

## Key Site 3: Dogfish Banks and Rose Spit, Haida Gwaii, British Columbia

**Location:** 53°51'56"N, 131°34'53"W

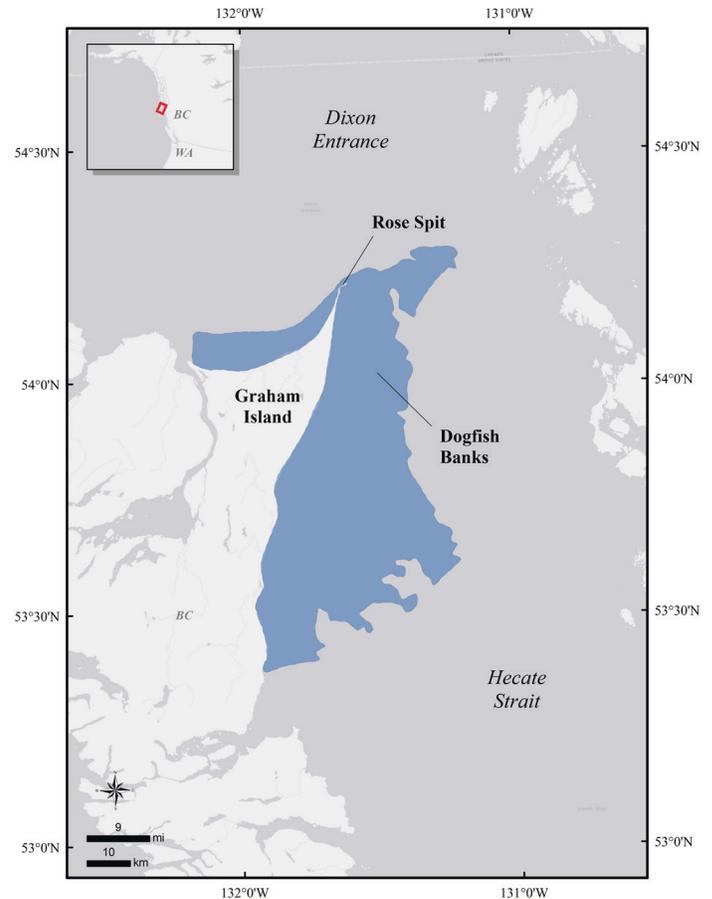
**Size:** 2821 km<sup>2</sup>

**Description:** Dogfish Banks and Rose Spit are located at the intersection of Dixon Entrance and Hecate Strait, on the north coast of British Columbia. Rose Spit is the most northeastern point of Graham Island in Haida Gwaii (formerly known as the Queen Charlotte Islands). This site includes the nearshore area of McIntyre Bay from Old Masset to Rose Spit and extends out to the northeast and south along the east coast of Graham Island, encompassing Dogfish Banks, a shallow offshore area east of Haida Gwaii. Large sandy beaches with isolated rocky headlands form the shoreline of McIntyre Bay. Rose Spit is the longest sand spit in British Columbia, with a large, well-developed dune system, extensive sandy beaches and offshore bars (IBA Canada 2016). The eastern shoreline of Graham Island consists of rocky shores, mud and sand flats, sheltered bays and points extending out into Hecate Strait (IBA Canada 2016). The waters of Dogfish Banks are unusually exposed sea duck habitat, with depths of 4 to 20 m extending over 20 km from shore (Palm et al. 2013). The waters are often turbulent, with frequent, high-intensity southeast winds and storm wave heights over 10 m, particularly during October to March (RPS Energy 2009). Glacial sands and gravels deposited adjacent to the flat coastal plain of eastern Graham Island create a sandy, gravelly seafloor with highly mobile sediment (RPS Energy 2009).

The region experiences cool, wet winters, with relatively warmer and drier summers. Average sea surface temperatures are around 6°C in winter and 12 to 13°C in summer (Irvine and Crawford 2011). The adjoining terrestrial habitat falls within the wet hypermaritime subzone of the Coastal Western Hemlock biogeoclimatic zone, with temperate rain-forest dominated by Western Hemlock, Western Red Cedar, and Sitka Spruce and extensive low-lying wet-land areas (Government of British Columbia 2014).

### Precision and Correction of Abundance

**Estimates Presented:** Abundance estimates from Hodges et al. (2005) have been adjusted to account for incomplete detection by applying species-specific visibility correction factors based on boat-to-air



ratios calculated from similar surveys in southeast Alaska (Hodges et al. 2008) and the estimates were expanded based on transect area relative to total survey area.

**Biological Value:** Dogfish Banks and Rose Spit provide a wintering area for an estimated 30,000 to 50,000 sea ducks, including 15,000 to 25,000 White-winged Scoters (*Melanitta deglandi*) and 15,000 to 20,000 Long-tailed Ducks (*Clangula hyemalis*) as well as 2000 to 3000 Surf Scoters (*Melanitta perspicillata*) and 500 to 1000 Black Scoters (*Melanitta americana*) (Hodges et al. 2005). Hodges et al. (2005) speculated that the area would be used by even larger numbers of sea ducks during migration, and recommended further surveys. Satellite telemetry studies indicate that a large proportion of White-winged Scoters and Black Scoters wintering in southern British Columbia stage around Rose Spit in spring, with some individuals using the area for five to six weeks (S. Boyd unpublished data). In spring, scoters congregate to feed on eggs of spawning herring, and major aggregations of Surf Scoters have been reported at Lawn Point

and McIntyre Bay (Harfenist et al. 2002). However, herring biomass in Haida Gwaii has been depressed in recent years, to the extent that fisheries have been closed (Irvine and Crawford 2011). Significant numbers of Harlequin Ducks (*Histrionicus histrionicus*) and Surf and White-winged scoters have been reported to molt off the eastern coast of Haida Gwaii (summarized in Harfenist et al. 2002). Molting Surf Scoters and White-winged Scoters in flocks of over 1000 have been observed at Rose Spit and McIntyre Bay, respectively (Savard 1988) but more recent summer surveys have not detected large numbers of scoters (LGL et al. 2009).

In December 1987, a single count of greater than 20,000 Long-tailed Ducks was recorded at Rose Spit (Harfenist et al. 2002). Scoters and Long-tailed Ducks were found throughout Dogfish Banks, but scoters were particularly abundant in the shallower areas of western Dogfish Banks while Long-tailed Ducks were more common in the deeper waters over the eastern banks (LGL et al. 2009, Hodges et al. 2005). Densities of scoters were high through autumn, winter, and spring, while Long-tailed Ducks used the area mainly in autumn and winter (LGL et al. 2009). Dogfish Banks was one of only three major wintering areas identified for scoters in northern British Columbia (Savard 1979). McIntyre Bay to Rose Spit may also be an important fall and wintering area for goldeneye, particularly Common Goldeneye (Harfenist et al. 2002). Large inter- and intra-annual fluctuations in abundance of sea ducks wintering at this site have been observed (Palm et al. 2013, LGL et al. 2009, Hodges et al. 2005). In this region, Surf Scoters commonly used areas with rocky, cobble, or sandy substrates during molt in fall and winter, while White-winged Scoters were primarily in sandy areas (Harfenist et al. 2002, Savard 1988). Surf and White-winged scoters were relatively more common in inlets during fall and winter but also continued to use open water. Long-tailed Ducks were more abundant in open water than in inlets (Harfenist et al. 2002).

While Bald Eagles are present along the shorelines of Haida Gwaii, they are almost completely absent from the offshore areas of Dogfish Banks, providing sea ducks a large foraging area with low predation danger (Palm et al. 2013). McIntyre Bay and Dogfish Banks exhibit high productivity and dense and diverse aggregations of plankton and are important larval rearing areas for invertebrates (Marine

Planning Partnership Initiative 2015, Clarke and Jamieson 2006).

**Sensitivities:** At Dogfish Banks, White-winged Scoters were found to carry large lipid reserves, likely to buffer against reduced time for foraging and elevated thermoregulatory costs at this exposed site (Palm et al. 2013). Large aggregations of migrating or molting sea ducks may be particularly sensitive to disturbance and marine pollution events. Mortality rates may be higher during winter, especially for female and immature sea ducks wintering near the northern extent of their range (Uher-Koch et al. 2016). The value of this site during spring is greatly enhanced by herring spawn, which has declined in recent years.

**Potential Conflicts:** Dixon Entrance is an important transportation route, and large container ships en route between Asian ports and Prince Rupert and Kitimat often anchor near McIntyre Bay; proposed industrial projects in mainland ports may lead to increases in tanker and/or freighter traffic (Marine Planning Partnership Initiative 2015). In addition, cruise ships regularly transit waters around Haida Gwaii, and there are concerns about large vessel bilge and wastewater discharge as well as negative effects of smaller freight or log boom towing vessels (Marine Planning Partnership Initiative 2015). Long-standing concern about the risks of oil spills in this region (Marine Planning Partnership Initiative 2015, IBA Canada 2016) has been somewhat alleviated by the Canadian federal government's recent commitment to legislate a moratorium on crude oil tankers (carrying more than 12,500 tonnes) on the north coast of British Columbia (Government of Canada 2016). NaiKun Wind Energy Group maintains an active tenure license and has provincial and federal environmental assessment approval for a large-scale offshore wind energy project (up to 110 turbines) on Dogfish Banks; however, the project is stalled due to lack of an electricity purchase agreement and limited support within the Haida community (Marine Planning Partnership Initiative 2015).

**Status:** There are no existing marine protected areas at this site, but the Haida Gwaii Marine Plan designated several proposed marine Protection Management Zones and a marine Special Management Zone in the area (Marine Planning Partnership Initiative 2015). Much of the adjoining

terrestrial areas are protected in Naikoon Provincial Park, Rose Spit Ecological Reserve, and Tow Hill Ecological Reserve; the boundary of Naikoon Provincial Park extends up to 200 m beyond the high tide line into the waters of Dixon Entrance and Hecate Strait; Rose Spit Ecological Reserve is limited to the terrestrial area while Tow Hill Ecological Reserve extends into the nearshore area of McIntyre Bay (BC Parks 2016). Waterfowl hunting is permitted within Naikoon Provincial Park but not in the ecological reserves.

The northern portion of this habitat site overlaps with the McIntyre Beach and Rose Spit Important Bird Area (IBA) and the southern portion overlaps with the Lawn Point IBA. Designation as an IBA does not confer legal protection of a site (IBA Canada 2016). McIntyre Bay and Dogfish Banks have been identified by the Department of Fisheries and Oceans as Ecologically and Biologically Sensitive Areas (EBSAs), in part because of their importance to birds, including seabirds, geese, and ducks. EBSAs do not have special legal status but identification is intended to guide management decisions (Clarke and Jamieson 2006).

This site falls within the area claimed as territory by the Haida Nation, which has never ceded rights, title, ownership, or jurisdiction over Haida Gwaii. The site is also included in the Pacific North Coast Integrated Management Area (PNCIMA), which is subject to a governance agreement between the governments of Canada, British Columbia, and First Nations (PNCIMA Initiative 2018). In British Columbia, the province owns most of the foreshore (i.e., intertidal zone) as well as coastal waters (both submerged land and the water column above it), including Dixon Entrance and Hecate Strait, but provincial legislation does not provide at-sea protection of marine birds (Harfenist et al. 2002). The Canadian federal government has jurisdiction over offshore waters (from the low water mark outwards) and over the regulation of migratory bird management, fisheries, shipping, and navigation in all marine waters.

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