



**ACCESS**  
Arctic Climate Change  
Economy and Society



**Project no. 265863**

**ACCESS**  
**Arctic Climate Change, Economy and Society**

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# ACCESS NEWSLETTER

Arctic Climate Change  
Economy and Society

Issue No. 10  
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## ACCESS Highlights



*Arctic Indigenous Peoples Representatives at the University Pierre et Marie Curie in Paris, France, attending a workshop co-organised by the EU projects ACCESS and ICE-ARC on July 9 and 10, 2014 - Photo: Elaina Ford.*

This newsletter is produced three times each year by a consortium of 27 partner organizations from 10 European countries in the 4-year Arctic Climate Change, Economy and Society (ACCESS) project. ACCESS is supported within the Ocean of Tomorrow call of the Seventh Framework Programme. Objectives of the ACCESS Newsletter are to facilitate international, interdisciplinary and inclusive information sharing of our research highlights about natural and human impact associated with sustainable development in the Arctic Ocean in the context of climate change.



[www.access-eu.org](http://www.access-eu.org)





## Arctic Indigenous Peoples Workshop

This special edition of the newsletter focuses on the interactions of the Indigenous Peoples and Local Communities with the ACCESS project, as it passes into its final stages of research and integration of results. The climate change effects on the Arctic Ocean over the next decades will impact on all of us, globally, but those whose livelihoods and cultures are so interlinked with the environment will face the greatest challenges. As always in their histories, the Indigenous Peoples have faced these changes and adapted - but as the ice cover shrinks and organisations and governments hungry for new resources and opportunities weigh up the prospects which the Arctic Ocean may offer in terms of enhanced transport links, accessible hydrocarbons and new fisheries, we have a responsibility to examine what can be done to support the aspirations and concerns of the local populations. It is a cliché, but it still counts - we need to talk more about these issues.

The Paris workshop provided a forum for this dialogue, and benefitted hugely from hearing from an excellent cross-section of representatives of the Inuit, Saami, Aleut, Gwich'in, Athabaskan and RAIPON, who provided robust assessments of the ACCESS aims and results - much of which is still work in progress and can take on board the perspectives of the communities. Headline issues where much work needs to be done include communication, respect for and use of local knowledge, and the inclusion of the Indigenous Peoples at every stage of projects, be they of a pure research nature or evaluation of strategic governance options. Some of the areas fall outside the mandate of the ACCESS project, but new-start European Union projects such as ICE-ARC (which co-sponsored the meeting) will address wider issues, building on the recommendations and observations of ACCESS as a further step to ensure we move forward to a goal of sustainable development in the Arctic.

We thank the Indigenous Peoples representatives for the insights that they have provided, and their help for our understanding of what really matters to them. The ACCESS project and its results are all the better for this, and we will ensure we communicate them to stakeholders and user groups as effectively as possible.

Lindsay Parson, Maritime Zone Solutions Ltd., for the  
ACCESS Editorial Board

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# Arctic Indigenous Peoples and ACCESS

“All changes in the Arctic, both good and bad, will first and foremost be felt by people living there. So it’s only logical that Arctic people should have a prominent voice in all debates concerning the Arctic”, declared EU Commissioner Maria Damanaki at the “Arctic Indigenous Peoples Dialogue” in October 2013.

The human dimension in the Arctic is diverse in terms of culture, governance, demography and economy. Settlements range from modern cities to tiny villages – all with indigenous peoples as part of the communities. Regions have combinations of contemporary formal economies such as services and resource extraction as well as traditional economies based on fishing, hunting and herding.

People have inhabited the Arctic since pre-historic times and have developed rich cultures based on connection to the land and water, and adapting to changes over time. Today climate change is accelerating the rate and dimensions of change which threatens traditional activities that are not just economic choices but are fundamental to indigenous cultures. Indigenous peoples

of the Arctic are stakeholders in a rapidly changing region that is and will continue to be the focus of widely diverse interest groups.

Indigenous peoples are authoritative knowledge-holders on climate change and key actors for developing measures and policies to mitigate and adapt to its effects in the Arctic. Blending centuries of accumulated indigenous wisdom of ecosystems and human interactions with contemporary scientific analysis enhances understanding of the effects of climate change in the Arctic. Indigenous perspectives illustrate that vulnerability and resilience vary significantly in the circumpolar north. Indigenous peoples are the human face of climate change in the Arctic.

## Workshop: Arctic Indigenous Peoples and the EU ACCESS Project on Long-term Climate Change Effects in the Arctic

Lead researchers from the ACCESS project, which is entering its fourth and final year, and representatives of Arctic indigenous peoples organisations joined for a highly interactive and informative workshop on 9 and 10 July 2014 in Paris. The collaboration was sponsored by the ACCESS project, hosted by the Université Pierre et Marie Curie, and ICE-ARC (Ice, Climate, Economics – Arctic Research on Change).<sup>1</sup>

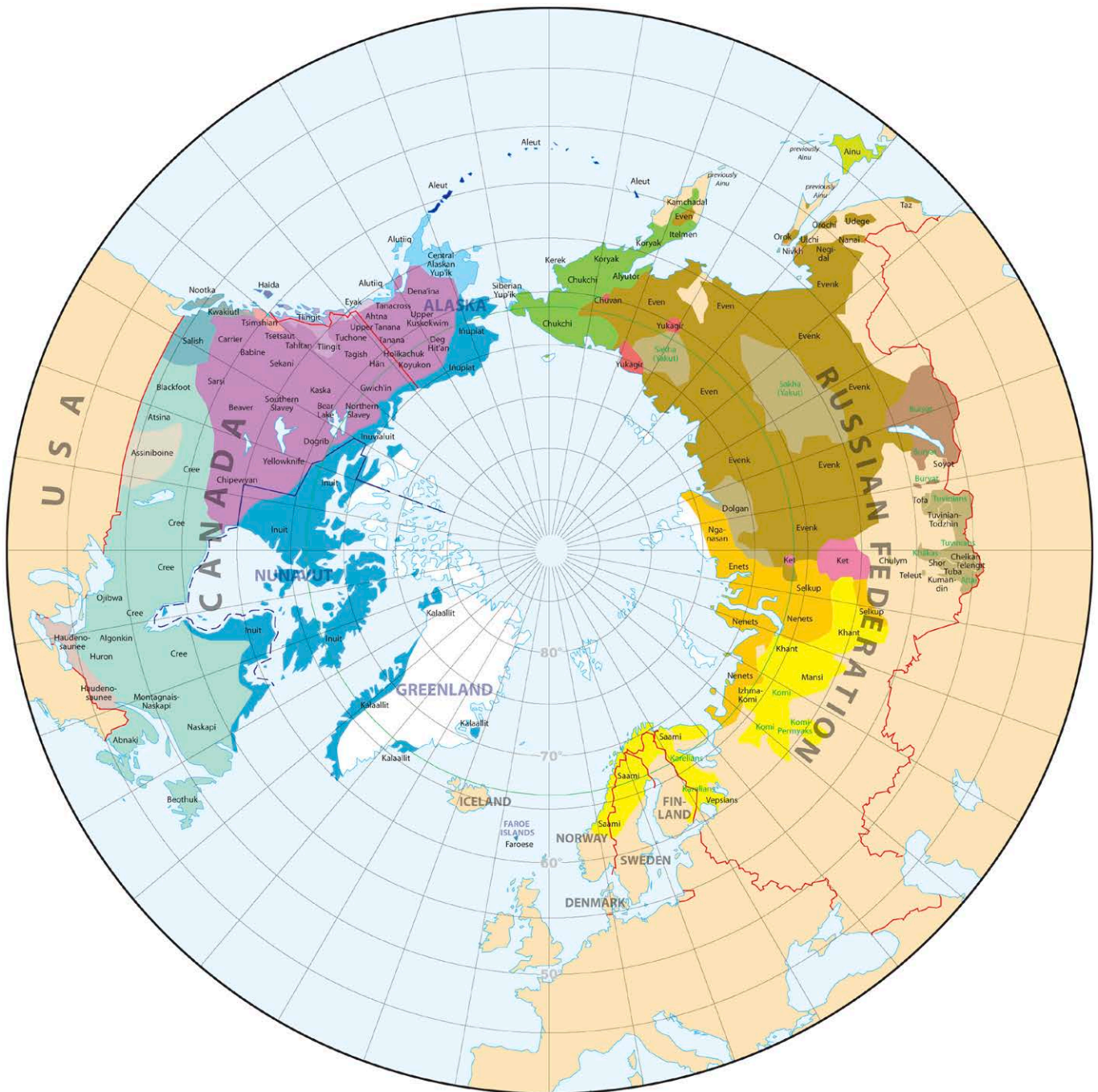
Nine people attended from around the Arctic (Figure 1): Inuit from Greenland; Saami from Norway, Sweden, and Russia; Aleut from the United States; Gwich’in and Athabaskan from Canada. Organisations represented include: Arctic Athabaskan Council; Arctic Council Indigenous Peoples Secretariat; Aleut International Association, Bering Strait Sub-Network; Arctic and environment group of the Saami Council, Norway; Gwich’in Council International, Canada; Inuit Circumpolar Council, Greenland; Nuuk Climate Research Center, Greenland; and Russian Association of Indigenous Peoples of the North (RAIPON), Russia.

The aim of the meeting was to share the findings of the ACCESS project with Arctic indigenous peoples’ representatives while

trying to gain an understanding of their views and perspectives to ensure that they are incorporated into the work of ACCESS. Also to learn ways in which the results of ACCESS can be more relevant and accessible to the indigenous communities in the Arctic. The objectives of the workshop were:
























- To reinforce that the views of various indigenous peoples are appropriately integrated with relevant ACCESS tasks, deliverables and recommendations, as far as possible.
- To share the results of the ACCESS research, so far, and consider how they can be useful to Arctic indigenous populations.
- To foster effective collaboration between indigenous peoples and the international scientific community as research and development in the rapidly changing region proceeds.

<sup>1</sup> - ICE-ARC is a four-year project funded by the European Union’s 7<sup>th</sup> Framework Programme that commenced on 1 January 2014 which is directly assessing the social and economic impact of Arctic sea-ice loss. [www.ice-arc.eu](http://www.ice-arc.eu)



## Indigenous peoples of the Arctic countries

### Subdivision according to language families

<b>Na'Dene family</b>		<b>Eskimo-Aleut family</b>	
 Athabaskan branch	 Inuit group of Eskimo branch	 Yupik group of Eskimo branch	
 Eyak branch	 Aleut group	<b>Uralic-Yukagirian family</b>	
 Tlingit branch		 Finno-Ugric branch	
 Haida branch		 Samodic branch	
 <b>Penutan family</b>		 Yukagirian branch	
<b>Macro-Algonkian family</b>		<b>Altaic family</b>	
 Algonkian branch	 Turkic branch	 Mongolic branch	
 Wakasha branch	 Tunguso-Manchurian branch	<b>Chukotko-Kamchatkan family</b>	
 Salish branch	 <b>Ket</b> (isolated language)	 <b>Nivkh</b> (isolated language)	
<b>Macro-Sioux family</b>		 <b>Ainu</b> (isolated language)	
 Sioux branch			
 Iroquois branch			
<b>Indo-European family</b>			
 Germanic branch			

### Notes:

For the USA, only peoples in the State of Alaska are shown. For the Russian Federation, only peoples of the North, Siberia and Far East are shown.

Majority populations of independent states are not shown, not even when they form minorities in adjacent countries (e.g. Finns in Norway).

Areas show colours according to the original languages of the respective indigenous peoples, even if they do not speak these languages today.

Overlapping populations are not shown. The map does not claim to show exact boundaries between the individual groups.

In the Russian Federation, indigenous peoples have a special status only when numbering less than 50,000. Names of larger indigenous peoples are written in green.

Figure 1 - Indigenous peoples of the Arctic countries.



### Activities and Findings

Scientists from various ACCESS work packages and ICE-ARC provided an overview of work underway and findings related to climate change effects in the Arctic over the next three decades and how this might impact human activities. A few selected points from each are highlighted here.

#### What are the programmes aiming to do?

##### *ACCESS Project Objectives*

*Jean-Claude Gascard, ACCESS Project Coordinator, Centre National de la Recherche Scientifique (CNRS)*

The EU supported project is assessing Arctic climate change scenarios and their impact on three economic sectors and human activities with a time horizon of three decades. The sectors are marine transportation (including tourism), fisheries and the extraction of oil and gas in the Arctic Ocean. A synthesis of the research will provide a view of ocean/ice conditions in 30 years. Particular attention is being given to environmental sensitivities and sustainability in the Arctic domain. ACCESS is also focusing on Arctic governance and strategic policy options. ACCESS is in its final year and reporting will be in 2015.

##### *Ice, Climate, Economics – Arctic Research on Change (ICE-ARC) Objectives*

*Elaina Ford, Project Manager, British Antarctic Survey*

Getting underway in January 2014, this four-year project is looking into the current and future changes in Arctic sea-ice from changing atmospheric as well as oceanic conditions. It will combine new observations of the Arctic atmosphere, ocean and ecological systems with climate models. This will be the first time that a leading global impact assessment model has been coupled with a physical climate model to directly assess the economic impact of observed and projected climate change events. It will assess socio-economic vulnerabilities, both to the peoples of the North and to the planet as a whole. Northwest Greenland is a focus area for considering impacts relevant for indigenous peoples.

#### What are some principal activities and findings so far that are of significance to indigenous peoples?

##### *Physical Effects*

*Jean-Claude Gascard, ACCESS Project Coordinator, CNRS*

- What we know is that in the Arctic winters are getting milder and sea-ice extent is retreating. Both factors are very important for evaluating opportunities and risks for economic activities and ecosystems.
- The Arctic has experienced substantial change in recent

years. These changes are most likely caused by a combination of natural variability in the high-latitude climate system and anthropogenic changes in the radiation balance and subsequently in atmospheric and oceanic heat transports and feedbacks of the air-sea-ice coupled system triggered by thinning Arctic sea-ice cover. Climate scenarios and current climate models are unable to reproduce these recent changes. Sea-ice is vanishing faster than in all coupled climate model scenarios calculations.

- ACCESS is monitoring the current status and changes in Arctic sea-ice to provide a baseline against which to compare projected changes and to maintain the critical measurements that are needed to determine and confirm the trends in the ocean, ice and atmospheric conditions. Projections and estimates of uncertainties for future developments on time scales of up to 30 years are being developed. Enhanced climate outlooks can provide a basis for better informing policies and actions.
- A sustainable Arctic Observing Network for weather and climate is needed. How can indigenous peoples and existing centres be part of and contribute to such a network?

##### *Fisheries, Aquaculture and Marine Mammals*

*Michel André, Technical University of Catalonia, Laboratory of Applied Bioacoustics*

- ACCESS is assessing the various economic and social impacts that climate change might have on fisheries, aquaculture, marine mammals and the societies that depend upon them. The main focus is on the Barents Sea – located in Russian and Norwegian waters – and the surrounding nations and communities. This is one of the most productive oceans and active fishing areas in the world, and also one of the most dynamic areas for ocean and atmospheric circulation – connecting the North Atlantic and Europe with the Arctic regions.
- One task is evaluating the geographical distribution of fish, and consequently, fishing activity. Another is looking at climate change impacts on aquaculture. How climate change measures — for example, changes in consumer preferences or policy action to raise bunker fuel prices — may alter activity at sea and the catch composition is being analysed as is the socio-economic impact on the fisheries sector. Indicators for sustainable development in Arctic fisheries are being elaborated.
- Another element is mapping the current distribution of the Arctic populations of marine mammals. This can aid development of conservation measures. It may be able to address the secondary effects of climate change, thereby helping to understand how circulation, stratification, sea-ice

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dynamics and marine mammal use of Arctic shelves will change in response to diminishing ice cover. Research is underway to collect and analyse data relative to effects of man-made noise on marine mammals, such as shipping, and oil and gas exploration and development. Not a lot of research has addressed the noise effect on marine mammals. ACCESS has been monitoring a large area in northeast Greenland and the Barents Sea over the last year with acoustic recorders and the results will be collected and analysed in the coming months.

- Some preliminary results indicate that: aquaculture seems to be more resilient to climate change than capture fisheries; oil spills are a significant risk to fisheries from more shipping and hydrocarbon activity as are risks from the effects of strikes and noise for marine mammals; and some sixteen areas have been identified as ecologically vulnerable.
- A total of about 97 areas of heightened ecological

significance have been identified within the Arctic 16 Large Marine Ecosystems (LMEs). The areas were identified primarily on the basis of their ecological importance to fish, birds and/or mammals, as these species are the most widely studied Arctic groups. The majority of areas identified are used by birds (85) and marine mammals (81), with a lower number used by fish (40, most of them spawning areas). About 70 areas are used both by birds and mammals, and only two of the areas identified are used only by fish.

- ACCESS (Work Package 4, 4.54) compared the LMEs of the Barents Sea with the presence of marine mammals and anthropogenic activities. The focus was increased acoustic contribution from human activities and impact on the sonar range of cetaceans, and increased human presence in areas that used to be relatively calm, possibly causing displacement. Three types of information were collected for the area under study: the presence of marine mammals;

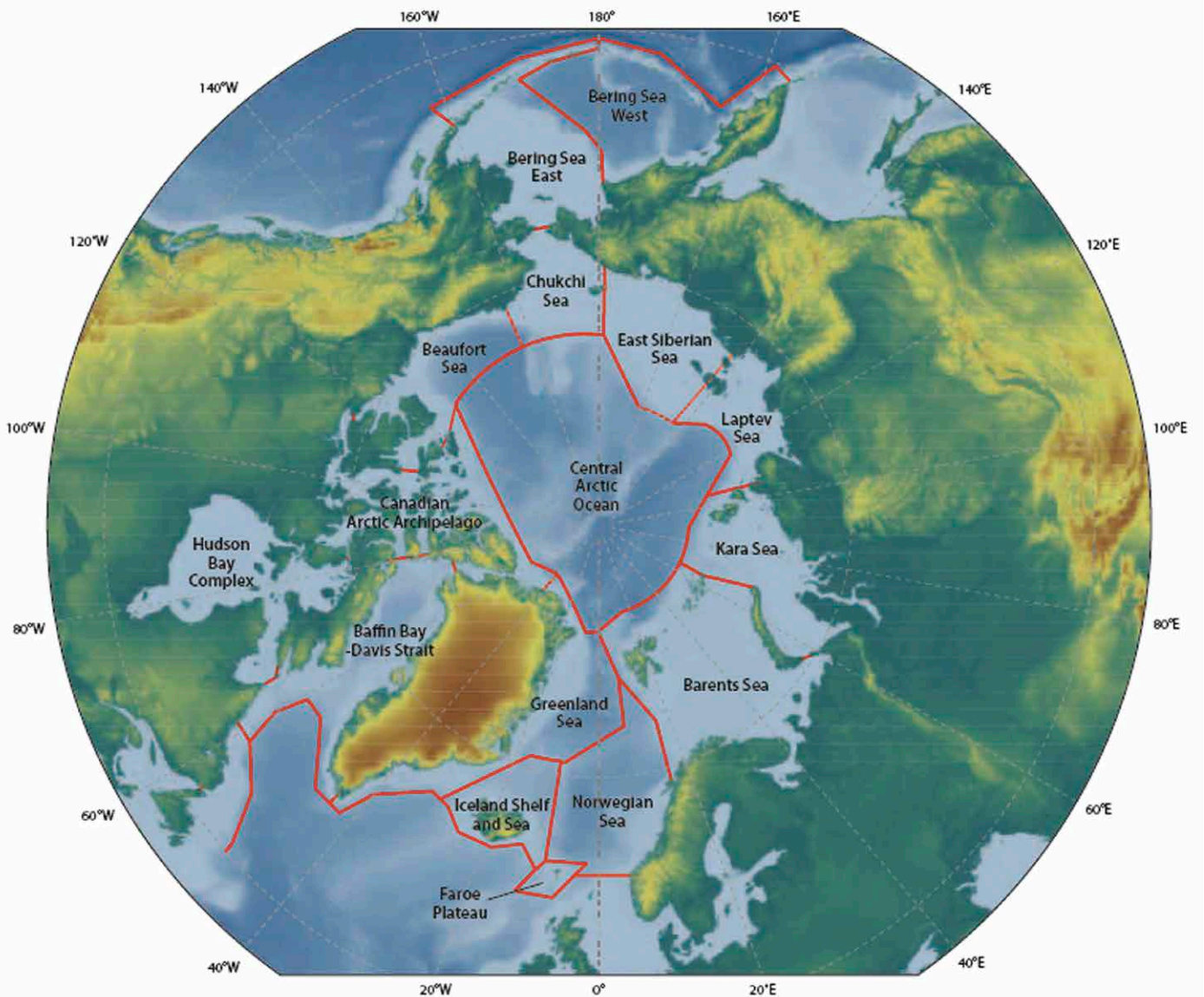


Figure 2 - Identification of Arctic marine areas of heightened ecological and cultural significance: Arctic Marine Shipping Assessment (AMSA), Arctic Monitoring and Assessment Programme (AMAP), Oslo. AMAP/CAFF/SDWG, 2013.

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presence of exploitation platforms; and shipping traffic. This information can be combined with sound exposure modeling, (as performed under ACCESS element 2.4.3), to estimate the acoustic impact on the environment. It can also help identify zones that are important to the animals and affected by human activities. These zones could be designated as Marine Protected Areas in the future (Figure 2).

### Shipping and Tourism

*Edgar Morgenroth, Economic and Social Research Institute, Ireland*

- Tourism numbers in the Arctic are expected to increase due to climate change.
- While the modelling predicts that the regional shares of tourists across the Arctic are not going to change significantly, except for Arctic regions (east Siberia) close to East Asian growth markets (principally China), the actual distribution depends on local developments such as the development of tourism facilities.
- Analysis of cruise tourism suggests that increased temperatures may shift tourists currently going on Norwegian cruises to colder destinations.
- The Northern Sea Route has significant potential as a transshipment route, and could account for more than 3.7% of world trade (in value terms) if year-round ice-free conditions existed and the appropriate support infrastructure were developed.
- The potential is not going to be reached in the near or even medium term as neither ice-free conditions nor the appropriate support infrastructure for large volume shipping exist. However, transshipment activity is expected to grow at an increasing rate as conditions and facilities improve.

### Governance and Regulatory Systems

*Lindsay Parson, Maritime Zone Solutions Ltd.*

The objective of Work Package (WP) 5 has been to provide an overview of each of the sectoral components of ACCESS in respect of their relevant regulatory systems, legislation and agreements, and to critically assess the strengths and weaknesses of these systems as they might respond to a significant period of climate change. This effort focuses on the governance requirements, which derive from the science-based assessments relating to human activities under changing climate conditions that are accelerated in the Arctic as developed in ACCESS' three thematic work packages: marine transport, fisheries and the exploitation of hydrocarbons in the Arctic. WP5 has proposed governance / stewardship strategic options and elements of integrated policy to act in line with future sustainable development of the region to balance economic prosperity, environmental protection and social equity. Such strategies, or infrastructures, will help to address the gaps, overlaps and inefficiencies in current institutional arrangements.

In a number of delivered reports, as well as several synthesis documents which are works-in-progress, WP5 has delivered summaries analysing pan-national, national, bi-lateral and multi-lateral, regional and local regulatory frameworks, and provided preliminary assessments of the spectrum of governance options for the management and regulation of the marine Arctic environment. In particular, it has reviewed the climate change effects on the operation of legislation and examined how it may be stressed during several decades of these effects. WP5 strives to ensure an effective participation of indigenous peoples in the development of the governance options, seeking their perspective in its output. As part of the compilation and integration of all criteria and factors which bear on our analyses, we incorporate systems such as ecosystem-based management and marine spatial planning to strengthen our cross-sectoral synthesis, governance and sustainable development options.



### Framing the Discussions

With the overview of the ACCESS project laid out, the indigenous peoples' representatives introduced their respective organisations and touched on some of the issues of concern. (Brief profiles and links to more detailed information sources are in the concluding section of this newsletter.)

Clearly, Arctic communities are ethnographically, culturally and economically diverse, as are the indigenous portions of their populations. In the circumpolar north, communities and livelihoods are affected by environmental change in different ways. This means that local experiences of climate change

impacts and responses to variability may be quite diverse. How do communities develop and evolve strategies to mitigate adverse impacts from climate change as well as to unearth effective adaptation approaches? We give a glimpse through a few cases brought out in the discussions to illustrate the importance of research at localised, regional and circumpolar levels to better understand the socio-economic dimensions of climate change impacts and adaptation across the Arctic.

#### *Some core questions facilitated our discussion, including:*

- From the indigenous peoples perspectives, what are the current views, uncertainties and significance of the effects of climate change to their lives, the environment and habitat in the Arctic in the near to long term?
- What are the best ways to ensure the full participation of the Arctic populations in the development and implementation of regulatory systems?
- ACCESS sector focus is on fisheries, shipping / tourism and hydrocarbon extraction. Which of these are most significant and what challenges do the predicted climate change induced changes to these endeavours present for indigenous peoples in the Arctic?
- Recognising the significance of the traditional ways, culture and the environment of the indigenous peoples, which aspects of the ACCESS scientific research are most relevant to local populations? How can these results be effectively formulated and communicated? How can local knowledge be better represented in academic research?

### Which Climate-related Issues are of Specific Concern to Indigenous Arctic Peoples?<sup>2</sup>

2 - Special thanks to Angela Benn and Phil Turner, National Oceanographic Centre, UK for reporting on the discussions.

Several lively and interactive discussion sessions revealed a number of commonly voiced issues. While some issues, such as fisheries, noise in the marine environment and governance, are within the scope of the ACCESS project to address, others fall outside of its mandate. Nevertheless, ACCESS recognises and acknowledges these issues and can contribute by making recommendations based on the lessons learned. The key issues identified are summarised briefly here.

#### Communication and Dissemination

There are varying degrees of difficulty in communication throughout the Arctic. Living costs are high. Transport is expensive and constrained. Communication technologies and connectivity open the door to a multitude of opportunities for people in the Arctic, but in some areas there is no or limited broadband access and internet connections are slow. Plus, digital skills are essential to take advantage of the empowering tools of the internet and these skills may not be in the hands of older people. Communication in all its forms can be further inhibited by multiple languages and insufficient translation options.

Dissemination has to be through a variety of mediums and in lay language in order to reach a wide audience, for example as paper copies of newsletters, reports and articles included in local publications, via community leaders and councils, the internet (including social networks and YouTube) and radio. Radio is considered a good way to reach communities and is successful in disseminating information in a trusted manner in many communities. Examples were mentioned such as health care information, weather and transport route updates. On the other hand, a representative from a village of 300 said that the community did not even have a radio. Dissemination of information needs to be done with care, targeting communities with information that is of relevance to them rather than an excess of what is sometimes perceived as an overload of negative information.

While acknowledging the underlying problems with infrastructure such as internet connections, ACCESS is not in a position to address these directly. ACCESS, however, is investigating ways to disseminate our findings and outlooks to communities across the Arctic – including via its newsletters and possible radio broadcasts.

### Engagement, Consultation and Contribution

There is a commonly held and extremely strong view that indigenous people need to be included at the very beginning of research projects. It is felt that the research agendas are set and owned by the institutions and foundations that fund them. Real participation of indigenous communities needs to be at the stage when the questions to be addressed are being formulated. Trust needs to be established and respect for the rights and aspirations of indigenous peoples maintained.

It is reported that indigenous communities are often not even aware that research is going on in their area. Researchers need to make clear what they want to do and why and how the knowledge gained will be used. Ideally, when the local community is satisfied that they are in agreement with the research to be undertaken and the use it will be put to, they will grant permission. Another common critique is that at the end of projects, researchers frequently fail to acknowledge,

cite in the text or even thank indigenous people for their contribution to the work. Furthermore, often the results are never relayed back to the communities in which the research was carried out.

How to change the model so that the outreach does not just come after a proposal has been funded in order that indigenous peoples are meaningfully engaged to influence and contribute to the research agenda and its results? This discussion indicated considerable interest. An approach in the Gwich'in Council International reflects the view from chiefs, "*nothing about us – without us*". From experience with researchers who came, gathered traditional knowledge went away and took "*ownership*" of this knowledge and failed to give credit, now research projects are required to obtain permits so that local communities and councils may consider the plan and ensure their rights.

#### *Engagement Approach in the Northwest Territories*

"*Nothing about Us without Us*", declared Northwest Territory Chiefs at the Dene Nation National Assembly in 2013. A reflection of this statement in terms of how research is conducted in the Northwest Territories is borne in the practice of the Arctic Research Institute highlighted here by Ethel Blake, Gwich'in Council International representative.

In previous years researchers came into our communities to gather research on traditional knowledge, and then they left and took "*ownership*" of the knowledge without giving credit to those who shared their information. That method is no longer an option. Now all researchers coming into the Northwest Territories have to apply for a research license from the Arctic Research Institute located in Inuvik. The Arctic Research Institute forwards the application to the affected communities which reviews it, considers the plan to determine if they will support the research and to ensure their right to maintain ownership of the research. The Arctic Research Institute's way of doing business with researchers is helping to preserve ownership of all research by the communities.

*Ethel Blake, Gwich'in Council International representative*

As part of this discussion, the issue of intellectual property rights of indigenous peoples was registered as a concern. This is not currently considered to be a matter for ACCESS. However, when making recommendations it can be included. A possible recommendation may be the development of a standardised method by which to cite / acknowledge the contribution of indigenous peoples to research projects.

Early engagement is not an option for the ACCESS project as it is in its final stages. However throughout its activities assessing climate change impacts on three economic sectors and human activities, the societal and economic dimensions for indigenous peoples have been an important element – witness this workshop. It is an issue which ACCESS can highlight when making recommendations.

The ICE-ARC project, a successor to ACCESS, is taking this matter front and centre. One of the four work packages aims to identify the socio-economic vulnerabilities in the Arctic region, including to:

- Understand the present impact of changes in sea-ice, environment and socio-economic conditions on the livelihoods of indigenous communities in northwest Greenland.
- Investigate how past changes affected indigenous cultures and their adaptive capacities and survival strategies.
- Develop strategies for the application of anticipatory knowledge by communities to help prepare for and negotiate future change.



## Arctic Indigenous Peoples and ACCESS

This will help to improve understanding of climate change impacts on marine ecosystems and Arctic societies as well as to strengthen capacity building in communities. Improved understanding of the vulnerabilities of high Arctic communities will place climate change impacts in context. ICE-ARC will examine societal, political, economic, institutional and legal barriers to adaptation. This will be achieved through two main methods, as highlighted by programme manager, Elaina Ford:

*“We will work with communities through open discussions with hunters, fishers, farmers, teachers and school children – the future of any society – and with no preconceived agenda so that indigenous peoples can take the discussion where they feel is important to their society. The focus is primarily in Greenland, though we do look for opportunities to collaborate to expand our remit.*

*Data will not be collected in indigenous peoples’ territory without their knowledge. In ICE-ARC, local collaborators will be centrally involved in the data collection. For example, hunters will add instruments to their sleds to measure sea-ice thickness and to collect data on their daily travels (Figures 3 and 6).*

*ICE-ARC members strongly support open access data, so all data and results will be available. We look for further collaborations and ideas on how best to get information and data to the communities”.*

A notable example of an indigenous community taking the lead to sit down with scientists to write a proposal for a project focusing on climate change impacts on communities was successfully funded with the indigenous group as the project leader. “That is how you get the value-added”, noted Bob Van Dijken of the Arctic Athabaskan Council.

### ***Research in the North: a changing paradigm?***

Indigenous land claim agreements and the devolution of federal powers and responsibilities are creating a new political and regulatory landscape in Canada’s northern territories. This has implications for researchers working in the North. There is not a one-size-fits all manual for northern research that can provide all the answers in one convenient location.

Canada invested substantial amounts in research and related infrastructure during the International Polar Year (IPY). Projects were required to work with international partners and include plans for training, education and outreach for northern residents. More than 50 Canadian led projects conducted Arctic research. There were some refreshing new models for research partnership that can be adopted as standard practice moving forward.

One that turned the traditional research paradigm on its head is the *Yeendoo Nanh Nakhweenjit K’atr’ahanahtyaa*: Environmental Change and Traditional Use in the Old Crow (Figure 4) Flats, Yukon. It focuses on addressing the complexities of climate change impacts on the Old Crow Flats and the nearby First Nation community of Old Crow.

Upon learning of the Canadian IPY science call for proposals, the community of Old Crow invited four “southern” university professors who held northern research chairs to help develop a research proposal. Over the course of a weekend the community worked with the academics to develop a proposal that dealt with the community’s priority research needs. They shared meals and stories, agreed upon research priorities and plans, and submitted a proposal. It was successful and received CAN\$1.7 million funding.

Summer research programmes provided employment opportunities and researchers participated in and offered training opportunities for youth summer camps and other activities. Following on in January, the researchers, up to fifteen professors and graduate students came to Old Crow to provide the results of the previous summer research and to make plans for the upcoming field season. Such collaborations strengthen the research partnership and ensure that the community remains engaged and informed. The project developed community-based monitoring programmes and protocols so that the First Nations government and community members could continue to gather information and develop long-term data sets. This “cradle to grave” approach, working with communities from the development of the proposal to the legacy aspects can serve as a valuable model.

Minor changes to the traditional research funding models could help promote this type of approach. The provision of some “seed funding” to allow researchers to travel north during the proposal development phase would help develop meaningful partnerships and community relevant research. Funding could also be included for developing communication materials and returning to communities after field programmes are completed to report on results. Not all research lends itself to this full partnership approach, but effective two-way communication should still be a goal.

With the Canadian High Arctic Research Station scheduled to open in Cambridge Bay Nunavut in 2017, we look forward to this institution promoting and fostering this research approach. Developing research relationships requires an investment of time, energy and funds, but in the end the results can be well worth the effort.

*Bob Van Dijken, Arctic Athabaskan Council, Director Circumpolar Relations, Council of Yukon First Nations*

More detail on the project is at: <http://pubs.aina.ucalgary.ca/arctic/Arctic64-1-127.pdf>

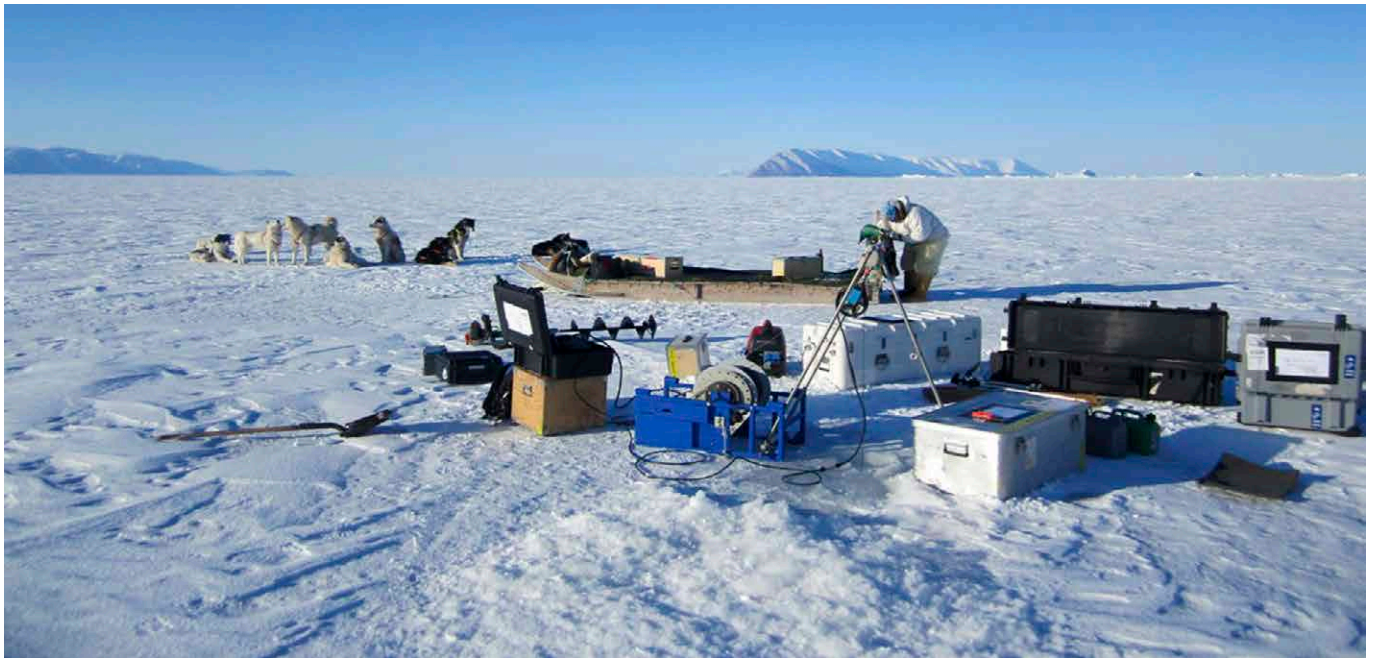


Figure 3 - Hunter's sled equipped with measurement equipment, Qaanaag Field Site, spring 2014. Photo: Naja Mikklesen.



Figure 4 - International Polar Year researchers community meeting, Old Crow, Yukon, February 2010. Photo: Kevin Turner.



### Capacity Building: Knowledge Retained by and Returned to Indigenous Peoples

Knowledge is an important aspect of self-determination. While a lot of funding is being targeted on orthodox polar research there is very little support for traditional knowledge. The “we” in “we need to understand what is going on” should include indigenous peoples, who need knowledge about their homelands. By asking local communities what questions they want answered, it would encourage the youth to see that it is not only external questions that need addressing.

It was felt that there is a need for capacity building in the Arctic with more Arctic-based institutions and for the knowledge that is produced in them to remain within the society. There is also support for co-production between indigenous peoples and academics of knowledge that will benefit everyone.

In parallel with this, ACCESS is investigating ways in which its partners may be able to offer opportunities at their institutions both in the North and elsewhere for graduate and post-graduate links with indigenous peoples.

A number of current initiatives are good examples of efforts to expand and retain knowledge in Northern communities, build capacity and strengthen institutions. Two examples are highlighted here. One in Greenland is gathering and preserving cultural and traditional knowledge while supporting capacity building. Another underscores the importance of strengthening the existing Saami knowledge institutions.

#### *Inuit Pinngortitarlu – People and the Environment*

*Lene Kielsen Holm, Greenland Climate Research Centre*

The Inuit Pinngortitarlu project is mapping historical and contemporary use of the Nuuk Fjord complex. It is exploring human-environment relations and local knowledge to outline local and regional impacts and experiences of climate change; the dynamics, socio-economics and political ecology of resource use; non-renewable resource development and the adaptive capacities of local communities.

Together with local peoples, we are mapping the past, present and future use of the Nuuk area. We started by inviting a small group of local experts, who are residents and former residents of the settlements of Kapisillit, Qoorngoq and Kangeq. With them, we discussed the approach of the Inuit Pinngortitarlu project. We asked them to communicate what they see as being of importance to understand the former and present uses of their respective areas. This phase is ongoing. So far we have been mapping hunting places for some types of animals and various fishing places. Our methods in gathering this information and knowledge have been through several workshops and trips to the Nuup Kangerlua and to Kangeq.

The people invited to participate are users of the resources that are found in the vicinity of the still populated, and for some abandoned, settlements. They have been making a living

from hunting and fishing in the Nuuk Fjord area for most of their lives. Their knowledge and understanding have been handed down from ancestors. One of the ideas fundamental to this project is to bring that knowledge forward and accessible for the generations to come. Their stories will help us gather information about the past and present uses of the area. This provides an informed basis which to try to foresee what is possible given the ongoing changes, especially in light of the projections for future developments.

By working with our own PhD students in this project, we believe that the knowledge gathered from this kind of collaboration can both “stay” at home, and also build knowledge capacity for the generations to come in Kalaallit Nunaat (Greenland). Together with the experts, both local knowledge-holders and local PhD students, we are documenting the different resources, settlements and the importance of shifting climates for the livelihoods of the people in the area.

We seek to understand the Nuuk Fjord area as a human world in which people engage in a complexity of rich and intricate social relations with animals and the environment. We are researching local knowledge and perceptions of weather, climate and environment; the use of living marine and terrestrial resources; the growing importance of tourism and leisure; and the political, social and environmental aspects of extractive industries. We are examining settlement patterns and both historic and contemporary movement, place names and mapping travel routes throughout the Nuuk Fjord region. A further aspect of this project is to place more recent changes in archaeological and historical context. To understand the impact of changes on historic Inuit and Norse cultures we are focusing on adaptation strategies in relation to changes in sea-ice, climate and the environment.

Also we believe that with this kind of mapping we can bring the knowledge about the area to future generations and also to other research and scientific studies. We believe that a holistic approach can be helpful in the endeavours that all of us are involved in trying to better understanding the forces at play in the changing environment.

- One important aspect of our work in the Inuit Pinngortitarlu project is a concern with understanding climate change within the context of other changes such as the societal and economic transformations underway in Greenland.
- Rapid social, economic and demographic change, resource management and resource developments including extractive industries, anti-hunting campaigns, trade barriers and conservation policies, all have significant implications for human security and sustainable livelihoods in the Arctic.
- In many cases, climate change magnifies existing societal, political, economic, legal, institutional and environmental challenges that northern peoples living in resource-dependent communities experience and negotiate in their everyday lives.

## Arctic Indigenous Peoples and ACCESS

We believe that working with multiple stakeholders is needed. They include, among others, hunters and fishermen, other users of the resources such as recreational hunters and fishermen, governmental institutions, scholarly institutions, like *Misimatusarfik* (University of Greenland), and the scientists working with climate and other fields of importance to society. It is important in order for us to understand the future challenges that the transformations will bring to the society, together with the impacts caused by the results of a changing climate and environment.

At the Greenland Climate Research Centre, our research projects nurture new knowledge about human-environment relations, economic activities, environment and climate change in Greenland in both historical and contemporary perspectives,

and contribute to social science approaches to climate change more generally. We are concerned with developing innovative perspectives in the social sciences and contributing to interdisciplinary approaches and methodologies. In this way, for example, we seek to enhance climate models and scenarios, develop new methods for long-term societal and economic development scenarios, contribute to understanding human-environment relations and resource use, and foster deeper understanding of the large-scale drivers of climate variability, and impacts on society and environment.

### *Saami / Indigenous Institution Building*

*"I am often left with the impression that decisions made regarding the Saami society are made based upon assumptions about the Saami people, not on certain knowledge".*

While there are increasingly more research and data collection available about the Saami, there is still a huge lack of statistical data and knowledge about Saami people's culture, economies and well-being. With increased global and national attention about the North, and the Arctic being the focus of many research programmes, we need to also strengthen the existing Saami knowledge institutions and establish more in fields of people, societies and traditional knowledge. There is a need to keep strengthening indigenous institutions to make better contributions to the Arctic research and assessments and to enable appropriate use of traditional knowledge. Research and science builds societies. We need to develop and strengthen the Saami / Indigenous science to build and strengthen our societies (to make resilient societies).

Projects such as ACCESS (and ICE-ARC) should not only gather data and produce knowledge about climate change in the Arctic, but also have the objective to develop the Arctic society, by involving indigenous researchers and indigenous institutions. It creates a venue for the indigenous researchers to develop their homeland communities.

*Gunn-Britt Retter, Arctic and Environment Group of the Saami Council, Norway*



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### Adaptation, Governance and Rights to the Marine Space and Resources

Knowledge is an important aspect of self-determination. While it was suggested that traditional knowledge should be ascribed the same significance as “orthodox” science as a basis for management and development of climate change mitigation and adaptation strategies. It was further suggested that states should involve indigenous peoples, in equal partnership with national authorities, in the development of such strategies. The meeting was reminded of the need to protect the rights of indigenous peoples through respect for human rights standards and obligations.

Governance was considered to be one of the most significant issues for indigenous peoples as the impacts of governance can be as significant as those of climate change itself. It was expressed that governance is frequently imposed from outside the Arctic and, as a consequence, often fails to understand the unique conditions and circumstances that prevail there, ignoring the traditional knowledge on which communities have successfully relied for millennia. Such failures in governance impact negatively on communities, their livelihoods and the environment. Rigid regimes that fail to allow flexibility to indigenous peoples restrict their ability to adapt, further compounding the impacts of climate change. Restrictions imposed in areas to which species move due to climate change may restrict or even render illegal traditional fishing and hunting practices.

#### *Governance and Rights to Resources*

*Lindsay Parson, Maritime Zone Solutions Ltd., Angela Benn and Phil Turner, National Oceanographic Centre, UK*

The indigenous peoples’ representatives at the Paris meeting identified governance and fishing, as their immediate primary concerns. Fishing, as changes are already being experienced and governance as it is considered that this has the potential

### Models for Self-governance

A discussion around the process by which self-governance could be achieved showed this to be a sensitive and challenging issue. A number of examples for self-governance were cited during the meeting including: the Red Dog Mine in Alaska,

to have a greater impact on the lives of Arctic peoples than the direct impacts of climate change.

One of many other important issues that emerged during the meeting was the need for the inclusion of traditional knowledge in policy-making. An example of the Norwegian Saami reindeer herders was used as an example of governance which had failed to achieve this. The Norwegian government has assumed responsibility for reindeer herding and, as a consequence, reindeer herding has become highly regulated by national legislation which imposes a production-oriented agricultural model on traditional herding systems while at the same time blaming reindeer herders for managing their herds irresponsibly.<sup>3</sup> The herders’ traditional responses to changes in both the natural and the socio-economic environments have depended on flexibility in herding practice, but this flexibility is being undermined, not only by loss of habitat and predation but also by constraints imposed by the governance regime.<sup>4</sup> Speculate on the implications of this for adaptation to climate change: “*The ability to self-organise according to their traditional knowledge is an important factor in strengthening reindeer herders’ resilience to changes. Institutional settings where reindeer pastoralists’ traditional organisation is restricted—as in Norway—represent a serious institutional constraint on adaptation.*”

Herders in the Yamal region of northern Russia, however, where the government has left the traditional systems of herding relatively undisturbed, have fared better. There is a lesson here to be applied elsewhere in the development of policy relating to climate change.

3 - Tyler, N. et al., (2007), Saami reindeer pastoralism under climate change: Applying a generalized framework for vulnerability studies to a sub-arctic social-ecological system, *Global Environment Change, Elsevier*, Vol.17, Issue 2, pp.191-206.

4 - Reinert, E. et al., (2009), Adapting to climate change in Sámi reindeer herding: the nation-state as problem and solution, *Adapting to Climate Change: Thresholds, Values, Governance*, (Adger, et al., eds.), Cambridge University Press.

the Saami parliaments, Greenland home-rule and a number of land claims and devolution agreements in Canada. These are currently being investigated with the aim of including, where appropriate, case studies within future ACCESS deliverables.

#### *Self-Government Agreements in the Northwest Territories*

Self-government agreements set out arrangements for Aboriginal Groups in the Northwest Territories to govern their internal affairs and assume greater responsibility and control over the decision-making that affects their communities. The self-government agreements address: the structure and accountability of Aboriginal governments, their law-making powers, financial arrangements and responsibilities for providing programmes and services to their members. Self-government enables Aboriginal governments to work in partnership with other governments and the private sector to promote economic development and improve social conditions.

Self-government agreements are intended to implement the Aboriginal party’s inherent right to self-government. As such, self-government agreements describe the structure of Aboriginal government(s), at potentially both the community and regional levels, and describe the powers and responsibilities of the self-government. Aboriginal governments in the process of self-government negotiations are: Gwich’in; Inuvialuit; Sahtu Dene and Métis of Colville Lake, of Déljne, of Fort Good Hope, of Norman Wells and of Tulita.

*Ethel Blake, Gwich’in Council International representative*

More information is available at: [www.daair.gov.nt.ca](http://www.daair.gov.nt.ca); [www.daair.gov.nt.ca/\\_live/pages/wpPages/Selfgovernment.aspx](http://www.daair.gov.nt.ca/_live/pages/wpPages/Selfgovernment.aspx)

## Indigenous Peoples Perspectives on ACCESS Focus Areas

### Climate Change Effects on Fisheries

The immediacy of the changes and the implications to cultures and livelihoods make this one of the issues that were considered to be most significant for indigenous peoples' representatives at the workshop. It was noted that in both Greenland and Norway species that were not common are now being caught, in particular, mackerel. As long as species that migrate north due to climate change are replaced by other species that can fill the same function, this is not viewed as a major problem.

However, ocean acidification is a cause for concern as it may impact on aspects of fish populations such as reproductive capacity. The impacts of regulations and policies are considered to be more important than the impacts of climate change per se. Concerns about the ability of regulations and quotas to keep pace with rapid changes were also raised. There is a role for ACCESS in this regard by providing information to indigenous communities on predictions of resource availability.

#### *Norwegian Fisheries and Adaptation to Climate Change*

There has been continuous settlement along the northeast coast of Norway for more than 10 000 years. The local people in the fjords and at the coast have developed knowledge for generations that has allowed them to adapt to changing environmental conditions, in part by utilising a range of fish species. Small-scale fisheries based on this knowledge are thus less vulnerable to climate change. The challenge in the fjords today is limitations to this local adaptation capacity due to centralised management of marine resources and inflexible regulations on the fisheries, which are not based on local traditional knowledge. Nonetheless, climate change itself remains a greater threat to the Norwegian national economy, which relies heavily on a single species, the Barents cod, which may migrate out of the Norwegian economic zone due to climate change.

*Gunn-Britt Retter, Arctic and Environment Group of the Saami Council, Norway*  
in *Climate Change and Arctic Sustainable Development*. (2010), UNESCO Publishing.

### Noise Pollution Effects on Living Resources

Noise pollution impacts on animals and fish was identified as a significant issue. It was reported that some species of whales have moved north and, while still remaining within the traditional hunting grounds, are now further away. It is not clear whether this move is due to noise, although noise has a strong presence in the area, with some seismic testing being carried out. It was noted that it is not only marine mammals that are affected by noise, but also fish. While not suffering the same trauma as marine mammals, fish have been found to be displaced by anthropogenic noise, only returning 10-15 days after the disturbance. This has implications for the movements of seals and seabirds which feed on the fish as well as the livelihoods of indigenous peoples.

Interest was expressed in a possible collaboration between ACCESS and indigenous communities to monitor noise and animal movements – a collaboration that would benefit both parties.

#### *The Noise Issue in the Arctic Ocean*

*Michel André, Technical University of Catalonia, Laboratory of Applied Bioacoustics*

The sea environment has always been filled with noise (from animals and physical processes), although the last hundred years have seen the introduction of many anthropogenic sources that are currently contributing to the overall noise budget of the oceans. The extent to which noise in the sea impacts and affects marine ecosystems has become a topic of considerable concern to the scientific community. Anthropogenic noise, including acoustic signals necessary to study the marine environment, can interfere with the natural use of sound by sea organisms. For geophysicists, seismologists and oceanographers, sound is the most powerful tool available to determine the geological structure of the seabed and to look for oil and gas reserves deep below the seafloor (Figure 5). As well, military operations also use sound for defense activities such as detecting long-range targets. On the other hand, unnecessary or unintentional noise sources, *i.e.* sources that are associated with specific activities but contain no information (shipping for instance) are constantly introduced in the marine environment.

The question is whether human-generated noise may interfere with the normal use of sound by the marine animals (*i.e.* chronic effects that may affect the long-term ability of marine animals to develop their normal activities, reproduce, and

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maintain sustainable populations) or cause physical harm to them (*i.e.* acute effects that may compromise the short-term ability of these animals to survive).

Based on existing technology already implemented in deep-sea observatories (LIDO, [listentothedeep.com](http://listentothedeep.com)), there is a need to use the acoustic systems for:

- Real-time monitoring of noise generated by human activities, including pile-driving and ships, to determine areas of acoustic impact.

- Real-time monitoring of the presence of cetaceans in the area of interest to develop a standard protocol for the measurement and computation of the emitted sound levels that allows comparison between different regions.

LIDO technology includes all necessary tools to perform these tasks and offer noise mitigation actions for the management of the Arctic challenges, therefore helping the sustainable development of the indigenous populations that rely on local resources for living.



Figure 5 - Deployment of Passive Acoustic Sensors in Northeast Greenland (ODEN Arctic Technology and Research Cruise 2013). Photo: Jan Durinck.

### Outlook for Developments in the Shipping/Tourism and Hydrocarbon Extraction Sectors

These activities were considered, by the representatives present, to be of less immediate importance to indigenous peoples. However, in the event of an accident, for example an oil spill or a cruise ship accident, the impacts would potentially become of paramount environmental, economic, social and cultural importance. The impacts on livelihoods of oil and gas industry infrastructure, such as pipelines, can have social and cultural impacts. Concerns were raised over the presence of cruise ships disrupting the whaling season in Alaska and highlighting the need for tourism activities to be co-ordinated with local communities. This opened up speculation that it may be an opportunity for local communities to provide tourism services

themselves. The need for caution was expressed as there is a danger that one of the very aspects of the Arctic that attracts tourists is the culture, but these could be degraded by tourism if care, respect and understanding are not exercised. The seasonal nature of tourism presents a problem as infrastructure has to be maintained outside the season with the cost often falling to local communities. Seasonal reduction in income can, in turn, put a strain on individual families as well as lead to a reliance on cheaper food stuffs and their associated health issues. Similarly, industries such as mining and oil and gas extraction may provide employment. Yet the boom-and-bust cycles typical in some and work regimes that often involve two-weeks-on / two-weeks-off patterns can impose stress on families and communities.



### Socio-Economic Effects of Climate Change in the Arctic: Implications for Indigenous Peoples

*Edgar Morgenroth, Economic and Social Research Institute, Dublin, Ireland*

Climate change is expected to have a range of impacts on the Arctic. Key environmental variables such as temperatures, precipitation and sea-ice cover are expected to change. These changes are likely to have significant economic implications, which will impact on indigenous peoples. Two such impacts relate to tourism development and commercial transshipment through Arctic waters.

Thus changes in climate are likely to lead to changes in tourism numbers and patterns across the Arctic. Climate change has a number of different impacts on tourism in the Arctic. On the one hand, the Arctic will become less forbidding and more accessible. On the other hand, the Arctic may well lose some of its unique characteristics. Such threats may lead to a temporary surge in the number of tourists, who would want to experience the Arctic before it is gone.

Research has shown that tourist destination choices are among other things determined by temperature and precipitation.<sup>5</sup> Thus, changes in temperature and precipitation due to climate change will change the destination choices of tourists. The impacts not only derive from the likely changes in the Arctic but also from changes elsewhere. Research funded as part of the ACCESS project has investigated the likely changes in tourist patterns in the Arctic, taking into account the projections of tourism throughout the world.<sup>6</sup>

The results of this analysis show that for a range of climate change scenarios tourist numbers to all Arctic regions are projected to increase. However, no significant redistribution of tourism shares across Arctic regions is projected, except for Russia and to a lesser extent the Northwest Territories and Alberta in Canada, where the likely growth is expected to be significantly above the average. The projected stronger than average growth in tourism numbers in Russia is a function of both the projected climate change and the fact that it is close to strongly growing markets in East Asia. Analysis on cruise tourism suggests that increased temperatures may shift tourists currently going on Norwegian cruises to other colder destinations.

Reductions in sea-ice make the use of the Northern Sea Route and Northwest Passage feasible for commercial transshipments between Europe and East Asia, Alaska and the west coast of Canada. The research conducted as part of the ACCESS project has identified the country pairs for which the routes would be shorter.<sup>7</sup> The countries that benefit to varying

degrees are Japan, Korea, North Korea, China, Taiwan the Philippines and Hong Kong in Asia and all of northern Europe including Norway, Denmark, Germany, Netherlands, Belgium, United Kingdom, Ireland, Iceland, France, Spain, Portugal, Poland, Sweden, Finland, Estonia, Latvia and Lithuania. For example shipping distance savings via the Northern Sea Route between Japan and northern Europe are in excess of 40%. If the Northern Sea Route were ice-free throughout the year and if the required support infrastructure and regulatory framework for the utilisation of the route were in place, the trade between the countries for which the Northern Sea Route is shorter would utilise that course. Trade between these countries accounts for at least 3.7% of world trade.<sup>8</sup> Of course, dependable ice-free conditions will not arise for some time even with significant climate change. Likewise, the required infrastructure and regulatory framework to utilise Arctic shipping routes will only be put in place over time. Thus actual volumes, of shipping traffic through the Arctic will increase only gradually. However, as conditions improve it is likely that the increase in shipping volumes via the Arctic will accelerate. This pattern of growth is often observed for the take-up of new routes and technologies and allows for the calculation of likely scenarios on the basis of some simple assumptions.

Assuming it takes 150 years to reach ice-free shipping conditions and 50 years to allow for ice-free shipping during half the year it is possible to consider the likely "penetration" of the Northern Sea Route for shipping between Europe and East Asia. Under these assumptions the expected volume of trade being shipped via the Northern Sea Route in 2030 is just 3.7% (or almost USD 60 billion) of the level that would be expected if the Arctic were completely ice-free. However, after 30 years (2042) the volume would reach 16.1% of the potential total shipping volume.

While local populations can be directly involved in determining both the extent and nature of the impacts of tourism as these are determined by the development of local tourism facilities such as ports, airports, hotels and other related tourist infrastructure, the impact of shipping through the Arctic can be less determined locally as fewer local facilities are needed. This has implications for the likely costs and benefits to area communities from these changes. For example, tourism facilities create jobs and generate income for local communities. Of course, tourism may also impact on indigenous communities and can lead to cultural change. There is however a difference between land-based and cruise-based tourism. The potential benefits from cruise tourists are lower as they require fewer locally sourced services, but this form of tourism may have less impact on the environment as there is no need for hotels. Of course cruise ships can interfere with local fishing and hunting activities. Shipping on the other hand is expected to

5 - Tol, R. and S. Walsh (2012), "The Impact of Climate on Tourist Destination Choice", *ESRI Working Paper WP423*, Economic and Social Research Institute (ESRI)

6 - Tol, R. and S. Walsh (2012), "Climate Change and Tourism in the Arctic Circle", Working Paper 5212, Department of Economics, University of Sussex.

7 - Based on identifying the port pairs for which the route is shorter. In total, 4 720 port pairs were considered in the analysis.

8 - Morgenroth, E., (2014) "The Potential Trade Effects of the Northern Sea Route: Implications for Shipping", task report submitted to the EU Commission.

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generate only limited employment and may result in pollution and negative impacts on marine life including whales and the other marine mammals which attract tourists. Thus the development of shipping, if left unregulated, could negatively impact on tourism development.

This discussion suggests that the expected socio-economic impacts of climate change via tourism and shipping need to be managed carefully. While local communities have at least some influence on the development of land-based tourism through their control of the development of tourism facilities, both cruise tourism and shipping activity are largely out of the control of local communities. In order to maximise the benefits and minimise the costs of cruise tourism and shipping for local communities, it is therefore vital to establish appropriate protocols for example on the timing and routing of cruise ships and commercial shipping.

### Reflecting Various Indigenous Peoples Perspectives

Arctic “indigenous peoples” is a catch-all phrase which fails to differentiate at a more local level different ways of life and cultures as well as different perspectives. An example of such differences was cited in which one group that owned the land and another that was concerned about disruption to reindeer migration routes disagreed over potential development of oil resources in Alaska.

While not within the mandate of ACCESS to explore and report in detail the differences between various Arctic indigenous peoples, the project will ensure that these differences are acknowledged. Based on the results of the workshop and, if possible, future interactions with the indigenous representatives, ACCESS will endeavour to include the perspectives and views of indigenous peoples in its outputs – including its recommendations. While not within the mandate of ACCESS to explore and report in detail the differences between various Arctic indigenous peoples, the project will ensure that these differences are acknowledged.

### ACCESS Recommendations

ACCESS recognises that a number of very important issues raised during the workshop are not within its mandate to address directly. However, it is expected that ACCESS can contribute to raising awareness of these issues in this newsletter and in its recommendations that will be forthcoming in early 2015. These may include, for example, to address the participation of indigenous peoples at all levels and in all issues including governance and research projects. The recommendations will form a significant part of the deliverables and synthesis products of ACCESS.

## Enhancing Communication of EU Stakeholders and Indigenous Peoples to Support Sustainable Development in the Arctic

*Thomas Bonnin, ACCESS, Université Pierre et Marie Curie*

Indigenous peoples in the Arctic have a long history of dealing with harsh conditions and environmental changes. Traditional knowledge and profound connexion with nature have fostered adaptation strategies. Today, however, the rapid pace of climate change, its impacts and the potential for significant shifts in the economic and cultural landscape raise concerns about adaptive capacity and how to ensure sustainability in the fragile Arctic. The perceptions of indigenous peoples provide a valuable human perspective essential to comprehend the implications of the evolving environmental conditions in the Arctic. These changes are significant for the native peoples, regions neighbouring the Arctic and global citizens.

In this context, it is important to take careful account of Arctic peoples’ knowledge and aspirations through effective communication and capacity building. The European Union (EU) is a critical stakeholder in this regard through its citizens – the Saami people of Sweden and Finland are Arctic indigenous peoples – its trade and economic ties and opportunities, and environmental and sustainability priorities. In March 2014, the European Parliament reinforced its objectives in this regard, inter alia, “Recommends strengthening regular exchange and consultations on Arctic-related topics with regional, local and indigenous stakeholders of the European Arctic in order to facilitate mutual understanding, in particular during the EU-Arctic policy-making process; stresses the need for such consultations to draw on the experience and expertise of the region and its inhabitants and to guarantee the essential legitimacy of the EU’s further engagement as an Arctic actor.”<sup>9</sup>

Indigenous peoples hold vast knowledge and experience that are an essential contribution to sustainable development in the Arctic. Strengthening communication networks and partnerships with indigenous peoples is an important step. Here we highlight several areas and opportunities to fortify the links.

Internet availability is a challenge in remote Arctic areas. This gap, as well as increased support to indigenous media, needs to be addressed. In line with the EU’s objectives for Vocational Education and Training, strengthening information and communication technologies expands opportunities for capacity building through education and training.

A 2014 report on Arctic information and communication needs has been released as part of the EU funded Strategic Environmental Impact Assessment, in which ACCESS was a key partner. The Gap Analysis Report identifies and analyses the information needs of stakeholders and policy-makers, and

9 - European Parliament, Joint motion for a Resolution on the EU strategy for the Arctic (2013/2595(RSP)), Articles 41, 42 and 44: [www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+MOTION+P7-RC-2014-0229+0+DOC+PDF+V0//EN](http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+MOTION+P7-RC-2014-0229+0+DOC+PDF+V0//EN).



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offers recommendations to improve knowledge and enhance two-way communication between information providers and users. It highlights information and communication gaps and major Arctic trends. The report also assesses how a proposed EU Arctic Information Centre could improve information provision and communication.<sup>10</sup>

As expert observers of environmental conditions, Arctic indigenous peoples have numerous indicators embedded in traditional knowledge to measure changes in the environment. Climate science can benefit from enhanced communication and exchange with indigenous peoples' experience and observations. Traditional practices and knowledge are invaluable for adaptation approaches and to contribute to the EU's development of strategic choices on Arctic issues. Such knowledge sharing may call for "cultural translation". Guidelines about traditional knowledge integration are provided by the Canadian-based Inuit Knowledge Center; Knowledge, Imagery, Vision and Understanding; and First Nations Centre initiatives.<sup>11</sup>

Languages are the embodiment of cultures. When one disappears, so is a culture lost for human diversity and

knowledge that can help resolve issues of global concern such as climate change. UNESCO's Endangered Languages Programme finds that a number of native languages in Greenland and Saami in Sweden and Finland are threatened. The Arctic Languages Vitality project of the Arctic Council lends support for language retention.<sup>12</sup> Further support for language retention in the European Arctic, in line with the European Charter for Regional or Minority Languages, could include support for research programmes, for example, to translate scientific communications into indigenous languages. As well, academic institutions could build or strengthen partnerships with indigenous knowledge initiatives such as the Centre for Saami language in education (Norway), the Saami Knowledge Centre in the Murmansk Region (Russia) and the Alaska Native Knowledge Network.<sup>13</sup>

It is widely expressed by Arctic natives that their "old time" image needs to be corrected and their identity respected as evolving and modern cultures. Updating this perception using EU communication initiatives could support more adapted policies concerning indigenous peoples and develop a better knowledge of their cultures in the wide society.

10 - [www.arcticinfo.eu/en/gap-analysis](http://www.arcticinfo.eu/en/gap-analysis)

11 - [www.inuitknowledge.ca](http://www.inuitknowledge.ca); [www.kivu.com/partnership-guidelines](http://www.kivu.com/partnership-guidelines); [www.naho.ca/firstnations](http://www.naho.ca/firstnations)

12 - [www.arcticlanguages.com](http://www.arcticlanguages.com)

13 - [www.samas.no](http://www.samas.no); [www.galdu.org](http://www.galdu.org); [www.ankn.uaf.edu](http://www.ankn.uaf.edu)



*Figure 6 - Ocean and sea-ice observation in Qaanaaq (Northwest Greenland, 2014) between Inuit hunters and researchers from the Danish Meteorological Institute, as part of the EU ICE-ARC research project. Traditional Inuit culture relies on the fast ice for transport and hunting. This research data serve to build a better understanding of the ocean processes partly inhibiting warm water from below to reach to the sea-ice.*  
Photo: Steffen Olsen.



## Selected Indigenous Peoples' Profiles and Information Links

### Aleut International Association

*Liza Mack, Aleut International Association, Bering Strait Sub-Network*

Aleut International Association represents the Aleut people in Alaska and Russia. They inhabit the Aleutian Islands beginning with the Shumagin Islands in the east, including the Pribilof Islands in the Bering Sea and the Commander Islands in the west. The islands span more than 1200 miles. They have inhabited this land for over 10 000 years. Along with Russian and English, the traditional language of the Aleut is Unangam Tunuu and there are still speakers in both Russia and Alaska, though less than 90 native speakers are left in Alaska and revitalisation efforts have begun. There are no roadways connecting any of the villages which are only accessible by air or sea. The Aleut people still hunt, fish and gather from the land and waters, subsisting on birds, land mammals, fish and plants of all kinds.

To learn more about Aleut history, economy, culture and contemporary issues facing the people, see: [www.aleutcorp.com](http://www.aleutcorp.com); [www.apiai.org](http://www.apiai.org); [www.aleutianseast.org](http://www.aleutianseast.org); [www.aleut-international.org](http://www.aleut-international.org); <http://tanamawaa.com>



Figure 7 - Medallion by Elena Yakovleva. Photo: Debra Justus.

### Arctic Athabaskan Council

*Bob Van Dijken, Arctic Athabaskan Council*

The Arctic Athabaskan Council (AAC) is an international treaty organisation established to defend the rights and further the interests internationally of American and Canadian Athabaskan member First Nation governments. Currently, AAC members in Alaska (including fifteen traditional villages), Yukon (the

Council of Yukon First Nations and the Kaska Tribal Council) and Northwest Territories (Dene Nation) span 76 communities and represent approximately 45 000 people.

The Athabaskan peoples reside in Arctic and sub-Arctic Alaska, United States, and the Yukon Territory and Northwest Territories of Canada. Athabaskan peoples have traditionally occupied a vast geographic area of approximately 3 million square kilometres. This vast region has been continuously occupied by Athabaskan peoples for at least 10 000 years and includes three of North America's largest river systems (Mackenzie, Yukon and Churchill Rivers). It also includes vast areas of tundra (barren lands) and taiga (boreal forest) as well as North America's highest mountains (Mount McKinley and Mount Logan) and the world's largest non-polar ice field (St. Elias Mountains). The south-eastern boundary of the Arctic Athabaskan peoples' traditional territories includes portions of provincial northern Canada.

The ancestors of contemporary Athabaskan peoples were semi-nomadic hunters. The staples of Athabaskan life are caribou, moose, beaver, rabbits and fish. Athabaskan peoples today continue to enjoy their traditional practices and diet.

Except for south-central Alaska (Tanana and Eyak) and the Hudson Bay (Chipewyan), Athabaskan peoples are predominately inland taiga and tundra dwellers. Collectively, the Arctic Athabaskan peoples share 23 distinct language and live in communities as far flung as Tanana, Alaska and Tadoule Lake, northern Manitoba, nearly 5 400 kilometres apart.

Peoples of Arctic Athabaskan descent represent approximately 2% of the resident population of Alaska, (12 000), compared with about one-third of the Yukon Territory (10 000), the Northwest Territories and provincial north (20 000) in Canada. Athabaskan peoples are a relatively young and growing population, compared with non-Aboriginal Arctic resident groups.

Forms of political and cultural organisation vary, depending upon the place of residence of a particular Athabaskan people. In Alaska, Athabaskan peoples have organised themselves in accordance with federal and state statutes which provide funding for government operations, including the Indian Reorganization Act for tribal governments, Alaska Native Claims Settlement Act for incorporated villages, and a variety of state-legislated and traditional political entities. In Canada, Athabaskan peoples have organised themselves into political bodies under federal legislation including bands created under the Indian Act, self-governing First Nations as mandated through negotiated Settlement Agreements, and regional umbrella organisations.

For more information: [www.arcticathabaskancouncil.com](http://www.arcticathabaskancouncil.com)

### Gwich'in Nations

*Ethel Blake, Gwich'in Council International*

The Gwich'in Council International was established as a non-profit organisation in 1999 by the Gwich'in Tribal Council in Inuvik, to ensure all regions of the Gwich'in Nation in the Northwest Territories, Yukon and Alaska are represented at the Arctic Council, as well as to play an active and significant role in the development of policies that relate to the circumpolar Arctic.

The Gwich'in live in a vast area extending from Northeast Alaska in the United States to the northern Yukon and Northwest Territories in Canada. Approximately 9 000 Gwich'in currently make their home in communities in Alaska, Yukon and Northwest Territories. The Gwich'in life and culture have traditionally been based on the porcupine caribou herd, the main source of food, tools and clothing. Fish and other animals supplement the diet. Gwich'in is the Athabaskan language spoken in the north-eastern Alaska villages of Arctic Village, Venetie, Fort Yukon, Chalkyitsik, Circle and Birch Creek as well as in Old Crow in the Yukon and Fort McPherson, Tsiigehtchic, Aklavik and Inuvik.

The Gwich'in participate in a wage economy such as public administration, construction, tourism activities along with other seasonal employment opportunities. Gwich'in in all regions from the Northwest Territories to Alaska participate in subsistence harvesting of fish, caribou, moose, waterfowl and small game for meat sources as well as hunting and trapping of large and small game to supplement their wage economy.

For more information: [www.gwich'in.org](http://www.gwich'in.org); [www.firstvoices.com](http://www.firstvoices.com); [www.sgsyukon.ca](http://www.sgsyukon.ca); [www.uaf.edu](http://www.uaf.edu)

### Inuit Peoples

*Thomas Bonnín, Université Pierre et Marie Curie*

Inuit interests are represented by the Inuit Circumpolar Council (ICC) created in 1977 by Inuit people from Alaska, Canada and Greenland, later joined by Inuit from Russia. In July 2014 the ICC issued a declaration reaffirming the objectives and rights of Inuit peoples. Inuit means human beings.

The majority of Inuit, which number about 60 000 people,

live in the northern regions of Canada in a region called Inuit Nunangat. It spreads over four areas: Inuvialuit, Nunavut, Nunavik and Nunatsiavut and encompasses eight main ethnic groups.

The second-largest Inuit population lives in Greenland, called Kalaallit Nunaat (country of the Greenlanders) and refer to themselves as Kalaallit. Most of the population lives on the west coast since 85% of the land mass is covered by the ice and only 15 % of the coast line is habitable. The population of Greenland is just above 56 000 and is 85 % Inuit. The capital and biggest town is Nuuk. Greenland's economy includes subsistence hunting, commercial fisheries, tourism, arts and crafts and recent efforts to develop hydrocarbon and mining industries. Today, seal hunting provides a living for about 2 500 people.

Inuktitut is the name of Inuit language in Canada, while in Greenland it is called Kalaallisut. A variety of dialects exist. While Inuktitut and its dialects are considered one of the strongest aboriginal languages in Canada, its erosion requires revitalisation initiatives. In Greenland, Kalaallisut is the main language, though Danish is also used in official contexts. Inuit have engaged in several self-determination processes. Important examples are that Greenland was granted home-rule in 1979 and self-rule status in 2009, while still part of Danish realm; and Nunavut (Canada) which has had its own government since 1999.

Despite economic and social changes, the Inuit have managed to retain a unique culture, language, core knowledge (called *Inuit Qaujimaqatuqangit* in Canada) and beliefs. They want to be considered as modern peoples of today who take elements of their culture and way of thinking into the cultural environment of the present day situation. Today, Inuit live in mixed economic systems between wage employment and subsistence practices. Hunting is still a major aspect of culture and lifestyle as well as a source of nutrition and clothing. Family is also a fundamental element of Inuit culture. Another central Inuit value is to ensure a safe continuation of human relationships with the environment: they wish to preserve the traditional skills and knowledge necessary to live off the land and sea while embracing core cultural values that defined the Inuit.

For more information: [www.inuitcircumpolar.com](http://www.inuitcircumpolar.com); [www.inuit.org](http://www.inuit.org); [www.inuitknowledge.ca](http://www.inuitknowledge.ca); [www.natur.gl/index.php?L=3](http://www.natur.gl/index.php?L=3); [www.ch.gov.nu.ca/en/home.aspx](http://www.ch.gov.nu.ca/en/home.aspx); [www.uqar.ca/files/boreas/inuitway\\_e.pdf](http://www.uqar.ca/files/boreas/inuitway_e.pdf)

#### *Inuit Societal Values (Inuit Qaujimaqatuqangit)\**

- Respecting others, relationships and caring for people (*Inuuqatigiitsiarniq*).
- Fostering good spirit by being open, welcoming and inclusive (*Tunnganarniq*).
- Serving and providing for family or community, or both (*Pijitsirniq*).
- Decision-making through discussion and consensus (*Aajiiqatigiinni*).
- Development of skills through practice, effort and action (*Pilimmaksarniq* or *Pijariuqsarniq*).
- Working together for a common cause (*Piliriqatigiinni* or *Ikajuqtigiinni*).
- Being innovative and resourceful (*Qanuqtuurniq*).
- Respect and care for the land, animals and the environment (*Avatittinnik Kamatsiarniq*).

\* Government of Nunavut (2013), Incorporating Inuit Societal Values: [www.ch.gov.nu.ca/en/Incorporating%20Inuit%20Societal%20Values%20Report.pdf](http://www.ch.gov.nu.ca/en/Incorporating%20Inuit%20Societal%20Values%20Report.pdf)

### Russian Association of Indigenous Peoples of the North

*Thomas Bonnin, Université Pierre et Marie Curie*

The Russian Federation includes more than a hundred different peoples, including about 270 000 indigenous peoples. From the Arctic Ocean to the Pacific shores, they speak languages belonging to many different origins and share cultures which hold strong ties with the natural environment. Under Russian legislation, to be recognised as indigenous, a people must not exceed 50 000 members. Forty-one indigenous peoples fulfil the criteria, including the Saami, Evenks, Yupiq and Nenets. Since 1990, their interests have been represented by the Russian Association of Indigenous Peoples of the North (RAIPON). However, obtaining greater self-determination is very difficult because of the lack of effective indigenous political institutions and economic resources.

For many indigenous peoples of Russia, traditional activities such as reindeer herding, fishing, hunting and gathering still constitute vital parts of livelihoods. Reindeer herding is one of the most prominent features of Russia's indigenous traditional economy and is practised by 16 indigenous herding peoples in the Arctic. Russia accounts for about two-thirds of the world's domesticated reindeer herds. Yet, social and economic changes have depressed reindeer husbandry. An important potential conflict is the development of industrial activities on reindeer pastures. Notably, reindeer foraging depends almost exclusively on lichens. In 2014, unusual cycles of snow thawing and freezing, hindering reindeer access to lichens, caused more than 600 000 animals to die from starvation in Russia's Yamal region.

Established during the International Polar Year, the UArctic EALÁT (University of the Arctic) Institute for Circumpolar Reindeer Husbandry aims to increase the educational and research capacity of Arctic peoples. It also seeks to increase public understanding of Arctic issues and challenges for indigenous peoples and reindeer husbandry, including the monitoring of land-use changes.

For more information: [www.raipon.info](http://www.raipon.info); UArctic EALÁT: <http://reindeerherding.org/projects/uarctic-ealat-institute>; [www.reindeer-husbandry.uit.no](http://www.reindeer-husbandry.uit.no); <http://iite.unesco.org/>

### Saami People

*Gunn-Britt Retter, Saami Council, Norway*

The Sámi are the indigenous people of Finland, Norway, Russia and Sweden and the only indigenous people in the European Union. The Sámi are one people that reside across the national borders of these four countries. They have their own traditional areas, with a distinct language, culture, livelihood and history. The traditional livelihoods and use of the lands, fresh and marine waters, and natural resources constitutes the basis of Sámi culture and identity.

"Sápmi" is the name of the traditional homeland of the Sámi. The term is found in all Sámi dialects. It derives from the Sámi's own name for themselves, *sámit* or *Sápmie laččat*. Today, the name, Sámi, or Saami, has been incorporated into the English language, including in reference books, and within the global indigenous people's movement in which the Sámi are active participants.

For more information: [www.galdu.org/web/index.php?sladja=43&giella1=eng](http://www.galdu.org/web/index.php?sladja=43&giella1=eng); [www.galdu.org/web/index.php?sladja=43&giella1=eng/courses/climate\\_change/en/download.html](http://www.galdu.org/web/index.php?sladja=43&giella1=eng/courses/climate_change/en/download.html)

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## Workshop Participants

### Indigenous Peoples Representatives

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**Liza Mack** (Aleut International Association, Bering Strait Sub-Network, Anchorage, US)

**Carl Christian Olsen** (Inuit Circumpolar Council, Greenland)

**Gunn-Britt Retter** (Arctic and Environment Group of the Saami Council, Norway)

**Ellen Inga Turi** (Arctic and Environment Group of the Saami Council, Norway)

**Elena Yakovleva** (RAIPON, Russia)

**Bob Van Dijken** (Arctic Athabaskan Council, Yukon, Canada)

**Alona Yefimenko** (Arctic Council Indigenous Peoples Secretariat, Copenhagen, Denmark)

### ICE-ARC Representative

**Elaina Ford** (Programme Manager, ICE-ARC Programme, UK)

### Access Project Participants

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**Lindsay Parson** (WP 5 - National Oceanography Centre/Maritime Zone Solutions Ltd., UK)

**Angela Benn** (WP5 - National Oceanography Centre, UK)

**Phil Turner** (WP 5 - National Oceanography Centre, UK)

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**Thomas Bonnin** (Researcher, Workshop Coordinator - Université Pierre et Marie Curie, France)



# Upcoming Arctic related events 2014-2015

18 – 23 January 2015

## Arctic Frontiers 9<sup>th</sup> Annual Conference. Tromsø, Norway

The title is Climate and Energy. It will address three main themes: Arctic climate change – global implications; ecological winners and losers in future Arctic marine ecosystems; the Arctic's role in the global energy supply and security.

More information: [www.arcticfrontiers.com/2015-conference](http://www.arcticfrontiers.com/2015-conference)

30 – 31 January 2015

## Symposium on Law and Governance in the Arctic. Irvine, California, USA

This symposium will explore the effectiveness of existing governance in the Arctic region, strategies for improving effective implementation, and possible alternative governance regimes. A segment of the presented papers will be published in the UCI Law Review as a symposium.

More information:

[www.law.uci.edu/academics/centers/cleanr/events/conferences.html](http://www.law.uci.edu/academics/centers/cleanr/events/conferences.html)

24 – 26 February, 2015

## ACCESS General Assembly. Universitat Politècnica de Catalunya in Vilanova, Spain

15 - 20 March 2015

## 2015 Polar Marine Science Gordon Research Conference. Lucca, Italy

The 2015 Polar Marine Science Gordon Research Conference (GRC) entitled “Polar Shelves and Shelf Break Exchange in Times of Rapid Climate Warming” will be held in Lucca, Italy from March 15-20, 2015. The GRCs provide an international forum for the presentation and discussion of frontier research in the biological, chemical, and physical sciences, and their related technologies.

More information: <http://www.grc.org/programs.aspx?id=12641>

23 – 27 March 2015

## Dynamics of Atmosphere-Ice-Ocean Interactions in the High-Latitudes. Rosendal, Norway

The goal of the workshop is to summarise fundamental understanding and description of small-scale processes in the coupled atmosphere-ocean-ice climate system at high latitudes in order to assess and reduce bias and uncertainties in weather prediction and climate models.

More information: <http://highlatdynamics.b.uib.no/>

23 – 30 April 2015

## Arctic Science Summit Week (ASSW) 2015. Toyama International Conference Center, Toyama, Japan

The ASSW will include the final International Conference on Arctic Research Planning (ICARP III Conference and 4th International Symposium on Arctic Research (ISAR-4)). The ICARP III aims to: identify Arctic science priorities for the next decade; co-ordinate various Arctic research agendas; inform policy makers, people who live in or near the Arctic and the global community; and to build constructive relationships between producers and users of knowledge.

More information:

[http://icarp.iasc.info/images/articles/downloads/IASC\\_ProgressSpring\\_2014](http://icarp.iasc.info/images/articles/downloads/IASC_ProgressSpring_2014)

29-30 May 2015

## EU-Arctic Conference. University of Dundee, Scotland

This conference will bring together academics and practitioners from disciplines such as international law, international relations, political science and marine biology, NGOs, representatives from EU institutions and international organizations to discuss the EU's potential contribution to enhance Arctic governance. The School of Law, University of Dundee and the K. G. Jebsen Centre for the Law of the Sea, (University of Tromsø, Norway) announce a call for papers for “The European Union and the Arctic”.

More information: <http://www.dundee.ac.uk/law/events/details/call-for-papers-the-european-union-and-the-arctic-2015-eu-arctic-conference.php>

2-5 June 2015

## Ilulissat Climate Days. Ilulissat, Greenland

The Ilulissat Climate Days will especially address recent, ongoing and future changes in the ice in and around Greenland, with a special focus on the effects for the Greenland society. These effects have significant impact on traditional hunting and fisheries, but also new opportunities for hydrocarbon exploration, mining and hydropower.

More information: <http://www.polar.dtu.dk/english/Ilulissat-Climate-Days>

7-10 July 2015

## Our Common Future Under Climate Change. UNESCO, Paris, France

This four-day Conference is the largest forum for the scientific community to come together ahead of the COP21 of the UNFCCC in 2015. The Conference will address key issues concerning climate change in the broader context of global change. Organized around daily themes, the Conference focuses on moving from present knowledge to future solutions.

More information: <http://www.commonfuture-paris2015.org/>



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[www.access-eu.org](http://www.access-eu.org)