

First Report of Scoters (*Melanitta* spp.) along Eastern Baffin Island, Nunavut, Canada

Mark L. Mallory,¹ John Chardine² and Scott Gilliland³

(Received 30 October 2019; accepted in revised form 22 January 2020)

ABSTRACT. In September of 2017 and 2018, we observed hundreds of scoters (*Melanitta* spp.) in fiords in Arctic Canada, approximately 1100–1800 km north of their previous northernmost observations. Given the remote locations and timing of observations, we do not know if these represent previously undiscovered areas where birds moult or new movements to Arctic locations. Moreover, the provenance of these sea ducks is unclear, as no evidence of movements to this region was indicated by large-scale satellite tracking of North American scoters during the last decade.

Key words: Arctic; range; scoter; *Melanitta*

RÉSUMÉ. En septembre 2017 et 2018, nous avons observé des centaines de macreuses (*Melanitta* spp.) dans des fjords de l'Arctique canadien, à environ 1 000 à 1 800 km au nord des observations antérieures de cette espèce les plus au nord. En raison de l'éloignement de ces lieux et de la période des observations, nous ne savons pas si elles représentent des lieux de mue jamais répertoriés pour ces oiseaux ou de nouveaux déplacements de ces oiseaux dans les régions arctiques. De plus, la provenance de ces canards de mer n'est pas claire, car il n'existe pas de preuve de déplacements vers cette région d'après les repérages satellitaires à grande échelle des macreuses nord-américaines pendant la dernière décennie.

Mots clés : Arctique; aire de distribution; macreuse; *Melanitta*

Traduit pour la revue *Arctic* par Nicole Giguère.

INTRODUCTION

The dynamic distribution of bird species is a source of considerable interest in recent years, as we try to document changes in range (La Sorte and Jetz, 2012), notably northward advancement related to global warming (McDonald et al., 2012). This task is challenging to undertake in the vast Canadian Arctic, however, because baseline information on distribution is generally poor for many species or for times of year other than the breeding season (reviewed in Richards and Gaston, 2018). Natural history records from early exploration (e.g., Richardson, 1825), local ecological knowledge (LEK) interviews (Gilchrist et al., 2005; Mallory et al., 2008), ornithological surveys (e.g., Manning, 1946; Soper, 1946; Johnston and Pepper, 2009), and long-term research stations (e.g., Lepage et al., 1998; Black et al., 2012; Gaston, 2014) have provided key information to generate maps of species' distributions. However, the small and widely dispersed human population and the high expense of Arctic research (Mallory et al., 2018) have meant that few observers have documented birds in the Arctic through the year, and many areas are woefully understudied.

For marine and coastal birds, observations by qualified personnel from expedition ships can fill in data gaps on

distributions (e.g., Hofmann et al., 1997), at least for those parts of the year when ships can safely navigate in Arctic waters. Expedition ship travel in the Arctic has been increasing in frequency and area covered (Dawson et al., 2018), and data from these trips are proving useful for mapping marine bird distributions, population trends, and threats they may face in the Arctic (Chardine et al., 2004; Wong et al., 2018). Here, we report on two extralimital observations of sea ducks in eastern Nunavut, much farther north than previously noted and disparate from locations detected by satellite telemetry (e.g., Meattley et al., 2018).

METHODS

Observations were made independently by Mallory and Chardine from Arctic tourist expedition ships. On 19 September 2017, Mallory was aboard the expedition vessel *M/V Ocean Endeavour*, which entered waters in the vicinity of Kivitoo, Nunavut, an abandoned, Distant Early Warning station on eastern Baffin Island (67°56' N, 64°52' W). Weather was 100% overcast, 3.4°C, with a light north wind at 5 km/h. The birds were approximately 200–500 m from the vessel and were observed with a 40×

¹ Department of Biology, Acadia University, 33 Westwood Avenue, Wolfville, Nova Scotia B4P 2R6, Canada; mark.mallory@acadiiau.ca

² Hurtigruten Pluss AS, Postboks 6144, N-9291 Tromsø, Norway

³ Canadian Wildlife Service, Environment and Climate Change Canada, 17 Waterfowl Lane, Sackville, New Brunswick E4L 1G6, Canada

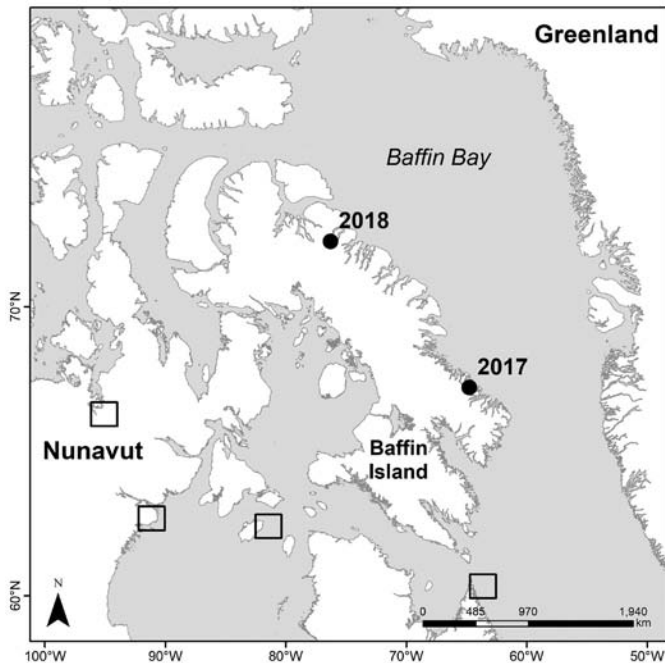


FIG. 1. Locations of observations of scoters (*Melanitta* spp.) from expedition ships moving along eastern Baffin Island (filled circles) and northernmost reports from e-Bird or other sources (open squares).

Swarovski spotting scope from the top deck of the vessel for a period of 20 min by Mallory, other onboard biologists, and several passengers. On 12 September 2018, Chardine was aboard the expedition vessel M/S *Fram*, which travelled to the southwestern end of North Arm Fiord, Baffin Island (71°52' N, 76°21' W). Weather was 100% overcast, ca. 2.0°C, with misty conditions and light winds. The birds were observed approximately 300–600 m from the vessel with 8 × 32 Swarovski binoculars from the bridge of the vessel for a period of ca. 45 min.

RESULTS AND DISCUSSION

In 2017 at Kivitoo (Fig. 1), Mallory observed ~200 sea ducks in the shallow water, 200 m from the shore. The birds appeared almost completely black with no obvious other colouration, although in the poor light some brief flashes of white could be picked out. Most birds swam away after apparently feeding in the area (consistent with flightlessness during molt), but some birds could fly (although this principally involved lifting off the water very briefly and landing again). Their overall appearance was that of *Melanitta* spp., and the general dark appearance with odd white flashes suggested that they were White-winged Scoters (*M. deglandi*).

The 2018 observation was similar; Chardine saw hundreds of dark birds swimming near the inland end of North Arm Fiord (Fig. 2), too far from the vessel to get a conclusive photograph, but they were clearly dark, scoter-like sea ducks. Through binoculars, small white patches on the sides could be seen in some birds. Chardine identified

the birds as White-winged Scoters and confirmed this with other observers on the ship. Subsequently, we sent the best image (without other information) to a retired sea duck expert who has conducted many hours of surveys (T. Bowman, U.S. Fish and Wildlife Service). From the birds' appearance and head position, he also considered these to be White-winged Scoters. During initial bird observations, the ship slowly sailed southwest as Chardine ascertained if the birds ahead of the ship were flightless and presumed to be moulting. As the ship approached closer to the birds, several flocks began to lift from the water and fly a few hundred metres ahead of the vessel. No birds were ever observed to escape by diving or swimming away.

Both observations were unexpected for these latitudes (Fig. 1). In eastern Canada, the known northern range limit for White-winged Scoter is approximately 55°–59° N along the coast of Labrador (Lock, 1986; Brown and Fredrickson, 2019). Across Canada, its breeding distribution follows the northern limits of the treeline (Meatley et al., 2018; Richards and Gaston, 2018; S. Gilliland, unpubl. data). In the west, this sea duck can be found north to the Mackenzie River delta (68.5° N), but generally has not been reported in areas north of the treeline except during migration for coastal regions of southern James and Hudson Bays (Brown and Fredrickson, 2019). Even the eBird database has only one record north of mainland North America, at Coats Island in northern Hudson Bay, and the farthest northern reporting in eastern North America was at the northern tip of Labrador (eBird, 2019). Consequently, the 2017 sighting would represent a northern range extension of ~1100 km while the 2018 sighting was ~1800 km north of the previous northernmost reports.

Unfortunately, the weather and light conditions as well as shipping operations did not allow us to get photographs suitable for conclusive identification (Fig. 2). Thus, while we are confident in our suggestion that we observed White-winged Scoters, we cannot exclude the possibility that these could be other *Melanitta* species. North American Surf Scoters (*M. perspicillata*) or Black Scoters (*M. americana*) seem unlikely, since we did not observe much coloration on heads or distinctively coloured bills, and we did see some flashes of white that we assumed were from wing bars. Conceivably these could have been Velvet Scoter (*M. fusca*), although numbers of this species are low and their closest breeding location is Iceland. They might also have been Common Scoters (*M. nigra*), which are found in western Europe and with low numbers in East Greenland (Birdlife International, 2020). We note, however, that all scoter species are listed as rare or accidental in Greenland (Boertmann, 1994; Lepage, 2020), so it is highly improbable that these would be Greenlandic breeding birds. Finally, based on appearance these could be Siberian Scoters (*M. stejnegeri*), although that would require a movement of at least 3500 km (Birdlife International, 2020). Importantly, even if our identification is incorrect, the location of these moulting scoters is far outside the known North American, Asian, or European ranges for any *Melanitta* species

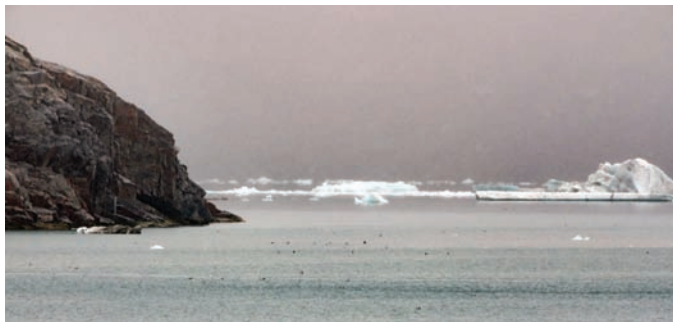


FIG. 2. Scoters (centre bottom of photograph) remained too far from the ship in North Arm Fjord for close photography, but using photographs, sea duck experts have considered the most likely identification to be White-winged Scoters (*Melanitta deglandi*).

(Richards and Gaston, 2018; Birdlife International, 2020), and a recent, multispecies telemetry study showed no evidence of any North American scoter species moving towards Baffin Island (Sea Duck Joint Venture, 2015).

Given the lack of survey information over most of these areas during the post-breeding season, it is unclear whether these observations represent new habitats used by scoters or a regular but unreported occurrence in previous years. We have not conducted LEK interviews explicitly on scoters in these areas, but in interviews with local hunters and elders about birds, key sites, and changing environmental conditions (e.g., Mallory et al., 2006, 2008), we have never been told about flocks of dark ducks (M.L. Mallory, unpubl. data). Thus, at present we cannot determine whether these observations represent typical or novel movement patterns and habitat use for these scoters; in fact, we do not know with which breeding area these birds may be affiliated (that would require a banding or telemetry study). Given the migration patterns of several bird species found in this region, for example high Arctic Brant (*Branta bernicla hrota*; Inger et al., 2010), Purple Sandpipers (*Calidris maritima*; Summers et al., 2014) and Northern Wheatears (*Oenanthe oenanthe*; Bairlein et al., 2012), it is certainly conceivable that these scoters breed in Europe. For now, their origin remains unknown, but our observations suggest that future survey work outside of the breeding season will uncover additional surprises in this relatively pristine and understudied region.

ACKNOWLEDGEMENTS

We thank Adventure Canada and Hurtigruten for the opportunity to view these birds from the expedition vessels, and Denis Lepage, Tony Gaston, and Eric Reed for insightful comments on the manuscript.

REFERENCES

- Bairlein, F., Norris, D.R., Nagel, R., Bulte, M., Voigt, C.C., Fox, J.W., Hussell, D.J.T., and Schmaljohann, H. 2012. Cross-hemisphere migration of a 25g songbird. *Biology Letters* 8:505–507.
<https://doi.org/10.1098/rsbl.2011.1223>
- BirdLife International. 2020. IUCN Red list for birds.
<https://www.birdlife.org/news/tag/iucn-red-list>
- Black, A.L., Gilchrist, H.G., Allard, K.A., and Mallory, M.L. 2012. Incidental observations of birds in the vicinity of Hell Gate polynya, Nunavut: Species, timing and diversity. *Arctic* 65(2):145–154.
<https://doi.org/10.14430/arctic4196>
- Boertmann, D. 1994. An annotated checklist to the birds of Greenland. *Meddelelser om Grønland, Bioscience* 38.
- Brown, P.W., and Fredrickson, L.H. 2019. White-winged Scoter (*Melanitta deglandi*). In: Rodewald, P.G., ed. *The birds of North America*, Version 1.1. Ithaca, New York: Cornell Lab of Ornithology.
<https://doi.org/10.2173/bna.whwsc04.01.1>
- Chardine, J.W., Fontaine, A.J., Blokpoel, H., Mallory, M., and Hofmann, T. 2004. At-sea observations of Ivory Gulls (*Pagophila eburnea*) in the eastern Canadian High Arctic in 1993 and 2002 indicate a population decline. *Polar Record* 40(4):355–359.
<https://doi.org/10.1017/S0032247404003821>
- Dawson, J., Pizzolato, L., Howell, S.E.L., Copland, L., and Johnston, M.E. 2018. Temporal and spatial patterns of ship traffic in the Canadian Arctic from 1990 to 2015. *Arctic* 71(1):15–26.
<https://doi.org/10.14430/arctic4698>
- eBird. 2019. White-winged/Stejneger's Scoter (*Melanitta deglandi/stejnegeri*).
<https://ebird.org/species/whwsc04>
- Gaston, A.J. 2014. Birds and mammals of Prince Leopold Island, Nunavut, 1975–2012. *Arctic* 67(1):10–19.
<https://doi.org/10.14430/arctic4363>
- Gilchrist, H.G., Mallory, M.L., and Merkel, F.R. 2005. Can traditional ecological knowledge contribute to wildlife management? Case studies of migratory birds. *Ecology and Society* 10(1):20.
<https://doi.org/10.5751/es-01275-100120>
- Hofmann, T., Chardine, J.W., and Blokpoel, H. 1997. First breeding record of Red-breasted Merganser (*Mergus serrator*) on Axel Heiberg Island, Northwest Territories. *Canadian Field-Naturalist* 111:308–309.
- Inger, R., Harrison, X.A., Ruxton, G.D., Newton, J., Colhoun, K., Gudmundsson, G.A., McElwaine, G., Pickford, M., Hodgson, D., and Bearhop, S. 2010. Carry-over effects reveal reproductive costs in a long-distance migrant. *Journal of Animal Ecology* 79(5):974–982.
<https://doi.org/10.1111/j.1365-2656.2010.01712.x>
- Johnston, V.H., and Pepper, S.T. 2009. The birds of Prince Charles Island and Air Force Island, Foxe Basin, Nunavut. *Canadian Wildlife Service Occasional Paper No. 117*. 52 p.

- La Sorte, F.A., and Jetz, W. 2012. Tracking of climatic niche boundaries under recent climate change. *Journal of Animal Ecology* 81(4):914–925.
<https://doi.org/10.1111/j.1365-2656.2012.01958.x>
- Lepage, D. 2020. Avibase – Bird checklists of the world: Greenland.
<https://avibase.bsc-eoc.org/checklist.jsp?region=gl&list=obc>
- Lepage, D., Nettleship, D.N., and Reed, A. 1998. Birds of Bylot Island and adjacent Baffin Island, Northwest Territories, Canada, 1979 to 1997. *Arctic* 51(2):125–141.
<https://doi.org/10.14430/arctic1054>
- Lock, A.R. 1986. A census of Common Eiders breeding in Labrador and the Maritime provinces. In: Reed, A., ed. *Eider ducks in Canada*. Canadian Wildlife Service Report Series No. 47. 30–38.
- Mallory, M.L., Fontaine, A.J., Akearok, J.A., and Johnston, V.H. 2006. Synergy of local ecological knowledge, community involvement and scientific study to develop marine wildlife areas in eastern Arctic Canada. *Polar Record* 42(3):205–216.
<https://doi.org/10.1017/S0032247406005481>
- Mallory, M.L., Fontaine, A.J., Akearok, J.A., and Gilchrist, H.G. 2008. Harlequin Ducks in Nunavut. *Waterbirds* 31(Spec. Publ. 2):15–18.
<https://doi.org/10.1675/1524-4695-31.sp2.15>
- Mallory, M.L., Gilchrist, H.G., Janssen, M., Major, H.L., Merkel, F., Provencher, J.F., and Strøm, H. 2018. Financial costs of conducting science in the Arctic: Examples from seabird research. *Arctic Science* 4(4):624–633.
<https://doi.org/10.1139/as-2017-0019>
- Manning, T.H. 1946. Bird and mammal notes from the east side of Hudson Bay. *Canadian Field-Naturalist* 60(4):71–85.
- McDonald, K.W., McClure, C.J.W., Rolek, B.W., and Hill, G.E. 2012. Diversity of birds in eastern North America shifts north with global warming. *Ecology and Evolution* 2(12):3052–3060.
<https://doi.org/10.1002/ece3.410>
- Meattey, D.E., McWilliams, S.R., Paton, P.W.C., Lepage, C., Gilliland, S.G., Savoy, L., Olsen, G.H., and Osenkowski, J.E. 2018. Annual cycle of White-winged Scoters (*Melanitta fusca*) in eastern North America: Migratory phenology, population delineation, and connectivity. *Canadian Journal of Zoology* 96(12):1353–1365.
<https://doi.org/10.1139/cjz-2018-0121>
- Richards, J.M., and Gaston, A.J., eds. 2018. *Birds of Nunavut*, 2 vols. Vancouver: University of British Columbia Press. 820 p.
- Richardson, J. 1825. Appendix to Captain Parry's journal of the second voyage for the discovery of the north-west passage from the Atlantic to the Pacific, performed in His Majesty's ships *Fury* and *Hecla*, in the years 1821-22-23. *Zoological Appendix No. 1. Account of the quadrupeds and birds*. London: John Murray. 288–379.
- Sea Duck Joint Venture. 2015. Atlantic and Great Lakes sea duck migration study: Progress report June 2015.
<http://seaduckjv.org/science-resources/atlantic-and-great-lakes-sea-duck-migration-study/>
- Soper, J.D. 1946. Ornithological results of the Baffin Island expeditions of 1928–1929 and 1930–1931, together with more recent records. *Auk* 63:1–24, 223–239, 418–427.
<https://doi.org/10.2307/4080126>
- Summers, R.W., Boland, H., Colhoun, K., Elkins, N., Etheridge, B., Foster, S., Fox, J.W., Mackie, K., Quinn, L.R., and Swann, R.L. 2014. Contrasting trans-Atlantic migratory routes of Nearctic Purple Sandpipers *Calidris maritima* associated with low pressure systems in spring and winter. *Ardea* 102(2):139–152.
<https://doi.org/10.5253/arde.v102i2.a4>
- Wong, S.N.P., Gjerdrum, C., Gilchrist, H.G., and Mallory, M.L. 2018. Seasonal vessel activity risk to seabirds in waters off Baffin Island, Canada. *Ocean & Coastal Management* 163:339–351.
<https://doi.org/10.1016/j.ocecoaman.2018.07.004>