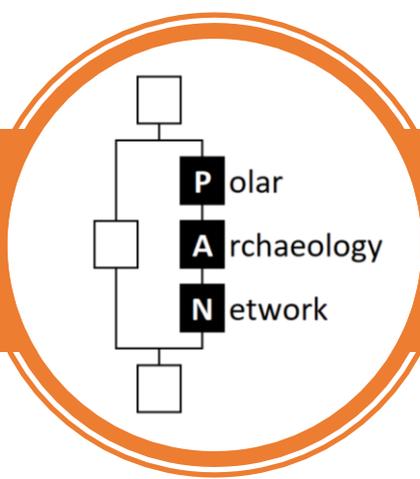


Via ZOOM, 15 September 2021



Polar Hour 2021

An online series of alternating science talks and coffee breaks
For Members and Friends of the Polar Archaeology Network

Do past human-walrus interactions have
anything to offer Svalbard?

Dr. Frigga Kruse, fkruise@ecology.uni-kiel.de
Institute for Ecosystem Research, Kiel University, GER
PAN Chair



zenodo

<https://arcticportal.org/community>

The screenshot shows the Arctic Portal website's community page. At the top, there is a dark blue header with the Arctic Portal logo (a white bird in flight) and the text "ARCTIC PORTAL" and "THE ARCTIC GATEWAY". To the right of the header are links for "Portfolio", "Services", and "Contacts", and a search bar. Below the header is a navigation menu with links: "Home", "About Us", "Community", "Portlets", "Maps", "Science", "Governance", "Library", "Calendar", and "Search". The main content area displays a grid of 24 partner logos, each with its name underneath. The logos include: METEO FRANCE, NERC - British Antarctic Survey (BAS), NERSC, NIBIO, NCU, Nofima, The Northern Forum, Northern Research Forum, NORSK-POLARINSTITUTT, NILU, Norwegian Meteorological Institute, NORCE, NSF, NSIDC, PAG, PAN, PAGE21, Polar Law Institute, PYRN, The Russian Academy of Science, Sámi Education Institute, SAON, SCAR, SPRI, University of Cambridge, SEARCH, Swedish Polar Research Secretariat, Tromsø Centre for Remote Sensing / University of Tromsø, Université Catholique de Louvain, UMEÅ UNIVERSITET, and UNEP/GRID-Arendal.

Click on the logo to go to the PAN Landing Page.

https://zenodo.org/

The screenshot shows the top navigation bar of the Zenodo website. The Zenodo logo is on the left, followed by a search bar with a magnifying glass icon. To the right of the search bar are links for 'Upload' and 'Communities', with 'Communities' circled in red. Further right are 'Log in' and 'Sign up' buttons. Below the navigation bar is a section titled 'Featured communities'. On the right side of this section is a link that says 'Need help uploading? Contact us'. The main featured community is 'Coronavirus Disease Research Community - COVID-19'. It includes a circular image of a coronavirus particle, a 'Browse' button, and a green 'New upload' button. The description states: 'This community collects research outputs that may be relevant to the Coronavirus Disease (COVID-19) or the SARS-CoV-2. Scientists are encouraged to upload their outcome in this collection to facilitate sharing and discovery of information. Although Open Access articles and datasets are...'. It is 'Curated by: Covid19_Team_OpenAIRE'.

Recent uploads

September 13, 2021 (v2.0) Software Open Access

View

The-Kirby-Institute/covid19-closed-pop-models: Version 2.0 of the COVID-19 Excel spreadsheet model

Richard T. Gray; amyjisoo

Release of Version 2.0 of the COVID-19 Excel spreadsheet model developed by researchers at the Kirby Institute. This version includes an update of the model to include vaccination.

Uploaded on September 13, 2021

3 more version(s) exist for this record

September 12, 2021 (v59) Dataset Open Access

View

BIP4COVID19: Impact metrics and indicators for coronavirus related publications

Thanasis Vergoulis; Ilias Kanellos; Serafeim Chatzopoulos; Danae Pla Karidi; Theodore Dalamagas

This dataset contains impact metrics and indicators for a set of publications that are related to the COVID-19 infectious disease and the coronavirus that causes it. It is based on: The COR-19 dataset released by the team of Semantic Scholar1 and The curated data provided by the LitCovid hub2...

Uploaded on September 12, 2021

66 more version(s) exist for this record

Need help?

Contact us

Zenodo prioritizes all requested related to the COVID-19 outbreak.

We can help with:

- Uploading your research data, software, preprints, etc.
- One-on-one with Zenodo supporters.
- Quota increases beyond our default policy.
- Scripts for automated uploading of larger datasets.

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- **Trusted** – built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
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Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

https://zenodo.org/

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Polar Archaeology

Recent uploads

Search Polar Archaeology

September 3, 2021 (v1) Poster Open Access View

PAN polar hour 2021. September issue
Müller-Hillebrand, Janosch; Kruse, Frigga;
Poster No. 2102 of the PAN Poster Series.
Uploaded on September 3, 2021

August 27, 2021 (v1) Poster Open Access View

PAN Polar Hour 2021. Sneak preview
Müller-Hillebrand, Janosch; Kruse, Frigga;
Poster No. 2101 in the PAN Poster Series
Uploaded on August 27, 2021

More

New upload

Community

Polar Archaeology Network

Polar Archaeology

This community was set up by the then Chair of the **Polar Archaeology Network (PAN)** in August 2021 as a key service to our growing global membership. You do not need to be a member of PAN in order to find your audience with us and reach out to them. We welcome uploads with a scientific or educational focus on archaeology or cultural heritage in the Polar Regions.

Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

https://zenodo.org/

The screenshot shows the Zenodo interface for a specific record. At the top, the Zenodo logo is on the left, followed by a search bar and navigation links for 'Upload' and 'Communities'. On the right, there are 'Log in' and 'Sign up' buttons. The main content area features the date 'August 27, 2021', the title 'PAN Polar Hour 2021. Sneak preview', and the authors 'Müller-Hillebrand, Janosch; Kruse, Frigga'. A 'Poster' tag and an 'Open Access' badge are visible. To the right of the title, statistics show 76 views and 76 downloads. Below the title, a 'Preview' section displays a PDF viewer with a poster image. The poster includes the text 'Sneak Preview', 'Polar Hour 2021', 'An online series of alternating science talks and coffee breaks For Members and Friends of the Polar Archaeology Network', and 'Questions in Polar Archaeology: Wed., 15 September 2021'. To the right of the preview, an 'Indexed in' section shows the 'OpenAIRE' logo. Below that, a 'Publication date' of August 27, 2021, and a 'DOI' of 10.5281/zenodo.5287007 are listed. 'Keyword(s)' include 'archaeology, science communication'. The 'Communities' section lists 'Polar Archaeology'. The 'License (for files)' is 'Creative Commons Attribution 4.0 International'. At the bottom right, a 'Versions' section shows 'Version 1' with the DOI 10.5281/zenodo.5287007 circled in red. Below the preview, a 'Files' section shows a PDF file 'Müller-Hillebrand and Kruse (2021) PAN polar hour 2021. Sneak preview (Poster No. 2101).pdf' with a size of 978.4 kB and options for 'Preview' and 'Download'. A 'Citations' section at the bottom left shows 0 citations.

Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

Centre stage: Atlantic walrus



Walrus safari to Borebukta - Hurtigruten Svalbard
Longyearbyen
Join us on a fun boat trip to Borebukta. The home of the odd animals with long teeth.

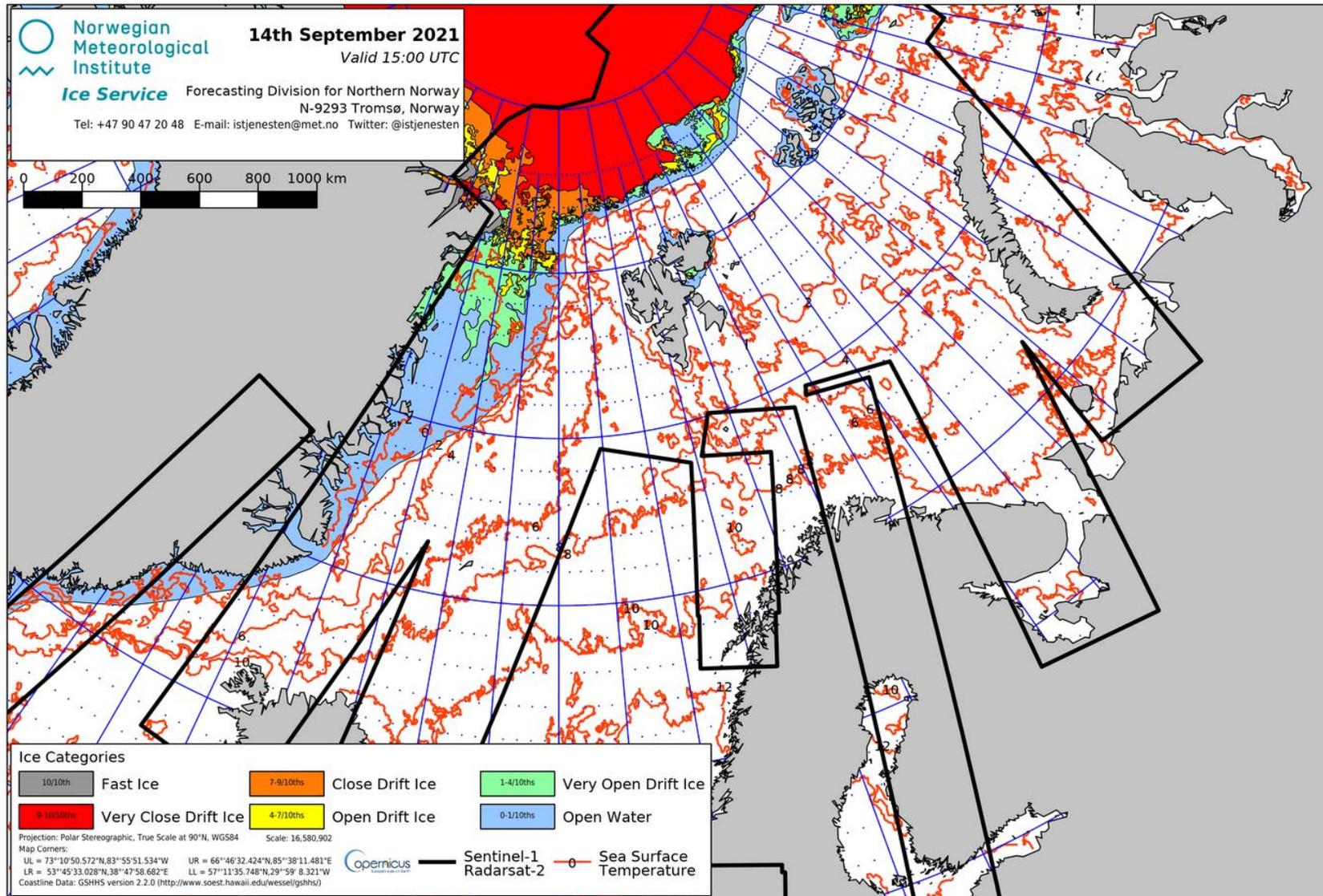
2

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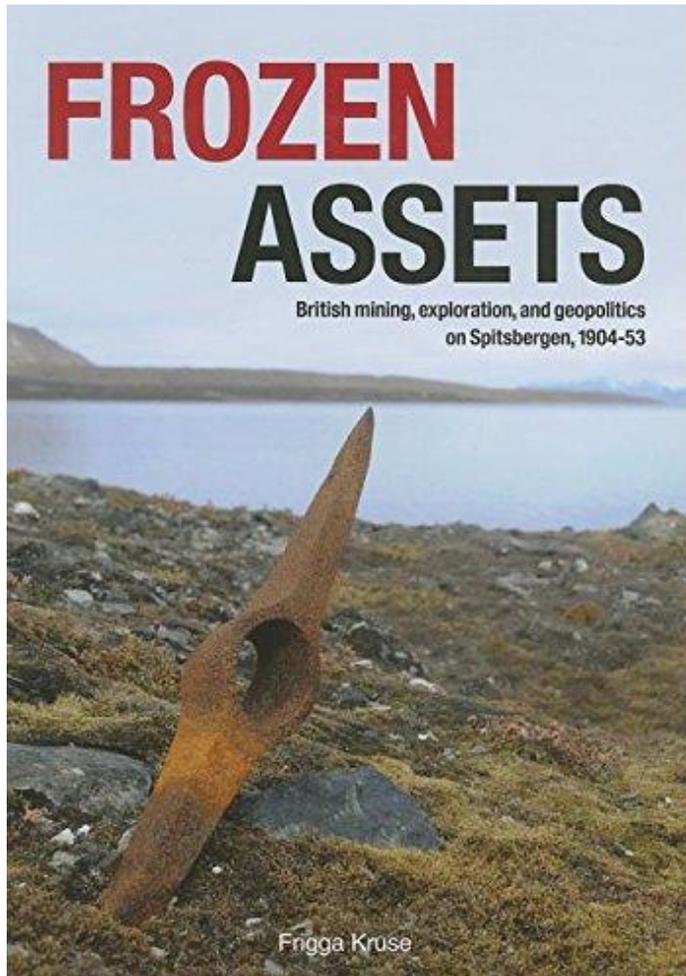
Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

Centre stage: Svalbard



Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

Context: My previous research in Svalbard



- PhD research (2008 – 2012) on British **mining history** and **industrial archaeology**
- Kruse, F. (2013) *Frozen assets. British mining, exploration, and geopolitics on Spitsbergen, 1904 - 53*. Groningen: Barkhuis.
- *Active in Svalbard since 2008*
- *Admittedly a long way from human-walrus interactions yet...*

Context: My previous research in Svalbard

- Postdoc research (2014 - 2016) on Svalbard's **environmental archaeology and historical ecology**

518 *Polar Record* 52 (266): 518–534 (2016). © Cambridge University Press 2016. doi:10.1017/S0032247416000309

Is Svalbard a pristine ecosystem? Reconstructing 420 years of human presence in an Arctic archipelago.

Frigga Kruse

Arctic Centre, University of Groningen, Aweg 30, 9718 CW Groningen, Netherlands
(f.kruse@rug.nl)

Received November 2015; first published online 3 May 2016

ABSTRACT. The Arctic is commonly perceived as a pristine wilderness, yet more than four centuries of human industry have not left Svalbard untouched. This paper explores the historical dimension of human-induced ecosystem change using human presence as a proxy. Its aims are fourfold: to reconstruct and quantify historical human presence, to ascertain if human presence is a suitable indicator of long-term anthropogenic pressure, to deduce trends in anthropogenic pressure on five selected species of game animal, and to postulate trends in their subpopulation sizes. Published sources give rise to 57 datasets dealing with the annual voyages to Svalbard as well as the participants in them. All known archaeological sites are visualised in a distribution map. Despite the large amount of data, the quantification of historical human presence remains biased and partial. Only with the aid of a timeline of known milestones is it possible to make hypotheses about changes in anthropogenic pressure and animal subpopulations over time. The exercise is nonetheless a necessary and instructive one: it confirms that the erroneous view of Svalbard as a pristine ecosystem hinders timely historical-ecological research. Future work must aim at the systematic quantification of past human impact in a holistic approach to environmental conservation and restoration.

520 *Polar Record* 53 (5): 520–533 (2017). © Cambridge University Press 2017. doi:10.1017/S0032247417000481

Catching up: the state and potential of historical catch data from Svalbard in the European Arctic

Frigga Kruse

University of Groningen, Arctic Centre, Aweg 30, 9718 CW Groningen, the Netherlands
(f.kruse@rug.nl)

Received October 2016

ABSTRACT. Svalbard in the European Arctic has a well-documented history of natural resource exploitation. Since its discovery in 1596, the archipelago has witnessed phases of commercial whaling, sealing, fur hunting and fishing. Scientists, trophy hunters and miners have also added to the depletion of wildlife. The magnitude, scale and speed of the hunt, however, remain largely unknown. This paper collates historical catch data of five selected species of game animal from published written and archaeological sources. These species include the bowhead whale, the Atlantic walrus, the polar bear, the Arctic fox and the Svalbard reindeer. The paper thereby aims to quantify the anthropogenic pressure on Svalbard's ecosystems over more than four centuries. This quantification is only moderately successful. The incomplete record prevents the use of this catch data as a suitable indicator of human-induced ecosystem change. To advance the state of knowledge, the paper recommends a return to the primary sources across international archives, libraries and museum collections, and outlines steps with which to arrive at the much needed time-depth in Svalbard historical ecology.

- *Aim to provide a baseline and share a vision*
- *Substantial problems finding reviewers*

Context: My „previous“ research in Svalbard

- Postdoc research (2018 - present)

Polar Record

www.cambridge.org/pol

Research Article

Cite this article: Kruse F, Nobles GR, de Jong M, van Bodegom RMK, van Oortmerssen GJM, Kooistra J, van den Berg M, Küchelmann HC, Schepers M, Leusink EHP, Cornelder BA, Kruijer JD, and Dee MW. Human–environment interactions at a short-lived Arctic mine and the long-term response of the local tundra vegetation. *Polar Record* 57(e3): 1–22. <https://doi.org/10.1017/S0032247420000418>

Received: 2 December 2019

Revised: 12 November 2020

Accepted: 19 November 2020

Keywords:

Svalbard; Mining; Archaeology; Environmental impact; Tundra vegetation

Author for correspondence:

Frigga Kruse, Email: fruse@ecology.uni-kiel.de

Human–environment interactions at a short-lived Arctic mine and the long-term response of the local tundra vegetation

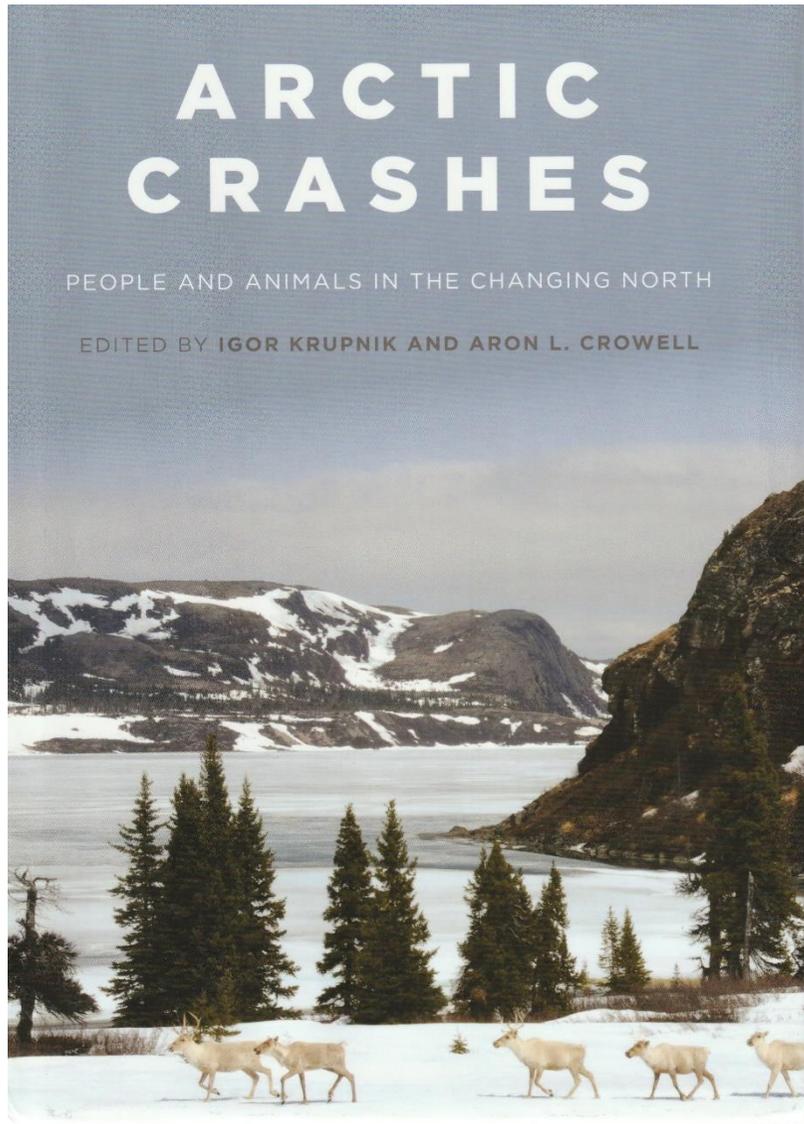
Frigga Kruse¹ , Gary R. Nobles² , Martha de Jong³, Rosanne M. K. van Bodegom⁴, G. J. M. (Gert) van Oortmerssen⁴, Jildou Kooistra⁴, Mathilde van den Berg⁵ , Hans Christian Küchelmann⁶ , Mans Schepers⁷ , Elisabeth H. P. Leusink⁸, Bardo A. Cornelder⁸, J. D. (Hans) Kruijer⁸  and Michael W. Dee⁹ 

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Abstract

Arctic mining has a bad reputation because the extractive industry is often responsible for a suite of environmental problems. Yet, few studies explore the gap between untouched tundra and messy megaproject from a historical perspective. Our paper focuses on Advent City as a case study of the emergence of coal mining in Svalbard (Norway) coupled with the onset of mining-related environmental change. After short but intensive human activity (1904–1908), the ecosystem had a century to respond, and we observe a lasting impact on the flora in particular. With interdisciplinary contributions from historical archaeology, archaeozoology, archaeobotany and botany, supplemented by stable isotope analysis, we examine 1) which

Inspiration



- key outcome of the Arctic Crashes project, "Arctic People and Animal Crashes: Human, Climate and Habitat Agency in the Anthropocene."
- implemented during 2014-2016 at the Smithsonian Institution's Arctic Studies Center
- collaboration with colleagues and indigenous partners from the U.S., Canada, Denmark, Greenland, and the Netherlands
- introduced a new vision to explore **human-animal-climate interactions**, including rapid animal declines ("crashes") in the North that analyzed such relations **primarily at regional and local scale**
- unlike earlier top-down models that tied changes in species' abundance and ranges to alternating warmer and cooler (high sea-ice/low sea-ice) regimes across the polar zone

Inspiration



Xénia Keighley (Weber)

PhD candidate, University of Copenhagen & University of Groningen
Verified email at palaeome.org

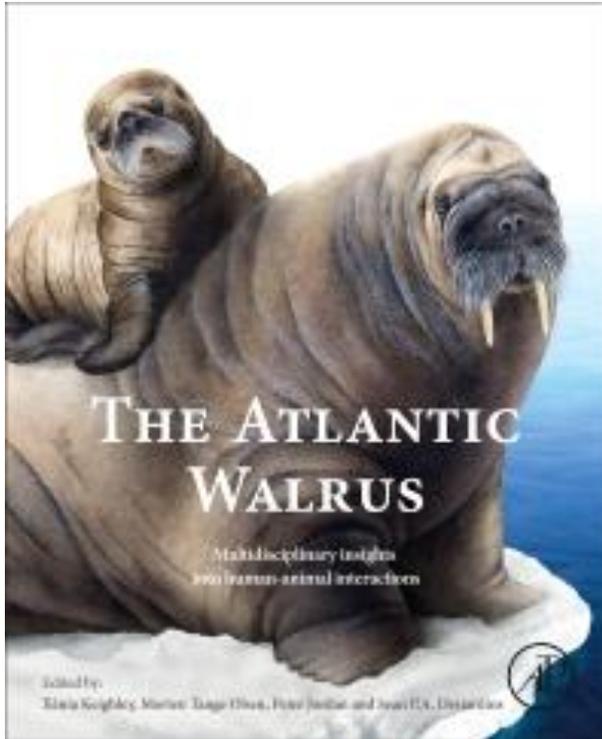
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FOLLOW

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The Atlantic Walrus: Multidisciplinary Insights into Human-Animal Interactions X Keighley, MT Olsen, P Jordan, S Desjardins Elsevier		2021
Predicting sample success for large-scale ancient DNA studies on marine mammals X Keighley, MH Bro-Jørgensen, H Ahlgren, P Szpak, MM Ciucani, ... Molecular Ecology Resources 21 (4), 1149-1166	2	2021
Genomic sex identification of ancient pinnipeds using the dog genome MH Bro-Jørgensen, X Keighley, H Ahlgren, CH Scharff-Olsen, ... Journal of Archaeological Science 127, 105321		2021
Hunting Ancient Walrus Genomes: Uncovering the hidden past of Atlantic walruses (Odobenus rosmarus rosmarus) X Keighley		2021
Disappearance of Icelandic walruses coincided with Norse settlement X Keighley, S Pálsson, BF Einarsson, A Petersen, M Fernández-Coll, ... Molecular biology and evolution 36 (12), 2656-2667	10	2019
Integrating cultural and biological perspectives on long-term human-walrus (Odobenus rosmarus rosmarus) interactions across the North Atlantic X Keighley, MT Olsen, P Jordan Quaternary Research, 1-21	2	2019
Sex identification of ancient pinnipeds using the dog genome MH Bro-Jørgensen, X Keighley, H Ahlgren, CH Scharff-Olsen, ... bioRxiv, 838797	2	2019
based learning: Designing the course behind the research EA Beckmann, X Weber, M Whitehead, A Nicotra Field Studies in Ecology		2018
Ancient Pinnipeds X Keighley, MH Bro-Jørgensen, P Jordan, MT Olsen SAArchaeological record the, 38		2018
Ancient Pinnipeds: What Paleogenetics Can Tell Us About Past Human-Marine Mammal Interactions X Keighley, MH Bro-Jørgensen, P Jordan, M Tange Olsen SAA Archaeological Record 18 (4), 38-45	2	2018

Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

Inspiration



*The Atlantic Walrus:
Multidisciplinary Insights into
Human-Animal Interactions*

- overviews of the **biology** of the Atlantic Walrus as well as **human cultures** within the North Atlantic Arctic and the surrounding region *by consolidating research which until now has been scattered across fields and academic publications*
- Editorial team of **inter-disciplinary** researchers
- Thirteen chapters, each authored by leading **international** researchers and experts on the Atlantic Walrus
- Considers the **inter-relatedness and complexity** of species biology, ecological change, human culture, and anthropogenic pressures onto the Atlantic Walrus
- Draws upon the **latest methods** in marine mammal and archaeological research
- Assesses **historical management** of the species, while also considering current and **future conservation** efforts in light of human activities and climate change

The *Timeless Arctic* Project 2018 - 2023



Hunted commercially!



How and to what effect?

Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

Bio-cultural archives in Svalbard: underrepresented!

Fleur de Lyshamna



Fleur de Lyshamna



Dianabukta



Dianabukta



Gnåodden



Smeerenbrug



Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

Walrus slaughter sites in Svalbard: undervalued!

Dolerittneset



Dolerittneset



Dolerittneset



Kraussbukta



Kraussbukta



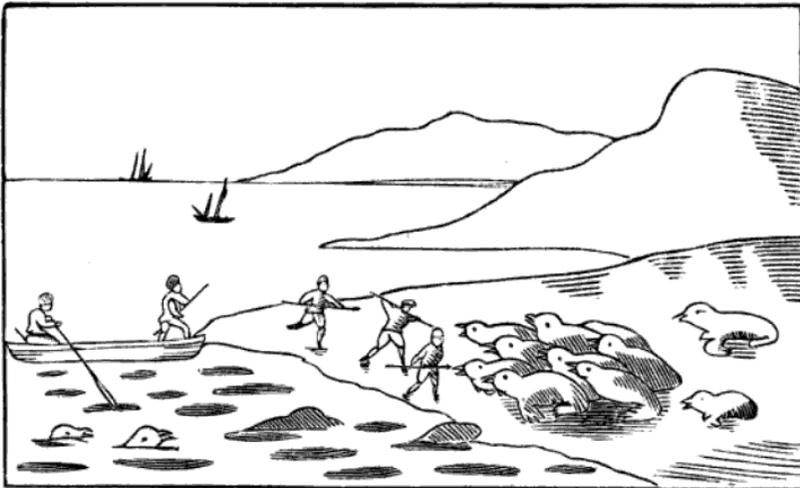
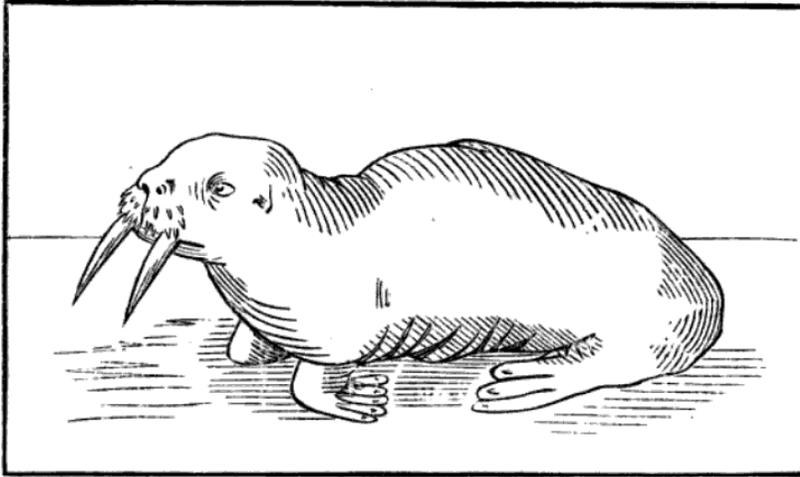
Kraussbukta



Kruse (2021) Do past human-walrus interactions have anything to offer Svalbard?

Human-walrus interactions in Svalbard

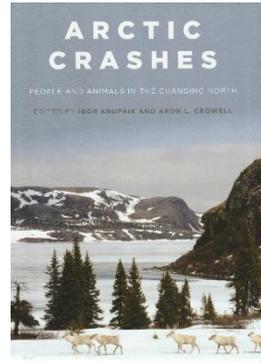
Fotherby, R. (1860) *Narrative of a voyage to Spitzbergen in the year 1613, at the charge of the fellowship of English merchants for the discovery of new trades. etc. With an introduction and notes by S. F. Haven.* Edited by S. F. Haven. Boston: John Wilson and Son.



10

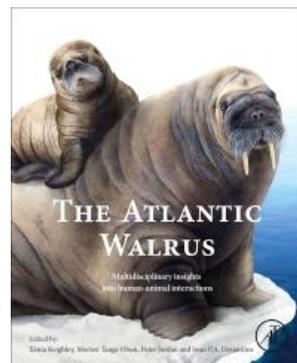
- No evidence of indigenous peoples
- No evidence of human contact prior to Barentsz in 1596
- A fairly recent human past
- Historical sources that speak of the demise of the Svalbard walrus
- *Why should additional archaeological research be of interest to anyone?*
- Professional vs political and public perceptions of Arctic archaeology!

Next steps



Xénia Keighley (Weber)
PhD candidate, University of Copenhagen & University of Oregon
weberx@mail@palaeo.org
Ancient DNA · evolution · taxonomy

TITLE	CITED BY	YEAR
The Atlantic Walrus: Multidisciplinary Insights into Human-Animal Interactions Keighley XW, Crowell AL, Krupnik IG. <i>Journal of Archaeological Science</i> . 2021.		2021
Predicting sample success for large-scale ancient DNA studies on marine mammals Keighley XW, Krupnik IG, Crowell AL, Krupnik IG, Crowell AL. <i>Marine Mammal Science</i> . 2021.	2	2021
Genomic sex identification of ancient porcupids using the dog genome Keighley XW, Krupnik IG, Crowell AL, Krupnik IG, Crowell AL. <i>Journal of Archaeological Science</i> . 2021.		2021
Hunting Ancient Marine Mammals: Uncovering the hidden past of Atlantic walrus (Odobenus rosmarus rosmarus) Keighley XW.		2021
Disappearance of Eschschsch walrus coincided with Norse settlement Keighley XW, Krupnik IG, Crowell AL, Krupnik IG, Crowell AL. <i>Marine Mammal Science</i> . 2020.	10	2019
Integrating cultural and biological perspectives on long-term human-walrus (Odobenus rosmarus rosmarus) interactions across the North Atlantic Keighley XW, Crowell AL, Krupnik IG, Crowell AL. <i>Journal of Archaeological Science</i> . 2019.	2	2019
Sex identification of ancient porcupids using the dog genome Keighley XW, Krupnik IG, Crowell AL, Krupnik IG, Crowell AL. <i>Journal of Archaeological Science</i> . 2019.	2	2019
Island farming: Changing the course behind the research Keighley XW, Krupnik IG, Crowell AL, Krupnik IG, Crowell AL. <i>Journal of Archaeological Science</i> . 2019.		2019
Ancient Porcupids Keighley XW, Krupnik IG, Crowell AL, Krupnik IG, Crowell AL. <i>Journal of Archaeological Science</i> . 2019.		2019
Ancient Porcupids: What Paleogenetics Can Tell Us About Past Human-Marine Mammal Interactions Keighley XW, Krupnik IG, Crowell AL, Krupnik IG, Crowell AL. <i>Journal of Archaeological Science</i> . 2019.	2	2019



- Book reviews: **that's what's on offer!**
- Literature reviews
- Policy reviews
- *No need to reinvent the wheel*
- Building collaborations
- Letters of reference from specialists
- Contact Riksantikvaren & Sysseimesteren
- Re-submitting project design for TA expedition in August 2022
- *Keeping my fingers crossing for permission to sample walrus bones!*

Thank you!



Please keep any questions for the Q&A.