

Data sharing between Community-based observing systems and scientific observations

Stein Sandven, Nansen Environmental and Remote Sensing Center, Bergen, Norway

Finn Danielsen, NORDECO, Copenhagen, Denmark

Torill Hamre, Nansen Environmental and Remote Sensing Center, Bergen, Norway

Lisbeth Iversen, Nansen Environmental and Remote Sensing Center, Bergen, Norway

How to advance Community-based observing in the Arctic and what is done in the H2020 INTAROS and CAPARDUS projects

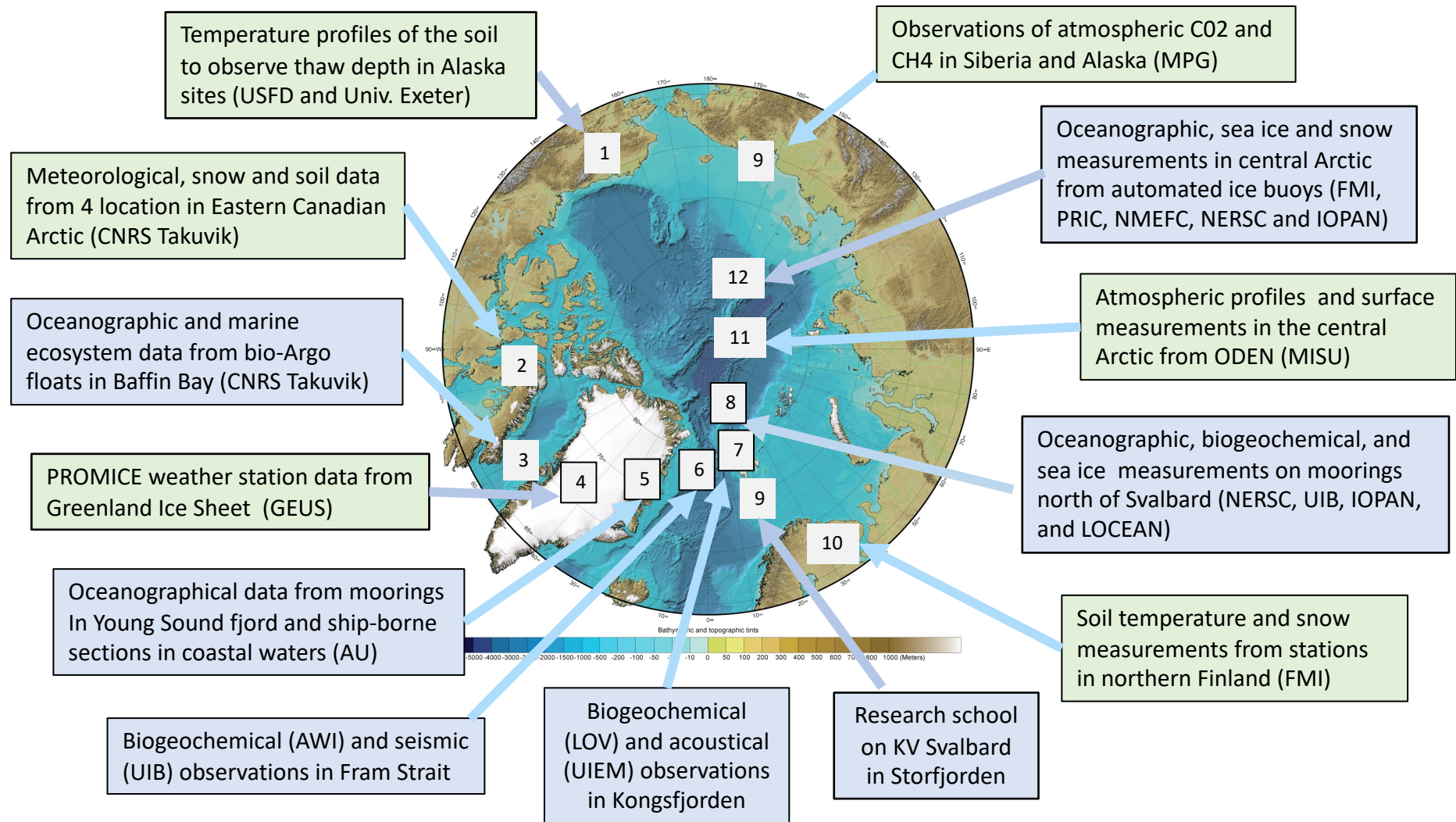
The INTAROS project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727890. The CAPARDUS project has similarly received funding under grant agreement no. 869673

Arctic Science Summit Week 2021

Session ID:25 - Experiences in Sustaining Collaborative Arctic Research Teams (2)

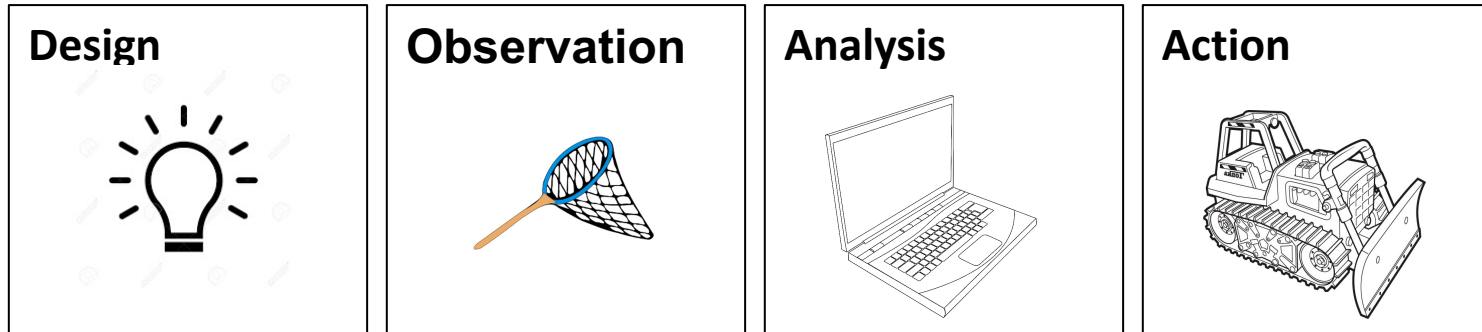
Thursday 25 March 1530-1830 CET

INTAROS scientific data collection in 2017-2021

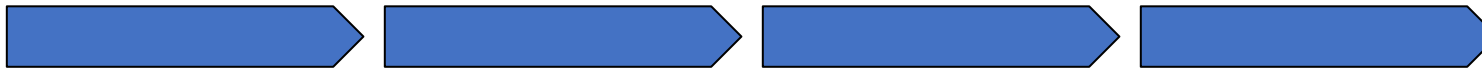


INTAROS collaborates with a number of national and international **research projects** and **monitoring programmes** across the Arctic region

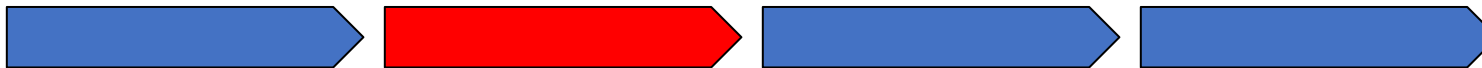
Citizen science and community-based observing



Scientist-executed

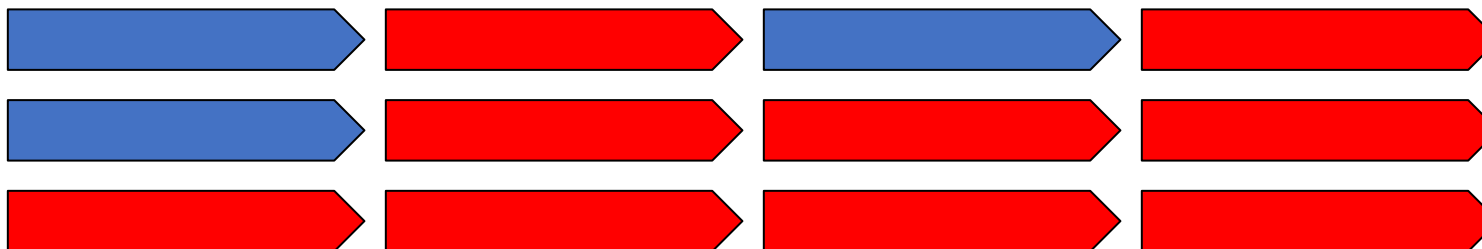


"Contributory citizen science"



The most
widespread in
W Europe

"Collaborative / Co-Created citizen science"



Community-
based
observing in
the Arctic



Principles regarding collection, use and sharing of data

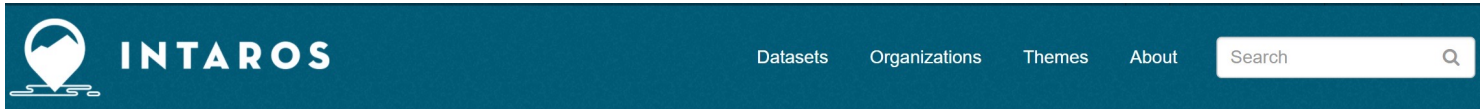
- FAIR (Findable Accessible, Interoperable, Reusable) (Wilkinson et al., 2016). [Guiding Principles for scientific data management and stewardship'](#)
- CARE (Collective benefit; Authority to control; Responsibility; Ethics) (GIDA, 2020). Principles of Indigenous Data Governance.
- For CBM and other data which involves humans from local communities EU-projects have additional requirements to a) Free, Prior, and Informed Consent, b) Inclusion criteria and c) Consent withdrawal procedure.



Overview of reviewed CBM systems

	Disko Bay	Svalbard	Other areas	
PISUNA	+			https://eloka-arctic.org/pisuna-net/en
Yakutia Community-Based Monitoring Program (CSIPN)			+	http://www.intaros.eu/media/1650/process-report-yakutia-cbm-dec-2019-final.pdf
Happywhale	+	+	+	https://happywhale.com/browse
eBird	+	+	+	https://ebird.org/science/download-ebird-data-products
Secchi Disk Study	+	+	+	https://www.playingwithdata.com/secchi-disk-project/
GLOBE Observer Clouds	+	+	+	https://observer.globe.gov/get-data/clouds-data
Alaska Arctic Observatory & Knowledge Hub			+	https://eloka-arctic.org/sizonet/
Yukon River Inter-Tribal Watershed Council			+	https://yukon.next.fieldscope.org/
Piniarneq	+		+	https://www.sullissivik.gl/
Pilot Whale Statistics in the Faroe Islands			+	https://heimabeiti.fo/hagtol
Citizen Seismology Program	+	+		https://www.geus.dk/natur-og-klima/jordskaelv-og-seismologi/registrerede-jordskaelv-i-groenland/
Snow Depth Measurements Citizen Science Program			+	Contact e-mail: achim.drebs@fmi.fi
Sea Ice for Walrus Outlook			+	https://www.arcus.org/siwo/resources

INTAROS Data Catalog



Search data

E.g. environment



Popular tags

CBM

citizen science

ocean temperature

INTAROS Data Catalogue statistics

132 datasets

37 organizations

0 themes

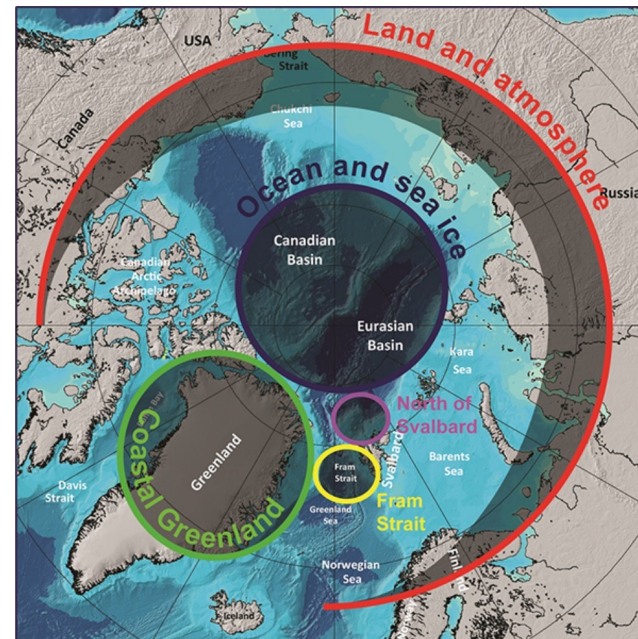
Community Based Monitoring datasets and programs

INTAROS is working closely with several local communities and citizen science programs across the Arctic. In one of these programs, INTAROS partner GEUS is collaborating with the municipality in Qeqertalik, Greenland, to collect information on seismic activity. A pilot program with seismic stations operated by local community members have been established, and the data collected feeds into the Raspberry Shake Community and the GEUS' earthquake bulletin. A data portal shown in image below gives access to the seismic data from this community. This and other CBM datasets can be found [here](#).



Welcome to the INTAROS data catalogue

INTAROS collects data within key regions of the Arctic, and provides access to these datasets and other datasets of relevance to our targeted stakeholders. This Data Catalog contains descriptions of collected, derived and estimated datasets that are generated within the project.



<https://catalog-intaros.nersc.no/>



INTAROS



🏠 / Datasets

🔼 Organizations

NORDECO **6**

Cornell Lab of Ornithology **1**

CSIPN **1**

Finnish Meteorological Institute **1**

GEUS **1**

Húsavík Research Centre **1**

PISUNA **1**

UiT The Arctic University of Norway **1**

University of Alaska Fairbanks **1**

University of the Faroe Islands **1**

[Show More Organizations](#)

🔼 Themes

There are no Themes that match this search

🔼 Tags

CBM **16**

citizen science **12**

environment **9**

[+ Add Dataset](#)



16 datasets found for "CBM"

Order by:

Relevance



Yakutia CBM

Since 2017, Indigenous peoples' communities in Yakutia, Russia, have been monitoring the environment using community-based monitoring (CBM) approaches. These efforts have helped...

[PDF](#)

Spotter Pro Marine Mammal Records

Spotter Pro is a global citizen science program using an app for recording marine mammals from ships of opportunity. The dataset can enable a better understanding of whale...

Citizen seismology program, Qeqertalik, Greenland

In the Qeqertalik municipality of Greenland, INTAROS has established pilot community based seismic stations for cryo- and tectonic seismological recordings, led by GEUS. The...

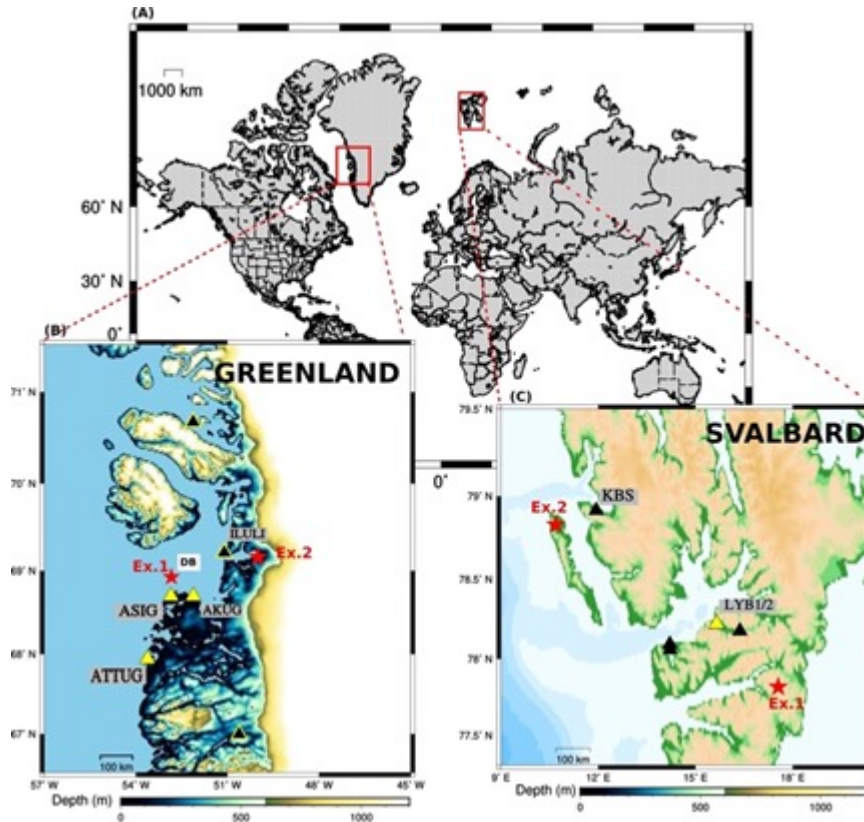
[PNG](#)

Pilot Whale Statistics

The Faroese have accurate statistics of whale catches dating back to 1584. These are most probably the longest continuous statistics for the use of wildlife anywhere in the...



Example: seismology – automated system



GEUS set up a pilot program to collect seismic activity in Disko Bay, Greenland

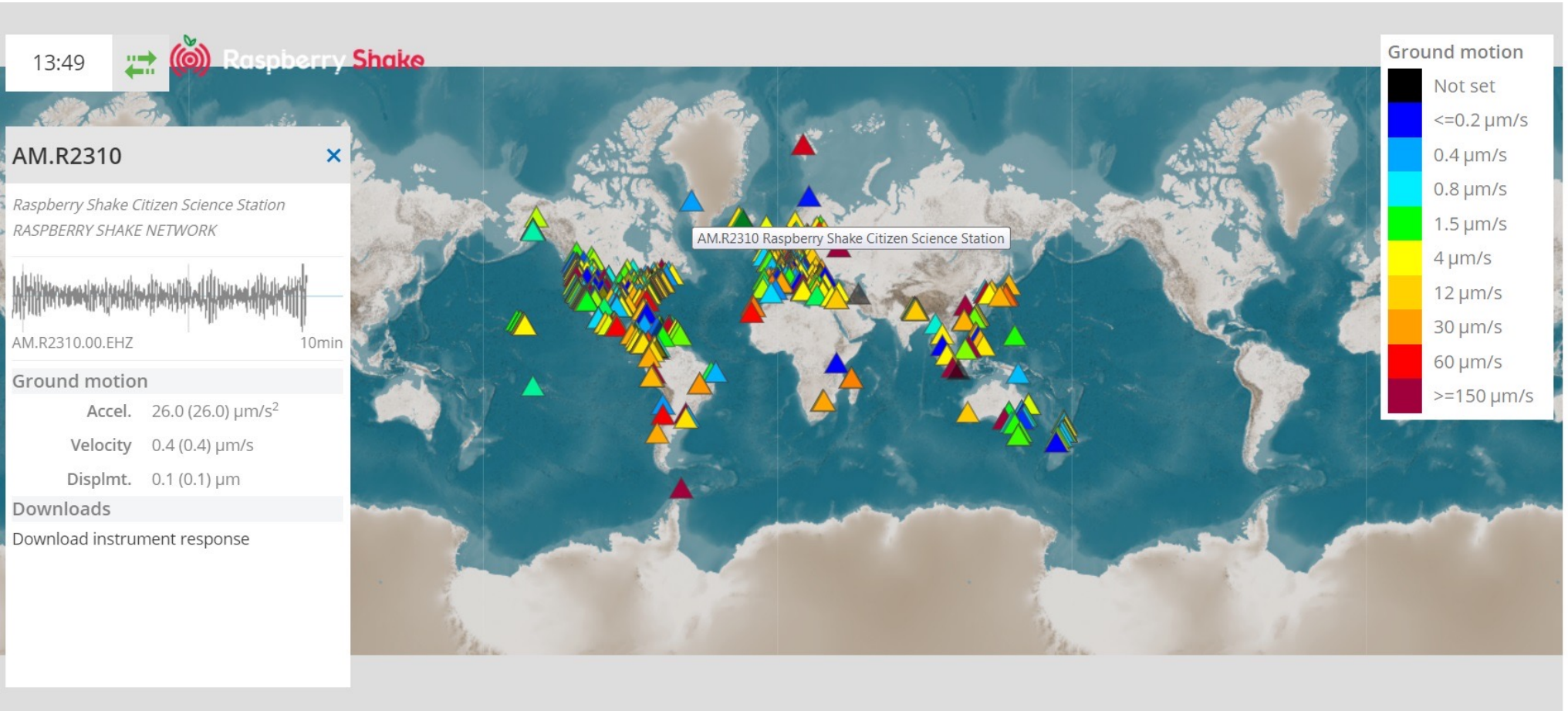


Gerth Olsen, Akunnaaq, with seismograph before connecting it to electricity and a router and placing it on the rock below his house. Photo: F. Danielsen.

Jeddi, Z. *et al.* (2020). Citizen Seismology in the Arctic. *Frontiers Earth Science* 8: 139.



Accessing seismology data in Raspberry Shake community portal



<https://stationview.raspberrysshake.org/>



INTAROS

Greenland: Community-based monitoring of land and marine ecosystems

PISUNA-net: Connecting top-down and bottom-up approaches



Focus group discussions with
experienced fishers and hunters



PISUNA-net in Greenland

Improved detection and data support for understanding trends in resources

Date	Coordinator	Community	Additional elements noted (leg
2019-12	Per Ole Frederiksen	Attu	↓ §? 🐳
2019-12	Per Ole Frederiksen	Attu	↓ 🐳 §?
2019-12	Per Ole Frederiksen	Attu	↓ 🐟 §?
2019-11	Per Ole Frederiksen	Attu	↓ 🐳 §?
2019-11	Per Ole Frederiksen	Attu	↑ §? 🐳
2019-11	Per Ole Frederiksen	Attu	↓ 🐟 §?
2019-10	Per Ole Frederiksen	Attu	§? 🐳
2019-10	Per Ole Frederiksen	Attu	↓ 🐳 §?
2019-10	Per Ole Frederiksen	Attu	↓ 🐟 §?
2019-09	Per Ole Frederiksen	Attu	↓ 🐳
2019-09	Per Ole Frederiksen	Attu	↓ §? 🐳
2019-09	Per Ole Frederiksen	Attu	↓ 🐳 §?
2019-09	Per Ole Frederiksen	Attu	🌳 ↔ §?
2019-09	Per Ole Frederiksen	Attu	↑
2019-09	Per Ole Frederiksen	Attu	↓ 🐟 §?
2019-09	Per Ole Frederiksen	Attu	↑ 🐳

Search the observations catalog:



Search for:

AND: All coordinators

AND: All communities

AND: All living resources

Date range: 2009-05-01 to 2020-09-01



Yakutia: Example of CBM observations of wildlife resources

- Use of reporting matrices, where several CBM groups provide data
- In native language (below is an example of translation to English)

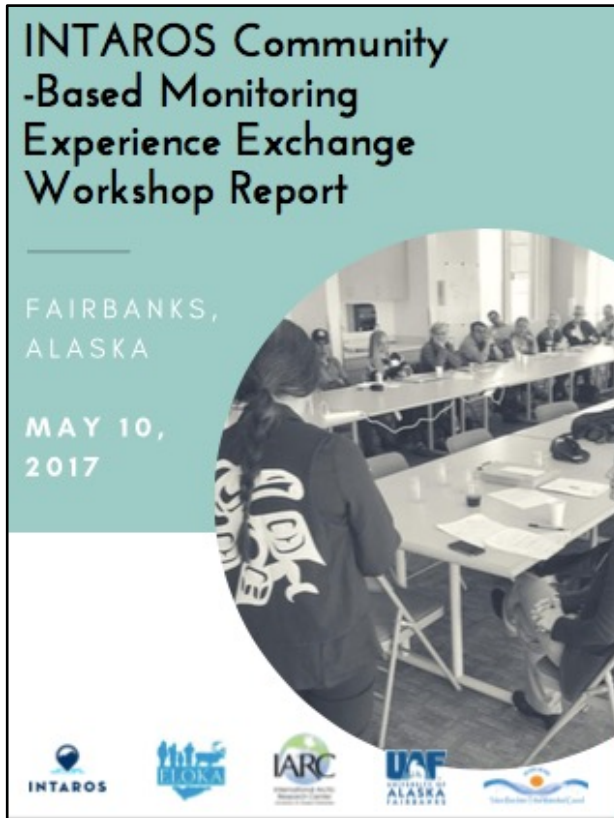
ZHIGANSK (Sakha Republic - Yakutia)

Name of coordinator: Ms. Lidiya Atlasova							Year, quarter: 2017, 4th quarter						
Village/community name: Zhigansk village, Sakha Republic (Yakutia)							Tendency*				Comments re. number, size of animals, first/last sightings etc.	Possible meaning and explanation of tendency *	Ideas for action and recommendations on management
Resources/ Resource use	Month	Locality	Total number of trips	Number seen	Catch total	Method	No change	More	Fewer	Don't know			
Moose	October	Zhigansk surroundings	15	1	0				*		Only a few tracks were registered	Just do not come across to the observer	No comments
	November	Zhigansk surroundings	16	1	0				*				
	December	Zhigansk surroundings	14	0	0				*				

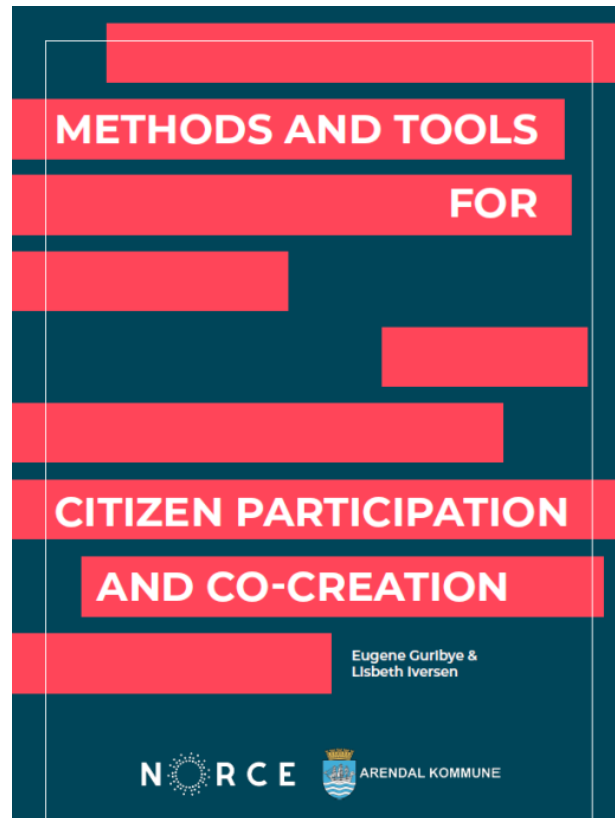
Citation: Enghoff, M., Vronski, N., Shadrin, V., Sulyandziga, R., Danielsen, F. 2019. INTAROS Community-Based Monitoring Capacity Development Process in Yakutia and Komi Republic, Arctic Russia. CSIPN, RIPOSR, NORDECO and INTAROS.



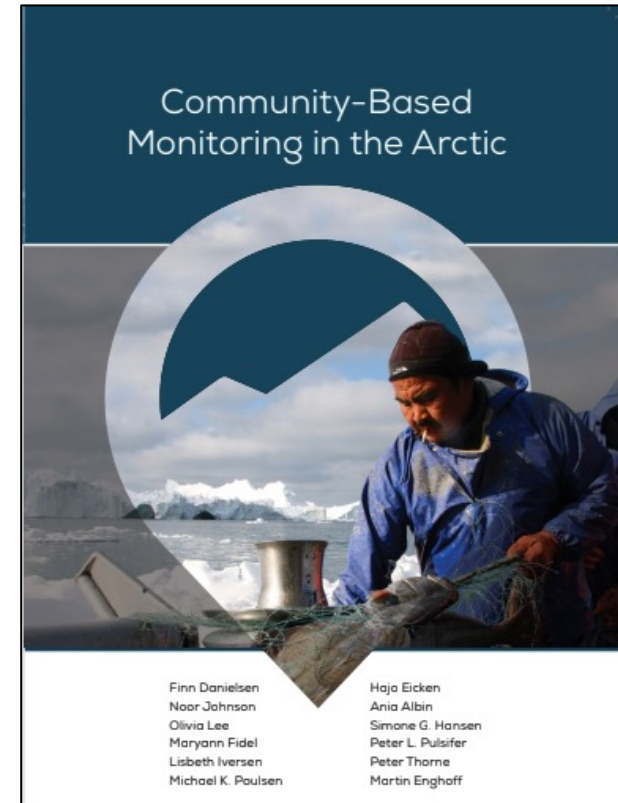
Further reading



<http://www.intaros.eu/>
<http://eloka-arctic.org/content/reports>



https://drive.google.com/file/d/1yfEmTcFv37qaipMIY0bXzJ_Xdf_o dBmE/view?usp=sharing



Danielsen et al. (2020). Univ.
Alaska Press. 116p.

Further work in related to CBM

- Document practices, guidelines, standards and regulations within selected themes in different Arctic communities
- The themes include observing systems (in particular CBM), data systems, ethics, norms and responsible research
- Important themes in various local communities are natural resource management, tourism, shipping, safety of operations, community planning and decision making
- Organise dialogue meetings and workshops with researchers, service providers, Indigenous and local communities, commercial operators and governance bodies to develop a Roadmap for an Arctic Practice System (building on Ocean Best Practice System)

