

A Chronology of Conservation Efforts Since 1985

Apr 1986	The Alfred Bog Committee authorizes a local real estate agent to acquire property.
Nov 1986	Two hundred acres are acquired. Acquisition, funding / communication and management plans are completed and approved.
Dec 1987	The Nature Conservancy of Canada is authorized to acquire the Cobi Foods property.
Apr 1988	The acquisition of the Cobi Foods property and a financing strategy is approved (3800 acres for \$725,000).
Sept 1988	The Minister of the Ontario Ministry of Natural Resources attends the official announcement at Alfred College of the purchase of the Cobi Foods property.
Nov 1988	The Alfred Bog Committee authorizes the preparation of a life science inventory and a land owner contact program.
Jan 1991	A report on the land owner contact is received. Certificates are awarded to land owners pledging to preserve land they own in the bog.
Jan 1992	The Life Science Inventory by Ted Mosquin is received. The construction of a boardwalk is approved.
Mar 1993	The Committee approves a statement of management principles. Two hundred acres are added to the protected land.
Jul 1994	The boardwalk is put in place.
Nov 1996	The finished Alfred Bog Management Plan is accepted.
Nov 1997	The Alfred Bog Committee approves in principle and depending on the detail, that the land acquired to date be used to create an Ontario Parks Nature Reserve under the Legacy 2000 program. It also approves a list of jobs to be done when resources become available.
Dec 1999	The first Official Plan for the United Counties of Prescott and Russell becomes law but local peat extractors appeal those provisions of the Plan that protect the Bog. The Ontario Municipal Board will hear the appeal this year.
Oct 2001	Another large property (3200 acres) in the bog is acquired by The Nature Conservancy for \$2,500,000. The governments of Canada and Ontario each paid 1/3 and the remaining \$820,000 was raised privately in the next few years.
2004	The last appeal to the Ontario Municipal Board is settled.
2005	The responsibility for managing the Bog was passed to the Superintendent of Voyageur Provincial Park.
2006	The Alfred Bog Committee disbands after 20 years.

Alfred Bog A conservation success story ...



The Ottawa Field-Naturalists' Club



The very rare Bog Elfin is found in
the Alfred Bog.

Alfred Bog

By Don Cuddy (retired)

Ontario Ministry of Natural Resources, Kemptville

(First published in The Ottawa Field-Naturalists' Club's magazine—Trail & Landscape, 1983-Vol. 17, No. 3)

With a foreword—July, 2008.

by Frank Pope,

This reprint also includes additions to the species lists from Ted Mosquin's study "The Alfred Bog: An Ecological Study"

Cover Photo— '**Bog Elfin**' by Tom Murray
Massachusetts Butterfly Club

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Foreword

Don Cuddy was among relatively few people who appreciated the biological value of Alfred Bog. He shared his knowledge in the 1983 article. Later, "The Alfred Bog: An Ecological Study" a report by Ted Mosquin, added to our knowledge. As long as the bog was zoned "conservation" in the municipal plan there was little concern about its preservation.

In the 1970s there was much interest in market gardening and an international vegetable retailer acquired a large block of land in the bog for market gardening. At that time the Holland Marsh was a leading producer of vegetables. When they discovered the conservation zoning they requested a change to "agriculture" and the municipality made this change in 1982.

Recognizing the danger to the biological integrity of the bog, The Vankleek Hill Nature Society and The Ottawa Field-Naturalists' Club appealed the change of zoning to the Ontario Municipal Board. The Board ruled in favour of the municipality. It appeared that the only hope of saving the bog would be to purchase the property.

In 1985, Charles Sauriol of the Nature Conservancy of Canada and Frank Pope (then President of The Ottawa Field-Naturalists' Club) called a meeting in Ottawa of all people interested in preserving the biological integrity of Alfred Bog. The result of that meeting was the formation of the Alfred Bog Committee with, Pope as Chair.

About that time there was a change of ownership of the property in question and the new owners, who had little interest in market gardening, expressed an interest in selling the property. The Alfred Bog Committee launched a fund raising drive and in 1987, with contributions by the two naturalist clubs, the Nature Conservancy and matching federal and provincial grants, the property was acquired. The Nature Conservancy negotiated the purchase. Subsequently smaller properties in the bog were acquired as opportunities arose. South Nation Conservation undertook to manage the property and in an inspirational move, installed a 1,000 ft. boardwalk on a heath part of the bog. The boardwalk proved very popular and is to this day. It solved a dilemma in that we wanted the public to know what a beautiful and valuable resource it was but we did not want them walking in the bog because human traffic is dangerous for people and destructive to bog plants.

In 1995 the United Counties of Prescott and Russell began preparing

their first Official Plan. The Ontario Ministry of Natural Resources designated Alfred Bog as a "Provincially Significant Wetland" and mapped the boundary. The designated area was then incorporated into the Official Plan in accordance with Provincial Policy Statement

By now a booming market for peat, used primarily for landscaping, had arisen. The owners of a second block of bog land, bigger than the first block, had been monitoring the situation and were sympathetic to preserving the biological aspects of their land. They indicated a willingness to sell and another fund raising drive began. With the Nature Conservancy negotiating the purchase, this block of land was added to our holdings which then accounted for about 95% of the bog.

In June 1999 the United Counties of Prescott and Russell announced that the Official Plan had been adopted by the County Council and approved by the Minister of Municipal Affairs in December 1999. Nevertheless, a number of appeals were filed to the Ontario Municipal Board. They were ultimately settled through a complicated mediated settlement in 2004. In the end, an additional 3,765 acres of land within the limits of the Alfred Bog had either been acquired or donated to a public body. It is estimated that by 2010, more than 98% of Alfred Bog will be publicly owned.

In October 2004, the United Counties adopted a Site Alteration By-law to ensure the long term protection of the Bog. This By-law strictly prohibits any site alteration and the destruction of trees within the limits of the Bog. As it stands today, the United Counties are still pursuing funding opportunities to acquire additional private properties within the limits of the Alfred Bog.

In 2005, the responsibility for managing the Bog was assigned to Ontario Parks. It is exercised by the Superintendent of Voyageur Provincial Park. In 2006 the Alfred Bog Committee was disbanded.

We are proud of this great legacy for future generations. It could not have been accomplished without the support of local citizens who, over this period, came to recognize the bog's biological significance. The Council of the United Counties of Prescott and Russell made it possible. South Nation Conservation did a great job managing the bog. The Nature Conservancy of Canada provided leadership, negotiating skill, legal knowledge and seed funding. The generosity of Mr. Andre Lafleche of Lafleche Environment should also be recognized for his significant contribution of money toward the acquisition of property in Alfred Bog. Finally, we must never forget the members of the Vankleek

- ☐ *Sphagnum magellanicum*
- ☐ *Sphagnum nemoreum*
- ☐ *Sphagnum rubellum*
- ☐ *Sphagnum russowii*
- ☐ *Sphagnum angustifolium*
- ☐ *Tetraphis pellucida*

1 Occurs in more or less disturbed habitats (ditches, marshes, beaver ponds and deciduous woods) associated with the bog. These habitats have not been examined in any detail and only the more obvious plants have been recorded.

2 Provincially rare.

3 Regionally rare (Eastern Ontario).

* Non-native plant

Editor's Note:

If visitors to the Alfred Bog observe a species not listed in this booklet, this information would be of interest to The Ottawa Field-Naturalists' Club. The club's email address is ofnc@ofnc.ca.

- | | |
|---------------------------------------|-------------------------------|
| <input type="checkbox"/> Boneset | <i>Eupatorium perfoliatum</i> |
| <input type="checkbox"/> Low Cudweed | <i>Gnaphalium uliginosum</i> |
| <input type="checkbox"/> Wild Lettuce | <i>Lactuca canadensis</i> |

Mosses of Alfred Bog

Collected by J.M. Reddoch and identified by R.R. Ireland in 1982.

- ☐ *Atrichum altecristatum*
- ☐ *Aulacomnium palustre*
- ☐ *Callicladium haldanianum*
- ☐ *Dicranum flagellare*
- ☐ *Dicranum montanum*
- ☐ *Dicranum polysetum*
- ☐ *Drepanocladus exannulatus*
- ☐ *Plagiomnium cuspidatum*
- ☐ *Plagiothecium cavifolium*
- ☐ *Pleurozium schreberi*
- ☐ *Pohlia nutans*
- ☐ *Polytrichum commune*
- ☐ *Polytrichum strictum*
- ☐ *Sphagnum capillifolium*
- ☐ *Sphagnum cuspidatum*
- ☐ *Sphagnum fallax*
- ☐ *Sphagnum fimbriatum*
- ☐ *Sphagnum fuscum*
- ☐ *Sphagnum girgensohnii*

Hill Nature Society and The Ottawa Field-Naturalists' Club who recognized the danger, initiated the rescue and raised a considerable amount of money to make the purchases possible.

Frank Pope, July 2008

Introduction to the 1983 Original Publication

Alfred Bog is a 4200 hectare (10,000 acre) bog lying between Highways 17 (now 174) and 417 in Alfred and Caledonia Townships of Prescott County. It can be reached from Ottawa in about 1 1/4 hours time by driving east along Highway 174 for 70 km to the village of Alfred, then south (turn right on Peat Moss Rd) for another 5.3 km to the bog. (Watch for the signs. See page 18-19 for map and current directions to the Alfred Bog boardwalk)

Until the past few years, the bog has been known to naturalists (and the general public) mainly through the presence of a disjunct Moose population. The local residents, of course, have always been familiar with the bog – using it for blueberry picking and snowmobiling. As is often the case, however, it takes an outsider to appreciate the true significance of a resource on a regional or provincial scale.

Within the past few years, field naturalists, botanists and entomologists have visited the bog with increasing regularity. While no systematic survey of its biota has been conducted, the cumulative finds of those who visited the bog to date reveal a highly significant flora and fauna, including two species of plants and butterfly not found elsewhere in Ontario. With our limited knowledge of the bog, it would be presumptuous to attempt an authoritative description.

The following account is, therefore, a general overview based upon my own observations made during several trips to the bog, supplemented with written records (published or not) of other naturalists and scientists, and various communications with individuals who have visited the bog either with me or separately.

Don Cuddy

The Alfred Bog has been known to naturalists and the general public mainly through the presence of a disjunct moose population.



Physiography

Alfred Bog lies in the middle of a broad, shallow valley once occupied by a precursor to the Ottawa River. The banks of this former river can be seen to the north and south of the bog at Alfred Station and Fournier, and form prominent slopes extending to the west for many kilometres. Within the broad, clay-bottomed trough, Alfred Bog forms a slight height of land. Three creeks drain the bog; two, Caledonia Creek and Horse Creek, drain westward into the South Nation River. The third, the Ruisseau des Atocas, drains northward into the Ottawa River. All have been deepened, straightened and extended to improve drainage in and about the periphery of the bog.

The clays underlying the bog were deposited beneath the Champlain Sea some 10,000 to 12,000 years ago. As the sea receded, rivers flowing on the clay plain were forced to cut into the clays in order to maintain their flow against the continuing isostatic rebound of the St. Lawrence Lowlands. Eventually the flow was diverted to the path of least resistance, the present channel of the Ottawa River. Alfred Bog is thought to have originated shortly thereafter on the poorly drained valley floor.

Several physiographic factors contribute to the continued existence of the bog. The flat-lying clays resist natural drainage. The shallow valley forms a frost pocket, thus enabling the bog plant species to compete more effectively against less cold hardy species. There are saline springs about the periphery of the bog. They attest to the earlier presence of the Champlain Sea, but their influence on the bog is not known.

Alfred Bog is a typical domed bog, with the thickest (and oldest) peat deposits in the central portion. The depth of peat varies from an estimated five metres in the middle of the bog to less than one meter at the edges. Due to clearing and stripping of the peat around the edges (to permit growing crops on underlying clay), there is often a perceptible bank of exposed peat up to one metre in height at the bog's edge. The transition from cultivated field to bog is sharpest on the better-drained north and west sides. On the south and east sides, the transition is much more gradual with extensive peripheral marsh and shrub thickets growing on formerly cleared land which has been proven to be too wet to cultivate.

<input type="checkbox"/> Hemp Nettle*	<i>Galeopsis tetrahit</i>
<input type="checkbox"/> Bugleweed	<i>Lycopus americanus</i>
<input type="checkbox"/> Northern Bugleweed	<i>Lycopus uniflorus</i>
<input type="checkbox"/> Marsh Skullcap	<i>Scutellaria galericulata</i>
<input type="checkbox"/> Turtlehead	<i>Chelone glabra</i> ¹
<input type="checkbox"/> Slender Agalinis	<i>Agalinis tenuifolia</i>
<input type="checkbox"/> Toadflax*	<i>Linaria vulgaris</i> ³
<input type="checkbox"/> False Pimpernel	<i>Lindernia dubia</i>
<input type="checkbox"/> Marsh Speedwell	<i>Veronica scutellata</i>
<input type="checkbox"/> Horned Bladderwort	<i>Utricularia cornuta</i> ³
<input type="checkbox"/> Flat-leaved Bladderwort	<i>Utricularia intermedia</i>
<input type="checkbox"/> Twin-scaped Bladderwort	<i>Utricularia geminiscapa</i> ³
<input type="checkbox"/> Common Plantain*	<i>Plantago major</i>
<input type="checkbox"/> Rough Bedstraw	<i>Galium asprellum</i>
<input type="checkbox"/> Marsh Bedstraw	<i>Galium palustre</i>
<input type="checkbox"/> Small Bedstraw	<i>Galium trifidum</i>
<input type="checkbox"/> Partridge-berry	<i>Mitchella repens</i>
<input type="checkbox"/> Wild Cucumber	<i>Echinocystis lobata</i>
<input type="checkbox"/> Ragweed	<i>Ambrosia artemisiifolia</i>
<input type="checkbox"/> Whorled Wood Aster	<i>Aster acuminatus</i> ²
<input type="checkbox"/> Large-leaved Aster	<i>Aster macrophyllus</i>
<input type="checkbox"/> Bog Aster	<i>Aster nemoralis</i> ³
<input type="checkbox"/> Flat-topped White Aster	<i>Aster umbellatus</i>
<input type="checkbox"/> Bog Aster x Whorled Wood Aster Hybrid	<i>Aster nemoralis</i> x <i>Aster acuminatus</i> Hybrid
<input type="checkbox"/> Nodding Beggarticks	<i>Bidens cernua</i>
<input type="checkbox"/> Beggarticks	<i>Bidens tripartitus</i>
<input type="checkbox"/> Spotted Joe-pye-weed	<i>Eupatorium maculatum</i>

<input type="checkbox"/> Spatulate-leaved Sundew	<i>Drosera intermedia</i> ²
<input type="checkbox"/> Round-leaved Sundew	<i>Drosera rotundifolia</i>
<input type="checkbox"/> Naked Mitrewort	<i>Mitella nuda</i>
<input type="checkbox"/> Large St. John's-wort	<i>Hypericum majus</i>
<input type="checkbox"/> Marsh St. John's-wort	<i>Triadenum fraseri</i>
<input type="checkbox"/> Northern White Violet	<i>Viola macloskeyi</i> ssp. <i>palens</i>
<input type="checkbox"/> Purple Loosestrife*	<i>Lythrum salicaria</i>
<input type="checkbox"/> Dewdrop	<i>Dalibarda repens</i>
<input type="checkbox"/> Common Strawberry	<i>Fragaria virginiana</i>
<input type="checkbox"/> Four-seeded Vetch	<i>Vicia tetrasperma</i>
<input type="checkbox"/> Wood Sorel	<i>Oxalis acetosella</i>
<input type="checkbox"/> Touch-me-not	<i>Impatiens capensis</i>
<input type="checkbox"/> Fireweed	<i>Epilobium angustifolium</i>
<input type="checkbox"/> Swamp Willow-herb	<i>Epilobium palustre</i>
<input type="checkbox"/> Bristly Sarsaparilla	<i>Aralia hispida</i>
<input type="checkbox"/> Wild Sarsaparilla	<i>Aralia nudicaulis</i>
<input type="checkbox"/> Bulb-bearing Water Hemlock	<i>Cicuta bulbifera</i>
<input type="checkbox"/> Marsh Pennywort	<i>Hydrocotyle americana</i>
<input type="checkbox"/> Water Parsnip	<i>Sium sauve</i>
<input type="checkbox"/> Bunchberry	<i>Cornus canadensis</i>
<input type="checkbox"/> Indian Pipe	<i>Monotropa uniflora</i>
<input type="checkbox"/> Swamp Candles	<i>Lysimachia terrestris</i>
<input type="checkbox"/> Starflower	<i>Trientalis borealis</i>
<input type="checkbox"/> Closed Gentian	<i>Gentiana andrewsii</i> ¹
<input type="checkbox"/> Dogbane	<i>Apocynum androsaemifolium</i>
<input type="checkbox"/> Buckbean	<i>Menyanthes trifoliata</i>
<input type="checkbox"/> Hound's Tongue*	<i>Cynoglossum officinale</i>
<input type="checkbox"/> Blue Vervain	<i>Verbena hastata</i> ¹

Historical Perspective

In 1806 Joseph Fortune, while surveying Caledonia Township, described the bog as a thick spruce-cedar swamp with large areas of "marsh". He found the surveying difficult: "...the timber all blown down, very bad going, almost impossible to get through" and, later: "...almost impossible to endure the hardship". Interpretation of Fortune's field notes and those of Angus Cattanach who resurveyed part of Caledonia Township in 1828 suggests that Fortune's "red spruce" was really Black Spruce and his "marsh" was more likely shrub heath bog. Many of the local residents still call the bog "the marsh".

Alfred Township was surveyed in 1820 by William Browne. He described all of the lowland between the Alfred-Caledonia township boundary and the South Nation River as a "great wet swamp" with large areas "...mostly bare of trees, except a few stunted tamarinds; the surface is covered with the low cranberry and bilberry...". Browne went on to predict the future for this area when he wrote: "A major part of this great swamp may be made fertile by burning when ditched". Most of the area so described is now used to grow corn or landscaping sod. Browne also showed on his map two small lakes which no longer exist. The larger of these, drained by Horse Creek, appears to have been over 40 ha (100 acres) in extent.

During the 160 years since Browne completed his survey, the combination of drainage and burning the peat overlying the clay soils had reduced Alfred Bog to less than half of its original extent. (It is, in fact, plausible that Mer Bleue and Alfred Bog, now 45 km apart, were essentially linked by wetlands before settlement.). Fires set to burn peat occasionally escaped, and it appears that much, if not all, of the present bog has been burned over at various times. Fires may also have been set in the bog to encourage better blueberry crops. Such fires would consume dry, woody materials and possibly kill trees, depending upon how dry the bog was at the time.

Other man-induced changes to the present bog include a number of drains and ditches which affect the water table, at least locally. The principle drain is that along Horse Creek, which was deepened a few years ago and cuts the bog into two sections. A number of survey line cuts also cross the bog. Despite these infringements upon its integrity, substantial portions of the bog appear to remain much as they were described by the first land surveyors early in the nineteenth century.

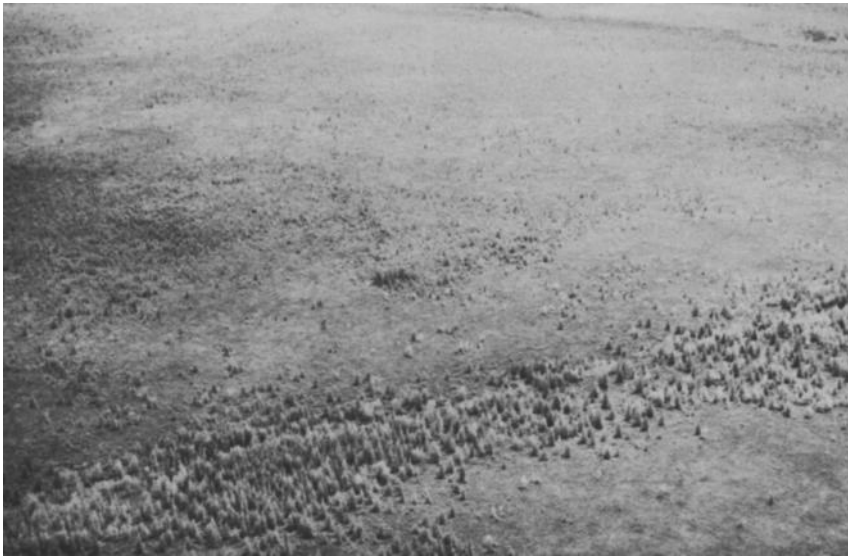


Photo 1. View over the open bog. The band of trees in the foreground follows a survey line along which a ditch was dug many years ago. The more rapid tree growth can be attributed to the better drainage near the ditch. The scattered, stunted trees in the background are of about the same age as those growing along the ditch.

Vegetation

A number of plant communities can be recognized in the bog, however, a very large portion of the bog's vegetation is transitional in nature between two or more of these communities. Some of the more interesting plants and the best bird habitat occur in these transition zones. Only the common vegetation types which occur on undisturbed portions of the bog will be described.

Low Bog Heath:

Extensive areas of open heath vegetation are largely confined to the western and northern parts of the bog where they occupy about 800 ha (2000 acres). The dominant shrub throughout this area is Leatherleaf. Other low heath shrubs, Labrador Tea, Bog Laurel, Sheep Laurel and Bog Rosemary are abundant. Hummocks of *Sphagnum* moss growing on and among the shrubs make walking difficult if your legs are a good deal shorter than those of a Moose. Moose (and other, smaller

- | | |
|--|--|
| <input type="checkbox"/> Painted Trillium | <i>Trillium undulatum</i> ³ |
| <input type="checkbox"/> Wild Iris | <i>Iris versicolor</i> |
| <input type="checkbox"/> Blue-eyed Grass | <i>Sisyrinchium angustifolium</i> |
| <input type="checkbox"/> Dragon's-mouth Orchid | <i>Arethusa bulbosa</i> ³ |
| <input type="checkbox"/> Grass Pink | <i>Calopogon tuberosus</i> |
| <input type="checkbox"/> Moccasin Flower | <i>Cypripedium acaule</i> |
| <input type="checkbox"/> White-fringed Orchid | <i>Platanthera blephariglottis</i> ² |
| <input type="checkbox"/> Southern Twayblade | <i>Listera australis</i> ² |
| <input type="checkbox"/> Rose Pogonia | <i>Pogonia ophioglossoides</i> |
| <input type="checkbox"/> False Nettle | <i>Boehmeria cylindrica</i> ¹ |
| <input type="checkbox"/> Stinging Nettle | <i>Urtica dioica</i> ssp. <i>gracilis</i> ¹ |
| <input type="checkbox"/> Dwarf Mistletoe | <i>Arceuthobium pusillum</i> ³ |
| <input type="checkbox"/> Dock-leaved Knotweed | <i>Polygonum lapathifolium</i> |
| <input type="checkbox"/> Water Knotweed | <i>Polygonum punctatum</i> |
| <input type="checkbox"/> Tear-thumb | <i>Polygonum sagittatum</i> |
| <input type="checkbox"/> False Buckwheat | <i>Polygonum scandens</i> |
| <input type="checkbox"/> Long-leaved Dock | <i>Rumex longifolius</i> |
| <input type="checkbox"/> Long-leaved Chickweed | <i>Stellaria longifolia</i> |
| <input type="checkbox"/> Yellow Pond-lily | <i>Nuphar variegata</i> |
| <input type="checkbox"/> Fragrant Pond-lily | <i>Nymphaea odorata</i> |
| <input type="checkbox"/> Canada Anemone | <i>Anemone canadensis</i> ¹ |
| <input type="checkbox"/> Virgin's-bower | <i>Clematis virginiana</i> |
| <input type="checkbox"/> Goldthread | <i>Coptis trifolia</i> |
| <input type="checkbox"/> Common Butter Cup* | <i>Ranunculus acris</i> |
| <input type="checkbox"/> Bristly Crowfoot | <i>Ranunculus pensylvanicus</i> |
| <input type="checkbox"/> Tall Meadow-rue | <i>Thalictrum polygamum</i> ¹ |
| <input type="checkbox"/> Field Penny-cress* | <i>Thlaspi arvense</i> |
| <input type="checkbox"/> Pitcher plant | <i>Sarracenia purpurea</i> |

<input type="checkbox"/> Stunted Sedge	<i>Carex paupercula</i> ³
<input type="checkbox"/> Cypress-like Sedge	<i>Carex pseudo-cyperus</i>
<input type="checkbox"/> Retorse Sedge	<i>Carex retrorsa</i>
<input type="checkbox"/> Broom Sedge	<i>Carex scoparia</i>
<input type="checkbox"/> Stiff Sedge	<i>Carex stricta</i>
<input type="checkbox"/> Three-seeded Sedge	<i>Carex trisperma</i>
<input type="checkbox"/> Fox Sedge	<i>Carex vulpinoidea</i> ³
<input type="checkbox"/> Blunt Spike-Rush	<i>Eleocharis obtusa</i>
<input type="checkbox"/> Dense Cotton-grass	<i>Eriophorum spissum</i>
<input type="checkbox"/> Filiform Cotton-grass	<i>Eriophorum tenellum</i> ³
<input type="checkbox"/> Virginia Cotton-grass	<i>Eriophorum virginicum</i>
<input type="checkbox"/> White Beak-rush	<i>Rhynchospora alba</i>
<input type="checkbox"/> Blackish Bulrush	<i>Scirpus atrovirens</i>
<input type="checkbox"/> Wool-grass	<i>Scirpus cyperinus</i>
<input type="checkbox"/> Great Bulrush	<i>Scirpus validus</i>
<input type="checkbox"/> Lesser Duckweed	<i>Lemna minor</i>
<input type="checkbox"/> Larger Duckweed	<i>Spirodela polyrhiza</i>
<input type="checkbox"/> Wild Calla (Water Arum)	<i>Calla palustris</i>
<input type="checkbox"/> Yellow-eyed Grass	<i>Xyris montana</i> ³
<input type="checkbox"/> Short-caudate Rush	<i>Juncus brevicaudatus</i>
<input type="checkbox"/> Canada Rush	<i>Juncus canadensis</i>
<input type="checkbox"/> Common Rush	<i>Juncus effusus</i>
<input type="checkbox"/> Path Rush	<i>Juncus tenuis</i>
<input type="checkbox"/> Bluebead Lily	<i>Clintonia borealis</i>
<input type="checkbox"/> Wild Lily-of-the-valley (Canada Mayflower)	<i>Maianthemum canadense</i>
<input type="checkbox"/> Cucumber Root	<i>Medeola virginiana</i>
<input type="checkbox"/> Three-leaved False Solomon's Seal	<i>Smilacina trifolia</i>

mammals) have created a maze of paths (best viewed from the air) across these parts of the bog.

The low bog heath all appears to have been burned over in the past. Scattered charred stumps suggest that it was at least partially wooded. Survey records support this view; the ratio of open to treed bog in the 1820's was roughly half what it is today. This and the scattered small Black Spruce and Tamarack trees suggest that in the absence of further disturbance (fire) much of the open bog heath will gradually be succeeded by the following association and eventually revert to coniferous forest.

Scattered Tree – Tall Shrub Thickets:

As trees invade the open bog heath, they are soon followed or accompanied by a variety of taller shrubs. These shrubs also form a zone between the open bog and the bog forests and in openings in the forests. Most species persist as an under story in the more open bog forests. The most common shrubs are Nannyberry, Black Chokeberry, Dwarf Birch, Mountain-holly and Sheep Laurel. High Bush Blueberry grows here as well, although it is likely that most of the blueberries in the bog are hybrids between high and low bush species. Low shrubs such as Leatherleaf, Labrador Tea and Bog Laurel grow amid the taller shrubs. Beneath all is a mat of *Sphagnum*.

The taller shrubs appear to require some protection from winter winds and, therefore, are rarely found far from trees. On the low bog heath, small 'islands' of Black Spruce and Tamarack surrounded by and intermixed with tall shrubs are frequent. These can be seen scattered throughout the large areas of open bog mat (low bog heath community) at the west end of the bog. Occasionally clumps of tall shrub species occur on the open bog mat without the protection of trees, but the shrubs rarely, if ever, reach normal height in this situation.

Black Spruce – Tamarack Forest:

Rather dense forest occurs in a broad band through the centre of the bog paralleling the Horse Creek drain. It also occurs in patches throughout much of the eastern half of the bog and along ditches and drains elsewhere. It appears to be most common in the slightly drier areas created by the ditches. Further away from the ditches, the forest becomes more open and the trees smaller, giving way to either patterned bog with wet sedge lenses or to the tall shrub scattered tree bog. Black Spruce and Tamarack are the dominant tree species,

although Balsam Fir may be frequent in portions of the forest. The ground cover varies according to how open the forest canopy is. The thickest forest supports only a layer of mosses, a shrub layer containing Labrador Tea, High Bush Blueberry and so forth, and, in addition, an assortment of herbaceous plants including sedges (especially Three-Seeded Sedge) and Moccasin-flower.

Patterned Spruce – Tamarack Thicket – Sedge Fen:

A patterned bog complex extends in a broad band through the centre part of the bog to the west of, and roughly parallel to, the Horse Creek drain. Smaller areas of patterned bog occur elsewhere, notably just east of Horse Creek and further to the west near the town described as the Manion Corners Long Swamp fen (Reddoch 1978). In Alfred Bog, the forest openings are much larger (up to 300m x 50m versus 50m x 15m), and the total area of patterned bog is far more extensive (covering about 200 hectares or 500 acres).



Photo 2. Closed Black Spruce-Tamarack forest with a ground cover of mosses.

The pattern is best described as a reticulum with lens-shaped sedge-shrub openings separated by bands of stunted, scrubby Tamarack and spruce trees (see Photos 3 and 4).

- ☐ Creeping Bent Grass
- ☐ Canada Bluejoint
- ☐ Canada Manna-grass
- ☐ American Manna-grass
- ☐ Pallid Manna-grass
- ☐ Fowl Manna-grass
- ☐ Sweet Grass
- ☐ Hairy Panic Grass
- ☐ Reed Canary Grass*
- ☐ Common Reed Grass
- ☐ Swamp Meadow Grass
- ☐ Slender Wedge Grass
- ☐ Atlantic Sedge
- ☐ Brownish Sedge
- ☐ Hoary Sedge
- ☐ Chordate Sedge
- ☐ Crawford's Sedge
- ☐ Fringed Sedge
- ☐ Crested Sedge
- ☐ Starved Sedge
- ☐ Folliculate Sedge
- ☐ Lake Sedge
- ☐ Woolly-fruited Sedge
- ☐ Mud Sedge
- ☐ Sallow Sedge
- ☐ New England Sedge
- ☐ Few-seeded Sedge
- ☐ Few-flowered Sedge

- Agrostis stolonifera*
- Calamagrostis canadensis*¹
- Glyceria canadensis*¹
- Glyceria grandis*
- Torreyochloa pallida*²
- Glyceria striata*
- Hierochloa odorata*
- Panicum lanuginosum*
- Phalaris arundinacea*¹
- Phragmites australis*
- Poa palustris*
- Sphenopholis intermedia*
- Carex atlantica* ssp. *capillacea*²
- Carex brunnescens*
- Carex canescens*
- Carex chordorrhiza*
- Carex crawfordii*
- Carex crinita*
- Carex cristatella*
- Carex exilis*³
- Carex folliculata*³
- Carex lacustris*
- Carex lasiocarpa*
- Carex limosa*³
- Carex lurida*
- Carex novae-angliae*³
- Carex oligosperma*³
- Carex pauciflora*³

Herbaceous Plants of Alfred Bog

<input type="checkbox"/> Bristly Clubmoss	<i>Lycopodium annotinum</i>
<input type="checkbox"/> Staghorn Clubmoss	<i>Lycopodium clavatum</i>
<input type="checkbox"/> Ground Pine	<i>Lycopodium dendroideum</i>
<input type="checkbox"/> Bog Clubmoss	<i>Lycopodium inundatum</i>
<input type="checkbox"/> Shining Clubmoss	<i>Lycopodium lucidulum</i>
<input type="checkbox"/> Ground Pine	<i>Lycopodium obscurum</i>
<input type="checkbox"/> Field Horsetail	<i>Equisetum arvense</i>
<input type="checkbox"/> Water Horsetail	<i>Equisetum fluviatile</i>
<input type="checkbox"/> Adder's-tongue Fern	<i>Ophioglossum vulgatum</i> ³
<input type="checkbox"/> Cinnamon Fern	<i>Osmunda cinnamomea</i>
<input type="checkbox"/> Royal Fern	<i>Osmunda regalis</i>
<input type="checkbox"/> Lady Fern	<i>Athyrium felix-femina</i>
<input type="checkbox"/> Crested Wood Fern	<i>Dryopteris cristata</i>
<input type="checkbox"/> Evergreen Wood Fern	<i>Dryopteris intermedia</i>
<input type="checkbox"/> Spinulose Wood Fern	<i>Dryopteris spinulosa</i>
<input type="checkbox"/> Hybrid Wood Fern	<i>Dryopteris x boothii</i>
<input type="checkbox"/> Hybrid Wood Fern	<i>Dryopteris x triploida</i>
<input type="checkbox"/> Sensitive Fern	<i>Onoclea sensibilis</i> ¹
<input type="checkbox"/> Bracken Fern	<i>Pteridium aquilinum</i>
<input type="checkbox"/> Marsh Fern	<i>Thelypteris palustris</i>
<input type="checkbox"/> Massachusetts Fern	<i>Thelypteris simulata</i> ²
<input type="checkbox"/> Virginia Chain Fern	<i>Woodwardia virginica</i> ³
<input type="checkbox"/> Narrow-leaved Cattail	<i>Typha angustifolia</i>
<input type="checkbox"/> Cattail	<i>Typha latifolia</i>
<input type="checkbox"/> Scheuchzeria	<i>Scheuchzeria palustris</i> ³
<input type="checkbox"/> Water Plantain	<i>Alisma triviale</i>
<input type="checkbox"/> Tickle Grass	<i>Agrostis scabra</i>



Photo 3. Aerial view of four major bog vegetation types, gray birch/tamarack/tall shrub (lower right corner), tamarack/tall shrub (lower right), black spruce (lower left corner to upper right), and patterned bog (upper left).



Photo 4. Very open, stunted spruce-tamarack forest and sedge meadow patterned bog. Some of the bog's most handsome orchids, including the White Fringe-orchid, grow in and about the edges of these sedge-dominated bog openings.

The treed bands are quite open and possess a ground cover of ericaceous shrubs and sedges growing on *Sphagnum* hummocks. The vegetation in the openings varies from predominantly shrubby *Sphagnum* hummocks on drier sites to a sedge-cottongrass meadow community in the wetter lenses. With the sedges grow Buckbean, Wild Iris and *Scheuchzeria* (which is rare in Eastern Ontario). Some of the wettest openings have shallow ponds in which grow Spatulate-leaved Sundew, Flat-leaved Bladderwort, Wild Iris and water lilies. The rare Twin-scaped Bladderwort is also found in the pools (Haber 1980).

The openings in the patterned bog area provide the habitat for many of the bog's rarer and more beautiful plants. The orchids Rose Pogonia, Dragon's-mouth, Grass-pink and White Fringed Orchid grow in relative abundance. The tall White Fringed Orchid seems to prefer the more shrubby openings.

This type of patterning in bogs is best developed in the string bogs of the boreal forest. It is thought to be related to the movement of ground water through the bog, with the long axis of the bog openings perpendicular to the direction of water movement. A further examination of the early surveyors' field notes reveals that Horse Creek began outside of the present bog area. It appears, therefore, that before the Horse Creek drain was extended through the bog, all water movement was by percolation through the bog mat. The present Horse Creek headwater area on the southeast side of the bog would have drained into a large marsh shown by the surveyors (Fortune 1807, Cattnach 1828). It in turn probably fed water into the bog throughout much of the year but also had an outlet northward to Mill Creek. If this hypothesis is correct, the diversion of groundwater via the Horse Creek drain may have a long term adverse impact on this section of the bog.

Peripheral Vegetation Types:

About the edges of the bog and extending into it along ditches and other disturbed sites, there are extensive areas of marsh, shrub thickets and deciduous woods. These areas of vegetation link the bog proper with the surrounding agricultural lands. They are most common along the more poorly drained east and south sides of the bog. These areas have not been studied, but they are an important part of the bog's ecology, acting as a buffer and providing wildlife habitat. Moose do most of their feeding in these peripheral areas; they are most frequently observed in the peripheral areas in the south eastern parts of the bog. The edges also provide habitat for many species of birds, such as

- ☐ Virginia Creeper
- ☐ Red-Osier Dogwood
- ☐ Bog Rosemary
- ☐ Leatherleaf
- ☐ Creeping Snowberry
- ☐ Wintergreen
- ☐ Huckleberry
- ☐ Sheep Laurel
- ☐ Bog Laurel
- ☐ Labrador Tea
- ☐ One-flowered Wintergreen
- ☐ Rhodora
- ☐ Low Sweet Blueberry
- ☐ High Bush Blueberry
- ☐ Large Cranberry
- ☐ Velvetleaf Blueberry
- ☐ Small Cranberry
- ☐ Twinflower
- ☐ Swamp Fly-honeysuckle
- ☐ Northern Honeysuckle
- ☐ Canada Elderberry
- ☐ Northern Wild Raisin
- ☐ Nannyberry

Parthenocissus vitacea
*Cornus stolonifera*¹
Andromeda glaucophylla
Chamaedaphne calyculata
Gaultheria hispida
Gaultheria procumbens
Gaylussacia baccata
Kalmia angustifolia
Kalmia polifolia
Ledum groenlandicum
Moneses uniflora
*Rhododendron canadense*²
Vaccinium angustifolium
Vaccinium corymbosum
Vaccinium macrocarpon
Vaccinium myrtilloides
Vaccinium oxycoccus
Linnaea borealis
Lonicera oblongifolia
*Lonicera villosa*³
*Sambucus canadensis*²
Viburnum cassinoides
Viburnum lentago

Shrubs of Alfred Bog

<input type="checkbox"/> Bebb's Willow	<i>Salix bebbiana</i>
<input type="checkbox"/> Pussy Willow	<i>Salix discolor</i>
<input type="checkbox"/> Shining Willow	<i>Salix lucida</i>
<input type="checkbox"/> Bog Willow	<i>Salix pedicellaris</i>
<input type="checkbox"/> Slender Willow	<i>Salix petiolaris</i>
<input type="checkbox"/> Speckled Alder	<i>Alnus rugosa</i>
<input type="checkbox"/> Dwarf Birch (Bog Birch)	<i>Betula pumila</i> var. <i>glandulifera</i>
<input type="checkbox"/> Gray Birch x Dwarf Birch Hybrid	<i>Betula pumila</i> var. <i>glandulifera</i> x <i>Betula populifolia</i> Hybrid
<input type="checkbox"/> Wild Gooseberry	<i>Ribes hirtellum</i>
<input type="checkbox"/> Skunk Currant	<i>Ribes glandulosum</i>
<input type="checkbox"/> Black Chokeberry	<i>Aronia melanocarpa</i>
<input type="checkbox"/> Shadbush	<i>Amelanchier interior</i>
<input type="checkbox"/> Pin Cherry	<i>Prunus pensylvanica</i>
<input type="checkbox"/> Choke Cherry	<i>Prunus virginiana</i>
<input type="checkbox"/> Blackberry	<i>Rubus allegheniensis</i> ¹
<input type="checkbox"/> Swamp Dewberry	<i>Rubus hispidus</i>
<input type="checkbox"/> Dwarf Raspberry	<i>Rubus pubescens</i>
<input type="checkbox"/> Dewberry	<i>Rubus setosus</i>
<input type="checkbox"/> Wild Red Raspberry	<i>Rubus strigosus</i> ¹
<input type="checkbox"/> Mountain Ash	<i>Sorbus americana</i>
<input type="checkbox"/> Meadowsweet	<i>Spiraea alba</i>
<input type="checkbox"/> Steeplebush	<i>Spiraea tomentosa</i>
<input type="checkbox"/> Winterberry	<i>Ilex verticillata</i>
<input type="checkbox"/> Mountain-holly	<i>Nemopanthus mucronatus</i>
<input type="checkbox"/> Alder-leaved Buckthorn	<i>Rhamnus alnifolia</i>
<input type="checkbox"/> Common Buckthorn*	<i>Rhamnus cathartica</i>

Red-winged Blackbirds and Yellow Warblers.

Briefly, these peripheral plant communities fall into three categories which intergrade extensively: deciduous lowland aspen-soft maple-ash-elm forest; sedge-cattail-goldenrod-aster marsh and forb communities; and dogwood-willow-alder shrub thickets. Due to our lack of knowledge of the flora and fauna of these associations, nothing can be said about the possible occurrence of significant species.

Forests dominated by Gray Birch tend to be restricted to the periphery of the bog but in places extend well out into it. Saplings are widely scattered throughout the open bog sections. Gray Birch probably represents a successional community following disturbance (drainage and/or fire). With the Gray Birch, there is generally a small amount of Red Maple. Beneath the forest canopy and occupying openings in it is a rather dense shrub layer consisting mainly of Mountain-holly, Nannyberry, Winterberry and Black Chokeberry. (See Figure 5) On the ground grow a number of herbs characteristic of lowland forests, such as Gold-thread and Spinulose Wood Fern. *Sphagnum* and other mosses are frequent but do not form the continuous, deep, hummocky mat found in the more open section of the bog. In Ontario, Gray Birch is confined to the easternmost part of the province (the Ottawa – St. Lawrence Lowland) where it is a common species in successional forests. It invades areas quickly following fire, and this may be the reason for its prevalence in Alfred Bog as well as in some other eastern Ontario wetlands.



Photo 5. Gray Birch wood with a dense under story of tall shrubs: Nannyberry, Mountain-holly and Winterberry. Photograph by Don Cuddy.

Flora

As can be seen from the list at the end of this article, Alfred Bog provides habitat for most of the plants typical of bogs. These plants include trees (Black Spruce and Tamarack) and a large number of shrubs. Of these shrubs, many of the ericaceous or heath species, blueberries, laurels, Labrador Tea, and so forth, are rarely found outside of bogs. Also characteristic of bogs are several of the orchid and sedge species which are common at Alfred Bog. These include Rose Pogonia and Grass-pink.

Some of the species found, while confined to bogs, can hardly be called common or even characteristic. To date, seven species of vascular plants which are considered rare in Ontario (Argus and White 1977, 1982) have been discovered in Alfred Bog. Another five species can be considered regionally rare, that is, rare in Eastern Ontario.

Two species, Rhodora and the sedge *Carex altantica* ssp. *capillacea*, have found nowhere else in Ontario. The Rhodora, an early-flowering shrub from which the scientific journal of plant taxonomy, "Rhodora", takes its name, has been found only in the western part of the bog, where it grows in a zone of open tamarack-spruce-birch woods along an old survey line. The sedge has been found only in the north eastern part of the bog, where it occupies openings in coniferous forest.

In Eastern Ontario, the White Fringed-orchid grows only in Mer Bleue and Alfred Bogs. It is much more common in the latter. The Southern Twayblade, rediscovered in Ontario at Alfred Bog in 1973 after a hiatus of 71 years (Whiting and Bobette 1974), is rare in Canada and throughout most of its eastern North American range. Although not plentiful, it does occur over a wide area in Alfred Bog. It formerly grew in Mer Bleue Bog but has not been seen there since 1902.

Haber (1980) reported finding the Twin-scaped Bladderwort growing in pools in the middle of the bog in August 1979. The following year, I found a healthy population in full flower in a pool behind an old beaver dam at the western corner of the bog. This bladderwort has been found in only two other localities in Ontario, Mer Bleue Bog and in northern Lennox and Addington County (where I collected it in 1979).

Trees of Alfred Bog

<input type="checkbox"/> Balsam Fir	<i>Abies balsamea</i>
<input type="checkbox"/> Tamarack, Larch	<i>Larix laricina</i>
<input type="checkbox"/> White Spruce	<i>Picea glauca</i>
<input type="checkbox"/> Red Spruce	<i>Picea rubens</i>
<input type="checkbox"/> Black Spruce	<i>Picea mariana</i>
<input type="checkbox"/> Jack Pine	<i>Pinus banksiana</i> ³
<input type="checkbox"/> Red Pine	<i>Pinus resinosa</i>
<input type="checkbox"/> White Pine	<i>Pinus strobus</i>
<input type="checkbox"/> Hemlock	<i>Tsuga canadensis</i>
<input type="checkbox"/> Eastern White Cedar	<i>Thuja occidentalis</i>
<input type="checkbox"/> Balsam Poplar	<i>Populus balsamifera</i>
<input type="checkbox"/> Large-toothed Aspen	<i>Populus grandidentata</i>
<input type="checkbox"/> Trembling Aspen	<i>Populus tremuloides</i>
<input type="checkbox"/> White Birch	<i>Betula papyrifera</i> ¹
<input type="checkbox"/> Yellow Birch	<i>Betula alleghaniensis</i>
<input type="checkbox"/> Gray Birch	<i>Betula populifolia</i>
<input type="checkbox"/> American Elm	<i>Ulmus americana</i> ¹
<input type="checkbox"/> Red Maple	<i>Acer rubrum</i>
<input type="checkbox"/> Silver Maple	<i>Acer saccharinum</i> ¹
<input type="checkbox"/> Black Ash	<i>Fraxinus nigra</i> ¹

Dragonflies and Damselflies:

as compiled by Chris Lewis and Bob Bracken

Dragonflies (*Anisoptera*):

<input type="checkbox"/> Fletcher's Dragonfly	<i>Williamsoni fletcheri</i>
<input type="checkbox"/> Common Baskettail	<i>Epithea cynosura</i>
<input type="checkbox"/> Delicate Emerald	<i>Somatochlora franklini</i>
<input type="checkbox"/> Hudsonian Whiteface	<i>Leucorrhinia hudsonica</i>
<input type="checkbox"/> Frosted Whiteface	<i>Leucorrhinia frigida</i>
<input type="checkbox"/> Dot-tailed Whiteface	<i>Leucorrhinia intacta</i>
<input type="checkbox"/> Belted Whiteface	<i>Leucorrhinia proxima</i>
<input type="checkbox"/> Chalk-fronted Corporal	<i>Ladona julia</i>
<input type="checkbox"/> Twelve-spotted Skimmer	<i>Libellula pulchella</i>
<input type="checkbox"/> Four-spotted Skimmer	<i>Libellula quadrimaculata</i>
<input type="checkbox"/> Common Whitetail	<i>Plathemis lydia</i>

Damselflies (*Zygoptera*):

<input type="checkbox"/> Ebony Jewelwing	<i>Calopteryx maculata</i>
<input type="checkbox"/> River Jewelwing	<i>Calopteryx aequabilis</i>
<input type="checkbox"/> Taiga Bluet	<i>Coenagrion resolutum</i>
<input type="checkbox"/> Sedge Sprite	<i>Nehalennia irene</i>

Fauna

Our knowledge of the fauna of the bog is as restricted as is that of the flora. Members of the Vankleek Hill Nature Society have birded in and around the bog for several years. The Ministry of Natural Resources has conducted surveys of the Moose population and has records of other game species and of those mammals trapped for their fur. Records of other mammals and of herptiles and insects are mostly casual observations.

The Vankleek Hill Nature Society has recorded over 50 species of birds in or about the edge of the bog. Typical nesting species include White-throated Sparrow and Eastern Kingbird. Some of the more interesting sightings include a Golden Eagle, several species of warbler which nest in the bog, and Gray Jays, which could nest in the bog as they have at Mer Bleue (Ouellet *et al.* 1976).

The mammals usually encountered in a bog-marsh-pond complex are found in and about the edges of the bog. Beaver regularly dam the drainage ditches; beaver ponds in turn create habitat for Muskrat and Mink, as well as waterfowl. Snowshoe Hares are frequent in the wooded sections of the bog. This winter I observed tracks which I believe to be of a Lynx. Other predators include Fox and Coyote. The most visible mammals in the bog are unquestionably the Moose; their numbers fluctuate but average around fifty. In pre-settlement days, moose ranged throughout Eastern Ontario, but the present population in Alfred Bog arrived in the early 1950's after crossing the Ottawa River from Québec. Without natural predators, the Moose herd grew (checked only by emigration, natural mortality, poaching and the occasional road kill) until in the late 1970's when a combination of moose tick infestation and malnutrition resulted in the death of many of the Moose. Larose Forest, a tract of county forest 30 km west of the bog, received many of the emigrant Moose population and now maintains its own population. The bog's Moose population tends to feed in winter in the deciduous forest and tall shrub vegetation. In summer, many of the Moose spread out from the bog and feed in the woodlots and ditches, and occasionally on farmer's crops.

Very few species of herptiles have been observed in the bog. Wood Frogs are commonly seen, and the Eastern Garter Snake does occur. The most notable species, however, is the Spotted Turtle. I have never been fortunate enough to see this handsome turtle, and I doubt that the bog's population is very large. Accounts of sightings are provided by

Haber (1980) and in Cook *et al.* (1980). The turtles appear to inhabit both natural ponds and drainage ditches in the bog.

Despite limited research, a number of rare and uncommon butterflies have been reported for the bog. These include the Jutta Arctic and the very rare Bog Elfin, which has been recorded from only three other localities in the world. (See Layberry *et al.* 1982 and the update in this issue of *Trail & Landscape*.)

Trail & Landscape article, May-August 1983

“On May 22, a group of seven collectors visited the Alfred Bog, and were successful in finding the elusive Bog Elfin (*Callophrys lanoraieensis*). This is the first record for the species in Ontario. Seven slightly worn specimens were found in about 35 man-hours of hard searching. All were seen in a wet, wooded part of the bog. Their apparent rarity may be due in part to the lateness of the trip, or to their habit of resting on the ground or on small stunted Black Spruce, and rarely flying. The area is quite different from the most commonly-visited parts of the Mer Bleue...”

A rare dragonfly (*Williamsonia fletcheri*) has also been reported from the bog. Further significant discoveries can be expected as more is learned about the bog's insect life.

[Editor's Note: Since this article was published in 1983, the Bog Elfin has been found in several other localities, although it still remains very rare. The Butterflies of Canada website says the following: "In Canada, it is found in a number of bogs in southern Quebec, but is so far known from only four locations each in Nova Scotia and New Brunswick and only from Alfred Bog and two other bogs near Newington, in eastern Ontario. It occurs in many bogs in Maine, but is very rare in New York and Massachusetts."]

☐ Clouded Sulphur

☐ Pink Edged Sulphur

☐ Cabbage White

☐ Mustard White

☐ Silvery Blue

Colias philodice

Colias interior

Pieris rapae

Pieris oleracea

Glaucopsyche lygdamus

Skippers :

☐ Arctic Skipper

☐ Least Skipper

☐ European Skipper

☐ Crossline Skipper

☐ Long Dash Skipper

☐ Hobomok Skipper

Carterocephalus palaemon

Ancyloxypha numitor

Thymelicus lineola

Polites origines

Polites mystic

Poanes hobomok

Butterflies, Moths of Alfred Bog

(Luciuk 1974)

Butterflies :

<input type="checkbox"/> Eyed Brown	<i>Satyrodes eurydice</i>
<input type="checkbox"/> Common Ringlet	<i>Coenonympha tullia</i>
<input type="checkbox"/> Jutta Arctic	<i>Oeneis jutta</i>
<input type="checkbox"/> Great Spangled Fritillary	<i>Speyeria cybele</i>
<input type="checkbox"/> Silver-bordered Fritillary	<i>Boloria selene</i>
<input type="checkbox"/> Meadow Fritillary	<i>Boloria bellona</i>
<input type="checkbox"/> Harris' Checkerspot	<i>Chlosyne harisii</i>
<input type="checkbox"/> Pearl Crescent	<i>Phyciodes tharos</i>
<input type="checkbox"/> Baltimore checkerspot	<i>Euphydryas phaeton</i>
<input type="checkbox"/> Red Admiral	<i>Vanessa atalanta</i>
<input type="checkbox"/> Painted Lady	<i>Vanessa cardui</i>
<input type="checkbox"/> White Admiral	<i>Limenitis arthemis</i>
<input type="checkbox"/> Viceroy	<i>Limenitis archippus</i>
<input type="checkbox"/> Henry's Elfin	<i>Callophrys henrici</i>
<input type="checkbox"/> Brown Elfin	<i>Callophrys augustinus</i>
<input type="checkbox"/> Bog Elfin	<i>Callophrys lanoraieensis</i>
<input type="checkbox"/> Harvester	<i>Feniseca tarquinius</i>
<input type="checkbox"/> Bronze Copper	<i>Lycaena hyllus</i>
<input type="checkbox"/> Spring Azure	<i>Celastrina ladon</i>
<input type="checkbox"/> Eastern Tiger Swallowtail	<i>Papilio glaucus</i>
<input type="checkbox"/> Black Swallowtail	<i>Papilio polyxenes</i>
<input type="checkbox"/> Orange Sulphur	<i>Colias eurytheme</i>

Conclusion

To finish up, I would like to summarize briefly why Alfred Bog is such an important part of our natural heritage. Despite being only a fraction of its former self, the bog is still the largest in Southern Ontario. This is more than a mere statistic. Only by virtue of its size can the bog support a viable Moose population. The large size permits the coexistence simultaneously and through time of a diversity of bog habitats. Some of Ontario's rare plants, such as Southern Twayblade and White Fringed-orchid, grow in substantial numbers in Alfred Bog, whereas in other bogs where they do occur, the number of individual plants can be counted on the fingers. The large size means that the bog can support a variety of use, from Saturday evening outings of groups of field-naturalists, to educational studies by students, to research studies by academics. The bog is no less sensitive than any other; there is just so much more of it that impacts are spread out over the larger area. Provided access by motorized vehicles is controlled, the size of the bog contributes also to its own buffering from non-compatible use or over-use. Only the most determined visitor will hike the two kilometres through dense forest and over rolling sphagnum hummocks necessary to penetrate to the centre of the bog.

The populations of rare flora and fauna which make the bog their home represent the remnants of a much broader distribution. They are, generally speaking, threatened species in a threatened landscape. As these species become rarer through loss of their habitat, the difficulty (and cost) of rescuing them from extinction increases.

The significance of Alfred Bog can only increase; each visit seems always to turn up some new discovery. Large parts of the bog remain unexplored by field-naturalists, botanists or zoologists. New rarities will be found – so long as the bog continues to provide a haven for them.

Mammals of Alfred Bog as compiled by Ted Mosquin (1991)

Note: Various mice, other voles, shrews, bats, Southern Bog Lemming, flying squirrels, Eastern Chipmunk and Porcupine occur in Eastern Ontario and no doubt some of these species are present in the bog.

<input type="checkbox"/> Moose	<i>Alces alces</i>	Pop. varies from 35 to 85
<input type="checkbox"/> Deer	<i>Odocoileus virginianus</i>	Few sighted occasionally
<input type="checkbox"/> Red Fox	<i>Vulpes vulpes</i>	Common
<input type="checkbox"/> Coyote	<i>Canis latrans</i>	Common
<input type="checkbox"/> Beaver	<i>Castor canadensis</i>	Common
<input type="checkbox"/> Muskrat	<i>Ondatra zibethica</i>	Common in drains at periphery of bog
<input type="checkbox"/> Raccoon	<i>Procyon lotor</i>	Occasional along drains
<input type="checkbox"/> Striped Skunk	<i>Mephitis mephitis</i>	Occasional (Eckersly 1982)
<input type="checkbox"/> Woodchuck	<i>Marmota monax</i>	One by burrow near H.Creek
<input type="checkbox"/> Long-tailed Weasel	<i>Mustela frenata</i>	Common (Eckersly 1982)
<input type="checkbox"/> Short-tailed Weasel	<i>Mustela erminea</i>	Common (Eckersly 1982)
<input type="checkbox"/> Mink	<i>Mustela vison</i>	Common (Eckersly 1982)
<input type="checkbox"/> Red Squirrel	<i>Tamiasciurus hudsonicus</i>	Common throughout spruce forests in bog
<input type="checkbox"/> Timber Wolf	<i>Canis lupis</i>	1 unconfirmed sighting (Eckersly 1982)
<input type="checkbox"/> Snowshoe Hare	<i>Lepus americanus</i>	Common throughout wooded areas and margins of the bog

<input type="checkbox"/> Wilson's Warbler ³	<input type="checkbox"/> Nashville Warbler
<input type="checkbox"/> Gray Jay	<input type="checkbox"/> Yellow-throated Warbler
<input type="checkbox"/> American Crow	<input type="checkbox"/> Black-and-white Warbler
<input type="checkbox"/> Cedar Waxwing	<input type="checkbox"/> Magnolia Warbler
<input type="checkbox"/> Eastern Meadowlark	<input type="checkbox"/> Yellow-rumped Warbler
<input type="checkbox"/> Bobolink	<input type="checkbox"/> Canada Warbler
<input type="checkbox"/> Rusty Blackbird	<input type="checkbox"/> Chestnut-sided Warbler
<input type="checkbox"/> Red-winged Blackbird	<input type="checkbox"/> Mourning Warbler
<input type="checkbox"/> Brown-headed Cowbird	<input type="checkbox"/> Common Yellowthroat
<input type="checkbox"/> Common Grackle	<input type="checkbox"/> Ovenbird
<input type="checkbox"/> Baltimore Oriole	<input type="checkbox"/> White-crowned Sparrow
<input type="checkbox"/> Philadelphia Vireo ³	<input type="checkbox"/> White-throated Sparrow
<input type="checkbox"/> Red-eyed Vireo	<input type="checkbox"/> Lincoln's Sparrow
<input type="checkbox"/> House Wren	<input type="checkbox"/> Song Sparrow
<input type="checkbox"/> Sedge Wren ²	<input type="checkbox"/> Chipping Sparrow
<input type="checkbox"/> American Robin	<input type="checkbox"/> Savannah Sparrow
<input type="checkbox"/> Veery	<input type="checkbox"/> Clay-coloured Sparrow
<input type="checkbox"/> Hermit Thrush	<input type="checkbox"/> Eastern Towhee
<input type="checkbox"/> Yellow Warbler	<input type="checkbox"/> Rose-breasted Grosbeak
<input type="checkbox"/> Palm Warbler ³	

Birds of Alfred Bog

as compiled by the Vankleek Hill Nature Society

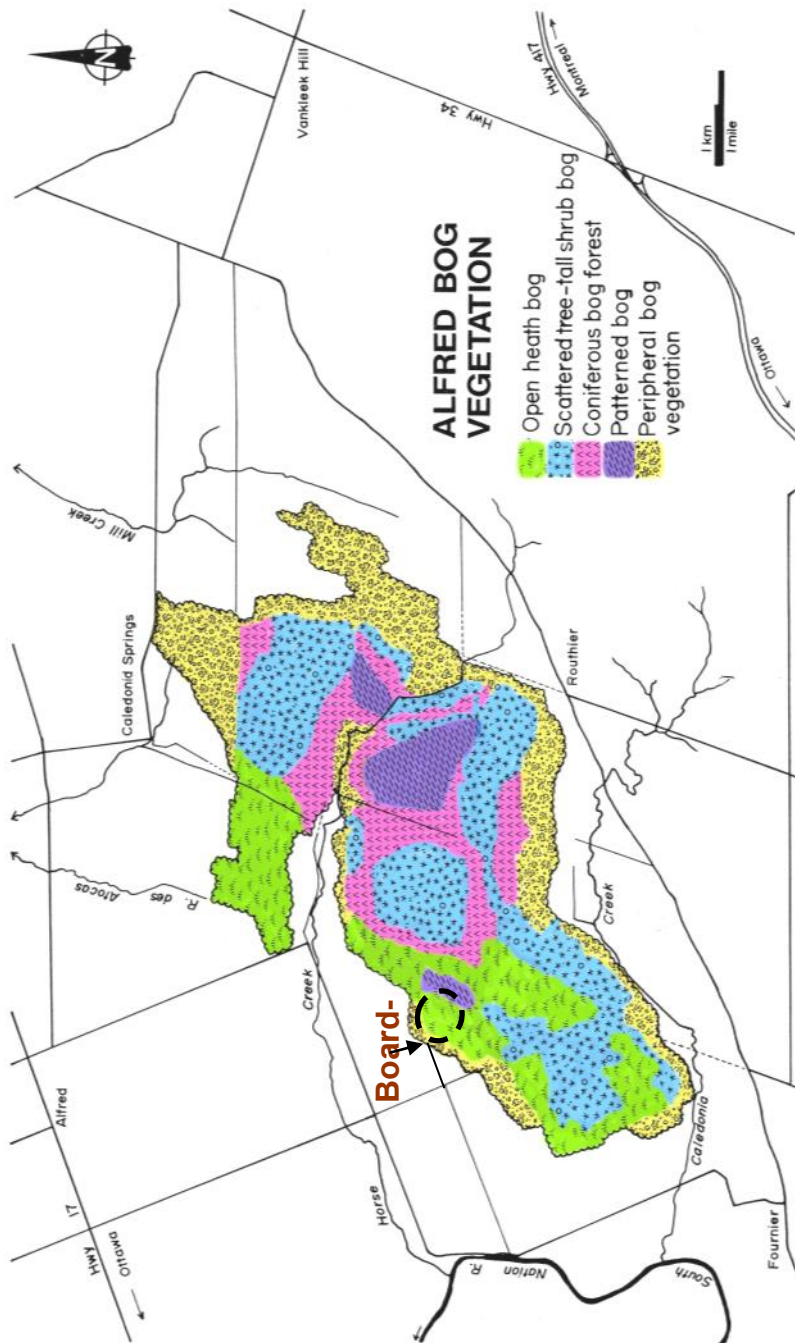
- | | |
|--|---|
| <input type="checkbox"/> American Bittern | <input type="checkbox"/> Whip-poor-will |
| <input type="checkbox"/> Great Blue Heron | <input type="checkbox"/> Belted Kingfisher |
| <input type="checkbox"/> Green Heron | <input type="checkbox"/> Black-billed Cockoo |
| <input type="checkbox"/> Black Duck | <input type="checkbox"/> Chimney Swift |
| <input type="checkbox"/> Mallard | <input type="checkbox"/> Ruby-throated Hummingbird |
| <input type="checkbox"/> Blue-winged Teal | <input type="checkbox"/> Northern Flicker |
| <input type="checkbox"/> Wood Duck | <input type="checkbox"/> Hairy Woodpecker |
| <input type="checkbox"/> Turkey Vulture | <input type="checkbox"/> Downy Woodpecker |
| <input type="checkbox"/> Northern Harrier | <input type="checkbox"/> Black-backed Woodpecker ³ |
| <input type="checkbox"/> Red-shouldered Hawk | <input type="checkbox"/> Barn Swallow |
| <input type="checkbox"/> Red-tailed Hawk | <input type="checkbox"/> Tree Swallow |
| <input type="checkbox"/> Golden Eagle ² | <input type="checkbox"/> Black-capped Chickadee |
| <input type="checkbox"/> Sharp-shinned Hawk | <input type="checkbox"/> White-breasted Nuthatch |
| <input type="checkbox"/> American Kestrel | <input type="checkbox"/> Golden-crowned Kinglet |
| <input type="checkbox"/> Osprey ³ | <input type="checkbox"/> European Starling |
| <input type="checkbox"/> Ruffed Grouse | <input type="checkbox"/> Gray Catbird |
| <input type="checkbox"/> Killdeer | <input type="checkbox"/> Brown Thrasher |
| <input type="checkbox"/> Spotted Sandpiper | <input type="checkbox"/> Northern Mockingbird |
| <input type="checkbox"/> Common Snipe | <input type="checkbox"/> Least Flycatcher |
| <input type="checkbox"/> Upland Sandpiper | <input type="checkbox"/> Great Crested Flycatcher |
| <input type="checkbox"/> American Woodcock | <input type="checkbox"/> Eastern Phoebe |
| <input type="checkbox"/> Mourning Dove | <input type="checkbox"/> Eastern Wood-Pewee |
| <input type="checkbox"/> Snowy Owl | <input type="checkbox"/> Alder Flycatcher |
| <input type="checkbox"/> Great Horned Owl | <input type="checkbox"/> Eastern Kingbird |
| <input type="checkbox"/> Blue Jay | <input type="checkbox"/> Connecticut Warbler ³ |

- | | | |
|---|--------------------------------|--|
| <input type="checkbox"/> Eastern Cottontail | <i>Sylvilagus floridanus</i> | One seen in SE corner of the bog by Mosquin 1989 |
| <input type="checkbox"/> Lynx | <i>Lynx lynx</i> | 1 unconfirmed set of tracks seen in winter 1983 by D. Cuddy, MNR |
| <input type="checkbox"/> Meadow Vole | <i>Microtus pennsylvanicus</i> | Few seen in grassy marsh at S side of bog (Mosquin |

Reptiles and Amphibians of Alfred Bog

as compiled by Cuddy, Mosquin and the Vankleek Hill Nature Society

- | | | |
|--|----------------------------|---|
| <input type="checkbox"/> Spotted Turtle ³ | <i>Clemmys guttata</i> | Provincially rare |
| <input type="checkbox"/> Snapping Turtle | <i>Chelydra serpentina</i> | In Horse Creek drain |
| <input type="checkbox"/> Painted Turtle | <i>Chrysemys picta</i> | In drain at rear of Conc. I |
| <input type="checkbox"/> Wood Frog | <i>Rana sylvatica</i> | Occasional throughout the bog |
| <input type="checkbox"/> Leopard Frog | <i>Rana pipiens</i> | One adult seen N. end of NCC property |
| <input type="checkbox"/> Green Frog | <i>Rana clamitans</i> | Abundant in some drains |
| <input type="checkbox"/> Garter Snake | <i>Thamnophis sirtalis</i> | Luciuk 1974 |
| <input type="checkbox"/> American Toad | <i>Bufo americanus</i> | Mosquin 1989, Occasional throughout the bog |



Directions to the bog: It is about an hour east of Ottawa.

From Ottawa, take Highway 417 east 67 km to County Road 9 (exit 51).

Head north 11 km on 9 through St. Isidore de Prescott to Franklins Corners and County Road 16.

Turn right and follow it east 3 km to Fournier and County Road 15.

Turn left onto 15 and go north 5 km to Concession 11 Road.

Turn right on it and go northeast 3.5 km to the turnoff, on the right, for the boardwalk.