

## Key Site 31: Sleeper Islands, Nunavut

**Location:** 57°31'18"N, 79°48'56"W

**Size:** 2722 km<sup>2</sup>

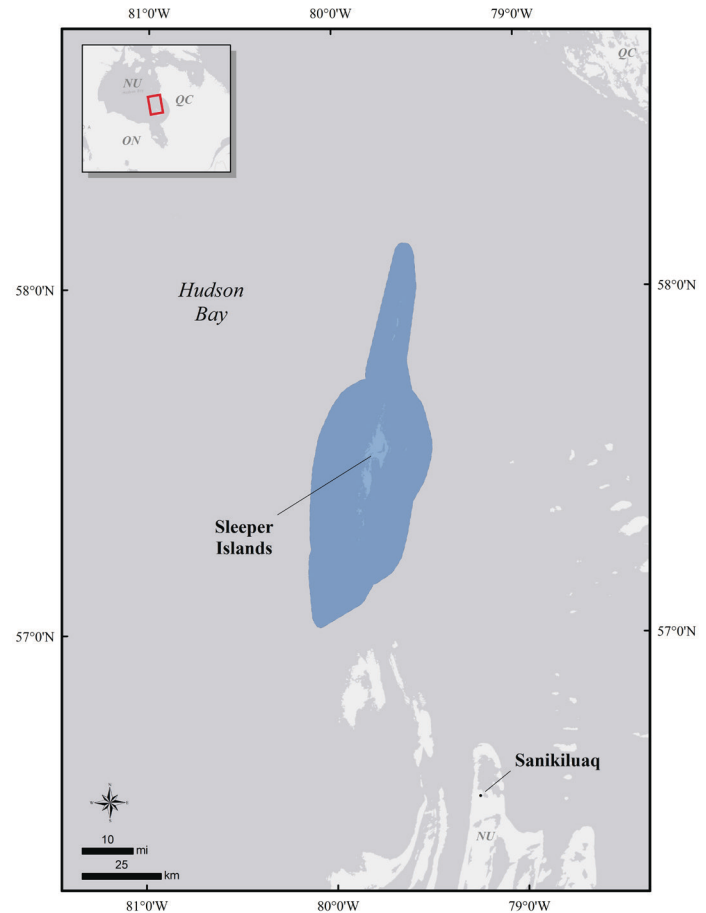
**Description:** The Sleeper Islands archipelago is in eastern Hudson Bay, about 115 km north of the community of Sanikiluaq. The archipelago includes more than 360 islands and covers about 49 km from north to south. Waters around the Sleeper Islands are relatively shallow and are on the boundary between the Low Arctic and Boreal oceanographic zones (Nettleship and Evans 1985). A more detailed description of the terrestrial habitats is found in Alexander et al. (1991).

Ice forms along shorelines in October and by November may extend offshore for several kilometers. Because the east coast of Hudson Bay is exposed to westerly winds, ice accumulation may be much less than in other areas. Ice forms quickly and continues to expand during November and December. By early January, open water is found only from the Belcher Islands south towards the mouth of James Bay and along the south coast of Hudson Bay from about the Severn River to the Great Whale River (Larnder 1968). Persistent open water occurs west and southwest of the Belcher Islands (Montgomery 1950, Freeman 1970). Shallow coastal areas break up in May, and in most years Hudson Bay is relatively ice-free by mid-July (Larnder 1968).

### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

**Biological Value:** Hudson Bay Common Eiders (*Somateria mollissima sedentaria*) are year-round residents of James and Hudson bays. The population was estimated to be approximately 45,000 birds (Abraham and Finney 1986), but recent winter surveys suggest 125,000 pairs make up the *sedentaria* subspecies (Bowman et al. 2015). In summer, they inhabit the entire coast of Hudson Bay, from Chesterfield Inlet in the northwest to James Bay and north along the east coast of Hudson Bay to Cape



Smith. In 1985, an estimated 5900 pairs of eiders (12% of the *sedentaria* population) nested on the Sleeper Islands.

In winter, Common Eiders are restricted to areas of open water, and the majority of *sedentaria* apparently concentrate in open cracks and leads near the Belcher and Sleeper islands and the south shore of Hudson Bay (Freeman 1970, Prach et al. 1981). In early winter, Common Eiders move in large numbers to permanent open water west and north of the Belcher Islands, off the Sleeper Islands, depending on the distribution of ice (Freeman 1970). In 2000, most Common Eiders were found in open water off the northern tip of the Sleeper Islands, while in 2002, about 100,000 eiders were found in leads approximately 10 km southwest of the islands. Given that few birds were found elsewhere during survey efforts, it is likely that this concentration represented almost all of the *sedentaria* population.

**Sensitivities:** Eiders are sensitive to the degradation of their staging and foraging areas.

**Potential Conflicts:** Oil exploration in central Hudson Bay is a potential source of pollution. Prevailing west and northwest winds render the east coast of the bay, including this key site, most susceptible to oil damage (Nakashima and Murray 1988).

**Status:** The Sleeper Islands are an Important Bird Area site (NU033; CEC 1999).

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**Sensitivities:** Availability and quality of food resources could be influenced by changes to water regimes and salinity (e.g., climate change, hydroelectric projects). Human disturbance can displace and alter behavior of birds, particularly while foraging or during the molting period.

**Potential Conflicts:** Hydroelectric projects on the adjacent mainland could affect the water regime and salinity in portions of Hudson Bay. For instance, about 100 km south of the key site, the Grande Rivière de la Baleine (formerly Great Whale River) and the Petite Rivière de la Baleine (formerly Little Whale River) were the subject of environmental assessments in the late 1980s because they were considered as potential sites for a new hydroelectric complex (Grande-Baleine); this project was abandoned in 1994 due to the Cree Tribal Governments' opposition. Berteaux et al. (2014) predict increasing temperature and precipitation within the next few decades in Quebec's taiga due to climate change; impacts will likely affect sea ducks, possibly favoring some species over others. Increases in precipitation that coincide with peak hatching time for sea ducks (early July) could negatively affect reproductive success.

**Status:** Wildlife management in this region is mostly under the Nunavik Marine Region Wildlife Board and the Eeyou Marine Region Wildlife Board. Parts of this key site fall within Tursujuq National Park (26,107 km<sup>2</sup>), which protects Lac Guillaume-Delisle as well as Lac à l'Eau-Claire (KRG 2007, Gouvernement du Québec 2015). Part of the key site also lies within the Rivers of the Lac Guillaume-Delisle Basin Important Bird Area that extends from the coast of Hudson Bay inland to the west side of Lac Eau Claire and mainly covers the rivers of this region. This Important Bird Area was principally identified based on the abundance of breeding Eastern Harlequin Ducks there (IBA Canada website).

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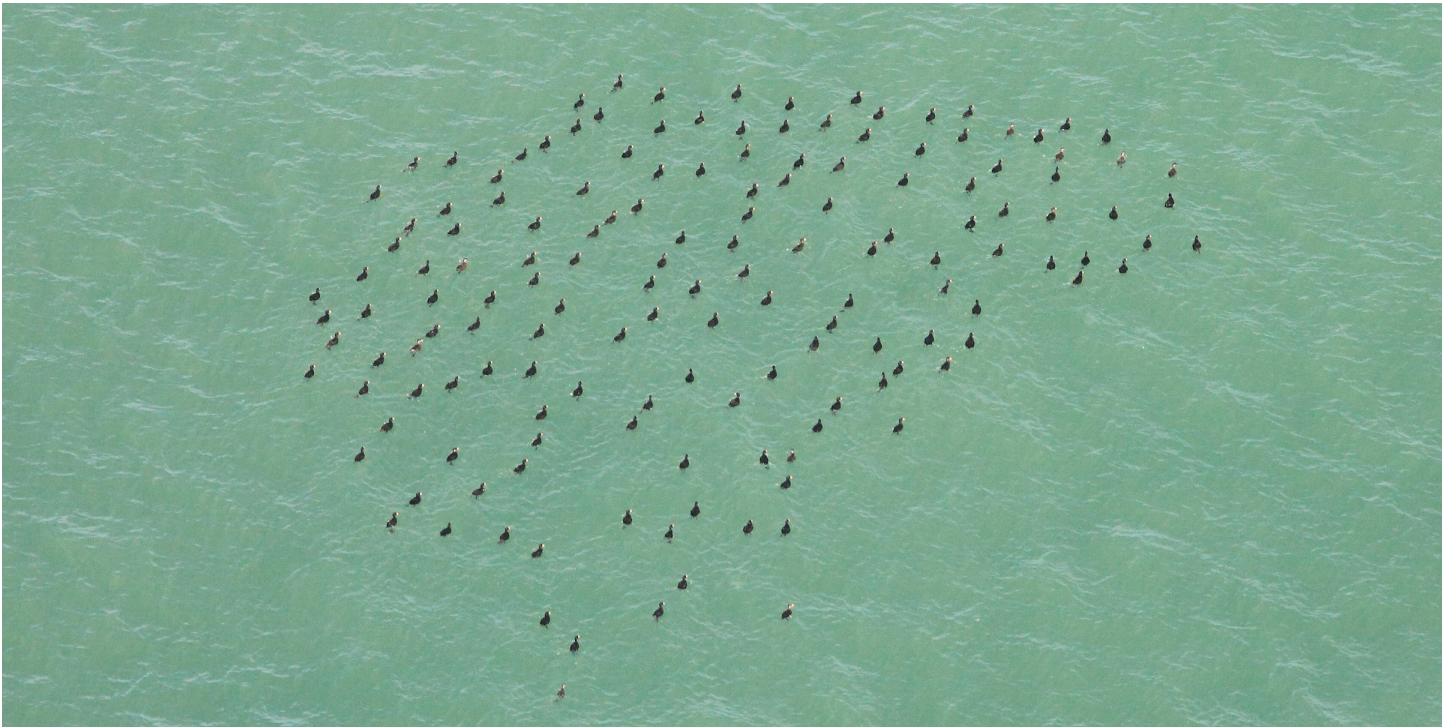
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**A flock of molting Black Scoters. Photo: Shannon Badzinski.**

## Key Site 33: Buchan Gulf, Nunavut

**Location:** 71°47'50"N, 74°7'25"W

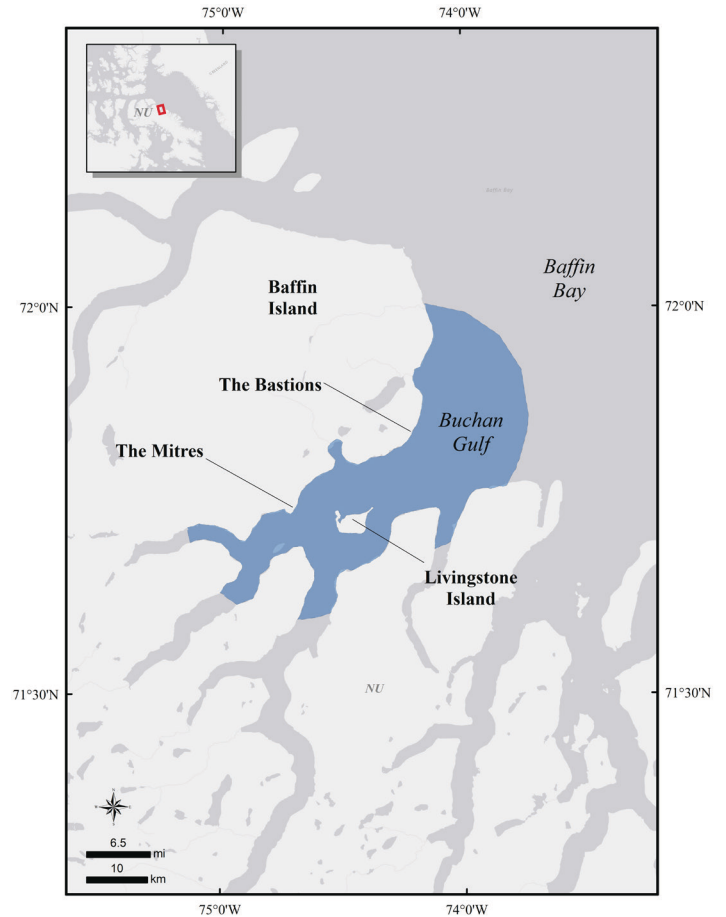
**Size:** 715 km<sup>2</sup>

**Description:** Buchan Gulf is on the eastern coast of north Baffin Island, about 200 km southeast of the community of Pond Inlet (Mittimatalik). The northern coast of the gulf is notable for two promontories, the Bastions and the Mitres. A description of this habitat is found in Alexander et al. (1991) and Latour et al. (2008). Buchan Gulf lies in the High Arctic oceanographic zone (Nettleship and Evans 1985). Over winter, open water develops parallel to the eastern and southeastern coast of Bylot Island (Smith and Rigby 1981). Recurring offshore leads form in sea ice off Buchan Gulf, with a relatively narrow band of landfast ice (although this may vary greatly between years; McLaren 1982); the floe edge is usually not far from shore. However, landfast ice forms in the gulf and along the eastern Baffin Island shore. Shore leads open as early as February but may close again in April or May (Smith and Rigby 1981). Ice breakup may not occur until July, and freeze-up begins in late October.

### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

**Biological Value:** King Eiders (*Somateria spectabilis*) and Common Eiders (*S. mollissima borealis*) may congregate along the ice edge during migration, usually in May (McLaren and McLaren 1982). King Eiders arrive by May, and Common Eiders return by mid-May. Numbers of both species increase throughout May, with a notable movement of King Eiders along the landfast ice edge bordering east Baffin Island. Numbers decline in late June as individuals move to terrestrial breeding areas. During July and August, numbers again increase along coasts, particularly south Lancaster Sound and the east coasts of Bylot and Baffin islands, as a series of migratory movements occur (McLaren and McLaren 1982). Up to 25,000 migrating eiders have been observed in the eastern Bylot Island/north Baffin Island region during migration (McLaren and Renaud 1979).



**Sensitivities:** Sea ducks are sensitive to pollution of offshore waters.

**Potential Conflicts:** Baffin Bay and Davis Strait have potential to become marine shipping routes and areas of hydrocarbon exploration and development (Imperial Oil Ltd. 1978; Petro-Canada Ltd. 1979; DIAND 1982; Arctic Council 2009). In 2016 Canada designated the Arctic waters indefinitely off limits to new offshore oil and gas activities and in 2019 suspended the terms of all active oil and gas licenses in the western and eastern Arctic offshore areas. This area is also of increasing importance as a tourist destination for cruise ships (Hall and Johnston 1995; Wakelyn 2001). Oil spills associated with drilling or shipping activities could endanger large numbers of sea ducks and pollute their feeding areas.

**Status:** Buchan Gulf is an Important Bird Area in Canada (NU069; CEC 1999), part of a Key Marine Habitat Site (Site 17; Mallory and Fontaine 2004), and will be part of Tallurutiup Imanga National Marine

Conservation Area, a future marine protected area. The marine waters of this key site are under federal jurisdiction.

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## Key Site 34: Scott Inlet, Nunavut

**Location:** 71°3'17"N, 71°17'15"W

**Size:** 408 km<sup>2</sup>

**Description:** Scott Inlet is located on the east coast of Baffin Island, about 120 km north of Clyde River (Kangiqtugaapik). Scott Island, approximately 11 km long, is in the centre of Scott Inlet. A description of this key terrestrial habitat site is found in Alexander et al. (1991) and Latour et al. (2008).

Scott Inlet lies in the High Arctic oceanographic zone (Nettleship and Evans 1985). Over winter, open water develops parallel to the eastern and southeastern coast of Bylot Island (Smith and Rigby 1981). Recurring offshore leads form in sea ice off Scott Inlet, with a relatively narrow band of landfast ice, although this may vary greatly among years (McLaren 1982). The floe edge is usually not far from shore. However, landfast ice forms in the inlet and along the eastern Baffin Island shore. Shore leads open as early as February but may close again in April or May (Smith and Rigby 1981). Ice breakup may not occur until July, and freeze-up begins in late October.

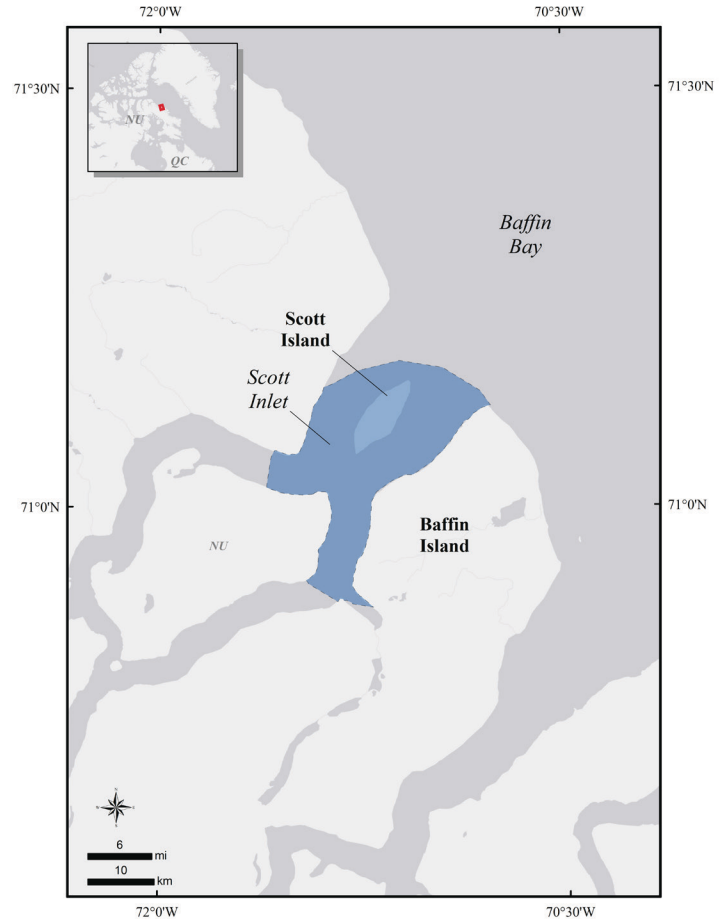
### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

**Biological Value:** King Eiders (*Somateria spectabilis*) and Common Eiders (*S. mollissima borealis*) may congregate along the ice edge during migration, usually in May (McLaren and McLaren 1982). Up to 25,000 migrating eiders have been observed along the eastern Bylot Island and north Baffin Island region during migration (McLaren and Renaud 1979).

**Sensitivities:** Sea ducks are sensitive to disturbance at their colonies and to the pollution of offshore waters.

**Potential Conflicts:** Baffin Bay and Davis Strait have potential to become marine shipping routes and areas of hydrocarbon exploration and development (Imperial Oil Ltd. 1978, Petro-Canada Ltd. 1979, Arctic Council 2009). In 2016 Canada designated the Arctic waters indefinitely off limits to new off-



shore oil and gas activities and in 2019 suspended the terms of all active oil and gas licenses in the western and eastern Arctic offshore areas. Baffin Bay is also of increasing importance as a tourist destination for cruise ships (Hall and Johnston 1995, Wakelyn 2001), although Scott Inlet is rarely visited by cruise ships. Oil spills associated with drilling or shipping activities could endanger large numbers of sea ducks and pollute their feeding areas.

**Status:** Scott Inlet is an Important Bird Area in Canada (NU070; CEC 1999) and a Key Marine Habitat Site (Site 18; Mallory and Fontaine 2004). Surrounding coastlines include crown and Inuit-owned lands, while the marine waters fall under federal jurisdiction.

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## Key Site 35: Markham Bay, Nunavut

**Location:** 63°39'42"N, 72°30'4"W

**Size:** 4721 km<sup>2</sup>

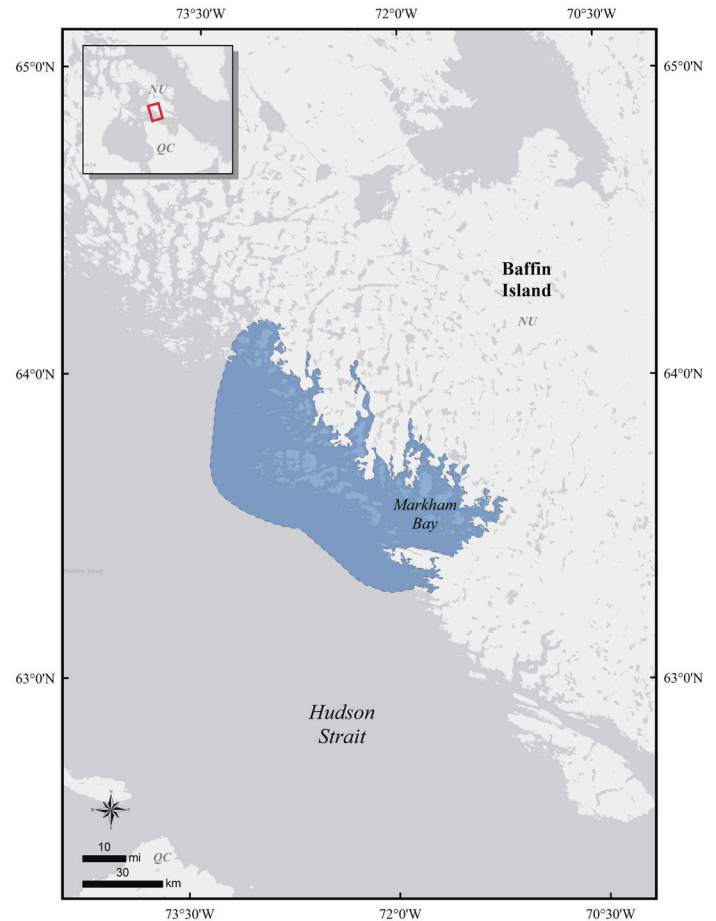
**Description:** Markham Bay is an island-studded area south of Baffin Island, about midway between the communities of Kimmirut (Lake Harbour) and Kinngait (Cape Dorset). It is located to the east of the former Cape Dorset Migratory Bird Sanctuary and is situated along the northern coast of Hudson Strait.

Markham Bay lies in the Low Arctic oceanographic zone (Nettleship and Evans 1985). Main currents flow east through Hudson Strait (Larnder 1968). Ice freeze-up usually occurs by mid-October, although the ice remains unconsolidated. Mobile pack ice dominates Hudson Strait from January to April, with landfast ice formed around coastlines (Larnder 1968). Ice breakup begins in April near persistent shore leads, such as the lead that opens along southern Baffin Island; by May, large patches of open water occur. Patterns of ice breakup and the location of the floe edge can change considerably in different years (McDonald et al. 1997). Little ice remains by late July.

### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

**Biological Value:** This site supports a large portion of the breeding population of Northern Common Eider (*Somateria mollissima borealis*) in Hudson Strait. Gaston and Cooch (1986) observed a minimum of 8000 eiders staging off the ice edge between Cape Dorset and Markham Bay in April 1982, and estimated that 10,000 pairs bred along this section of Baffin Island. Aerial and boat surveys conducted in 1997 and 1998 recorded 44,500 Common Eiders (3% of the continental population; NAWMP 2012) along this coast, and over 4000 nests per year in Markham Bay (Gilchrist et al. 1998, Gilchrist et al. 1999). Eider colonies are typically small and distributed across many islands. They are also susceptible to high annual fluctuations in success due to predation, and probably experienced higher use by humans when



the settlement of Amadjuak was extant. Common Eiders occur in this area from April through October (MacLaren Marex Ltd. 1979, Gaston and Cooch 1986).

**Sensitivities:** Sea ducks congregate in open ice leads and over key foraging sites, where they are susceptible to disturbance and to pollution of their foraging and migration areas. Offshore foraging areas are susceptible to pollution and disturbance from increased ship traffic.

**Potential Conflicts:** Proposed year-round shipping could impact sea ducks in the area, particularly during breeding and molting seasons, when they are most vulnerable to disturbance. Increased ship traffic increases the risk of oil spills, collisions, and habitat degradation.

**Status:** Markham Bay is part of a Key Marine Habitat Site (Site 25; Mallory and Fontaine 2004) and a Key Terrestrial Habitat Site (Site 48; Latour et al. 2008). Surrounding coastlines include crown

and Inuit-owned lands, while the marine waters are under federal jurisdiction.

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## Key Site 36: Frobisher Bay, Nunavut

**Location:** 61°58'38"N, 64°39'31"W

**Size:** 14,646 km<sup>2</sup>

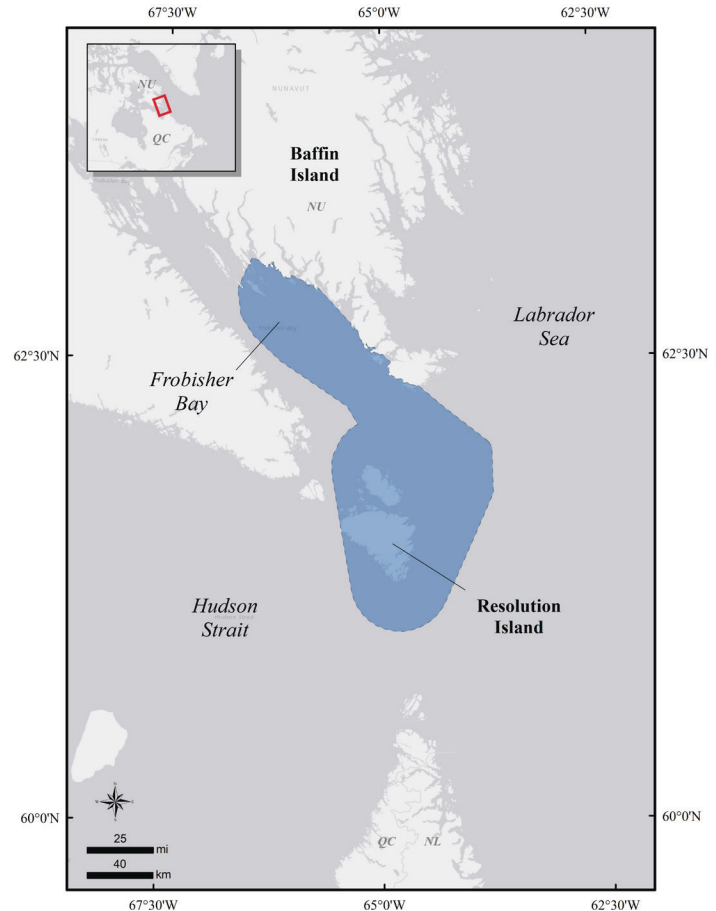
**Description:** Frobisher Bay is a relatively shallow bay running approximately 200 km northwest to southeast in southern Baffin Island, just north of Hudson Strait. A large polynya forms here annually (Stirling and Cleator 1981); its size and shape vary according to ice and wind conditions. Islands are numerous, particularly along the north side of the bay and extending through to Loks Land and Resolution Island. Many small polynyas are found among these islands. A key terrestrial habitat site, Hantzsch Island, occurs here. This is a small, dome-shaped island located approximately 1 km off the northeastern shore of Edgell Island, at the mouth of Frobisher Bay (Alexander et al. 1991, Latour et al. 2008).

Frobisher Bay is in the Low Arctic oceanographic zone (Nettleship and Evans 1985). It exhibits the second highest tides in Canada (regularly over 10 m). Ice freeze-up usually begins in late October or early November, but the timing varies greatly among years. The edge of the polynya may be 20 to 100 km south-east from the city of Iqaluit (M. L. Mallory, pers. obs.). Ice breakup begins in April near open water, and the entire bay is usually navigable by early July, although large pans of ice may persist into late July.

### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

**Biological Value:** Significant concentrations of marine birds are distributed throughout this region, depending on the annual patterns of ice breakup and the distribution of prey (McLaren Atlantic Ltd. 1978, Riewe 1992). Frobisher Bay is an important nesting, feeding, and migration stopover for Common Eiders (*Somateria mollissima borealis*) (Abraham and Finney 1986, Fontaine et al. 2001, Iverson et al. 2014). Many thousands of eiders were observed around Resolution Island, Loks Land, and the tips of the Meta Incognita and Hall peninsulas in 1977 (McLaren Atlantic Ltd. 1978). Harlequin Duck



(*Histrionicus histrionicus*), a species at risk in Canada, occurs in Frobisher Bay in unknown numbers (Mallory et al. 2001). Many other species, including Canada Goose (*Branta canadensis*) and Long-tailed Duck (*Clangula hyemalis*), are common in Frobisher Bay, but their abundance and distribution have not been assessed. Sea ducks occur in this marine area with highest concentrations from early May to October, although migrating sea ducks may be found in open water areas earlier or later in the season (Riewe 1992).

**Sensitivities:** Nesting sea ducks are sensitive to disturbance and the pollution of their feeding areas.

**Potential Conflicts:** Davis Strait has the potential to become a marine shipping route and an area of hydrocarbon exploration and development (Imperial Oil Ltd. 1978, Petro-Canada Ltd. 1979, Arctic Council 2009). In 2016 Canada designated the Arctic waters indefinitely off limits to new offshore oil and gas activities and in 2019 suspended the terms of all active oil and gas licenses in the western and eastern Arctic offshore areas. The complex nature

of currents in the region suggests that oil spills in southern Davis Strait could enter this marine area (Barry 1977). Increased ship traffic attributable to the needs of the growing community of Iqaluit could contribute to higher disturbance of birds, as well as increased chance of pollution and collisions.

**Status:** Frobisher Bay is part of a Key Marine Habitat Site (Site 28; Mallory and Fontaine 2004) and surrounds a Canadian Important Bird Area on Hantzsch Island (NU025; CEC 1999). Surrounding coastlines include crown and Inuit-owned lands, whereas the marine waters are under federal jurisdiction.

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## Key Site 37: Ungava Bay, Quebec

**Location:** 58°49'11"N, 68°26'37"W

**Size:** 13,989 km<sup>2</sup>

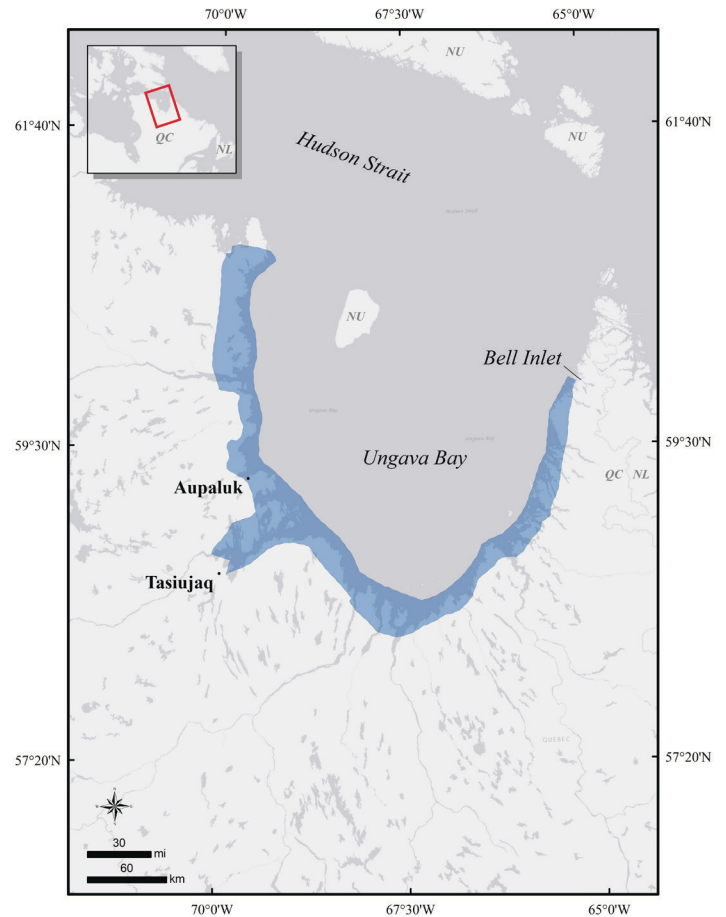
**Description:** Ungava Bay lies in northeastern Quebec and is bordered by Hudson Strait to the north. The Ungava Peninsula borders its west shore, and the Labrador Peninsula borders its east shore. This key site is composed of an oceanic coastal band from Quaqtaq at its northwestern end, to Kuujjuaq in the south, and to Bell Inlet at its northeastern end. It comprises the myriad of islands and archipelagos near the coast; the numerous deep bays, inlets, and mouths of large rivers that empty into Ungava Bay; and a narrow terrestrial stretch along the coast. Several Inuit communities are located in this key site.

### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

**Biological Value:** The importance of this key site to sea ducks is only partially understood due to the remoteness of the site and the lack of organized surveys. However, local Inuit knowledge and other available information provide evidence that the site is used during migrations, breeding, molting, and possibly for wintering. For instance, Ungava Bay supports Common Eiders (*Somateria mollissima borealis*) during about six months (from mid-May to mid-November) (Savard et al. 2011).

During spring migration, Common Eiders that have been wintering in the Gulf of St. Lawrence and around Newfoundland fly north along the Labrador coast and then along the Ungava Bay coast to their breeding islands along the Ungava Peninsula and farther north in eastern Arctic Canada (Nakashima 1986, Mosbech et al. 2006a, Savard et al. 2011). Considering that about one third of *S. m. borealis* (total population estimated at 550,000; NAWMP 2012) use this migration route (Mosbech et al. 2006a, Savard et al. 2011), the segment of the population migrating through Ungava Bay rather than Hudson Strait could number more than 150,000 individuals. Female eiders arrive on the coast of Ungava Bay from about the third week of May to early June (Mosbech



et al. 2006a, Savard et al. 2011). Important spring staging areas include the sector of Kangirsuk (mouth of the Arnaud River), south of Aupaluk and east of Tasiujaq (mouth of the Rivière aux Feuilles), and the stretch from Pointe Le Droit to Bell Inlet on the eastern side of the bay (Nakashima 1986).

During a comprehensive survey of the area in 1978 and 1980, 48,700 breeding pairs were observed on several archipelagos and islands along the Ungava Bay and the Quebec coast of the Hudson Strait (Chapdelaine et al. 1986), with most in Ungava Bay. This likely represents the most important known breeding concentration of *S. m. borealis* in the Canadian Arctic (Savard et al. 2011), accounting for about 25% of the entire population. Some pairs also breed on islets in freshwater lakes on the mainland, generally less than 2.5 km inland (Chapdelaine et al. 1986). The largest known colonies are situated in the following archipelagos: Eider Islands, Plover Islands, Payne Islands and Gyrfalcon Islands along the western coast of the site, islands between Weymouth Inlet and the mouth of the Qijujjuuq River, and

islands from Langley Inlet to Bell Inlet along the eastern coast of the site (Chapdelaine et al. 1986, Nakashima 1986, Falardeau et al. 2003). The Quebec Breeding Bird Atlas provides new insights on other sea ducks breeding, or possibly breeding, on the western coast of Ungava Bay (the eastern coast has not yet been surveyed): Long-tailed Duck (*Clangula hyemalis*) is common and widely dispersed, Red-breasted Merganser (*Mergus serrator*) is scarcer, and Common Merganser (*Mergus merganser*) and King Eider (*Somateria spectabilis*) are rare (Quebec breeding bird atlas 2016). Harlequin Duck (*Histrionicus histrionicus*), a species of special concern in eastern Canada, breed on fast-flowing rivers that empty into the southern half of Ungava Bay (Dancelou, Aux Mèlèzes, Caniapiscou, Koksoak, False, Qurlutuq, and George rivers; Savard et al. 2008) and near the coast in the Aupaluk and Kangirsuk sectors (Quebec Breeding Bird Atlas 2016).

Ungava Bay is believed to be of high importance to sea ducks during the molting period. Common Eiders molt in large numbers in Ungava Bay; males leave their nesting area and congregate in July in the numerous bays and estuaries, particularly along the coast between Quaqtq and Kangirsuk, in the mouth of the Lefroy River, in the Ikattok and Boulder bays south of Aupaluk, near the mouths of the False River and Rivière à la Baleine, and in coastal areas between Pointe Le Droit and Bell Inlet (Driver 1958, Nakashima 1986). Black Scoters and Surf Scoters (*Melanitta americana* and *M. americana*) (Appendix 1, Appendix 2) of both sexes also leave breeding grounds to stage or molt in the southernmost and eastern part of the Ungava Bay (SDJV 2015, Lamb et al. 2020, Lamb et al. 2021).

Male and female Barrow's Goldeneyes (*Bucephala islandica*) from the eastern population, listed as a species of special concern under the Species at Risk Act of Canada, have been confirmed molting in the southern part of the site: males molted in Tasiujaq Bay, the mouth of the Marralik River, and Alukpaluk Bay (Robert et al. 2002); females molted at the mouth of the Koksoak, False, and À la Baleine rivers (Savard and Robert 2013).

Ungava Bay is also very important to sea ducks during the fall staging period; the few data available are based on satellite telemetry studies (SDJV 2015, Lamb et al. 2020). Many birds that molt in Ungava Bay in July and August also stage there for a pro-

longed period, sometimes as late as October and November. Female Common Eiders stayed in the same general areas they used during premolt and molt for another 30 days on average, with departures from the site between October 21 and November 16 ( $n = 12$ ; Savard et al. 2011). Ungava Bay, therefore, supports Common Eiders for about six months (i.e., from mid-May to mid-November) (Savard et al. 2011). Some Common Eiders that breed higher in the Canadian Arctic and winter along western Greenland also pass by the north-western coast of Ungava Bay in October (Mosbech et al. 2006a). King Eiders have been tracked to the Quaqtq area in September and near Aupaluk from October to December (Mosbech et al. 1986b).

Only small groups of eiders (fewer than 50), including Common and King Eiders, have been reported in the key site during winter, including in the Eider Islands off Quaqtq (Nakashima 1986), off Aupaluk, and around the Gyrfalcon Islands (Mosbech et al. 2006b, Canadian Wildlife Service unpublished data). Long-tailed Ducks have also been observed during an exploratory survey for eiders in February 2010 off Aupaluk, in the Gyrfalcon Islands, and off the mouth of the Koksoak River on the western side of Ungava Bay (Canadian Wildlife Service unpublished data).

**Sensitivities:** Access and quality of food resources at key foraging sites are of great importance in this site. Colonies are sensitive to human disturbance and predation, and breeding is highly dependent on annual weather conditions in this low Arctic climate. A few communities harvest eiderdown each year.

Avian cholera outbreaks have been documented recently in Arctic Canada; Common Eider mortalities due to this highly virulent disease were confirmed in 2006 and 2011 in the Aupaluk region and suspected in 2006 in the Kangirsuk region, with observed mortality ranging from 1% to 24% in the affected colonies (Iverson 2015). Eggs and eiderdown collection, and subsistence harvest by Inuit, are not considered to have impacts at the population scale.

**Potential Conflicts:** Berteaux et al. (2014) predict temperature and precipitation increases in Quebec's taiga (south and east coasts of Ungava Bay) and tundra (west coast) due to climate warming. Permafrost thaw is also predicted to have profound effects on the Arctic ecosystem. These climatic changes will likely influence overall sea duck distribution, with species

ranges shifting further north. Increases in polar bear populations combined with an earlier ice-free season has led to greater polar bear predation on eider nests; this increase in bear predation has been estimated to be greater than seven-fold since the 1980s in the low Canadian Arctic (Iverson et al. 2014).

Maritime traffic is expected to increase in the near future in Hudson Strait, and perhaps in Ungava Bay, as the ice-free season lengthens. An accidental oil spill could have dramatic effects, particularly near breeding eider colonies or when sea ducks congregate at foraging sites during staging or when molting; furthermore, an increase in the ice-free period will facilitate natural resource development in Nunavut and Nunavik and likely result in increased industrial activities in the Arctic in general.

In 2016 Canada designated the Arctic waters indefinitely off limits to new offshore oil and gas activities and in 2019 suspended the terms of all active oil and gas licenses in the western and eastern Arctic offshore areas.

Avian cholera outbreaks have been documented recently in Arctic Canada; Common Eider mortalities due to this highly virulent disease were confirmed in 2006 and 2011 in the Aupaluk region and suspected in 2006 in the Kangirsuk region, with observed mortality ranging from 1% to 24% in the affected colonies (Iverson 2015). Eggs and eiderdown collection, and subsistence harvest by Inuit, are not considered to have impacts at the population scale.

**Status:** The Parc National Kuururjuaq falls within the key site; created in 2009, it protects the Koroc River drainage basin that stretches from the interior Torngat Mountains all the way down to Ungava Bay. Part of the planned Parc National du Québec de la Baie-aux-Feuilles, between Aupaluk and Tasiujaq, also overlaps the key site, as does part of the planned Quaqtak-Kangirsuk biodiversity reserve (MELCC 2021). There are four Important Bird Areas (IBA) included in the key site: Eider Islands IBA, Plover and Payne islands IBA, Gyrfalcon Islands IBA, and Northeast Ungava Bay IBA, all of which support a significant number of breeding Common Eiders (IBA Canada 2021). However, while IBA designation recognizes the area's importance for birds, it provides no legal protections to these areas.

All offshore waters and islands in the key site are part of the Nunavik Marine Region, a zone where

Inuit manage wildlife through the Nunavik Marine Region Wildlife Board.

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## Key Site 38: Killiniq Island–Button Islands, Nunavut

**Location:** 60°35'1"N, 64°39'57"W

**Size:** 827 km<sup>2</sup>

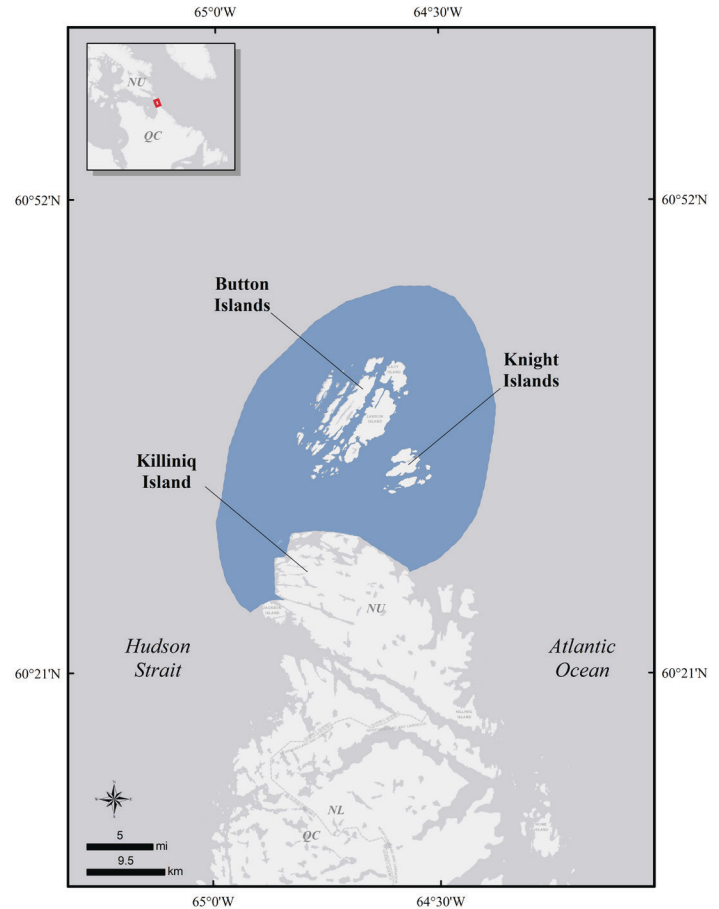
**Description:** The Killiniq Island–Button Islands key site lies at the northern tip of the Labrador Peninsula, at the northeastern end of continental Canada and the southeast end of Hudson Strait. The site includes Killiniq Island and the Button Islands, Nunavut. Several straits in this site are important corridors for sea ducks flying between the Labrador coast and Ungava Bay: the McLelan and the Lenz straits, south and north of Killiniq Island, respectively, and the Gray Strait between the Killiniq and Button Islands.

### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

**Biological Value:** Due to the remoteness of this site, few surveys have been conducted to document use by sea ducks. However, the few data that exist, along with data from telemetry studies, indicate this area is an extremely important seasonal site for sea ducks, particularly during migration and winter. The importance of this site to sea ducks during the breeding season is low (Lock 1986).

Northern Common Eiders (*Somateria mollissima borealis*) breeding in the eastern Canadian Arctic and wintering in the Gulf of St. Lawrence and around Newfoundland fly south along Hudson Strait or Ungava Bay and cross the straits at the tip of the Labrador Peninsula from September to November before continuing south (Nakashima 1986, Mosbech et al. 2006a, Savard et al. 2011). In spring, Common Eiders migrate an opposite path on their return to Arctic breeding grounds, with most birds likely passing through McLelan Strait, but also in Gray Strait (Nakashima 1986). Thousands of Common Eiders pass through these straits daily for about two weeks (Nakashima 1986), peaking the third week of May to early June, based on tracked birds marked just west in Ungava Bay (Mosbech et al. 2006a, Savard et al. 2011). Given that one third of *S. m. borealis* (total population estimated at 550,000; NAWMP



2012) would use this route (Mosbech et al. 2006a; Savard et al. 2011), and that another considerable portion of that population migrates to Greenland to winter (Mosbech et al. 2006a), the contingent of Common Eiders migrating through the straits of the site could easily be more than 200,000 individuals. Other migrants at this site include Long-tailed Duck (*Clangula hyemalis*) and King Eider (*Somateria spectabilis*); both species have been observed during a reconnaissance winter survey (Canadian Wildlife Service unpublished data). Harlequin Ducks (*Histrionicus histrionicus*) (a Species of Concern through the Species at Risk Act) could pass by the Killiniq and Button islands during migration from breeding areas in the Hudson and Ungava bay drainages and Labrador to molting and wintering areas in Greenland (Brodeur et al. 2002, Chubbs et al. 2008).

The key site may be important during the molting period, because there are large colonies of Common Eiders in Ungava Bay southwest of the site (about 6800 nests; Chapdelaine et al. 1986) and smaller colonies along the northern Labrador coast

(about 2000 nests; Lock 1986). Bell Inlet, about 50 km south on Ungava Bay, hosts large numbers of molting Common Eider males (Nakashima 1986). Harlequin Ducks may also molt on the site, given that there have been birds molting just south of the site in the Cape Chidley and the Galvano Island areas along the Labrador coast (Brodeur et al. 2002, Gilliland et al. 2002).

Major groups of eiders winter in this key site (Nakashima 1986, Canadian Wildlife Service unpublished data). In 2010, a reconnaissance survey in February reported about 40,000 eiders, half King Eiders and half Common Eiders; most flocks were located west and south of the Button Islands, but also in the Knight Islands and west of Killiniq Island, with only a few more observations east of Killiniq Island (Canadian Wildlife Service unpublished data). Based on a satellite telemetry study, there could be King Eiders in the Killiniq Island–Button Islands area from October to March (Mosbech et al. 1986b, Appendix 1). About 1500 Long-tailed Ducks were also observed in the key site during the 2010 winter survey conducted by the Canadian Wildlife Service.

**Sensitivities:** Wintering conditions for sea ducks may improve if climate warming leads to more favorable ice conditions in winter. Sea ducks are sensitive to disturbance at their colonies and to the pollution of offshore waters.

**Potential Conflicts:** Shipping and cruise ship traffic is expected to increase, and the shipping season may become longer (i.e., earlier in the spring and later into the fall), thereby increasing the possibility of interaction between migrating sea ducks and ships (ENRNT 2015). Expanded shipping and vessel traffic bring a higher risk of contamination from oil, other hazardous and noxious substances, or waste spills (accidental release or illegal discharge), and a risk of collision. Climate change and shipping may alter ice conditions and shipping routes, and cumulative disturbance could increase (ENRNT 2015). Shipping from current and future resource development projects in Hudson Bay (e.g., the deep water port of Churchill, Manitoba) and northern areas (e.g., the Baffinland Mary River Mine in Nunavut) may increase shipping through Hudson Strait (CHARS 2015). In 2016 Canada designated the Arctic waters indefinitely off limits to new offshore oil and gas activities and in 2019 suspended the

terms of all active oil and gas licenses in the western and eastern Arctic offshore areas.

**Status:** The Button Islands is recognized as an International Biological Program site (Eng et al. in Mallory and Fontaine 2004).

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Common Eiders wintering in sea ice. Photo: Christine Lepage.

