



Milk River Ridge Plant Survey: A Shared Experience

by Cheryl Bradley (with contributions from Janet Marsh)

On June 8-10, 2007 the Alberta Native Plant Council's (ANPC) Botany Alberta and Adopt-A-Plant Alberta (APA) partnered with Nature Conservancy of Canada (NCC) for some botanizing on the Milk River Ridge. About two dozen botanists, with a broad array of experience, gathered at the Rangeview Ranch 25 kilometres southeast of Cardston. We were planning two forays into native grasslands recently incorporated into NCC's Milk River Ridge natural area.

As the ANPC Board member living in Lethbridge and most familiar with the area's flora, I was asked to assist in organizing the weekend. Reg Ernst, who had previously conducted rare plant surveys on the Milk River Ridge, agreed to help out as a guide. Samantha Hines-Clark, NCC's conservation coordinator for volunteers, organized registration, accommodation, meals and the agenda for the weekend. NCC also generously helped to defray costs.

Our objectives, if we can presume to be so formal, were to search for rare plants, to record any rare plant occurrences, and to keep a list of other species in flower along with their phenology. This information will be used in managing the NCC properties. Other less formal objectives were to practice our plant identification skills, rusty from a long winter's disuse, and to learn from each other about the local flora and rare plant survey techniques.

The Rangeview Ranch, operated by the Thompson family, provided an ideal base for our activities. Some of us pitched tents while others slept in beds in rustic cabins. We all gathered for delicious home-cooked meals in the central dining room. The Thompsons were enthusiastic and gracious hosts, providing us not only shelter and food but also an understanding of the area's history and current land use.



The Milk River Ridge surveyors

Photo: Laurie Hamilton

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Folks came from Lethbridge, Calgary, Red Deer, Edmonton and as far away as Fort McMurray and the Peace River country. The temperature was chilly and the winds were strong as befits spring on the Milk River Ridge, but skies were clear most of the weekend and spirits of participants were bright. There are few activities that field botanists enjoy more than spending time together in the great out-of-doors identifying plants and sharing conversations about the finer details of local plant taxonomy and ecology.

The Milk River Ridge, which parallels the north side of the Milk River near the southern border of Alberta, is one of the most important large areas of native grassland remaining in Alberta and North America. Of particular importance are pristine foothills rough fescue grasslands. Several foothills rough fescue plant communities are rare, provincially and globally.

NCC's Milk River Ridge natural area includes five properties recently acquired or placed under conservation easement (Nay, Johnson, M. Thompson, R. Thompson and Stewart) totaling about 5000 acres. A preliminary site visit a week prior to the event helped to establish our focus on the Nay and Stewart properties.

It didn't take the keen botanists who arrived on Friday evening very long to discover the first rare plant. A few hundred **blue camas** (*Camassia quamash*), in full flower, were growing in a wet meadow along the access road to the ranch buildings. This population and six others within a one kilometre radius were reported in June 2005 during a vegetation survey by Rangeland Conservation Service Ltd.

Blue camas, an S2-ranked species, is at the northeastern limit of its range in the southwest corner of Alberta, and this is the most northeasterly occurrence of all.

Conversations followed about whether this beautiful species of the lily family had made its way to the top of the Milk River Ridge on its own or had been planted by indigenous peoples, who greatly prized the sweet taste of the starchy roots when cooked.

After breakfast on Saturday morning, participants were provided a brief presentation on the area's climate, physiography, soils and vegetation by myself and soil scientist Ed Karpuk. Understanding environmental context is an important first step in any rare plant survey.

Climate: Climate is inland continental with frost-free period about 90 days, 20 days less than Calgary. In winter, there are frequent chinooks and snow mostly comes in early spring.

Physiography: The properties we were to survey are at the highest elevation (ca 1400 m) of the Milk River Ridge, a

continental divide between Hudson Bay and Gulf of Mexico drainages.

The ridge was formed through differential erosion of horizontal sandstone beds. Most of the Ridge was glaciated resulting in uneven till deposits up to 30 metres deep over bedrock. The highest points were unglaciated and have loess or slope-wash fans over bedrock.

Soils: According to the Agricultural Region of Alberta Soil Inventory Database (AGRASID), soils of the unglaciated areas are orthic black chernozems described as loamy on loess (Del Bonita soil series) and loamy or overflow on slope-wash fans (Hillmer). Soils in the higher glaciated areas are loamy on glacial till (Beazer) and thin breaks on till veneer (Ockey). As well, there are soils which are shallow to gravel on glaciofluvial material (Rockford). At lower elevations soils are loamy silt or sand over fluvial sands and gravels (Blackfoot-Rinard).



Abundant blue camas plants attracted surveyors

Photo: L. Hamilton

Vegetation: The western two-thirds of the Milk River Ridge lies within the Foothills Fescue Natural Subregion. The native grasslands are dominated by foothills rough fescue (*Festuca campestris*) and bluebunch or Idaho fescue (*Festuca idahoensis*). Plant communities for NCC's Milk River Ridge natural area are described in vegetation and range resource inventory reports prepared for the various properties by Rangeland Conservation Ltd. in 2005 and 2006. Other grasses identified as co-dominant with foothills rough fescue and bluebunch fescue include northern wheat grass (*Elymus lanceolatus*), western wheat grass (*Pascopyrum smithii*), western porcupine grass (*Stipa curtisetata*) and June grass (*Koeleria macrantha*). Lower elevation, dry sites have mixed grassland communities with needle-and-thread grass (*Stipa comata*) dominant. There are also modified grasslands dominated by Kentucky bluegrass (*Poa pratensis*), timothy (*Phleum pratense*) and smooth or awnless brome (*Bromus inermis*).

With environmental context in mind, participants then reviewed handouts that listed the fourteen vascular plant species and two mosses on the Alberta Natural Heritage Information Centre (ANHIC) tracking and watch lists previously reported on or in the vicinity of the Milk River Ridge NCC properties. Descriptions in the *Rare Vascular Plants of Alberta* (Kershaw, L, J. Gould, D. Johnson, J. Lancaster. 2001) were consulted to familiarize ourselves with key characteristics, flowering period and habitat. Many of the target species bloomed in May or June so there was a good chance of finding them in flower. Some, however, such as meadow aster (*Aster campestris*) and spike redtop (*Agrostis exarata*) were late bloomers and therefore unlikely to be found.

Habitats for the rare plants we sought ranged from dry ridge tops to grassy slopes to moist meadows in riparian areas.



On the way to the NCC properties

Photo: L. Hamilton

This suggested our search was not going to be a leisurely stroll. We had a plan and everyone was anxious to get underway. To reach the Stewart property, we carpoled four kilometres and walked half a kilometre along the edge of a cultivated field.

No more than a few minutes and a few dozen metres from our starting point and all of us were on our hand and knees on a dry gravelly site at the edge of the North Milk River valley (1390 m elevation). There were expansive views south and east across the valley towards the plains but we were oblivious to this; instead peering downward at scattered low plants with stem and basal leaves pinnately divided into linear segments and with several round flower heads of yellowish tubular disc florets and translucent bracts in the involucre. We identified it as **tufted hymenopappus** (*Hymenopappus filifolius*), an S2-ranked species restricted mostly to the Milk River Ridge in Alberta. The genus name comes from the Greek hymen (membrane) in reference to the translucent bracts and pappus (old man) for the greyish hairs on the fruits.

Minutes later at the same site we were puzzling over several glaucous plants, less than 20 centimetres tall, with simple linear leaves and umbellate clusters of small flower buds that were just beginning to unfold. After a few

thwarted attempts at keying immature plants, we found a plant in flower and identified it as **American thoroughwax** (*Bupleurum americanum*), an S3-ranked species on the ANHIC watch list. We counted about 50 plants in a 30 metre long by 10 metre wide area along the valley rim. Like tufted hymenopappus, this is a species found only in the southwest corner of Alberta.

Much to our glee, still at the same site, we also identified **hare-footed locoweed** (*Oxytropis lagopus*), a rare species (S1 rank) confined to the Milk River Ridge in Alberta. The pinkish pea-like flowers characteristic of this early-flowering plant were already faded and we resorted to using the silvery hairy pinnately divided leaves and the silky hairy papery pods on a short stalk as identifying characteristics in determining the extent and size of the population. As we worked our way along the valley rim we found a few more patches of hare-footed locoweed on similar exposed gravelly sites with shallow soil and sparser vegetation compared to the surrounding foothills rough fescue grassland.



American thoroughwax flowers

Photo: L. Hamilton

Why are there three rare plant species (hare-footed locoweed, American thoroughwax and tufted hymenopappus) occurring together at this site? All are at the northern limit of their range in southwestern Alberta. What makes this habitat on the Milk River Ridge special? Ed Karpuk pointed out that it may have something to do with the unusual soils. Firstly, there is very thin soil development, likely because of exposure to wind and water erosion on the valley rim. Secondly, parent material is coarse gravels and cobbles of ancient outwash fans deposited by rivers originating in the Rocky Mountains. Glaciers were thin here and so are till deposits. A white crust of calcium carbonate on many of the stones indicates a limy (calcareous) site in a highly evaporative environment. Could it be that these three species are primarily associated with limy gravelly substrates throughout their range? We don't yet have an answer to that question but Ed's insights reminded us that rare plant survey is more meaningful when there is consideration of geology and soils.

Our spirits were high from our early success in finding rare species, even though we had covered very little distance and it was almost lunchtime. At this point we split into two groups. The group I was part of slowly worked our way westward about half a kilometre along the valley rim, descended 75 metres into the coulee bottom and then walked half a kilometer down the coulee before climbing the southeast-facing slope of the North Milk River valley to arrive back at the vehicles by late afternoon. We identified almost every species we found in flower along the way, except some sedges and grasses which were immature and difficult to key using a field lens. The fast group, led by Reg, headed straight south into the North Milk River valley and traversed a few drainages before climbing westward up a coulee and returning on foot across the ridge top to the Rangeview ranch buildings. This fast

group covered twice the distance and considerably more elevation compared to the slow group.

Three additional species on the ANHIC tracking list were found on the Stewart property. **Low yellow evening primrose** (*Oenothera flava*), an S2-ranked species, occurred along a well-used cattle trail at the bottom of a steep coulee slope on clay-rich soil. The site supported an herbaceous plant community with silky perennial lupine (*Lupinus sericeus*), western dock (*Rumex occidentalis*), sticky purple geranium (*Geranium viscosissimum*) and common yarrow (*Achillea millefolium*). Fifty rosettes, many with yellow flowers rising from the root crown and nestled among the leaves, occurred in a patch extending three metres by one metre. We were surprised to find low yellow evening-primrose in bloom as our background information reported the species flowered in July and August.

Waterpod (*Ellisia nyctelea*), also an S2-ranked species, occurred along a cattle trail in the coulee bottom. It was at the edge of an ephemeral runoff channel which was now dry. The site had regosolic, slumping soil with sparse vegetation. Fifteen waterpod plants were counted in an area about one square metre. Stems, less than two decimetres tall, bore pinnately-cut leaves on stalks fringed with stiff hairs. Small, whitish, bell-shaped flowers arose singly from leaf axils, some already in fruit. Plants of this annual species were obviously



Waterpod Photo: L. Hamilton

taking advantage of early spring moisture to grow, bloom and produce seed before the site completely dried out. If we had been a week or two later, we may not have found it.

Western ribgrass (*Plantago canescens*), an S2-ranked species on the ANHIC watch list was found in several patches of 25 to a few hundred plants on the valley slopes within foothills rough fescue grassland communities. Soil texture at these sites was sandy or gravelly. This species of the plantain family is characterized by tufts of woolly lance-shaped leaves with segmented hairs and dense spikes of small white flowers. Plants were in full bloom during our survey.



Hairs of western ribgrass

Photo: L. Hamilton

Despite the full and active day, folks were still keen to botanize after dinner on Saturday. Some settled down in the dining room to key specimens which had been collected and to compile lists of species observed that day. Others of us headed off to NCC's Johnson property, a section of land recently acquired in the heart of the Ross Lake Natural Area on the Milk River Ridge. At twilight we found ourselves estimating the size of a western ribgrass population – several hundred plants in an area 15 metres by 5 metres – located by the vehicle trail in a dip of a west-facing slope within a June grass dominated grassland.

We rose early on Sunday and enjoyed a hearty breakfast with conversation again focusing on matters botanical. We drove about five kilometres southwest from where we were the previous day to begin our survey for rare plants. The Nay property is half a section of foothills rough fescue grassland dissected by the upper portions of two coulees draining eastward into the North Milk River. We were at a similar elevation as the Stewart property (1390 m) but relief was not as steep.

Again, no more than a few minutes and a few dozen metres from our starting point and we were all on our hands and knees peering at a yellow composite that resembled a false dandelion (*Agoseris glauca*). Unlike false dandelion, however, the leaves were not at all glaucous and they tapered to a slender point. Flower bracts were also long-tapered rather than just acuminate. The ligulate heads were borne on long slender stalks that tended to nod at the tip. A pappus of feathery bristles with scale-like bases, rather than capillary bristles, clinched our determination that it was **nodding scorzonella** (*Microseris nutans*). This is an S2-ranked species on the ANHIC tracking list. The population of less than 100 plants occurred in several patches over a few hundred metres along the mid to lower slopes of a shallow valley. Soils were loamy and supported a grassland dominated by foothills rough fescue and bluebunch fescue with a variety of herbs including sticky purple geranium and three-flowered avens (*Geum triflorum*).

We again split into two groups. The faster group searched higher hilltops in the further western reaches of the property and was successful in finding about six patches of hare-footed locoweed totaling about 450 plants. These occurrences were documented by Suzanne Visser who through the Adopt-a-Plant Alberta program is monitoring this species. The slower group searched the eastern edge of the property



Nodding scorzonella flower Photo: L. Hamilton

identifying species in flower as we went. We checked out a wetland site where alpine foxtail (*Alopecurus alpinus*) had previously been reported. Neither target species was found; however, we did find an introduced foxtail species, meadow foxtail (*Alopecurus pratensis*), not far from the Nay property. We recorded two additional populations of western ribgrass.

By early afternoon we straggled back to the vehicles, reluctant to leave but knowing we must since many of us had a long drive home. Over a hearty lunch at Rangeview Ranch, we took stock of what we had found.

Altogether over two days we identified a total of about 140 vascular plant species including 24 species that had not previously been listed for the Stewart property and 30 that had not been previously listed for the Nay property. We had information on the development phase for many species we observed. Species in full bloom (R7 phenology code) include yellow false dandelion (*Agoseris glauca*), prairie onion (*Allium textile*), small-leaved everlasting (*Antennaria parvifolia*), rosy everlasting (*Antennaria rosea*), balsamroot (*Balsamorhiza sagittata*), field mouse-ear chickweed (*Cerastium arvense*), bastard toadflax (*Comandra pallida*), Macoun's cryptanthe (*Cryptantha celesoides*), low larkspur (*Delphinium bicolor*), compound-leaved fleabane (*Erigeron compositus*), subalpine umbrella-plant (*Eriogonum*

umbellatum), small-flowered rocket (*Erysimum inconspicuum*), sticky alumroot (*Heuchera cylindrica*), small-leaved alumroot (*Heuchera parvifolia*), butte marigold (*Hymenoxys acaulis*), wire rush (*Juncus balticus*), spatulate bladderpod (*Lesquerella alpina*), silky perennial lupine (*Lupinus sericeus*), clustered broom-rape (*Orobanche fasciculata*), common blue-eyed grass (*Sisyrinchium montanum*), bog violet (*Viola nephrophylla*) and death camas (*Zigadenus venenosus*). Together their flowers served us up a visual feast.

We completed native plant reports for a total of seven vascular plant species on the ANHIC tracking and watch lists in about a dozen occurrences (element occurrences are separated by more than one kilometre from each other).



Tony the horse whisperer Photo: L. Hamilton

We were fortunate to have a lichenologist among us. Janet Marsh found several lichen species on the ANHIC non-vascular plant species tracking and watch lists.

Janet's report included the following remarks:

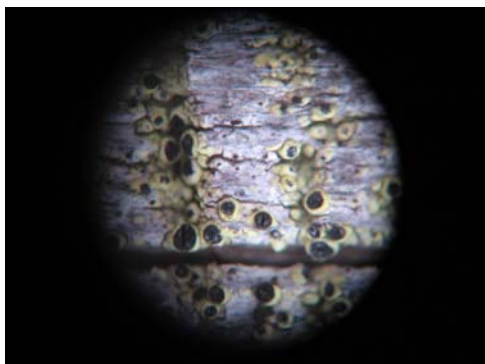
"The Milk River Ridge supported several lichens on soil, rocks and fenceposts. Many of the lichens found are common in Columbia Basin steppe habitats known from Montana, Idaho, Washington, Oregon and British Columbia. My objective was to record lichens that occurred on NCC properties of the Milk River Ridge with special attention paid to tracked lichens

encountered as there were no ANHIC records of lichens in this area. Thirty-five lichens were noted from the Stewart and Nay NCC properties with six tracked lichens found.

On grey weathered wood fenceposts on both properties, two species of *Cyphelium* occurred; one was chartreuse with black fruiting bodies, *C. pinicola*, the bright yellow colour comes from rhizocarpic acid that gives mat lichens on rocks their yellow colour. The other lichen is grey, about the same colour as the wood, with black fruiting bodies, *C. inquinans*, that is a tracked S2 lichen.

On the Stewart property near the top of the ridge, *Caloplaca trachyphylla* (Desert fire-dot lichen), an orange radiate crustose lichen occurred on sandstone; this is an S2-ranked lichen that was found on several rocks and outcrops throughout the area. Also at this site, another tracked lichen, *Acarospora fuscata* (S2-ranked), which is a crust lichen and is composed of dark brown angular areoles, occurred on sandstone. Further down the slope from the ridge in a rock outcrop area, a squamulose, red-brown soil lichen, *Psora tuckermannii* (Brown-eyed scale) (S2-ranked), was growing on soil in a rock crevice. Also at this site, *Acarospora schleicheri* (S2-ranked), a yellow-green soil crust with black fruiting bodies, was spotted growing on soil among detritus.

At the far west end of the ridge top on the Nay property, *Melanelia sorediata* (Powdered camouflage lichen) (S1S2-



Fruiting bodies of *Cyphelium pinicola*

Photo: L. Hamilton

ranked), a dark brown foliose lichen with powdery round soralia near the ends of the lobe surface, was found growing on west-facing exposed granite boulders; within a 5 square metre area, ten lichen bodies were counted.

Lichens respond to microhabitats and even though we were in the native grasslands per se, there were several microhabitats with many very interesting lichens.”

We parted our Botany Alberta weekend with visions of beautiful plants and a beautiful natural area still in our heads. We had all benefited from shared laughter and our insights into the science and art of field botany. We were pumped for more botanizing - let the field season begin!

Acknowledgements: The success of this event is due to contributions by everyone involved. Samantha Hines-Clark organized the event on behalf of NCC and has arranged for providing rare native plant information to ANHIC. Dana Bush inspired the event but regrettably was unable to attend. Lorna Allen helped to advertise the event. Ed Karpuk provided an overview of the Adopt-A-Plant Alberta program and contributed his expertise on soils and geomorphic processes. Reg Ernst helped to guide participants and conveyed his knowledge of the Milk River Ridge. Elisabeth Beaubien, Mari Decker and Laurie Hamilton compiled species lists and information on phenology. Laurie also produced digital files of field results and photos for use by participants. Suzanne Visser recorded information on hare-footed locoweed populations on the Nay Property and submitted this to ANHIC. Janet Marsh identified lichens and compiled her results. Other botanists contributing to the event were Howard Anderson, Adam Blake, Tony Blake, Kara Tersen, Heide Blakely, Alison Dinwoodie, Eileen Ford, Robert Grey, Pat McIsaac, Elizabeth Millham, Elizabeth Podgurny, Jim Posey, Cheryl Thorpe and James Visser.

A special thank you to the Thompson family of Rangeview Ranch for their warm hospitality.



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If you have an announcement, article or other item, you are invited to submit it to the editor for publication. Items concerning native plants will be given highest priority.

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Endangered Species Conservation Committee Update: Rare Plants Added to Alberta's Wildlife Regulations

by C. Dana Bush

The following table provides a current summary of the status of plant species that have been reviewed by the Endangered Species Conservation Committee (ESCC).

Common Name	Scientific Name	Status	Date of Minister's Acceptance	Listed in Wildlife Act	Recovery Team / Plan ¹
Western blue flag	<i>Iris missouriensis</i>	Species of Special Concern after downlisting from Threatened	Mar. 6, 2000	No	Plan completed and deemed successful. No longer applicable due to downlisting.
Western spiderwort	<i>Tradescantia occidentalis</i>	Endangered	Sept. 12, 2001	Yes	Plan approved Dec. 16, 2005
Soapweed	<i>Yucca glauca</i>	Endangered	Feb. 3, 2003	Yes	Plan approved May 18, 2006
Small-flowered sand verbena	<i>Tripterocalyx micrantha</i>	Threatened	Feb. 26, 2004	Yes	Prospective team members have been contacted.
Tiny cryptanthe	<i>Cryptantha minima</i>	Endangered	Mar. 11, 2005	Yes	Prospective team members have been contacted.
Slender mouse-eared cress	<i>Halimolobos virgata</i>	Data Deficient	Dec. 16, 2005	No	Not applicable
Porsild's bryum	<i>Bryum porsildii</i>	Endangered	Dec. 5, 2007	No	Expectation to develop team in 2008
Limber pine ²	<i>Pinus flexilis</i>	Pending	Pending	No	
Whitebark pine	<i>Pinus albicaulis</i>	Pending	Pending	No	

¹Endangered Species should have a recovery plan in 12 months, while Threatened Species should have a recovery plan in 24 months.

²The Limber Pine status report has an error in the area calculations. The on-line report will be corrected in the near future, but hard copy reports are incorrect.

Four rare plant species have been added to the Endangered/Threatened lists in Alberta's Wildlife Regulation: **western spiderwort**, **soapweed**, **small-flowered sand verbena**, and **tiny cryptanthe**. The amendments to provide protection for these species are in the consultation phase – if you are interested in providing comments to the ANPC, please contact Dana Bush at cdbush@telus.net.

The Minister of Sustainable Resource Development, Ted Morton, has also responded favourably to the recommendation to list **Porsild's bryum** as Endangered.

A recovery team for **tiny cryptanthe** has been initiated (prospective members have been invited) and will likely meet in 2008. At that time, discussion will

be held on whether to task this team with recovery planning for **small-flowered sand verbena** as well, due to similarities in habitat. It's unfortunate that the government waited so long, because the largest known population of **small-flowered sand verbena** has been seriously impacted by sand removal, and the city of Medicine Hat has had to deal (cont'd on page 12)

Puzzling Pairs: Wild Strawberries

by Lorna Allen

Most people recognize the wild strawberry when they see it (especially when it is in the tasty fruiting stage). Yumm, it's a strawberry. But which one? There are two species of wild strawberry in Alberta (Moss 1992):

- woodland strawberry (*Fragaria vesca*)
- wild strawberry (*Fragaria virginiana*)

Both have similar, small white flowers with five petals. The petals can be up to 11 millimetres long, but are usually shorter. And both have those fairly distinctive strawberry leaves with three leaflets. A closer look at the leaves will help sort out the two species. The leaves of the woodland strawberry are a yellowish-green in colour, have jagged teeth and the veins tend to be very pronounced. In contrast, the leaves of the wild strawberry are a more blue-green. The leaves are still toothed, but not as jagged, tending to point up rather than out. The leaves of wild strawberry are often glaucous (covered with a 'bloom' or powdery coating, like that on a prune plum). To me, the leaves of wild strawberry seem thicker and tougher than those of woodland strawberry.

One of the features used in every key I looked at is the difference between the terminal tooth on the leaf. The *Illustrated Flora of British Columbia* (Douglas *et al.* 1999), for example, says: "terminal tooth of leaflet usually surpassing the adjacent lateral ones" for woodland strawberry, and "terminal tooth of leaflet usually much narrower and shorter than adjacent lateral ones" for wild strawberry.

While this character often holds true, it doesn't always. So, if the tooth character seems ambiguous, it's important to take these other differences into account.

While the leaves are the key feature used to separate the two species, there are other differences. The flowers are on long stalks (peduncles) in both species, but the peduncle usually sticks out above the leaves in woodland strawberry, and is shorter than the leaves in wild strawberry.

If you were to compare the fruits, woodland strawberry tends to be slightly elongated, and the seeds (achenes) usually sit right at the surface. The wild strawberry is usually more rounded and often the seeds are sunken into the fruit. But then, who is going to compare them, when they could eat them?



Woodland strawberry fruit

Photo: L. Allen



Woodland strawberry flower

Photo: L. Allen



Wild strawberry flower

Photo: L. Allen

Puzzling Pairs (cont'd)



Woodland strawberry leaflet

Photo: L. Allen



Wild strawberry leaflet

Photo: L. Allen

Comparison of Diagnostic Characteristics

Characteristic	Woodland strawberry (<i>Fragaria vesca</i>)	Wild strawberry (<i>Fragaria virginiana</i>)
Leaflet colour	Yellowish green	Blue green
Leaflet surface	Pronounced veins	Glaucous
Leaflet teeth	Jagged and divergent	Less jagged, ascending
Leaflet terminal tooth	Surpasses the adjacent teeth	Narrower and shorter than adjacent teeth
Peduncles	Longer than leaves	Shorter than leaves
Fruit	Slightly elongated	Globose
Achenes	On fruit surface	Sunken in fruit

References:

Douglas, G.W., Meidinger, D. and J. Pojar. 1999. Illustrated Flora of British Columbia, Vol 4. British Columbia Ministry of Environment, Lands and Parks and Ministry of Forests. Victoria, BC. 427 pp.
 Moss, E.H. revised by J.G. Packer. 1992. Flora of Alberta. University of Toronto Press, Toronto, Ontario.

Joyce Gould

J. Dewey Soper Award Recipient

The Alberta Society of Professional Biologists (ASPB) awarded the J. Dewey Soper Award to Joyce Gould in 2007 to recognize the work she has done for rare plants in Alberta. The J. Dewey Soper Award is given periodically to a Canadian biologist who has made significant contributions to the field of biology. The J. Dewey Soper award recipient was announced at the 2007 ASPB Conference last April, and presented to Joyce on Monday, September 19th, 2007 at the Friends of Wagner Natural Area Society Annual Open House, in conjunction with a talk by Robin Leech on the Spiders of the Wagner Natural Area.

Fifteen or twenty years ago, few people in Alberta knew what a “rare plant” was. Today, Alberta has complete and current ranking lists of Alberta’s vascular plants, mosses and lichens, and Dr. Joyce Gould has played a pivotal role in this transition. Joyce Gould obtained an Honours B.Sc. in Botany from the University of Alberta and an M.Sc. from the University of Toronto. She recently defended her Ph.D. on “Patterns and Attributes of Rarity in the Vascular Flora of Alberta.” She has conducted plant surveys in Alberta, Ontario, Nunavut, and the Yukon and has made a number of contributions to botanical knowledge over the course of her career, including the first report of the orchid *Corallorhiza trifida* from Baffin Island in 1997. Joyce has been employed as a botanist for the Alberta government since 1990 and was with the Alberta Natural Heritage Information Centre (ANHIC) from its inception in 1996 until 2007. As

ANHIC’s Senior Botanist, Joyce received records of rare plant occurrences from botanists around the province, and assessed their prevalence in order to assign provincial status ranks. This has been done for every plant, moss and lichen in Alberta! Currently Joyce is the Science Co-ordinator for Alberta Parks and is involved in research-related plant work, as well as co-ordinating needs of the field when it comes to plant-related issues.

Joyce recently helped to publish the *Rare Vascular Plants of Alberta*, which has immeasurably improved the effectiveness of rare plant identification in Alberta. Joyce is also currently undertaking the task of revising the *Flora of Alberta* with John Packer; a lengthy and challenging project, especially with numerous recent changes in North American taxonomy. Joyce reviews the status of plants at both the provincial and federal levels, as a

member of the secretariat for the Scientific Subcommittee of the Endangered Species Conservation Committee (ESCC) in Alberta and a member of the vascular plant subcommittee of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Joyce serves on two recovery teams (western spiderwort and yucca).

With today’s challenge of increasing development and public land use issues coupled with increased concern over species at risk, the ability to track and protect the native flora of our province is of vital importance to a healthy and productive future. Though public attention and legislation has traditionally focused on charismatic macrofauna, Joyce Gould has played a key role in raising the profile of the rare flora of Alberta to industry and the public, and promoting its protection.



Joyce Gould receiving the J. Dewey Soper Award

Photo: Robin Leech

Book Review

Wildflowers of the Rocky Mountains (2007)

Written by: George W. Scotter and Halle Flygare

Reviewed by Lorna Allen

The first version of this book by George W. Scotter and Halle Flygare was called *Wildflowers of the Canadian Rockies* and came out in 1986. I bought it when it first came out, and it has long been one of my favourite picture books of the flowers of the Rocky Mountains. Why? The photographs are both uniformly excellent and appropriate for the species being shown. The text tends to be both descriptive and well-written, and the book covers a nice selection of the species people are most likely to notice, while remaining compact enough to carry with you.

So when the second version came out, I was very curious to see what, if anything, had changed. Well, a few things have.

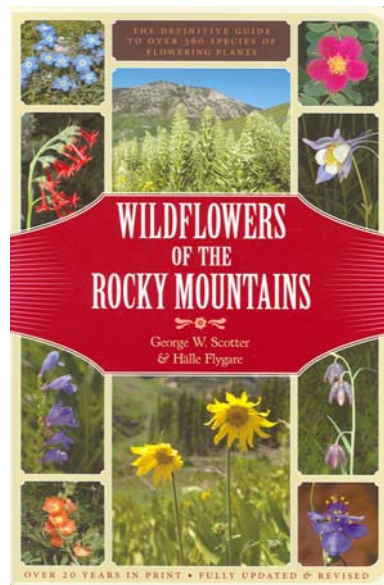
The 1986 version covered 228 species, while this new one has upped the number to over 360. I didn't do an exhaustive comparison to see which species have been added. But as the change in name suggests, many of the new species covered are from the Rockies further south, into the United States. So it is no longer a guide just for the Canadian Rockies.

Correspondingly the size of the book has also increased – not necessarily a good thing in a field guide. But the increase in size is more modest than the increase in species might suggest. The authors accomplish this, in part, by taking some of the species that had two full photos in the first edition and using just one full one in this edition, while placing the other as a small cameo showing a distinctive feature. Often a picture of the plant as it is flowering is featured, with an inset of the fruits. This seems to work successfully in most cases – freeing up space for additional species.

The increase in species covered is the most significant change, but there are some others: the addition of range maps; a new format with the photos beside the text; and updated scientific names.

Do I have some quibbles...well, yes. Although many of the photos are the same, the reproduction in the new edition doesn't seem as crisp as in the old. And I'm not sure how helpful the new range maps are. Even if a species just barely makes it into Alberta, such as the many that are essentially restricted to the Waterton area, the entire province is coloured in. Jone's columbine (*Aquilegia jonesii*), for example, can really only be found in and around Sofa Mountain in Alberta, but from the map you might think you could find it anywhere in the province. But these are merely quibbles.

The authors, in the introduction, state "The goal of this edition is to greatly expand the coverage, to update the information provided and to add new features such as distribution maps and standardised common plant names." I think they have accomplished this, and given us an updated flower book worth having.



ANPC Objectives

The Alberta Native Plant Council strives to:

- Promote knowledge of Alberta's native plants.
- Conserve Alberta's native plant species and their habitats.
- Preserve plant species and habitat for the enjoyment of present and future generations.

Specific objectives are to:

- Educate individuals, industry, and government about native plants.
- Promote awareness of native plant issues through a newsletter, an annual workshop, and in the media.
- Co-ordinate information and activities concerning Alberta's native plants.
 - ✿ To develop briefs or position papers for special projects; for example, biodiversity, forest vegetation management, wetlands, rare species or phenology.
 - ✿ To organize field trips, plant studies and May Species Counts.
 - ✿ To update lists of current research and conservation projects.
- Preserve natural habitats and plant communities.
 - ✿ To support legislation that protects native plants.
 - ✿ To take action to establish, preserve and manage protected areas.
 - ✿ To undertake Alberta projects jointly with like-minded groups.
- Encourage appropriate use of Alberta's native plants.
 - ✿ To produce information on the use of native plants in land reclamation.
 - ✿ To develop and distribute collection, salvage and management guidelines.
 - ✿ To update a list of native seed sources and suppliers for horticulture and reclamation.

Looking for Volunteers!!

The Alberta Native Plant Council has the following volunteer positions open:

- **Horticulture and Reclamation Representative**
- **Federation of Alberta Naturalists Alternate Director**
- **Central Director**

For more information please contact us at info@anpc.ab.ca



Small Grant Program

The ANPC Small Grant Program which provides funds for research, study and appreciation of native plants supporting plant conservation is now in place.

The application form can be obtained through ANPC webpage: (www.anpc.ab.ca) or by e-mail: info@anpc.ab.ca or by writing to ANPC at the following address:

Alberta Native Plant Council
Box 52099, Garneau Postal Outlet
Edmonton, AB
T6G 2T5

ESCC Update (cont'd from pg. 7)

with a very large population of **tiny cryptanthus** on a proposed housing development, with little legal guidance from the province. However, there is hope that these species will be protected in the near future.

Limber pine and **whitebark pine** were considered at the ESCC meeting on December 11, 2007. The concern for these species arose because of the combined impacts of white pine blister rust, mountain pine beetle and climate change. Estimates are that both species (and the mutualistic Clark's nutcracker) will be almost gone within 100 years. The ESCC will be recommending that a breeding programme be established, however there are insufficient funds within ASRD, Fish and Wildlife Division to support this (despite some support from Forestry Division), which is the reason the recovery teams have taken time to form – there simply isn't enough staff.

The ANPC is writing the Minister to request that lottery funds be made available for environmental programmes – so far only 0.144% of lottery funds has gone to Alberta Environment (for Water for Life) and none at all to Alberta Sustainable Resource Development. Letters of support from ANPC members would be welcome and well-timed.



Limber pine needles

Photo: L. Hamilton

The Alberta Native Plant Council

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