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with many partners

**Improving and expanding the  
environmental monitoring efforts  
by expedition cruise ships  
in the Arctic**

**ASSW 2022**

Photo by M. Enghoff

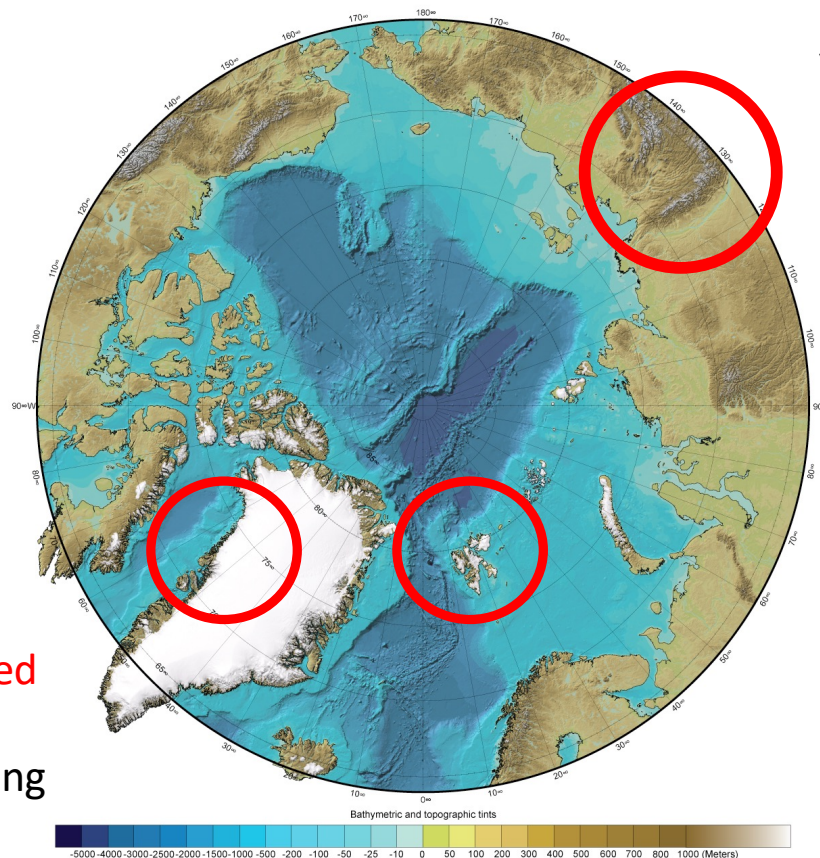




## *Co-developed Citizen Science and Community-Based Monitoring networks*

### Greenland

- Citizen seismology
- Expedition cruise-based observing
- Fisher-based monitoring of natural resources (PISUNA)



### Yakutia:

- Herder-based monitoring of wildlife resources

### Svalbard

- Citizen seismology
- Expedition cruise-based observing
- Networking for knowledge co-creation



## Report from workshop

### Cruise Expedition Monitoring Workshop and Dialogue-Seminar

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On improving and expanding the  
environmental monitoring efforts  
of cruise ships in the Arctic

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March 7-8 2019,  
Longyearbyen, Svalbard



## *Expedition cruise based Citizen Science*

- Initiated a **dialogue** on coordinated expedition cruise operator-based observing, w. operators, scientists, decision-makers
- We tested the use of four Citizen Science programs among cruise operators in Disko Bay and Svalbard
- A total of **165 people** contributed observations during one cruise season



Photo by M. K. Poulsen



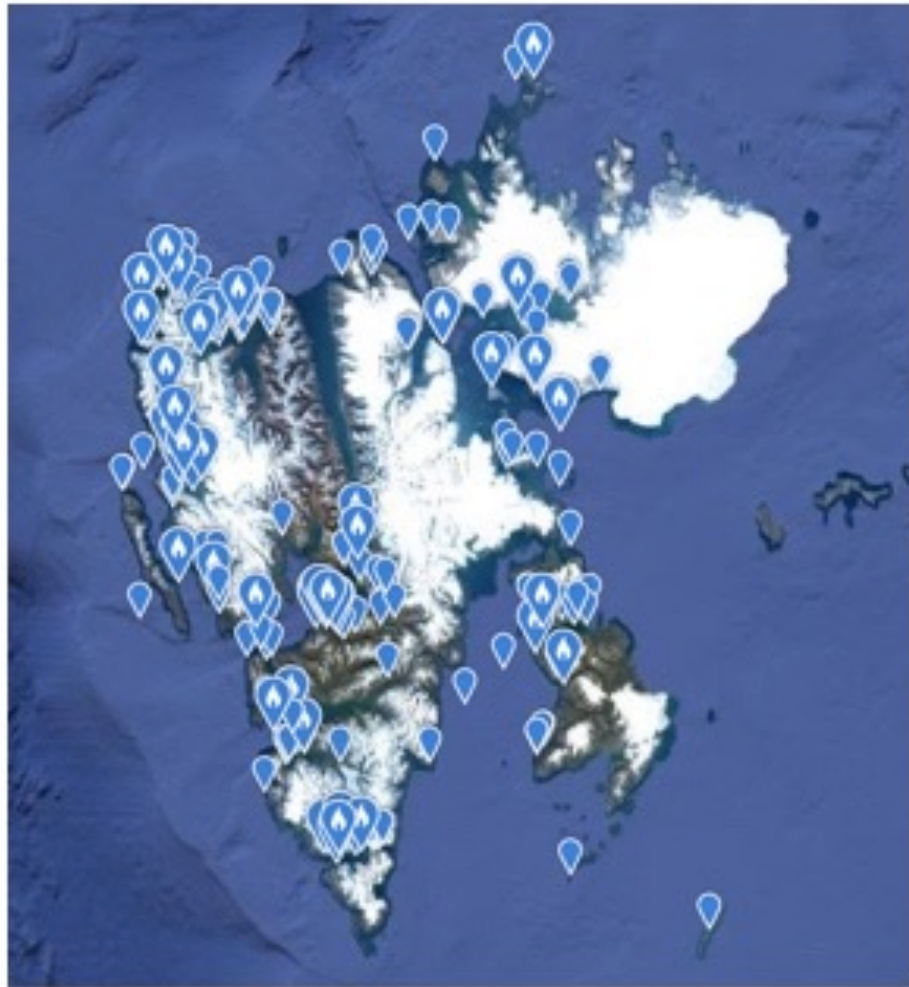


Photo by H. Kisbye

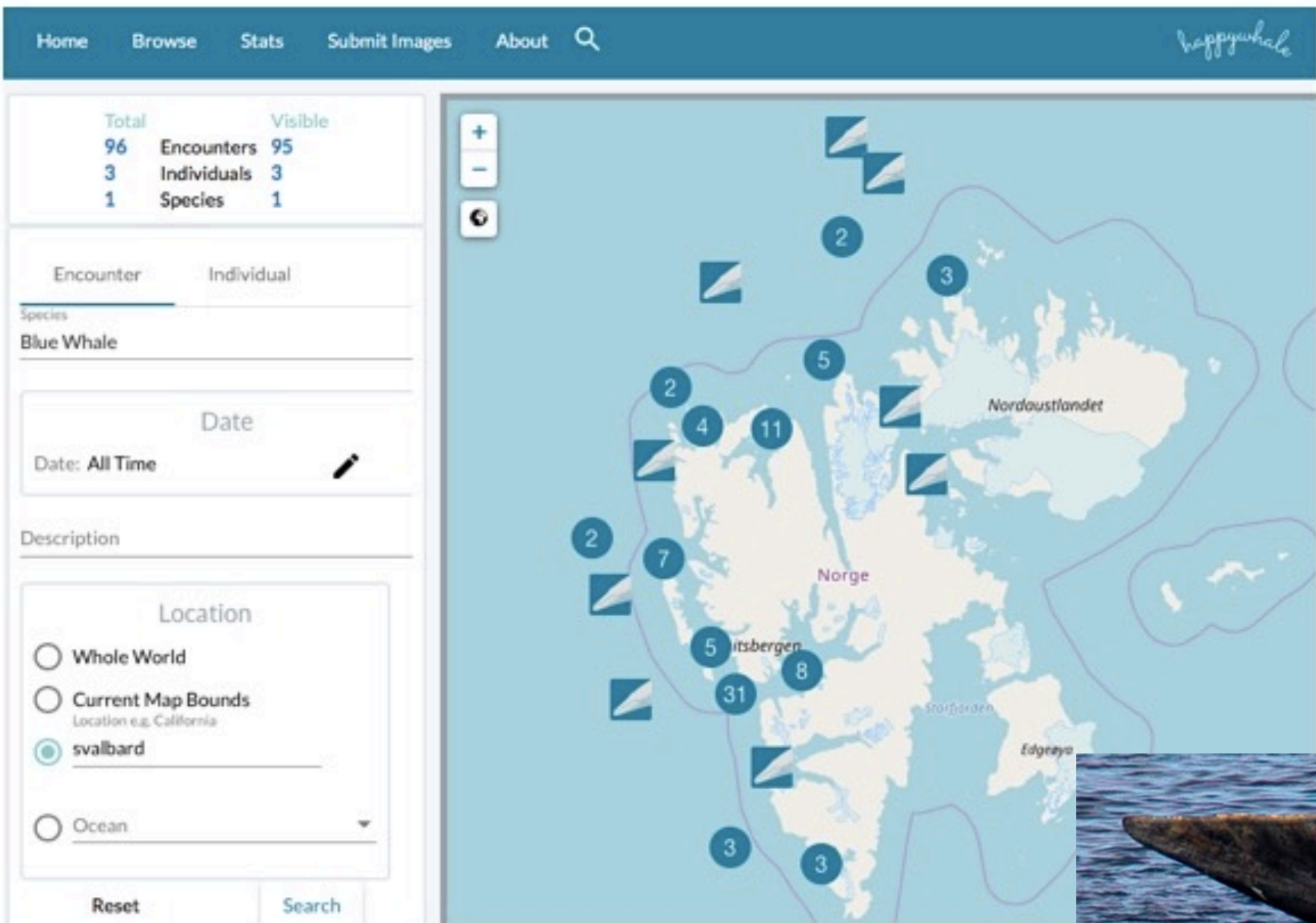
Records of (A) Pink-footed goose *Anser brachyrhynchus* (left:  $n = 583$  records) and (B) Atlantic puffin *Fratercula arctica* (right;  $n = 622$  records) from Svalbard 2002-2019



Records of White-tailed eagle  
*Haliaeetus albicilla* from  
Greenland 2005-2019 in the eBird  
database ( $n = 68$  records).

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

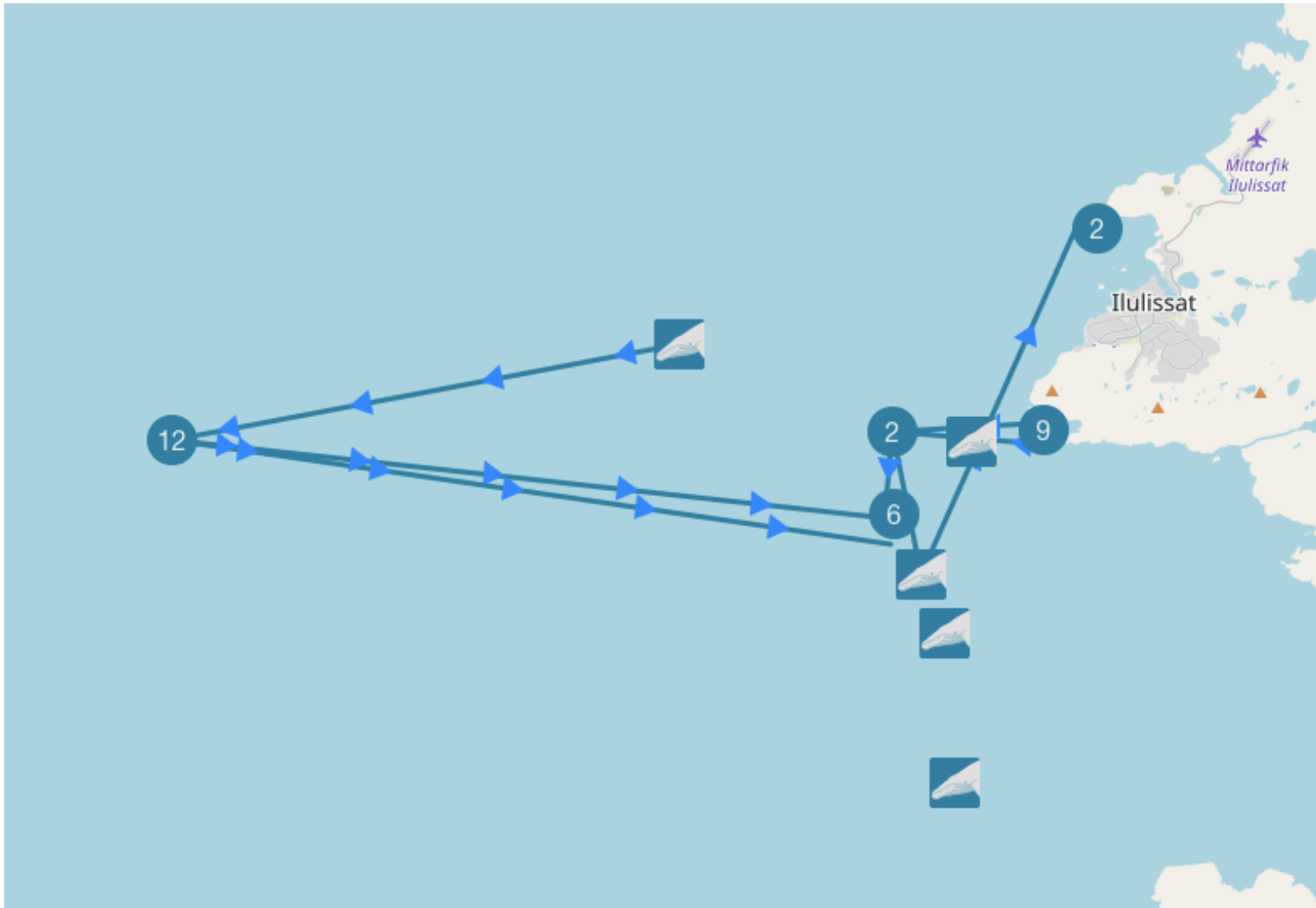




Bowhead Whale sighted from “Barnaby” on 24 June 2019, Spitsbergen, Svalbard, when sailing with Lindblad on board Geographic Expeditions. Photo: David Hone.



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



Some of the Humpback Whales *Megaptera novaeangliae* in Disko Bay, Greenland, in 2019 were repeatedly photographed at locations close to the town of Ilulissat. The digits refer to number of encounters and these will show up when zooming in.



Sperm Whale sighted by “MTurcot” on 1 August 2019, Tasiilaq (Ammassalik), East Greenland.





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

HOME

SECCHI DISK PROJECT

WHO ARE WE?

PRIVACY AND DATA

☐ Define search boundary

☐ Limit by boat

Secchi Depth

From Date

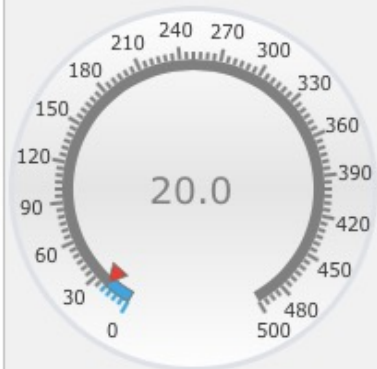
To Date

Free Search

Enter a Location

Radius around Free Search

Kilometers



FILTER

RESET

Kort

Satellit

User ID

FIND

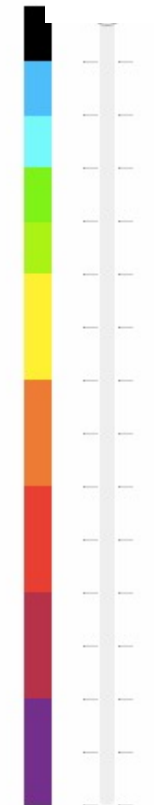
Select a Boat

CLEAR

☐ Show Clustering

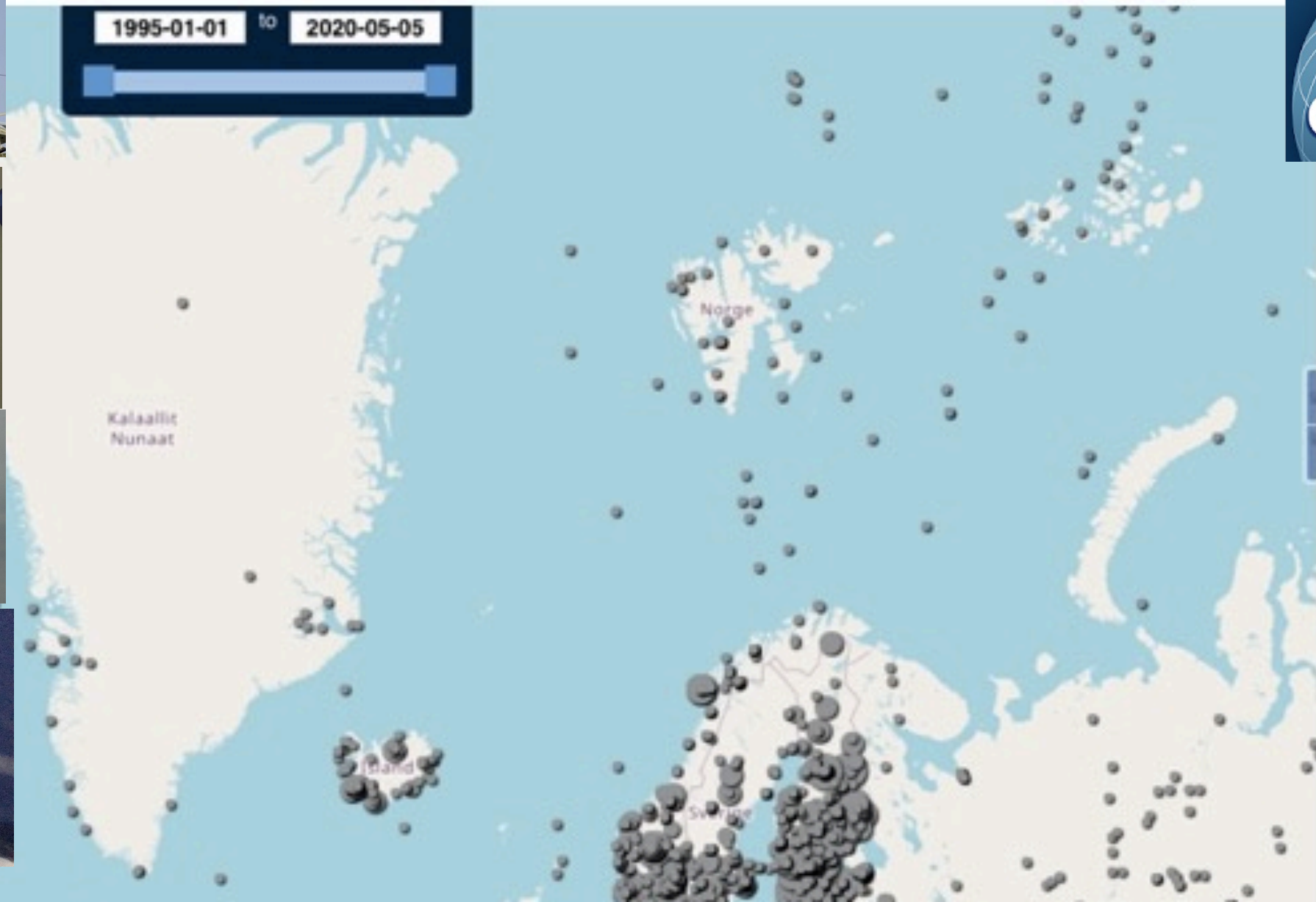


Secchi  
SECCHIDISK.ORG



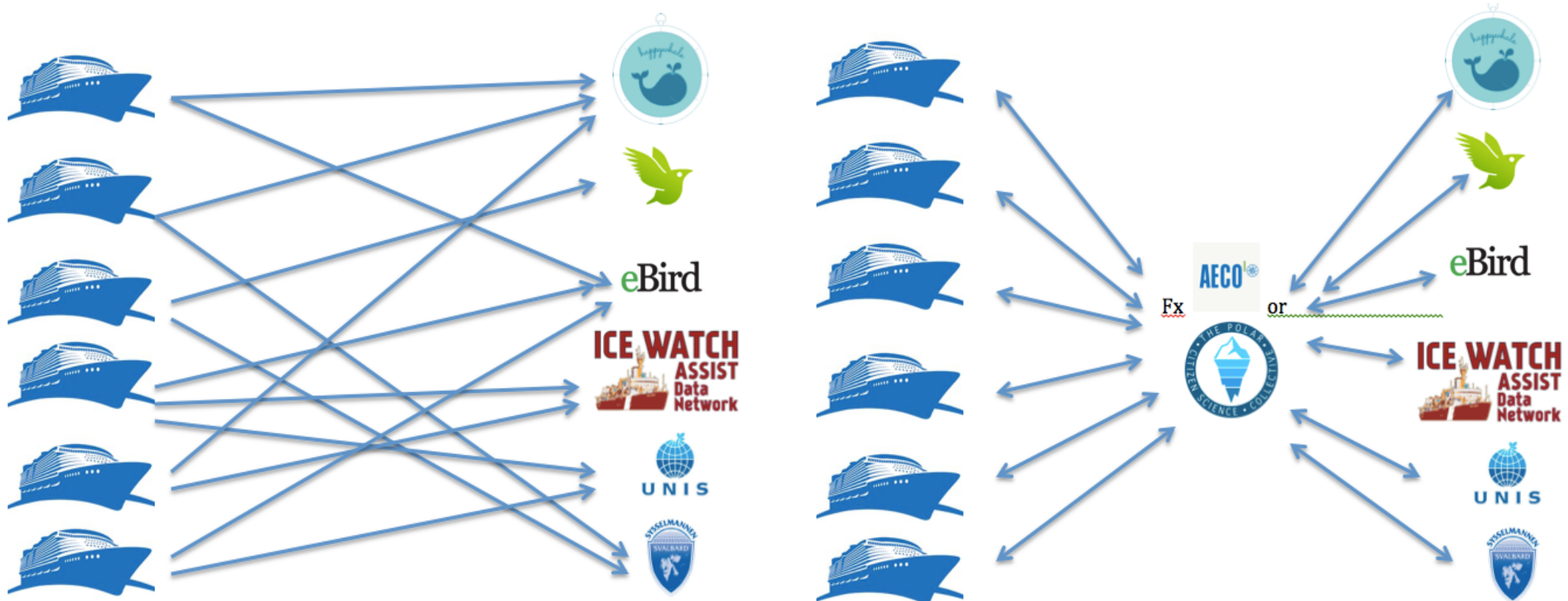
Secchi Depth  
> 0m




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





What can be done to facilitate dialogue between cruises, Citizen Science programs and decision makers in the Arctic?



	Programs tested			
Low (1-10) ●				
Medium (11-100) ●	eBird	Happy-whale	Secchi Disk	Cloud Obs.
High (101-1000) ●				
Very high (>1000) ●	eBird			
Number of observations	●	●	●	●
Number of locations	●	●	●	●
Number of attributes observed	●	●	●	●
Education and awareness raising potential*	●	●	●	●
Relevance to decision-making*	●	●	●	●

**Improved data support for understanding the status of the environment**



**Policy brief**

*“3) Clear lines of communication should be developed...”*





**Thank you!**

More information  
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