



# Monitoring Svalbard's environment and cultural heritage through citizen science by expedition cruises

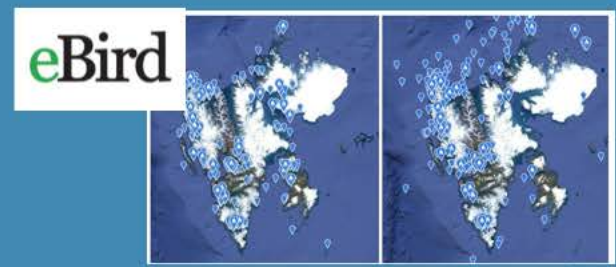
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The continuous areas of wilderness and the cultural heritage sites in Svalbard need to be managed based on a solid understanding of the ongoing changes. Expedition cruises regularly reach otherwise rarely visited places. They can gather significant and relevant data on the environment. Observations are often documented with photographs. A workshop for enhancing the environmental monitoring efforts of expedition cruise ships was held in Longyearbyen in March 2019, facilitated by the INTAROS project and the Association of Arctic Expedition Cruise Operators (AECO) (<https://intaros.nersc.no/content/cruise-expedition-monitoring-workshop>). The participants were representatives of cruise operators, citizen science programs, local government and scientists. They agreed on a pilot assessment of monitoring programs during 2019 looking into some of the citizen science programmes already used by guides and tourists.

Workshop report at <http://www.intaros.eu/media/1635/2019-report-aeco-workshop-v4.pdf>



Records of (A) Pink-footed goose *Anser brachyrhynchus* (left; n = 583 records) and (B) Atlantic puffin *Fratercula arctica* (right; n = 622 records) from Svalbard 2002-2019 in the eBird database.



Happywhale records of marine mammals from Svalbard in 2019 (81 encounters of 13 species).



Location for entries of Secchi depth 2013-2019. Each marker represents a vessel (or reading).



Extract of global map of positions from where cloud cover records have been obtained by the Cloud Observations program 1995-2019.

A total of 705 checklists with records of birds from Svalbard were during 2019 submitted to eBird by 76 observers. 62 different species were reported and 755 records were documented by photographs. A total of 81 encounters with 13 species of marine mammals from Svalbard were during 2019 reported to Happywhale by 40 observers on board at least 14 different vessels. The Secchi Disk study did not receive any measurements from Svalbard during 2019. GLOBE Cloud Observations received 5 records from 3 different vessels from Svalbard during 2019.



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