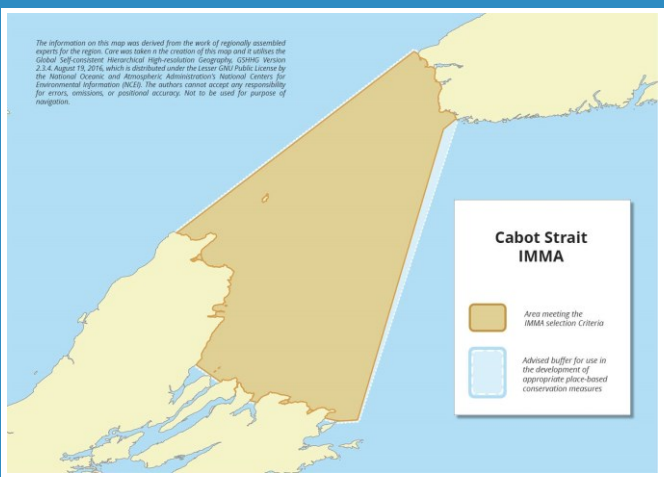

Area Size

10,710 km^2

Qualifying Species and Criteria

Blue Whale – *Balaenoptera musculus*

Criterion A; C (3b)

Fin Whale – *Balaenoptera physalus*

Criterion A; C (3b)

North Atlantic Right whale – *Eubalaena glacialis*

Criterion A; C (3b)

Hooded Seal – *Cystophora cristata*

Criterion A; C (3b)

Minke Whale – *Balaenoptera acutorostrata*

Criterion C (3b)

Grey Seal- *Halichoerus grypus*

Criterion C (3b)

Humpback Whale – *Megaptera novaeangliae*

Criterion C (3b)

Harp Seal – *Pagophilus groenlandicus*

Criterion C (3b)

Criterion D (2) Marine Mammal Diversity

Balaenoptera acutorostrata, Balaenoptera musculus, Balaenoptera physalus, Cystophora cristata, Delphinus delphis, Eubalaena glacialis, Globicephala melas, Halichoerus grypus, Lagenorhynchus albirostris, Leucopleurus acutus, Megaptera novaeangliae, Orcinus orca, Pagophilus groenlandicus, Phocoena phocoena

Cabot Strait IMMA

Summary

The Cabot Strait IMMA is a relatively narrow passage to the southern entrance to the Gulf of St. Lawrence, Canada. Approximately 65 km wide, water depths in the centre of this IMMA, exceed 500 m. This area hosts a high diversity of 14 marine mammal species. Eight species – minke whales (*Balaenoptera acutorostrata*), Endangered blue whales (*Balaenoptera musculus*), Critically Endangered North Atlantic right whales (*Eubalaena glacialis*), Vulnerable fin whales (*Balaenoptera physalus*), humpback whales (*Megaptera novaeangliae*), Vulnerable hooded seals (*Cystophora cristata*), grey seals (*Halichoerus grypus*) and harp seals (*Pagophilus groenlandicus*), use this corridor to move between important seasonal breeding or feeding habitat in the Estuary and Gulf of St. Lawrence and habitats located outside of this area.

Description:

The Cabot Strait IMMA is a relatively narrow passage (approximately 65 km wide). This IMMA is located at the southern entrance to the Gulf of St. Lawrence, Canada. It is characterized by a westward moving current along the northern half, and an eastward moving current along the southern half (Brickman et al., 2016). Water depth in the Laurentian Channel, in the centre of this IMMA, exceeds 500 m in depth.

Cabot Strait has been identified as an important habitat for blue whales (Figure 1). The importance of Cabot Strait for North Atlantic right whales has also recently been assessed (final results pending; Ratelle & Vanderlaan et al., in review). Cabot Strait has voluntary seasonal vessel speed restrictions to mitigate North Atlantic right whale vessel strikes

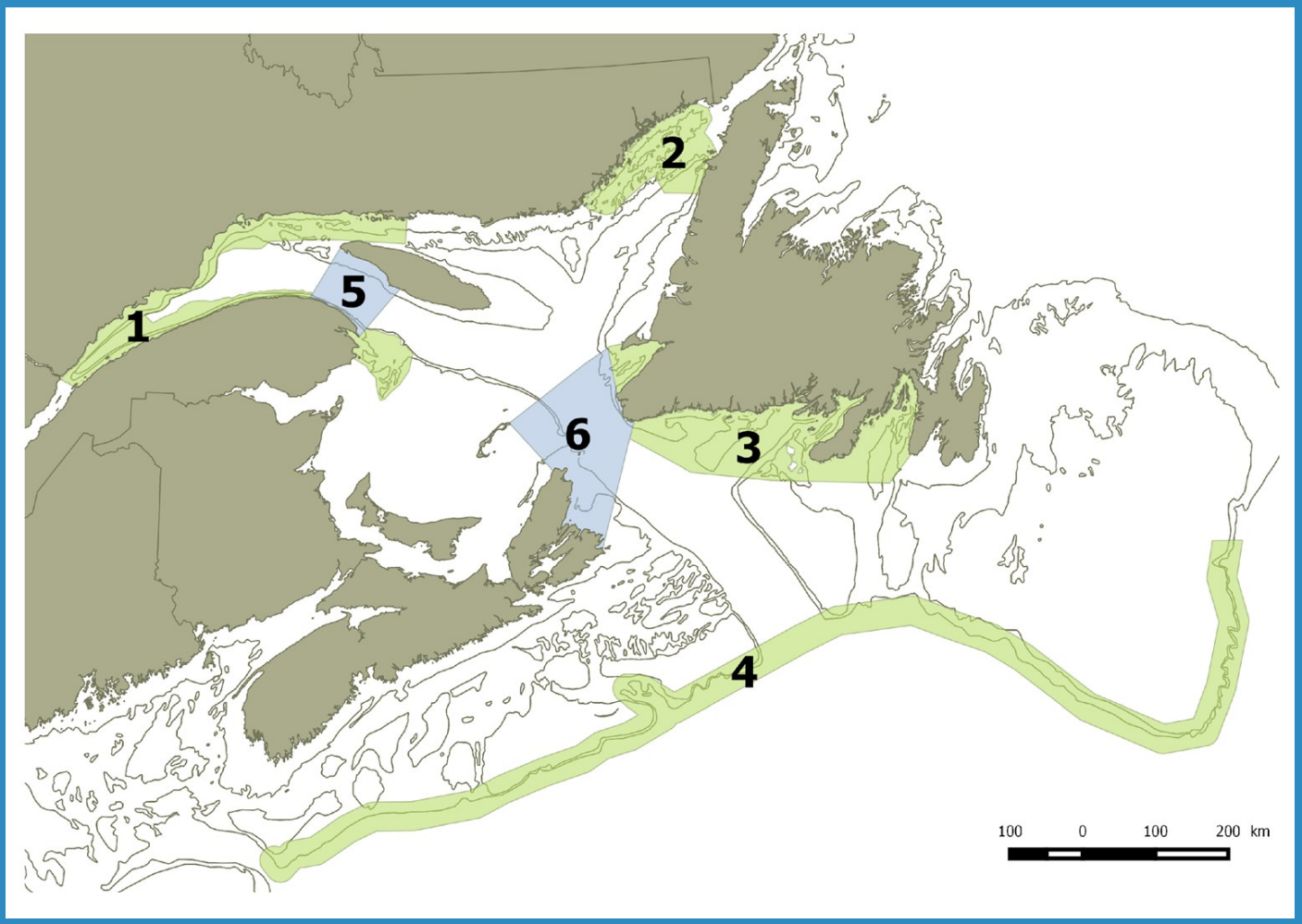

Figure 1: Polygons delimit areas in Canadian waters that are important to blue whales for foraging (green) and transit (blue): (1) lower St. Lawrence Estuary – northwestern Gulf of St. Lawrence, (2) Mecatina Trough, (3) south and southwestern Newfoundland, (4) continental shelf edge, (5) Honguedo Strait, (6) Cabot Strait. Excerpt from Lesage et al. (2018).

Figure 2: Blue whale (*Balaenoptera musculus*). Photo credit: DFO.

(https://shipfed.ca/circular-letters/whales-mitigation-measures-2024-east-coast/).

Criterion A: Species or Population Vulnerability

Four of the species or populations that use the IMMA as a main migratory corridor to access their foraging habitats in the Gulf of St. Lawrence, Canada, are considered threatened according to the global IUCN Red List: North Atlantic right whales (*Eubalaena glacialis*, CR); blue whales (*Balaenoptera musculus*, EN); hooded seals (VU; *Cystophora cristata*) and fin whales (VU; *Balaenoptera physalus* (Cooke 2018a, 2018b, 2020; Kovacs et al., 2016).

Additionally, the Canadian Species at Risk Act (SARA – the Canadian legislation for protection of at-risk species) lists the North Atlantic right whale and the Atlantic blue whale as Endangered (Beauchamp et al., 2009; DFO, 2014), and the Atlantic fin whale as Special Concern (DFO, 2017). The hooded seal is not listed under the SARA.

Criterion C: Key Life Cycle Activities Sub-criterion C3: Migration Routes C3b – Migration / Movement Area

Summer foraging habitats for blue whales in the Northwest Atlantic are mainly located in Canadian waters, with few identified so far outside the Estuary and Gulf of St. Lawrence (Davis et al., 2020; Lesage et al., 2018; Moors-Murphy et al., 2019; Delarue et al., 2022). Satellite telemetry and passive acoustics indicate that blue whales enter and exit the Gulf of St. Lawrence almost exclusively via Cabot Strait (Lesage et al., 2017; Delarue et al., 2022; Simard et al., 2016; Moors-Murphy et al., 2019). The autumn exit occurs mainly between October and early January, whereas spring re-entry occurs as early as late-February / early March, with some whales possibly using the IMMA or remaining in nearby habitats year-round (Simard et al., 2016; Delarue et al., 2022). Sporadic reports of ice-entrapment of blue whales in the southern Gulf and off the southwest coast of Newfoundland from mid-February through April support use of the IMMA at that time of year (Sergeant, 1982; Stenson et al., 2003). Between 1975 and 2015, 26 ice entrapments involving at least 48 individuals have been reported in or in the vicinity of Cabot Strait, including an event in mid-March of 2014 that caused the death of at least 9 blue whales (Figure 2). Considering the small size of the population (likely less than 250 mature; COSEWIC, 2012), and that 20 to 115 unique individuals are photographed in the St. Lawrence each summer, the IMMA clearly represents a vital migratory route for blue whales.

A few thousand fin whales enter the Gulf of St. Lawrence to feed each summer (COSEWIC, 2019). Satellite telemetry data and passive acoustic monitoring indicate that Cabot Strait is most likely the main exit route for this species in the fall, and probably their only entry route in the spring. Indeed, of the eight fin whales tracked on their fall migration out of the Gulf of St. Lawrence, all exited via the IMMA (Ramp et al., 2024). Two acoustic monitoring studies further indicate that the Belle Isle Strait, the only alternate exit or entry route to the Gulf of St. Lawrence, is used to a much lesser extent than Cabot Strait by fin whales in the fall, and not at all in the spring (Roy et al., 2018; Delarue et al., 2022), emphasizing the importance of the IMMA for fin whales feeding in the Estuary or Gulf of St. Lawrence.

There is also evidence for minke whales and humpback whales using Cabot Strait as an exit and entry route to the Gulf of St. Lawrence. Based on acoustic detection frequencies, humpback whales exit the Gulf through the MIMMA mainly from mid-December through February, and re-enter again in June (Delarue et al., 2022). Minke whales were

detected sporadically in the IMMA between late July and mid-December (Delarue et al., 2022). However, the low research effort combined with the possibility that only male minke whales might be calling (Risch et al., 2014), limit our capacity to assess the timing of their seasonal migration through the IMMA.

Hooded seals from the Northwest Atlantic congregate off the north coast of Newfoundland, in Davis Strait, and in the Gulf of St. Lawrence to breed in March, before moving to northern latitudes where they feed and moult in July. When ice conditions are favourable, approximately 6% of the total pup production for this population may occur in the Gulf of St. Lawrence (Stenson et al., 2006). Satellite telemetry studies confirm Cabot Strait as an important migratory exit route for animals breeding in the Gulf of St. Lawrence (Bajzak et al., 2009; Vacquié-Garcia et al., 2024). The reduction in area-restricted search behaviour between mid-April and early-June suggests this is when animals are likely to exit the Gulf (Vacquié-Garcia et al., 2024). Data about period of entry is lacking given animals are tagged during the breeding period, but is likely to be in late fall or early winter. The proportion of the population likely using Cabot versus Belle Isle Strait for transit is unknown.

Approximately 30-40% of the North Atlantic right whale population use the Gulf of St. Lawrence between May and December to feed (Crowe et al., 2021; St-Pierre et al., 2024). The IMMA is one of two potential entry access to the Gulf. Acoustic detections over a broad network of recorders (Davis et al., 2020; Durette-Morin et al., 2022; Moors-Murphy et al., in review; Simard et al., 2024) spread from the wintering areas off eastern USA north to eastern Canadian waters suggest that the IMMA might be the main entry and exit route for right whales using the Gulf of St. Lawrence. Despite limits on call detection range imposed by shipping transiting through Cabot Strait, data on North Atlantic right whale occurrence in the Gulf of St. Lawrence, and their acoustic presence on passive acoustic monitoring systems in and around Cabot Strait, provide evidence for use of the IMMA throughout the spring, summer, and autumn. Whether Cabot Strait is used for other purposes than migration is unknown.

Harp seals enter the Gulf of St. Lawrence sometime in the autumn (timing unclear) to feed prior to pupping on the drifting pack ice during March. They moult later in April and May, forming large concentrations on the sea ice off northeastern Newfoundland and in the northern Gulf of St. Lawrence, and then leave the Gulf via Cabot Strait or the Strait of Belle Isle to summer in the Arctic (Sergeant, 1991; Grecian et al., 2022). Migration out of the Gulf has been tracked via satellite in juveniles, and commenced between mid-June and mid-July (Grecian et al., 2002). The precise dates for adults departure, and for the re-entry of any age class, are unknown. Traditionally, approximately 18% of the world's total pup production (assuming western North Atlantic harp seals represent 80% of the Global population; Kovacs, 2015), occurred in the Gulf. While the decrease in Gulf pack ice has led to a substantial decrease of pupping (Tinker et al., 2023), the Gulf is likely to continue to serve as an important foraging area for juveniles and a portion of the adults prior to and after pupping (ICES, 2023; Tinker et al., 2023).

The largest grey seal breeding colony in the world is found on Sable Island (Scotian Shelf to the west of Cabot Strait), but outside the breeding season, animals from Sable and the Scotian Shelf disperse into the Gulf of St. Lawrence, with some Gulf animals summering on the Scotian Shelf. To reach their summering areas, grey seals must transit through Cabot Strait (Breed et al., 2009; Harvey et al., 2012). The proportion of the World grey seal population occurring in the Gulf of St. Lawrence during summer

Figure 3: North Atlantic right whale (*Eubalaena glacialis*). Photo credit: DFO.

is unknown. Total abundance globally was more than 600,000 individuals in 2016, with nearly 80% of these occurring in the Northwest Atlantic (Bowen, 2016). The most recent assessment suggests that approximately 16% of the Northwest Atlantic grey seals (or 13% of the World's total) breed in the Gulf of St. Lawrence during winter and thus, use Cabot Strait to access this region at one point or another (Hammill et al., 2023).

An additional six species also most likely use the IMMA to access to their Gulf summer feeding areas. These species include harbour porpoises (*Phocoena phocoena*), long-finned pilot whales (*Globicephala melas*), white-sided dolphins (*Lagenorhynchus acutorostrata*), white-beaked dolphins (*Lagenorhynchus albirostris*), common dolphins (*Delphinus delphis*), and killer whales (Kingsley & Reeves, 1998; Lawson & Gosselin, 2009; Lawson & Stevens, 2014).

Criterion D: Special Attributes Sub-criterion D2: Diversity

In addition to the 8 species of marine mammals that use the IMMA on a regular basis for transiting, six others also use the IMMA to access their summer feeding areas. Large scale surveys indicate that several thousands of individuals from four other cetacean species are present in the Gulf of St. Lawrence during summer (Kingsley & Reeves, 1998). These species include harbour porpoises (*Phocoena phocoena*), long-finned pilot whales (*Globicephala melas*), white-sided dolphins (*Leucopleurus acutus*) and white-beaked dolphins (*Lagenorhynchus albirostris*). These four species are all also heavily present on the Scotian Shelf, just south of the Gulf of St. Lawrence (Lawson & Gosselin, 2009), indicating that they must use the IMMA as their main access to the Gulf. Common dolphins (*Delphinus delphis*) were also regularly documented in the Cabot Strait during

summer (Lawson & Gosselin, 2009). Killer whales (*Orcinus orca*) have been observed in Cabot Strait and although data for this species is scarce, these observations support their use of the IMMA (Lawson & Stevens, 2014).

Figure 4: Hooded seal (*Cystophora cristata*) male, female and pup on pack ice during the reproduction season in the Gulf of St. Lawrence. Photo credit: Mike Hammill, DFO.

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