CANADA 33: MER BLEUE CONSERVATION AREA

Information Sheet on Ramsar Wetlands

Effective Date of Information: The following description was completed by the National Capital Commission on December 20, 1994 and updated by the Canadian Wildlife Service – Ontario Region in October 2001.

Reference: 33rd Ramsar site designated in Canada.

Contact: Gatineau Park and Greenbelt Division, Environmental and Land Management Branch, National Capital Commission, Suite 202, 40 Elgin Street, Ottawa, Ontario, K1P 1C7.

Date of Ramsar Designation: October 5, 1995

Geographical Coordinates: Extends from 45°05' to 45°30' north latitude, and from 75°30' to 76°00' west longitude. Part of the St. Lawrence Lowland which is a large plain bordered on the North by the Canadian Shield.

General Location: Situated in the National Capital Region less than 10 km from the Capital of Canada, Ottawa in the Province of Ontario.

Area: The Conservation Area is now 3 343 ha, due to additional lands acquired in 2000, increasing the total area from 3 100 ha as initially designated.

Wetland Type (Ramsar Classification System): *Inland wetlands*: Type U - open peat bogs and fens; Type Tp - permanent, freshwater marshes.

Altitude: Altitude at the center of the Bog is approximately 70.1 meters above sea level and slopes gradually down to 67.06 meters near the edges. Two adjacent sandy ridges are at an elevation of 76.20 meters which is 9.14 meters higher that the bog surface.

Overview: Approximately 50% of the area is a raised peat dome *Sphagnum* bog, usually found much further north in Canada. The borders of the bog form a typical lagg environment much of which has been transformed into pond and marsh by beaver.

Physical Features: Mer Bleue is located in the southern melt water channel of the post-glacial Ottawa River. This channel was eroded into the floor of the Champlain Sea, which invaded the Ottawa Valley some 12 000 years ago. Bedrock topography consists of two N.N.E. - S.S.W. trending ridges. Surficial material consists of some glacial till, thick marine clay, and freshwater and deltaic deposits grading from coarse sand to clay. Peat deposits in the bog proper are up to 6 meters thick.

The hydrological features at this site are most unusual. Being a domed bog, water enters the Bog mainly from natural precipitation creating oligotrophic conditions. The periphery of the Bog is encircled by a mineral-enriched lagg which maintains a base water level for the Bog. Drainage is poor due to underlying clay deposits as well as numerous beaver dams. Water eventually drains slowly both westward into Greens Creek and eastward into Bear Brook. However, water levels remain at or near the surface of the Bog for most of the year. Saline ground-water sources are found under the organic

overburden. A number of artificial ditches were dug in the Bog for land reclamation or drainage of adjacent lands, however, most are no longer functioning efficiently due to the many beaver impoundments and gradual sedimentation that has occurred along their lengths.

The climate of the region is classified as cold humid continental. Mean annual temperature for Ottawa is 5.8 C. Mean annual precipitation is 85 cm, 64 of which falls as rain. The average growing season is 193 days.

Ecological Features: Mer Bleue is a boreal peatland which is usually found in the boreal forest to the north. The sphagnum Bog contains two main types of vegetation - the black spruce forest and the open heath vegetation. The black spruce (*Picea mariana*) forest is dominated by black spruce with some growth of larch (*Larix laricina*), trembling white aspen (*Populus tremuloides*) and grey or white birch (*Betula* spp.).

Sphagnum spp. are the dominant low lying form of vegetation in the Bog. About 12 species of heaths thrive in the Bog. The most common are Labrador tea (*Ledum groenlandicum*), leatherleaf (*Chamaedaphne* sp.), small cranberry (*Vaccinium oxycoccus*), bog-laurel (*Kalmia polifolia*), and sheep-laurel (*K. augustifolia*). At least nine species of orchids (*Orchidaceae* spp.) are found in Mer Bleue along with a variety of cottongrasses (*Eriophorum* spp.) and sedges (*Cyperaceae* spp.).

The marsh areas around Mer Bleue are characterized by plants such as cattails, alders (*Alnus rugosa*), willows (*Salix* sp.), and a variety of sedges (*Cyperaceae*). There are several aspen islands in the center of Mer Bleue consisting of an overstory of aspen and an understory dominated by braken fern. The edges of the islands are surrounded by small bands of cattail and some alder growth.

The ridges of the site extend from the center of the Conservation Area westwards. There is a wide mixture in the vegetation from early succession poplars and shrubs to some very large mature specimens of white pine, maple and ash. A section of this area includes a variety of hard and softwood plantations established by the Canadian Forest Service.

Land Tenure/Ownership: The Mer Bleue Conservation Area is part of 14 950 hectares of Greenbelt lands owned by the National Capital Commission, a Crown Agency of the Canadian government. One of the Greenbelt's primary roles is the conservation and protection of natural ecosystems such as the Mer Bleue Bog.

A small area of some 73 hectares inside of the Conservation Area is occupied by the Geomagnetic Laboratory and owned by Public Works and Government Services Canada It is part of the Federal Greenbelt Lands which are managed by the NCC. There is also one
regional and two municipal roads within the Conservation Area.

The surrounding lands are made up of a mosaic of private agricultural, commercial and residential land, along with municipal owned lands. Approximately 480 hectares of the Bog habitat is privately owned most of which is located at the southeast corner of the Bog.

Conservation Measures Taken: The area is protected by Federal statue, the National Commission Act. Within the Province of Ontario the Bog is currently recognized as a Class I Provincial Wetland and an ANSI (Areas of Scientific Interest).

In addition, numerous environmental inventories and studies have been carried out over the years not only by the NCC but by other government environmental agencies, by universities, and conservation groups.

Conservation Measures Proposed: Recommendations have been made to acquire additional adjacent wetlands areas that are part of the natural Bog ecosystem.

Current Land Use: Current land uses of the site are as follows:

Recreational:	Wildlife observation, nature trails, berry picking, snowshoeing, cross-country skiing.
Research:	Universities, government agencies and conservation groups
Agriculture:	Market gardens, cropland, pasture, egg production.
Residential:	Less than 30 single family units owned and rented by NCC.
Commercial:	A building and renovation company.

Land use in the surrounding area includes residential properties, agricultural lands, a landfill site and land held for speculation.

Disturbances/Threats:

Site: Ponding due to beaver activity has the potential to convert bog vegetation to marsh communities. There is a concern about the spread of invasive plant species; in particular purple loosestrife (*Lythrum salicaria*). This species is highly invasive and constitutes a significant threat to native wetland plant communities. To a lesser degree, other invasives such as glossy buckthorn (*Rhamnus frangula*), and European frog-bit (*Hydrocharis morsus-ranae*) are also present. The Bog surface is very sensitive to uncontrolled recreational uses such as berrypicking, and off-trail excursions.

Surrounding area/catchment: Bogs are extremely sensitive to changes in water levels and nutrient concentrations. A number of external factors have the potential to affect water quality and quantity:

- A landfill site adjacent to the bog.
- Proposed development of urban communities.
- Municipal drainage ditches that cross the Bog.
- Drainage /fill on privately owned parts of Bog ecosystem.
- Farming practices from adjacent agricultural lands.

Hydrological Values: Mer Bleue drains both westward into Green Creek and eastward into Bear Brook. Drainage was formerly through small creeks, which now have been modified through a series of ditches dug in the late 1800's. These ditches are no longer functioning efficiently due to the many beaver ponds which started up in the late 1950's. As in a typical Bog, the water level is at or near the surface for most of the year. Much of the Bog is surrounded by the "lagg" which is basically a moat of standing or slow flowing water found between the outer perimeter of the Bog and the land. Flooding is

controlled naturally through beaver dams and the ability of sphagnum to absorb large amounts of water.

The Bog receives most of its water in the form of atmospheric precipitation. Flow velocities of ground and surface waters are very low given the impermeability of the underlying clay soils, the absorption qualities of *Sphagnum* and the presence of numerous beaver dams. Shoreline stabilization is not a significant concern as the impact of water on the ridges is minimal and most of the land is relatively flat.

Social/Cultural Values: Europeans began farming in the area surrounding the Bog in the 1830's. Active exploitation of the Bog itself occurred from the 1870 to the early 1900's and included activities such as logging, hunting, blueberry picking, farming, peat extraction, development, transportation/utility corridors, recreation and scientific investigations. Today, the Bog is reserved mainly for recreational and scientific purposes.

Noteworthy Fauna: The Bog has a number of significant fauna because of its relatively undisturbed natural habitat and its uniqueness in representing a boreal habitat which is normally found much farther north.

At least 22 mammal species are present in or around Mer Bleue. Aquatic furbearers such as beaver (*Castor canadensis*), muskrat (*Ondatrra canadensis*) and mink (*Mustela* sp.) live in the surrounding marshes. The spotfin shiner, regionally rare, is found in Bear Brook Creek. Two rare beetles, *Stenolophus magnasephalus* and *Agonum darlingtoni* occurs here. The Spotted Turtle (*Clemmys guttata*), a rare species in Canada, is found in the center of the Bog.

Noteworthy Flora: Vegetation types considered significant on a Southern Ontario and/or regional basis.

(1) Maple-beech (upland tolerant deciduous forest) rare in Ottawa-Carleton region.
(2) Swampy forests of Maple, Cedar, and Hemlock (lowland tolerant forests) are regionally significant.
(3) Black spruce-larch forests (lowland intolerant coniferous forests). rare in the Ottawa district.
(4) Open bog, low-shrub bog and treed bog are highly significant within an Ottawa District and Southern Ontario context.
(5) Bog pool is regionally significant.

(A) NATIONALLY SIGNIFICANT FLORA:

Porsild's cottongrass	*Eriophorum x porsildii*
Southern twayblade	*Listera australis*
Torrey's manna grass	*Torreychloa pallida*

(B) PROVINCIALLY SIGNIFICANT FLORA:

Ground pine	*Lycopodium obscurum*
Drooping manna grass	*Glyceria x laxa*
Long manna grass	*Glyceria melicaria*
Folliculata sedge	*Carex folliculata*
Hayden's sedge	*Carex haydenii*

New England sedge	*Carex novae-angliae*
Greene's rush	*Juncus greenei*
White-fringed orchid	*Platanthera blephariglottis*
Large purple-fringed orchid	*Habenaria fimbriata*
Heart-leaved tearthumb	*Polygonum arifolium*
Seaside dock	*Rumex maritimus*
Slashed avens	*Geum laciniatum*
Black-berried highbush blueberry	*Vaccinium corybosum*
Twin-scapped bladderwort	*Utricularia geminiscapa*
Downy goldenrod	*Solidago puberula*
Marsh dandelion	*Taraxacum palustre*

(C) SIGNIFICANT FLORA IN SOUTHERN ONTARIO:

Small bur-reed	*Sparganium minimum*
Fernald's sedge	*Carex merritt-fernaldii*
Prostrate sedge	*Carex chordorrhiza*
Alpine cottongrass	*Scirpus hudsonianus*
Sticky everlasting	*Gnaphalium viscosum*
Flat-topped hawkweed	*Hieracium umbellatum*

(D) REGIONALLY SIGNIFICANT FLORA:

There are 122 plants that are considered regionally significant (rare or sparse) in the Ottawa/Carleton District.

Current Scientific Research/Facilities: A number of ongoing research projects are being carried out by different organizations. The University of Guelph is doing a study entitled *Beaver Population Size/Individual Fitness in Relation to Food Availability and Parasite Burden*. The University of Ottawa is sponsoring research into*The Breeding Behavior of Red Winged Blackbirds* and is also doing course work research on *Nest Predation and Avian Reproductive Strategies* and *Soil Sampling in Mer Bleue Bog.* Agriculture Canada is carrying out research studies on *Coleoptera* larva.

The Department of Health and Welfare is investigating the presence of Giardiasis (Beaver Fever). The Eastern Chapter Society of Ontario Nut Growers is involved in research on a variety of nut trees that were previously planted in the Mer Bleue Conservation Area by the Canadian Forest Service. The Canada Department of Natural Resources does seismic research at its Geomagnetic Laboratory located on one of the Bog's ridges. The NCC is currently doing research on the impact of Beaver on the bog vegetation.

Current Conservatioin Education: The NCC has a self-guided interpretation boardwalk trail through the Bog and is widely used by individuals, families, and organized groups such as local schools.

Current Recreation and Tourism: Most recreational use of the Conservation Area occurs in the west end where the ridges provide easy access. Cross-country-skiing and trail walking are the most common activities. The Bog nature trail (boardwalk) which was completed in 1986, is used increasingly. Other activities include bird watching, nature study, and snowshoeing.

Management Authority:

National Capital Commission
Suite 202, 40 Elgin Street
Ottawa, Ontario
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Jurisdiction: The area is under the jurisdiction of the Federal Government - Department of Canadian Heritage which administers the National Capital Commission.

References:

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- Brunton, D. 1984. *The Vegetation and Flora of the Mer Bleue Conservation Area, National Capital Commission Greenbelt, Ottawa-Carleton, Ontario.* Contract No. 3l-184. National Capital Commission. Ottawa. 206 p.
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- Fox, G. 1982. *The Impact and Management of Visitor Use at Mer Bleue Bog.* National Capital Commission, Greenbelt Office. Ottawa.
- Hough, Stansbury and Woodland Ltd. 1991. *Ecological Analysis of the Greenbelt.* Contract Report. National Capital Commission. Ottawa. 113 p.
- Paine, C. 1982. *Mer Bleue Conservation Area Development Plan.* National Capital Commission. Ottawa. 60 p.
- Salm, J., W.T. Munro, T.C. Dauphine and C. Hutton. 1974. *Proposal for the Development of a Conservation Area in the Eastern Ottawa Greenbelt, Including the Mer Bleue Bog.* Environment Canada. Ottawa. 43 p.

Reasons for Ramsar Designation:

The site meets thefollowing Ramsar criteria:

Criteria No. 1: Mer Bleue is an example of *Sphagnum* bog which is rare in the geographical region of southern Ontario. It is also a good representative example of a natural wetland, common to other biogeographical regions in Canada.

Criteria No. 2: The site supports an appreciable assemblage of rare, vulnerable and endangered species of plant and animal life. The site is also of special value for maintaining the genetic and ecological diversity of the region due to its qualities and peculiarities of its flora and fauna.

Status of Management Plan: The National Capital Commission *Greenbelt Management Plan* (1981) provides recommendations for management of existing resources including the Mer Bleue sector which it designated as a Conservation Area. The *Mer Bleue Conservation Area Development Plan* (1982) lists a series of guidelines and recommendations for the conservation of Mer Bleue. A *Greenbelt Beaver Management Plan* (1989) includes recommendations for Mer Bleue. At present, the Commission is completing a Master Plan for the Greenbelt that includes the Mer Bleue Conservation Area.