# A Dynamic Environment On The Magdalen Islands

# A DYNAMIC ENVIRONMENT

# OF

# THE MAGDALEN ISLANDS

The following information was compiled by Rachelle Clark
while on the Challenge Project 1994/95

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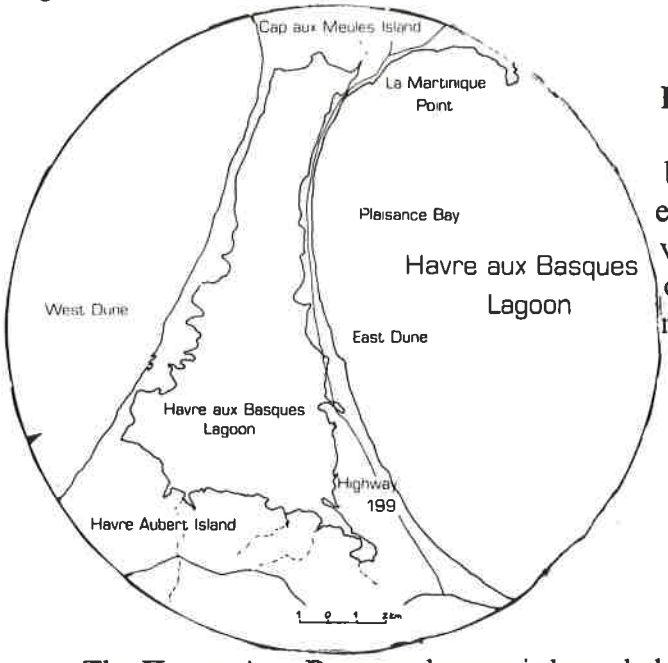
## LAGOONS

Of all marine habitats, lagoons are probably both the most productive and the most fragile. The Magdalen Islands archipelago has three large lagoons : **Grande Entree, Havre-Aux-Maisons and Havre-Aux-Basques.**




Since 1956, the **Havre-Aux-Basques** lagoon has lost its beneficial lagoon characteristics and has become a vast pool of stagnant water cut off from the nearby marine environment.

The **Havre-Aux-Basques** lagoon is bounded on the east and west by two lines of sand dunes 10 kilometres long, on the south end of Havre Aubert Island and on the north end of Cap-Aux-Meules Island. These two islands are linked by highway 199, on the eastern line of dunes. In order to build this highway without putting in bridges, the main opening into the lagoon, as well as a a second passage located near La Martinique Point, were permanently closed off. The **Havre-Aux-Basques** lagoon has only been connected to the Gulf of St. Lawrence by un stable breaks located mainly in the western line if dunes. These break do not allow the lagoon to maintain large exchanges of water with the Gulf to maintain water, temperature and salinity, which accounts for its gradual desertion by fish, molluscs and crusta oceans.

## POINTE de L'EST

Pointe de l'Est National Wildlife Area is a major natural component of the Iles-de-la-Madeleine in the southern part of th Gulf of St. Lawrence.

This site brings together in whole or in part the typical elements of the island chain's landscape : a reddish rock core, offshore bar shifted by the wind into fixed or active dunes and lagoons, including some that are eutrophic and filled with vegetation. In turn, these elements take in moors, salt meadows, marshes, immense beaches and freshwater, brackish or salt waterponds.

Composed primarily of sand, the area has been colonized to a large extent by marine vegetation. The plant that receives top billing in the sandy habitat is none other than beachgrass which, through its well developed root system, is able to hold dunes in place. This truly unique landscape is characterized by the crowberry moor, the stunted forests of spruce and fir, the spartina, samphire and sedge of the saltwater ponds, the yellow pond-lily of the freshwater ponds, and the sphagnum moss of the marshes with their procession of health and carnivorous plants.

During the fall migration period, some shorebirds show a preference for specific habitats. For example, the lesser yellowlegs, short-billed dowitcher, least sandpiper, lesser golden plover and pectoral sandpiper are most at home on the salt meadows. The whimbrel frequents the crowberry moor.

The presence of the piping plover on the sandy shores of **pointe de l'est** during the breeding peroid is one of the main justifications for protecting the habitats, since this bird is on the list of endangered species. The chance to see the horned grebe, a rarity, on the Etang de l'Est in the nesting season will no doubt thrill many visitors.

The islands and islets of the Etang de l'Est provide a space for the least sandpiper and the gulls to breed. Colonies of herring and great black-backed gulls and common arctic terns can be found around the edges of the pond. within the wildlife area breed mainly the blackduck, northern pintail, red-breasted merganser and greater scaup. For the last species, this breeding site is an isolated station in eastern canada. On rare occasions, mallards and blue-winged teal are also sighted.

## ISLAND FORESTS : SMALL BUT ESSENTIAL

Located in the middle of the Gulf of St. Lawrence, the Magdalen Islands are situated in the boreal, or northern, forest region. This region is characterized by a preponderance of conifers. Conifers fluorish in our cold climate mainly because their needles allow them to weather the winter drought.

On the Magdalen Islands, conifers must also adapt to the harsh maritime environment, where the almost constant buffeting of the windsand the salty sea air make it difficult for trees to establish themselves and grow. Despite these adverse conditions, a variety of forest types, with their associated plant species, thrive on the Islands.

Although forests now only cover 18% of the islands' land mass, they play an essential role in maintaining the balance of nature. For example, the forests trap runoff from precipitation and promote snow accumulation, both crucial to the islands' groundwater supplies. Forests also stabilize the soil and provide shelter for people and wildlife.

During the last ten years, the Quebec Department of Forests has initiated and funded projects to develop and maintain forests cover on the Magdalen Islands, mainly through tree planting and windbreak creation. Increasing numbers of islanders are joining in the effort and undertaking their own reforestation efforts.

## FORESTS AND THE SOIL

Forests play an active role in soil formation and conservation. Organic matter in the soil is supplied from forest debris such as leaf litter, fallen branches and the dead logs. Soil organisms such as bacteria, fungi earthworms and insects slowly break down and digest the debris to produce a black, mineral-rich soil called humus.

Tree roots also contribute to soil formation. Thrusting into rock crevices, the roots break off small fragments of parent rock, creating a friable material that is broken down further by tunneling insects and other organisms. The result is a deep layer of spongy, well-aerated soil.

## FORESTS AND THE WIND

The Magdalen Islands are constantly buffeted by strong winds, which wreak havoc on bare, unprotected soils. In these conditions, forests help prevent soil erosion by ensuring a high level of moisture and providing physical support, which promote coil cohesion.

More specifically, trees help reduce the evaporation of moisture from the soil caused by wind and solar radiation. Their branches provide shade from the sun, and act as a natural windbreak. Their intertwining roots above and below the forest floor form a protective mat that helps to shelter the soil from the wind.

The forest also provides shelter for a variety of bird and plant species. We can benefit from these natural windbreaks by planting or maintaining trees around our houses.

## FORESTS ON THE MAGDALEN ISLANDS

To promote a greater understanding and appreciation of our forests, a network of sites has been created to highlight various aspects of the forests. Each site features a particular type of forests, whose characteristics are summarized on a selfinterpretive panel that is easily accesible. Although these sites are an ideal place to observe, particular aspects can be found on the Magdalen Islands archipelago. Each site highlights in a different way the wide range of flora and fauna found in our forests.

The alder thicket of **Grande Entree** is a shrub community rather than a full-fledged forest. The alders, which in tangled clumps, colonize clearings and areas of sparse vegetation.

The dune forest or spruce-fir forest with lichen found in **Grosse Ile** consists mainly of scattered, stunted growths of black spruce and balsam fir, with lichens. It grows on secondary dune ridges and is the last, or climax stage of plant succession in this type of ecosystem.

several small conifer groves found in **Havre-Aux-Maisons** consists of fir and spruce. Although these groves may appear insignificant, they play a crucial role in conserving drinking water supplies on the Magdalen Islands.

Elfinwood of **Fatima** provides a natural windbreak for nearby vegetation. These dwarfed, ground-hugging trees can be found on the edge of windswept cliffs were high winds, salt spray, windblown abrasive particles, ice blasting and other factors create particularly harsh growing conditions.

La bouillee de bois in **Etang-du-Nord**, is the term used by islanders to describe scattered clumps of trees. The clumps consist of black spruce, with an understorey of health shrubs such as sheep-laurel and northern bayberry. The clumps are located between an edge of elfinwood and a stand of white spruce, forming a natural windbreak for the latter.

The fir-white spruce forest of **Havre-Aubert**, is an association between the two species in which fir predominates, is the most common forest type on the Magdalen Islands. However, mature forests of any kind are rare on the islands and Havre-Aubert Island is one of the few places where they can be found. The stand also contains several species of deciduous trees that bear witness to the special conditions found here.

## THROUGH THE BRANCHES

You will discover the alder thicket
With its tangle of branches and roots
Enriching and stabilizing the soil
Sheltering young fir and spruce

Through the branches
You will find the small grove of evergreens
Pungent with the scent of firs
Children's playgroung and lovers' rendez-vous
Haven for small animals and birds

Through the branches
You will discover the stunted elfinwood
Hugging the ground against the storm
Beating back the sea salt and the wind
The first bulwark of the forest

Through the branches
You will see the bog
With its delicate flowers in June
And deep carpet of autumn colours
That rival the maple's scarlet bloom

Through the branches
You will find a stand of majestic trees
That you never thought of as a forest
Inspiration for future generations
And witness to the islands history

Through the branches
You will discover a wreath of flora
From the ghostly indian pipe to the blazing firewood
A wave of colour on the forest edge
A glint of light on the forest floor

Through the branches
You will discover the islands' fauna
A glimpse of a red fox if you are lucky
But more likely the colourful throng of songbirds
And insects almost too small to see

Through the branches
You will discover the nature trail
A place to stroll and observe nature
With all your senses, through all four seasons
A place of beauty and serenity

Through the branches
You will discover the forests' mystery
The interdependence of soil, water and flora
A while you are reflecting on the wonders of ecology
A bird through the branches, takes flight and soars.

A. Miousse

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