

WAGNER NATURAL AREA NEWSLETTER

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MAY COUNT OF PLANTS IN FLOWER IN WAGNER

by Patsy Cotterill

On a bright Sunday, the last in May, eight of us set forth on what is fast becoming a traditional rite of spring: our annual rendezvous with the spring-flowering plants of Wagner Natural Area. It was May 28th to be precise, this year's date for our contribution to the annual Count of Plant Species in flower, a province-wide phenology survey that is carried out every year on the last full weekend in May.

We started soon after 10:00 a.m., trekking across the property from west to east and it quickly became clear to us that, whatever may happen in the future, Wagner, for the present, remains unmistakably a wetland in this wet spring. For hours we stumbled and slogged through marshy woodland, squelched through or vaulted boot-swallowing quaking fen, pushed against snappy branches or dodged eye-poking dead wood, only occasionally being able to enjoy the springy firmness of relatively dry con-

ifer woods, until I found myself classifying vegetation types on the basis of how easy they were for humans to walk through. And the rewards for our efforts were meagre compared with last year's: a mere 48 species tallied as against a record-breaking 82 in 1988, for

this has been a late spring as well as a wet one. Nevertheless, what was in bloom was appreciated by our party, and there were plenty of other diversions along the way: a pair of circling red-tailed hawks, frogs and toads of various sizes to avoid stepping

SOCIETY OPENS ITS DOORS TO GENERAL MEMBERSHIP

Since the Wagner Natural Area Society formed in 1982, we have always had a struggle finding enough money for our yearly operational costs. Every year we spend several hundred dollars on insurance, printing and mailing letters, minutes and notices, and numerous other incidentals. We have always been able to come up with the money through donations from member clubs, interest from grant money for capital works projects, and rent from the hay fields on the property. Last year, however, was a bad year financially. The hay crop could not be pulled off from the fields due to bad weather, we

had additional costs due to the road issue, and our newsletter is costing us extra money. It is doubtful that things will improve in the future.

For this reason, we have decided to open the society up to general membership. Since its beginning, membership has been limited to two representatives from each of the member clubs and a few individual members, all of whom were required to attend monthly meetings and get involved in various projects.

Now anyone can become a member without making this commitment. Privileges of membership

will include receipt of this newsletter, which will be published three times a year, plus the opportunity to participate in special events such as field trips and the annual picnic. Membership fees will be \$10 per year for single membership, \$12 for family membership and \$8 for students. Anyone presently receiving the newsletter will continue to do so for the duration of 1989, but starting in 1990, it will only come with membership. Donations over the cost of membership are tax deductible, and remember, if you are interested in getting more involved, we could still use more executive members.



Yellow Lady's-slipper
(*Cypripedium calceolus*)
is the floral emblem of
Wagner Natural Area

of where the first clump of Calypso was discovered during the May Count of 1985. The species has not, to my knowledge, been seen in Wagner in the interim. This fitful appearance in the Natural Area of Calypso, a species common in boreal forests to the north and in the mountains, is intriguing. The best that we could do for the much prized Yellow Lady's-slipper, relatively common in the central and eastern parts of the property, was to find its fresh green leaves.

The low, delicate woodland plant Moschatel, *Adoxa moschatellina*, was in full bloom and seems to be spreading. It is now abundant in the woods at both the west and east ends of the property and can easily be seen along the western portion of the Marl Pond Trail.

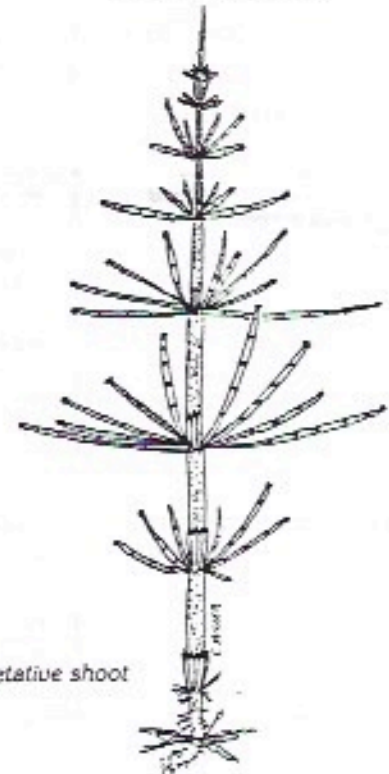
Some plants are restricted to only a few locations in Wagner; for example, Buckbean, *Menyanthes trifoliata*, in a central creek, and the very occasional Bristly Black Currant, *Ribes lacustre*. We were not able to locate any specimens of either, flowering or otherwise, and time and energy limited our ability to search. Nor were we able to find our one or two plants of Northern Valerian, *Valeriana dioica*, a more western species, in their usual woodland location just west of the northeast field. Here we were luckier, however; we found some new individuals in similar habitat not far away from the Cabin Trail and of these, two were in flower.

Violets seem to have done particularly well in the Edmonton region this year, favoured perhaps by the cool, wet weather. Wagner does not appear to have enough well-drained soil to support Early Blue Violet, *Viola adunca*, so abundant this year on Edmonton's ravine banks and in other dry places, but the other four common violets of central Alberta were well repre-

Field Horsetail



Fertile shoot with
spore-bearing head



Vegetative shoot

on, once the loud and proximate howling of disturbed coyotes, and always an orchestra of bird song to provide background music, the calls like individual instruments now dominating, now fading away. At lunchtime, we competed for dry perches alongside Jones' Pond, where a moose had been spotted recently, and munched while reflecting on the water's amber tranquility.

A disappointment was that none of the four species of orchid reported last year was in flower. Not even Pale Coral-root, *Corallorhiza trifida*, easily distinguishable with its leafless stems and yellow flowers, was evident in its usual spots in deciduous woods. The one orchid species that we did find in flower, however, was of major interest. Two scapes of the beautiful *Calypso bulbosa* were observed alongside the Cabin Trail a few metres south

sented: Canada Violet, *Viola canadensis*, a species of poplar woods and tallest of them all with a proper leaf-bearing stem; the small, white-flowered Kidney-leaved Violet, *Viola renifolia*, of mixed woods and spruce forest; even a patch of purple Marsh Violet, *Viola palustris*, on the banks of the creek on the far eastern side; and, of course, our abundant and beautiful blue Bog Violet of the fens, *Viola nephrophylla*, just beginning its long flowering period.

This year, we tried an innovation in recording that should permit a more accurate assessment of the flowering status of each species from year to year. Instead of simply

checking off a species in flower, as in previous years, we also assigned it a number from one to four, according to the extent of its flowering. Thus, assigning a #1 indicated one or two plants of a species in flower, #2 up to 25% of plants in flower, and so on. While this method is subjective, it should allow us to record some of the obvious differences in development we have been mentally noting from year to year. This year, for example, Low Bush-Cranberry, *Viburnum edule*, squeaked into the record with one or two bushes in flower, whereas last year it would undoubtedly have rated a 4; and Golden Sedge, *Carex aurea*,

was included because of one spike only with evident pollen, whereas last year plants were mainly in fruit. This new system will report such distinctions.

Finally, by late afternoon we were on our way home, tired and windswept, not quite satisfied that everything had been accounted for, but satisfied at least that much of our low count could be attributed to factors beyond our control. For scientific purposes, all that mattered was that we had recorded what we saw. Progress and regress, delay and advancement, early and late springs, all these are the natural order of things!

The following two articles are reprinted from the Edmonton Journal and the Stony Plain Reporter and indicate some of the tremendous media coverage the road issue at Wagner is getting.

Plant-lovers, bird-watchers upset by plans Road threatens flowering wetland

By GORDON KENT, June 24, 1989

Edmonton Journal Staff Writer

A flower-filled wetland threatened by a highway could be another test of the province's interest in the environment.

Alberta Transportation wants to put a paved road along the east side of the Wagner Natural Area, south of Highway 16X about 10 km west of Edmonton.

The 750-metre road and interchange, designed to connect

Highway 794 with an existing dirt road to serve future development, would consume about 18 hectares of boggy land renowned by birdwatchers and plant-lovers for almost 50 years.

"I think the general public is aware of the big issues, but I think the small ones are just as important to our environment," said Alice Hendry,

past president of the Wagner Natural Area Society.

"Little pieces here, little pieces there, and before you know it, it's gone."

Her volunteer group has managed the 130-hectare area, owned by the provincial government, since 1981. They build fences and maintain walking trails, but much of their job has been protecting the area from

road builders, off-road drivers and uncontrolled snowmobile use.

During a tour of the area Saturday, several species of orchids were blooming in the dense bush, and Hendry pointed out key habitat for owls and beavers.

Although nothing will be done on the latest proposal until a \$150,000

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environmental assessment is finished next February, she said they're lobbying now to ensure the report isn't ignored.

In the past year they've had contradictory information on exactly what is planned, she said.

Jim Sherstabetoff, an ecologist with the engineering firm helping prepare the report, called the unusual spring-fed

peatland "very significant".

He said it's home to more than one-quarter of all plant species living in Alberta.

Parkland county councillor George Sewell, who represents the area, said this is a big issue for local residents.

His council will be guided by the environmental report, although the final decision rests

with the provincial government, he said.

"The county recognizes that's a valuable area from a natural perspective, (but) we also see the necessity at this time of hooking up that connector road," he said.

"Certainly, if the report of the impact study indicates the impact on the area is going to be great, we would probably re-evaluate our position."

If it's approved, he didn't expect building to start for two years.

But for Pat Miller, a member of the Orchid Society of Alberta, it's a fight to protect the future.

"How many opportunities will we ever have at something like this?" she asked.

"It's part of our environment that we can't replace."



Solitary Sandpiper



Ruffed Grouse



Black-capped Chickadee

Proposed road could destroy entire bog area

By *CHRISTINE VANZELLA*, July 26, 1989

Stony Plain Reporter Staff Writer

Much of the Wagner Natural Area's plant and animal life could be drastically affected if a proposed road goes through adjacent to it, say members of the Wagner Natural Area Society.

Destroying several acres of land, including springs, peatland and marl ponds, along with the added effects of pollution from the road after it is built, will destroy the

Wagner Natural Area, says Alice Hendry, past president of the Society.

Hendry says despite opposition to the road from the public, the provincial government seems intent on building the road anyway.

She adds the society has received conflicting letters from the Premier and involved ministers on

whether it will be actually built or not.

The County of Parkland, along with Alberta Transportation, want to install an interchange at the Spruce Valley Road and Hwy. 16 Intersection. This could lead to a road being built connecting Hwy. 794 to Hwy. 16.

"We really feel like we've been getting con-

flicting statements (from the province)," says Hendry.

"If they're going to build the road ... why don't they just tell us that."

The county and province are waiting for the results of an environmental impact study on the Wagner Natural Area.

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The study is currently being conducted by Spencer Environmental Management Services.

But Hendry says the assessment would be a waste of money if a road is not built.

"Not building the road isn't even one of the options. They're studying what will happen if a road is put through."

Objectives of the assessment include determining potential impacts of the proposed interchange on the environment.

Recommending and evaluating options which could eliminate or minimize impacts to the area if the interchange and road are built are also part of the study.

The area harbours about 360 of the 1,200 plant species that can be found in Alberta, including the majority of orchid species found in Alberta, some which are very rare.

Animals like moose, deer, weasels, toads and frogs can also be found there, along with many different types of birds, including one of the largest

owl habitats in the central Alberta region.

The 130 hectare area is protected under the Natural Areas Program of Alberta Forestry, Lands and Wildlife. The land is dominated by wet meadows, marl ponds and spruce forests.

Even though the road would be adjacent to what is presently the Wagner Natural Area, it would cut off the Wagner Bog's natural water supply and kill much of the vegetation.

"The biggest concern is that it's going to cut off

a lot of the water flow," and the road would also destroy springs in the area, says Terry Thormin, the Society's vice-president.

"As soon as you lose your water you're going to lose a lot of the plants and birds as a result," he says, adding salt on the road in the winter time will also affect the water supply.

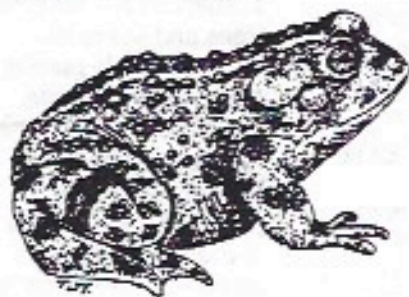
"We've got to mount opposition right now. It will be too late after the study is completed."

TOADING AT THE WAGNER NATURAL AREA

by Wayne Roberts

When the ice and snow of winter melt away in April, the

Western or Boreal Toad



relatively quiet marshes and ponds of central Alberta come alive with the activity of numerous breeding animals; most conspicuously, the mating calls of birds and anuran amphibians. In early April, the first amphibians to be heard are the Boreal Chorus Frogs and Wood Frogs. The

former sound individually like the sound produced by running the thumb along the tips of 7 or 8 teeth on a comb, and the latter a sound variously described as quacking or clucking. While some Boreal Chorus Frogs may be heard very early in April, sometimes even before the Wood Frogs, it is the Wood Frog that spawns first, and this species may be finished spawning by early May. Boreal Chorus Frogs spawn over a more extended period, from late April through the month of May.

Wood Frog eggs are easily seen as they are spherical masses of eggs, usually attached to vegetation near the

surface where they receive maximum solar radiation and, consequently, develop rapidly. Numerous clutches of eggs are often deposited in close proximity to one another, and male frogs may be seen near the eggs awaiting the arrival of additional females. Wood Frog eggs may be seen near the north gate and in the marl ponds. The tiny egg masses of the Boreal Chorus Frog are scattered throughout the temporary ponds and the shallow flooded margins of larger, more permanent bodies of water, and are exceedingly difficult to find.

In early to mid May when Wood Frog spawning is largely

completed, the Boreal (Western) Toad spawn. Occasionally, during the last week in April, but more frequently in the first two weeks in May, male toads may be heard whistling (much like a high speed Saw-whet Owl) from the ponds. On particularly warm days, the toads may not be active until just before dark, at which time females may be encountered on the trails or in open areas as they head toward the romantic chorus emanating from the males in the mari ponds. If you watch quietly from the boardwalk in the fading light, the males may be seen swimming about in the shallow water searching for females. There is keen competition for mates, and any toad coming close to an amorous male is likely to be seized. Should a male be seized by another, a special release call is given by the seized male to indicate that his captor, in his enthusiasm, has made a mistake. The errant male then releases his catch and carries on his seemingly desperate search for a mate.

The intense but somewhat indiscriminate mating drive of some anurans has some interesting consequences. A late arriving female Wood Frog may be seized by a number of males lurking near recently deposited egg masses. A ball of Wood Frogs may be seen tumbling over and over in the water as each male vies for the opportunity to mate with the female. This may result in the death of the female. Mismatched pairs of toads may be found in amplexus (the male of the

Boreal Toad may be found, for example, in amplexus with the female of the Canadian Toad) and, occasionally, hybrids between these species may be found. In east central Alberta, the range of the Boreal Toad extends eastward to the Lac La Biche area. In suitable habitat where fens and bogs are close to open meadows or cultivated fields, both of these toad species may be found close to one another and may

share the same spawning habitat. While the Canadian Toad has not been seen or heard within the Wagner Natural Area, it is known to occur nearby (along the North Saskatchewan River and in the Glory Hills) and may be found someday in the meadows or along the margin of the dugout on the west side where the Tiger Salamander has been found.

The following is excerpted from a new book titled WETLANDS OF CANADA in which the Wagner Natural Area is discussed in two places (by: National Wetlands Working Group, Canadian Committee on Ecological Land Classification. Available from Sustainable Development Branch, Canadian Wildlife Service, Environment Canada

Boreal Wetland Values

Natural Environment Values

Boreal wetlands often present a unique opportunity for the enjoyment and study of the natural environment. For example, the Wagner Bog, a protected natural area of spring fens and coniferous treed swamps a mere 13 km from the city of Edmonton, Alberta, has a remarkable variety of fauna and flora. Fifteen of Alberta's 25 orchid species can be found there (Thormin 1982a), as well as dozens of bird species, including five kinds of owls, and flycatchers, nuthatches, warblers, sparrows and sandpipers (Thormin 1982c). The Wagner Bog is equally rich in butterfly species, some of which are specific to peatland areas, such as

Oenels jutta, Erebia disa, Boloria eunomia, Boloria selene and Boloria titania (Thormin 1982b). This wetland complex provides ample opportunities for people to satisfy various interests, within a few minutes' drive from a large metropolitan area.

Spring Fens

A spring fen near Spruce Grove, Alberta (53°34'N, 113°50'W), locally called the "Wagner Bog", has been investigated. This wetland occurs on a lower slope of a gently rolling upland. The discharge points are occupied by shallow, mari-filled pools, with narrow sedge fens extending downslope from the springs. These narrow fens cut through dense

coniferous treed swamps.

On this site, a 25 m transect was made from a minerotrophic spring fen to the adjacent coniferous treed swamp. In the fen there are a few scattered *Larix laricina* trees and some low shrubs (*Betula pumila*, *Andromeda polifolia*, *Salix pedicellaris*). The herb layer consists of *Muhlenbergia glomerata*, *Eleocharis quinqueflora*, *Carex diandra*, *Carex aquatilis* and *Scirpus validus*. There are bladderworts (*Utricularia intermedia* and *Utricularia minor*) in the small pools, along with *Chara sp.* the moss layer has nearly continuous cover and consists of *Tomenthypnum nitens*, *Campylium stellatum*, *Drepanocladus revolvens* and *Scorpidium scorpioides*,

depending on the height of the water table.

The peat in this spring fen was cored and sampled. The mineral soil was reached at 224 cm, with the groundwater table observed at 5 cm below the surface. The surficial peat layer (0-35 cm) is composed of marl and moss remains, underlain by a thin (35-50 cm) layer of *Carex-Drepanocladus* fen peat. This is then underlain by a woody *Sphagnum fuscum* peat (50-177 cm), with a basal layer (177-224 cm) of humic marl peat containing wood fragments.

Chemical analyses of the peat reflect the high

amounts of Ca, Mg, Na and S found in the groundwater. Calcium levels are very high in the peat throughout the profile, with peaks in the marl layers at 10-35 cm and at 177-189 cm. The high levels of Ca and the high ash content even in the *Sphagnum* peat imply that the peat lying between the marl layers has been enriched by a downward migration of marl. The initially high levels of Na do not change substantially through the profile, indicating that Na is not accumulated in the peat. However, S displays a pattern of amounts increasing with depth.

The macrofossils in the cores from the spring fen and the coniferous treed swamp indicate an intricate development predicated by the presence of minerotrophic fen waters. The basal layers comprise well-decomposed materials that contain some woody plant remains, indicating a marshy condition with some shrubs. On the low-lying part of the wetland (the present spring fen), small pools developed where marl was deposited. However, the small pools were overwhelmed by bog conditions, indicated by *Sphagnum fuscum* peat, possibly as a result of a shift in the fen drainage

system. As peat filled in the lower part of the wetland, the more elevated part (the present swamp) became wetter and small pools developed on it. Later, bog conditions were prevalent at both core sites, but minerotrophic spring water inundated the lower part of the wetland, initiating a highly minerotrophic fen which still prevails there. On the higher part of the wetland, bog conditions were maintained until recently, when the minerotrophic groundwater rose sufficiently to come within the reach of plant roots, allowing the initiating of minerotrophic swamp development.