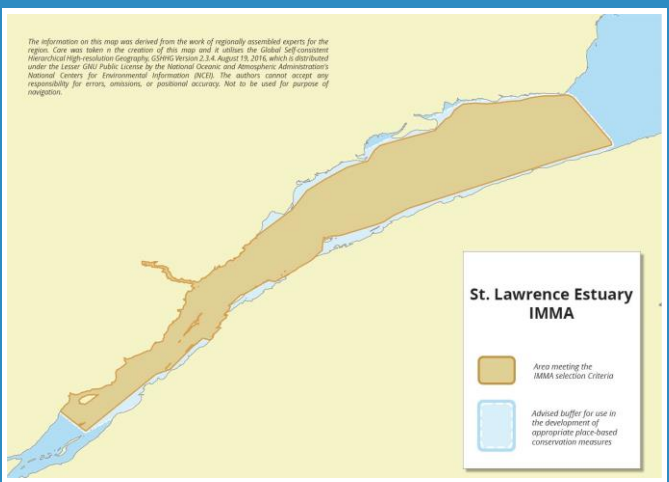

Area Size

10,189 km²

Qualifying Species and Criteria

Beluga Whale – *Delphinapterus leucas*

Criterion A; B (2); C (1, 2); D (1)

Harbor Seal – *Phoca vitulina*

Criterion B (2); C (1, 2)

Other Marine Mammal Species Documented

Balaenoptera acutorostrata, Balaenoptera musculus, Balaenoptera physalus, Cystophora cristata, Halichoerus grypus, Leucopleurus acutus, Megaptera novaeangliae, Pagophilus groenlandicus, Phocoena phocoena

Summary

The St. Lawrence Estuary (SLE) connects the Gulf of St. Lawrence to the Great Lakes drainage basin in central North America, and is located in the province of Quebec, Canada. The area's highly heterogeneous bathymetry and salinity enhance local productivity and allow it to host a unique subpopulation of belugas (*Delphinapterus leucas)*. The IMMA encompasses an EBSA and designated Critical Habitat for SLE beluga, supporting 68 to 100% of the population depending on the season. The IMMA also hosts

St. Lawrence Estuary IMMA

Summary, continued.

the Saguenay St. Lawrence Marine Park, which aims to protect marine mammals and beluga in particular. Harbor seals (*Phoca vitulina*) also form aggregations throughout the IMMA, pupping in May-June and feeding in the area throughout the year.

Description:

The SLE Estuary IMMA is located in the province of Quebec, Canada. It extends over a stretch of approximately 400 km in the Estuary and approximately 50 km in the Saguenay Fjord. The area is highly heterogeneous in bathymetry and salinity, with bathymetry not exceeding 350 m. The confluence of the Saguenay River and the Laurentian Channel, which ends abruptly at the Saguenay Fjord mouth results in oceanic fronts, water mass movements, upwelling of cold mineral rich waters and high productivity (Saucier et al., 2009; Savenkoff et al., 2017). The Upper Estuary is generally seasonally ice-covered, although less so in recent years, but dominant winds and local water mass movements lead to relatively ice-free sectors throughout winter.

The area is a recognized EBSA (Lesage et al., 2007), and encompasses the Critical Habitat of SLE beluga (DFO, 2012; Lesage et al., 2024); it hosts the Saguenay St. Lawrence Marine Park, which aims to protect marine mammals and the beluga in particular. The Park is soon to be extended to encompass most of the beluga summer range and proposed SLE IMMA.

Figure 1: St. Lawrence Estuary Beluga (*Delphinapterus leucas*) with newborn calf. Photo credit: V. Lesage, DFO.

Figure 2: Harbour seals (*Phoca vitulina*) at a haul-out site in the St. Lawrence Estuary. Photo credit: DFO.

Criterion A: Species or Population Vulnerability

The St. Lawrence Estuary IMMA is focused on a relict and isolated subpopulation of Beluga whales (*Delphinapterus leucas*) that is considered of Least Concern globally, but Endangered in Canada (Lowry et al., 2017; COSEWIC, 2014).

Criterion B: Distribution and Abundance Sub-criterion B2: Aggregations

The Lower St. Lawrence Estuary (SLE) is characterized by the upwelling of cold mineral-rich waters caused by local bathymetry, water mass movements and oceanic fronts (Saucier et al., 2009), which enhance local productivity (Savenkoff et al., 2017) that provides prey for St. Lawrence Estuary (SLE) beluga whales. The more estuarine and brackish waters in the Upper St. Lawrence Estuary and Saguenay Fjord, and seasonal sea-ice cover also provide characteristics typical of beluga seasonal habitat in the Arctic (O'Corry-Crowe, 2018). Abundance for SLE belugas has been estimated at 1,850 individuals (95% CI: 1,500 – 2,200) in 2022 (Tinker et al., 2024). The IMMA sustains on average 68% of the population year-round, including the entire summer range of the population, and most of its range for other seasons (Lesage et al., 2024). During winter, on average 32% of the population on average moves into the northwestern Gulf of St. Lawrence, aggregating in the waters of the St. Lawrence Estuary between the Battures aux Loups Marins and Pointe-des-Monts / Les Méchins, including the Saguenay River up to Ile St-Louis.

Harbor seals (*Phoca vitulina*) also form aggregations throughout the IMMA. According to a recent survey, the IMMA supports nearly 22% of the eastern Canadian population (DFO, 2024), or 6.4% of the population from the western North Atlantic (DFO, 2024; Sigourney et al., 2022).

Criterion C: Key Life Cycle Activities Sub-criterion C1: Reproductive Areas

Belugas from the St. Lawrence Estuary mate in the spring (Hill et al., 2024) and give birth mainly from late June to August (Sergeant, 1986; Michaud, 2007). Given that the population's entire summer range is encompassed in the IMMA, the area provides important habitat for reproduction for this population (Lesage et al., 2024). Herds with neonates are reported throughout the belugas' summer range, except in the deeper waters of the Laurentian Channel along the north shore of the Lower Estuary (Michaud, 1993; Ouellet et al., 2021; Harvey et al., in review).

Harbor seals give birth in late May and June, weaning their pups after 3-4 weeks (Dubé et al., 2003; Muelbert & Bowen, 1993). Harbor seals mate shortly after weaning pups. Given the species' year-round presence in the IMMA, this area also provides important habitat for mating, parturition and rearing of young for both species.

Sub-criterion C2: Feeding Areas

The enhanced local productivity makes the St. Lawrence Estuary a particularly attractive area for several marine mammal species for feeding, including belugas and harbor seals (reviewed in Savenkoff et al., 2017; see also Lesage et al., 2007; Lesage et al., 2018; Lacroix Lepage, 2018; Mosnier et al., 2023; Ramp et al., 2024).

There is no evidence that beluga go through a fast and feast cycle, suggesting they feed year-round, although not necessarily at the same intensity at all times (Vladykov, 1946; Lesage et al., 2020). In the St. Lawrence Estuary, they feed on a variety of prey

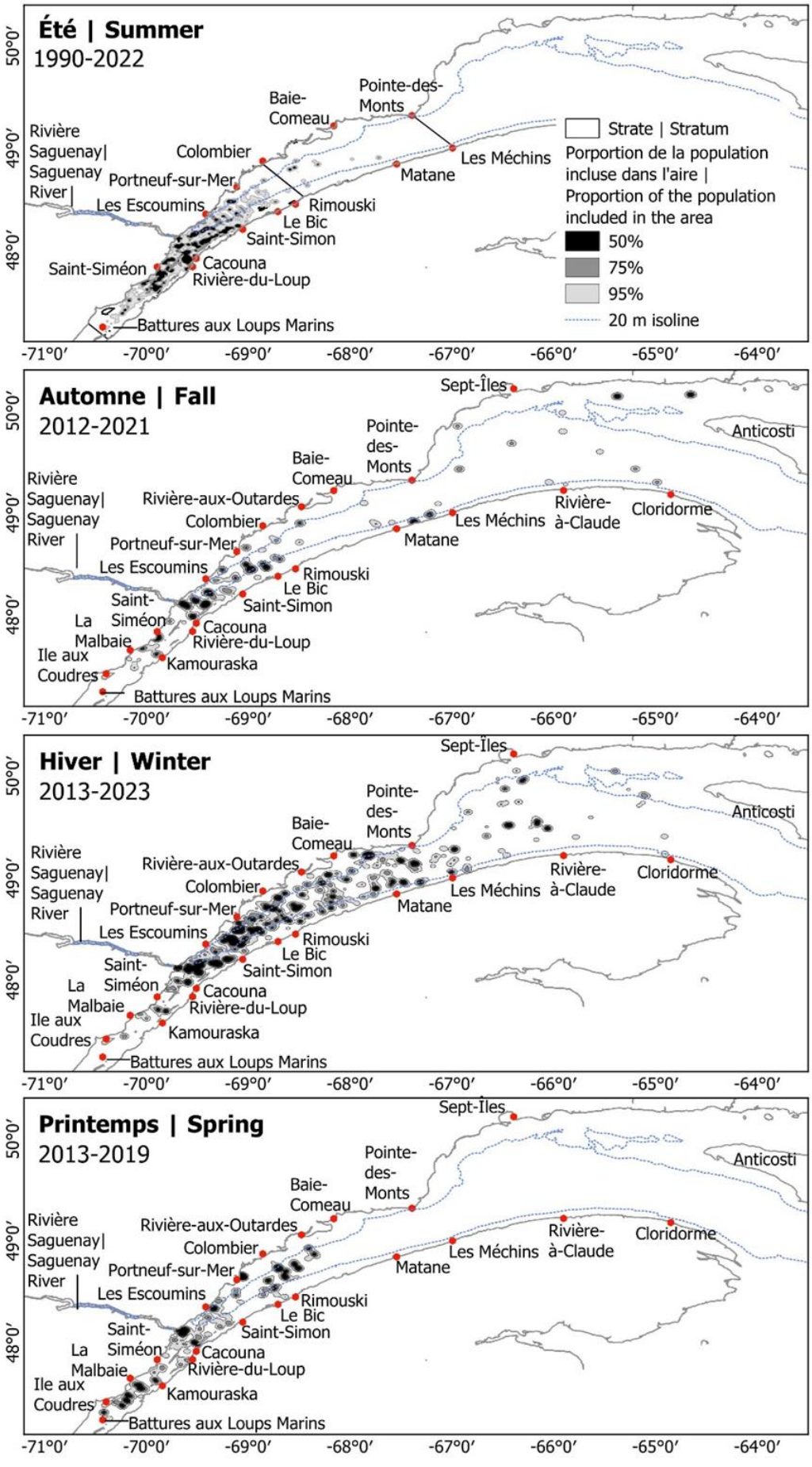

Figure 3: Seasonal areas including 50, 75 and 95% of the St. Lawrence Estuary beluga population, based on aerial surveys. Excerpt from Harvey et al. (in press).

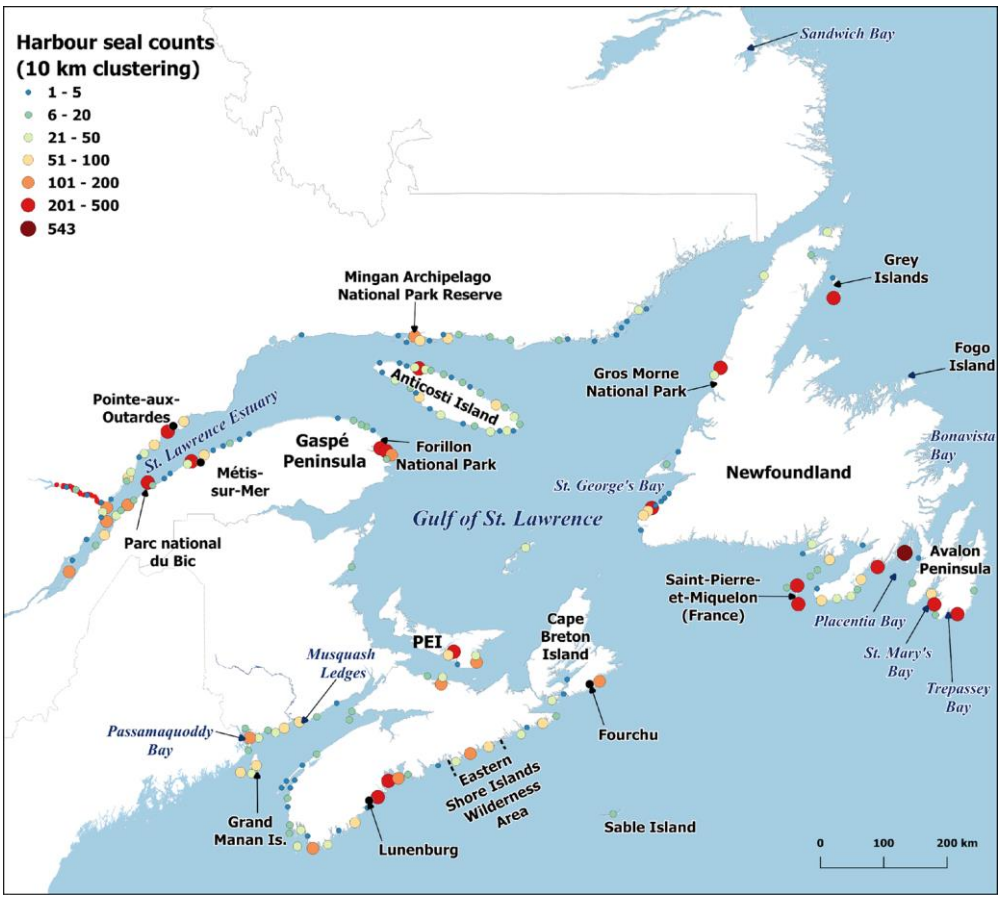

Figure 4: Location and counts of harbour seals detected during the 2019-2021 Atlantic Canada wide harbour seal survey. Excerpt from DFO (2024).

ranging from invertebrates to small and larger fish species as evidenced by digestive tracts analyses (Vladykov, 1946; Lesage et al., 2020). The occurrence of at least 68% of the population in the IMMA throughout the year, and of 100% of the population during summer, is indirect evidence that the IMMA supports feeding. While direct evidence linking specific habitat to foraging are still scarce, archival tag data indicate that area-restricted-search, a behaviour often related to foraging, occurs in several areas of the beluga range (Lemieux-Lefebvre et al., 2012, 2018; Barreau et al., in review).

Satellite tracking and archival tag data, as well as stomach temperature pills, stomach contents and stable isotope analyses indicate that harbor seals are feeding in the IMMA throughout the year (Lesage et al., 1999; Lesage et al., 2001; Lesage et al., 2004).

Criterion D: Special Attributes
Sub-criterion D1: Distinctiveness

The SLE beluga subpopulation is significantly differentiated and the most genetically divergent group of Belugas in Canada (Brown Gladden et al., 1999; de March & Postma, 2003; Postma, 2017; Montana et al., in press). This subpopulation is at the southernmost limit of the species' distribution, and is geographically separated by thousands of kilometres from other beluga subpopulations. This isolation from other subpopulations could lead to local adaptations to both a year-round estuarine habitat existence and to a warmer southern location (COSEWIC, 2016).

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