

Experiences with Citizen Science in Svalbard

Presentation by Michael Kjøie Poulsen (NORDECO) for CAPARDUS and CULTCOAST Workshop on observation and documentation of Cultural Heritage Sites in Svalbard on 24 march 2021.

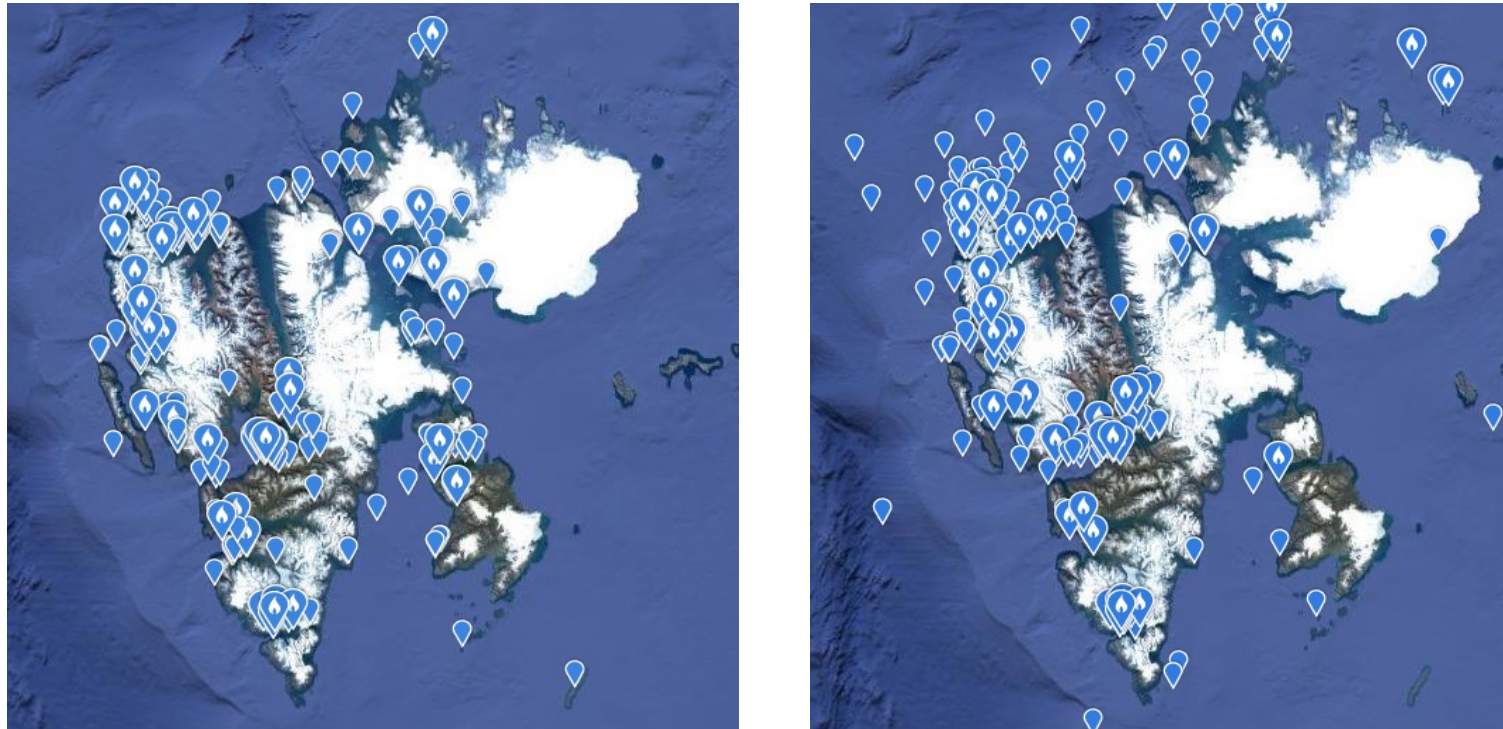
- Environmental monitoring is challenging in Arctic region.
- Citizen science including community-based monitoring can provide stronger basis for management
- Hunters and fishermen can observe and contribute, but not much in Svalbard.
- Most parts of Svalbard are mainly visited by tourists and researchers
- Can we mobilize traveling tourists and researchers in Svalbard to contribute to environmental monitoring through citizen science?
- Cruise Expedition Monitoring Workshop and pilot program in 2019 (for presentations at the workshop and the final report: <https://intaros.nersc.no/content/cruise-expedition-monitoring-workshop>)



CS programs selected to be part of the Pilot Cruise Expedition Monitoring 2019

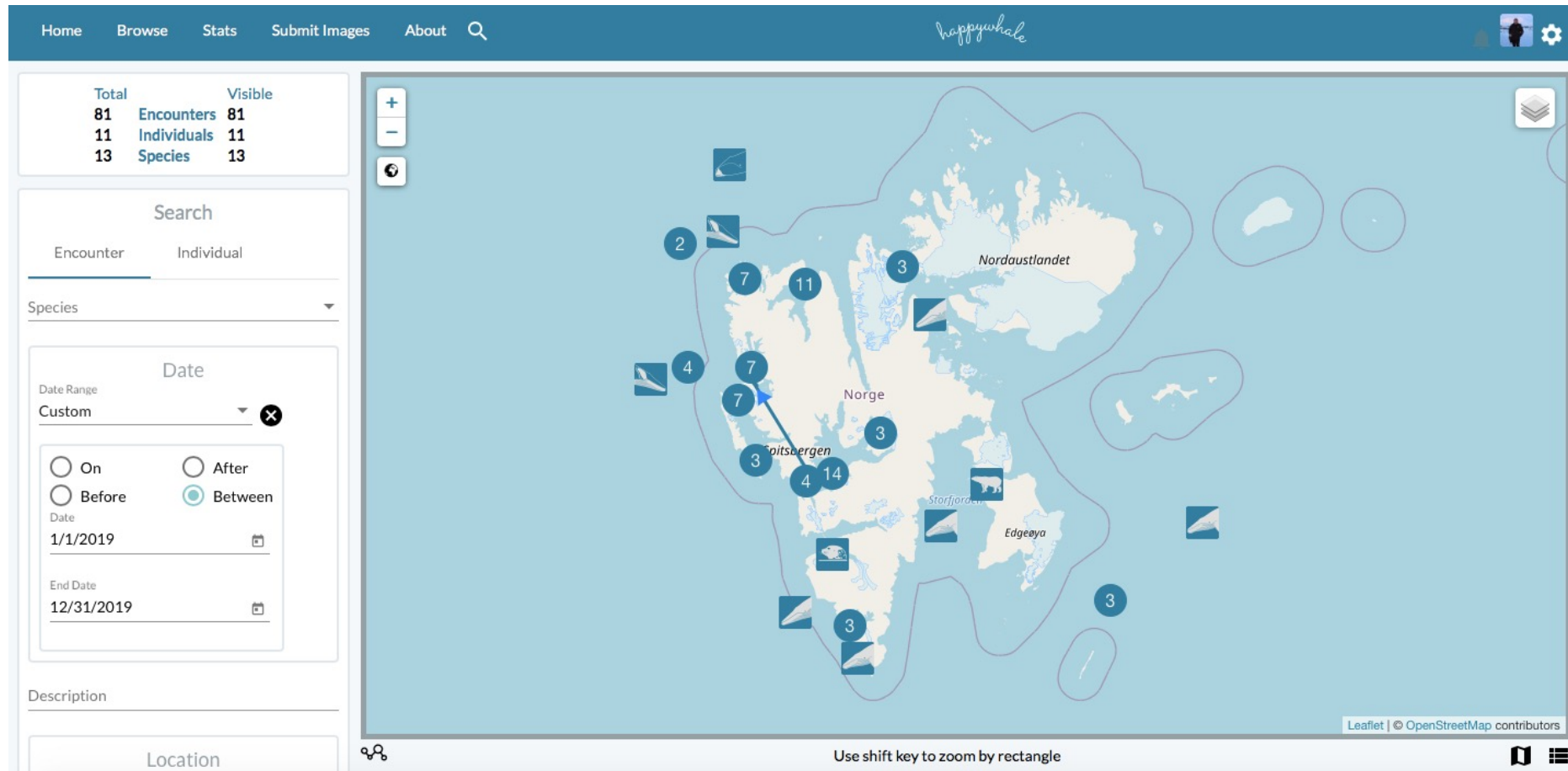
- eBird (ebird.org)
- Happywhale (happywhale.com)
- Secchi Disk Study (secchidisk.org)
- Cloud Observations (www.globe.gov/web/s-cool)
- Cultural and Historical Site Photography
- Tidal Glaciers as Hot Spots for Top Predators Feeding (IOPAN)
- Plastic Debris on Arctic Shores (IOPAN)

Examples of eBird species maps from Svalbard



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. Records highlighted with a white flame are from eBird hotspots, areas with “many” checklists.

Happywhale



Happywhale records of marine mammals from Svalbard in 2019 (81 encounters of 13 species). The digits indicate numbers of encounters too close together to be shown on the map. They will show up when zooming in on the map. The arrow indicates two locations where the same individual has been encountered.

iNaturalist

iNaturalist × [Udforsk](#) [Dine observationer](#) [Fællesskab](#) ▼ [Mere](#) ▼ 0 0

Observationer [Start](#) [Filtre](#)

Geografisk område ▼ **3,584** OBSERVATIONER **381** ARTER → **697** IDENTIFIKATORER → **270** OBSERVATØRER →

[Kort](#) [Gitter](#) [Liste](#) [Interessante steder](#) [Gentag søgning på kort](#)

Ringsæl
(*Pusa hispida*)
Svalba... • 1/8/1987
5d

Rødhalet Våge
(*Buteo jamaicensis*)
Downto... • 14/3/2021
forskningskvalitet 1 6d

Hvidhval
(*Delphinapterus leucas*)
Kvaløy... • 2/7/2019
forskningskvalitet 3 14d

Liden Skjaller
(*Rhinanthus minor*)
9990 B... • 21/8/2019
forskningskvalitet 1 16d

Barentshavet Karahavet

Monitoring of Cultural and Historical Sites – 2019 Pilot

The focus of the monitoring

- Citizen Science related to the monitoring of cultural and historical sites is far less developed than citizen science related to environmental monitoring. We do not know of an existing program relevant for monitoring of cultural and historical sites in the Arctic region.

What to record

- Take photographs of the general site and of any signs of possible ongoing erosion or damage. Take notes describing any concerns you may have for the future of the site. What could be done to safeguard the site?
- Instructions for exactly what and how to photograph at each site should be developed.

Recommendations for improving the use of cruise ship observations and monitoring.

- 1) All cruise expedition ships should be equipped with tablets containing the apps for the same small selection of citizen science programs so that they can easily upload records.
- 2) Evaluation of data that can be created and how such data can contribute to monitoring programs, to ensure that data is made readily available in a form that is useful for institutions responsible for planning and improving environmental management.
- 3) Clear lines of communication between citizen science program participants, citizen science program organizers, the scientific community and decision makers should be further developed.
- 4) Developing expedition cruise monitoring is of high priority in Svalbard, but is also highly relevant to other polar regions.
- 5) Further work is necessary to fully understand the feasibility and potential of coordinated expedition cruise operator based environmental observing in the Arctic.