

# ARCTIC CLIMATE PREDICTIONS: PATHWAYS TO RESILIENT, SUSTAINABLE SOCIETIES (ARCPATH)



norden



# Responsible Development of the Arctic: Opportunities and Challenges - Pathways to Action

## Final Reporting of Nordic Centres of Excellence

### General information

Name of the Nordic Centre of Excellence:	Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)
Name of the responsible leader of the NCoE:	Astrid Ogilvie and François Counillon
Project id	76654
Reporting period	2016-01-01 – 2021-12-31

Photograph on the cover page: ARCPATH team members at the ARCPATH annual meeting held in Reykjavík, Iceland in October 2017.

<https://ncoe-arcpath.org/>

**RESPONSIBLE LEADER OF THE NCOE:**  
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Project Manager: Dr Kjetil Lygre (NERSC)

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## IN MEMORIAM: YONGQI GAO (1965-2021)

This report would not be complete if we did not pay homage to our dear and valued colleague, Yongqi Gao, who passed away in Bergen, on 23 July 2021. We have very many fond memories of our times spent with him, and will always recall his bright smile, easy manner, and sense of humour. He was an extremely productive scientist, and his work will live on in many ways. The legacy of ARCPATH is also his legacy. His phrase “If you want to go fast, go yourself. If you want to go far, go together” sums up, not just his working life in general, but has truly reflected the work of ARCPATH. As a project team, we have all “gone together.” Goodbye dear Yongqi, we miss you. This final report for a project that we began together is dedicated to you.



*An International Symposium in Yongqi's honour will be held in Bergen during 7-9 September 2022 with invited speakers including ARCPATH colleagues François Counillon, Shuting Yang, Noel Keenlyside, Kjetil Lygre and Astrid Ogilvie. The Symposium will include a special session, well aligned with ARCPATH research, "Climate Impacts on Environment and Society". There will be an associated special issue in Advances in Atmospheric Sciences.*

## 1. DESCRIPTION OF THE CENTRE

The Nordic Centre of Excellence project *Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)* was devised in response to the NordForsk call focusing on "Responsible Development of the Arctic: Opportunities and Challenges - Pathways to Action" established to generate new insights into the challenges and opportunities confronting the Arctic region. ARCPATH was funded for 5 years from 1 January 2016 to 31 December 2020. A one-year extension was granted to 31 December 2021. Taking its cue from the NordForsk call, the ARCPATH project has sought to combine improved regional climate predictions with enhanced understanding of environmental, societal, and economic interactions in order to supply new knowledge of Arctic "pathways to action". This goal has been achieved through extensive cross-disciplinary collaboration resulting in a truly synergistic Nordic Centre of Excellence with a focus on responsible and sustainable development in northern communities.

The home and leadership of ARCPATH has been shared by the Nansen Environmental and Remote Sensing Centre (NERSC) in Bergen, Norway (Dr Yongqi Gao as lead) and the Stefansson Arctic Institute, in Akureyri, Iceland (Dr Astrid Ogilvie as co-lead). These two colleagues came from very different disciplinary homes, but the partnership between Yongqi and Astrid developed into a close friendship which helped to ensure the success of the project. It was a tragic loss when Yongqi Gao passed away in July 2021. Subsequently, Astrid Ogilvie has assumed the role of Scientific Leader with François Counillon, Yongqi's colleague, as Project Leader at NERSC. The project Co-PIs are: Dr Niels Einarsson, Director of the Stefansson Arctic Institute (SAI); Professor Noel Keenlyside, Bjerknes Centre, University of Bergen (UiB); Dr Marianne H. Rasmussen, Director of the University of Iceland Research Centre in Húsavík (UoI); Dr Brynhildur Daviðsdóttir, Professor at the University of Iceland and Director of the Environmental and Natural Resources Graduate Programme (UoI); Dr Shuting Yang, Senior Scientist, Danish Meteorological Institute (DMI); and Dr Torben Koenigk, Senior Scientist, Swedish Meteorological and Hydrological Institute (SMHI). International collaborators are based at institutes in: the United Kingdom, the United States, Russia, Germany, China and Spain. Significant input to ARCPATH has come from two of these partners, Professor Leslie King (Royal Roads University, Canada) and Professor Margaret Willson (University of Washington, USA). A complete list of ARCPATH team members, international members and advisory board members may be found on <http://www.svs.is/en/projects/arcpath>.

The ARCPATH project has generated knowledge of high importance for sustainable development in the Nordic Arctic Region (see Figure 1), in particular for the project focus areas in Iceland, Greenland and northern Norway. The combined expertise of ARCPATH team members has created new knowledge for disciplines including: physical sciences focusing on climate predictions; natural sciences focusing on ecology and behaviour of cetaceans; and social sciences such as anthropology and economics focusing on social impacts of fisheries governance, the societal importance of cetaceans and the implications of climate change. In seeking to synthesize results from such separate disciplines encompassing very different research methods, ARCPATH has placed great emphasis on the need to

go beyond the multidisciplinary approach in which different aspects of a project are conducted separately. Instead, the objective has been interdisciplinarity, where different research elements are integrated in order to provide greater insight into research questions and results where the whole is greater than the sum of the parts. Transdisciplinarity has been a further goal, leading to co-creation of knowledge undertaken in collaboration with community members, stakeholders and other knowledge holders. From the very start of the project, synthesis has been an important goal of the research. Positive outcomes of ARCPATH are the innovative syntheses of results arising from very different, physical, natural and social science methods of inquiry (King and Ogilvie, 2020). The highly successful ARCPATH project is now completed; however, its legacy will continue in terms of its numerous project outputs, not least in Nord (2020) and the continuation of its ethos in many new research endeavours. The project websites will be available for the foreseeable future: <https://www.nersc.no/project/arcpath> and <http://www.svs.is/en/projects/arcpath>.

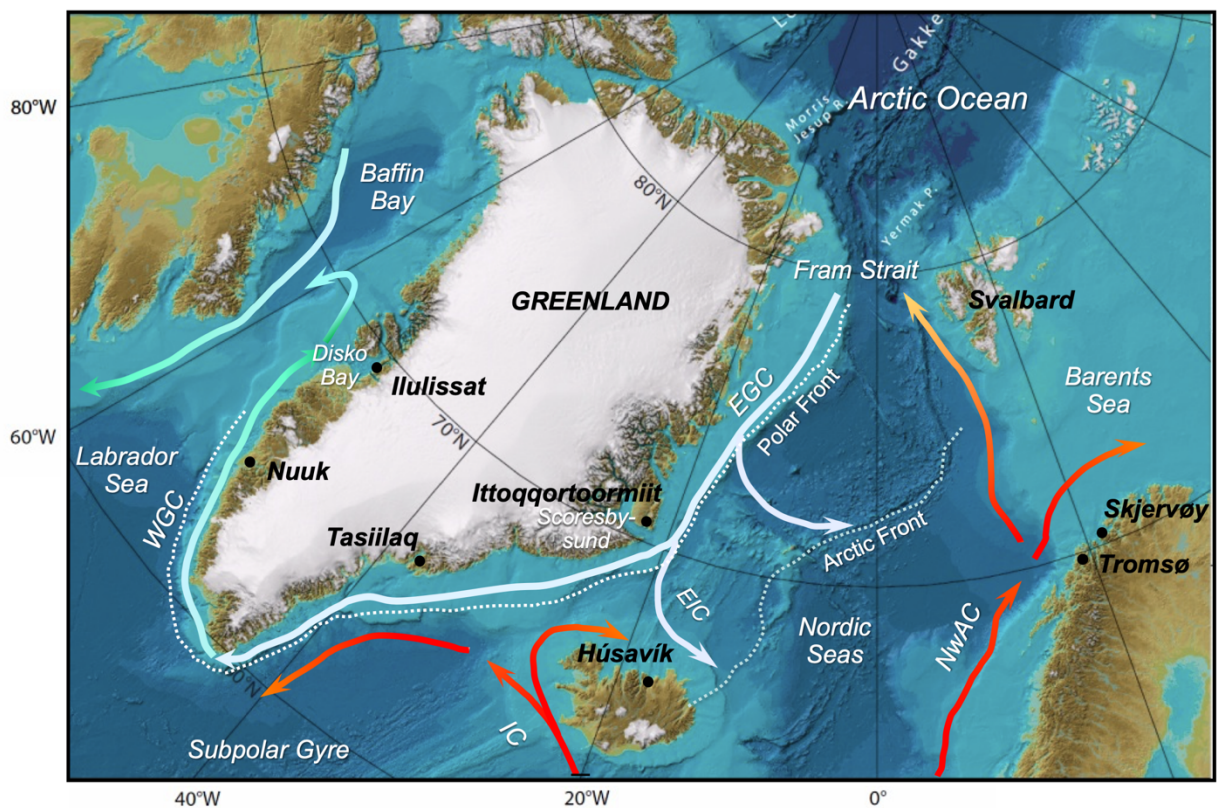


Fig. 1. Geographical settings and locations of ARCPATH primary focus areas. Major temperate warm (warm colours) and cold (cold colours) ocean currents are shown: East Greenland Current (EGC); West Greenland Current (WGC); East Icelandic Current (EIC); Irminger Current (IC); and Norwegian Atlantic Current (NwAC). The Polar front indicates the modern mean limit of polar waters and sea ice of Arctic Ocean origin. Bathymetry from the International Bathymetry Chart of the Arctic Ocean (IBCAO). Figure courtesy of Dr Martin Miles, NORCE Norwegian Research Centre and University of Colorado-Boulder.

## 2. SUMMARY OF THE FINAL REPORT

### **Public Executive Summary**

The NordForsk Centre of Excellence-funded project *Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies* has as its acronym "ARCPATH" which reflects its focus on the Arctic region and the NordForsk focus on "pathways to sustainability". ARCPATH has integrated results from a variety of very different and traditionally separate academic disciplines. In particular, the project has sought to address the complex and interlinked issues of climate and socio-economic change occurring in the Arctic by focusing on near-term changes, with the overarching goal of producing solid policy-relevant results and fostering responsible and sustainable development. This has required the understanding and reconciliation of environmental, social and economic demands reflecting the adaptive challenges and confounded realities of Nordic Arctic societies facing rapid social, economic and environmental change. While the Arctic region as a whole has been the context for the project, ARCPATH has had a specific focus on communities in Iceland, Greenland and northern Norway. Analyses of changes in both Arctic and global climate have formed a large component of the project and a significant achievement of ARCPATH has been to improve the prediction of climate of the next few years at high latitudes, through the application of state-of-the-art climate models, new initialisation methods, and high-resolution regional climate models. This is to meet the demands of the societies and stakeholders in the ARCPATH focus regions for a more nuanced picture of how rapidly their climate will change up to 2030. Further significant achievements include analyses of impacts of climate on fisheries in the past and the present as well as detailed analyses of the significance of ecosystem services with a particular focus on whale-watching tourism in the project research communities.

### **General Summary**

The ARCPATH project was designed specifically to integrate results derived from a variety of very different and traditionally separate academic disciplines. In particular, the project has sought to address the complex and interlinked issues of climate and socio-economic change occurring in the Arctic by focusing on near-term changes, with the overarching goal of fostering responsible and sustainable development. This has required the reconciliation of environmental, social, and economic demands. ARCPATH methods have involved cutting-edge cross-disciplinary collaboration. The disciplines and knowledge systems include: climatology (global modelling; dynamical downscaling; historical climatology); environmental science (marine and fisheries biology); socio-economic science (fisheries management systems; human eco-dynamics; local and indigenous knowledge; anthropology; economics; and governance systems). In the context of both global and Arctic climate change as well as social-ecological and socio-economic change ARCPATH has focused on developments in local communities in Iceland, Greenland and, to a lesser degree, northern Norway (Malinauskaite et al. 2022a)

As noted in the original ARCPATH research proposal, rapid and far-reaching changes in the Arctic will cause global effects but are likely to first and foremost have an impact on Arctic Nordic regions. It is

thus essential that Nordic researchers combine their expertise in order to elucidate and understand these changes. ARCPATH has built a Nordic Centre of Excellence based on the long experience of established researchers, leading experts in their fields, as well as including many young scientists who bring fresh insights and who will help to achieve long-term Nordic added value. These goals and achievements have been well established for ARCPATH. Combining the expertise of each ARCPATH institution has facilitated important synergies in knowledge creation, and it has been clear that the research conducted could not have been undertaken by each partner institution on its own. ARCPATH has had great success in the training of young scholars and in terms of Nordic Added Value. The project has also drawn international talent to the Nordic region through international recruitment of senior scholars, post doctoral scholars and PhD students. Outreach has been significant and has included novel endeavours such as the ARCPATH contributions to the documentary films by environmental artist, Elizabeth Ogilvie, *Out of Ice* and *Into the Oceanic*. International collaboration has been excellent and is reflected in the numerous publications and presentations by team members working with colleagues within and outside of ARCPATH. This report also summarizes the implementation of project findings and project results in the context of the United Nations Agenda 2030 and the 17 Sustainable Development Goals.

### 3. HIGHLIGHTS AND MAIN FINDINGS

In order to address the issues highlighted by the NordForsk call on responsible development of the Arctic, ARCPATH research has been conducted in the context of three overarching goals: *i) To predict regional changes in Arctic climate over the coming decades using innovative methods to capture both anthropogenic and natural factors in global and high-resolution regional models; ii) To increase understanding and reduce uncertainties regarding how changes in climate interact with multiple societal factors, including the development of local and regional adaptation measures; iii) To combine improved regional climate predictions with enhanced understanding of environmental, societal, and economic interactions in order to supply new knowledge on potential “pathways to action”.*

Analyses of changes in both Arctic and global climate have formed a significant and highly successful component of ARCPATH. One major highlight is improved understanding of mechanisms of variability driving multidecadal climate variability in the Arctic. Historical observations have shown that Arctic climate has varied on multi-decadal timescales (Ogilvie, 2022; Langehaug et al. 2021; Svendsen et al. 2021; Docquier et al. 2021). The analysis of historical records of climate change, in particular the past sea-ice record for Iceland, in terms of correlation with the North Atlantic Oscillation (NAO) index and Atlantic and Pacific multi-decadal variability is a significant example of project synthesis (King and Ogilvie, 2020, p. 402 and pers. comm. ARCPATH colleague Bo Christiansen, DMI). A related highlight is that it was possible to demonstrate that oceanic variations in both the Pacific and Atlantic contributed to these variations through changes in atmospheric and oceanic circulation, which influence the movement of warm air and water to high latitudes. In particular, it has been demonstrated that up to 50% of the warming during the 1940s may have been driven by changes in the Pacific. Furthermore, in contrast to previous work by others, our research has shown the importance of natural climate

variability, as opposed to greenhouse gas warming and cooling caused by aerosol emissions (Svendsen et al. 2021; Omrani et al. submitted).

A further related highlight is that ARCPATH has been able to provide improved ability to predict near-term variation of the Arctic climate and on spatial scales more relevant to society. Developments focused on the use of joint ocean and sea-ice data and advanced statistical schemes (Tian, 2021; Kimmritz et al. 2017; Kimmritz et al. 2019; Dai et al. 2020) to enhance prediction skill. We were able to show that this led to better predictions of regional Arctic sea-ice on seasonal-to decadal-time scales. Our findings indicate that improving representation of oceanic processes is key to improving predictions in this region, and that ocean-atmosphere interaction and teleconnections act to shape Arctic regional climate change (Docquier and Koenigk, 2021). This research serves to meet the demands of the societies and stakeholders in the ARCPATH focus region for a more nuanced picture of how rapidly their climate will shift up to 2030. An added highlight regarding this work is that another project funded by NordForsk <https://www.nersc.no/project/embla> has built on the foundation of the data assimilation method used for the prediction system in ARCPATH.

The project has had a specific and integrative focus on marine changes in the Arctic, with particular regard to linkages between environmental changes and variations in cetacean populations and migrations and development of whale-watching tourism. Over the life of the project, social, economic and marine biological research and fieldwork has taken place in Iceland, Greenland and the seas around Norway and the Svalbard archipelago. A noteworthy project highlight is the overall success related to working with an interdisciplinary research team and combining different scientific approaches and theories to examine human-nature interactions. Outcomes of this approach are the highlights related to the project focus on ecosystem services (ES). The rich data collected for the project allowed this to expand from ES identification and valuation to information on governance and co-production. This work was greatly enhanced by interviews with different stakeholders and ES users and co-producers that revealed aspects of Arctic marine resource governance that would not have been known otherwise. While focusing initially on whale ES, the concept was also applied to previously unexplored areas in this regard, such as glaciers, and volcanic areas (Cook et al. 2022a). This work went beyond just classifying and valuing ES monetarily, but investigated how these important services are formed, governed, and potentially affected by climate change in the future. A related highlight is that the data collected for this research extend beyond just ES resources, but also provide interesting information concerning the risks pertaining to, and resilience of, Arctic coastal communities and how they relate to their local marine ecosystems. Furthermore, it has been established that, taking into consideration different local cultural contexts, sophisticated ecosystem services assessments can be highly useful for evaluating multiple uses of marine mammals and provide informed policy advice (Cook et al. 2022ab; Malinauskaite et al. 2022ab).

In tandem with the ES work, ARCPATH carried out investigations into future sea-surface temperature (SST) change in the Nordic Seas region in a large ensemble of climate simulations following different future emission scenarios. Particular focus was on the region north of Húsavík in Iceland (our primary



whale-watching study). SSTs are expected to increase by at least 2°C in all of the emission scenarios until 2050. This work is a further project highlight as the potential consequences for different whale species and dolphins of such an increase are significant. If whales leave these waters in search of colder regions the impacts on both the local and national economy could be far reaching. Associated with this work is anthropological fieldwork documenting present and historical marine resource use. This has involved a focus on past and present marine-use activities, including whale hunting and the contemporary emphasis on whale-watching activities. The marine biological work of ARCPATH has included investigations of the blue whales that have increasingly been moving north and currently come into Skjálfandi Bay, adjacent to Húsavík, every summer in June. A highlight is the fact that a photo-identification catalogue of 148 different individuals has been compiled and it has been possible to make matches of the same blue whales sighted off Svalbard and from Húsavík. This possible shift may be linked to warming Arctic waters. Analyses based on this exciting work were published in 2019 (Madsen *et al.*, 2019). Although the “staple” of the whale-watching industry is now the humpback whale, the novelty of the presence of blue whales is of great interest and the loss of these magnificent creatures could negatively impact the Húsavík tourism industry.

ARCPATH has had a major focus on fisheries and fisheries governance systems and in this regard also, linkages between historical and contemporary data have been a significant focus of the project. A highlight of this aspect of the research has been results on correlations between fisheries and temperature changes in the North Atlantic back to ca AD 1700; and the evaluation of the incidence of extreme weather events, such as increased storminess, and human adaptation responses in our study areas in the past (Ogilvie, 2022). It is clear that a correlation exists between ocean temperatures and marine stocks. Although other factors were involved, it is highly likely therefore that climate was of importance for the fisheries in several respects. If the weather was particularly stormy, for example, then many lives were lost at sea, and more fishermen were drowned during cold and stormy periods, as in 1698 to 1704 (Ogilvie, 2022). Recent ARCPATH research has considered whether current and future changes in climate will bring higher wind speeds and increased storminess. Observations and model simulations of future climate do indicate a slight increase in the number of days with greater wind speeds. It is unclear as yet whether this could have a significant impact on fisheries and whale-watching tourism in the future. However, further research on this issue is a planned continuation of ARCPATH.

A contemporary fisheries focus has been on marine governance. This has included investigating social and economic impacts of Individual Transferable Quotas (ITQs) systems in coastal communities. ARCPATH research is finding serious flaws in the design of this form of marine-resource governance due to significant social, economic and ecological externalities that are not sufficiently dealt with in policy design, implementations and assessments. A major publication in the *Proceedings of the National Academy of Science* (Young *et al.*, 2018) has shown that ITQs are panacea solutions to fisheries governance that need to be reviewed due to a range of negative social equity issues as well as a lack of flexibility and sophisticated ecosystem understanding. In fisheries management—as in environmental governance more generally—regulatory arrangements that are thought to be helpful in some contexts frequently become panaceas or simple formulaic policy prescriptions. When this happens, negative side

effects are common. Several of the key case studies and arguments in this publication derive from ARCPATH research.

## 4. NORDIC ADDED VALUE

Rapid and far-reaching changes in the Arctic are causing global effects and are impacting Arctic Nordic regions, both directly and indirectly. It is thus essential that Nordic researchers combine their expertise in order to elucidate and understand these changes. ARCPATH has built a Nordic Centre of Excellence that capitalises on the long experience of established researchers, leading experts in their fields, as well as many young scientists who bring fresh insights and who will help to achieve long-term Nordic added value. In particular, ARCPATH has enabled the major climate centres in the Nordic region to work together to develop climate predictions for the area. Sharing of knowledge, data, and computing infrastructure has allowed us to make greater progress in improving models and use of observational data than would have been possible if working only nationally. The interdisciplinary and collaborative group that has constituted ARCPATH is generating knowledge of high importance for development in the Arctic region, actively creating a critical mass for success and expertise.

Within ARCPATH, we have facilitated close collaboration among disciplines such as physical sciences focusing on climate predictions, natural sciences focusing on ecology and behaviour of cetaceans and social sciences such as anthropology, economics, history and sociology focusing on the societal importance of cetaceans, fisheries governance and the implications of climate change. The project therefore not only acknowledges that multiple disciplines are needed to identify responsible development paths for the Arctic region but has integrated them in the research. Combining the expertise of each institution involved (in Norway, Iceland, Sweden and Denmark) has facilitated important synergies in knowledge creation, and it is clear that the research conducted could not be done by each partner institution on its own. ARCPATH has drawn international talent to the Nordic region through recruitment of senior scholars, post-doctoral researchers, Masters and PhD students. The Danish Meteorological Institute and the Swedish Meteorological and Hydrological Institute together developed a common new prediction system, which would not have been possible without the project. Furthermore, climate competence from Denmark, Norway and Sweden could cluster and support biological and socio-economic investigations in the entire Nordic Sea regions. Iceland and Greenland have no access to their own climate models and need to rely on cooperation with climate partners from other countries. Conversely, excellent knowledge on the biological and socio-economic systems in this Nordic Sea area exists in these countries. This interaction has led to knowledge that is directly useful to society and will contribute to solid policy and the sustainability and resilience of Arctic communities. The project team has produced numerous jointly authored articles reflecting collaborative research across the Nordic countries involved as detailed in the list of publications and presentations.

There can be little doubt that ARCPATH, with its results in transdisciplinary Arctic social and natural science has increased Nordic visibility internationally. The transdisciplinary approach of ARCPATH,

which by definition relies on active collaboration and co-creation of knowledge with stakeholders, has therefore delivered significant Nordic added value. Stakeholders participated in the research through design of research questions and methods e.g., with qualitative interviews and quantitative surveys. Thus, stakeholders are able to rely on results that they helped to form for better-informed decision-making. As an example, ARCPATH has delivered tangible knowledge for decision-makers contemplating the establishment of a Marine Protected Area in Skjálfandi Bay in northern Iceland (see also the section on Implementation and Impact). ARCPATH will also have provided a springboard for further research among the Nordic partners as evidenced in the section on future perspectives and continuation of the research.

## 5. IMPLEMENTATION AND IMPACT

One of the key goals of ARCPATH has been to produce empirically based knowledge that can be of use to society at large, but in particular for our stakeholders in fisheries and other marine-resource use sectors, as well as coastal communities based on making their living from the sea. This use has increasingly been turning towards non-consumptive utilization in the form of marine tourism, and with this ARCPATH has especially focused on the expanding sector of whale watching, an enterprise which is highly sensitive to global processes, both biophysical forces, such as climate change, as well as social and economic processes of globalization and cultural change, enabling new and alternative use of cetaceans. In our work we have convincingly shown the need for a change of paradigm when it comes to valuing nature in terms of ecosystem services of whales, and this new understanding has significant implications for policy and management for future developments in the fisheries. The Icelandic government is currently considering a permanent halt in commercial whaling, recognizing that future use and value of the whale stocks will lie in non-consumptive use such as whale watching and marine tourism in general. ARCPATH research results can be drawn upon in the design of new whaling, or alternative whaling policies.

This new understanding of the importance of whale ecosystem services is already having impacts beyond Iceland. Thus, for example, ARCPATH's Professor Brynhildur Daviðsdóttir has been invited to attend a workshop in 2022 conducted by the International Whaling Commission as a presenter and expert. The aim of the workshop is to begin relying on diverse socio-economic values when managing whales internationally and the work conducted in ARCPATH will materially contribute to the workshop as well as the subsequent practical follow up. ARCPATH participants have also engaged in significant outreach in the international academic community with a particular focus on embedding research work into University education at the graduate level for example in Iceland, the United States and Spain.

Another major impact derived from ARCPATH research is enhanced understanding of the possible impact of climate change on coastal towns as shown by the economic, social and cultural significance of whales in those communities. The homogenous economic structure and significant reliance of those towns on whales for economic income revealed a significant economic and social vulnerability

to climate change. This ARCPATH research has already been presented to the Icelandic Climate Change Science Council. It will subsequently be highlighted in the Council's next report and will influence regional adaptation strategies to climate change.

Another policy process which has just been begun in Iceland is a major review of impacts and efficacy of fisheries governance in Iceland, taking stock of the benefits and drawbacks of the Individual Transferable Quota (ITQ) system that has been in place for some three decades, with complex and sometimes adverse implications for coastal community viability in terms of resource and access rights. ARCPATH has much to offer for this policy process, especially when it comes to empirical results and advice on how to amend the system towards social equity, which is indeed the key for a robust, efficient and long-lasting governance system. Here we have issues of new recruitment of young people in fishing as well as including gender-fair measures in a management system that has inbuilt bias against women participating in fishing. We have shown that Iceland has a long tradition of seawomen active in fishing and there is no valid reason for the present discrimination of women working against their inclusion in this important sector. Fisheries management in marine-resource reliant countries and areas can be controversial political topics. Nevertheless, it is noteworthy that we see more and more of ARCPATH research being quoted and included in the public discourse.

Similar to fisheries governance discourse and potential policy changes in Iceland, another avenue for implementation of ARCPATH results is the policy development of coastal planning. After the passing of the 2018 Icelandic law on coastal planning, several fjords and bays have been listed as priorities for the planning process as described in the new law. ARCPATH results that were shared with local stakeholders in Skjálfandi Bay led in part to the unified request from local municipal leaders to the National Planning Agency stating the high priority need for an official marine spatial plan for the Bay. This political process is longer than the duration of research projects, but the legacy of the ARCPATH results created a strong foundation for the future coastal planning process. Additionally, part of the conversation about the need for formal spatial planning in the Bay is also the discussion concerning a potential marine protected area in the Bay which could be included in the spatial plan. A small local working group has engaged ARCPATH researchers as consultants regarding the goals, justifications, and implementation options of marine protected areas. The working group also submitted a request to an international NGO called Mission Blue to receive their "Hope Spot" designation; a prestigious designation for marine areas of particular ecological importance. As part of the "Hope Spot" application, ARCPATH researchers wrote letters to confirm the important social and economic importance of the Bay.

ARCPATH's paradigm of nuanced and sophisticated understanding of co-produced knowledge is also being reflected in the larger context of the new European Union (EU) Arctic policy. Here we have been in dialogue with experts leading the new people-centred approach of the EU. Recent meetings hosted by the CER-ARCTIC Research Centre at the Autonomous University of Barcelona (an ARCPATH offspring that became a significant collaborator) have included several ARCPATH researchers in fruitful and valuable discussion with the EU Arctic Ambassador, Mr Michael Mann. We will be continuing our collaboration with the EU and use the momentum that has been created in our collaboration. The Barcelona meetings included a workshop on Gender Equality in the Arctic which

also refers to a major Arctic Council project that several ARCPATH researchers are participating in. This will continue, not least now that the Arctic Council has just endorsed the project’s third phase. ARCPATH has pertinent insights to offer to this project, not least with regards to policy relevant observations on gender issues in fisheries and design of governance in line with UN Sustainable Development Goals.

## 6. PUBLICATIONS AND OTHER OUTPUT

An overview of peer-reviewed publications, communication and outreach to the general public, including in press, up to the date of reporting, is provided in the following table:

	Open Access publications	Total publications
Journal articles	52	55
Book contributions	18	27
Total peer reviewed publications	<b>70</b>	<b>82</b>
	Media appearances	Total public outreach
Communication and outreach to the general public	<b>20</b>	<b>59</b>

A full list of academic and other output is provided in the Appendix.

## 7. MOBILITY, RESEARCHER TRAINING, AND INTERNATIONAL COLLABORATION

ARCPATH has been very active in terms of researcher training and international collaboration. The mobility that was reduced due to Covid-19 was more than made up for by numerous virtual meetings. Researcher training included a large number of courses. One example is the masters-level field course at the University of Iceland’s Research Centre in Húsavík led by Marianne Rasmussen on *Studying Marine Mammals in the Wild* on the fundamentals of a suite of field methodologies used in the study of free-ranging cetaceans. Summer schools focusing on elements of climate change with a particular focus on ARCPATH research have also been held. An example is the 2018 summer school held in Norheimsund, Norway entitled *Climate Teleconnections and Predictions: Past, Present and Future*. 30 international graduate students attended, and presentations were given by ARCPATH members. Astrid Ogilvie has been one of the organisers of an educational activity, the *Svartárkot Culture-Nature* course (<https://svartarkot.is/>), that involves both researcher training and international collaboration.

This is held annually in northeastern Iceland, close to Akureyri and Húsavík. The next workshop will be held in June 2022.

International collaboration within and outside of ARPATH has been extremely strong. The project has boasted some 16 international collaborators from locations including: Canada, the United States, the United Kingdom, Russia, China, Germany and Spain (see <http://www.svs.is/en/projects/arcpaht> for the full list). In addition, the project has had a distinguished advisory board with colleagues from the USA (Professor Cecilia Bitz, University of Washington, Professor Lawrence C. Hamilton, University of New Hampshire); the United Kingdom (Michael Bravo, Fellow of Downing College, University of Cambridge) and Germany (Dr Burkhardt Rockel, Helmholtz-Zentrum Geesthacht Institute for Coastal Research). These international colleagues have all been active partners in ARCPATH and have been involved in the joint production of publications and related research pursuits. While all have contributed, Professor Leslie King of Royal Roads University, Canada, must be singled out for her extreme dedication to ARCPATH, not least in terms of the production of papers (see e.g., Nord, 2020) and writing of the annual reports. In total 16 visits (weeks up to 6 months), of which 12 by females have been undertaken within and funded by ARCPATH.

In addition to this, ARCPATH team members have all had significant interactions with many other colleagues in a variety of locations in all years of the project, even through the pandemic. Yongqi Gao worked tirelessly to promote Norwegian-Chinese scientific collaboration in particular with regard to the Nansen-Zhu Centre established in 2003, connecting several leading Chinese institutions with the Nansen Centre, the University of Bergen, and NORCE. In 2019, Astrid Ogilvie and Leslie King were invited to become Visiting Professors at the University of the Highlands and Islands, in Orkney, Scotland. Níels Einarsson was similarly invited to be a Co-Director at the CER-Arctic Research Centre at the Autonomous University of Barcelona. These affiliations have led to considerable international collaborative activity, such as the writing of papers and proposals. ARCPATH has organized 5 international workshops and 12 conference sessions (cf. Appendix)

Furthermore, with regard to mobility, as a result of the fruitful collaboration with the CER-Arctic Research Centre, Laura Malinauskaite and Brynhildur Daviðsdóttir undertook collaborative research there in 2019. This led to publications with Eduard Ariza Solé focusing on social-ecological systems, ecosystem services and co-production of ecosystem services in the Arctic. The Annual Stefansson Memorial lecture, co-hosted by the Centre and by ARCPATH, was held on 1 December 2017, delivered by Professor Daviðsdóttir and again on 3 November 2021 when it was given by Mr Michael Mann, EU Special Envoy for Arctic Matters. Further examples of mobility are detailed in prior reports. Astrid Ogilvie has spent time at the Institute of Arctic and Alpine Research and has also collaborated with British and US colleagues (Hartman et al. 2022; Jackson et al. 2022).

Researcher training has resulted in two PhD theses. Laura Malinauskaite focused on social-ecological systems in the context of cetaceans and Tom Barry examined Arctic governance in the context of biodiversity. There were also two successful Masters students from the University of Iceland. Sarah Kendall's thesis was: *Socio-cultural Values of Whales in Húsavík and their Implications for Social-ecological Resilience* and Renee Blankenstein wrote on *The Effectiveness and Potential Improvements*

of a *Voluntary Code of Conduct for Whale-Watching in Iceland*. Marianne Rasmussen and Brynhildur Daviðsdóttir currently supervise a Masters student who is using an EU tool kit for work focusing on Skjálfandi Bay. Continuing the marine educational focus, Marianne Rasmussen has been funded by Nordplus for the project *Arctic Sense* to develop educational material using Virtual Reality tools for Norway, Denmark and Iceland.

## 8. SUSTAINABLE DEVELOPMENT GOALS

In the year 2000, the United Nations (UN) introduced the Millennium Development Goals (MDGs), establishing a 15-year international commitment to reduce poverty, improve access to education, and advance the health of women and children, specifically in countries of the Global South. Although a measure of progress was made under the MDGs (the extent of which is disputed; see Rammelt, 2021), particularly in relation to poverty reduction in some countries, significant work remained (Sumner & Tiwari, 2010). As such, in 2017, the UN ushered in the Sustainable Development Goals (SDGs) aimed at realizing a transformative agenda for sustainable development, not only in the Global South, but in all nations around the globe. To be met by the year 2030, the 17 SDGs are to be monitored through 169 targets and 244 indicators that encompass goals including, but not limited to, ending poverty, ensuring quality education, promoting good health, reducing inequalities, and climate action (UN, 2015). The SDGs aim to redress dimensions neglected in the MDGs related to climate change, environmental sustainability, governance, and the recognition of inequality, all subjects addressed in ARCPATH research. The realization of the UN SDGs is not simply an aspirational enterprise; it presents real opportunities to engender positive outcomes for all living species and the planet. Resolving the ‘wicked problems’ (Eden & Wagstaff, 2021) identified in the SDGs was a formidable challenge before the onset of the Covid-19 pandemic. It is even more so now in the face of mounting social and economic uncertainty. We are now nearing the halfway point of the 25-year period to implement the SDGs and much work remains to monitor the SDGs’ progress, promote their achievement, and measure their outcomes and impacts (UN, 2021). The ARCPATH Centre has contributed to the implementation and fulfilment of many of the SDGs in the Nordic countries that are the location of ARCPATH research.

With its focus on resilient sustainable arctic societies, ARCPATH directly addressed the overall goals of Agenda 2030 to *end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just and inclusive societies; to protect human rights and promote gender equality and the empowerment of women and girls; and to ensure the lasting protection of the planet and its resources*. Another contribution of the ARCPATH project to the overall goals of Agenda 2030 is the development of data and information to assist in tracking the fulfilment and implementation of the SDGs and targets and measuring progress towards the Agenda 2030 goals in the Nordic countries. Another issue addressed by ARCPATH is the need to link the SDGs to each other rather than working on them individually without reference to the overall impact of the interconnected goals. While the ARCPATH project as a whole addressed the main objectives of Agenda 2030, it also more specifically addressed a number of the individual SDGs, some directly, and others more indirectly. This was achieved through the research process as well as relating them to each other to achieve sustainability of Arctic societies.

SDGs 1, 2 and 3 are at the core of Agenda 2030 and ARCPATH contributed to those goals by focusing on economic, social and ecological sustainability of Arctic societies in Iceland, northern Norway and Greenland. The focus here was on helping to reduce poverty and hunger and increase health and well-being in Arctic communities, through promoting a shift to sustainable livelihoods such as marine tourism and promoting resilience and adaptation to the impacts of climate change in Nordic Arctic communities.

As well as addressing the overall sustainability goals for Agenda 2030, the ARCPATH centre and researchers mainly made progress towards fulfilment of, in this order: SDGs 13, *climate action*; 14, *life below water*; 11, *sustainable cities and communities*; 8, *decent work and economic growth*; 16, *peace, justice and strong institutions with a focus on governance*; 5, *gender equality*; and 10, *reduced inequalities*, in both the research teams and in the communities, thereby contributing also to: SDGs 1, *no poverty*; 2, *zero hunger*; and 3, *good health and well-being*. Specific contributions to SDGs and their targets are listed below, beginning with SDG 13, climate action, as this is the SDG to which ARCPATH chiefly contributed.

*SDG13. Take urgent action to combat climate change and its impacts.* The ARCPATH achievements in climate modelling and predictions provided information that was understandable and usable to communities to enable them to plan to enhance community resilience and to adapt to climate impacts and changes in their regions. In particular, we addressed the targets of the climate SDG: Target 13.1 - *Strengthen resilience and adaptive capacity to climate-related disasters*. ARCPATH has contributed to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters such as loss of sea ice and permafrost, retreating glaciers and loss of traditional livelihoods. Target 13.2 - *Integrate climate change measures to policies and planning*. The ARCPATH team promoted climate knowledge that enabled Nordic communities to plan effectively to meet the climate challenge in their communities. Target 13.3 - *Build knowledge and capacity to meet climate change*. Much ARCPATH research was focused on *improving education, awareness raising and human and institutional* capacity to address climate adaptation, resilience, impact reduction and early warning. SDG 13 is of particular relevance to the ARCPATH Nordic regions because of Arctic Amplification - the fact that the Arctic is warming much faster than the rest of the Earth.

*SDG3: Good Health and well-being.* With our focus on implications and impact of the Covid19 pandemic, ARCPATH supported enabling healthy lives and promoted well-being for all ages. Much of the work of ARCPATH was directed at ensuring the well-being of Arctic communities in the face of rapid ecological, social and economic change. This included identifying the ecological and social determinants of health in the case study communities: SDG8, *Decent Work and Economic Growth*, Target 8.3. With focus on governance of marine resources, ARCPATH supported the promotion of development-oriented policies, that incorporated conservation of marine species and ecosystems, while promoting alternative livelihoods for Arctic residents. and contributing to strengthening institutions of environmental governance; SDG11, *Sustainable Cities and Communities* Target 11.4. With focus on protecting whale ecosystem services with a particular emphasis on cultural significance ARCPATH strengthened efforts to protect and safeguard the world's cultural and natural heritage in the Nordic countries of Iceland, Norway and Greenland and promote sustainable communities;



SDG14, *Life Below Water*, Targets 14.2, 14.4, 14.5. With a focus on effective management of marine resources including the creation of marine sanctuaries, ARCPATH has contributed to sustainable management of fish and whale resources in marine and coastal ecosystems, and to achieving the conservation of at least 10% of coastal and marine areas. As regards SDG16, *Peace Justice and Strong Institutions* and SDG 17 *Partnerships for the Goals* ARCPATH researchers developed enduring partnerships with the communities in which we worked and with our focus on environmental governance, contributed to strengthening local and regional institutions and policies for disaster management, climate adaptation and marine conservation and governance.

## 9. RESEARCH AREAS, INTERDISCIPLINARITY, AND RESEARCH ACTIVITY

Overall, the Centre may be described as undertaking interdisciplinary research in order to consider the role of both climatic and social-ecological change in Nordic Arctic and Subarctic locations. The specific research fields involved include: climatology (global modelling; dynamical downscaling; historical climatology); environmental science (marine and fisheries biology); socio-economic science (fisheries management systems; human eco-dynamics; local and indigenous knowledge; anthropology; economics; and governance systems). By drawing on these separate but interlinking disciplines and knowledge forms, ARCPATH has formed a truly synergistic Centre of Excellence. For a specific discussion on project synthesis see King and Ogilvie (2020). ARCPATH has collected, assembled, and analysed a wide variety of different data sets and information with a focus on local communities in Iceland, Greenland and northern Norway. For the climatological components of ARCPATH there has been a major focus on enhancing climate predictions. This involves the use of the Norwegian Climate Prediction Model (NorCPM, e.g., Kimmritz et al. 2017; Kimmritz et al. 2019; Dai et al. 2020) and a prediction system based on the European ESM (EC-Earth) Model (Tian, 2021). These include data from the worlds' oceans, and also sea-ice concentration (and thickness for EC-Earth) in order to perform global climate predictions. In addition to these, regional climate models have been used to locally refine the climate predictions for the Arctic. For the socio-economic aspects of the project use has been made of quantitative economic modelling, supported by qualitative interviews, ethnographic fieldwork and archival work. This follows the Economics of Ecosystems and Biodiversity (<http://www.teebweb.org/>) ecosystem services economic modelling framework. ARCPATH also used proven ethnographic research methods to solicit community insights concerning local changes regarding both climatic and social-ecological elements and to document how local people are adapting/adjusting to these changes and impacts. The main social science research methods have thus involved: participant observation, semi-structured and specialist interviews, document analysis and surveys (see e.g., Malinauskaite et al., 2019a; Chambers et al. 2020). Evaluation of historical data follows established methods of analysis (Ogilvie, 2010; Russell, 2000).

Project research activities have been structured around seven discrete but interlinked work packages. The following list shows the original participant line-up. As the project progressed responsibilities shifted slightly. In particular, the major and significant contributions of Professor Brynhildur Daviðsdóttir and her graduate students (now post doctoral scholars) Laura Malinauskaite and David

Cook, must be noted here. The main goal of Work Package 1 *Arctic Linkages: Climate, Environmental Change, and Human Eco-Dynamics* [Leader Astrid Ogilvie (SAI); Co-Leader Noel Keenlyside (UiB)] was to form an historical context for the project as a whole in that it explored and established linkages among changes in climate, social-ecological systems, and marine systems. The main objective of Work Package 2 *Improved Global Climate Prediction by Initialization of Arctic Sea Ice and Sea-Surface Temperatures* [Leader Noel Keenlyside (UiB); Co-leader Shuting Yang (DMI)] was to improve capability for decadal climate predictions by starting the predictions from realistic ocean and sea-ice conditions. The climate modelling and prediction aspects are described in detail in Yang et al. (2020). The main goal of Work Package 3 *Arctic Climate Predictions and Regional Downscaling* [Leader Torben Koenigk (SMHI)] was centered on climate predictions for the Arctic/Nordic Seas to the year 2030 by using high-resolution global-coupled simulations and regional downscalings. The main focus of Work Package 4 *Climate, Social-Ecological Systems, Cetaceans and Tourism* [Leader Marianne Rasmussen (UoI); Co-Leader Niels Einarsson (SAI)] was to analyse to what extent climate change, tourism, and industrial development puts cetaceans (and human societies dependent on their consumptive and non-consumptive use) under increasing pressure. Thus, there has been an integrative focus on marine changes in the Arctic, with particular regard to linkages among environmental changes and changes in cetacean populations, and the growth of whale-watching tourism (Malinauskaite et al. 2020). Work Package 5 had considerable overlap with Work Package 4 but focused on *Marine Governance, Security and Rapid Social and Environmental Change* [Leader: Niels Einarsson; Co-Leader: Astrid Ogilvie]. Work concentrated on field research on fisheries governance issues, including investigating social and economic impacts of Individual Transferable Quota (ITQ) systems in coastal communities. Work Package 6, *Project Synthesis*, was led by Astrid Ogilvie and Yongqi Gao, but received outstanding contributions by Professor Leslie King (see e.g., King and Ogilvie, 2020). Work Package 7 *Project Management and Dissemination* was led by Yongqi Gao and Astrid Ogilvie.

As regards interdisciplinary work in the Centre, the barriers and the challenges, and the opportunities and advantages that were experienced, the primary outcome of the project must rest squarely on the latter. It is evident that different research areas work entirely differently with completely different methods. Bringing together these different research disciplines is a long-term process and requires clear communication and a strong willingness amongst researchers to work together to seek solutions. One barrier is that sufficient observational data from, e.g., social sciences, are not always available in a form which allows a robust comparison to climatic changes. Furthermore, in a project like ARCPATH, it is not only the impacts of climatic changes that are to be considered, but a whole host of socio-economic elements that need to be taken into account. Thus, for example, with regard to the focus on whale migrations these could be influenced by warming water temperatures but they could equally well be influenced by increased shipping, environmental pollution or overfishing with an attendant impact on cetacean food sources. In order to have precise answers to such questions, further detailed research will be required. Nevertheless, it is felt that the findings of ARCPATH regarding such questions are a significant contribution to interdisciplinary research.

Large-scale, long-term, international, interdisciplinary, trans-disciplinary, multi-topic research projects with many different country, university and non-academic partners are increasingly the norm, particularly in areas of global significance such as climate change and biodiversity loss. Such

complex projects present new challenges including the need to integrate different methods, languages, knowledge-systems, time frames and, most of all, to synthesize research findings. In seeking to synthesize results from many separate disciplines encompassing very different research methods, ARCPATH placed great emphasis on the need to go beyond the multidisciplinary approach in which different aspects of a project are conducted separately. Instead, the objective becomes a focus on interdisciplinarity where different elements are integrated in order to provide greater insight into research questions and results where the whole is greater than the sum of the parts. Transdisciplinarity has been a further goal, where research has been undertaken in collaboration with members of a community, stakeholders and other knowledge holders.

For ARCPATH, the processes, structures and actions required to synthesize emerging findings throughout the lifetime of the project were identified early on in the project. These included initiating synthesis by developing appropriate processes and structures from the design phase of the project, regular communication with, and interrogation of, researchers from different parts of the project, joint authorship, and project meetings on topics that required input across the project. They also included means of harvesting and integrating findings, wresting meaning from them, identifying policy-relevance, co-creating and mobilizing findings to ensure their applicability to the problem addressed by the research and considering the on-going policy, practice, and scholarly legacy especially with respect to Arctic research.

## 10. HAVE THERE BEEN ANY MAJOR DEVIATIONS TO THE CENTRE'S RESEARCH PLAN SINCE START-UP?

There have not been any major deviations.

## 11. GENDER BALANCE

ARCPATH has placed much emphasis on the importance of gender perspectives, and the project has had both a female and a male lead. Yongqi Gao and Astrid Ogilvie together led the project from its inception in 2016 until his untimely death in July 2021. Subsequently, the project has been led by Astrid Ogilvie as Scientific Leader with François Counillon as Project Leader at NERSC. In both instances, the female and male leaders worked together in harmony to the best interests of the project. Furthermore, ARCPATH complies with the general objectives of NordForsk to increase recruitment of women and improve gender balance in projects. Climate science has traditionally been dominated by males; however, this project has had an excellent gender balance and includes leading female scientists for both climate and social science spheres. ARCPATH has had an excellent gender balance among the team leaders (7 female and 7 male). Of the 7 project work packages, 4 were led or co-led by women. WP1 and WP6 were led by Dr Astrid Ogilvie, WP4 was led by Dr Marianne Rasmussen and WP 2 was co-led by Dr Shuting Yang. Dr Ogilvie was also the co-leader of WP7. Issues of gender tend to be under-represented in the Arctic discourse, requiring greater emphasis on gendered dynamics in projects, research, community well-being and policy making, to mention but a few. In terms of recent developments, through partnership between the Stefansson Arctic Institute

(SAI) and the Arctic Council project Gender Equality in the Arctic (GEA) ARCPATH has continued to address this imbalance.

An exciting new project, *Searching for Seawomen*, is currently in the planning stage and a meeting will be held in April 2022 in Akureyri in this regard including ARCPATH team members Margaret Willson, Niels Einarsson, Astrid Ogilvie and Catherine Chambers, as well as other colleagues from diverse disciplines. The project is envisaged as a multidisciplinary international effort drawing on the expertise of anthropologists, archaeologists, historians and natural scientists to establish early female participation in work related to the sea. Using archival, historical and oral resources, earlier research by Willson established the presence of hundreds (if not thousands) of women in Iceland working in all positions from deckhand to skipper. Nevertheless, much material on female sea participation internationally and in Iceland has been under-documented and their presence systematically erased. Building upon research already done through ARCPATH, the *Searching for Seawomen* project will employ cross-cultural methods to give an important new perspective on historical female presence at sea in several Nordic Arctic countries. Such knowledge of an erased past will create better understanding of the present, providing a vital foundation in designing inclusive, equitable and gender-fair resource-use policies for the future.

With regard to ARCPATH fieldwork, gender perspectives mostly came up in the fieldwork in Greenland, where gendered division of labour and resources result in different roles of men and women in co-production, use and governance of provisioning, for example, whale ecosystem services, where men are typically the hunters and women primarily help to process whale products. Furthermore, there were more women than men among the interviewed scientists and whale-watching guides in Iceland and Norway, which is a finding in itself, even though gender issues were not discussed specifically in relation to whale ecosystem services (despite the question being asked). In addition, some of the impacts of the COVID-19 pandemic in Iceland and Greenland were more severe for women than men. This included increased reports of domestic violence suffered by women, especially in Iceland. In Greenland, policy responses by the national government included restrictions on the sale of alcohol in Nuuk, a largely successful attempt to mitigate the possibility of exacerbating the pre-existing level of domestic violence and abuse in the home (Cook and Jóhannsdóttir, 2021).

## 12. ARE THERE DEVIATIONS TO THE PLAN FOR OPEN ACCESS TO THE PROJECT'S RESEARCH RESULTS?

There are no significant changes to the plan for Open access to the project's research results.

## 13. FUTURE PERSPECTIVES AND CONTINUATION OF THE RESEARCH

ARCPATH team members are continuing the ethos and goals of ARCPATH in many new and ongoing projects. The focus on historical sea-ice records will be continued in a US National Science Foundation (NSF) funded project *Synthesizing historical sea-ice records to constrain and understand Great Sea-*

*Ice Anomalies (GSIA)s*). Astrid Ogilvie is the Co-PI on this new project that takes ARCPATH historical climate research one step further in that, as well as focusing on historical data for Iceland and Greenland, the project will include auxiliary data, e.g., century<sup>+</sup>-scale instrumental oceanographic measurements from coastal and shelf regions, e.g., northern and eastern Iceland with the aim of testing the hypothesis that GSIA)s were recurring events. Astrid Ogilvie is also continuing her Arctic-focused interdisciplinary research with the NSF "Navigating the New Arctic" project on *Navigating Impacts of the Arctic Tourism Industry on Nature, Commerce, and Culture in Northern Communities (ACT)* which considers cruise-ship tourism, a side focus of ARCPATH, and with a similar focus on northern regions.

Further development regarding climate and sea-ice predictions will be continued in the bilateral China-Norway project NFR-4SICE led by NERSC (Yiguo Wang, ARCPATH young researcher). François Counillon leads a strategic project at the Bjerknes Centre for Climate Research to provide coupled reanalysis of the last millennium based on proxy data, which will help to better understand multi-decadal variability of the climate and its main drivers. Furthermore, a large EU-proposal was recently submitted involving 3 ARCPATH partners (UiB, NERSC, and DMI) with the aim of improving near-term climate predictions for societal transformation. Enhancement of the EC-Earth climate prediction system has continued at DMI under the Danish state funded National Centre for Climate research (NCKF). The new research, led by Shuting Yang, includes development of an improved initialization method in the prediction system, provision of new decadal climate prediction experiments with improved skill and better understanding of the source of predictability in the North Atlantic, Arctic and the European sector. Noel Keenlyside is extending work on climate predictability through a Russian Megagrant with ARCPATH colleague, Vladimir Semenov, from the institute of Atmospheric Physics Russian Academy of Science and expanding research on Arctic impacts on the northern hemisphere to include interactions with rapid warming of the Tibetan Plateau in the bilateral China-Norway project (NFR-COMBINED). Torben Koenigk is contributing to a Swedish Research Council project to investigate whether the climate of the Last Interglacial, which was globally 2°C warmer than the pre-industrial climate, can be used as an analogue for a future world. Another new Swedish Research Council-funded FORMAS project (led by Koenigk) will evaluate the risk of future abrupt changes in the Gulfstream and the consequences for European and Nordic Seas.

The JUSTNORTH Horizon 2020 project with leadership by Catherine Chambers and Níels Einarsson applies the philosophies of justice and equity to several case studies on economic activities in the Arctic to address how sustainable development can be met through the theories of justice. The project takes important lessons learned from the ARCPATH ocean governance focus to continue to explore the issues of intergenerational equity in Icelandic small-scale fisheries and spatial justice of activities in Skjálfandi Bay, Iceland. Catherine also has a leadership role in a new Horizon Europe project, *Marine SABRES* that will explore the fishing industry's drivers, impacts, pressures, and responses to migrating fish stocks under different climate change scenarios. Catherine and Níels are also partners in a Northern Periphery preparatory grant, *Living on the Edge*, which uses historical archaeological records of regime shifts at sea to better understand future human adaptations to a changing marine environment. Further planned research includes a synthesis project on the impacts of storm frequency on Icelandic fisheries and aquaculture. ARCPATH findings suggest that storms are

an understudied climate change factor for Icelandic fisheries that needs to be better understood in terms of impacts and adaptations at the local level. This would also build on the historical analyses of fisheries and storminess undertaken for ARCPATH. Marianne Rasmussen has continued her collaboration with Professor Aran Mooney at Woods Hole Oceanographic Institute, USA and Adam Smith, now at the University of Southern Denmark, on a project entitled *Hearing in Auks*, funded by the US Office of Naval Research. With funding from the German Environmental Agency, together with German and Japanese colleagues, she is also undertaking research on humpback and blue whale responses to sound. All the projects mentioned have, in one way or another, come into being because of ARCPATH.

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## Appendix. Full list of academic output

### Journal articles

*Submitted articles with grey outline colour*



Title	Name	Journal, event, etc	Type	Open access
<b>2022</b>				
<i>Capital assets underpinning economic well-being – the example of whale ecosystem services in Arctic coastal communities</i>	Cook, D., Malinauskaite, L., Davíðsdóttir, B., Ögmundardóttir, H.	Ecosystem Services (under peer review) 2022	Journal Article: Peer Reviewed	Yes (green)
<i>Peering into the fire – an exploration of volcanic ecosystem services</i>	Cook, D., Malinauskaite, L., Davíðsdóttir, B.	Ecosystem Services (under peer review) 2022	Journal Article: Peer Reviewed	Yes (green)
<i>Connecting the dots: an interdisciplinary perspective on climate change effects on whales and whale watching</i>	Malinauskaite L., Cook, D., Davíðsdóttir, B., Ögmundardóttir, H., Koenigk, T., Karami, M. P., Krushke, T.	Ocean and Coastal Management (under peer review) 2022	Journal Article: Peer Reviewed	Yes (green)
<i>The urban climate in the largest cities of the European Arctic</i>	Miles, V., Esau, I.	Urban Climate (submitted 2022)	Article	Yes
<i>Coupled stratosphere-troposphere-Atlantic multidecadal oscillation: importance for near-future climate projection</i>	Omrani, N.-E., N. Keenlyside, K. Matthes, L. Boljka, D. Zanchettin, J. H. Jungclaus, S. W. Lubis	Submitted to NPJ Climate and Atmospheric Science	Article	Yes
<i>Extreme weather events and impacts on local fisheries: Evidence from Iceland on the need for adaptation planning</i>	Suehring, N., Chambers C., Einarsson, N.	In preparation (for submission to Marine Policy) 2022	Journal Article: Peer Reviewed	
<i>Assessing the influence of sea surface temperature and arctic sea ice cover on the uncertainty in the boreal winter future climate projections</i>	Cheung, H.-N., N. Keenlyside, T. Koenigk, S. Yang, T. Tian, Z. Xu, Y. Gao, F. Ogawa, N.-E. Omrani, S. Qiao, W. Zhou.	2022, Climate Dynamics, 10.1007/s00382-022-06136-0.	Journal Article: Peer Reviewed	Yes
<i>Interactive governance of whale ecosystem services: governability assessment of three case studies in the Arctic.</i>	Malinauskaite, L., Cook, D., Davíðsdóttir, B., Ögmundardóttir, H.	Ecology and Society, 2022 (in press)	Journal Article: Peer Reviewed	Yes (green)
<b>2021</b>				
<i>NorCPM1 and its contribution to CMIP6 DCCP</i>	Bethke, I., Y. Wang, Y., Counillon, F., N.	Geosci. Model Dev., 14, 7073–7116, 2021 <a href="https://doi.org/10.5194/gmd-14-7073-2021">https://doi.org/10.5194/gmd-14-7073-2021</a>	Article	Yes

	Keenlyside, N., Kimmritz, M., Fransner, F., Samuelsen, A., H. Langehaug, H. R., Svendsen, L., Chiu, P.-G., Passos, L., Bentsen, M., Guo, C., Gupta, A., Tjiputra, J., Kirkevåg, A., Olivie, D., Seland, Ø., Solsvik Vågane, J., Fan, Y., Eldevik. T.			
<i>The blessing of dimensionality for the analysis of climate data</i>	Christiansen, B.	Nonlin. Processes Geophys., 28, 409–422, <a href="https://doi.org/10.5194/npg-28-409-2021">https://doi.org/10.5194/npg-28-409-2021</a>	Journal Article: Peer Reviewed	Yes
<i>Co-production processes underlying the ecosystem services of glaciers and adaptive management in the era of climate change.</i>	Cook, D., Malinauskaite, L., Davíðsdóttir, B., Ögmundardóttir, H.	Ecosystem Services, 101342 2021	Journal Article: Peer Reviewed	Yes (green)
<i>Impacts, systemic risk and national response measures concerning COVID-19 – the island cases of Iceland and Greenland.</i>	Cook, D., Jóhannsdóttir, L.	Sustainability, 13(15), 8470 2021	Journal Article: Peer Reviewed	Yes (green)
<i>Observation-based selection of climate models projects Arctic ice-free summers around 2035</i>	Docquier, D., Koenigk, T.	Commun Earth Environ 2, 144. <a href="https://doi.org/10.1038/s43247-021-00214-7">https://doi.org/10.1038/s43247-021-00214-7</a> , 2021	Journal Article: Peer Reviewed	Yes
<i>A review of interactions between ocean heat transport and Arctic sea ice</i>	Docquier, D., Koenigk, T.	Environ. Res. Lett. 16 123002, 2021	Journal Article: Peer Reviewed	Yes
<i>10 Human Insecurities of Marginalized Peoples in the Arctic: The Cost of Arctic and Nordic Exceptionalism</i>	Hoogensen Gjørsv, G.	Breaking Through: Understanding Sovereignty and Security in the Circumpolar Arctic, University of Toronto Press, Toronto <a href="https://doi.org/10.3138/9781487531041-011">https://doi.org/10.3138/9781487531041-011</a> 2021	Journal Article: Peer Reviewed	No
<i>The emerging earths of climatic emergencies: on the island geography of life in modernity's ruins</i>	Huijbens, E.H.	Geografiska Annaler B, 2021	Journal Article: Peer Reviewed	Yes
<i>Systemic risk of cruise ships viewed from an Arctic and insurance perspective</i>	Jóhannsdóttir, L., Cook, D., Arruda, G. M.	Elementa: Science of the Anthropocene, 9(1), 00009 2021	Journal Article: Peer Reviewed	Yes (green)
<i>Efficiency management in catch</i>	Karlsdóttir, I.,	Sustainable Futures, 3, 100060	Journal Article:	Yes

<i>handling onboard small boats – standardisation of processes in Icelandic fisheries.</i>	Cook, D., Minelgaité, I.	2021	Peer Reviewed	(green)
<i>Propagation of Thermohaline Anomalies and their predictive potential 3 along the Atlantic water pathway</i>	Langehaug, H.R., Ortega, P., Counillon, F., Matei, D., Maroon, E., Keenlyside, N., Mignot, J., Wang, Y., Swingedouw, D., Bethke, I., Yang, S., Danabasoglu, G., Bellucci, A., Ruggieri, K.P., Nicolli, D., Årthun. M.	Journal of Climate, DOI: <a href="https://doi.org/10.1175/JCLI-D-20-1007.1">https://doi.org/10.1175/JCLI-D-20-1007.1</a> Pp., 1–60, Published-online: 31 Dec 2021	Article	No
<i>Socio-cultural valuation of whale ecosystem services in Skjálfandi Bay, Iceland.</i>	Malinauskaite, L., Cook, D., Daviðsdóttir, B. & Ögmundardóttir, H.	Ecological Economics, 180, 106867 2021	Journal Article: Peer Reviewed	Yes (green)
<i>Towards Community-Based Narwhal Conservation in Greenland.</i>	Nuttall, M., Flora, J., Oberborbeck Andersen, A.	Science, Vol. 370, No. 6515, 21.12.2021 <a href="https://doi.org/10.1126/science.abe7105">https://doi.org/10.1126/science.abe7105</a>	Letter - Reply	No
<i>Pacific contribution to decadal surface temperature trends in the Arctic during the twentieth century</i>	Svendsen, L., N. Keenlyside, M. Muilwijk, I. Bethke, N.-E. Omrani, and Y. Gao	(2021), Climate Dynamics, 57(11), 3223-3243, 10.1007/s00382-021-05868-9.	Article	Yes
<i>Benefits of sea ice thickness initialization for the Arctic decadal climate prediction skill in EC-Earth3</i>	Tian, T., Yang, S., Karami, M. P., Massonnet, F., Kruschke T., Koenigk, T.	Geosci. Model Dev., 14, 4283–4305, <a href="https://doi.org/10.5194/gmd-14-4283-2021">https://doi.org/10.5194/gmd-14-4283-2021</a> , 2021	Journal Article: Peer Reviewed	Yes
<b>2020</b>				
<i>How Does the Arctic Council Support Conservation of Arctic Biodiversity?</i>	Barry, T., Daviðsdóttir, B., Einarsson, N., Young, O.R.	Sustainability, 12, 5042, 2020	Article	Yes
<i>The Arctic Council: An Agent of Change?</i>	Barry, T., Daviðsdóttir, B. and Young, O.	Global Environmental Change, 63, 2020	Article	Yes
<i>Understanding the Distribution of Multimodel Ensembles</i>	Christiansen, B.	2020, Journal of Climate, <a href="https://doi.org/10.1175/JCLI-D-20-0186.1">https://doi.org/10.1175/JCLI-D-20-0186.1</a>	Journal Article: Peer Reviewed	Yes
<i>A contingent valuation approach to estimating the recreational value of</i>	Cook, D., Malinauskaite, L.,	Tourism Management Perspectives, 36, 100754	Journal Article: Peer Reviewed	Yes (green)

<i>commercial whale watching – the case of Faxaflói Bay, Iceland</i>	Davíðsdóttir, B., Ögmundardóttir, H.	2020		en)
<i>Reflections on the ecosystem services of whales and valuing their contribution to human well-being</i>	Cook, D., Malinauskaite, L., Davíðsdóttir, B., Ögmundardóttir, H. & Roman, J.	Ocean and Coastal Management, 105100 2020	Journal Article: Peer Reviewed	Yes (green)
<i>Seasonal to decadal predictions of regional Arctic sea ice by assimilating sea surface temperature in the Norwegian Climate Prediction Model</i>	Dai, P., Gao, Y., Counillon, F., Wang, Y., Kimmritz, M., Langehaug, H.R.	<i>Climate Dynamics</i> volume 54, pp., 3863–3878, 2020	Article	Yes
<i>An evaluation of the cost-competitiveness of maritime fuels – a comparison of heavy fuel oil and methanol (renewable and conventional) in Iceland</i>	Helgason, R., Cook, D., Davíðsdóttir, B.	Sustainable Production and Consumption, 236-248, 2020	Journal Article: Peer Reviewed	Yes (green)
<i>Ferðamennska á mannöld – Jarðsambönd ferðafólks við virkjanir og víðerni. [Tourism in the Anthropocene. How tourists view utility sites as wilderness]</i>	Huijbens, E.H.	Náttúrufræðingurinn, 2020	Journal Article: Peer Reviewed	Yes
<i>Willingness to pay for expansion of the whale sanctuary in Faxaflói Bay, Iceland: a contingent valuation study</i>	Malinauskaite, L., Cook, D., Davíðsdóttir, B., Ögmundardóttir, H. & Roman, J.	Ocean and Coastal Management, 105026 2020	Journal Article: Peer Reviewed	Yes (green)
<b>2019</b>				
<i>Future projections of cyclone activity in the Arctic for the 21st century from regional climate models (Arctic-CORDEX).</i>	Akperov, M., O. Gutjahr, N. Koldunov, F. Boberg, M. Adakudlu, T. Koenigk et al.	Global and Planetary Change 182, <a href="https://doi.org/10.1016/j.gloplacha.2019.103005">https://doi.org/10.1016/j.gloplacha.2019.103005</a>	Journal Article: Peer Reviewed	Yes
<i>Arctic Ocean freshwater dynamics: Transient response to increasing river runoff and precipitation.</i>	Brown, N. J., Nilsson, J., & Pemberton, P.	Journal of Geophysical Research: Oceans, 124, 5205–5219. <a href="https://doi.org/10.1029/2018JC014923">https://doi.org/10.1029/2018JC014923</a>	Journal Article: Peer Reviewed	Yes
<i>Whale sanctuaries – an analysis of their contribution to marine ecosystem-based management.</i>	Cook, D., Malinauskaite, L., Roman, J., Davíðsdóttir, B., Ögmundardóttir, H.	<i>Ocean and Coastal Management</i> , 104987. (2019) <a href="https://www.journals.elsevier.com/ocean-and-coastal-management">https://www.journals.elsevier.com/ocean-and-coastal-management</a>	Journal article (reviewed)	Yes
<i>Synergies and trade-offs in the Sustainable Development Goals – the case of the Icelandic tourism sector.</i>	Cook, D., Saviolidis, N., Davíðsdóttir, B., Jóhannsdóttir, L., Ólafsson, S.	<i>Sustainability</i> , 11(15), 4223. (2019)	Journal article (reviewed)	Yes
<i>Analysis of Ensemble Mean Forecasts: The Blessings of High Dimensionality</i>	Christiansen, B.	Monthly Weather Review, <a href="https://doi.org/10.1175/MWR-D-18-0211.1">https://doi.org/10.1175/MWR-D-18-0211.1</a>	Journal Article: Peer Reviewed	Yes

<i>Tending to Destinations. Conceptualising tourism's transformative capacities.</i>	Huijbens, E.H. and Jóhannesson, G.T.	Tourist Studies, 19,: 3, 279-294 (2019) <a href="https://doi.org/10.1177/1468797619832307">https://doi.org/10.1177/1468797619832307</a>	Journal article (Peer reviewed)	Yes
<i>Systemic risk of maritime-related oil spills viewed from an Arctic and insurance perspective.</i>	Jóhannsdóttir, L., Cook, D.	Ocean and Coastal Management, 104853. (2019).	Journal article (reviewed)	Yes
<i>Impact of Ocean and Sea Ice Initialisation On Seasonal Prediction Skill in the Arctic</i>	Kimmritz, M., F. Counillon, L. H. Smedsrud, I. Bethke, N. Keenlyside, F. Ogawa, Y. Wang	Journal of Advances in Modeling Earth Systems, 2019, <a href="http://dx.doi.org/10.1029/2019MS001825">http://dx.doi.org/10.1029/2019MS001825</a>	Journal Article Peer Reviewed	Yes
<i>Towards normal Siberian winter temperature</i>	Koenigk, T., R. Fuentes-Franco	International Journal of Climatology 2019, 1-8, doi:10.1002/joc.6099	Journal Article: Peer Reviewed	Yes
<i>Tracing the imprint of runoff variability on Arctic water mass transformation,</i>	Lambert, E., A. Nummelin, P. Pemberton, M. Ilicak,	JGR Ocean 124 (1), 302-319. 2019 <a href="https://doi.org/10.1029/2017JC013704s">10.1029/2017JC013704s</a> .	Journal article – Peer reviewed	Yes
<i>Willingness to pay for expansion of the whale sanctuary in Faxaflói Bay, Iceland: a contingent valuation study.</i>	Malinauskaite, L., Cook, D., Davíðsdóttir, B., Ögmundardóttir, H., Roman, J.	Ocean and Coastal Management, 105026. (2020)	Journal article (reviewed)	Yes
<i>Arctic ecosystem services: a literature review.</i>	Malinauskaite, L., Cook, D., Davíðsdóttir, B., Ögmundardóttir, H, Roman, J.	Ecosystem Services, 36, 100898. (2019) <a href="https://www.journals.elsevier.com/ecosystem-services">https://www.journals.elsevier.com/ecosystem-services</a>	Journal article (reviewed)	Yes
<i>Barents-Kara sea ice and European winters in EC-Earth</i>	Ringgaard, I. M., S. Yang, E. Kaas, J. Hesselbjerg Christensen	Climate Dynamics, <a href="http://link.springer.com/article/10.1007/s00382-020-05174-w">http://link.springer.com/article/10.1007/s00382-020-05174-w</a>	Journal Article: Peer Reviewed	Yes
<i>The vulnerability of destinations to climate change: A comparative analysis of contextual socio-political factors.</i>	Santos-Lacueva, R. Ariza, E. Romagosa, F., Saladié, O.	Journal of Sustainable Tourism, DOI: 10.1080/09669582.2019.1607865	Journal article, Peer reviewed	Yes
<i>Assimilation of semi-qualitative sea ice thickness data with the EnKF-SQ</i>	Shah A., L. Bertino, F. Counillon, M. Gharamti, J. Xie	Tellus A: Dynamic Meteorology and Oceanography, 72:1, 1-15, DOI: 10.1080/16000870.2019.1697166	Journal Article: Peer Reviewed	Yes
<i>A wider view of assessments of ecosystem service in coastal areas: the perspective of social-ecological complexity.</i>	Solé, L. and Ariza, E.	Ecology and Society 24 (2):24.	Journal Article: Peer Reviewed	Yes
<i>Seasonal predictions initialised by assimilating sea surface temperature observations with the EnKF</i>	Wang Y, F Counillon, N Keenlyside, L Svendsen, S Gleixner, M Kimmritz, P Dai, Y Gao	Climate Dynamics, 2019, <a href="https://doi.org/10.1007/s00382-019-04897-9">https://doi.org/10.1007/s00382-019-04897-9</a>	Journal Article: Peer Reviewed	Yes
<b>2018</b>				
<i>Cyclone Activity in the Arctic from an Ensemble of Regional Climate Models (Arctic CORDEX).</i>	Akperov, M. , A. et al. including Koenigk T.	JGR-Atmos 123, <a href="https://doi.org/10.1002/2017JD027703">https://doi.org/10.1002/2017JD027703</a> - 2018	Journal article	Yes

<i>Reply to "Comment on 'Ensemble Averaging and the Curse of Dimensionality'.</i>	Christiansen, B.	Journal of Climate, 31, 9017-9019, DOI: 10.1175/JCLI-D-18-0416.1	Journal article	
Historical records of earthquakes for Greenland and Labrador in Moravian Missionary Journals	Demarée, G.R. Ogilvie, A.E.J., Kusman, D.	Journal of Seismology. <a href="https://doi.org/10.1007/s10950-018-9796-z">10.1007/s10950-018-9796-z</a> . Online 4 October 2018.	Journal article.	Yes
<i>Optimising assimilation of sea ice concentration in an Earth system model with a multcategory sea ice model</i>	Kimmritz M, Counillon F, Bitz CM, Massonnet F, Bethke I, Gao Y.	Tellus. Series A, Dynamic meteorology and oceanography. 2018;70:1435945	Journal article	Yes
<i>Impact of Arctic sea ice variations on winter temperature anomalies in northern hemispheric land areas.</i>	Koenigk, T., Y. Gao, G. Gastineau, N. Keenlyside, T. Nakamura, F. Ogawa, Y. Orsolini, V. Semenov, L. Suo, T. Tian, T. Wang, J. J. Wettstein, S. Yang	Climate Dynamics (published online) 1-27, DOI 10.1007/s00382-018-4305-1 - 2018	Journal article	Yes
<i>Sea-ice stories from Iceland and Labrador.</i>	Ogilvie, A.E.J.	<a href="https://bifrostonline.org/sea-ice-stories-from-iceland-and-labrador/">https://bifrostonline.org/sea-ice-stories-from-iceland-and-labrador/</a>	Online publication	Yes
<i>Impact of assimilating a merged sea-ice thickness from CryoSat-2 and SMOS in the Arctic reanalysis</i>	Xie J, Counillon F, Bertino L.	The Cryosphere. 2018;12(11)	Journal article	Yes
<i>Moving beyond panaceas in fisheries governance</i>	Young, O.R. et al	PNAS   September 11, 2018   vol. 115   no. 37   9065–9073	Journal article	
<i>Regional Coupled Model and Data Assimilation</i>	Zhang, S., Xie, Y., Counillon, F., Ma, X., Yu, P. and Jing, Z.	Advances in Meteorology <a href="https://doi.org/10.1155/2018/9434102">https://doi.org/10.1155/2018/9434102</a>	Journal article Special issue	Yes
<b>2017</b>				
<i>L'éruption du Lakagígar en Islande ou 'Annus Mirabilis 1783' Chronique d'une année extraordinaire (The eruption of Lakagígar in Islande or 'Annus Mirabilis 1783' – Chronicle of an extraordinary year)</i>	Demarée, G.R. and Ogilvie, A.E.J. 2017.	<i>Sémata, Ciências Sociais e Humanidades</i> , 229: 239-260.	Journal article – Peer reviewed	
<i>Medieval Iceland, Greenland, and the New Human Condition: A case study in integrated environmental humanities,</i>	Hartman, S., Ogilvie, A.E.J., Ingimundarson, J.H., Dugmore, A.J., Hambrecht, George, McGovern, T.H. 2017.	<i>Global and Planetary Change</i> 156, 123-139, <a href="https://doi.org/10.1016/j.gloplacha.2017.04.007">https://doi.org/10.1016/j.gloplacha.2017.04.007</a> [OPEN ACCESS]	Journal article – Peer reviewed	Yes
<i>Quality assessment of the TOPAZ4 reanalysis in the Arctic over the period 1991–2013.</i>	Xie J, Bertino L, Counillon F, Lisæter KA, Sakov P	<i>Ocean Science</i> . 2017;13. <a href="https://www.nersc.no/biblio/quality-assessment-topaz4-reanalysis-arctic-over-period-1991-2013">https://www.nersc.no/biblio/quality-assessment-topaz4-reanalysis-arctic-over-period-1991-2013</a>	Journal article – Peer reviewed	Yes
<i>Skillful prediction of European climate rooted in the ocean</i>	Årthun, M., Eldevik, T., Viste, E., Drange, H., Furevik, T.,	<i>Nat Commun</i> 8, 15875 (2017). <a href="https://doi.org/10.1038/ncomms15875">https://doi.org/10.1038/ncomms15875</a>	Journal article – Peer reviewed	Yes

	Johnson, H.L., Keenlyside, N.S.			
<b>2016</b>				
<i>Flow-dependent assimilation of sea surface temperature in isopycnal coordinates with the Norwegian Climate Prediction Model.</i>	Counillon, F., Keenlyside, N., Bethke, I., Wang, Y., Billeau, S., Shen, M.L., Bentsen, M. 2016.	Tellus, A, 68, 32437, <a href="http://dx.doi.org/10.3402/tellusa.v68.32437">http://dx.doi.org/10.3402/tellusa.v68.32437</a>	Journal article – Peer reviewed	Yes

## Book contributions

*Submitted articles with grey outline colour*

<b>2022</b>				
<i>Stormy Weather: Climate and Sea-Ice Variations in the North Atlantic (Iceland Sector)</i>	Ogilvie, A.E.J.	In (Natascha Mehler, editor) German voyages to the North Atlantic islands (1400-1700), Northern World series, Brill, Leiden. Submitted.	Book chapter	No
<i>How many wrongs make a right? Narwhals, indignation, and sustainability in Ittoqqortoormiit, East Greenland</i>	Flora, J	What on Earth! Outrage and Anthropology on a Disrupted Planet (edited by Bubandt and Crawford) In press	Book chapter	No
<i>Transcription of Regional Icelandic Manuscripts Initiative (OTRIMI): Designing an open science platform for digitization of Icelandic literary production in manuscripts through curated citizen science</i>	Hartman, S., Hreinsson, V., Ingólfssdóttir, G., Ogilvie, A.E.J., Sigurðardóttir, R.	In (Travis, C., Bergmann, L., Dixon, D., Legg, R., and Crampsie, A., editors) The Routledge Handbook of Digital Environmental Humanities, Routledge, In press.	Book chapter	
<i>A New Look at Climate and Agriculture in Fifteenth-Century Iceland.</i>	Júlíusson, Á.D. and Ogilvie, A.E.J.	In (Andrea Kiss, Rudolf Brazdil and Chantal Camenisch, editors) Fifteenth-Century Climate of Europe, Palgrave. In Press.	Book chapter	No
<i>Disjunctures of practice and the problems of collapse</i>	Jackson, R., Hartman, S., Trump, B., Crumley, C., McGovern, T.H., Linkov, I., Ogilvie, A.E.J.	In (A.Izdebski, P. Filipkowski and J. Haldon, editors) Perspectives on public policy in societal-environmental crises. What the future needs from history. Risks, Systems, Decisions. Cham, Springer. In Press.	Book chapter	Yes
<i>Systemic risk and mitigating economic disasters in the Arctic – cases of oil spills, cruise ships and pandemics.</i>	Cook, D, Jóhannsdóttir, L	Handbook IV on Disaster Risk Reduction for Resilience: Disaster Economic Vulnerability and Recovery Programs. Springer, Cham 2022	Book chapter (Peer reviewed)	
<b>2021</b>				
<i>Early Meteorological Observations in Greenland: The Contributions of David Cranz, Christian Gottlieb Kratzenstein and Christopher Brasen</i>	Demarée, G.R., Ogilvie, A.E.J.	In (Felicity Ann Jensz and Christina Petterson, editors) Legacies of David Cranz's "Historie von Grönland" (1765), Basingstoke, Palgrave Macmillan, 141-164. DOI 10.1007/978-3-030-63998-3. 2021.	Book chapter	Yes
<i>Developing Earthly Attachments in the Anthropocene</i>	Huijbens, E.H.	Routledge, 2021	Book	No
<i>The Arctic as the last frontier: tourism</i>	Huijbens, E.H.	Global Arctic – an introduction to the multifaceted dynamics of the Arctic, 2021	Book chapter	No
<i>A Fleet of Silver: Local Knowledge Perceptions of Sea Ice from Iceland and Labrador/Nunatsiavut.</i>	Ogilvie, A.E.J., Hill, B.T., Demarée, G.R. 2021.	In (Panagiotakopulu, E, Sadler, JP, editors) <i>Biogeography in the Sub-Arctic: The Past and Future of North Atlantic Biota</i> , John Wiley & Sons Ltd, 273-291. DOI:10.1002/9781118561461.	Book chapter	No
<b>2020</b>				
<i>Small-scale fisheries in Iceland: Local voices and global complexities</i>	Chambers, C., Einarsson, N., Karlsdóttir, A.	In <i>Small Scale Fisheries in Europe</i> . C. Pita, J. Pascuel and M. Bavinck (Eds.) Amsterdam: Springer 2020	Book chapter	
<i>Arctic Fisheries and Aquaculture</i>	Chambers, C. Henke, T., Cook, D., Costa-Pierce, B., Einarsson, N., Kaiser, B.,	In <i>Renewable Economies in the Arctic: A State of Knowledge</i> 2021	Book chapter	



	Knutsson, Ö., Nazarova, N., Sutton, T.			
<i>“Small science”: Community engagement and local research in an era of big science agendas.</i>	Chambers, C., King, L.A., Cook, D., Malinauskaite, L., Wilson, M., Ogilvie, A. E. J., Einarsson, N.	In (Douglas C. Nord, editor) <i>Nordic Perspectives on the Responsible Development of the Arctic: Pathways to Action</i> , Springer Nature, Switzerland, <a href="https://doi.org/10.1007/978-3-030-52324-">https://doi.org/10.1007/978-3-030-52324-</a> , 203-224, 2020.	Book chapter	
<i>Security as an Analytical Tool: Human and Comprehensive Security Approaches to Understanding the Arctic</i>	Hoogensen Gjørvi, G.	Routledge Handbook of Arctic Security 2020	Book chapter	No
<i>The Challenge of Synthesis: Lessons from Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	King, L.A., Ogilvie, A.E.J.	In (Douglas C. Nord, editor) <i>Nordic Perspectives on the Responsible Development of the Arctic: Pathways to Action</i> , Springer Nature, Switzerland, <a href="https://doi.org/10.1007/978-3-030-52324-9">https://doi.org/10.1007/978-3-030-52324-9</a> 3-412.2020	Book chapter	Yes
<i>Climate Change in the Arctic</i>	Koenigk, T., J. Key, J., Vihma, T.	In: <i>Physics and Chemistry of the Arctic Atmosphere</i> , Springer, 2020	Book-chapter	No
<i>The ARCPATH project: Assessing Risky Environments and Rapid Change: Research on Climate, Adaptation and Coastal Communities in the North Atlantic Arctic.</i>	Ogilvie, A.E.J., Gao, Y., Einarsson, N., Keenlyside, N., King, L.	In (Douglas C. Nord, editor) <i>Nordic Perspectives on the Responsible Development of the Arctic: Pathways to Action</i> , Springer Nature, Switzerland, <a href="https://doi.org/10.1007/978-3-030-52324-">https://doi.org/10.1007/978-3-030-52324-</a> , 137-156. 2020.	Book chapter	Yes
<i>The Climate Model: An ARCPATH tool to Understand and Predict Climate Change</i>	Yang, S., Gao Y., Torben, K., Keenlyside N., Counillon F.	In (Douglas C. Nord, editor) <i>Nordic Perspectives on the Responsible Development of the Arctic: Pathways to Action</i> , Springer Nature, Switzerland, <a href="https://doi.org/10.1007/978-3-030-52324-157-180">https://doi.org/10.1007/978-3-030-52324-157-180</a> , 2020 .	Book chapter	No
<b>2019</b>				
<i>Tourism geography in and of the Anthropocene.</i>	Gren, M. and Huijbens, E.H.	In D.K. Müller (Ed.) <i>A Research Agenda for Tourism Geographies</i> . Edward Elgar Publishers: Cheltenham, pp. 117-127. (2019)	Book article (Peer reviewed)	
<i>Afterwords. Involving Earth – Tourism matters of concern.</i>	Huijbens, E. H.	In M. Mostafanezhad and R. Norum (eds.). <i>Anthropocene Ecologies: Entanglements of Tourism, Nature and Imagination</i> . London: Routledge, pp. 187-189. (2019)	Book article (Peer reviewed)	
<i>Opportunities and Challenges for Nordic Arctic and Subarctic Regions: A Case Study Approach</i>	Ogilvie, A.E.J.	In Nilsson, K., Karlsdóttir, A. and Refsgaard, K. (eds.) <i>Nordic Working Papers Opportunities and Challenges for Future Regional Development</i> - notes from an open seminar, with EK-R (Nordic Committee of Senior Officials for Regional Policy) and Nordregio’s Board of Directors at University of Akureyri, Organised by Ministry of Transport and Local Government, Byggðastofnun and Nordregio, 12 September 2019, Nordisk ministerråd, Copenhagen. For Nordregio and Nordic Committee Handbook.	Book chapter (peer reviewed).	Yes (Available online)

		<a href="http://urn.kb.se/resolve?urn=urn:nbn:se:norden:org:diva-5802">http://urn.kb.se/resolve?urn=urn:nbn:se:norden:org:diva-5802</a>		
<i>Recognized Seaworthy: Resistance and Transformation among Icelandic Fisher Women</i>	Willson, M., Tryggvadóttir, H.	In T. King et al. (Eds.), <i>At Home on the Waves</i> . Berghahn Books: New York (2019)	Book article (Peer reviewed)	
<b>2018</b>				
<i>The 1780s: Global Climate Anomalies, Floods, Droughts, and Famines</i>	Damodaran, V., Allan, R., Ogilvie, A.E.J., Demarée, G.R., Gergis, J., Mikami, T., Mikhail, A., Nicolson, S.E., Norrgård, S., Hamilton, J.	In: White S., Pfister C., Mauelshagen F. (eds) <i>The Palgrave Handbook of Climate History</i> . Palgrave Macmillan, London, pp. 517-550. First Online 18 July 2018 DOI <a href="https://doi.org/10.1057/978-1-137-43020-5_34">https://doi.org/10.1057/978-1-137-43020-5_34</a> . eBook ISBN 978-1-137-43020-5; Hardcover ISBN 978-1-137-43019-9.	Book chapter (published)	Available online.
<i>Feasting on friends. Whales, puffins and tourism in Iceland</i>	Huijbens, E. and Einarsson, N.	In C. Kline (Ed.) <i>Animals as Food: Ethical Implications for Tourism</i> . London: Routledge Ethics of Tourism Series, 10-27. ISBN 978-1-138-29161.	Book chapter	No
<i>Early Modern Europe</i>	Pfister C., Brázdil R., Luterbacher J., Ogilvie A.E.J., White S.	In: White S., Pfister C., Mauelshagen F. (eds) <i>The Palgrave Handbook of Climate History</i> . Palgrave Macmillan, London, pp. 265-295. First Online 18 July 2018 DOI <a href="https://doi.org/10.1057/978-1-137-43020-5_23">https://doi.org/10.1057/978-1-137-43020-5_23</a> . eBook ISBN 978-1-137-43020-5; Hardcover ISBN 978-1-137-43019-9.	Book chapter (published)	Available online.
<b>2017</b>				
<i>A Brief Description of Sea Ice. In: Elizabeth Ogilvie, ed., Out of Ice,</i>	Ogilvie, A.E.J. 2017.	Black Dog Publishing, London, 88-90	In book	
<i>Finding Gender in the Arctic: A Call to Intersectionality and Diverse Methods. In: The Interconnected Arctic — UArctic Congress 2016. Latola, Kirsti and Hannele Savela (eds).</i>	Hoogensen-Gjørø, G. 2017a.	Cham, Switzerland: Springer International Publishing	Book chapter	Yes
<i>Tensions between Environmental, Economic, and Energy Security in the Arctic” In: Northern Sustainable: Understanding and Addressing Change in a Circumpolar World. Gail Fondahl and Gary Wilson (eds).</i>	Hoogensen-Gjørø, G. (2017b).	Cham, Switzerland: Springer International Publishing	Book chapter	Yes

## Conference presentations

Title	Name	Journal, event, etc	Type	Open access
<b>2021</b>				

<i>Panel on International Arctic Research in Iceland</i>	Chambers, C.	Arctic Circle Assembly, 14-17 October, 2021	Conference presentation – Invited	
<i>Panel on International Arctic Research in Iceland</i>	Chambers, C.	Arctic Circle Assembly, 14-17 October, 2021	Conference presentation – Invited	
<i>Moderator</i>	Einarsson, N.	Arctic Coast Guard Forum. Women in Maritime, Akureyri, 12 April 2021, Online.	Invited conference session	
<i>Future Perfect? Earthly tourism attachments</i>	Huijbens, E.H.	Invited keynote at the 29 <sup>th</sup> Nordic Symposium of Tourism Research. University of Akureyri, Akureyri, Iceland, 20-23 September 2021.	Conference presentation – Invited	Yes
<i>Towards providing more reliable regional climate change projections</i>	Keenlyside, N.	Workshop: Multi-annual to Decadal Climate Predictability in the North Atlantic-Arctic Sector, Denmark, Hybrid event 22.09.2021	Conference presentation - oral	Yes
<i>Historical and Early Instrumental Climate Data for England, Iceland, Labrador and Greenland</i>	Ogilvie, A.E.J.	Presentation to Human Ecodynamics Research Centre (HERC) Workshop, 19-20 March 2021.	Presentation	No
<i>Climate, Society, Economy and Scholarship: Environmental Writings in Iceland ca. 1200-1400</i>	Ingimundarson, J.H. and Ogilvie, A.E.J.	Leeds International Medieval Congress, University of Leeds, 5-9 July 2021.	Presentation	No
<i>The Past Climate of Iceland Revisited AD 1400-1700</i>	Ogilvie, A.E.J.	Third International Conference on Polar Climate and Environmental Change in the Last Millennium, Torun, Poland, 30 August to 1 September 2021	Presentation	No
<i>Earth, wind and fire. The emerging energy landscapes of the Anthropocene</i>	Huijbens, E.H. and Benediktsson, K.	Virtual presentation at the 2021 Annual International Conference of the RGS/IBG. London, UK, 1 September 2021	Conference presentation - oral	Yes
<i>Climate predictions: Pathways to resilient, sustainable societies</i>	Keenlyside, N.	NordForsk webinar, 17.3.2021	Oral presentation	Yes
<i>The role of subpolar North Atlantic as a source of predictability</i>	Yang, S., Tian, T., Wang, Y., Schmith, T., Drews, A., Olsen, S.M., Keenlyside, N.	At the European Geophysical Union Conference 2021	Conference presentation	
<i>The urban climate in the largest cities of the European Arctic</i>	Miles, V, Esau, I.	International Symposium on the connection between climate change and biological and landscape diversity change in the Arctic and Subarctic regions, Salekhard, Russia, 2-3 December 2021	Conference presentation	
<i>The role of subpolar North Atlantic in</i>	Yang, S., Tian, T.,	At Workshop on Multi-annual to	Conference	

<i>climate predictions for high latitudes</i>	Wang, Y., Schmith, T., Drews, A., Olsen, S.M., Keenlyside, N.	Decadal Climate Predictability in the North Atlantic-Arctic Sector, 2021	presentation	
<i>Women in Maritime</i>	Willson, M.	Arctic Coast Guard Forum, University of Akureyri, 2021	Conference presentation	No
<i>Gender, History and Memory in the Nordic Context</i>	Willson, M.	The Society for the Advancement of Scandinavian Study conference, Seattle, 2021	Conference presentation	No
<i>Narwhal Pluralities: Which Narwhal is the un/sustainable one?</i>	Flora, J.	Open Mic Departmental Seminar, Department of Anthropology, Aarhus University, 23rd March 2021	Presentation	No
<i>A fleet of silver, come to torment us: Sea-ice variations off the coasts of Iceland from the Settlement to the Present</i>	Ogilvie, A.E.J.	Invited Lecture to the Centre for Climate Change Research (CCCR), Nicolaus Copernicus University, Toruń, Poland. 6 December 2021.	Presentation	No
<i>Whale Ecosystem Services and Co-production Processes Underpinning Human Wellbeing in the Arctic: Case Studies from Greenland, Iceland and Norway</i>	Malinauskaite L., Cook, D., Davíðsdóttir, B., Ögmundardóttir.	ArcticNet Scientific Meeting 2021, Québec, Canada 2021	Conf. pres. - Poster	
<i>Report on the 2021 Stefansson Memorial Lecture &amp; Roundtable on Gender Equality in the Arctic</i>	Chambers, C.	Stefansson Arctic Institute; Institute of Arctic Studies, Dartmouth College: ARCPATH; CER-ARCTIC; Dec. 2021	Conference report	Yes
<i>Systemic Risk, COVID-19 and Climate Change.</i>	Cook, D. & Jóhannsdóttir, L.	Trans European Policy Studies Association (TEPSA), Brussels, Belgium 2021	Policy brief	
<i>Key dimensions of Arctic economies: subsistence, mixed, market, and their relative context</i>	Jóhannsdóttir, L. & Cook, D.	Trans European Policy Studies Association (TEPSA), Brussels, Belgium 2021	Policy brief	
<i>Review of a parliamentary resolution on Icelandic Arctic policy</i>	Einarsson, N.	Icelandic Parliament Foreign Affairs Committee, 11 May 2021.	Policy review	Yes
<i>Meeting on Icelandic Arctic policy</i>	Einarsson, N.	Icelandic Parliament Foreign Affairs Committee, 12 May 2021.	Policy outreach	No
<i>Corporate Social and Environmental Innovation</i>	Ogilvie, A.E.J.	Inaugural Conference on <i>Innovations to Tackle Global Sustainability Challenges</i> , Virtually to Centres for International Business Education and Research (CIBER) at the George Washington University, Indiana University, and Georgia Institute of Technology. 20-21 May 2021.	Panel Member	No
<i>Roundtable on Gender Equity in the Arctic</i>	Willson, M.	ARCPATH sponsored. The Autonomous University of Barcelona, 2021	Discussant	No

<i>Ocean Connections from the Arctic across the globe</i>	Berx, B. M. Payne, J. Høyer, N. Keenlyside, M. Reigstad, S. Henley	Hybrid workshop, Nordic Pavilion, COP26, 4.11.2021	Workshop	Yes
<b>2020</b>				
<i>Reflections on Icelanders and Arctic Research in the Anthropocene</i>	Chambers, C. & Einarsson, N.	Iceland Arctic Talks, Arctic Circle Assembly, 5 November 2020	Conference presentation – Invited	
<i>Understanding the distribution of multi-model ensembles</i>	Christiansen, B.	At the European Geophysical Union Conference 2020	Conference presentation - oral	
<i>Arctic Meteorological and Geographical Observations on Dutch whaling Vessels in the Early 1760s</i>	Demarée, G.R., Tagami, Y., Mailier, P., Ogilvie, A.E.J., Mikami, T.	Presentation for the 35th International Symposium on the Okhotsk Sea and Polar Oceans 2020, Mombetsu, Hokkaido, Japan, 16-21 February 2020.	Presentation	No
<i>How to Cultivate Economic Growth Among Young People: Youth Programs and Best Practises from the North Atlantic</i>	Gunnarsson, G.	1st Northern Youth Forum, “Entrepreneurship, sustainable technologies, innovation ecosystems of the North”, 27 September 2020	Conference presentation	
<i>Climate History of Iceland and the Lake Mývatn Area</i>	Ogilvie, A.E.J.	Svartárkot Culture-Nature Project, Human ecology and culture at Lake Mývatn 1700-2000: Dimensions of Environmental and Cultural Change, Bárðardalur, northern Iceland, 24 August 2018.	Presentation	No
<i>Reflections of Change: The Natural World in Literary and Historical Sources for Iceland ca. AD 800-1800</i>	Ogilvie, A.E.J	Invited lecture to University of the Highlands and Islands Archaeology Institute Research Seminar, Kirkwall, Orkney, Scotland, virtually on 25 September 2020.	Presentation	No
<i>Weather as Magic and Metaphor in the Sagas of Icelanders</i>	Ogilvie, A.E.J.	Invited Keynote Hermann Pálsson Memorial Lecture at the Annual Conference of the Scottish Society for Northern Studies, virtually on 21 November 2020.	Presentation	Yes
<i>Arctic Climate Predictions - Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	Ogilvie, A.E.J.	Internal presentation to INSTAAR Colleagues. 15 January 2020	Presentation	No
<i>The decadal climate prediction skill with focus on the North Atlantic region</i>	Yang, S., Christiansen, B.	European Geophysical Union Conference 2020	Conference presentation	
<b>2019</b>				

<i>The Arctic Research Center of the Universitat Autònoma de Barcelona: First steps</i>	Ariza, E., Einarsson, N.	Invited presentation at the Lisbon International Arctic Conference and Workshop. Instituto Superior de Ciencias Sociais e Políticas. Universidade de Lisboa. 13th Dec.	Conference presentation - Invited	
<i>Fishing rights and financial capitalism in Iceland: From common property to panaceas of private ownership</i>	Einarsson, N.	Public lecture at the Dept. of Anthropology, Autonomous Univ. of Barcelona, 21. February 2019	Conference presentation - Invited	
<i>Sustainable Arctic Tourism</i>	Huijbens, E. H.	Panel at the Embassy of Iceland in London, Knightsbridge, England, 26 <sup>th</sup> June 2019, organised by Polar Research and Policy Initiative.	Conference presentation - Invited	
<i>Arctic Climate Predictions - Pathways to Resilient, Sustainable Societies (ARCPATH) and Historical Sea-Ice Records from Iceland</i>	Ogilvie, A.E.J.	Panel on <i>Out of Ice</i> by Elizabeth Ogilvie and Rob Page, Ca'Dolfìn: Università Ca' Foscari Venezia, Venice, Italy, 7 May 2019.	Conference presentation - Invited	
<i>Arctic Climate Predictions - Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	Ogilvie, A.E.J.	DIS Travel Abroad Expedition to Ilulissat and Queqertarsuaq, Ilulissat, Greenland, 27 May 2019.	Conference presentation - Invited	
<i>Opportunities and Challenges for the Nordic Arctic Region</i>	Ogilvie, A.E.J.	Opportunities and challenges for future regional development, Open seminar with EK-R (Nordic Committee of Senior Officials for Regional Policy) and Nordregio's Board of Directors, Organised by Ministry of Transport and Local Government, Bygðastofnun and Nordregio, University of Akureyri, 12 September 2019. Oral version of published paper.	Conference presentation - Invited	
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH): Some "fishy" aspects.</i>	Ogilvie, A.E.J.	Re-visiting Fisheries History - Re-visiting Iceland, NAFHA Conference, University of Iceland, Reykjavík, Iceland, 17-18 October 2019.	Conference presentation - Invited	
<i>Whale research in Iceland</i>	Rasmussen, MH	Scandinavian Physiological Society, Harpa, Reykjavik, Iceland	Conference presentation - Invited	
<i>All Aboard: Icelandic Women, Equality and Opportunity at Sea.</i>	Willson, M.	International Maritime Organization conference in Reykjavík in September 26, 2019	Conference presentation – Invited	
<i>Multiple goals in fisheries management: a case study of the Icelandic lumpfish fishery.</i>	Chambers, C.	Arctic Frost Early Career researcher meeting and conference. October 16-18. Cedar Falls, Iowa (2019)	Conference presentation - oral	
<i>Good Marine Governance: Social Aspects of Fisheries and Aquaculture.</i>	Chambers, C.	Arctic Circle Assembly. October 10-12. Reykjavík. (2019).	Conference presentation - oral	
<i>Equitable development of aquaculture in Iceland.</i>	Chambers, C.	Regional Studies Association Research Network Sustainability in the Coastal Zone annual meeting, April 12-13. Limerick. Ireland.	Conference presentation - oral	
<i>Ecosystem services of whales and their valuation in the Arctic.</i>	Cook, D.	University Centre of the Westfjords, Ísafjörður, Iceland. (2019)	Conference presentation (Oral)	Yes

<i>Observations needed for enhancing the accuracy of reanalysis in polar regions.</i>	Counillon, F	CLIVAR Global Synthesis and Observations Panel (10th session), Woodshole, February 5-6, 2019	Conference presentation - oral	
<i>Enhancing the skill of dynamical climate prediction: Avenue explored with the NorCPM</i>	Counillon, F., N. Keenlyside, S. Barthelemy, M. Kimmritz, Y. Wang, I. Bethke	Workshop: Big data, data assimilation, and uncertainty quantification, IHP, Paris, France, November 12-15, 2019	Conference presentation - oral	
<i>Status of climate prediction and future challenges: a perspective from Norway</i>	Counillon, F., N. Keenlyside, S. Barthelemy, M. Kimmritz, Y. Wang, I. Bethke	International Computing in the Atmospheric Sciences (iCAS) symposium, Stresa, Italia, September 8-9, 2019	Conference presentation - oral	
<i>Analysis of decadal forecasts and other progress from DMI</i>	Christiansen, B	ARCPATH annual meeting, Reykjavik, October 14-15, 2019	Conference presentation - oral	
<i>Arctic Warming Impacts: Uncertainties, Implications and Prospects</i>	Gao, Y	Workshop Presentation: Arctic Circle China Forum, May 10-11, 2019, Shanghai, China	Conference presentation - oral	
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies</i>	Gao, Y	Workshop Presentation: Arctic Circle China Forum, May 10-11, 2019, Shanghai, China	Conference presentation - oral	
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies</i>	Gao Y, Astrid E Ogilvie	EGU General Assembly April 7-12, 2019, Vienna, Austria (Poster)	Conference presentation - Poster	Yes
<i>Feasting on friends. Whales, puffins and tourism in Iceland.</i>	Huijbens, E.H.	The 11 <sup>th</sup> International Critical Management Studies Conference: Precarious Presents, Open Futures. The Open University, Milton Keynes, UK. 27 <sup>th</sup> - 29 <sup>th</sup> June 2019.	Conference presentation - oral	
<i>Local Impacts of the 1783-84 Lagagígar Eruption in Iceland</i>	Júlíusson, Á.D, Ogilvie, A.E.J., Demarée, G.R.	INQUA 2019, 25-31 July 2019, Dublin, Ireland.	Conference presentation - Oral	
<i>Variability and global impact of Arctic sea ice and subpolar Gyre.</i>	Karami M P, T Koenigk, Q Zhang	IUGG General Assembly 2019	Conference presentation - oral	
<i>Recent developments of the Norwegian Climate Prediction Model for seasonal to decadal predictions</i>	Kimmritz, M., F. Counillon, Y. Wang, I. Bethke, N. Keenlyside	Alfred-Wegener Institute seminar, Bremerhaven, Germany, June 20, 2019	Conference presentation - oral	
<i>Assessing the contribution of ocean and sea ice initialization for seasonal prediction in the Arctic</i>	Kimmritz, M., F. Counillon, Y. Wang, I. Bethke, N. Keenlyside	EGU General Assembly April 7-12, 2019, Vienna, Austria,	Conference presentation - oral	
<i>Siberian cooling trends and the linkage to Arctic sea ice loss</i>	Koenigk, T., R. Fuentes-Franco	EGU, Vienna 2019	Conference presentation - oral	
<i>Decadal prediction efforts at SMHI – Ongoing work and future plans.</i>	Kruschke, T. et al.	EC-Earth Meeting, ECMWF, Reading (UK), 21-23 May 2019	Conference presentation - oral	
<i>The migratory movements of blue whales (<i>Balaenoptera musculus</i>) inhabiting Arctic and Sub-Arctic areas of the Northeast Atlantic.</i>	Madsen, R, Rasmussen, MH, Olsen, MT, Lydersen, C, Vikiingson, GA,	Dansk Havpattedyr Symposium, Odense, Denmark	Conference presentation - Oral	

	Kovacs, KM, Palner, MKH Bertelsen, JL, Jacobsen, JS, Jørgensen, MS, Whittaker, M, Jacobsen, T, Scott, J, Iversen, MR			
<i>Social-ecological change and ecosystem services of whales in the Arctic.</i>	Malinauskaite, L	UAB CER ARCTIC, Barcelona (2019)	Conference presentation (Oral)	Yes
<i>Ecosystem services of whales in the Arctic.</i>	Malinauskaite, L, Cook, D.	World of Greenland, Ilulissat, Greenland. (2019).	Conference presentation (Oral)	Yes
<i>Recent whale research at the University of Iceland's research center in Húsavík</i>	Rasmussen, MH	Whale congress, Húsavík, Iceland	Conference presentation - Oral	
<i>Contribution to the Transatlantic twinning of MPA managers to Iceland's future MPA management plan.</i>	Rasmussen, MH	The 5th International Conference on Marine Mammal Protected Areas, Greece	Conference presentation - Oral	
<i>Pacific contribution to decadal surface temperature trends during the 20th century</i>	Svendsen, L.	EGU General Assembly April 7-12, 2019, Vienna, Austria	Conference presentation - oral	
<i>Impact of anomaly initialization to the Arctic Ocean on decadal prediction using the EC-Earth3 model</i>	Tian T, S Yang	EC-Earth Meeting, ECMWF, Reading (UK), 21-23 May 2019	Conference presentation - oral	
<i>Sensitivity study on decadal prediction skill to Arctic sea ice initialization in an Earth system model with a multi-category sea ice module</i>	Tian T, P Karami, S Yang, T Koenigk, W Klaus, F Massonnet, M Caian	EGU, Vienna 2019	Conference presentation - oral	
<i>Empirical anisotropic multivariate localisation in the ensemble Kalman filter for Earth System models</i>	Wang, Y, F. Counillon, S. Barthelemy	International EnKF workshop, Voss, Norway, June 3-5, 2019	Conference presentation - oral	
<i>Norwegian Climate Prediction Model (NorCPM)</i>	Wang, Y., F. Counillon, N. Keenlyside, M. Kimmritz, I. Bethke, H, Langehaug, F. Li, Y. Gao	China-Norway Third-pole-Arctic workshop, October 7-9, 2019, Bergen, Norway	Conference presentation - oral	
<i>On the climate variability and the recent abrupt cooling over Subpolar North Atlantic</i>	Yang, S, B Christiansen, S S.Drijfhout, J Mecking	Workshop on climate prediction in the Atlantic-Arctic sector, Bergen, June 5-7, 2019	Conference presentation - oral	
<i>The recent abrupt cooling over Subpolar North Atlantic: Exploring the variability of the North Atlantic.</i>	Yang, S, S Drijfhout, J Mecking, B Christiansen	EGU, Vienna 2019	Conference presentation - oral	
<i>On the decadal variability in the Subpolar North Atlantic and its recent abrupt cooling trend</i>	Yang, S, B Christiansen, S S.Drijfhout, J Mecking	European Meteorological Society GA2019, 9 -13 September 2019, Copenhagen, Denmark	Conference presentation - oral	
<i>Coupled climate modeling with focus on the Arctic</i>	Yang, S	Danish Meteorological Society seminar, Nov. 6, 2019, Copenhagen, Denmark	Conference presentation - oral	



<i>Factors influencing the atmospheric responses to Arctic sea ice reduction</i>	Yang, S, I M Ringgaard, J Hesselbjerg Christensen, E Kaas	PAMIP workshop, Totnes, UK, June 24-27, 2019	Conference presentation - oral	
<i>Habitat use of minke whales in Skjálfandi Bay, North Iceland</i>	Albrecht, S and Rasmussen, MH	Worlds Marine Mammal conference, Barcelona, Spain.	Conference presentation - Poster	
<i>Harbor porpoise (Phocoena phocoena) annual and seasonal distribution in Skjálfandi Bay, Iceland. Using opportunistic data over the past 10 years H(2009-2018) collected from whale watching platforms.</i>	Calvo, MO and Rasmusen, MH	Worlds Marine Mammal conference, Barcelona, Spain.	Conference presentation - Poster.	
<i>The actual and potential skill of dynamical decadal forecasts</i>	Christiansen, B, Yang, S	EGU, Vienna 2019	Conference presentation - Poster	Yes
<i>The skill of dynamical decadal forecasts with focus on the North Atlantic</i>	Christiansen, B, S Yang	Workshop on climate prediction in the Atlantic-Arctic sector, Bergen, June 5-7, 2019	Conference presentation - Poster	
<i>The role of Arctic sea ice initialisation in decadal climate prediction: linking the Arctic sea ice loss and the mid-latitude climates</i>	Tian T, P Karami, S Yang, F Massonnet	Workshop on climate prediction in the Atlantic-Arctic sector, Bergen, June 5-7, 2019	Conference presentation - Poster	
<i>Refinement methods of Arctic sea-ice initialization for improving the decadal prediction skill in the Arctic</i>	Tian, T, P Karami, S Yang, T Koenigk, F Massonnet	European Meteorological Society GA2019, 9 -13 September 2019, Copenhagen, Denmark	Conference presentation - Poster	
<i>Constraining ice thickness to improve Arctic sea ice prediction with the EC-Earth3 Climate Prediction model</i>	Tian T, P Karami, S Yang, T Koenigk, F Massonnet	Polar CORDEX Meeting 2019, Copenhagen, Oct. 7-13, 2019	Conference presentation - Poster	
<i>The recent abrupt cooling over North Atlantic: A forced signal or natural variability?</i>	Yang, S, S S.Drijfhout, J Mecking, Bo Christiansen	CMIP6 Analysis Workshop, Barcelona, March 24-28, 2019	Conference presentation - Poster	
<i>A comparison of marine ecosystem-based management concerning two Arctic whale sanctuaries: Faxaflói Bay and Ninginganiq.</i>	Cook, D.	Proceedings of the Arctic Circle Assembly, Reykjavík, Iceland. (2019)	Conference proceedings	Yes
<i>Whale sanctuaries – an analysis of their contribution to marine ecosystem-based management.</i>	Cook, D., Malinauskaite, L.	Proceedings of the European Society of Ecological Economics Conference, Turku, Finland. (2019)	Conference proceedings	Yes
<i>Sociocultural valuation of ecosystem services of whales in Skjálfandi Bay, Iceland.</i>	Malinauskaite, L.	Proceedings of the Arctic Circle Assembly, Reykjavík, Iceland (2019).	Conference proceedings	Yes
<i>Sociocultural valuation of ecosystem services of whales in Skjálfandi Bay, Iceland.</i>	Malinauskaite, L., Cook, D.	Proceedings of the European Society of Ecological Economics Conference, Turku, Finland (2019).	Conference proceedings	Yes
<i>Transformation of socio-ecological systems in the Arctic: marine ecosystem change and management in coastal communities.</i>	Malinauskaite, L., Cook, D.	Proceedings of the 2019 Mexico Conference on Earth System Governance, Oaxaca, Mexico (2019).	Conference proceedings	Yes
<b>2018</b>				
<i>EnKF Initialised Climate Prediction with the Norwegian Climate Prediction Model</i>	F. Counillon, N. Keenlyside, M. Kimmritz, Y. Wang, I.	Workshop on Climate Data Assimilation, Model Initialization and	Conference presentation - Invited	

	Bethke, H. Langehaug	Parameter Estimation, 4-5 Oct 2018, Hamburg		
<i>Risky environments and rapid change: Research on adaptation and coastal communities in the North Atlantic Arctic</i>	Einarsson, N.	Arctic Science Ministerial Science Forum, Berlin, 25 October 2018	Conference Presentation - Invited	
<i>Contradictions of Arctic Extinction Travel: Lessons from Greenland and Iceland</i>	Einarsson, N.	Climate Existence Conference, Sigtunastiftelsen, Sigtuna, Sweden, 7-9 May 2018.	Conference presentation - invited	
<i>Assimilation of sea ice in an Earth system model and its impacts for climate prediction</i>	Kimmritz, M, F. Counillon, Y. Wang, N Keenlyside, I. Bethke	Modeling, Teleconnections and Predictions, October 16-17, 2018 Beijing, China	Conference presentation - invited	
<i>Optimised Assimilation of Sea-Ice Concentration and Implications for Climate Prediction</i>	Kimmritz, M., F. Counillon, C.M. Bitz, F. Massonnet, I. Bethke, Y. Wang, Y. Gao, L. Bertino, N. Keenlyside	Workshop on observations and analysis of sea-surface temperature and sea ice for NWP and Climate Applications (ECMWF), 22-25 January 2018, Reading, UK.	Conference presentation - Invited	Yes
<i>Evaluating impacts of Arctic sea ice loss and variation on the northern hemisphere.</i>	Koenigk T.	Arctic Frontiers Science 2018, Tromsø, Norway, 21-26 January 2018. T. K. <i>Keynote speaker.</i>	Conference presentation - Invited	
<i>Arctic Explorers: Stefansson's "Friendly Arctic" and lessons learned from John Rae, early adopter of Inuit traditional knowledge.</i>	Ogilvie, A.E.J., with Einarson, Niels, Virginia, Ross	Invited oral presentation Dartmouth College, New Hampshire, 27 February 2018.	Conference presentation - Invited	Available online
<i>Reflections on Weather and Climate by Travellers to the North</i>	Ogilvie, A.E.J.	Climate Existence Conference, Sigtunastiftelsen, Sigtuna, Sweden, 7-9 May 2018.	Conference Presentation - invited	
<i>Climate, Sea Ice and Human Ecdynamic Systems in Northeastern Iceland: Lessons from the Past and Perspectives from the Future</i>	Ogilvie, A.E.J.	Royal Academy for Overseas Sciences International Conference. Climate and Cultures: Perspectives for the Future, Palais des Académies, Brussels, Belgium. <i>Invited Keynote Lecture</i> , 23-24 May 2018.	Conference Presentation - invited	
<i>Dynamical climate predictions at the Bjerknnes Centre</i>	Y. Wang, F. Counillon, N. Keenlyside, M. Kimmritz, I. Bethke, H.R. Langehaug, F. Li	International Symposium Arctic-East Asia Climate Research: Observations, Modeling, Teleconnections and Predictions, October 16-17 2018, Beijing, China	Conference presentation - invited	
<i>Development of Coupled Data Assimilation in Norwegian Climate Prediction Model</i>	Y. Wang, F. Counillon, N. Keenlyside, M. Kimmritz, I. Bethke, H.R. Langehaug, F. Li	International coupled data assimilation symposium, Tsingtao, China (5-8 Nov. 2017)	Conference presentation - invited	
<i>2018 Ensemble averaging and the curse of dimensionality</i>	Christiansen, B	EGU 2018, Vienna, April 2018	Conference Presentation (Oral)	

<i>The blessings of high Dimensionality: Explaining Ensemble Behavior</i>	Christiansen, B.	AGU 2018, Washington DC., USA. December 2018.	Conference Presentation (Oral)	
<i>Arctic Marine Protected Areas</i>	Barry, T.	Arctic Biodiversity Congress, Rovaniemi, 8 October 2018. co-organized by Arctic Council Conservation of Arctic Flora and Fauna and UNEP World Conservation Monitoring Centre	Chaired a session	
<i>Arctic climate change, international collaboration and multidisciplinary research: The ARCPATH project</i>	Einarsson, N.	Arctic Circle Assembly 2018, Climate Change in Arctic Iceland, session organised by the Ministry for Foreign Affairs of Iceland	Conference presentation (oral)	
<i>Optimised assimilation of sea ice concentration and implications for climate prediction</i>	Kimmritz, M., F. Counillon, C.M. Bitz, F. Massonnet, I. Bethke, Y. Wang, Y. Gao, L. Bertino, N. Keenlyside, 2018	Workshop on observations and analysis of sea-surface temperature and sea ice for NWP and Climate Applications (ECMWF), Reading, UK. Jan 2018.	Conference presentation - Oral	
<i>From Narratives to Numbers: Blending the Humanities and Natural Science in Northern Research.</i>	King, L., Ogilvie, A.E.J., Ingimundarson, J.H., Hreinsson, V., Hartman, S.	4th International St Magnus Conference Alternative Fact and Actual Fiction: Constructing the Social Narrative, Orkney Islands, Scotland, 16-18 April 2018.	Conference presentation (oral)	
<i>The Foundations of Map-Making and Geography in Iceland</i>	Ogilvie, A.E.J.	48th International Arctic Workshop, Program and Abstracts 2018, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado at Boulder, 82-85.	Conference presentation (Oral) and Abstract.	Available online
<i>Climate, Sea Ice and Human Ecodynamic Systems in Northeastern Iceland</i>	Ogilvie, A.E.J.	Hay and Wetland Management Workshop, Hannesarholt, Reykjavik, Iceland, 14-17 June 2018	Conference Presentation (Oral. Workshop).	
<i>Studying Past Climates: A Focus on Documentary Evidence</i>	Ogilvie, A.E.J.	ARCPATH Summer Course, Climate Teleconnections and Predictions: Past, Present and Future, Norheimsund, Norway, 4 July 2018.	Conference Presentation (oral) ARCPATH summer school.	
<i>Examples of Climate Impacts: Case Studies from Iceland</i>	Ogilvie, A.E. J.	ARCPATH Summer Course, Climate Teleconnections and Predictions: Past, Present and Future, Norheimsund, Norway, July 2018.	Conference Presentaton (oral) ARCPATH summer school.	
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	Ogilvie, A.E.J., Yongqi Gao (with contributions from ARCPATH members).	NordForsk Annual Meeting, University of Helsinki, Finland 28-31 May 2018.	Conference Presentation (oral)	
<i>Impact of anomaly initialisation on the Arctic Ocean on decadal prediction using the EC-Earth model</i>	Tian, T., et al.	Arctic Climate Predictions: Pathways to Resilient Sustainable Societies (ARCPATH) Annual Meeting 2018, Bergen, Sept. 6-7, 2018.	Conference presentation (Oral)	

<i>Seasonal-to-decadal prediction with the Norwegian Climate Prediction Mode</i>	Wang, Y.; Counillon, F.; Keenlyside, N.; Bethke, I.; Dai, P.i; Langehaug, H.; Kimmritz, M.; Gleixner, S.; Svendsen, L.	EGU-2018 General Assembly, Vienna, 9 April 2018	Conference presentation (Poster)	
<i>Norwegian Climate Prediction Model</i>	Wang, Y.; Counillon, F.; Keenlyside, N.; Bethke, I.; Dai, P.i; Langehaug, H.; Kimmritz, M.; Gleixner, S.; Svendsen, L.	Arctic Frontier Science 2018, Tromsø, 21-26 January 2018	Conference presentation (Oral)	
<i>Development and current S2D prediction skill of the Norwegian Climate Prediction Model</i>	Wang, Y.; Counillon, F.; Keenlyside, N.; Kimmritz, M.; Bethke, I.; Langehaug, H. R.; Li, F.	Conference on subseasonal-to-decadal climate prediction, Boulder, 17-21 September 2018	Conference presentation (Oral)	
<i>The fate of Arctic sea ice: Prediction and projection using climate models.</i>	Yang, S.	Danish-Chinese Arctic Science Workshop 2018, Copenhagen, Oct. 17-18, 2018.	Conference presentation (Oral)	
<i>Arctic sea ice loss and extreme cold winters in Europe: revisited.</i>	Yang, S., et al.	Workshop on Knowledge Gaps of Cryospheric Extremes, Helsinki, Finland, 25 - 27 April, 2018.	Conference presentation (Oral)	
<i>Assimilation of sea ice in an Earth system model and its impacts for climate prediction</i>	Kimmritz, M, F. Counillon, I Bethke, N. Keenlyside, C. Bitz, F. Massonnet, Y. Wang	EGU-2018 General Assembly, Vienna, 9 April 2018	Conference presentation (Poster)	
<i>Assimilation of sea ice in an Earth system model and its impacts for climate prediction</i>	Kimmritz, M, F. Counillon, Y. Wang, N Keenlyside, I. Bethke	Conference on subseasonal-to-decadal climate prediction, Boulder, 17-21 September 2018	Conference presentation (Poster)	Yes
<i>Assimilation of Sea Ice in an Earth System Model</i>	M. Kimmritz, F. Counillon, C. M. Bitz, F. Massonnet, Y. Wang, I. Bethke, N. Keenlyside, Y. Gao	Polar conference, Davos, Switzerland, 15-26 June, 2018	Conference presentation (Poster)	
<i>Assimilation of Sea Ice in an Earth System Model and its Impacts for Climate Prediction</i>	M. Kimmritz, F. Counillon, C. M. Bitz, F. Massonnet, Y. Wang, I. Bethke, N. Keenlyside, Y. Gao	EnKF workshop 28-30 May 2018, Bergen, Norway	Conference presentation (Poster)	
<i>Assimilation of Sea Ice in an Earth System Model and Impacts for Climate Prediction</i>	M. Kimmritz, F. Counillon, Y. Wang, N Keenlyside, I. Bethke	FAMOS meeting, 23-26 Oct 2018 Bergen, Norway	Conference presentation (Poster)	Available online

<i>Evaluating impacts of Arctic sea ice loss and variation on the northern hemisphere climate</i>	Koenigk, T.	EGU-2018 General Assembly, Vienna, 9 April 2018	Conference Presentation (Poster)	
<i>Siberian cooling trends and the linkage to Arctic sea ice loss</i>	Koenigk, T.	SPARC-General Assembly, Kyoto, 3 Oct 2018	Conference Presentation (Poster)	
<i>Arctic Indigenous Peoples: A Dialogue and Perspectives on Common Concerns for Sustainable Societies</i>	Oddsdóttir, E.	Seminar and roundtable organized by the Icelandic Ministry for Foreign Affairs, Arctic council Indigenous Peoples' Secretariat, the Icelandic Arctic Cooperation Network and Stefansson Arctic Institute, Reykjavík 15 May 2018	Roundtable discussion	
<i>Introduction to Elizabeth Ogilvie's Book and Film Launch Out of Ice with ARCPATH focus.</i>	Ogilvie, A.E.J.	Arctic Circle Assembly, Harpa, Reykjavík, Iceland, 19 October 2018.	Panel presentation.	
<b>2017</b>				
<i>Challenges towards environmentally based ecosystem prediction</i>	Keenlyside, N., 2017	Advances in Integrated Ocean Research towards Sustainable Development, Kiel, Germany, 3.7. 2017. N.K. <i>Keynote speaker.</i>	Conference presentation - Invited	
<i>Climate prediction with the Norwegian model NorCPM</i>	Kimmritz, M., I. Bethke, F. Counillon, P. Dai, H. Langehaug, F. Li, N. Keenlyside, M.-L. Shen, Y. Wang, 2017	Nansen Zhu annual meeting, Beijing, China. 31 Oct 2017.	Conference presentation - Invited	
<i>Lecture on optimising the assimilation of sea ice concentration in a fully coupled Earth system model with a multicategory sea ice model</i>	Kimmritz, M., F. Counillon, C.M. Bitz, F. Massonnet, I. Bethke, Y. Gao,	National Marine Environmental Forecasting Center, Beijing, China. 30 Oct 2017	Conference presentation - Invited	
<i>Assimilation of sea ice within the Norwegian Climate Prediction Model</i>	Kimmritz, M.,	Polar Prediction Workshop, Bremerhaven, Germany. 28 Mar 2017. M. K. <i>Keynote speaker.</i>	Conference presentation - Invited	
<i>COST/CLIVAR Workshop on ocean reanalyses and inter-comparisons</i>	Wang, Yiguo,	Toulouse, France (29-30 June 2017).	Conference presentation - Invited	
<i>International symposium on advances in S2D prediction</i>	Wang, Y.	Beijing, China (18-20 Sep 2017).	Conference presentation - Invited	
<i>Mini-Symposium "Modelling and Simulation of Sea Ice"</i>	M. Kimmritz and T. Richter	ENUMATH, 2017, Voss, Norway, 28-29 Sep, 2017. (Organised by K & R)	Conf – Meeting – Org. of	
<i>16-18 October 2017. ARCPATH Annual and GREENICE final meeting</i>	Ogilvie A, N Einarsson and B Davíðsdóttir	Reykjavík, Iceland. (Organised by AO, NE, BD).	Conf – Meeting – Org. of	
<i>International coupled data assimilation symposium</i>	Wang, Y.	Qingdao, China (5-8 Nov 2017). Organisation of conference	Conf pres – Org of conf	

<i>Policy, research and conservation areas in the Arctic: Relevance for ARCPATH.</i>	Barry, Tom.	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017.	Conference presentation - Oral	
<i>Analyses of the Long Historical Time Series of Iceland Sea Ice,</i>	Bo Christiansen,	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Assessing the role of Arctic sea ice changes in future Northern Hemisphere circulation changes.</i>	Cheung, H.	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Ecosystem Services and Marine Mammals in the Arctic - New Research Possibilities.</i>	David Cook,	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Coastal communities, climate and rapid socioecological change: Reflections on ongoing ARCPATH research.</i>	Niels Einarsson	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Sea Ice, Climate, and Resource Governance in a Northern Community: The Case of Grimsey Island, Iceland,</i>	Einarsson, N. and Ogilvie, A.E.J. 2017	ARCPATH Annual and GREENICE final meeting, University of Iceland, Reykjavik, Iceland, 17 October 2017.	Conference presentation - Oral	
<i>Sea Changes in North Atlantic Arctic Coastal Communities.</i>	Einarsson, Niels.	ARCPATH Annual and GREENICE final meeting, University of Iceland, Reykjavik, Iceland, 17 October 2017.	Conference presentation - Oral	
<i>Historical Reflections: A Geo-Historical Introduction to Skjálfandi Bay, Iceland and Ittoqqortoormiit, Greenland.</i>	Gunnar Már Gunnarson.	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Cruise and Marine Tourism in Iceland;</i>	Huijbens, Edward	14 March Presentation for the DG Mare CBSS' Expert Group on Maritime Policy (EGMP).	Conference presentation - Oral	
<i>Marine traffic in Iceland, challenges and opportunities</i>	Huijbens, Edward	3-4 April: Cruising in Iceland Conference, Ísafjörður.	Conference presentation - Oral	
<i>Arctic Tourism in the Anthropocene: Relevance for ARCPATH.</i>	Edward Huijbens	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Impact of Arctic sea ice decline on recently observed climate change: a coordinated multi-model study,</i>	Keenlyside, Noel, et al.,	JpGU-AGU Joint Meeting 2017, Japan, 24.5.2017.	Conference presentation - Oral	
<i>Global and Arctic Climate Predictions.</i>	Keenlyside, Noel.	Panel on <i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i> Arctic Circle Assembly, Harpa, Reykjavik, Iceland, 14 October 2017.	Conference presentation - Oral	
<i>Recent Developments in NorCPM (Norwegian Climate Prediction Model) for Enhancing Arctic Climate Prediction Skill.</i>	Madlen Kimmritz and François Counillon.	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Data assimilation of sea ice - investigating key strategies in an Earth system model with a multi-category sea ice model,</i>	Kimmritz, M., F. Counillon, C.M. Bitz, F. Massonnet, I. Bethke, Y. Gao,	GOVST-VIII Science Day within the 8th Annual meeting of the GODAE OceanView Science Team, Bergen, Norway. 09 Nov 2017	Conference presentation - Oral	
<i>Interdisciplinary Projects: The Challenge of Synthesis.</i>	Leslie King.	Panel on <i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i> Arctic Circle	Conference presentation - Oral	

		Assembly, Harpa, Reykjavík, Iceland, 14 October 2017.		
<i>ARCPATH - An Interdisciplinary Project: The Challenge of Synthesis.</i>	Leslie King.	ARCPATH annual meeting, Reykjavík, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH),</i>	King, L., Ogilvie, A.E.J. and Einarsson, Niels. 2017.	<i>ICASS IX, Umeå, Sweden, 10 June 2017.</i>	Conference presentation - Oral	
<i>Pathways to Resilient and Sustainable Northern Societies: Looking to the Past and the Future, University of the Highlands and Islands Archaeology Institute Archaeology</i>	King, L., Ogilvie, A.E.J. and Einarsson, Niels. 2017.	<i>Conference: Our Islands, Our Past, Kirkwall, Orkney, 14-17 September 2017.</i>	Conference presentation - Oral	
<i>Impact of Arctic sea ice variations on winter temperature anomalies in northern hemisphere land areas.</i>	Koenigk, T.	EGU-2017 General Assembly, Vienna, 26 April 2017.	Conference presentation - Oral	
<i>The impact of Arctic sea ice on climate in lower latitudes.</i>	Koenigk, T. et al.,	20-year Rosby Centre, Norrköping, 13 Sep 2017:	Conference presentation - Oral	
<i>Arctic-lower latitude linkages in observations, atmosphere models and coupled models.</i>	Koenigk, T. et al.,	GREENICE-ARCPATH-meeting, Reykjavik. 16 Oct 2017.	Conference presentation - Oral	
<i>Best Available Technology - The Perception of Risk.</i>	Embla Eir Oddsdóttir.	ARCPATH annual meeting, Reykjavík, Iceland, 16 -18 October, 2017	Conference presentation - Oral	
<i>Documentary Records of Climate Change,</i>	Ogilvie, A.E.J. 2017.	ARCPATH/GREENICE writing workshop, Bergen, 8-11 May 2017.	Conference presentation - Oral	
<i>Climate, Environment and Adaptation in Northeastern Iceland A.D. 1750 to the Present.</i>	Ogilvie, A.E.J., Sigurðardóttir, Ragnhildur, Júlíusson, Árni Daníel, Hreinsson, Viðar and Hicks, M.	<i>Session 5.3. Evaluation and Planning for Uncertain Times in a Rapidly Changing Environment, ICASS IX, Umeå, Sweden, 9 June 2017.</i>	Conference presentation - Oral	
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH),</i>	Ogilvie, A.E.J. and Gao, Yongqi. 2017.	<i>Nordforsk Joint Nordic Initiative on Arctic Research Annual Conference, Umeå, Sweden, 13-14 June 2017.</i>	Conference presentation - Oral	
<i>Introduction to the ARCPATH and GREENICE Projects: Arctic Climate and Environmental Change and Human Eco-Dynamics,</i>	Ogilvie, A.E.J. 2017.	Panel on <i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i> Arctic Circle Assembly, Harpa, Reykjavík, Iceland, 14 October 2017.	Conference presentation - Oral	
<i>Why Study Past Climates? The Historical Sea-Ice Record from Iceland,</i>	Ogilvie, A.E.J. 2017	ARCPATH annual meeting, Nordic House, Reykjavík, Iceland, 16 October, 2017.	Conference presentation - Oral	
<i>Out of Ice: Sea Ice and Northern Communities. Panel on Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	Elizabeth Ogilvie	Arctic Circle Assembly, Harpa, Reykjavík, Iceland, 14 October 2017.	Conference presentation - Oral	
<i>Progress Concerning the Ocean Downscaling Work.</i>	Per Pemberton.	ARCPATH annual meeting, Reykjavík, Iceland, 16 -18 October, 2017.	Conference presentation - Oral	
<i>Climate, Cetaceans, Tourism and Anthropogenic Noise. Panel on Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	Marianne Rasmussen	Arctic Circle Assembly, Harpa, Reykjavík, Iceland, 14 October 2017.	Conference presentation - Oral	

<i>Cetaceans, Climate Changes and Anthropogenic Noise.</i>	Marianne Rasmussen	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017.	Conference presentation - Oral	
<i>Gender issues, fisheries governance and community resilience in North Atlantic Arctic coastal communities, with a special focus on Iceland.</i>	Margaret Willson	ARCPATH annual meeting, Reykjavik, Iceland, 16 -18 October, 2017.	Conference presentation - Oral	
<i>Development of the EC-Earth Decadal prediction system in ARCPATH</i>	Yang, Shuting et al. 2017.	ARCPATH and GREENICE joint meeting, Reykjavik, Oct. 16-18, 2017.	Conference presentation - Oral	
<b>2016</b>				
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH).</i>	Ogilvie, A.E.J., Einarsson, Niels, Gao, Yongqi, Keenlyside, Noel, Rasmusson, Marianne, H. 2016.	46th International Arctic Workshop, Program and Abstracts 2016. Institute of Arctic and Alpine Research (INSTAAR), University of Colorado at Boulder, 50-52	Workshop contribution - abstract	Yes
<i>Reanalysis and climate prediction with the Norwegian Climate Prediction Model.</i>	Counillon F, Keenlyside, N, Wang Y, Kimmritz, M, Bethke, I, 2016.	Invited speaker at Nansen-Zhu Summer School, Climate teleconnections and predictions, Wuhan, 14 October 2016	Conference presentation - invited	
<i>Application, Data assimilation: a perspective from Norway.</i>	Counillon F, Kimmritz, M. and L. Bertino.	Invited speaker at Sea Ice Thickness Workshop, National Centre for Atmospheric Research (NCAR), Boulder, Colorado, 15 November 2016	Conference presentation - invited	
<i>Nansen-Zhu Summer School, Climate teleconnections and predictions, Beijing, China, 10/2016</i>	Kimmritz, M. 2016	Invited speaker at Nansen-Zhu Summer School, Climate teleconnections and predictions, Beijing, China, 10/2016	Conference presentation - invited	
<i>Sea Ice Thickness Workshop at NCAR, Boulder, USA 11/2016</i>	Kimmritz, M. 2016.	Invited speaker at Sea Ice Thickness Workshop at NCAR, Boulder, USA 11/2016	Conference presentation - invited	
<i>Reanalysis and climate prediction with the Norwegian Climate Prediction Model,</i>	Counillon, F., Keenlyside, N., Wang Y., Kimmritz, M. and Bethke, I. 2016.	Data Analysis and Modelling in Earth Sciences Workshop, Hamburg, 28 September 2016	Conference presentation.	
<i>Reanalysis and climate prediction with the Norwegian Climate Prediction Model.</i>	Counillon, F., Keenlyside, N., Kimmritz, M., Wang Y., and Bethke, I. 2016.	International Workshop on Coupled Data Assimilation, Toulouse, 20 October 2016	Conference presentation.	
<i>Fishing rights and financial capitalism in the Arctic: From common property to private ownership assets. Session title: Closing the marine commons as a tool of resource governance: Inevitable developments and alternative solutions.</i>	Einarsson, Niels. 2016. (Presenter and Session Organiser).	Nordic ruralities conference, University of Akureyri, Akureyri 24 May, 2016	Conference presentation.	
<i>Introduction, Chair, and Moderator. Panel on The Educating of Mid-Latitudinal Countries on Climate Change through Art and Science: "To See Things Differently" organized by Kerry Koepping, Arctic Arts Project.</i>	Einarsson, Niels. 2016	Arctic Circle Conference, Harpa, Reykjavik, Iceland, 7-9 October, 2016	Panel	
<i>Fishing communities in the age of financial capitalism: From the Arctic to the Azores. Undisciplined</i>	Einarsson, Niels and Nielson, Alison. 2016.	International Conference of the European Network of Political Ecology (ENTITLE) Stockholm,	Conference presentation.	



Environments:		Kungliga Tekniska Högskolan, 21 March 2016		
<i>Sea ice, Climate, and Resource Governance in a Northern Community: The Case of Grimsey Island, Iceland.</i>	Einarsson, Niels and Ogilvie, A.E.J. 2016.	Conference on Anthropology, Weather and Climate, British Museum, London, 28 May 2016	Conference presentation.	
<i>Panel on People, Policy and Adaptations to Rapid Change in the Arctic,</i>	Einarsson, Niels and Ogilvie, A.E.J. 2016.	sponsored by the Institute of Arctic Studies at Dartmouth College, 4. December, discussing the role of multidisciplinary research and international collaboration for sustainability <a href="https://news.dartmouth.edu/events/event?event=41766#.WNFN01vjcs">https://news.dartmouth.edu/events/event?event=41766#.WNFN01vjcs</a>	Conference presentation.	
<i>Market-based fisheries governance, marine reserves and coastal communities: Developing interdisciplinary empirical research.</i>	Einarsson, Niels and Vidal, Duarte.	NILS Science and Sustainability Programme Conference, Universidade de Complutense, 26 May 2016	Conference presentation.	
<i>Meeting tomorrow's societal challenges: cross-border cooperation in Arctic research</i>	Gao, Y. 2016.	European Open Science Forum, Manchester, U.K., July 2016	Conference presentation ARCPATH contribution	
<i>5th International Polar Tourism Research Network Conference: Tourism, People and Protected Areas in Polar Wilderness</i>	Huijbens, E., 2016	Raufarhöfn, northeastern Iceland, 29 August - 2 September 2016. 50 participants. Planned and hosted by E. Huijbens / SAI.	planned and hosted conference	
<i>Tourism and socio-economic development in the Arctic in times of climate change.</i>	Huijbens, E.H. 2016.	Oral presentation to conference: <i>Enginn er eyland: Ísland og alþjóðasamfélagið – staða og framtíð Íslendinga í samfélagi þjóðanna</i> (No Man is an Island: The Place and Future of Icelanders in Society) Akureyri, University of Akureyri, Iceland, 19 March 2016.	Conference presentation.	
<i>On sub-seasonal prediction of Arctic sea ice using multivariate assimilation of sea-ice.</i>	Kimmritz, M. 2016.	North Atlantic Climate (NACLIM) meeting, Exeter, 4 October 2016	Conference presentation.	
Presentation	Kimmritz, M. 2016	at Data Analysis and Modelling in Earth Sciences, Hamburg, Germany, September 2016	Conference presentation.	
Assimilating sea ice in Norwegian Climate Prediction Model,	Kimmritz, M. 2016,	ARCPATH Annual Meeting, Danish Meteorological Institute, Copenhagen. 27-28 October 2016	Conference presentation.	
<i>Data assimilation of sea ice within the Norwegian Climate Prediction Model.</i>	Kimmritz, M., Counillon, F., Gao, Y., Bethke, I., Wang, Y. and Keenlyside, N. 2016	SNOWGLACE meeting, Bergen, 1 December 2016	Conference presentation.	
<i>Arctic Climate Predictions: Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	Ogilvie, A.E.J. 2016.	46th International Arctic Workshop: <i>The Arctic's new normal: Shifting environmental baselines over decades to millennia and comparisons with the Antarctic</i> , INSTAAR, Boulder, Colorado, 3 April 2016	Conference presentation.	
<i>Fleet of Silver: Literary and Historical Icescapes of Iceland.</i>	Ogilvie, A.E.J. 2016. A	Third International St Magnus Conference: <i>Visualising the North</i> , The Centre for Nordic Studies (CNS)	Conference presentation.	

		University of the Highlands and Islands, Kirkwall, Orkney, 15 April 2016.		
<i>The Summer of 1816 in Iceland. 1816: The Year Without A Summer.</i>	Ogilvie, A.E.J. 2016.	Royal Meteorological Society National Meeting, Whitby Museum, Whitby, North Yorkshire, 21 May 20	Conference presentation.	
<i>The ARCPATH project.</i>	Ogilvie, A.E.J. 2016.	Sigtuna HfE Workshop, Sponsored by Sigtunastiftelsen and NIES, Sigtuna, Sweden, 9-11 September 2016	Conference presentation.	
<i>Seeing Things Differently in Arctic Research.</i>	Ogilvie, A.E.J. 2016.	Panel on The Educating of Mid-Latitudinal Countries on Climate Change through Art and Science: “ <i>To See Things Differently</i> ” organized by Kerry Koepping, Arctic Arts Project. Arctic Circle Conference, Harpa, Reykjavik, Iceland, 7-9 October, 2016	Conference presentation.	
<i>WP 1: Arctic Linkages: Climate, Environmental Change, and Human Eco-Dynamics.</i>	Ogilvie, A.E.J. 2016.	ARCPATH Annual Meeting, Meteorological Institute, Copenhagen, 27-28 October, 2016. <i>Presented by Noel Keenlyside</i>	Conference presentation.	
<i>Visualising the Arctic: Change and the New Normal.</i>	Ogilvie, A.E.J., Koepping, Kerry, and Einarsson, Niels. 2016.	Third International St Magnus Conference: <i>Visualising the North</i> , The Centre for Nordic Studies, University of the Arctic	Conference presentation.	
<i>Photo-Identification of Whales and Dolphins.</i>	Rasmussen, M. H. 2016.	Arctic Circle conference, Harpa, Reykjavik, Iceland, 7-9 October, 2016	Conference presentation.	
<i>Echolocation Behaviour of the Icelandic White-Beaked Dolphins (Lagenorhynchus albirostris) Now and Then.</i>	Rasmussen, M.H., Koblitz, J. and Stilz, P. 2016	The Fifth Joint Meeting between the Acoustical Society of America and the Japanese Acoustical Society, Honolulu, USA, 28 November 2 December, 2016	Conference presentation.	

## Media events and public outreach

<b>2021</b>				
<i>Klimarapport varslar auka temperatur dei neste fem åra (“Climate report predicts increased temperatures over the next 5 years”)</i>	Counillon, F.	Norwegian Norsk rikskringkasting AS, (NRK) nyheter (“news”) 2021	Media	
<i>New tool can predict short-term climate changes</i>	Keenlyside, N.	News Piece, 4/5/2021 <a href="https://www.nordforsk.org/news/new-tool-can-predict-short-term-climate-changes">https://www.nordforsk.org/news/new-tool-can-predict-short-term-climate-changes</a>	News Piece	Yes
<i>Into the Oceanic. COP26 documentary by Environmental Artist, Elizabeth Ogilvie and Filmmaker Rob Page</i>	Ogilvie, A. E. J., Keenlyside, N., Chambers, C., Einarsson, N., Rasmussen, M., Willson, M.	Interviewees, intotheoceanic.org, 2021	Media appearance	Yes
<i>On women in the Maritime in Iceland.</i>	Willson, M.	For Radiotelevsione svizera (Swiss National Radio), 2021	Media	Yes

<i>The Arctic Council: An Agent of Change?</i>	Barry, T.	PhD defense, Univ. of Iceland, 27. jan 2021 <a href="https://english.hi.is/events/doctoral_defence_in_environment_and_natural_resources_tom_barry">https://english.hi.is/events/doctoral_defence_in_environment_and_natural_resources_tom_barry</a>	Public lecture	Yes
<i>The ecosystem services of glaciers in a dynamic era of climate change</i>	Cook, D.	Presentation (online) for Rotary Club Reykjavik Internal 2021	Outr. Public. - Presentation	
<i>Equitable governance in Icelandic fisheries and aquaculture</i>	Chambers, C.	Guest Lecture in graduate seminar, Memorial University, February 2021	Outreach to the public - Invited	
<i>Icelandic fisheries: Migrations and movements; fisheries governance</i>	Chambers, C.	Arctic Winter College, Arctic Institute, February 2021	Outreach to the public - Invited	
<i>Interdisciplinary Research for the Future of Small-Scale Fisheries</i>	Chambers, C.	Future Food FAO Earth Day Celebration April 2021.	Outreach (public service)	
<i>Roundtable on Gender Equality in the Arctic – Taking stock, sharing knowledge. With 25 Arctic/non-Arctic experts on gender issues. ARCPATH participation:</i>	Chambers, C., Oddsdóttir, E., Smáradóttir, S., Einarsson, N., Ariza, E., Willson, M.	CER-ARCTIC/Universitat Autònoma de Barcelona. 03/11/2021 Co-sponsored by ARCPATH, 3 November 2021	Outreach to the public - Roundtable with journalists	
<i>Meeting on Science policy, governance and knowledge transfer in the Arctic and Europe. With 14 Arctic/non-Arctic experts on fisheries, science diplomacy and knowledge transfer</i>	Einarsson, N.	Departament d'Acció Climàtica, Alimentació i Agenda Rural, Generalitat de Catalunya, 4 November 2021	Outreach to the public - Invited	
<i>Fragile Communities and Economic Development in the Northeast Region</i>	Gunnarsson, G.	Guest lecture in graduate seminar, University of Akureyri, 6 October 2021, Iceland	Outreach to the public, invited	
<i>The EU's Stronger Arctic Engagement</i>	Michael Mann, EU Special Envoy for Arctic matters.	Stefansson Memorial Lecture 2021. CER-ARCTIC/Universitat Autònoma de Barcelona. Co-sponsored by ARCPATH. Introductions by N. Einarsson and E. Ariza. 03/11/2021	Outreach to the public - Online	Yes
<i>Weather Magic in the Sagas of Icelanders</i>	Ogilvie, A.E.J.	Outreach talk to Boulder "Sons of Norway", 26 February 2021.	Presentation	No
<b>2020</b>				
<i>Margaret Willson</i>	Dingman, E.	Aurora interview in Women of the Arctic, 2020	Media	Yes
<i>The Price of Fish</i>	Einarsson, N. and Chambers, C.	Documentary shown on New Zealand public television. Mike Bhana and Wild Film, 2020 YouTube: <a href="https://www.youtube.com/watch?v=dlQNDYoymMU">https://www.youtube.com/watch?v=dlQNDYoymMU</a>	Media appearance	

<i>Klimatförändringar i Svalbard</i>	Koenigk, T.	January 2020, Swedish Radio - P1	Media appearance	
<i>Introduction</i>	Einarsson, N.	Stefansson Memorial Lecture 2020. Dr. Margaret Willson. Topic: Seawomen of Iceland. Polar Institute of the Wilson Center in Washington, D.C. 1. Dec. Online. <a href="https://www.wilsoncenter.org/event/2020-stefansson-memorial-lecture-seawomen-iceland">https://www.wilsoncenter.org/event/2020-stefansson-memorial-lecture-seawomen-iceland</a>	Outreach to the public	
<i>Seawomen of Iceland</i>	Willson, M.	Stefansson Memorial Lecture 2020. Dr. Margaret Willson. Topic: Seawomen of Iceland. Polar Institute of the Wilson Center in Washington, D.C. 1. Dec. Online. <a href="https://www.wilsoncenter.org/event/2020-stefansson-memorial-lecture-seawomen-iceland">https://www.wilsoncenter.org/event/2020-stefansson-memorial-lecture-seawomen-iceland</a>	Outreach Presentation	Yes
<b>2019</b>				
<i>The changing coastal Arctic</i>	Breton, F.	Invited appearance on the programme on Catalunya Radio, “La nit dels ignorants” with Xavier Solà, May 5th. <a href="https://www.ccma.cat/catradio/alcanta/la-nit-dels-ignorants-3-0/francoise-breton-geografa-i-ambientalistacal-que-la-gent-es-comprometi-en-la-defensa-del-litoral/audio/1039263/?fbclid=IwAR2GF_MnLmkIfHz7pHJcEp0DCMD3emuT5jko0qz9wktZltCZ2PR6mbjVMvlk#.XNkC3FpM_y4.facebook">https://www.ccma.cat/catradio/alcanta/la-nit-dels-ignorants-3-0/francoise-breton-geografa-i-ambientalistacal-que-la-gent-es-comprometi-en-la-defensa-del-litoral/audio/1039263/?fbclid=IwAR2GF_MnLmkIfHz7pHJcEp0DCMD3emuT5jko0qz9wktZltCZ2PR6mbjVMvlk#.XNkC3FpM_y4.facebook</a>	Media	
<i>Extremväder i Europa måste tas på allvar</i>	Koenigk, T.	ETC-nyheter: Klimat: <a href="https://www.etc.se/klimat/extremvader-i-europa-maste-tas-pa-allvar">https://www.etc.se/klimat/extremvader-i-europa-maste-tas-pa-allvar</a> 27 June 2019	Media appearance	
<i>Sörmland varmt som Paris år 2100</i>	Koenigk, T.	30 July 2019: Eskilstuna Kuriren	Media appearance	
<i>Nya klimatscenarier med SMHI's globala klimatmodell</i>	Koenigk., T. Döscher., R.	27 October, Swedish National TV. TV4	Media appearance	
<i>Geopolítica del deshielo en el Ártico: intereses globales e impactos locales</i>	Breton, F.	Invited lecture at the Faculty of Economics and Business, Autonomous Univ. of Barcelona (UAB). 23rd of May.	Outreach to the public - Invited talk	
<i>Arctic landscapes transformations facing uncertainties of climate change and human management impacts. The emergence of new visions and values</i>	Breton, F.	Lecture at a UAB Master course on “Intervenció i Gestió del Paisatge”. May 22, MUHBA, Museu d'Historia de Barcelona.	Outreach to the public - Invited talk	
<i>Equitable governance in Icelandic fisheries and aquulture.</i>	Chambers, C.	Dalhousie University Marine Affairs Lecture Series, Invited talk. November 19. (2019)	Outreach to the public - Invited	
<i>Good Ocean Governance in Fisheries and Aquaculture: Examples from Iceland.”</i>	Chambers, C..	Lecture at the FFI/FAO summer school, Píngeyri, Iceland, Sep 9. (2019)	Outreach to the public - Invited	

<i>Tourism in Iceland. From boom to ?</i>	Huijbens, E. H.	Invited speaker at the Umeå University, department of geography. Umeå, Sweden, 26 <sup>th</sup> April 2019.	Outreach to the public (Invited)	
<i>Arctic Climate Predictions - Pathways to Resilient, Sustainable Societies (ARCPATH)</i>	Ogilvie, A.E.J.	Outreach presentation to Boulder Valley Rotary Club. 19 November 2019.	Outreach to the public (Invited)	
<i>The "Frozen North": Key Arctic Explorers and the Search for the Northwest Passage</i>	Ogilvie, A.E.J.	Outreach presentation to Sons of Norway, Boulder, Colorado, 22 November 2019.	Outreach to the public (Invited)	
<i>Icelandic fisheries, society and gender through the life of a female fishing captain.</i>	Willson, M.	Talk at Árni Magnússon Institute for Icelandic Studies in Reykjavík on November 1, 2019.	Outreach to the public - Invited	
<i>Árctic s'escalfa.</i>	Breton, F.	Memorial Xavier Batalla. Invitation to the round table on the Arctic. April 25th, at Col·legi de Periodistes de Catalunya, Barcelona. <a href="https://www.periodistes.cat/actualitat/noticies/lartice-sescalfa-la-geoestrategia-del-canvi-climatic">https://www.periodistes.cat/actualitat/noticies/lartice-sescalfa-la-geoestrategia-del-canvi-climatic</a>	Outreach to the public - Roundtable with journalists	
<i>Oceanography and Environmental Applications</i>	Counillon, F	Data assimilation summer school, Timisoara, Romania, July 22nd-August 2nd, 2019	outreach to the public (course)	
<i>Comments regarding a government bill with a clause on constitutional status of Icelandic natural resources (In Icelandic).</i>	Einarsson, N.	30. June 2019 Available on government webpage <a href="https://samradsgatt.island.is/oll-mal/SCases/Details/?id=1387">https://samradsgatt.island.is/oll-mal/SCases/Details/?id=1387</a>	Outreach to the public (public service)	Yes
<b>2018</b>				
<i>Interview for a UTube video</i>	Astrid and Elizabeth Ogilvie	Arctic Circle Assembly conference in October 2018 <a href="https://www.youtube.com/watch?v=AvsXSnyPjwk">https://www.youtube.com/watch?v=AvsXSnyPjwk</a>	Media profiling	
<i>On the potential linkage between Arctic ice loss and cold weather in Sweden.</i>	Koenigk, T.	Sveriges Radio, 1 March 2018	Media profiling	
<i>Skrämmande att Arktis starkaste is har brutits sönder</i>	Koenigk, T.	Aftonbladet, 23 Aug 2018	Media profiling	
<i>"In Iceland, activists, industry are waging war over commercial whaling"</i>	Rasmussen, M.	American Nightline: October 2018. ( <a href="https://abcnews.go.com/International/iceland-activists-industry-raging-war-commercial-whaling/story?id=58561835">https://abcnews.go.com/International/iceland-activists-industry-raging-war-commercial-whaling/story?id=58561835</a> )	Media profiling	
<i>Theory of economic valuation, applications to whale ecosystem services and ARCPATH activities</i>	Cook, D	Lecture. University of the Westfjords for the Coastal and Marine Management Masters students, November 2018.	Lecture	
<i>Economic Valuation of Ecosystem Services of Whales</i>	Malinauskaite, L	Presentation at a board meeting of IceWhale – Icelandic Whale Watching Association. Reykjavík, Iceland, October 2018	Lecture	

<i>ARCPATH: Socio-Ecological Systems, Ecosystem Services and Marine Mammals in the Arctic</i>	Malinauskaite, L	Guest lecture in Environmental Economics. University of the Iceland, April 2018.	Lecture	
<i>Back to Basics: Historical Climate Research.</i>	Ogilvie, A.E.J.	ARCPATH Annual Meeting, Nansen Environmental and Remote Sensing Centre, Bergen, Norway, 6 September 2018.	Presentation to ARCPATH annual meeting.	
<i>Whale research in Northeast Iceland</i>	Rasmussen, M	NOAA/Stellwagen Bank National Marine Sanctuary, Scituate, USA	Guest lecture	
<i>Whale research in Northeast Iceland</i>	Rasmussen, M.	Wood Hole Oceanographic Institution, Woods Hole, USA	Guest lecture	
<b>2017</b>				
<i>Rapid climatic change in the North Atlantic Arctic and impacts on coastal communities</i>	Einarsson, N.	Interview with Icelandic State Television, Channel One, concerning on 17 January 2017.	Media - Interview	
<i>Whales, Science and the Local Community in Húsavík, Iceland</i>	Einarsson, N.	Main interviewee in documentary film by Miquel Such and John Grothier, premiered in Barcelona at the inauguration of the Autonomous University of Barcelona Arctic Research Centre, 1. December <a href="http://www.svs.is/static/files/ce-r-arctic-inauguration-programme-flyer-22.11.17-ne.pdf">http://www.svs.is/static/files/ce-r-arctic-inauguration-programme-flyer-22.11.17-ne.pdf</a>	Media – Main interviewee	
<i>Arctic coastal communities and impacts of marine resource governance systems.</i>	Einarsson, N.	An upcoming television documentary. Dr Einarsson as advisor, will be made by a New Zealand team in 2018.	Media – TV film - advisor	
<i>Theoretical foundations and advanced applications with focus on ensemble methods, Bergen, Norway.</i>	Counillon, F	“Crash Course on Data Assimilation” (June 2017) F.C. taught	Outreach to the public	
<i>Meeting with Icelandic Coast Guard security engineer at SAI</i>	Huijbens, Edward	15 March, Meeting with Icelandic Coast Guard security engineer at SAI	Outreach to the public	
<i>Second Joint Arctic SAR Workshop &amp; TTX,</i>	Huijbens, Edward	Reykjavík 5 & 6 April 2017	Outreach to the public	
<i>Arctic climate and ocean circulation.</i>	Koenigk T.	In cooperation with the CRESCENDO schools network (organized by the EU-H2020 project CRESCENDO) T. K.: two lectures to school classes (Kunskaps gymnasiet Norrköping)	Outreach to the public	
<i>North Atlantic Exploration and Climate.</i>	Ogilvie, A.E.J. 2017.	Denver Museum of Nature and Science re. exhibit <i>Vikings: Beyond the Legend</i> . 21 February 2017. 2 Invited Outreach presentations	Outreach to the public - Invited	
<i>Reconstructing the Past Climate of Iceland Using Documentary Sources</i>	Ogilvie, A.E.J. 2017.	School for International Training (SIT) Graduate Student Group on: <i>Iceland and Greenland: Climate Change and the Arctic</i> , Akureyri, 9 October 2017. Invited lecture	Outreach to the public - Invited	
<i>Sagas and Science: Documentary Evidence of Changes in Climate and Sea-Ice Incidence in Iceland from the Settlement to the Late 1800s</i>	Ogilvie, A.E.J. 2017.	University of Iceland Centre for Medieval Studies ( <i>Miðaldstofa</i> ), Reykjavík, 9 March 2017. Invited lecture	Outreach to the public - Invited	

<i>Sagas and Science: Reconstructing the Past Climate of Iceland Using Documentary Sources.</i>	Ogilvie, A.E.J.	School for International Training (SIT) Graduate Student Group on: <i>Iceland and Greenland: Climate Change and the Arctic</i> , Akureyri, 15 March 2017 Invited lecture	Outreach to the public	
<b>2016</b>				
<i>Interview</i>	Niels Einarsson.	Interview in Icelandic State Radio, Channel one, 22 February 2016.	Media	
<i>Interview</i>	Niels Einarsson.	Interview with Norwegian State Broadcasting, NRK P2, 19 September 2016. First broadcast 1 February 2017. <a href="https://radio.nrk.no/serie/ekko/MDSP25002317/01-02-2017#t=33m1s">https://radio.nrk.no/serie/ekko/MDSP25002317/01-02-2017#t=33m1s</a>	Media	
<i>Living in Northern Coastal Communities.</i>	Ogilvie, A.E.J.	Invited Outreach presentation to Boulder "Sons of Norway" group. 22 January 2016.	Outreach to the public - Invited	

## Summer courses and miscellaneous

<b>2022</b>				
<i>A Review of COVID-19 Public Health Restrictions, Directives, and Measures in Arctic Countries</i>	Larsen, C. V. L., Olesen, I., Stoor, J. P. A., Sebastián, M. S., Cueva, K., Rink, E., Lavoie, J., Akearok, G. H., Gladun, E., Zatseva, L., Johannsdottir, L., Cook, D., Rautio, A., Timlin, U., Beroderstadt, A. R., Dagsvold, I. & Siri, S.	Report for the Arctic Council's Sustainable Development Working Group (SDWG), Tromso, Norway (IN PRESS)	Report	
<i>Impacts of Climate Change and Climate Extremes on Arctic Livelihoods and Communities</i>	Hausner, V., Trainor, S., Ford, J., Nikitina, E., Klokov, K., Cook, D., Stammler, F. Fauchald, & Nilsson, L. M.	Chapter 7 of Climate Issues of Concern, Report by the Arctic Monitoring and Assessment Programme (AMAP). Tromso, Norway (IN PRESS). 2022	Report	
<b>2021</b>				
<i>Youth and Newcomers in Icelandic Fisheries</i>	Lebedef, E. (Supervised by C. Chambers)	Master thesis, University Centre of the Westfjords, 2021	Master thesis	
<b>2018</b>				
<i>Climate Teleconnections and Predictions: Past, Present and Future</i>	Gao, Y, Furevik, T, Lygre, K, He, S	Summer School, 30.6 – 6.7.2018, Norheimsund, Norway	Summer Course	
<i>Predicting Arctic Sea Ice: Challenges and Perspectives</i>	Kimmritz, M	ARCPATH Summer school (30.06.2018-06.07.2018)	Lecture	
<i>Climate History of Iceland and the Lake Mývatn Area</i>	Ogilvie, A.E.J.	Svartárkot Culture-Nature Project, Human ecology and culture at Lake Mývatn 1700-2000: Dimensions of	Presentation to Svartárkot summer course.	

		Environmental and Cultural Change, Bárðardalur, northern Iceland, 24 August 2018.		
<i>Examples of Climate Impacts: Case Studies from Iceland in General and Mývatn in Particular</i>	Ogilvie, A.E.J.	Svartárkot Culture-Nature Project, Human ecology and culture at Lake Mývatn 1700-2000: Dimensions of Environmental and Cultural Change, Bárðardalur, northern Iceland, 24 August 2018.	Presentation to Svartárkot summer course.	
<i>General Climate History of Iceland: Documentary Evidence ca. 1600-2018</i>	Ogilvie, A.E.J.	University of Iceland Course on Society and Environment in Mývatn area, northern Iceland. University of Iceland, Reykjavik, 9 November 2018	Presentation to course for graduate students.	
<i>Climate Impacts ca. 1700-1950: Examples from Iceland in General and Mývatnssveit in Particular.</i>	Ogilvie, A.E.J.	University of Iceland Course on Society and Environment in Mývatn area, northern Iceland. University of Iceland, Reykjavik, 9 November 2018	Presentation to course for graduate students.	
<b>2016</b>				
<i>Summer School on Climate Teleconnections and Predictions</i>	Gao, Y., Noel Keenlyside Francois Counillon Marianne Rasmussen	Wuhan China (October 10-14, 2016)	Summer course	
<i>Marine Mammal summer course</i>	Rasmussen, M. H.	<a href="http://rannsoknasetur.hi.is/summer_course">http://rannsoknasetur.hi.is/summer_course</a>	Summer course	