

Key Site 72: Western Lake Erie, Ontario

Location: 42°16'59"N, 81°48'6"W

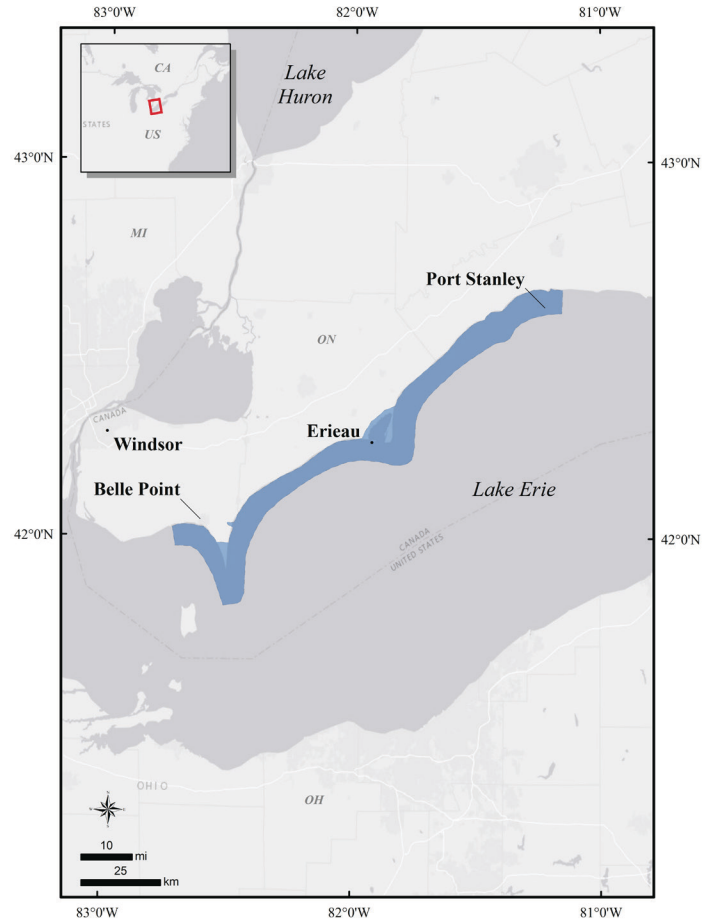
Size: 1332 km²

Description: Lake Erie is one of the lower Laurentian Great Lakes, located between the province of Ontario, Canada, and the states of New York, Pennsylvania, Ohio, and Michigan, USA. The western portion of the Canadian side of Lake Erie that constitutes this site extends west from the harbor at Port Stanley, Ontario, to Belle Point/Leamington, Ontario, and includes Rondeau Bay, Hillman Marsh, and Point Pelee. For more detailed information about waterfowl and wetland habitats in the Great Lakes region, and the benthic community, limnology, and geomorphology of this part of Lake Erie, see Prince et al. (1992), Bolsenga and Herdendorf (1993), Makarewicz et al. (2000), and Holcombe et al. (2005).

Precision and Correction of Abundance

Estimates Presented: Abundance values are based on several sources: (1) Shoreline surveys conducted as part of the Mid-Winter Waterfowl Survey (MWS) (Environment and Climate Change Canada/Canadian Wildlife Service, Ontario) and the Lower Great Lakes Migrant Waterfowl Survey (LGLMWS) (Environment and Climate Change Canada/Canadian Wildlife Service, Ontario). Observed counts were adjusted by species-specific or species group detection rates estimated for aerial fixed-wing surveys by Hodges et al. (2008) for coastal surveys in Alaska. (2) Ground-based estimates made during Christmas bird counts (CBC) (National Audubon Society 2015) from 1997 to 2015. Observed counts (not adjusted for incomplete detection) were derived from summing annual data from CBC circles included within the key site boundaries.

Biological Value: This site is important to several species of sea ducks during spring, fall, and winter seasons. Long-tailed Duck (*Clangula hyemalis*), White-winged Scoter (*Melanitta deglandi*), Black Scoter (*Melanitta americana*), Surf Scoter (*Melanitta perspicillata*), Hooded Merganser (*Lophodytes cucullatus*), Common Merganser (*Mergus merganser*), Red-breasted Merganser (*Mergus serrator*), Common Goldeneye (*Bucephala clangula*), and Bufflehead (*Bucephala albeola*) have been commonly observed in varying abundances since the 1990s at this site



(Appendix 1). Sea duck numbers at this and other sites across the lower Great Lakes have increased substantially since the mid-1980s and the early 1990s (Petrie and Schummer 2002). The establishment of dreissenid (zebra) mussels at Lake Erie in the mid-1980s provided an abundant food source for sea ducks and other diving duck species (Custer and Custer 1996, Schummer et al. 2008a, b). Dreissenid mussels also may provide favorable microhabitats for other important aquatic invertebrate prey items, such as amphipods and chironomids, and may have improved water quality and clarity that benefits forage fish species, such as gizzard shad (*Dorosoma cepedianum*), emerald shiner (*Notropis antherinoides*), and round goby (*Neogobius melanostomus*) and improved the foraging efficiency of many sea ducks (Wisden and Bailey 1995, Ross et al. 2005, Bur et al. 2008, Schummer et al. 2008b).

Spring: During aerial surveys of the lower Great Lakes shorelines of Ontario conducted during 2002 and 2011, the maximum peak abundance of sea ducks at this site was estimated at 44,300

birds (Environment and Climate Change Canada/Canadian Wildlife Service unpublished data [LGLMWS]). Mergansers, primarily Common Merganser and Red-breasted Merganser, were the most common species at this site, with maximum estimated peak numbers of 30,700 and 14,800 birds, respectively. Other sea duck species observed at lower maximum estimated peak abundances within this site included Common Goldeneye (5,500), Bufflehead (4,100), Long-tailed Duck (1,100), and Hooded Merganser (100).

Fall: During aerial surveys of the Ontario shorelines of the lower Great Lakes conducted during 2001 and 2011, maximum peak abundances of sea ducks at this site were estimated to be as high as 34,000 (Environment and Climate Change Canada/Canadian Wildlife Service unpublished data [LGLMWS]). Common Goldeneye (maximum estimated peak abundance 17,800), Common Merganser (11,700), Red-breasted Merganser (13,800), Bufflehead (2,000), and Long-tailed Duck (300) were the most common species at this site during fall.

Winter: During annual aerial waterfowl surveys of the Ontario shorelines of the lower Great Lakes conducted during January 2002 through 2018, the maximum peak sea duck abundance at this site was estimated at 46,400 birds (Environment and Climate Change Canada/Canadian Wildlife Service unpublished data [MWS]). CBC circles surveyed annually within this site reported a maximum count of 50,600 sea ducks between 1997 and 2015 (National Audubon Society and Bird Studies Canada unpublished data [CBC]). Common Goldeneye (maximum estimated peak abundance 11,300 [MWS]), Bufflehead (7,200 [MWS]), Common Merganser (9,200 [MWS]), Red-breasted Merganser (47,400 [CBC]) were the most abundant species at this site during winter. Other species observed during winter, typically at much lower abundances relative to other sea ducks, included Long-tailed Duck (maximum estimated peak abundance 400) as well as Black Scoter (9,500) and White-winged Scoter (4,000).

Sensitivities: Waterfowl are sensitive to human disturbance, mostly small vessel and/or shipping traffic, during migration and winter periods. Food resource availability and quality could be influenced by industrial, urban or cottage development, agricultural pollution, and invasive and other problematic species.

Type E botulism (*Clostridium botulinum*) outbreaks that can kill large numbers of sea ducks and waterbirds occur periodically at the lower Great Lakes (Canadian Cooperative Wildlife Health Centre 2003, 2005), particularly during fall migration, as well as other epizootic disease outbreaks that can occur where large numbers of waterfowl congregate.

Potential Conflicts: Disturbance associated with small vessel and shipping traffic remains a potential conflict at this site. Chemical and oil spills and water contamination from several sources, including shipping, urban, industry, and agriculture can impact sea ducks. There is potential for offshore wind development within high sea-duck use areas throughout the lower Great Lakes region.

Status: Several important bird areas have been designated within this area (<http://www.ibacanada.ca/mapviewer.jsp>) including the Southwest Elgin Forest Complex, Clear Creek, Greater Rondeau Area, and Point Pelee.

Literature Cited

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