized habitat preservation as the first priority. (There are also Federal land management statutes which have as one major purpose the preservation of pristine ecosystems, but the protection of plants is not their main purpose.) The U.S. federal government has always had the constitutional power to protect floristic diversity. There are a variety of statutes which contribute at least indirectly to plant preservation (i.e. Clean Air Act, Surface Mining Control and Reclamation Act, Land and Water Conservation Act, etc.). However, those federal laws which have as their main purpose the legal protection of native plants fall into two categories:

1. domestically enforceable, international treaties that are aimed at plant protection (Western Hemisphere Convention and the Convention on International Trade in Endangered Species of Wild Fauna and Flora);
2. the Endangered Species Act of 1973, as amended and the Lacey Act of 1973.

American plant protection law began, for the most part, as a facet of wildlife law, but parallels or analogies between wildlife law and plant law can be carried only so far. At common law, the legal characteristics of plants differ significantly from those of animals. Unlike wildlife law, most plant protection law is concerned largely with the most pressing problems of species in imminent danger and does not encompass a regulatory system for preventing declines of valuable species to endangered or threatened status. Because wildlife law considers overall health of species populations before authorizing any taking of valuable game, it is far better developed than the law of plant protection.

The most serious problem of federal plant protection law is its emphasis on saving single species faced with extinction to the relative exclusion of a broader protective focus. Limited efforts are bound to be counter-productive in the wider context of all flora so long as they ignore the causes that will bring other species to severe depletion. Wildlife management in the U.S. has long adopted as a main theme the notion that habitat main-

tenance, enhancement and protection is the most effective management tool, and wildlife managers attempt to monitor species overall populations to prevent such declines. Conceptual advances in wildlife protection should be adapted in the plant context - and extended to encompass the notion of ecosystem preservation.

American laws protecting plants may be the most advanced in the world, but they clearly fail in their goal of protecting plant diversity and preventing the extinction of species.

Present law is doubly deficient. First, its structure is unlikely to accomplish its present purpose of single-species preservation because the existing statutes and the administrative implementation of them leave too many loopholes. Second, the focus on individual species is too narrow; effective protection of floristic diversity will require new forms of protection for the habitat of vulnerable species. Finally, as consistent with other conservation issues, the U.S. Congress has put plant preservation on the back burner while devoting more resources and attention to other issues.

Excerpt from: "The greening of American Law? The recent evolution of federal law for preserving flora diversity," by G.C. Coggins and A.F. Harris, *Natural Resources Journal* 27(2), Spring 1987, pp. 247-307.

PROGRESS REPORT:

Alberta's First Rare Plant Monitoring Project: Western Blue Flag (*Iris missouriensis*)

The Alberta Government Departments of Forestry, Lands and Wildlife, and Recreation and Parks jointly funded Alberta's first rare plant monitoring project with the World Wildlife Fund's Wild West Program.

The project on the western blue flag was conducted on three different sites in Southwestern Alberta by Alberta Native Plant Council director Cliff Wallis.

Six permanent sample plots were established - one in Police Outpost Provincial Park and the rest on two areas of privately owned lands. Rectangular plots were laid out to include the maximum number of *Iris* plants in each population. Each plot was then gridded into squares and the number of *Iris* stems counted and recorded.

There were an estimated total of 5000 to 6000 stems in all sites. The ratio of non-flowering to flowering stems ranged from a high of 6:1 in a spring and fall grazed moist depression to a low of 60:1 in a spring and fall grazed upland slope. Level moist depressions appeared to be the most prolific flowering sites while the slightly drier uplands were less productive. Lightly

grazed areas had significantly greater flower production than ungrazed, very lightly grazed or moderately grazed areas.

The permanent plots will provide a means of assessing changes in the plant populations in the future.

The study concluded that limiting factors include heavy grazing pressure, loss of spring flow and natural drought. Threats to potential habitat for this species include cultivation and invasion by non-native species.

The study recommendations included: purchase of property or landowner agreements to protect populations on private lands; yearly inspection and a triennial population census; protection of the Provincial Park site from development; a study of the impact of groundwater withdrawals on spring flow; and maintaining livestock grazing at light levels.

NATIONAL AND INTERNATIONAL NEWS:

British Columbia Initiates Rare Plants Committee

The B.C. Ministry of Environment and Parks organized meetings to form a committee on endangered and threatened provincial plants. Short lists of priority species and draft legislation were developed. Recent work has included encouraging of the preparation of COSEWIC status reports for high priority species and the maintenance of records for additional or deleted plant taxa from the rare plants list. For further information on B.C.'s initiatives, contact Gerald B. Straley, The Botanical Gardens, The University of British Columbia, 6501 NW Marine Drive, Vancouver, B.C. V6T 1W5.

Canadian Botanical Association

The Conservation Committee of the Canadian Botanical Association (CBA) has recently adopted a new policy statement on "Transplanting as a Method of Preservation". The CBA is strongly opposed to the idea that transplanting is a reliable method of conserving rare species. It is CBA's position that ecosystem preservation is the only viable means of maintaining a full range of genetic diversity. This policy is based on the rationale that a rare native species cannot be considered in isolation from its habitat. For copies of the policy and further information, contact Dianne Fahselt, Canadian Botanical Association, Department of Plant Sciences, University of Western Ontario, London, Ontario N6A 5B7.

Riparian Systems Conference

California is hosting a Riparian Systems Conference: Protection, Management and Restoration from September 22-24, 1988 at the University of California. For further information contact Dana L. Abell, Riparian Conference Coordinator, University

Extension, University of California, Davis, California 95616 USA (916)678-3564.

Prairie Conference

Omaha is hosting the 11th North American Prairie Conference from August 7-11, 1988. For further information contact Dr. T.B. Bragg, 11th N.A. Prairie Conference, Department of Biology, University of Nebraska-Omaha, Omaha, NE 68182-0040 USA.

Endangered Plant Species Workshop

The Nature Conservancy (US) and the Native Plant Society of Oregon are hosting a workshop on the future of endangered plant species in the Pacific northwest on June 18-22. For further information contact Kenton Chambers, Department of Botany and Plant Pathology, OSU, Corvallis 97331 USA.

C.B.A./C.S.P.P. Annual Joint Meeting

The Canadian Botanical Association and the Canadian Society of Plant Physiology will jointly host their annual meeting at the University of Victoria, Victoria, B.C. from June 5-9, 1988. Their will also be field trips on Sunday June 5 to Salt Spring Island and from June 10-12 (Choose either the trip to the Bamfield Marine Station or to the Kamloops area. The latter trip involves looking at vegetation from the coast to Kamloops.)

COUNCIL NEWS:

Alberta Native Plant Council Executive

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

Vice-Chairman: Cliff Wallis (Consultant, Naturalist)

Secretary: Lorna Allen (Biologist, Natural Areas Program)

Treasurer: Julie Hrapko (Botanist, Provincial Museum)

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

Director: Shane Porter (Southern Director - Lethbridge Community College)

Director: Elisabeth Beaubien (Northern Director - Botany, University of Alberta)

ANPC Committees

Rare Plants Committee: Chairman - Matt Fairbarns

Information and Education Committee: Chairman - Elisabeth Beaubien

Conservation and Protection Committee: Chairman - Cheryl Bradley

PUBLICATIONS:

Alberta Wildflowers: A Flowering Date Survey

By Elisabeth Beaubien. Write to Wildflower Survey, Department of Botany, University of Alberta, Edmonton, Alberta, T6G 2E9 or telephone (403) 432-3484. "Do you enjoy the outdoors? Do springtime walks and wildflowers appeal to you? How would you like a chance to learn more about the secret life of plants? Keep your fingers on the pulse of nature by joining Albertans who record when some of our native wildflowers bloom. We need your help to chart the 'green wave' of spring across Alberta."

Conservation Values and Management Concerns in the Candidate South Castle Natural Area

By Matt Fairbarns for the Natural Areas Program, Public Lands Division, Alberta Forestry, Lands and Wildlife. (see article on the first page of this newsletter for a description of this site.) To obtain a copy of this report contact: Information Centre, Alberta Forestry, Lands and Wildlife, Main Floor, Bramalea Building, 9920 - 108 Street, Edmonton, Alberta T5K 2M4.

Workshop Notes

If you would like a copy of the workshop notes from the ANPC February Rare Plants Workshop, please write to Alberta Native Plant Council, Box 4524, Station SE, Edmonton, Alberta T6E 5G4.

ALBERTA FIELD TRIPS

Big Sagebrush Natural Area

Join Alberta Naturalists Cliff Wallis (Calgary 271-1408) and Matt Fairbarns (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 to August 1)

FAN Trip to Rat's Nest Cave

On July 16-17 the Federation of Alberta Naturalists will have their summer field trip to Rat's Nest Cave, Canmore corridor. This event is being hosted by the Alberta Speleological Society and assisted by the Calgary Field Naturalists Club. Meet at the William Watson Lodge, Visitors Centre, Kananaskis, 9:00 am, Saturday July 16. Bring a lunch, be prepared to sign a waiver for both the field trip and for access to the cave. Cave is muddy and wet so please wear old clothes and rubber boots. Cave access must be booked with Mary-Helen Posey at 282-3997 (Calgary) - leave a message. Those not adventurous enough to enter the cave will have a field trip to the surrounding area to look at plants and animals and their ecological management.