

WAGNER NATURAL AREA NEWSLETTER

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Newsletter of the Wagner Natural Area Society, Management Committee
and Volunteer Stewards of Wagner Natural Area, Parkland County, Alberta



Wagner Society Wins Two Grants to Study Moths and Lichens!

This spring the Wagner Society has been awarded two grants that will enable us to collect moths and lichens as part of a long-term study to inventory these organisms in the Natural Area. One grant, for \$4,770, has been awarded by Canada Trust Friends of the Environment Foundation to purchase equipment to trap, prepare and store the moths. The other, for \$3,529, from the federal government's Summer Career Placement Program, will pay the wages of a student to collect and prepare the moth and lichen specimens.

The study, which it is hoped can be conducted over a 10-year period, will involve one sampling once a week during the summer at a small number of sites that will have been previously identified and flagged. The student will use battery-run lights, baffles and collecting buckets to collect the moths overnight and will remove equipment and samples the following morning. These will be in a sensitive area of fens not visited by the public. Lichen sampling will be done at the same sites and others.

Although details still have to be worked out, the University of Alberta (Entomology Department), the Provincial Museum of Alberta (Entomology Section) and the Canadian Forest Service (Northern Forestry

Centre) have all expressed interest in committing time, resources and expertise to assisting with the study. The sorted specimens are to be identified later with expert help. It is the Society's intent that the resulting collection will be located so as to be accessible to anyone who is interested. A student will be hired to begin collecting shortly.

Responsible for planning the project and developing the grant proposals were Pat Clayton, Dave Ealey, Irl Miller and

Green Speckleback lichen, Flavopunctelia flaventior, on the trunk of a tamarack tree.
Photo by P. Cotterill.



Inside This Issue

- Treasurer's Report, pp. 2, 3
- The Wagner Grapevine, pp. 3, 4
- Summary of Breeding Birds, pp. 5, 6
- Moss Diversity in Peatlands, p. 7
- Wildflowers of Wagner No. 13, p. 8

Treasurer's Report by Dave Ealey

A treasurer's job, unlike that of the B-movie detective, is more than just "getting the facts, ma'am." However, it is important to stick to the facts with sufficient precision that any subsequent (forensic?) audit will approve the handling of the organization's finances. Here I would like to identify, for the record, the different tasks and responsibilities of the treasurer so that Wagner Natural Area Society members can be assured that appropriate financial practices are taking place both on their behalf and with respect to the long-term management of the Natural Area. The treasurer, of course, does not work in isolation from the rest of the Society executive, but nevertheless has an independent responsibility associated with being the signing authority on all financial and Society papers.

The treasurer deals with all income and expenses associated with the Society's business. Our organization relies heavily for its income on donations from visitors and membership subscription fees, and must handle that income properly. We report to members about the use of the income received each year through the annual financial statement at the Annual General Meeting. Occasionally financial matters come up in the Society's twice-yearly newsletter. Such reporting is not only a requirement under the Societies Act and the Charitable Associations Act but also an opportunity for Wagner Society to take stock of the cost of conserving our protected area. Each annual statement must of course be audited by a qualified person approved by the management committee.

What does handling of income and expenses involve? Like proper household budget management, it requires documentation of chequing account transactions and records of any monies set aside for specific purposes, such as planned maintenance or a "cushion" for unforeseen expenses. I now use Quickbook as computer software for generating financial reports to reconcile against the WNAS cheque book registers.

Recording expenses can be dealt with in many ways. To improve record-keeping and to help

planning, I established a system of detailed expense forms in early 1998. These forms, which management committee (executive) members of the Society submit for reimbursement of expenses incurred on Society business, should allow us to assess what the different management activities cost. For example, although this year's detailed financial report does not include extensive details on expense items, it took me a while under the former system to attribute certain expenses, and some costs could not be identified to a single use. Next year's financial statement will, for example, more clearly show the cost of items such as publishing and distribution of the newsletter.

A major part of expense and income management is the payroll of summer students. (The student's wages each year have been provided by grants.) This requires the usual payroll deductions, tax and benefits management and release of cheques to our short-term employees. The treasurer must also submit the appropriate forms to the government for taxes. Probably nothing opens one's eyes more to the responsibilities of employers than having to fill out those blessed forms!

Managing the savings investments is also part of the treasurer's role. Last year we consolidated the various GICs and savings accounts to provide a better accounting of the purposes of the various donations that the Society has received over the last few years. As a non-profit society, we are not entitled to accumulate funds without having some purpose in mind for those funds. Consequently, we established three GICs using monies from various donations, remnants of grants and careful financial management. These were directed as follows: an education fund (balance of a grant awarded for this purpose), a maintenance fund (an endowment fund to generate interest for ongoing site maintenance), and a general back-up fund for unforeseen financial obligations.

See opposite page (below) for a summary of the 1997 financial statement.



The Wagner Grapevine



Wagner an EMAN Site

Thanks to applications submitted by Dave Ealey and Derek Johnson, Wagner is now registered as a site that can be used for monitoring studies by scientists participating in the Ecological Monitoring and Assessment Network. Wagner Natural Area, with its protected status, accessibility and scientific reputation, is a highly suitable place to do longitudinal (long-term) monitoring studies of trends (for example, changes in water supply and quality, vegetation composition, rare plant populations). Our upcoming moth and lichen study fits this goal.

Villeneuve Extension Lease

Wagner Society's annual lease of the Villeneuve road allowance (commonly referred to by us as the "Villeneuve extension") was recently renewed. We had applied to Parkland County to receive title to the road allowance to consolidate it with adjacent Crown Land leased by the Society. The County, however, declined, stating that the lease would provide the Society with control but not ownership of the road allowance. This gives the County negotiating power in the

event it wishes to construct a service road along the north boundary of Wagner in the future.

Summer Management & Monitoring

As our summer student will focus on the moth study and will not be available for site maintenance, interpretation and other research, management committee members will be undertaking some of these tasks on a scheduled basis during the summer. Visitors with concerns or information about the site can reach us by leaving a message on our voice mail (988-4477).

Election of Directors at AGM

At our annual general meeting on January 20, 1998 we put into practice a new provision in our constitution in electing directors for terms. The following were elected for one-year terms: Alice Hendry, Glenn Jenkins and Derek Johnson. Dave Ealey, Irl Miller, Mike Jenkins were elected for two-year terms. Pat Clayton, Patsy Cotterill and Beth Jenkins were elected for three-year terms.

1997 Financial Statement — Summary (provided by Treasurer Dave Ealey)

The Society's income and expenses for the last financial year are summarized below. If members wish to see a more detailed statement please request one by leaving a message on our voice mail (988-4477).

Income

Donations (donation boxes, general donations, dedicated donations)	\$622.39
Membership dues	\$322.00
Miscellaneous Income (hay rental, sales of pins, etc.)	<u>\$612.30</u>
Total	\$1,556.69

Expenses

Insurance	\$500.00
Office expenses	\$688.13
Payroll and program expenses	<u>\$284.67</u>
Total	\$1,472.80

Total Income/Expense \$83.89

Investment Certificates

As of January 1, 1998, Wagner Society held the following GICs:

1. \$2,037.66;	2. \$3,500.00	3. \$5,569.46	Total Savings: <u>\$11,107.12</u>
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Spring Spruce-Up

Wagner is looking clean, tidy, and ready for visitors. Cliff Berreth, Construction Technologist with Alberta Environmental Protection, did some reconstruction work on the boardwalk earlier this year. This and the work of the carpenters on our management committee means that the boardwalk is now in good shape and can reliably support the weight of our visitors! Further, on May 3 we removed downed trees, put fresh gravel in appropriate spots and re-installed culvert pipes where necessary along the Marl Pond Trail, besides carrying out our usual spring-clean of the picnic shelter and toilets. Compared with last year, the trail is relatively dry. Water levels are also currently low in the marl ponds. The scarcity of frogs' and toads' eggs so far despite an early spring suggests this may not be a good year for amphibians.

Events/Field Trips

The Society executive decided not to offer any guided field trips this year as these have been poorly supported for the last couple of years. We conclude that many people now know about Wagner and prefer to schedule their trips to suit themselves. However, we are willing to reverse this decision if a demand for organized events re-emerges. In any case, our **frog-and-toad walks** will continue as they have for many years, led by University of Alberta zoologist Wayne Roberts. These traditionally take place on Thursdays in the last week of April and the first two weeks of May (this year April 30, May 7 and 14). Wayne patrols the boardwalk of the Marl Pond Trail from about 6:30 p.m. until nightfall, listening and watching for frogs and toads.

May Species Count

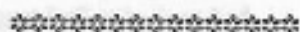
Another event that will continue because it is part of a province-wide tradition is the May Count of Plant Species in flower, which in Wagner takes place on the last Sunday in May each year. Join us on Sunday, May 31 this year (meet at 10 a.m. at the main gate) for the whole day or part of it. (Note: some strenuous walking and bush-whacking are involved.) Call Patsy at 481-1525 if you would like more information.

3rd Volunteer Steward Conference, May 8-10

Several Wagner Society executive will be taking part in this weekend conference/workshop entitled "Changes and Challenges" at the Battle Lake 4H Centre and other venues near Pigeon Lake. We look forward to exchanging ideas with fellow stewards, learning more about how to do the job and, above all, getting a glimpse of what the future holds for those of us who manage protected areas.

Bouquets

Thank you to all of our members who renewed their subscriptions earlier this year, and to those who included donations as well. Special thanks to our out-of-town members who cannot personally benefit from visiting Wagner but nevertheless support our efforts with generous donations. Perhaps that applies to some of our elderly local members too—they can't get out to visit much but they support Wagner on principle and are glad to know it's there!



Where Have All the Meadow Voles Gone?

I haven't done a proper study, but aren't those little brown torpedoes that were scuttling about everywhere in the grass last year much more difficult to come by this year? My source Deirdre Griffiths tells me that the past winter's lack of snow could be the culprit—poor insulation and cover may have made these rodents vulnerable to cold and predation, possibly bringing their populations crashing down in the mere course of a winter. I was also concerned about the apparent dearth of Richardson's ground squirrels in the Villeneuve field and at the Atim corner in Wagner. Alice Hendry tells me, however, that they are abundant elsewhere in the district. We shall be watching to see if the situation in Wagner changes. Incidentally, Alice also notes that at least four moose have been killed on the roads near Wagner this past year. How sad! —Ed.

Surveying Breeding Birds in Wagner: A Summary by Edgar Jones

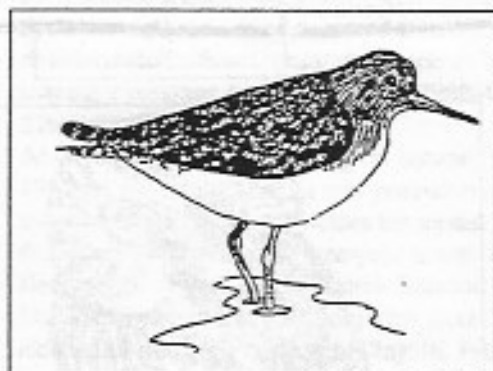
Four breeding bird surveys have been done by Wagner summer students since we first started employing students in 1986. These were carried out in 1986 (June 22 to July 3, by Terry Friedrich), 1987 (May 25 to June 7, by Andrew Hendry), 1994 (June 18 to 30, by Sandra Tober), and 1996 (June, by Glenn Jenkins). In this summary I will also include historical notes from my own personal records made on visits to Wagner for filming and observations.

In the students' summaries there are a number of bird species which are conspicuous by their absence, particularly since the 1986 and 1987 surveys. For instance, the Bonaparte's Gull which used to breed regularly in Wagner has not been seen since 1987. Mourning Dove and Common Nighthawk both bred commonly in Wagner prior to 1987. The last sighting of a Nighthawk was in 1987. Northern Harrier was last seen in 1987. In earlier days it used to nest in the wet area north of Highway 16 (formerly 16X). Gray Jays were last recorded at that time also. I have records of successful nestings for 1954, 1955 and 1958, the last year that I checked the Wagner area for nesting jays, which start nesting very early in the year, usually in March. Blue Jays are regularly seen and I have nesting records from May 24, 1960, May 10, 1961, and May 26, 1962.

Smaller birds such as Ruby-crowned Kinglets are regularly recorded and likely still nest there. The only nest record I have was July 1, 1956. The Boreal Chickadee used to nest commonly in Wagner, and is still there, likely breeding. My nesting records are all in late May or June such as June 3, 1955, June 28, 1959 and May 25, 1960. In March of 1955 these birds fed regularly from the hand, due to the fact that cutting crews were taking black swamp spruce for fence-posts, and at lunch-time shared their sandwiches with the chickadees! Even such rarities as the Olive-sided Flycatcher were nesting on June 21, 1959. The nest contained three eggs and was 30 feet above the moss of the muskeg in a black spruce. The Western Wood Pewee was also a common breeder. On June 20, 1956 I recorded three eggs, on June 21, 1959, three nests with three eggs each, and on July 5 four more nests, one as low as six feet. This species is now very scarce in

Wagner, but still might be found in some of the quiet areas of the property.

It seems likely that the Solitary Sandpiper and the Myrtle Warbler, the latter now classified as the Yellow-rumped Warbler, are still breeding in Wagner. My last and only nesting records of Solitary Sandpiper were recorded on July 5th, 1959 when two were located with four eggs each. My last records of searching for and finding Myrtle Warblers were in 1956 and 1959, June 21 and July 1, respectively.



Solitary Sandpiper. Drawing by Sandra Tober.

The most notable addition to the bird life of Wagner is the Common Raven, which in recent years has spread its range throughout central and southern Alberta.

Last fall I placed two duck boxes in the beaver-pond area on the west side of the property. The earlier surveys had recorded a pair of Goldeneye ducks (tree-nesting ducks that are easily attracted to nesting boxes) with a brood of one- to three-day-old downies on the beaver pond. It is most probable that these were hatched somewhere on the west side of Wagner as there seems to be little in the way of suitable breeding territory outside of Wagner. I also placed a third duck box of a type often used by Buffleheads and/or small owls such as Saw-whets or Boreals. This was placed to the south of marker # 6 on the Marl Pond Trail in a mixed forest of spruce, birch and poplar, facing west. As there were indications of a small owl in the area it seemed like a good possibility. This box is approximately 300 yards from the beaver pond in a south-easterly direction. (contin. overleaf)

(continued from page 5)

From the earlier reports/surveys and my own observations, it seems likely that the reduction and decline of such species as Gray Jays, Boreal and Black-capped Chickadees and Downy and Hairy Woodpeckers over the years could well be the result of the intensive poisoning campaigns undertaken by the Alberta Government in an effort to control coyotes and other predators. The 1080 poison used in conjunction with meat stashes was known to have very detrimental effects on forest bird species that were attracted to these bait stations. To this day, many of the species listed above have yet to recover from

Northern Saw-whet Owl.
Drawing by Sandra Tober.



Our guest contributor to this issue is **Dr. Rene Belland** of the Devonian Botanic Garden, who writes on pages 7 and 8. Belland notes that few rare mosses occur in peatlands (nevertheless the "common eleven" are challenge enough for most of us ordinary mortals!). Reporting in *The Bryologist* (vol. 100 (1), 1997, pp. 1-12), with first author D.H. Vitt, Belland states that 113 species or 25% of the Alberta moss flora is rare, with most rare species occurring in the northern Rocky Mountains, often associated with particular rock formations in cliffs and alpine tundra.

these devastating predator-control practices.

Finally, I recommend that for all future bird studies and surveys standard bird banding codes be used. This would make it much easier to summarize species lists for the Wagner Natural Area.

Editor's note: Eddie has supplied a list of these codes for Wagner Society's files. Eddie, a well-known nature film-maker and wildlife artist, and lifelong birder, was instrumental in the acquisition of Wagner property as public land and nature reserve. Jones's Pond, in the centre of Wagner, is named in his honour.

Bulletin Board

LOST: One men's gold watch, on May 3rd, somewhere on the Wagner property. Call Irl Miller at 455-3866 if you have information.

Saving Little Mountain Natural Area

The Edmonton Natural History Club has spent many months working to save this 46-acre parcel of remnant aspen parkland in north-east Edmonton (east and north of 50 St. and 160 Ave. adjacent to Little Mountain Cemetery), which is now part of a development proposal. ENHC aims to raise public support for the area to persuade Edmonton City Council to exchange the equivalent of City-owned developable land for the site, now owned by the developer. For a brochure on Little Mountain NA or other information, call Patsy Cotterill at 481-1525. To express support for the project, Edmontonians please call or write the mayor and councillors in your City ward. (For address and numbers, see Edmonton phone directory—City blue pages.)

Moss Workshop, Fall 1998

The Edmonton Plant Study Group plans to offer a moss identification workshop (field and microscopic characters) in September or October, to be led by U of A bryology student **Sylvie Mauser**. We would have a day or half-day field trip (probably to Elk Island Park) followed by a lab session at the U of A BioSciences the next day. Call Patsy at 481-1525 if you want to register.

Moss Diversity in Alberta Peatlands

by René Belland

Peatlands are an important feature of the landscape in Alberta, where recent estimates show the province to have approximately 121,000 km². This amounts to a significant proportion, about 18%, of the total area of the province. Alberta's peatlands are an important habitat for mosses, and at least 64 moss species and 20 species of *Sphagnum* moss are known to occur in them. This richness comprises somewhat less than one-sixth of all the mosses known in the province.

Peatlands develop in areas where peat production is greater than decomposition. Generally this includes areas where rainfall exceeds evapotranspiration and temperatures are cool. In Alberta, peatlands are found in the northern half of the province, within the so-called 'Green Zone' (as opposed to the "White-Zone," or agricultural area).

There are two main types of peatlands found in the province, bogs and fens. Fens develop under the influence of mineral-rich groundwater and the plants that are associated with them receive their nutrients from this groundwater. Fens are characterized by high cover of sedges and the presence of tamarack. Mosses are usually abundant, and include mainly non-*Sphagnum* species, or what are often termed "brown mosses." Three different types of fens can be found in Alberta: poor, moderate-rich, and extreme-rich fens. The descriptions used to describe the fens (e.g., moderate, extreme-rich) refer to the number of plant indicators that can be found in them, and not to the "richness" of available nutrients.

Alberta fens can be very diverse in the moss flora that they support. At least 74 species are known to occur in them. However, not all species are found in any one fen. Individual fens are extremely variable in the actual numbers of mosses that they support. Depending on conditions, some fens harbour only a few species (less than 10), while others may be extremely rich (more than 20 species). Moreover, it is always hard to predict which mosses can be expected in fens, and no two fens ever appear to be alike in their species composition. The number of species is dependent on the number of available microhabitats, and water chemistry.

The latter is particularly significant since its chemical constituents and pH may be extremely variable, and this is reflected in the variable species diversity and composition.

Unlike fens, bogs are dominated by *Sphagnum* mosses, and vascular plants play a lesser role. In Alberta, bogs are the next step in the succession from fens, and are always found in peatland complexes that include fens. Bogs are always treed in Alberta, with the dominant tree being black spruce, although some bogs are known to have a minor presence of tamarack left over from past disturbances. As with fens, there are several different bog types in the province. The two most common types are continental bogs and peat plateaus. Continental bogs are the most common and occur throughout northern Alberta. Peat plateaus are permafrost peatlands, and are found only in the northernmost regions of the province. The overall diversity of bogs is considerably less than that of fens; only about 27 mosses and 12 species of *Sphagnum* are known from them. Bogs are typically very consistent in the mosses that occur in them. Most bogs are dominated by five species of *Sphagnum*, and perhaps six species of other mosses. Regardless of which bog you may visit, you will always encounter the same 11 species; only their relative amounts have changed!

Are there any rare mosses in peatlands? The answer is: not many. Only ten, or about 8% of the rare mosses of Alberta, can be found in peatlands, and of these seven grow in fens. Do all these facts about the relatively impoverished moss diversity of peatlands mean that we should ignore these vegetation types in our conservation efforts? Absolutely not! Peatlands play an important function in the hydrology and carbon balance of our ecosystems...but that's another story!

Bryologist René J. Belland, Ph.D., is Director of Research and Database Manager at the University of Alberta Devonian Botanic Garden. He is currently devising a model to predict the occurrence of rare mosses in the Rocky Mountains. (See also Dr. Belland's peat moss profile on page 8 of this newsletter.)

Wildflowers of Wagner No. 13

Rusty Peat Moss

Peat Moss Family

Sphagnum fuscum is probably the dominant peat moss in ombrotrophic bogs of Alberta. *Sphagnum* species are some of the most easily identified mosses because of their distinctive morphology. Features that distinguish the genus *Sphagnum* using the unaided eye include their large size (as compared with other mosses), their pompom-like head or 'capitulum,' and their two kinds of branches (spreading and hanging). At the microscopic level the *Sphagna* possess two distinct leaf-cell types that are unknown elsewhere among the bryophytes. *Green cells* are elongate, worm-like cells that are living and photosynthetic. *Clear cells* are dead cells, with no coloration. They are much fatter than green cells and have pores in their cell walls that enable water to enter. The clear cells contribute significantly to the water retention capacity that peat mosses are renowned for.

In Alberta there are 22 species of *Sphagnum*. *Sphagnum fuscum* can be easily recognized by its distinctly brownish coloration, its dark brown stem, and its moderate, but slender, size. Its capitulum is about 1 cm across, and plants are usually longer than 20-30 cm. However, in ideal situations, the plants may reach 0.5 m in length! *S. fuscum* is a 'hummock former,' and produces dense brown hummocks that may reach 1.5 m in diameter and 1m in height. In Alberta bogs, a second common *Sphagnum* species, *S. angustifolium*, may be found interspersed among *S. fuscum* plants. The color of *S. angustifolium* is light-green and contrasts sharply with the dull brown of *S. fuscum*.

Sphagnum fuscum is a widely distributed species in boreal regions of North America, Europe, and Asia. It is generally associated with coniferous forests, becoming rare north of the treeline and south in the deciduous forests. In Alberta, the species is the dominant species in many of the black-spruce-dominated bogs that are frequent in the "Green Zone" of the northern half of the province. *Sphagnum fuscum* is occasionally found in fens where it grows in hummocks that are well above the influence of

Sphagnum fuscum (Schimp.) Klinggr.

Sphagnaceae

the nutrient-rich fen waters. Although not frequent at Wagner, look for the species along the margins of fens, at the fen-forest transition, where peat has accumulated to a sufficient depth to promote the growth of the rusty peat moss.



Text by René Belland, Ph.D.

Drawing by John Maywood, courtesy of Dale Vitt, Ph.D., Director of the University of Alberta Devonian Botanic Garden.