THE ECOSYSTEMS and State of Health of the Marine Park

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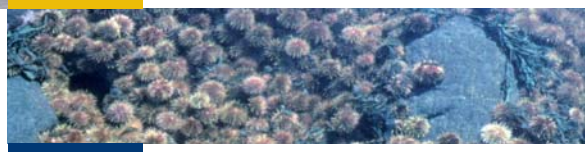
Photo: Charles Lessard, Parks Canada

Ice fishing at L'Anse Saint-Jean

Saguenay–St. Lawrence
MARINE PARK



Green Sea Urchins
Photo: Michel Bouliane, Parks Canada

A rich natural environment that is threatened

Based on its hydrographic and oceanographic divisions, the marine park is defined by three ecosystems: the upper estuary, the lower estuary and the Saguenay Fjord. Their physical and biological characteristics are highly different and their boundaries are less well defined than on land because of the fluid nature of a marine environment. They are, however, very much interrelated since the water and species move from one ecosystem to another.

In addition, numerous activities that take place at great distances from the marine park have impacts on its state of health – consequences that can be positive, such as the importing of zooplankton through currents, or negative, such as upstream toxic contamination.

The upper estuary

The upper estuary covers 53% of the marine park's area and is characterized by strong tides, relatively warm and rough waters, expansive tidal flats and islands. It is the least well known area in terms of scientific knowledge and a relatively important area for the reproduction of animals species, including the beluga. The upper estuary could be described as the "nursery" of the marine park.

Parks Canada Parcs Canada

Québec

•Ministère du Développement durable, de l'Environnement et des Parcs
•Société des établissements de plein air du Québec

The lower estuary

The lower estuary covers 30% of the marine park, whose underwater topography is highly influenced by the Laurentian Channel that runs along the north shore. It is through this channel that water from the Atlantic Ocean finds its way into the lower estuary. The head of the Laurentian Channel is characterized by the upwelling of cold water and is located within the boundaries of the marine park. The state of the lower estuary is deemed stable but of concern, particularly because of the impact of upstream contaminants, oxygen depletion of the deep waters of some sections and variations observed in the abundance of marine mammals and their prey.

The Saguenay Fjord

Classified among the longest fjords in the world, the Saguenay Fjord is 105 km long and extends from Saint-Fulgence to Tadoussac. It covers 17% of the area of the marine park and is made up of three basins defined by sills, including one shallow (20 m) sill 7 km from the mouth of the river. When the tide comes in, the Saguenay receives a wealth of nutrients from the lower estuary, carried by the cold salty oxygen-rich water carrying plankton that breathes life into the deepest depths of the fjord.

The state of the coastal environment and watershed is also cause for concern. Contaminants carried by rivers and streams accumulate in the marine park. Coastal erosion is also a growing problem in certain sections of the park. Increased development along the coast may adversely affect the quality of sensitive habitats, such as marshes.

The challenges involved

The following are the most important challenges in terms of the marine park's ecosystems and biodiversity:

1. Maintaining marine biodiversity

A reduction in biodiversity would be a loss for the marine park. It is home to a dozen species at risk to varying degrees, which means that the park's marine biodiversity is at stake. Of particular concern are:

- the recovery of endangered species and protection of their habitats, including the St. Lawrence beluga, blue whale, Atlantic sturgeon and Barrow's goldeneye;
- maintaining the biodiversity of fish in the fjord;
- the protection of forage species and their spawning grounds and other species that play key roles in the ecosystem.

2. Water pollution from wastewater discharge

Wastewater discharge is a direct form of pollution for marine environments that contributes to deterioration of the living environment for plant and animal species in the marine park. It comes from the sewage of certain towns along the river, large ships, marine tour boats and pleasure boats. This is an issue that involves the municipalities and the federal and provincial departments that are responsible for these areas.

3. The need for research

To better protect the marine park's ecosystems and the species that compose them, more information is needed. Increased knowledge of the park's biodiversity and existing contamination will enable it to take appropriate management measures. A comprehensive research program that meets the marine park's needs will have to be developed with the partners involved.

Proposed actions

Priorities:

- Meet the obligations associated with the Species at Risk Act relating to the marine park.
- Maintain and develop resource monitoring programs (ex.: state of the krill, oxygen levels and ice fishing).
- Intervene with the government departments responsible for municipal wastewater treatment programs to promote the installation of proper facilities.
- Intervene with the municipalities so that wastewater recovery systems are installed for boats on wharves and in marinas.
- Conduct awareness campaigns aimed at the marine industry and pleasure boating community to institute environmental practices on boats operating in the marine park.
- Update the report on the state of the marine park by including recent data, focus on priorities and ensure that they are implemented.

Other actions:

- Make residents and municipal authorities aware of the importance of protecting the river banks and how they affect the health of the marine park.
- Determine what needs to be protected and restored in the marine park (marshes, kelp beds, etc.) and put appropriate measures in place.
- Set up a research program adapted to the needs of the marine park and carried out in partnership with other groups.