

PRESENT AND FUTURE CITIZEN SCIENCE IN SVALBARD

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A presentation of established CBM and CS projects through the Polar Citizen Science Collective and projects such as iNaturalist, eBird, and Happywhale for

Community-based Monitoring and Citizen Science in the Svalbard Area

A workshop organised by the Nansen Environmental and Remote Sensing Center (NERSC) as part of the CAPARDUS H2020 project and Norwegian Institute for Cultural Heritage Research (NIKU) as part of the CULTCOAST project

Longyearbyen, Svalbard, 8 August 2022.



The Research Council
of Norway



Report from
workshop

Cruise Expedition
Monitoring
Workshop and
Dialogue-Seminar

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

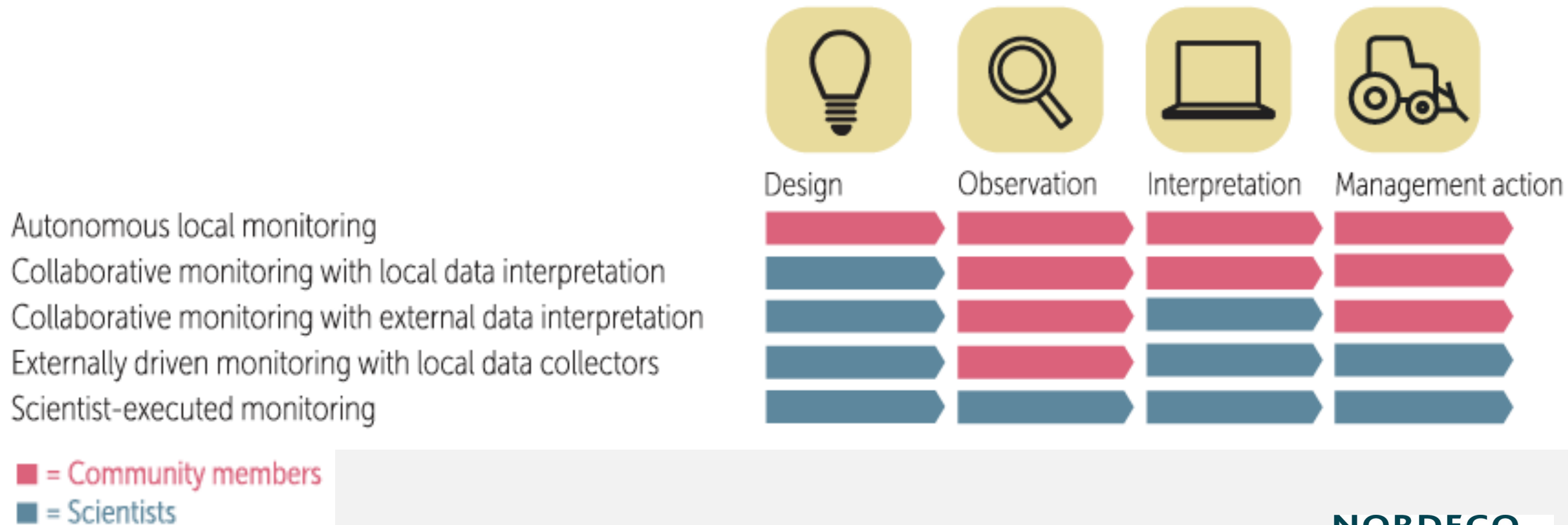
March 7-8 2019,
Longyearbyen, Svalbard



Spectrum of approaches to monitoring

“Community-based Monitoring” - Monitoring where community members are contributing with more than just observations

“Citizen-science” - Research and monitoring involving community members (often used when community members, citizens, only contribute with data gathering)

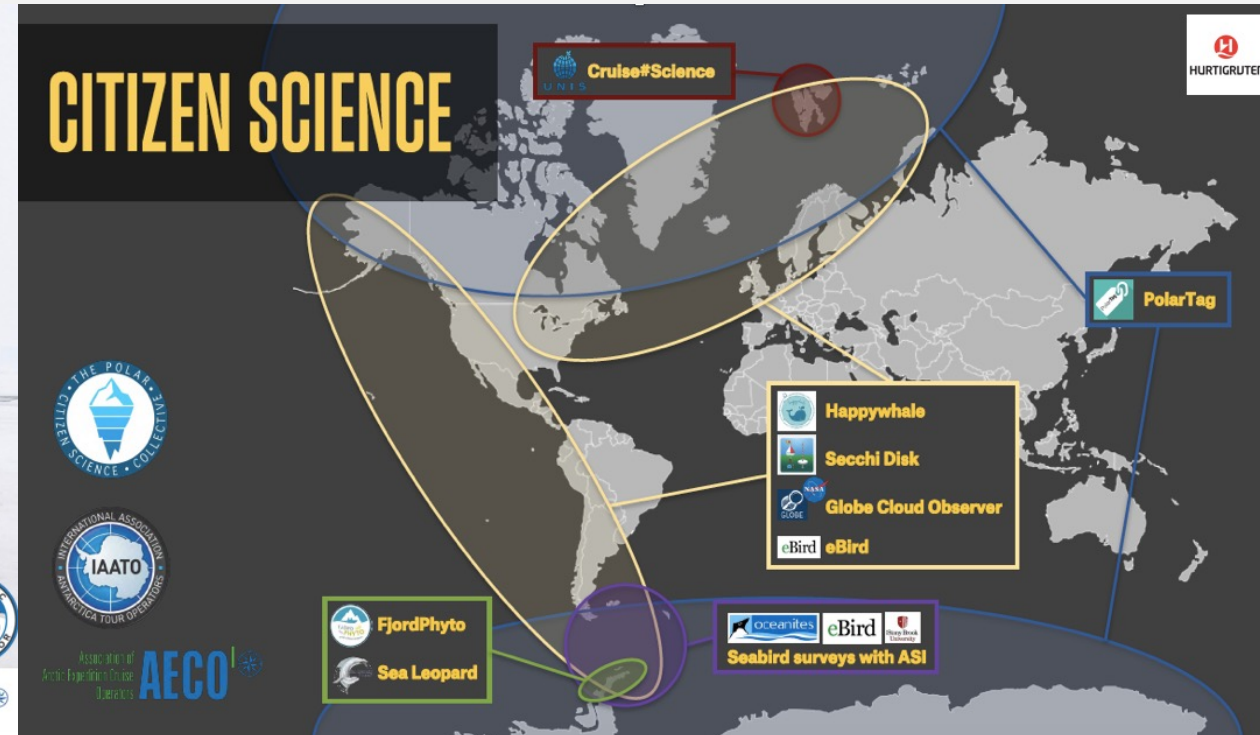


CRUISE EXPEDITION MONITORING WORKSHOP - 2019

- The INTAROS project and the Association of Arctic Expedition Cruise Operators (AECO) arranged a workshop in Longyearbyen in March 2019
- The participants were representatives of cruise operators, citizen science programs, local government and scientists.
- We wanted a better understanding of the existing use of CS by expedition cruises in Svalbard and to discuss what can be done to enhance these efforts.



COLLABORATION IN FACILITATING CITIZEN SCIENCE IN SVALBARD

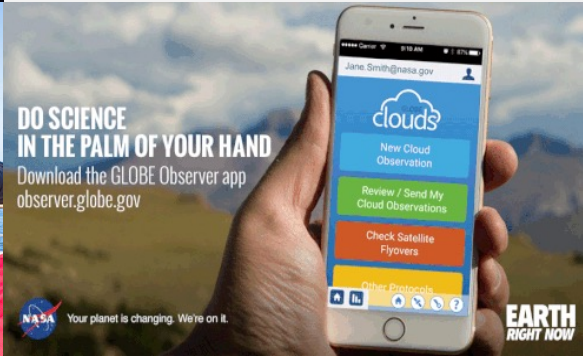
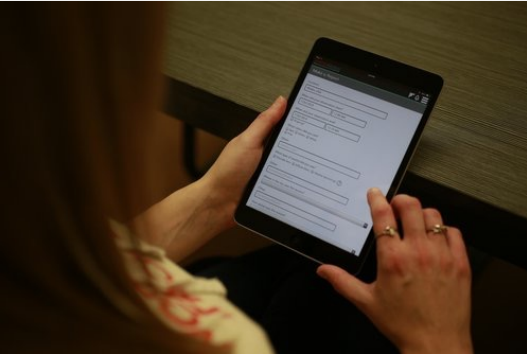


A group of scientists and expedition cruise experts have set up an organisation called the Polar Citizen Science Collective (www.polarcollective.org) which facilitates ship-based citizen science projects on IAATO and AECO vessels. Hurtigruten is one of the cruise operators getting deeply involved in developing citizen science.

- Also to be mentioned: "Cultcoast" and "Hearts in the Ice".

POLAR CS COLLECTIVE SUPPORTS CITIZEN SCIENCE PROJECTS (2022)

- **Aurorasaurus** - Track auroras around the world (scientific partner: NASA Science Activation)
- **NASA GLOBE Clouds** - Cloud Observations & Atmospheric Measurements (scientific partner: NASA GLOBE Observer)
- **Seabird Surveys** for the Antarctic Site Inventory (scientific partner: eBird)
- **Secchi Disk Study** - Long-term Changes of Phytoplankton (scientific partner: Secchi Disk Foundation)
- **Happywhale** - Marine Mammal Photo-ID (scientific partner: International Whaling Commission and multiple regional research partners)
- **FjordPhyto** Phytoplankton Sampling (scientific partner: Vernet Lab at Scripps Institution of Oceanography)



POPULAR CS PROGRAMS IN SVALBARD

(Updated 4 August 2022)

	Observations	Species	Observers
iNaturalist Worldwide	109,899,401	388,842	2,304,763
iNaturalist Svalbard	4,056	268	236
eBird Worldwide	*69,604,719	10,623	797,448
eBird Svalbard	*4,145	103	475
Artsobservasjoner Svalbard	102,544	1,220	656
Happywhale Worldwide	222,056	**111	12,667
Happywhale Svalbard	334	16	

GBIF 30.000 hold records from Svalbard (2021).

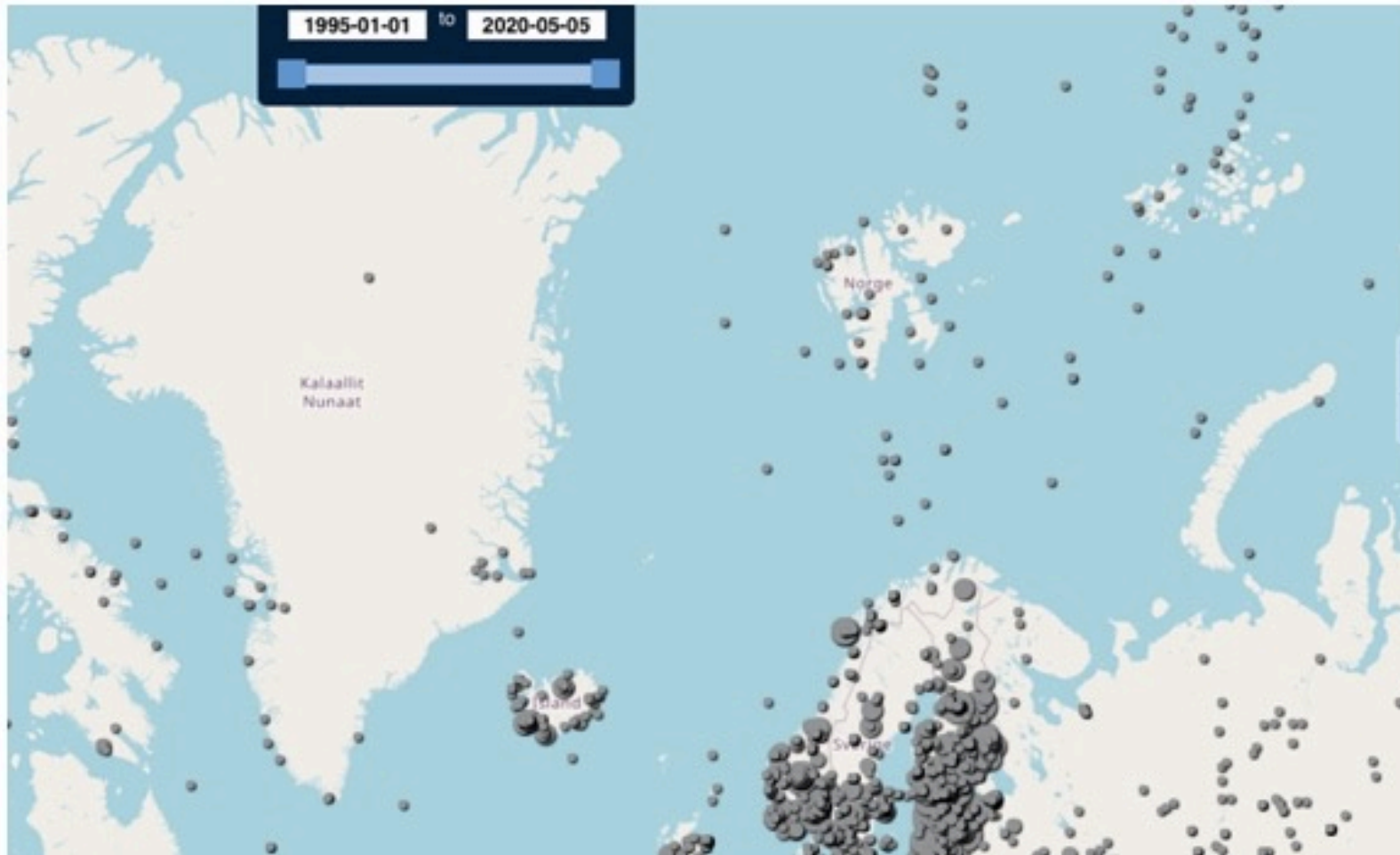
* for eBird is no. of observations = no. of checklists (with multiple species)

** Mostly Humpback Whale (with 207,222 records). 48 species with less than 10 records

GLOBE CLOUD OBSERVATIONS

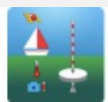


Participants are photographing clouds and recording sky observations, using the GLOBE Observer app, for comparison with NASA satellite data. Participants can time their observations of clouds with that of satellite observations. This will help refine satellite-derived models and enhance scientific understanding of Earth's atmosphere.



Sites in and around Svalbard with GLOBE Cloud Observations during 1995-May 2020.

SECCHI DISK



SECCHI DISK
THE GLOBAL SEAFARER STUDY
OF THE PHYTOPLANKTON
ARE YOU TAKING PART?

HOME

SECCHI DISK PROJECT

WHO ARE WE?

PRIVACY AND DATA POLICIES

☐ Define search boundary

☐ Limit by boat

Secchi Depth

From Date

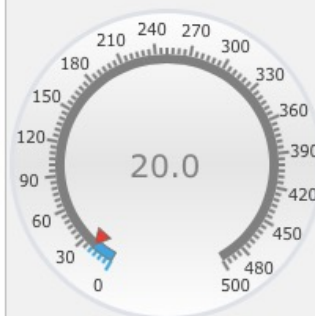
To Date

Free Search

Enter a Location

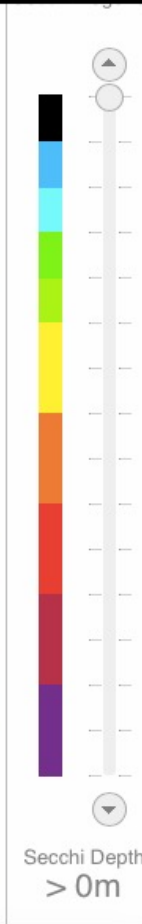
Radius around Free Search

Kilometers



FILTER

RESET



In 2013, the global citizen science Secchi Disk programme was established for seafarers to study the marine phytoplankton.

The Secchi disc is lowered slowly down in the water. The depth at which the disk is no longer visible is taken as a measure of the transparency of the water.

Sites in and around Svalbard with Secchi Disk measurements during 2013-2019.

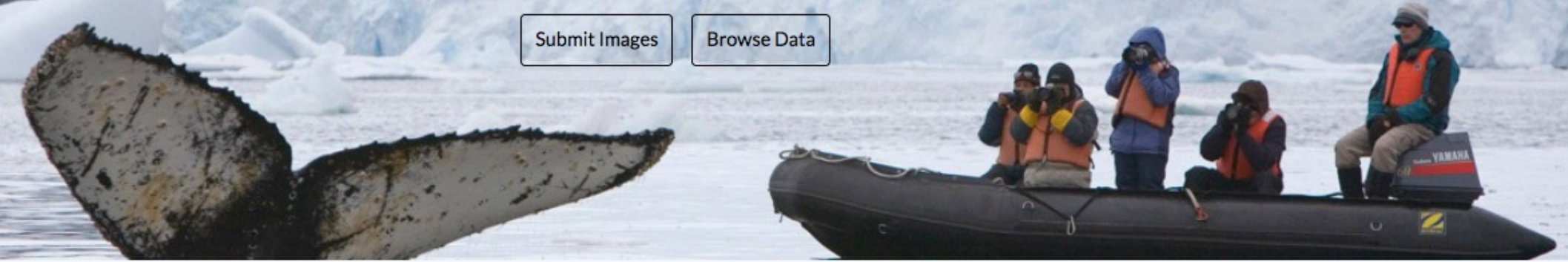
Happywhale

Your Whales as Individuals

Happywhale engages citizen scientists to identify individual marine mammals, for fun and for science

Submit Images

Browse Data



How It Works



You submit photos of your marine mammal encounters



Happywhale tracks your whales around the globe

Happywhale

Home Browse Stats Submit Images About Name Your Whale Support Us

happywhale



Users Individuals Encounters

Number: 80573

Furthest Traveled

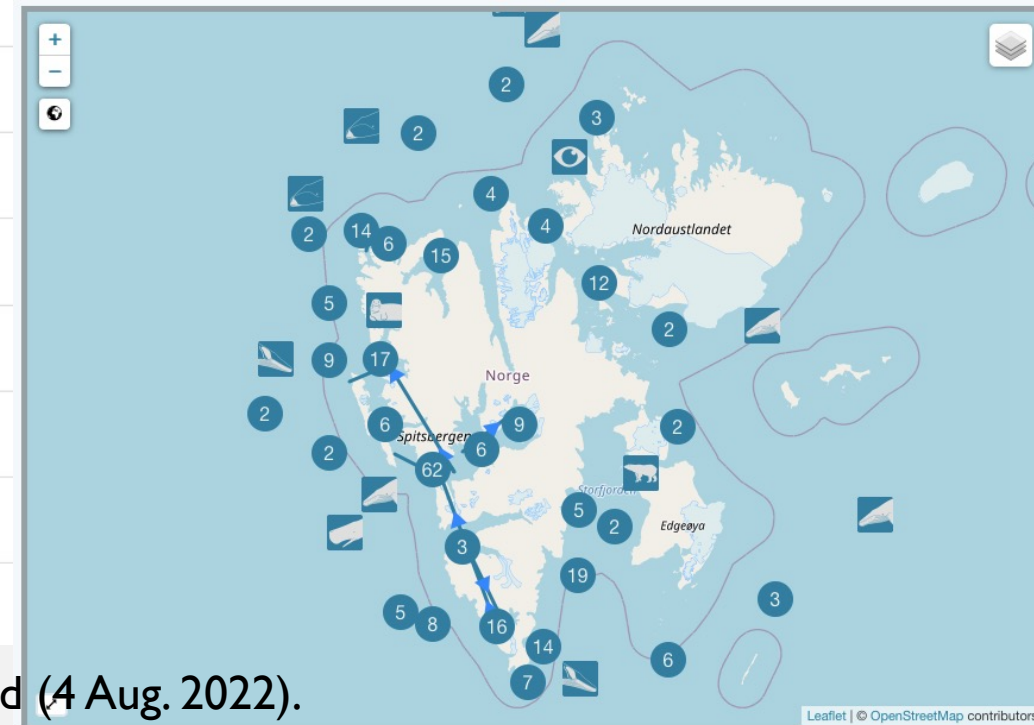
Individual		Distance (km)
	Humpback Whale Фродо (RCHP)	11261
	Humpback Whale ID: PAN-1814	11026
	Humpback Whale ID: HW-MN1300886	10931
	Humpback Whale ID: UABCS-MN2-04B0151	10531
	Humpback Whale Trans-Pacific	10338
	Humpback Whale ID: PAN-1249	9171
	Humpback Whale ID: SPWRC-TGVA0058	9143
	Humpback Whale Tongatapu Traveler	9117
	Humpback Whale ID: SPWRC-TGVA0240	9027
	Humpback Whale ID: HW-MN1300655	8621

Longest Time Between Sightings

Individual	Interval
	Humpback Whale ID: NA-1842 43.0 years
	Humpback Whale ID: NA-1904 42.7 years
	Humpback Whale ID: NA-1044 41.1 years
	Humpback Whale ID: NA-1745 41.0 years
	Humpback Whale ID: NA-1995 40.1 years
	Humpback Whale ID: NA-3085 40.1 years
	Humpback Whale ID: NA-1637 40.1 years
	Humpback Whale ID: NA-1751 40.1 years
	Humpback Whale Hepzibah 40.0 years
	Humpback Whale ID: NA-1101 40.0 years

Longest Time Between First and Last Sightings

Individual	Interval
	Humpback Whale Hepzibah 45.0 years
	Humpback Whale ID: NA-1842 43.0 years
	Humpback Whale Swazz (FS) 42.9 years
	Humpback Whale ID: NA-1904 42.8 years
	Humpback Whale ID: NA-0030 42.7 years
	Humpback Whale ID: NA-3160 42.6 years
	Humpback Whale ID: NA-1162 42.5 years
	Humpback Whale ID: NA-1044 42.4 years
	Humpback Whale ID: NA-1745 42.3 years
	Humpback Whale ID: NA-1965 42.2 years



A total of 234 encounters with 16 species of marine mammals from Svalbard (4 Aug. 2022).



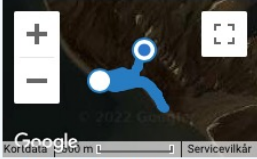
eBird: "Open access to eBird data is critical for conservation actions and we are committed to ensuring that your data will be put to the best use possible for research, conservation, and education".

Use a phone to track trip and record bird species for a checklist in eBird.
Photos and sound recordings can be added

103 Species observed	4154 Complete checklists	479 eBirders	124 Hotspots
Recent visits Checklists submitted within the last hour are not shown.			
NAME	DATE/TIME	LOCATION	SPECIES
Michael Køie Poulsen	7 Aug 2022 15:34	Longyearbyen, Svalbard	10
Marcus Bergström	7 Aug 2022 15:17	Nordvest-Spitsbergen NP--Fjortende Julibreen, Svalbard	11
Bernardo Alps	7 Aug 2022 13:30	Recherchefjorden, Svalbard, SJ (77.493, 14.688), Svalbard	7
Michael Køie Poulsen	7 Aug 2022 10:20	Hiorthamn, Svalbard	13
Michael Køie Poulsen	7 Aug 2022 10:10	Longearbyen Havn (Longearbyen Harbour), Svalbard	3
Michael Køie Poulsen	7 Aug 2022 09:12	Longearbyen, Svalbard	7
Marcus Bergström	7 Aug 2022 09:00	Ny-Ålesund, Svalbard	13
Bernardo Alps	7 Aug 2022 08:01	Bamsebu, Svalbard, NO (77.551, 15.063), Svalbard	10
Rémi Bigonneau	6 Aug 2022 15:41	Borebukta, Svalbard	9
Bernardo Alps	6 Aug 2022 14:32	Kronebreen, Kongsfjorden, Svalbard, NO (78.894, 12.539), Svalbard	7
Michael Køie Poulsen	6 Aug 2022 13:13	Longearbyen, Svalbard	2
Kini Roesler	5 Aug 2022 13:39	Kapp Lee, Svalbard	9
Michael Køie Poulsen	5 Aug 2022 13:25	Longearbyen, Svalbard	10

CHECKLIST S116477315
Sun 7 Aug 2022 10:20 AM [Edit date and effort](#)
Hiorthamn Svalbard, Svalbard [Edit location](#)

Michael Køie Poulsen [Share](#)
Traveling Complete
1 3 hr 2 km


Submitted from eBird for iOS, version 2.13.20
[Edit comments](#)

SUBMIT ANOTHER FOR...
Same location and date
Hiorthamn, Svalbard, SJ on Sun Aug 07, 2022
Same location
Hiorthamn, Svalbard, SJ
Same area and date
Another location near Hiorthamn, Svalbard, SJ on Sun Aug 07, 2022
Same area
Another location near Hiorthamn, Svalbard, SJ
Same date
Sun Aug 07, 2022
Different location and date

13
Species observed
202 individuals

70 Barnacle Goose
11 Common Eider
5 Rock Ptarmigan

4 Common Ringed Plover
2 adults with 2 puili
2 Dunlin
6 Purple Sandpiper
1 Parasitic Jaeger
8 Black Guillemot (mandtii)
5 Black-legged Kittiwake
55 Glaucous Gull
20 Arctic Tern

‘Our’ checklist from Hiorthamn

eBird [Submit](#) [Explore](#) [My eBird](#) [Science](#) [About](#) [News](#) [Help](#) [Donate](#) Michael Køie Poulsen (MichaelK Poulsen) Language

DATA FOR: World **LIST:** 7 Aug 2022 - Hiorthamn, Svalbard, SJ [Change species](#) [Common Eider](#) [Common Ringed Plover](#)

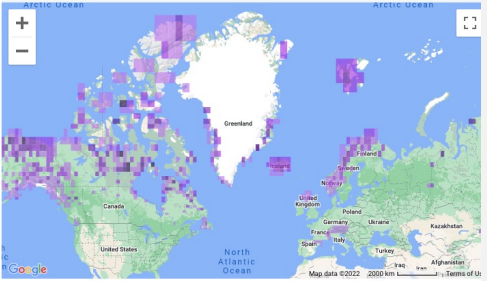
Rock Ptarmigan
Lagopus muta
LC Least Concern
[SEEN](#) [PHOTO](#) [AUDIO](#) [YEAR](#)


BREEDING MALE © Caleb Putnam eBird S47864849 Macaulay Library ML 113345131
HABITAT

Identification
POWERED BY MERLIN
Plump chickenlike bird found in rocky tundra and alpine summits. Plumage changes strikingly throughout the year. In winter, both sexes are pure white with black outer tail feathers. As summer progresses, male develops cold grayish-brown feathers on head, neck, and back; generally quite splotchy looking. Summer female is paler golden-brown with intricate black and white markings. Female nearly identical to Willow Ptarmigan; look for slightly smaller bill. Summer male Willow and Rock Ptarmigans can be separated by the colder grayish plumage on Rock Ptarmigan and in winter by the distinctive black eyeline on Rock Ptarmigan. Also note habitat differences. Best distinguished from White-tailed Ptarmigan by black outer tail feathers. Vocalizations include guttural groaning and clucking notes.

Statistics

Observations	With photos	With audio
2	2	0
15.431	1.690	68

Range Map
Large map


Weekly Bar Chart
Choose a region to view Weekly Bar Chart

Media All media My media
Top photos [View all](#)



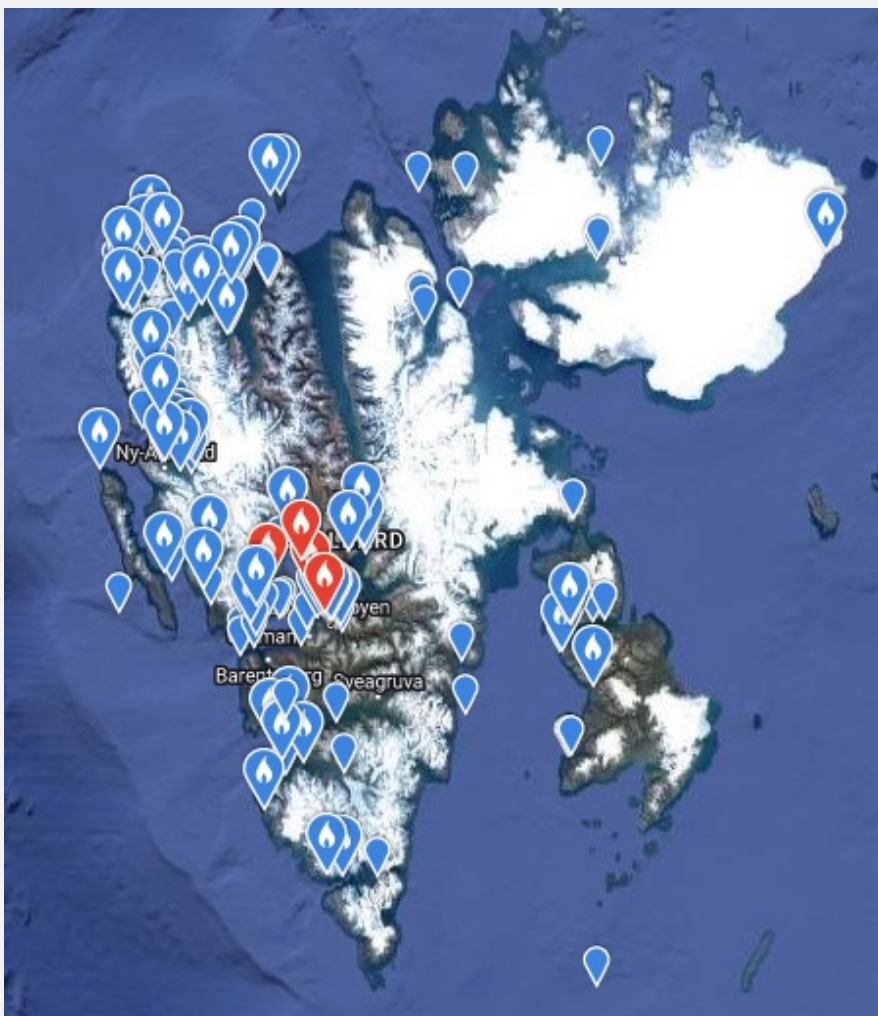



Rock Ptarmigan
Rock Ptarmigan
Rock Ptarmigan
Rock Ptarmigan
Rock Ptarmigan
Lagopus muta

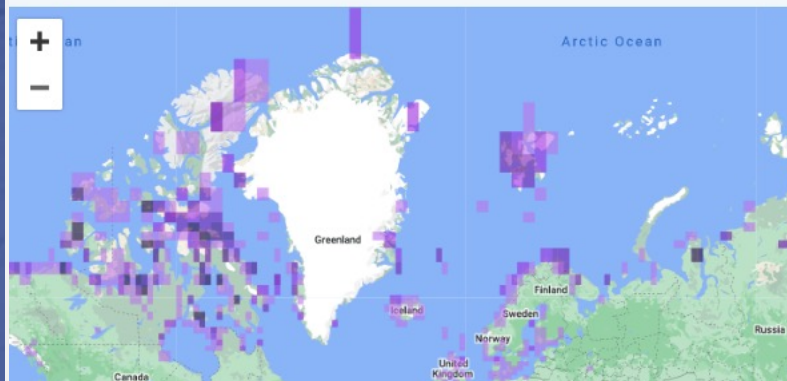
eBird info on Rock Partridge

Recent checklists from Svalbard

KING EIDER



Range Map



eBird King Eider distribution map



King Eider distribution map lacking Svalbard

Svalbard records of King Eider in eBird

ARTSOBSERVASJONER

Artsobservasjoner

Rapportsystem for arter

Home

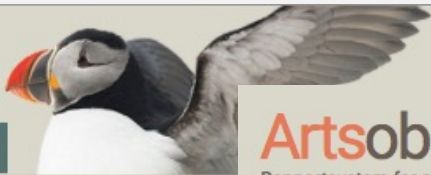
Submit sightings

Search sightings

Lists

Themes

Images



English (United Kingdom)

Artsobservasjoner

Rapportsystem for arter

Home

Submit sightings

Search sightings

Lists

Themes

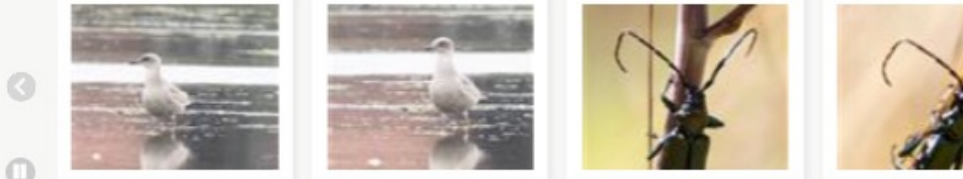
Images



Michael Kjøle Poulsen • Log out

My pages

Todays images



Todays sightings

OBSERVERT

SPECIES GROUP

Today



Yesterday

All



4265 Sightings

1124 Species



+ Add sighting

Review & publish (0 sightings)

Diary

Sighting properties

Species name

Dunlin

Calidris alpina (Linnaeus, 1758)

☐ Uncertain identification

☐ Unspontaneous

Insert date

Today Yesterday Now Last Reset

Start date:

05/08/2022

Start time:

HH:MM

End date:

05/08/2022

End time:

HH:MM

Quantity:

Unit:

Not for this taxon

Age/stage:

Gender:

Activity:

Foraging

Discovery method:

Not for this taxon

☐ Do not clear after saving

Public comment:

Private comment:

☐ Note of interest

☐ Not recovered

☐ Not present

Determination method:

Hide until:

DD/MM/YYYY

Length (mm):

Not for this taxon

Weight (g):

Not for this taxon

Site

Småbåthavna

Coordinates: E15.54319, N78.2388138 (±707m)

Geographic(WGS 84)

Related to parent site: Adventfjorden

Show sightings from this site

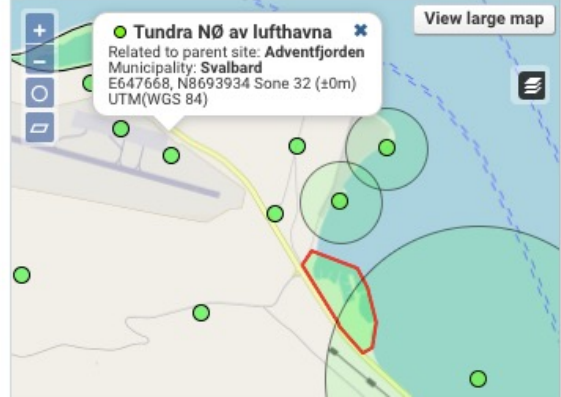
Map

New site

My sites

Favorites:

Search Site:





Keep Track

Record your encounters with other organisms and maintain life lists, all in the cloud.



Crowdsourcing Identifications

Connect with experts who can identify the organisms you observe.



Learn About Nature

Build your knowledge by talking with other naturalists and helping others.



Create Useful Data

Help scientists and resource managers understand when and where organisms occur.



Become a Citizen Scientist

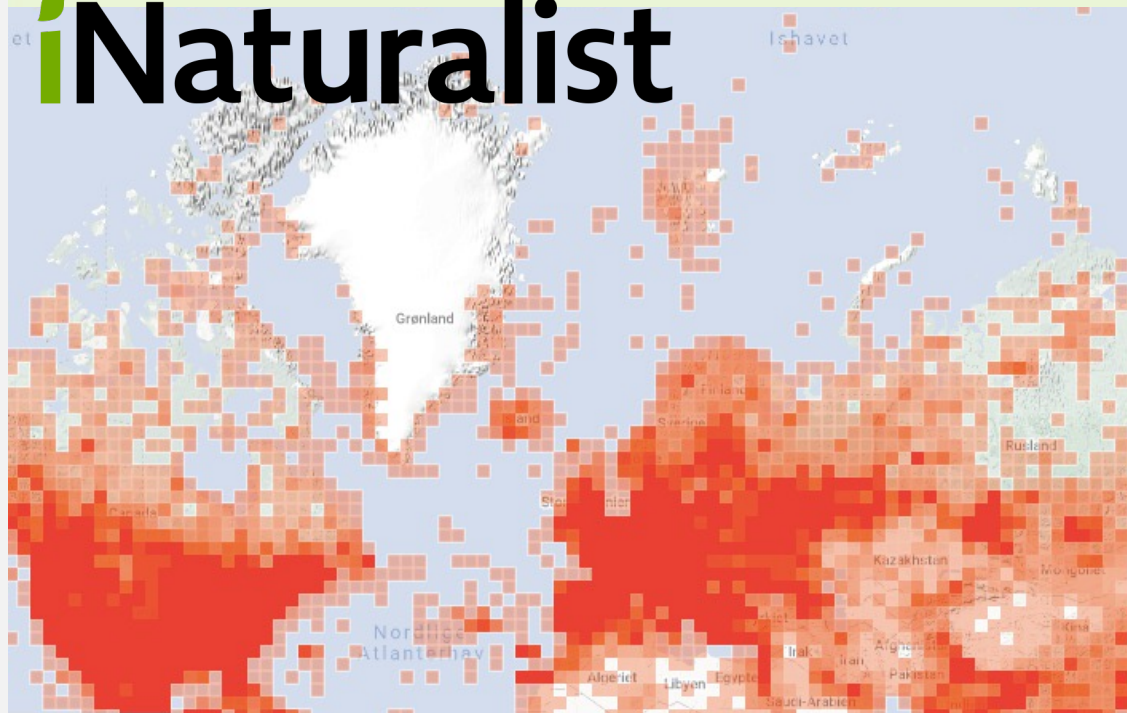
Find a project with a mission that interests you, or start your own.



Run a Bioblitz

Hold an event where people try to find as many species as possible.

iNaturalist



Geografisk område

2,670
OBSERVATIONER

163
ARTER

585
IDENTIFIKATORE

174
OBSERVATØRER

Kort

Gitter

Liste

Interessante steder

Gentag søgning på kort

Lagopus muta hyp...
Spitzb... • 15. okt 2021
forskningskvalitet 1 14d

Ride
(*Rissa tridactyla*)
Spitzb... • 3. okt 2021
forskningskvalitet 1 1må

Hvidnæse
(*Lagenorhynchus albiro...*)
Spitzb... • 3. okt 2021
forskningskvalitet 1 1må

Ride
(*Rissa tridactyla*)
Spitzb... • 3. okt 2021
forskningskvalitet 1 1må

Rensdyr



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Learn About Nature

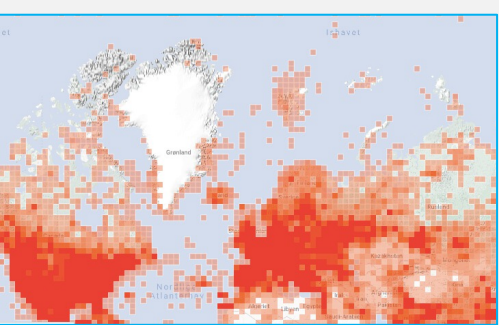
Build your knowledge by talking with other naturalists and helping others.



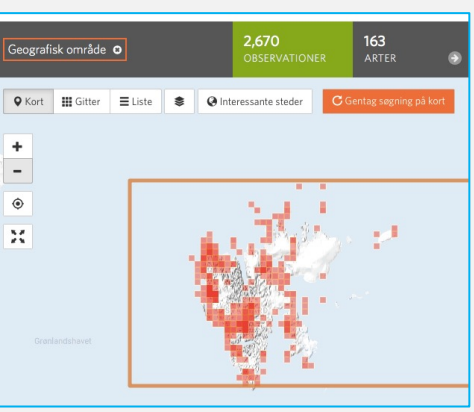
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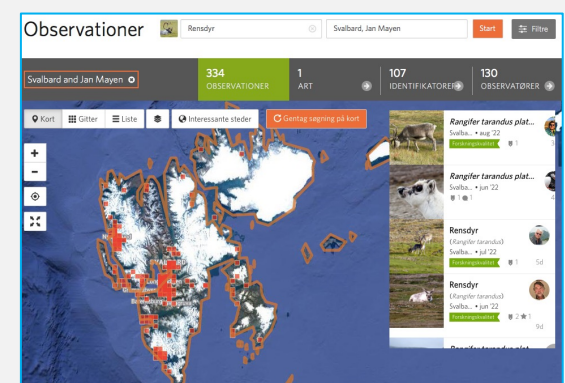
iNaturalist



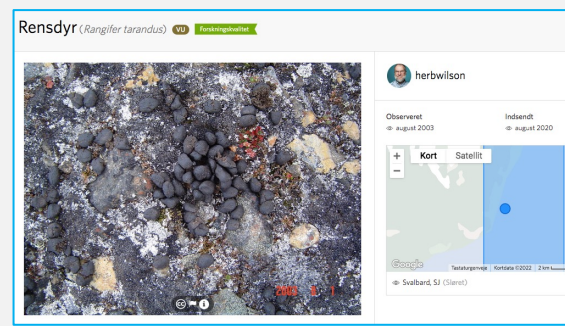
Density of iNaturalist observations



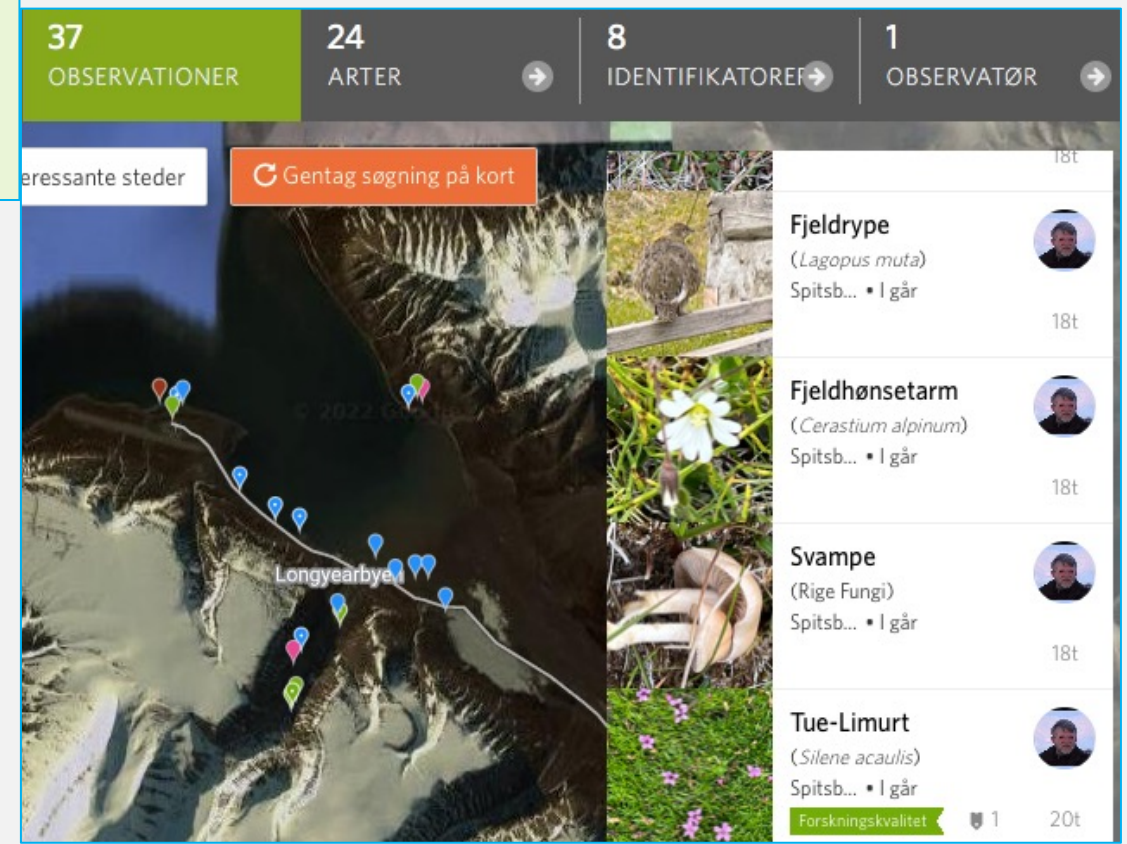
Density of iNaturalist observations, Svalbard



Reindeer observations from Svalbard in iNaturalist



One of the Reindeer observations from Svalbard in iNaturalist



iNaturalist showing some of 'our' observations from Hiorthamn

A RECENT “PROJECT” FROM SVALBARD IN NATURALIST



DIS AE SVALBARD 2022

JUL 11, 2022 - JUL 15, 2022

Om

Tilslut  1

Discover, identify and log species during our field trip to Svalbard.

[Læs mere >](#)

 Projektjournal

Overblik

64	45	21	8	 Statistik
OBSERVATIONER	ARTER	IDENTIFIKATORER	OBSERVATØRER	

Seneste observationer 

[Vis alle](#)



Papaver dahlianum

 1 21d



Fk

Havterne

Sterna paradisaea

 1 20d



Fk

Stor Præstekrave

Charadrius hiaticula

 1 20d

iNaturalist can be used for Bioblitz

CITY NATURE CHALLENGE BORN, LUXEMBOURG 30 APR. – 1 MAY 2021

Ramborn Orchard Hiking

701
OBSERVATIONS

249
ESPÈCES

129
IDENTIFICATEURS

72
OBSERVATEURS

CarteGrilleListeEndroits intéressants

Refaire la recherche sur la carte





Ixodes ricinus
(Tique du Mouton)
Born, Mompach, Dis... • Hier
1h



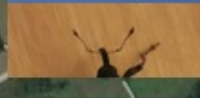
Genre *Heracleum*
Born, Mompach, Dis... • Hier
1



Pararge aegeria
(Tircis)
Born, Mompach, Dis... • Hier
Niveau de recherche 1
1h



Buteo buteo
(Buse Variable)
Born, Pétzwee, 666... • Hier
Niveau de recherche 1
13 h



Nedys quadrimaculatus





SYSSELMESTEREN PÅ SVALBARD – THE GOVERNOR OF SVALBARD

Reporting hunting and fishing activities is mandatory

- You are required to submit hunting, trapping and fishing reports in Svalbard.
- There is a large potential for expanding the use of CS to contribute to the basis for environmental policies and management decisions.