

Western Canadian Arctic Key Sites

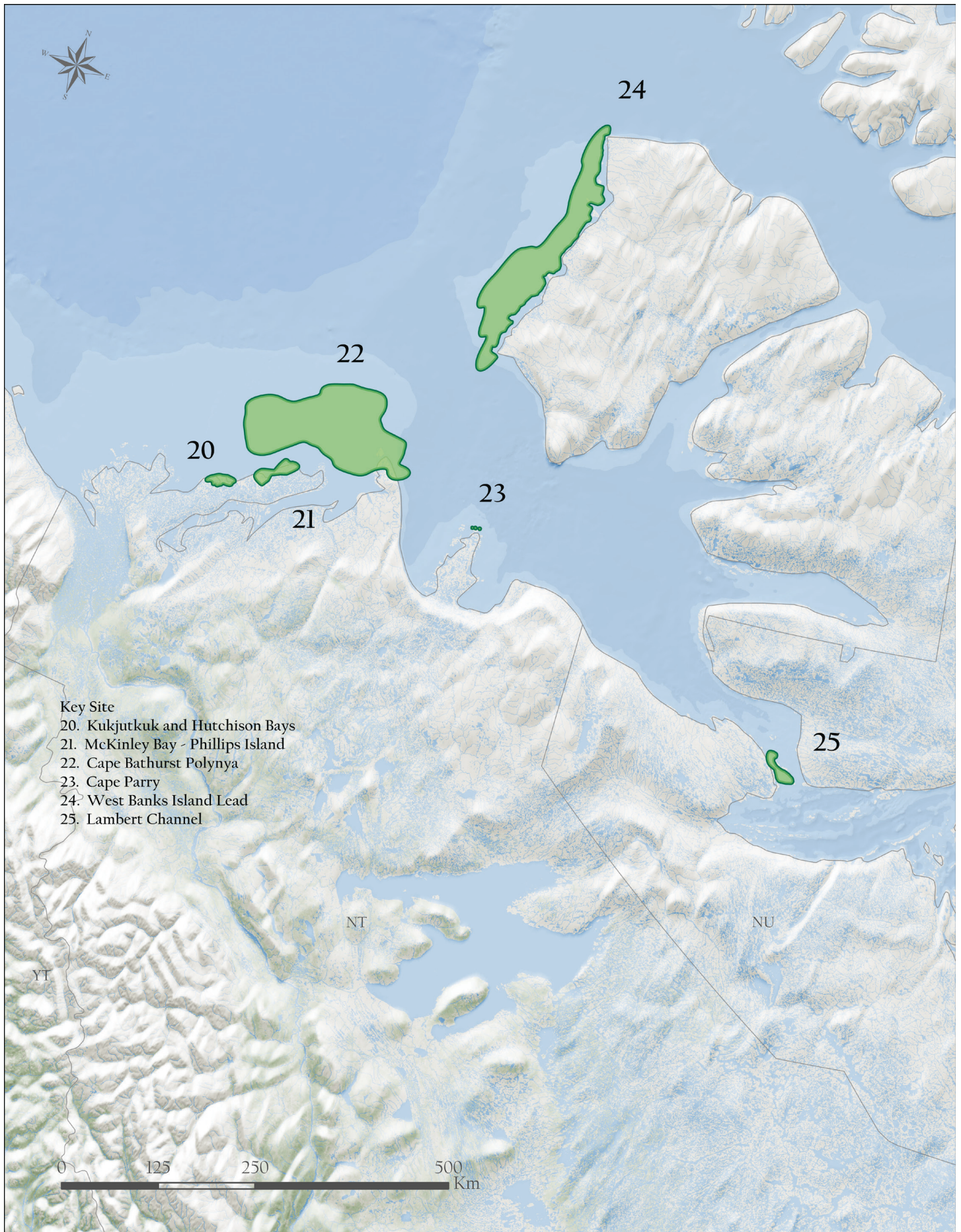


Figure 5. Key habitat sites for sea ducks in the Western Canadian Arctic.

Key Site 20: Kukjutkuk and Hutchison Bays, Northwest Territories

Location: 69°41'10"N, 132°24'41"W

Size: 315 km²

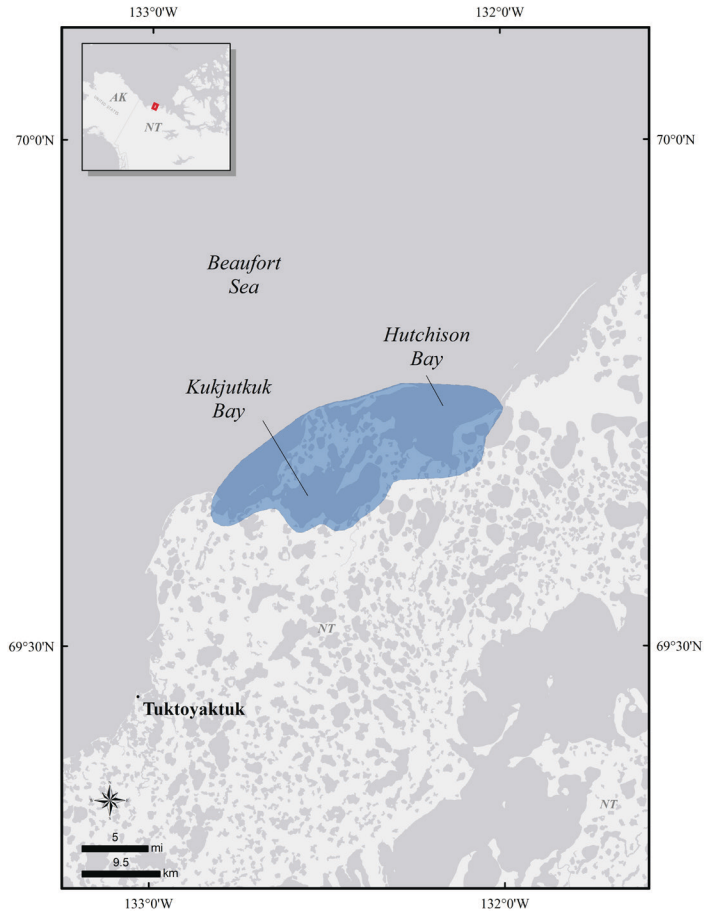
Description: Kukjutkuk and Hutchison bays are located on the northern coast of the Tuktoyaktuk Peninsula, 25 to 50 km northeast of the community of Tuktoyaktuk. This and other parts of the northern Tuktoyaktuk Peninsula have a highly irregular coastline and diverse geographic features, including sandy barrier islands, sand spits, and sheltered bays and lagoons. Inland from the coast, the relief is low and the landscape is characterized by numerous ponds and lakes, abundant tundra polygons, extensive wetlands, and lowland tundra with numerous pingos.

Kukjutkuk Bay and Hutchison Bay are each approximately 100 km² in area. These shallow bays provide molting waterfowl with protection from terrestrial predators, shelter from wind and rough seas, and, in the case of sea ducks, abundant food at an accessible depth.

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 area is used by waterfowl at all times during the spring and summer but is especially important to molting or pre-molting diving ducks. Hutchison Bay annually supports over 15,000 molting or pre-molting diving ducks, mainly Long-tailed Ducks (*Clangula hyemalis*), Surf Scoters (*Melanitta perspicillata*), and White-winged Scoters (*M. deglandi*), with lesser numbers of Red-breasted Mergansers (*Mergus serrator*) and Common Mergansers (*M. merganser*) in late summer (Barry and Barry 1982, Sirois and Dickson 1989, Cornish and Dickson 1994). Similar quantitative surveys have not been carried out at Kukjutkuk Bay, but reconnaissance surveys suggest that molting waterfowl are probably as numerous there as at Hutchison Bay. Thus, a conservative estimate of the number of diving ducks using the overall key habitat site (marine and terrestrial) in late summer is 30,000



birds, of which a high proportion are Long-tailed Ducks and Scoters (Cornish and Dickson 1994).

Populations of many sea duck species have been in decline in the western Arctic since the 1970s (Dickson and Gilchrist 2002), making recognition and conservation of their habitat of even greater importance.

Sensitivities: Lowland habitats are susceptible to terrain disturbance. Sea ducks are sensitive to disturbance during the nesting, brood-rearing, and molting periods.

Potential Conflicts: The general region has been subject to extensive seismic and exploratory drilling activity. Development of gas processing plants and a pipeline network is likely in the near future.

Status: This key site has been identified as Class D (“lands and waters where cultural or renewable resources are of particular significance and sensitivity throughout the year”) in the Tuktoyaktuk Community Conservation Plan (WMAC 2016).

Kukjuktuk and Hutchinson bays are part of a Key Terrestrial Habitat Site (Site 11; Latour et al. 2008). Terrestrial areas are situated on Inuvialuit lands, while marine waters fall under federal jurisdiction.

Literature Cited

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Key Site 21: McKinley Bay–Phillips Island, Northwest Territories

Location: 70°07'23"N, 130°57'3"W

Size: 593 km²

Description: The McKinley Bay–Phillips Island area is located on the northern coast of the Tuktoyaktuk Peninsula, 120 km northeast of Tuktoyaktuk. It is an area of convoluted coastline, numerous sand barrier islands, and sheltered bays and lagoons. Inland from the Beaufort Sea coast, the relief is low and the landscape characterized by numerous ponds and lakes, abundant tundra polygons, extensive wetlands, and lowland tundra.

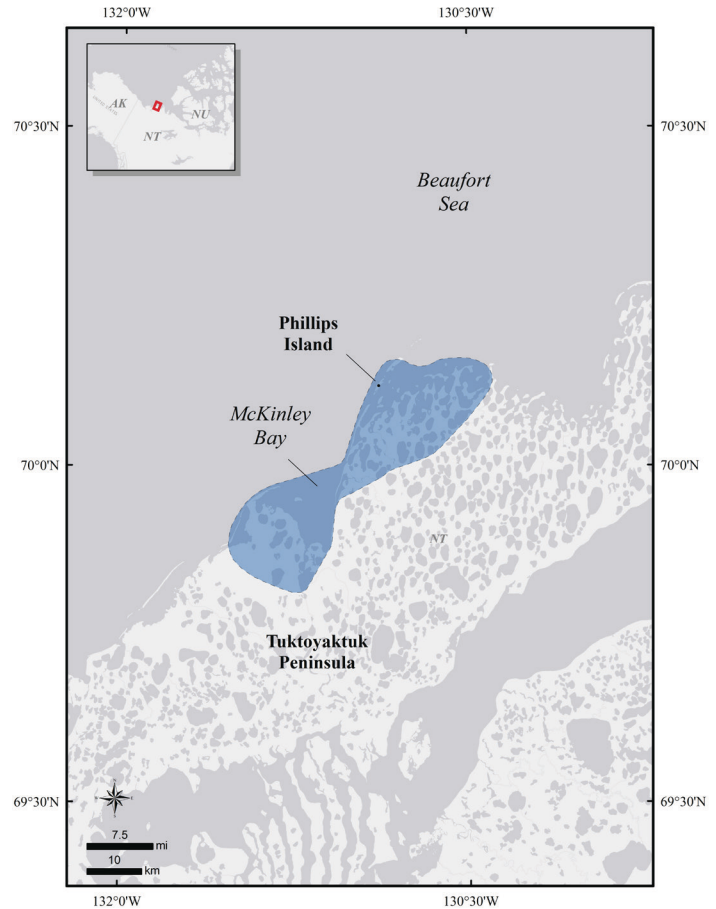
McKinley Bay is a large (>100 km²), shallow, and sheltered bay. Since 1979, the outer part of the bay has been used as a harbor and support base for offshore drilling operations in the Beaufort Sea. An entrance channel and mooring basin were dredged in the outer bay, and an artificial island (Phillips Island) was constructed to shelter ships. An airstrip, accommodations for crews, and a number of related facilities were constructed on the island as well. The use of McKinley Bay for harboring ships peaked in 1982 to 1985, and use of the area fell off greatly in the early 1990s. Some industry-related structures and facilities used by reindeer herders also occur on the northwestern side of McKinley Bay, near Atkinson Point.

The area near Phillips Island, like much of the northern coastline of the Tuktoyaktuk Peninsula, features a diversity of coastal landforms, including bays and lagoons of various sizes, offshore barrier beaches and sand bars, projecting and recurved sand spits, muddy tidal flats and marshes, numerous islands, and sandy/gravelly shoreline beaches. The lowlands near the coast contain numerous grass ponds and lakes and wetland communities dominated by grasses and sedges.

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: McKinley Bay and the various bays and lagoons near the coast are heavily used by



molting and pre-molting ducks (Arner et al. 1985, Alexander et al. 1988, Cornish and Dickson 1994, Bartzen et al. 2017). Historically, well over 25,000 molting diving ducks (sea ducks and Scaup) have been present in the McKinley Bay–Phillips Island area during most years, including than 20,000 sea ducks—primarily Long-tailed Duck (*Clangula hyemalis*), Surf Scoter (*Melanitta perspicillata*) and White-winged Scoter (*M. deglandi*), which use the marine part of McKinley Bay during most years (Alexander et al. 1988a, 1988b, Cornish and Dickson 1994). Research conducted there in 2001–2002 (Bartzen et al. 2017) indicated fewer than 10,000 sea ducks.

Populations of many sea duck species have been in decline in the western Arctic since the 1970s (Dickson and Gilchrist 2002), making recognition and conservation of their habitat of even greater importance.

Approximately 7300 Western King Eiders (*Somateria spectabilis*) and Pacific Common Eiders (*S. mollissima v-nigra*) are found in this area in small colonies

(Alexander and Hawkings 1988, Alexander et al. 1988a, 1988b).

Sensitivities: Lowland habitats are susceptible to terrain disturbance through the disruption of natural drainage patterns and the melting of permafrost. Sea ducks are sensitive to disturbance during the nesting, brood-rearing, and molting periods.

Potential Conflicts: The general region has been subject to extensive seismic and exploratory drilling activity. Development of gas processing plants and a pipeline network is possible in the near future. Additional dredging of the harbor and/or development of facilities at McKinley Bay could have an impact on migratory birds and their habitat. 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 moratorium will be in place until a review process for existing licenses is completed, which is expected in 2022.

Status: This key site has been identified as Class D (“lands and waters where cultural or renewable resources are of particular significance and sensitivity throughout the year”) in the Tuktoyaktuk Community Conservation Plan (WMAC 2016). McKinley Bay is part of a Key Terrestrial Habitat Site (Site 10; Latour et al. 2008). The terrestrial areas are under territorial jurisdiction while the marine waters are under federal jurisdiction.

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Key Site 22: Cape Bathurst Polynya, Northwest Territories

Location: 70°40'51"N, 129°45'51"W

Size: 12,835 km²

Description: This key site includes the portion of the recurring polynya that forms in the western Amundsen Gulf north of Tuktoyaktuk Peninsula. It is situated offshore of McKinley Bay and Cape Dalhousie and extends southeast to the Baillie Islands, covering the northern tip of the Bathurst Peninsula.

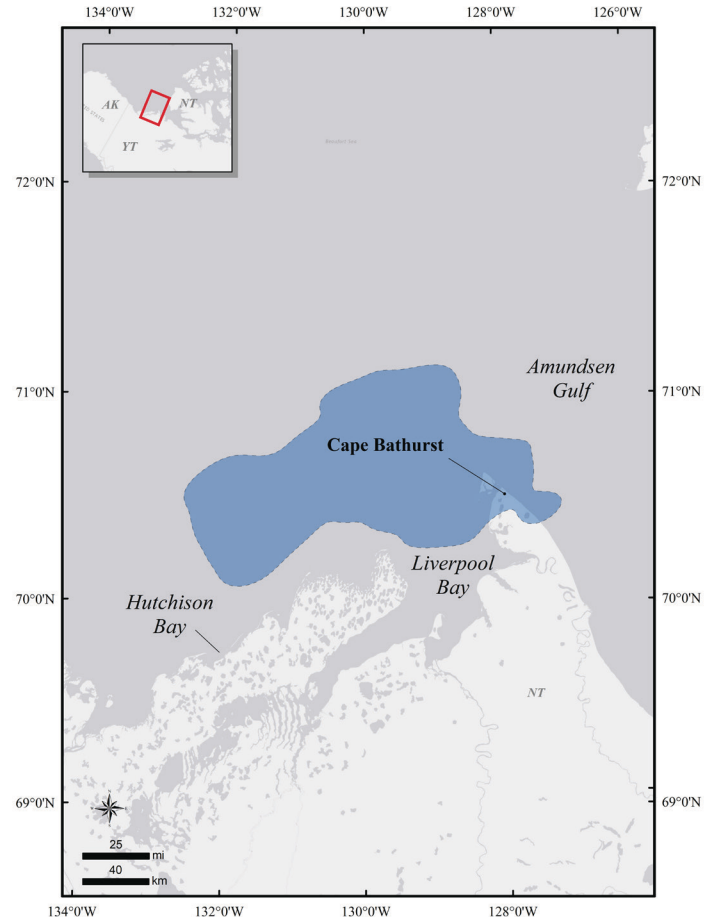
This site lies in the Low Arctic oceanographic zone (Nettleship and Evans 1985). A recurrent crack and lead system develops in the Beaufort Sea between the landfast ice and Arctic pack ice. This persistent lead coincides with the 30-m depth contour and changes its position very little from year to year (Marko 1975). Freeze-up occurs between mid-October and mid-November, but patches of open water and new ice occur frequently during the winter. An open lead develops on the eastern side of Cape Bathurst sometime in January. By mid-May, open water is continuous from Cape Bathurst to Mackenzie Bay. Open water remains in the general area until late May or early June, when the ice between Cape Bathurst and Cape Kellett begins to disintegrate. With the advance of breakup in mid-June, the open water between Cape Bathurst and Cape Kellett enlarges into Amundsen Gulf (Smith and Rigby 1981, Alexander et al. 1997).

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: While few seabirds use this marine site (Wong et al. 2014), it is a critical area for sea ducks (Alexander et al. 1988). Populations of many sea duck species have been in decline in the western Arctic since the 1970s (Dickson and Gilchrist 2002), making recognition and conservation of their habitat of even greater importance.

The recurrent leads in this area serve as a migration corridor and staging area for large numbers of King Eider (*Somateria spectabilis*), Common Eider



(*Somateria mollissima v-nigra*), and Long-tailed Duck (*Clangula hyemalis*) (Alexander et al. 1997, Dickson and Smith 2013). The most critical areas for eiders are patches of open water with depths between 10 and 40 meters (Dickson and Smith 2013). Common and King eider stage at this site in mid-May to early June before arriving on the breeding grounds (Dickson 2012a, 2012b). Post-breeding usage of this area occurs throughout mid-spring to early fall due to differences in timing of molt migration between male and female eiders (Dickson 2012a).

Populations of many sea duck species have been in decline in the western Arctic since the 1970s (Dickson and Gilchrist 2002), making recognition and conservation of their habitat of even greater importance.

In 1974, 50,000 Common Eiders were observed in a large lead near Cape Dalhousie (33% of the continental population of *v-nigra*; Barry 1976), and 75,000 were observed in leads north of Liverpool Bay at the same time (50% of the continental population;

Searing et al. 1975). Approximately 25,000 Common Eiders were observed near the Baillie Islands in 1993 (17% of continental *v-nigra* population; Alexander et al. 1997). Single-day surveys in 1992 and 1993 recorded 63,000 King Eiders in this area (16% of the continental population; Alexander et al. 1997). These eiders form a key component of the traditional diet of indigenous residents of nearby communities (Byers and Dickson 2001).

In 1974, over 24,000 Long-tailed Ducks were observed in the open-water lead north of Liverpool Bay (Searing et al. 1975) and approximately 17,000 Long-tailed Ducks were observed in the large lead near Cape Dalhousie (Barry 1976).

Sensitivities: Migrating sea ducks are heavily dependent upon open leads for feeding and resting. In a warming and increasingly variable climate, unpredictability of access to leads and open water areas may be greater due to effects of shifting winds on unconsolidated ice, which could result in severe negative impacts on the birds (Lovvorn et al. 2015). Sea ducks using these offshore foraging areas are susceptible to pollution, disturbance, and collisions from increased ship traffic.

Potential Conflicts: Extensive offshore drilling and ship traffic occur throughout the area, although mostly west of Hutchison Bay (Alexander et al. 1997). Exploitation of hydrocarbon resources in the Beaufort Sea increases the possibilities of oil spills in these sensitive areas. Warming temperatures in the Arctic may change the size and location of the sites and alter the food resources within these sites for sea ducks (Dickson and Gilchrist 2002). 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 moratorium will be in place until a review process for existing licenses is completed, which is expected in 2022.

Status: The Bathurst Polynya is a Canadian Important Bird Area due to its large waterfowl concentrations (NT039; CEC 1999). The Cape Bathurst/Baillie Island Polynya, Liverpool Bay, Mackenzie Estuary/Nearshore Beaufort Shelf, and the Kugmallit Canyon have all been identified

as Ecologically and Biologically Significant Areas (EBSA) in the Beaufort Sea (DFO 2014).

Cape Bathurst is Inuvialuit land, while the surrounding marine waters fall under federal jurisdiction.

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Key Site 23: Cape Parry, Northwest Territories

Location: 70°11'33"N, 124°40'2"W

Size: 8.2 km²

Description: Cape Parry consists of three points at the northern tip of the Parry Peninsula, 100 km north of Paulatuk. The underlying limestone forms three outcrops of coastal cliffs that rise 20 m above sea level. The coastline has beaches of sand and gravel and is deeply incised, forming numerous bays and small inlets. The peninsula is sparsely vegetated and is dotted with small lakes and ponds. A Distant Early Warning (DEW) site was located 3 km south of Police (West) Point from the 1950s to the 1980s.

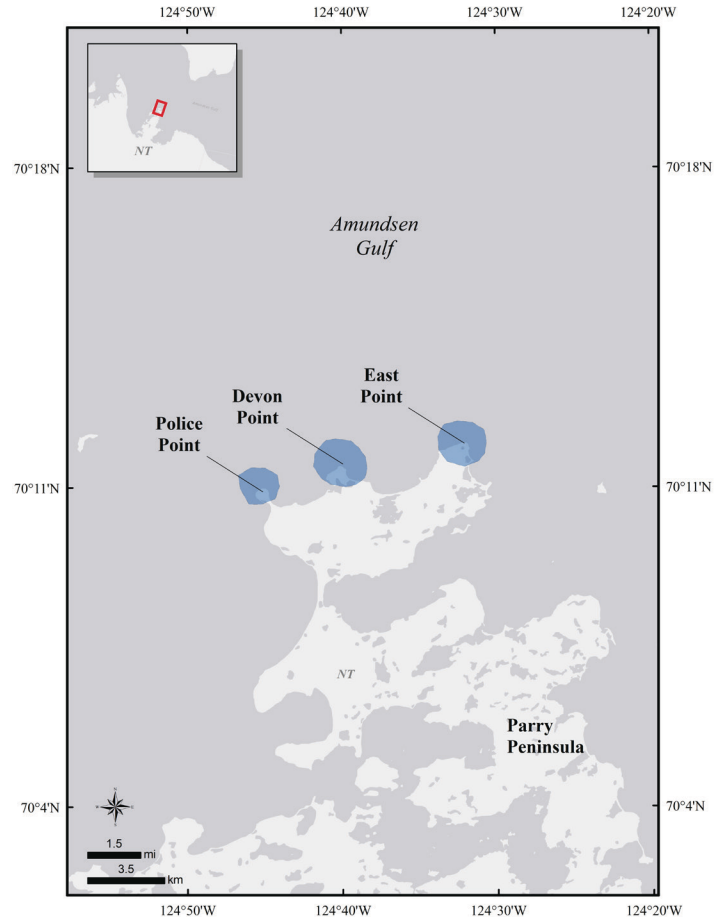
Marine currents and a variable bathymetry result in marine upwellings that produce a rich marine environment in the vicinity of Cape Parry. Offshore, a series of lead and polynya systems form annually, typically coinciding with the 30-m depth contour (Marko 1975). These provide critical habitat for migrating sea ducks (summarized in Mallory and Fontaine 2004). Open water usually persists between May and November (Smith and Rigby 1981).

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 recurrent leads immediately north of Cape Parry serve as a migration corridor for 20,000 Western King Eiders (*Somateria spectabilis*), Pacific Common Eiders (*S. mollissima v-nigra*), and Long-tailed Ducks (*Clangula hyemalis*) (Barry and Barry 1982, Alexander et al. 1988, Alexander et al. 1991). Densities at this site can reach 8500 sea ducks per square kilometer in spring and represent over 1% of these species' continental populations (NAWMP 2012).

Sensitivities: Migrating sea ducks are heavily dependent on open leads for feeding and resting. In a warming and increasingly variable climate, unpredictability of access to leads and open water areas may be greater due to effects of shifting winds on unconsolidated ice, which could result in severe negative impacts on the birds (Lovvorn et al. 2015).



Sea ducks using these offshore foraging areas are susceptible to pollution, disturbance, and collisions from increased vessel traffic.

Potential Conflicts: Extensive offshore drilling and ship traffic occur throughout the area, although mostly west of Hutchison Bay on the Tuktoyaktuk Peninsula (Alexander et al. 1997). Exploitation of hydrocarbon resources in the Beaufort Sea increases the possibility of oil spills in these sensitive areas. 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 moratorium will be in place until a review process for existing licenses is completed, which is expected in 2022.

Status: This key site is within the Cape Parry Migratory Bird Sanctuary, an International Biological Programme Site (Site 4-11; Eng et al. 1989), an Important Bird Area in Canada (NT041; IBA Canada 2004), a Key Marine Habitat Site (Site 19;

Mallory and Fontaine 2004), and the Anguniaqvia Niqiyuam Marine Protected Area. It has been identified as Class D (“lands where cultural or renewable resources are of particular significance and sensitivity throughout the year”) in the Paulatuk Community Conservation Plan (WMAC 2016). Marine waters surrounding Cape Parry are under federal jurisdiction.

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Key Site 24: West Banks Island Lead, Northwest Territories

Location: 73°13'23"N, 125°6'38"W

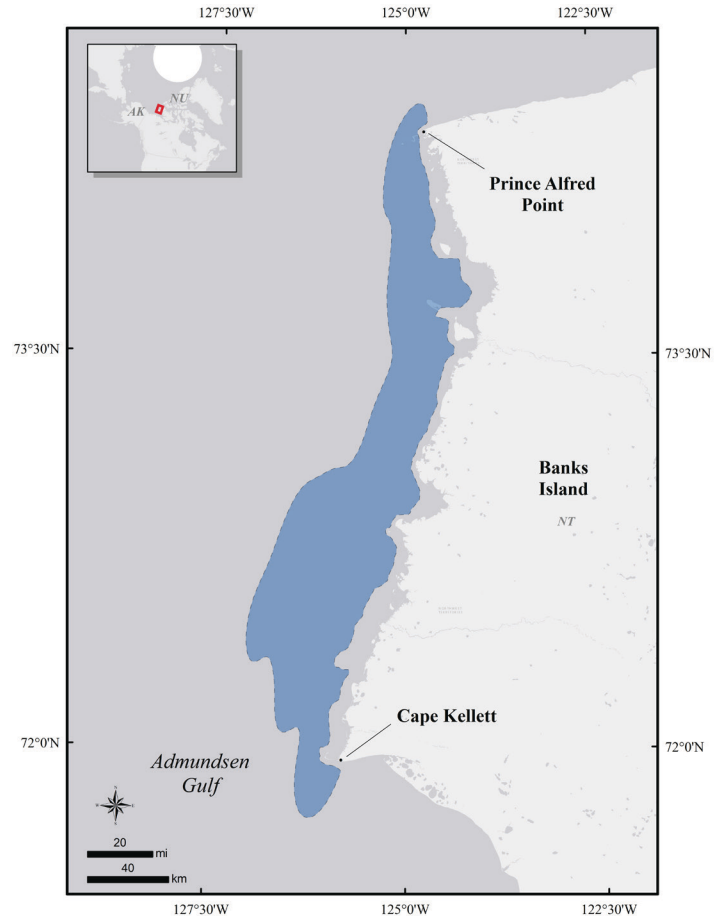
Size: 8540 km²

Description: The West Banks Island Lead is located along the western coastline of Banks Island, in the eastern Beaufort Sea. It is characterized by a flaw lead (open water between mobile pack ice and stationary landfast ice) along the island's coast that extends from Cape Prince Alfred at the northwest tip, south to Cape Kellett. Open water typically appears in late May and persists until freeze-up in December, with small patches remaining through most of the winter. The open water off Banks Island may join with the Admundsen Gulf–Cape Bathurst polynya or other leads that occur along the south coast (Stirling and Cleator 1981). Breakup, characterized by progressive widening of the lead, occurs rapidly in June, beginning at the southernmost tip and progressing northward (Smith and Rigby 1981, Alexander et al. 1997).

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: Historically, ice conditions in the Beaufort Sea have been consistent from year to year (Alexander et al. 1994). The recurrent flaw lead off the western coast of Banks Island is an important staging area for migrating sea ducks. The most critical areas within the lead are those with depths between 10 and 40 m (Dickson and Smith 2013). King Eiders (*Somateria spectabilis*) stage at this site during the first two weeks in June before arriving on the breeding grounds (Dickson 2012a). More than 16,000 King Eiders were observed in the area north of Cape Kellett (Barry and Barry 1982) and as many as 95,000 birds were observed in a single day along the coast (Barry 1986). Surveys during the early 1990s observed 39,000 birds in the same area (Alexander et al. 1997). Larger numbers of King Eiders and Common Eiders (*Somateria mollissima*) use the Banks Island lead in years when ice conditions are unfavorable in the southeastern Beaufort Sea (Barry and Barry 1982).



Locally breeding King Eiders also use the flaw lead as a primary staging area prior to molt migration (Dickson 2012a). Male birds arrive in this area in late June, and females typically arrive by mid to late July and stage for two to four weeks (Dickson 2012b).

More than 1000 Common Eiders have been observed along the western coast of Banks Island north of Cape Kellett (Alexander et al. 1988a). Although occurring in higher densities inland on Banks Island, Long-tailed Ducks (*Clangula hyemalis*) are present in low numbers along this site (Alexander et al. 1988b).

Populations of many sea duck species have been in decline in the western Arctic since the 1970s (Dickson and Gilchrist 2002), making recognition and conservation of their habitat of even greater importance.

Sensitivities: Migrating sea ducks are heavily dependent on open leads for feeding and resting.

In a warming and increasingly variable climate, unpredictability of access to leads and open water areas may be enhanced by greater effects of shifting winds on unconsolidated ice, which could result in severe negative impacts on the birds (Lovvorn et al. 2015). Sea ducks aggregate in large flocks at off-shore foraging areas, increasing their vulnerability to pollution and disturbance from increased ship traffic. The degradation of these open water areas could result in substantial negative impacts on western King Eider populations.

Potential Conflicts: The area west of Banks Island is subject to comparatively little resource exploration compared to the offshore drilling and ship traffic that occurs throughout the Mackenzie Delta and Tuktoyaktuk Peninsula areas to the south (Alexander et al. 1997). The area currently has no active exploration licenses for oil and gas development (Dickson and Smith 2013). Potential exploitation of hydrocarbon resources in the Beaufort Sea increases the possibilities of oil spills in these sensitive areas. 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 moratorium will be in place until a review process for existing licenses is completed, which is expected in 2022. Warming temperatures in the Arctic may change the size and location of leads and alter the food resources within these sites for sea ducks (Dickson and Gilchrist 2002).

Status: This key site is within the Western Banks Island Ecologically and Biologically Significant Area (EBSA) in the northern region of the Beaufort Sea Large Ocean Management Area (LOMA) (DFO 2014). The area also falls within Banks Island Westerly Gradient Eco-Unit, characterized by 29% fast ice and mixed depths throughout its area (Hodgson et al. 2015). This site overlaps with three proposed Priority Conservation Areas (PCAs): the Banks Island slope, the Banks Marine Bird Sanctuary, and the Cape Prince Alfred area (DFO 2015). Marine waters of the West Banks Island lead are under federal jurisdiction.

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King Eiders. Photo: Tim Bowman.

Key Site 25: Lambert Channel, Nunavut

Location: 68°35'33"N, 114°5'32"W

Size: 423 km²

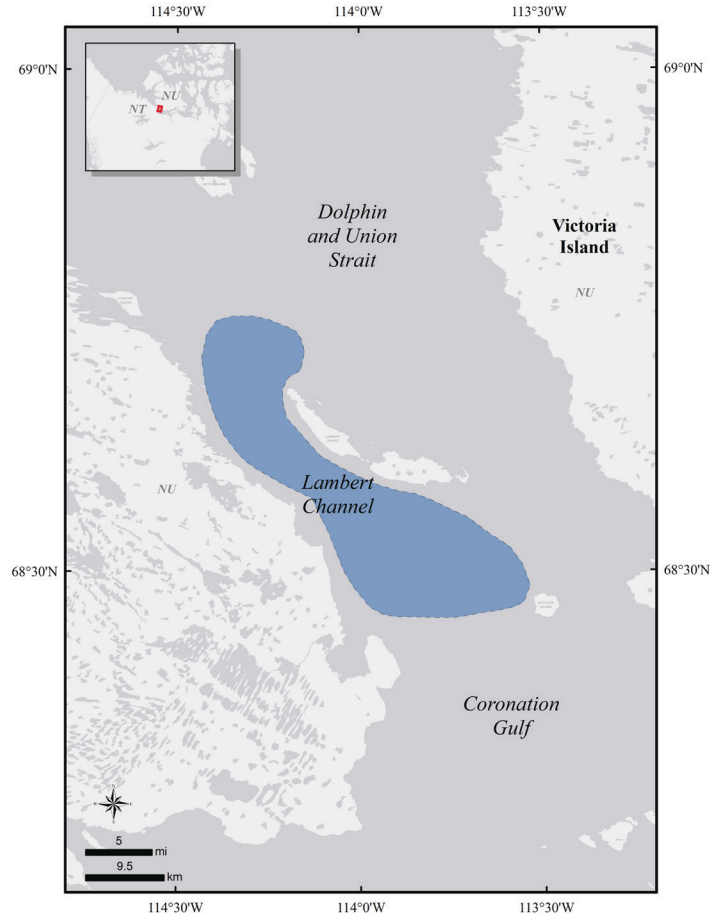
Description: Lambert Channel is a narrow stretch of water between Dolphin and Union Strait and Coronation Gulf, near the community of Kugluktuk (aka Coppermine). It lies in the Low Arctic oceanographic zone (Nettleship and Evans 1985). A small polynya occurs in southern Dolphin and Union Strait between Victoria Island and the mainland. The appearance of open water is variable, ranging from February to June. Open water usually appears first on the southwestern side of Lambert and Camping islands and remains until breakup commences in the first part of July. Lambert Channel begins to freeze before the eastern side of Dolphin and Union Strait and is usually ice-covered by the end of October or the beginning of November (Smith and Rigby 1981). Lambert Channel is very shallow in places and contains numerous shoals. Hydrographic charts indicate that it has a strong current with heavy tidal rips (Smith and Rigby 1981).

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: More than 70,000 Common Eiders (*Somateria mollissima v-nigra*) were observed in this area from June 6 to 19, 1980, with roughly 18,000 eiders observed in one day. About 90% of the birds were resting and feeding, suggesting that it is a critical feeding area prior to nest initiation (Allen 1982). That survey also recorded approximately 5000 Long-tailed Ducks (*Clangula hyemalis*), with more than 2000 birds observed on one day (Allen 1982). On June 9, 1993, 64,000 Common Eiders (at least 64% of the Canadian *v-nigra* population at that time) were observed in the polynya, most concentrated in the shallow, southeast end (Alexander et al. 1997).

Sensitivities: Migrating marine waterfowl are heavily dependent on shore leads and polynyas for feeding and resting (Dickson and Smith 2013). The degradation of these open-water areas could result



in severe negative impacts on the birds. In a warming and increasingly variable climate, unpredictability of access to leads and open water areas may be greater due to shifting winds on unconsolidated ice, which could result in severe negative impacts on the birds (Lovvorn et al. 2015). Offshore foraging areas for marine birds are susceptible to pollution and disturbance from increased ship traffic. Degradation of this site could have a significant impact on populations moving through the area.

Potential Conflicts: Changes in ice patterns due to climate change, and increased shipping activity related to mineral exploitation and cruise ships in the region, could have an impact on birds using Lambert Channel. 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: Lambert Channel has been designated an Ecologically and Biologically Significant Area by Fisheries and Oceans Canada (DFO 2011). This key

site also overlaps with a Key Marine Habitat Site (Site 20; Mallory and Fontaine 2004). Marine waters of Lambert Channel are under federal jurisdiction.

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