CANADA 20: BAIE DE L'ISLE-VERTE NATIONAL WILDLIFE AREA, QUEBEC

Information Sheet on Ramsar Wetlands

Effective Date of Information: The information provided is drawn from text was supplied at the time of designation to the List of Wetlands of International Importance, May 1987 updated by the Canadian Wildlife Service - Quebec Region in October 2001.

Reference: 20th Ramsar site designated in Canada.

Name and Address of Compiler: Canadian Wildlife Service, Environment Canada, P.O, Box 10,100, 1141 route de l'Église, Ste-Foy, Québec, G1V 4H5.

Date of Ramsar Designation: 27 May 1987.

Geographical Coordinates: 48°01'N., 69°20'W.

General Location: Situated on the south shore of the St. Lawrence River, in Rivière-du-Loup County, 30 km downstream from the City of Rivière-du-Loup, Quebec.

Area: 2 215 ha (area increased due to acquisitions in 1998, increased from 2028 ha).

Wetland Type (Ramsar Classification System): *Marine and coastal wetlands*: Type A - marine waters; Type G - intertidal mud, sand, or salt flats; Type H - intertidal marshes. *Inland wetlands*: Type Q - permanent and seasonal brackish or saline flats and marshes; Type Sp - permanent freshwater ponds, marshes and swamps; Type Xf - freshwater swamp forest.

Altitude: The site lies at 15 m above sea level.

Overview (Principal Characteristics): The area comprises mostly *Spartina* marsh, humid woodland and boreal forest on rocky outcrops reaching 16-17 m.

Physical Features (Geology, Geomorphology, Hydrology, Soils, Water, Climate): The area is partly influenced by a maritime/river-edge climate; this climate is cold and damp with an attenuated maritime influence. Average annual temperature is 3.6°C, the hottest months being July and August with averages of 17.6°C and 16.2°C, respectively. January and February are the coldest months with average temperatures of -11.4°C and -10.2°C, respectively. Average annual precipitation is 943 mm. Average tidal range is 3.5 m; it reaches 4.7 m during spring tides and is only 1.5 m during neap tides. Maximum recorded are 5 m. During July, water salinity reaches 26.8% in L'Isle-Verte.

Ecological Features (Habitats, Vegetation): In the middle estuary of the St. Lawrence near L'Isle-Verte, can be found the most important *Spartina* marsh of southern Quebec. This marsh, which stretches from either side of the bay of l'Isle Verte, constitutes the last vestiges of the great *Spartina* marshes of the St. Lawrence Estuary, all those further upstream having been destroyed, diked or drained for agricultural or other purposes (port developments, roads). This natural environment has become unique through development pressures.

At the level of the lowest tides, *Laminaria saccharina* and *Laminaria longicruris* are present, and *Fucus* spp. and *Ascophyllum nodosum* higher up. Eelgrass *Zostera marina* succeeds the fucacias. Communities of smooth cordgrass *Spartina alterniflora* characterise the middle and high areas, where the flat surface is dominated by this one species. It is replaced above the level of medium tides by meadow cordgrass *Spartina patens*. Depending on the environment, this community can be found on the entire shoreline, accompanied by a number of important species. Terrestrial meadows are characterised by colonies of *Phleum pratense* and *Agropyron repens*. Wrinkled alder *Alnus rugosa* forms fairly extensive shrubs between the Vases and Verte rivers. The *Carex paleacea/Festuca rubra* community is the primary plant community to make the transition between the intertidal area and land. It succeeds either the *Salicornia europea/Spergularia marina* community, or the sub-community of *Hierochloe odorata* in *Spartina patens* along the upper shoreline. Several hygrophilic species are found, witnessing the intermediary stage between intertidal and terrestrial environments. A little higher up the slope a community of *Spartina pectinata/Hierochloe odorata* is present. The *Calamagrostis canadensis/Sanguisorba canadensis* community on the shoreline follows the preceding community as the drainage gets better. It is present either in its original form (a sub-group of *Myrica gale*) or in its form derived from ancient formations (a sub-group of *Phleum pratense*). It has a much wider distribution than the preceding communities and constitutes the last herbaceous community of the marsh toposequence at the limit of the sea's influence.

The only forest communities in this area are found on the rocky elevations between the Vases and Verte rivers. The islets are, from south-west to north-east, Aux Feuillus, Corydalis, Habenaria, Chasseur, and Des Genévriers. Conifer forest, typical of the forest cover colonising the rocky elevations of the St. Lawrence estuarine lowlands, is dominated by black spruce *Picea mariana*. A magnificent pine forest of *Pinus divaricata* is to be found on the top of Habenaria Islet, often mixed with *Picea mariana*. On Chasseur Islet *Picea mariana* and balsam fir *Abies balsamea* dominate.

Land Tenure:

(a) Site: Some of the site is federal Crown Land; 528 ha is owned by the Canadian Wildlife Service. The remaining 1 500 ha is owned by the Government of Quebec. However, the Canadian Wildlife Service has acquired most of the hunting, fishing and hay harvesting rights in this sector.

(b) Surrounding Area: Mainly private lands.

Conservation Measures Taken: The land administered by the Canadian Wildlife Service, Quebec Region, Environment Canada was designated a national wildlife area on 5 June 1980 under the National Wildlife Area Regulations and the *Canada Wildlife Act* of 1973. In 1986, the migratory bird sanctuary was established on the banks of Rivière Verte.

Conservation Measures Proposed: None currently.

Current Land Use/Activities in:

(a) Site: The area is managed for the protection of fauna and their habitats. Only activities compatible with these objectives are permitted. All other uses that would

have a negative effect are rigorously controlled. Public access is limited to certain sectors, although hiking and wildlife observation is permitted.

(b) Surrounding Area: Mainly agricultural land uses.

Threats to Integrity of:

(a) Site: Agricultural activities on surrounding lands could affect the integrity of the marshes. Fertilizers, herbicides and pesticides carried by streams from agricultural land through the drainage network could affect the quality of water courses in the area. This is also the case for wastewater from surrounding areas which is emptied into the river untreated or after partial treatment. Accidental spills of oil during transport by tanker and similar spills in the nearby Port of Cacouna pose a potentially serious threat to riverine ecosystems.

(b) Surrounding Area: None currently.

Hydrological/Physical Values:

Social/Cultural Values:

Noteworthy Fauna: Some 130 species have been recorded from the area; half the species recorded from the immediate region, including several uncommon species such as Wigeon *Anas penelope*, Elegant Rail *Rallus elegans*, Laughing Gull *Larus atricilla*, Hawk Owl *Surnia ulula*, Marsh Wren *Cistothorus palustris* and Wilson's Phalarope *Phalaropus tricolor*. Between 10% and 25% of all birds in the St. Lawrence Estuary are to be found at some time or other in the region of L'Isle-Verte. Cooper's Hawk *Accipiter cooperii*, Hen Harrier *Circus cyaneus*, Great Horned Owl *Bubo virginianus*, Belted Kingfisher *Ceryle alcyon*, Short-eared Owl *Asio flammeus* and several species of thrushes are occasionally recorded. During the spring migration, large populations of Canada Goose *Branta canadensis*, Greater Snow Goose *Anser caerulescens atlanticus* and groups of Brent Goose *Branta bernicla*, an uncommon species the small population of which merits special attention can be observed. Several other species of wildfowl stopover during migration; ducks such as Pintail *Anas acuta*, Black Duck *Anas rubripes*, Mallard *Anas platyrhynchos*, Gadwall *Anas strepera*, Common Shoveler *Anas clypeata* and American Wigeon *Anas americana*, as well as Blue-winged Teal *Anas discors* and Green-winged Teal *Anas crecca*.

The number of spring migratory birds is estimated at 35 000, compared with 10 000 in the autumn. Of this number, anserines are dominant in spring with numbers recorded at 27 000 birds, of which 40% are Snow Goose and 34% Canada Goose. Other species such as Black Duck, Blue-winged Teal and Pintail comprise 19% of migratory birds in spring. Eider *Somateria mollissima*, Scoter, seagulls and cormorants comprise 8%. Of shorebirds, Black-bellied Plover *Pluvialis squatarola* dominates during the spring migration, followed in order of population size by Semipalmated Plover *Charadrius semipalmatus*, Greater Yellowlegs *Tringa melanoleuca*, Killdeer *Charadrius vociferus*, Least Sandpiper *Calidris minutilla*, Common Snipe *Gallinago gallinago* and Spotted Sandpiper *Actitis macularia*. Anatidae form the largest migratory group in autumn; 4 000 Black Duck were recorded by the Canadian Wildlife Service inventory in 1976-1977. Thousands of Scoter and Goldeneye feed and rest in the estuary waters closest to the intertidal swamps. Other sea ducks, specifically Eider and Old Squaw *Clangula hyemalis* are also among the autumn migrants but in less important numbers, in the same way as Canada Goose. Other aquatic birds observed during migration include

several hundred Double-crested Cormorant *Phalacrocorax auritus*, Great Blue Heron *Ardea herodias* and Night Heron. Seagulls are common in this area. More than 60 potential nesting species have been recorded in the area, the most common being Bobolink *Dolichonyx orzivorus*, Red-winged Blackbird *Agelaius phoeniceus*, Common Grackle and Brown-headed Cowbird *Molothurus ater*. Also recorded are Tree Swallow *Iridoprocne bicolor*, Bank Swallow *Riparia riparia*, American Robin *Turdus migratorius*, 12 species of warbler and eight finches. Savannah Sparrow *Passerculus sandwichensis* dominates the coastal marsh and neighbouring fields, often accompanied by Song Sparrow *Melospiza melodia*. Several species reside or are in passage during winter in the area which extends from L'Isle-Verte to Matane, Quebec; 41 regular visitors and 15 occasional have been recorded.

The area is one of the most important sites for Black Duck reproduction. Nesting takes place in the upper part of the marsh, shrub borders and in water courses, but it is during the breeding period that the area is all-important, because the marshes hide coveys in great numbers, small ponds abound with insects and isolate the coveys. The North American Waterfowl Management Plan recognises the precarious position of the Black Duck population in eastern North America and confirms the priority of protecting its habitats in the St. Lawrence Valley. The presence of a large number of this species at L'Isle-Verte, the relative rarity of the habitat chosen by the Black Duck, as well as the objectives of the Plan confirm the urgency of protection of this area. Based on the results of duckling banding programs undertaken at L'Isle-Verte during several summers, estimates of 8.3 broods per km of river bank and 4.5 young per brood leaving the nest have been made. Along the area's 15 km of shoreline, therefore, 560 ducklings should reach that age.

Amongst marine mammals, harbour seal *Phoca vitulina* and gray seal *Halichoerus grypus* can be seen in the intertidal marsh between the Verte River and Loupe Point. Twenty-five years ago harbour seal bred on this coastline. In deep estuarine waters, beluga whale *Delphinapterus leucas* can be encountered, the population of which has seriously diminished over the past few years.

In forests, terrestrial mammals are represented by American hare *Lepus americanus*, American porcupine *Erethizon dorsatum* and red squirrel *Tamiasciurus hudsonicus*, which are common in the area; south of the islets, moose *Alces alces* have been observed. Fox *Vulpes vulpes*, common raccoon *Procyon lotor*, striped skunk *Mephitis mephitis*, American mink *Mustela vison*, long-tailed weasel, and ermine *Mustela erminea* have also been recorded. Fox and common raccoon search for eggs and chicks in the marshes. American mink, weasel and skunk are also potential predators of birds in the marshes. Eastern chipmunk *Tamias striatus* occurs in mixed forests, woodchuck *Marmota monax* in fields near Loupe Point and masked shrew in fields. The Bufonidae are represented in the area only by American toad *Bufo americanus* ssp. *americanus* which is abundant in northern and humid deciduous forests. The Hylidae family includes tree-frog *Hyla crucifer* which makes a very strident call early in spring, most often in the wooded or shrubby sectors of the reserve. The Ranidae family comprises wood frog *Rana sylvatica* which returns to the humid forests after reproduction in the ponds and pools, and common leopard frog *Rana pipiens*. Several reptiles can be observed in the area, on occasion striped snake *Thamnophis sirtalis* spp. *pallidula*.

Capelin *Mallotus villosus*, rainbow smelt *Osmerus mordax*, herring *Clupea harengus*, American shad *Alosa sapidissima*, Atlantic tomcod *Microgadus tomcod*, Atlantic salmon *Salmo salar* and Atlantic sturgeon *Acipenser oxyrhynchus* are present in the sea. Large quantities of American eel *Anguilla rostrata* are caught in traps and exported. To catch herring, capelin and shad, the same method is used, but not the same trap, into which flat boats have access and the fish

are caught by landing nets. Three species of stickleback live in the ponds and pools; speckled *Gasterosteus wheatlandi*, three-spined *Gasterosteus aculeatus* and nine-spined *Pungitius pungitius*. At least eight bird species feed on stickleback and three of these are responsible for 80% of the total fish capture: these are Night Heron *Nycticorax nycticorax*, Ring-billed Gull *Larus delawarensis* and Common Grackle *Quiscalus quiscula*. Around 30% of stickleback in the marshes were victims of predation by birds in 1982 and 1983. On sandy or muddy beaches, fishermen collect *Nereis diversicolor* and *Arenicola marina* to use as bait. One mollusc, the whelk *Buccinum andatum*, is found on sandy beaches as well as at depths of 100 m; eelgrass *Zostera marina* communities are full of young whelk. Another mollusc, gaper-shell *Mya arenaria* which lives in sandy or muddy beaches, is also sought after as food. Several shore birds hunt sand-hopper *Orchestia gammarella* on the banks of the area. In puddles left by the receding tide and under stranded seaweed, *Gammarus* sp. can be seen. Where pebbles replace the sand, blue mussel *Mytilus edulis* attach themselves to rocks or other mussels. *Cheironumus* sp. are dominant in pools and ponds. Also present are *Trichocorixa verticalis*, *Ephydra* sp. and *Culocoides* sp., *Oligochetae* and omnipresent gastropod *Hydrobia minuta*. Crustacean *Gammarus lawrencianus* are abundant in ponds.

Noteworthy Flora:

Current Scientific Research and Facilities: Numerous studies have been undertaken by the Canadian Wildlife Service, by independent groups working on government programs, and by scientists concerned with the biotic and abiotic aspects of the area.

Current Conservation Education: A seasonal visitor centre and interpretation program are provided in the summer.

Current Recreation and Tourism: Trails and an information kiosk are on site.

Management Authority:

Canadian Wildlife Service
Quebec Region
Environment Canada
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Jurisdiction: Federal - Environment Canada.

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Reasons for Ramsar Designation: The area is the most important *Spartina* marsh of southern Quebec. The diversity of habitats present in the bay, from estuarine waters of intertidal marshes to forest islets, favours the presence all year of an important number of bird species. The area is one of the most important sites for Black Duck reproduction.

Status of Management Plan: The *Plan de gestion de la Réserve nationale de faune de la baie de L'Îsle-Verte* was released in May 1986.