

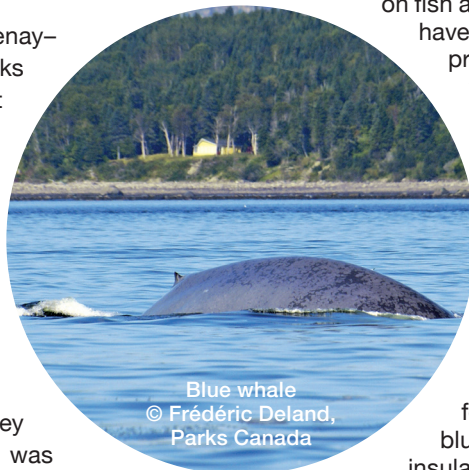


# Giant Tiny prey, predators

## Science supporting whale protection in the Saguenay–St. Lawrence Marine Park

Every summer, birds, seals and whales converge to the Saguenay–St. Lawrence Marine Park, a rich feeding ground for a wide variety of marine species, including whale species at risk that Parks Canada is responsible for protecting in the Marine Park. To protect whales in their feeding grounds, it is necessary to properly understand the food available to these fragile giants.

The study of whales' food in the Saguenay–St. Lawrence Marine Park is carried out by Parks Canada primarily to determine how to protect whales species at risk, such as the St. Lawrence beluga and the blue whale. The findings were used to identify the feeding grounds most commonly used by rorqual whales (minke whale, humpback whale, fin whale and blue whale). In light of this information, the shipping industry agreed to reduce the speed of vessels in the main feeding grounds in order to reduce the risk of collisions with rorqual whales. Furthermore, prey in St. Lawrence beluga high-residency areas was also studied, and the information gathered will guide the development of protective measures for areas to which the species demonstrates a strong attachment.



Blue whale © Frédéric Deland, Parks Canada

## Blue whale, white whale: an extraordinary encounter

The Saguenay–St. Lawrence Marine Park area is probably the only place in the world where the beluga, a typically Arctic species, can encounter the blue whale, a highly migratory oceanic nomad. Unfortunately, the situation of both species is highly precarious, and efforts are being made at the Marine Park to support their recovery. In past centuries, the populations of both of these whale species were decimated by hunting. At present, they face a number of threats that hinder their ability to recover. For example, the small size of their populations may limit their reproductive capacity, and contamination, noise pollution and disturbance by marine traffic can adversely affect the health of individuals.

The beluga is greyish when young and becomes white as it ages. Adult belugas measure between three and five metres long. They live in the St. Lawrence year-round, and the Marine Park includes several areas where females give birth and care for their young. The desire to protect the beluga is what led to the creation of the Marine Park in 1998. The beluga has a varied diet, feeding on fish and invertebrates. Pregnant and nursing females have important energy requirements to fulfill. The protection of their favourite gathering places and their food sources is essential to the recovery of this population, which numbers fewer than 900 individuals.

By contrast, the blue whale can grow as long as 29 metres, about the length of two and a half school buses. Blue whales may migrate thousands of kilometres to reach the region of the Marine Park. They feed primarily on small, shrimp-like crustaceans called krill, consuming up to four tonnes per day. In the Marine Park, the blue whale must feed almost constantly in order to rebuild its blubber reserves. This layer of fat acts as thermal insulation and as an energy supply to help the whale survive during times of year when it is feeding less. Large energy reserves are crucial for the survival and reproduction of these animals.





Krill © J-F Saint-Pierre, Parks Canada



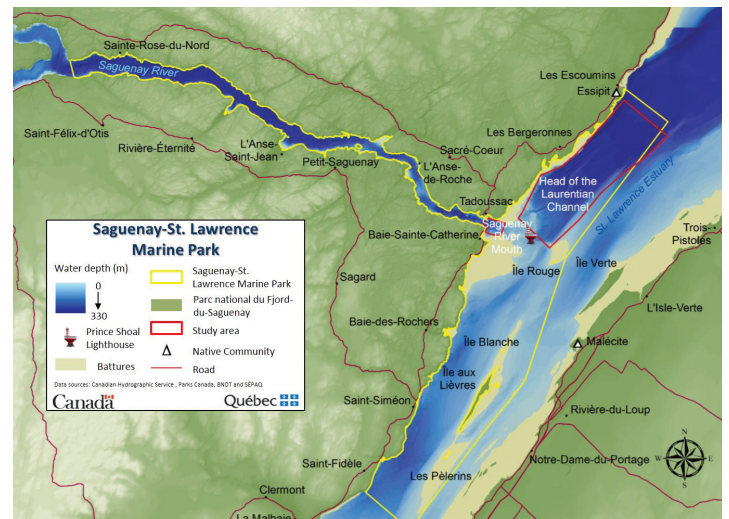
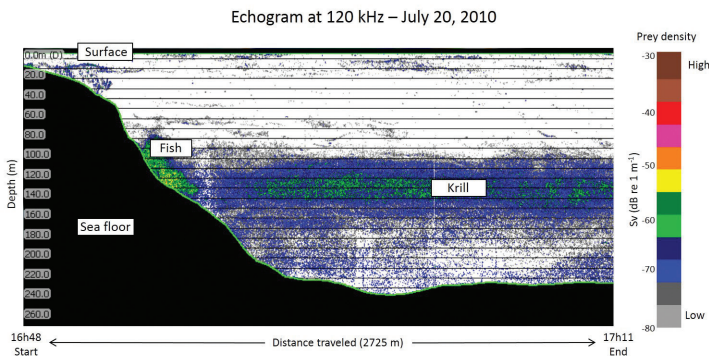
School of small fish © J-G Béliveau, Parks Canada

## Sounding the depths

Since 2009, the Marine Park’s science team has been boarding the Parks Canada boat, *L’Alliance*, twice a week to conduct research on two ecologically distinct areas: the mouth of the Saguenay River, and the head of the Laurentian Channel in the St. Lawrence Estuary. The team uses traditional methods, such as visual observation, along with high-tech methods, such as hydroacoustics. Two observers on the deck record the number of predators, including birds, seals and whales, their position and behaviour. Meanwhile, a scientific echosounder is lowered into the water to conduct hydroacoustic sampling. The echosounder sends out low-intensity sound signals. Some of these signals reflect off organisms present in the water column and off the sea floor. This creates an image called an echogram, which represents the sea floor and the organisms living in the water column. On an **echogram**, masses of small fish, which are eaten by species like the beluga, and krill, the preferred prey of the blue whale, appear as clouds of different colours. The colour indicates the density of these organisms. The science team members then correlate their observations of predators made from the boat with the underwater detections made with the echosounder.

## The Marine Park: a unique showcase for the marine environment

The results obtained through this project contributes to enrich the information given to visitors of the Marine Park, enabling them to learn more about whales and about the importance of protection measures in place. Over the years, the Marine Park has become a unique showcase offering the opportunity for the general public to gain a better understanding of the marine environment and a greater appreciation for this complex and fascinating ecosystem.



For more information, please contact:

**Nadia Ménard**, Ecosystem Scientist  
Saguenay–St. Lawrence Marine Park

Telephone: 418 235-4703, extension 244