

Key Site 18: Ledyard Bay, Alaska

Location: 69°43'1"N, 163°47'43"W

Size: 3065 km²

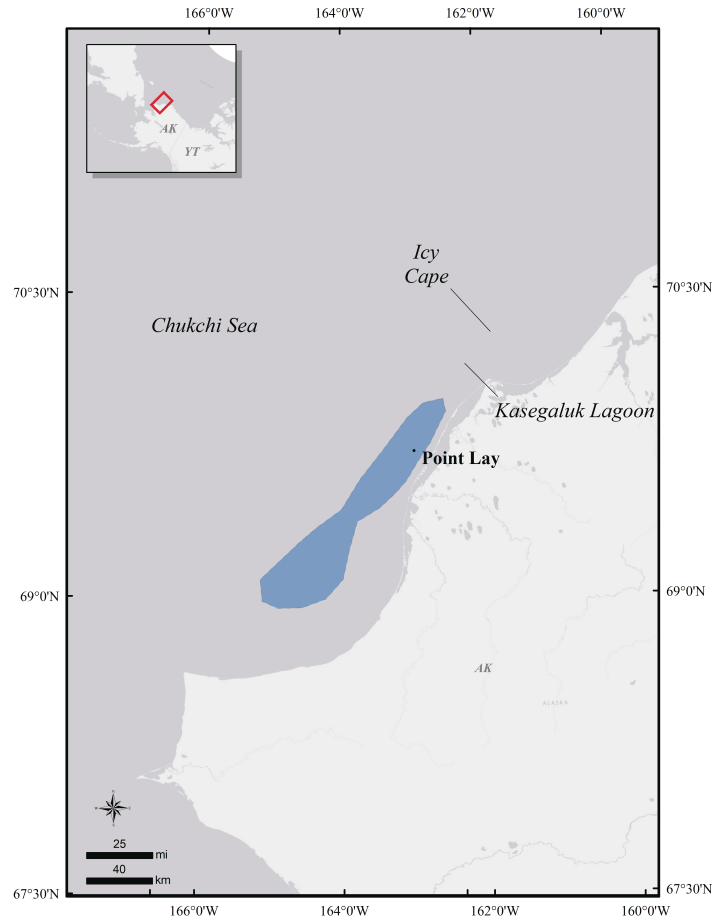
Description: Ledyard Bay includes near- and off-shore coastal waters between Cape Lisburne and Icy Cape on the Arctic coast of Alaska. This remote marine site on the eastern edge of the Chukchi Sea provides shallow (<30 m) water staging and molting habitat for a variety of sea duck species. Just outside the northeast portion of this site, Solivik Island and several other unnamed islands form the outer barrier of Kasegaluk Lagoon. The adjacent shoreline includes steep cliffs at Cape Lisburne, gradually descending towards wetland ecosystems, with many thermokarst lakes near Kasegaluk Lagoon. In addition to numerous small creeks emptying into Ledyard Bay, major rivers such as the Avak, Utukok, Kokolik, and Kukpowruk also provide substantial freshwater input.

Telemetry and aerial survey data suggest use by sea duck species takes place throughout marine waters of Ledyard Bay, with concentrations occurring near Kasegaluk Lagoon in the northeast portion of this site (Larned et al. 1995, Petersen and Flint 2002, Oppel et al. 2009, Bartzen et al. 2016, Sexson et al. 2016). Also see description for Beaufort Sea Lagoons Key Site, which includes part of Kasegaluk Lagoon.

Precision and Correction of Abundance

Estimates Presented: Fall abundance estimates for this key habitat site have not been adjusted to account for incomplete detection or other biases and can be treated as minimum estimates of population size (Larned et al. 1995).

Biological Value: The coastal waters of Ledyard Bay provide critical staging habitat for all four eider species (*Somateria* and *Polysticta* spp.) (Larned et al. 1995, Petersen and Flint 2002, Oppel et al. 2009, Martin et al. 2015). In particular, this area provides important staging and molting habitat for Spectacled Eiders (*S. fischeri*) breeding on the Arctic Coastal Plain of Alaska (Sexson et al. 2014, 2016). As many as 33,192 Spectacled Eiders have been observed in Ledyard Bay during the fall molting period (Larned et al. 1995), and it is likely that all female Spectacled Eiders breeding on the Arctic Coastal Plain molt



there, along with males from the Russia and Alaska breeding populations (Petersen et al. 1999, Sexson et al. 2014). This habitat also represents important staging habitat for threatened Steller's Eiders (*P. stelleri*) during spring migration (Martin et al. 2015).

Aerial survey data provide limited insight into species-specific seasonal use of this area. However, results from telemetry studies indicate use by all four eider species, as well as Long-tailed Ducks (*Clangula hyemalis*), which stage in the northwest portion of this key site during spring and fall migration (Bartzen et al. 2016). This key site may also provide important foraging and loafing habitat for eiders, Long-tailed Ducks, White-winged Scoters (*Melanitta deglandi*), and Red-breasted Mergansers (*Mergus serrator*) breeding nearby on the Arctic Coastal Plain (Amundson et al. 2019).

Sensitivities: Threatened populations of sea ducks (i.e., Steller's Eiders, Spectacled Eiders) using this area are vulnerable to disturbance or unintentional take associated with subsistence harvest of nonthreatened

sea ducks (e.g., King and Pacific Common eiders (*S. spectabilis* and *S. mollissima v-nigrum*) migrating through this corridor (Lovvorn et al. 2018). Changing distribution and abundance of benthic prey within Ledyard Bay may ultimately influence use by, and seasonal movement of, eiders within this key site (Lovvorn et al. 2015, Sexson et al. 2016).

Potential Conflicts: Arctic marine ecosystems may be under increasing risk of contamination associated with increased vessel traffic and transportation of petroleum products, as the ice-free period continues to lengthen (Wang et al. 2009, National Audubon Society 2018a, 2018b), increasing risk of oil spills and bird collisions with vessels. Sea ducks provide an important subsistence resource, and conservation of this key habitat site requires consideration of subsistence hunting traditions by residents of the village of Point Lay (Lovvorn et al. 2018).

Status: The Ledyard Bay key habitat site lies within federally regulated waters and falls within both the Territorial Sea (0 to 12 nautical mile line) and Contiguous Zone (12 to 24 nautical mile line) of U.S. government jurisdiction (NOAA 2018). The federal government exercises authority over oil and gas exploration in these waters, and a small portion of this key site falls within the Chukchi Sea Sale Area (BOEM 2018). Ledyard Bay is designated critical habitat for Spectacled Eiders under the Endangered Species Act (USFWS 2001). This area also falls within the Ledyard Bay Important Bird Area (IBA), identified as a high-priority conservation area of global significance (National Audubon Society 2018a), largely because of its use by molting Spectacled Eiders and other staging waterfowl. Kasegaluk Lagoon, adjacent to this key site, is another globally significant IBA (National Audubon Society 2018b). The adjacent Arctic Coastal Plain provides nesting habitat for Spectacled, Steller's, and King eiders, as well as Long-tailed Ducks, White-winged Scoters, and Red-breasted Mergansers (Amundson et al. 2019, Wilson and Swaim 2018).

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