

## Key Site 28: Southeast James Bay, Quebec

**Location:** 52°7'9"N, 79°12'25"W

**Size:** 6532 km<sup>2</sup>

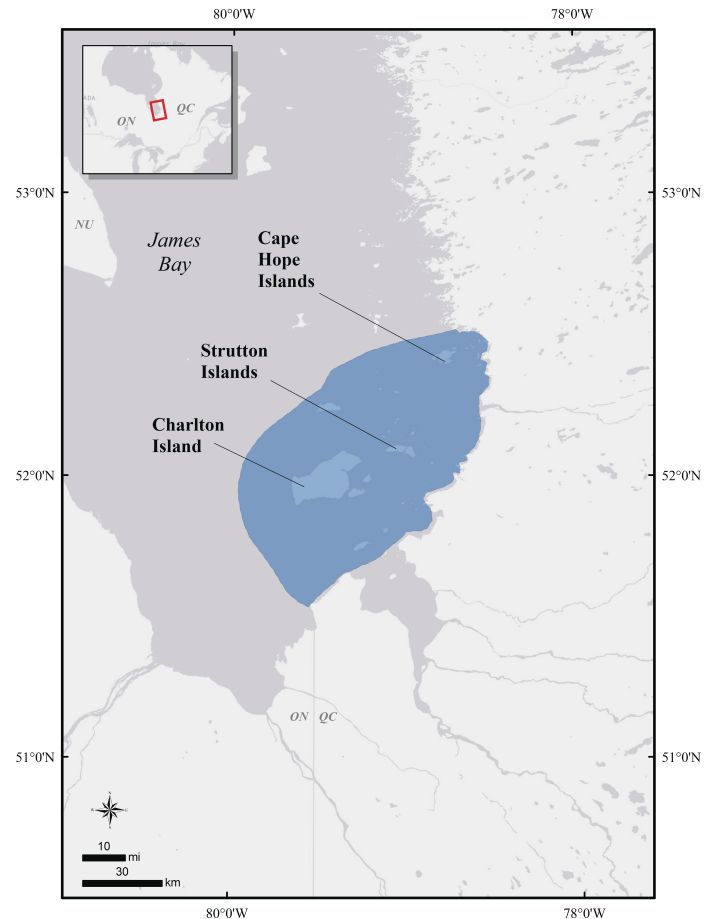
**Description:** The Southeast James Bay key site encompasses small bays, islands, and waters from the Ontario–Quebec border east to the Cape Hope Islands, north of the Eastmain River. Several large rivers on the Quebec coast empty into James Bay, including the Nottaway, Broadback, Rupert, and Eastmain rivers. This site contains several islands, with the largest being Charlton Island.

### 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 is heavily used by sea ducks during migration as well as for molting (Lamb et al. 2020). Black Scoters (*Melanitta americana*), Surf Scoters (*Melanitta perspicillata*), White-winged Scoters (*Melanitta deglandi*), and Long-tailed Ducks (*Clangula hyemalis*) pass through the site from mid-May to early June on route to their northern breeding areas (SDJV 2015; [Appendix 1](#), [Appendix 2](#), [Appendix 3](#)). Other spring migrants include Common Goldeneyes (*Bucephala clangula*), Common Mergansers (*Mergus merganser*), and Red-breasted Mergansers (*Mergus serrator*) (data from Rupert Bay; Foramec 2004). Many ducks wintering along the Atlantic coast and breeding west of Hudson Bay or in the Arctic stage in southeast James Bay in spring and fall (SDJV 2015, Lamb et al. 2019, Lamb et al. 2020).

The site is an important molting area for Black and Surf scoters, among others. Telemetry data collected through the Sea Duck Joint Venture's Atlantic and Great Lakes sea duck migration study illustrate that males and females of both species use the area extensively; males arrive from late June through August followed by the arrival of females in August and September (SDJV 2015, Lamb et al. 2021, Bowman et al. 2021). Telemetry data also suggest some use of this area by White-winged Scoters during the molting period (SDJV 2015, Meattay et al. 2018; Lepage et al. 2020). Areas of highest use within the key site include



the waters offshore of Pointe de la Fougère Rouge to Pointe Saouayane, the southwest and northeast ends of Charlton Island, the string of small islands extending from Trodely Island to the Strutton Islands, Boatswain Bay, the waters offshore of the mouth of Eastmain River, and around Cape Hope Islands (Curtis and Allen 1976, Badzinski et al. 2013, Lamb et al. 2021). An aerial survey in late July 2013 documented nearly 35,000 molting (predominantly male) scoters within this key site; most flocks consisted of Black Scoters and/or Surf Scoters and relatively few White-winged Scoters (Badzinski et al. 2013; [Appendix 4](#)). On August 23, 2015, approximately 3500 Surf (about 80%), Black (about 18%), and White-winged scoters (about 2%) were observed from the shore along the southern Charlton Island coastline (T. Cheskey, Nature Canada, pers. comm.). Surveys conducted within this site during the 1970s found that sea duck numbers were greatest from mid-August through September (Curtis and Allen 1976). It is therefore possible and likely that use of this site by sea ducks increases during late summer and early

fall due to an influx of female scoters and males and females of other sea duck species (SDJV 2015).

The Southeast James Bay key site is also within a migration corridor used by Black Scoters and other sea ducks from late summer until James Bay likely freezes during late fall (mid-November) (SDJV 2015, Lamb et al. 2021). During late summer, molt-migrant sea ducks may use and pass through this area when traveling between breeding and molting areas. For example, female Surf Scoters breeding in northern Manitoba use southeast James Bay as a stopover before heading to their molting areas in the St. Lawrence Estuary, Quebec (Lepage et al. 2020). During fall, migrant scoters coming from other James Bay and Hudson Bay molting areas and inland breeding locales throughout eastern Canada use the site prior to departure to wintering areas further south (SDJV 2015). Some male Black Scoters marked with satellite transmitters used this site for about six months (late May to late November), which encompassed the prebreeding, molting, and fall staging periods for this species (Lamb et al. 2021). Curtis and Allen (1976) also reported rafts of scoters around the islands from late summer through fall.

**Sensitivities:** Food resource (e.g., mussels) availability and quality could be influenced by changes in water regime (e.g., amount and timing of freshwater output in the bay) and salinity (e.g., climate change, hydroelectric projects). Congregations of birds can be affected by human disturbance, particularly during foraging and molting.

**Potential Conflicts:** Hydroelectric projects on the adjacent mainland could affect water regime and salinity in portions of James Bay. The Rupert River has already been partially diverted for energy production, and environmental assessments were conducted in the early 1990s to study the potential for hydroelectricity on the Nottaway and Broadback rivers. Climate change predictions for Quebec's Hudson Plains foresee an increasing trend in temperature and precipitation (Berteaux et al. 2014), which could eventually result in changes in waterfowl communities as the marine ecosystem adapts. Increased shipping traffic will increase risk of oil spills. Aboriginal harvest of sea ducks within this site is low, typically fewer than 200 Black Scoters and Long-tailed Ducks (R. Cotter, Canadian Wildlife

Service, pers. comm.), and would have negligible effect at the population level.

**Status:** The offshore waters and islands lie within the Eeyou Marine Region where wildlife is managed by the Eeyou Marine Region Wildlife Board. The Boatswain Bay Migratory Bird Sanctuary is situated within the Southeastern James Bay key site. Established to protect an important nesting and staging area for numerous water birds during spring and fall migrations, this sanctuary encompasses part of the Boatswain Bay coast, including all islands, water, shallow banks, and rocks within 3.2 km of the high water line (Environment Canada 2014). Boatswain Bay has been recognized as an Important Bird Area on the basis of its importance to water birds during migration (IBA Canada 2021). Quebec has three planned biodiversity reserves (baie de Boatswain, Waskaganish, and Péninsule de Ministikawatin) on the mainland adjacent to the key site, but they have not yet been officially designated; these reserves would prohibit any forestry activity, mining, gas or oil exploration and exploitation, or hydraulic energy production (MELCC 2021).

#### Literature Cited

- Badzinski, S. S., K. Ross, S. Meyer, K. F. Abraham, R. W. Brook, R. C. Cotter, F. Bolduc, C. Lepage, and S. Earsom. 2013. SDJV Project #82. James Bay moulting Black Scoter survey. Annual project summary for endorsed Sea Duck Joint Venture projects. <https://seaduckjv.org/wp-content/uploads/2014/11/SDJV-PR82-Badzinski-annrpt-FY13.pdf>. 26 pp.
- Berteaux, D., N. Casajus, and S. de Blois. 2014. Changements climatiques et biodiversité du Québec: vers un nouveau patrimoine naturel. Presses de l'Université du Québec, Québec, Canada. 169 pp.
- Bowman, T. D., S. G. Gilliland, J. L. Schamber, P. L. Flint, D. Esler, W. S. Boyd, D. H. Rosenberg, J-P. L. Savard, M. C. Perry, and J. E. Osenkowski. 2021. Strong evidence for two disjunct populations of Black Scoters (*Melanitta americana*) in North America. *Wildfowl* 71:179–192.
- Curtis, S., and L. Allen. 1976. The waterfowl ecology of the Quebec coast of James Bay. Canadian Wildlife Service, Ottawa, Ontario. 72 pp.
- Environment Canada. 2014. Network of protected areas. <https://www.canada.ca/en/environment->

[climate-change/services/migratory-bird-sanctuaries/locations/boatswain-bay.html](https://climate-change/services/migratory-bird-sanctuaries/locations/boatswain-bay.html).

Foramec, Inc. 2004. Centrale de l'Estmain-1-A et dérivation Rupert-Avifaune: Sauvagine et autres oiseaux aquatiques. Report presented to the Société d'énergie de la Baie James. Quebec. 113 pp.

IBA Canada. 2021. <http://ibacanada.ca/>.

Lamb, J. S., P. W. C. Paton, J. E. Osenkowski, S. S. Badzinski, A. M. Berlin, T. Bowman, C. Dwyer, L. J. Fara, S. G. Gilliland, K. Kenow, C. Lepage, M. L. Mallory, G. H. Olsen, M. C. Perry, S. A. Petrie, J.-P. L. Savard, L. Savoy, M. Schummer, C. S. Spiegel, and S. R. McWilliams. 2019. Spatially explicit network analysis reveals multi-species annual cycle movement patterns of sea ducks. *Ecological Applications* 29:1–17.

Lamb, J. S., P. W. C. Paton, J. E. Osenkowski, S. S. Badzinski, A. M. Berlin, T. Bowman, C. Dwyer, L. J. Fara, S. G. Gilliland, K. Kenow, C. Lepage, M. L. Mallory, G. H. Olsen, M. C. Perry, S. A. Petrie, J.-P. L. Savard, L. Savoy, M. Schummer, C. S. Spiegel, and S. R. McWilliams. 2020. Assessing year-round habitat use by migratory sea ducks in a multi-species context reveals seasonal variation in habitat selection and partitioning. *Ecography* 43:1842–1858.

Lamb, J. S., S. G. Gilliland, J.-P. L. Savard, P. H. Loring, S. R. McWilliams, G. H. Olsen, J. E.

Osenkowski, P. W. C. Paton, M. C. Perry, and T. Bowman. 2021. Annual-Cycle Movements and Phenology of Black Scoters in Eastern North America. *Journal of Wildlife Management* 85:1628–1645.

Lepage, C., J.-P. L. Savard, and S. G. Gilliland. 2020. Spatial ecology of White-winged Scoters (*Melanitta deglandi*) in eastern North America: a multi-year perspective. *Waterbirds* 43:147–162.

Meatley, D. E., S. R. McWilliams, P. W. C. Paton, C. Lepage, S. G. Gilliland, L. Savoy, G. H. Olsen, and J. E. Osenkowski. 2018. Annual cycle of White-winged Scoters (*Melanitta fusca*) in eastern North America: Migratory phenology, population delineation, and connectivity. *Canadian Journal of Zoology* 96:1353–1365.

Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC). 2021. Aires projetées au Québec (version du 31 mars 2021) [in French only]. <https://services-mddelcc.maps.arcgis.com/apps/MapSeries/index.html?appid=8e624ac767b04c0989a9229224b91334>.

Sea Duck Joint Venture (SDJV). 2015. Atlantic and Great Lakes sea duck migration study: Progress report June 2015. [https://seaduckjv.org/wp-content/uploads/2014/12/AGLSDMS-Progress-Report-June2015\\_web.pdf](https://seaduckjv.org/wp-content/uploads/2014/12/AGLSDMS-Progress-Report-June2015_web.pdf).