



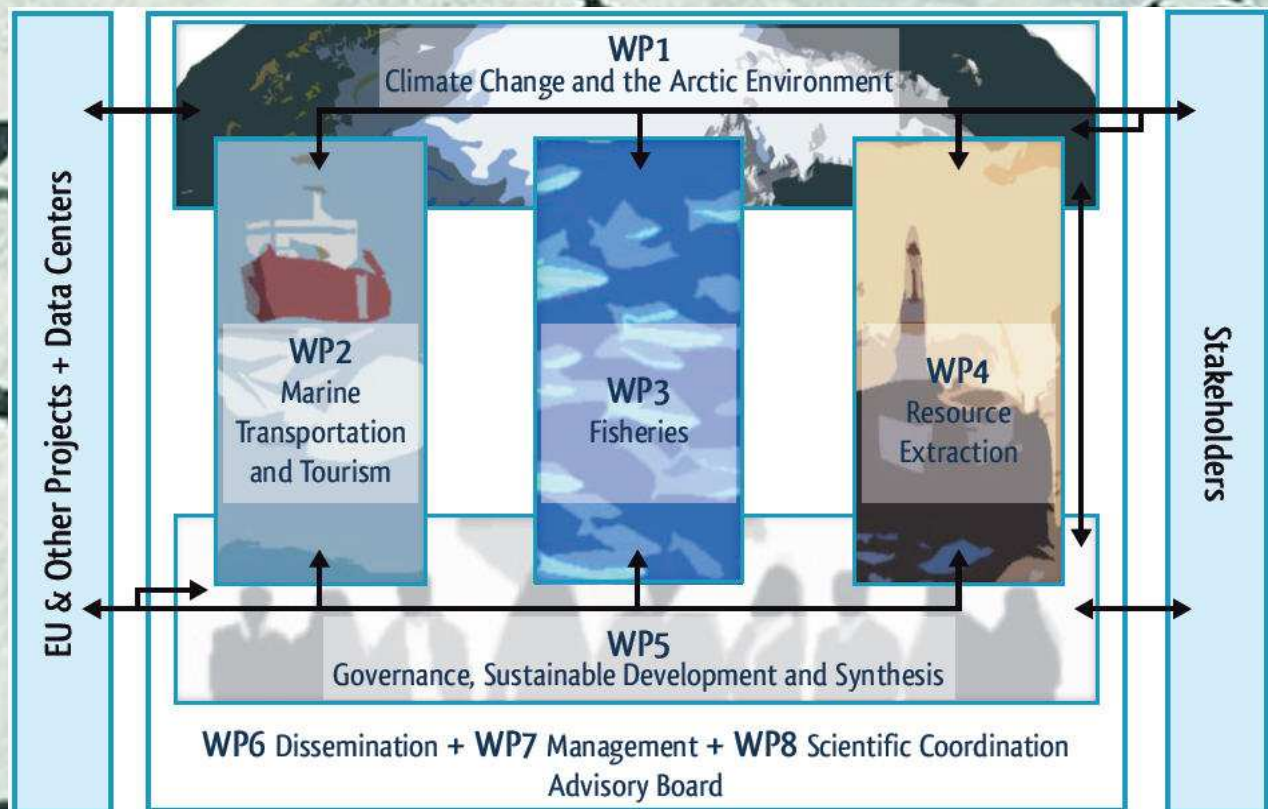
**ACCESS**  
Arctic Climate Change  
Economy and Society

# ACCESS NEWSLETTER

## Issue No. 2

### 30 January 2012

This newsletter is produced three times each year by the consortium of 27 partner organizations from 10 European countries in the 4-year *Arctic Climate Change, Economy and Society* (ACCESS) project. ACCESS is supported by the European Commission as part of its 7<sup>th</sup> Framework Priorities programme on the *Ocean of Tomorrow* call. Objectives of the ACCESS Newsletters are to facilitate international, interdisciplinary and inclusive information sharing of our research highlights about natural and human impacts associated with sustainable development in the Arctic Ocean in the context of climate change.



## ACCESS Advisory Board Members



**Ms. Adele Airoidi** has a master in Polar Studies from Scott Polar Research Institute. She worked at the secretariat of the European Union Council of Ministers in Brussels from 1981 until 2004, mainly on environmental policy issues. During that period she assisted Denmark and Greenland foreign affairs in preparing the 1992 *Ilulissat Conference*. Since 2004, she has been active in the field of Arctic affairs. In 2008 she wrote a report “*The European Union and the Arctic- Policies and Actions*” for the Nordic Council of Ministers, which was updated in 2010.



**Prof. Hajo Eicken** is at the Department of Geology & Geophysics, University of Alaska Fairbanks, in the United States. His research interests include the growth, evolution and properties of sea ice. He is particularly interested in determining how microscopic and macroscopic properties affect sea-ice processes and the climate system. Prof. Eicken’s group also investigates different uses of sea ice in indigenous communities, the private sector and the public at large to help decision makers adapt to a changing Arctic. Prof. Eicken chairs the Science Steering Committee for the Study of Environmental Arctic Change (SEARCH) project.



**Hon. Hannu Halinin** is Ambassador for Arctic affairs at the Ministry for Foreign Affairs of Finland. Amb. Halinin is a Senior Arctic Official for the Arctic Council and for the Nordic Council of Ministers.



**Hon. Inuuteq Holm Olsen** has served as Deputy Minister for the Department of Foreign Affairs of the Government of Greenland since July 2006. Minister Holm Olsen began his career at the Department of Foreign Affairs in 1996 and was Private Secretary to the Premier from 1997 through 1999. He was posted at the Danish Foreign Ministry in Copenhagen and was at the Greenland Representation in Brussels from 2000 through 2003. Minister Holm Olsen earned a BA in Political Science from the University of Alaska Fairbanks in 1994 and a MA in International Affairs from The George Washington University in 1996.



**Prof. Thomas Sterner** is at the School of Business, Economics & Law, Gothenburg University, in Sweden. Professor Sterner’s main research interests lie in environmental economics and the design of policy instruments. He has studied a number of different applications ranging from energy and climate, through natural resource management such as fisheries to issues relating to industrial and transport pollution



**Professor Oran R. Young** is at the Bren School of Environmental Science & Management, University of California Santa Barbara, in the United States. Prof. Young specializes in the analysis of environmental institutions with particular reference to international regimes. He chaired the Steering Committee of the Arctic Governance Project and has served as Vice-President of the International Arctic Science Committee, Chair of the Board of Governors for the University of the Arctic, and Co-chair of the Arctic Human Development Report. He is the author or co-author of more than 20 books, including *Institutional Dynamics: Emergent Patterns in International Environmental Governance* (2010) and *Science Diplomacy* (2011).



# Work Package Progress

## WORK PACKAGE 1 (WP1) CLIMATE CHANGE AND THE ARCTIC ENVIRONMENT

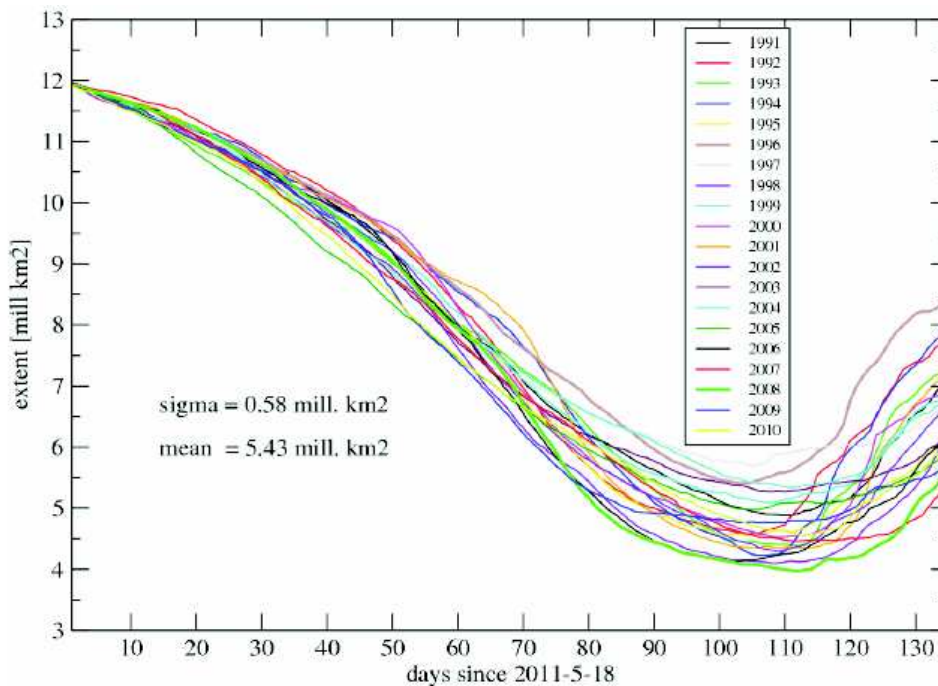
The main objective of WP1 is to inform the other WPs about changing ice properties and other physical environmental parameters. Arctic climate projections for the next decades will be improved by better assessments of anthropogenic and natural sources of pollution.

The Sea Ice Outlook (SIO) is an international effort to produce, compare and evaluate seasonal forecasts of the minimum (September) sea ice extent in the Arctic. Three ACCESS partners, the Alfred Wegener Institute for Polar and Marine Research, FastOpt, and OASys have participated in the SIO in the last few years.

The SIO was initiated after the dramatic sea ice extent minimum in 2007. The retreat of the sea ice from the coasts as well as large parts of the eastern Arctic has sparked interest in an intensified economic use of the Arctic Ocean that was inaccessible in the past due to the obstacle of sea ice for shipping and other commercial activities. Clearly, reliable spring forecasts for the summer sea ice season would be of great benefit for the planning of these activities. While the SIO itself is not intended to provide accurate forecasts for Arctic sea ice conditions during the summer, it provides an overview of the current methods and merits of different approaches to seasonal sea ice prediction in the Arctic.

The AWI/FastOpt/OASys contribution consists of an ensemble of ocean-sea ice hindcasts where the ocean-sea ice model NAOSIM is driven by atmospheric forcing taken from 20 previous years. The ensemble integration is started from suitable initial conditions at the end of May (see Figure 1). Besides the likely value for the September sea ice extent, the twenty member ensemble can be used to generate statements about the likelihood of the sea ice extent to exceed or fall below a certain threshold (e.g. the record sea ice extent of 2007). It turns out that reliable initial conditions for ice thickness are essential for a skillful prediction. Therefore, the data assimilation system NAOSIMDAS has been used recently to provide initial ice conditions that are consistent with the available observational data. However, in the last years ice thickness data were restricted to regional sources like ice mass balance buoys (IMB) and air-borne electro-magnetic measurements collected by AWI. This year NASA is planning air-borne ice thickness measurements in March (IceBridge campaign) covering a large fraction of the Canadian Arctic. It is envisioned to assess the benefit of these data for the SIO with the help of the data assimilation system NAOSIMDAS.

More information about the SIO including the results from previous years can be found under <http://www.arcus.org/search/seaiiceoutlook/>.



**FIGURE 1:** Simulated evolution of the ice extent [million km<sup>2</sup>] when forced with atmospheric data from 1991 to 2010 until end of September. The test abscissa gives the days since the initialization of the forecast on May 18<sup>th</sup> 2011. The range from day 106 to 135 is used for the calculation of the September mean.

### WP1 Meetings

**Bremen, Germany, Workshop on Climate Scenarios and Climate Modeling at the Haus de Wissenschaft on 5-6 September 2011** – Projections for the impact of climate change can only be achieved in close collaboration between climate scientists and those working on socio-economic issues. Difficulties arise because of the different backgrounds and terminologies between the fields. The aim of the workshop was to communicate to non-climate experts a working knowledge of climate science issues that are important for their research on climate change impacts on different sectors and activities. The workshop gave an introduction to climate change due to greenhouse gases and aerosols, expected and observed changes in the Arctic, natural climate variability, and climate models and their components. The workshop tried to answer questions regarding the generation of climate scenarios, their inputs and the assumptions and uncertainties involved. Distinguished speakers from within ACCESS and external were recruited for ten overview talks. The workshop was advertised on mailing lists and within relevant European Union (e.g. VECTORS and ECO2) and other projects. It attracted almost 40 participants who contributed to the workshop outcome also in two break-out sessions. These discussions focussed on the needs of the users of climate model scenario calculations, the usefulness of climate model results to answer specific questions, mechanisms to generate alternative climate change scenarios and future collaborations. The agenda of the workshop and the presentations can be found on the ACCESS website (<http://www.access-eu.org> under Dissemination – see WP6 below).

**Villefranche, France, Laboratoire d'Océanographie de Villefranche, 24-25th November 2011** – Workshop to discuss fieldwork during the course of the ACCESS project (see Future Activities and Initiatives below).

### WP1 CONTACTS

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## **WORK PACKAGE 2 (WP2)** **MARINE TRANSPORTATION AND TOURISM**

**The main objective of WP2 is to evaluate the effects of climate change on increased Arctic shipping and tourism, using the results of WP1 and providing recommendations for WP5. We will consider rules and regulations, infrastructure needs, pollution, safety, and socio-economic costs and benefits.**

Hazards to navigation represent serious challenges for safe, secure and reliable marine transportation and tourism in the Arctic Ocean (Fig. 2). Limited, and in many areas non-existent bathymetric charting, along with various ice phenomena (including sea ice, growlers and icebergs) as well as extreme and variable meteorological conditions (including low temperatures, dense fogs and strong winds) all present risks to Arctic navigation. WP2 is evaluating these challenges in view of existing infrastructures, notably the 2011 *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue*, and emerging solutions, such as the binding polar code that is anticipated from the International Maritime Organization. Additional efforts from WP2 are focusing on lessons learned from experiences that include the 2007 sinking of the *Explorer* in the Southern Ocean as well as the 2011 grounding of the *Costa Concordia* off of Italy.



**FIGURE 2:** Common summer Arctic navigation conditions with sea-ice flows and fog.

## **WP2 Meetings:**

**Copenhagen, Denmark, at Nordic Bulk Carriers (NBC) on 29 November 2011** – This second meeting of WP2 focused presentations of work-in-progress and the work program for 2012 (see the ACCESS website, <http://www.access-eu.org>, for the meeting agenda). A list of ice conditions at various regions of the Northern Sea Route (NSR) has been provided by Arctic And Antarctic Research Institute; identified gaps especially data on ice concentrations and ridges will partly be closed by data from Meteorology Institute of Norway and WP1. Several WP2 partners are preparing and executing full-scale measurements in the Arctic by designing and manufacturing instruments to measure: **(a)** internal ice pressure by a stress sensor buoy as a function of ice conditions; **(b)** water current and wind (Hamburgische Schiffbau-Versuchsanstalt, Scottish Association For Marine Science); **(c)** air pollution from ship emissions by aircraft flights (Deutsches Zentrum Für Luft- Und Raumfahrt and Université Pierre Et Marie Curie); and **(d)** underwater noise from ships and offshore oil/gas activities (Universitat Politecnica de Catalunya, Shirshov Institute Of Oceanology)

NBC reported on a new NSR record voyage in September 2011 by their Arctic Class Bulk Carrier “Sanko Odyssey” (see picture above), shipping 70,000 t of iron ore from Murmansk to China. They managed the NSR in 7.4 days with an average speed of 13.5kn. With a shortened trip of 18 days compared to the voyage via the Suez Canal, the fuel savings was about 1000 t, equivalent to a value of USD 650,000! Even though the ice conditions were very light with long stretches of open water, the ship was escorted by a Russian icebreaker.

## **WP2 Publications, Presentations and Outreach:**

***The Arctic: Territory of Dialogue*** – Russian Geographical Society, 22-23 September 2011, Arkhangelsk, Russian Federation.

## **WP2 CONTACTS**

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Prof. Lawson W. Brigham / +1-907-474-7763 / [lwb48@aol.com](mailto:lwb48@aol.com)

## **WORK PACKAGE 3 (WP3) FISHERIES**

**The main objective of WP3 is to estimate and quantify how climate changes impact Arctic fisheries and aquaculture, and the livelihood of communities and economic actors depending of these industries.**

Ecosystem-based management (EMB) is an integrating approach to holistically consider the biological, physical, geological and chemical dynamics of natural systems in view of human impacts and relevant regulatory systems. EMB is an important component of WP3, requiring close collaboration with WP1 and research to assess changes in the Arctic Ocean associated with climate warming. An example of biological and physical connections in the Arctic Ocean for a commercially important species is shown in Figure 3 with regard to seawater temperatures and fish catches over years in the Barents Sea.

## **WP3 Meetings:**

While no WP3 meeting during this period, there have been meetings between Beijer and Nofima to plan tasks 3.1, 3.2, 3.3, and 3.5.

## **WP3 Publications, Presentations and Outreach:**

Eide, A. (2012). A bioeconomic MPA study based on cellular automata population growth and distribution. *Fisheries Research* 113:118-132 DOI:10.1016/j.fishres.2011.10.004 (in press).

Eide, A. (2011). On the limits of improved fish finding capacity and its contribution to resource conservation. In Chan, F., Marinova, D. and Anderssen, R.S. (eds) *MODSIM2011, 19th International Congress on Modelling and Simulation*. Modelling and Simulation Society of Australia and New Zealand, December 2011, pp. 2493-2499. ISBN: 978-0-9872143-1-7.

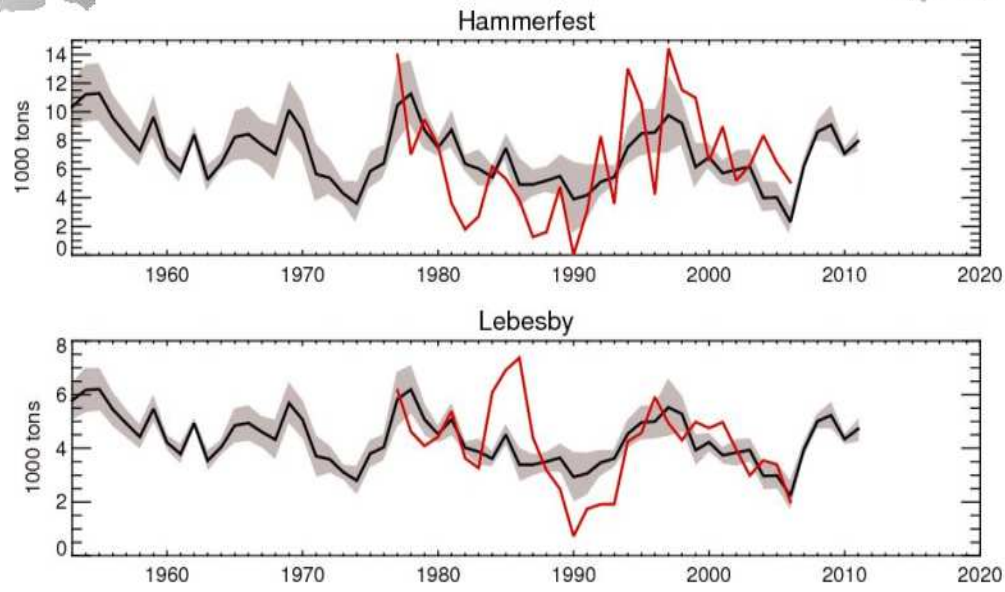
**19th International Congress on Modelling and Simulation** – Modelling and Simulation Society of Australia and New Zealand, December 2011, MODSIM2011

**Seminar on The spatial dimension - A Step Forward for Fish Management?** – Institute of Marine Research, 23 November 2011, Bergen – Norway

**Workshop on Aquaculture in the Arctic** – Nofima, 6 December 2011, Tromsø, Norway



### Actual Cod Catches and Reconstructed Cod Catches Based on Seawater Temperatures in the Barents Sea



**FIGURE 3:** Time series of cod landings from coastal fisheries in the Hammerfest and Lebesby municipalities of the Barents Sea region as observed (red) and reconstructed based on ocean temperatures (black), which are known to influence the early life histories of cod. Reconstruction of landings is based on a statistical model that relates temporal-spatial patterns in observed landings to ocean temperatures simulated by a sea ice-ocean model. Other factors influencing the stocks or even the catch success cannot be treated with this method, such as: fish catch limits, capacity of fish processing facilities, market processes, marine productivity and species interactions. Good agreement on a decadal scale between observed landings and those reconstructed from simulated temperatures illustrates close bio-physical coupling and the types of interdisciplinary analyses for ecosystem-based management. The time lag of cod landings to ocean temperatures suggests cod catches can be projected five years in advance, interpreted herein as the climate-driven variability in landings data. Results from EU project DAMOCLES by Michael Karcher and colleagues (in preparation) with cod landings data courtesy of Trond Havelin, Fiskeridirektoratet, Norway).

#### **WP3 CONTACTS**

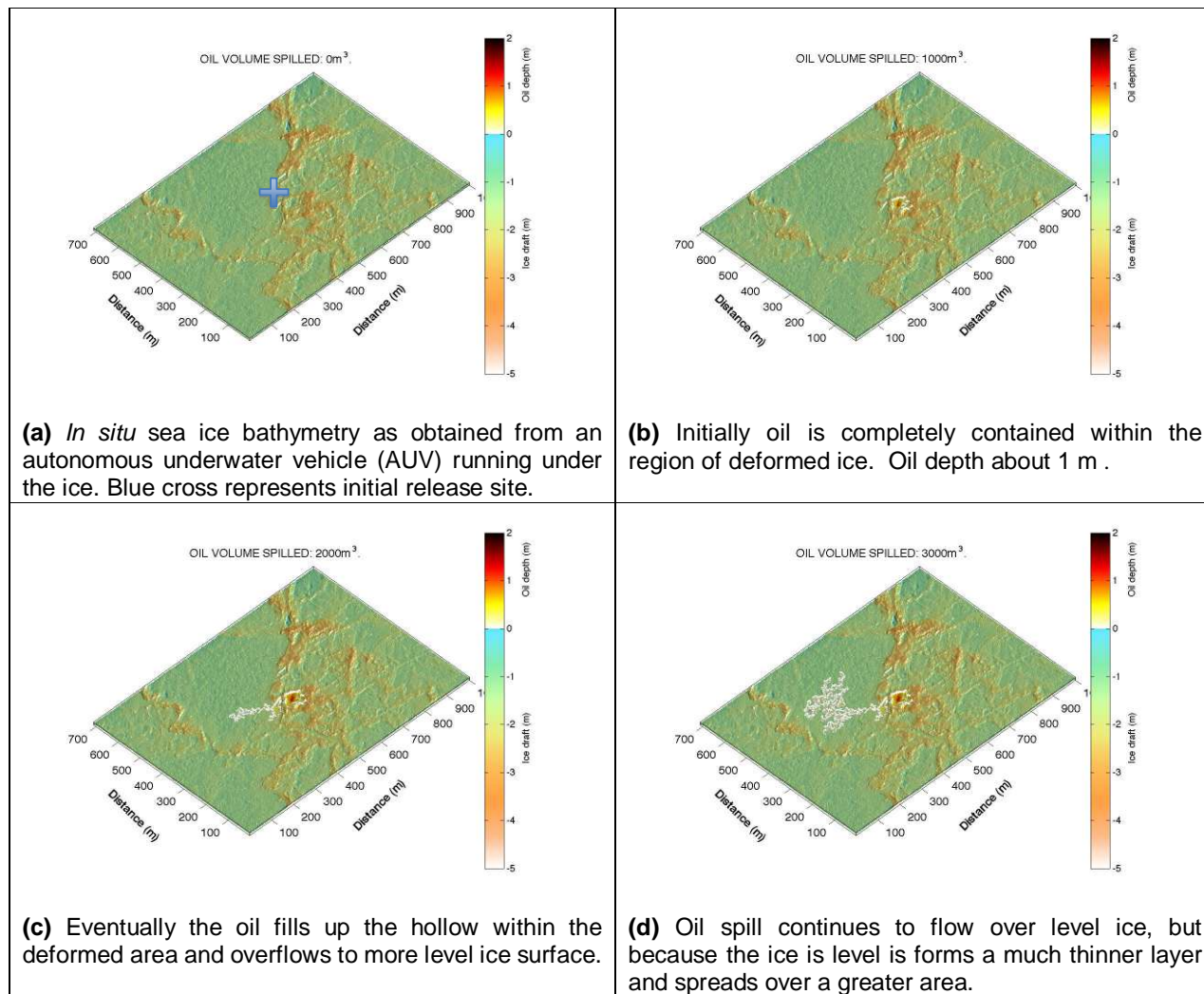
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### **Work Package 4 (WP4) Resource Extraction**

**The main objective of WP4 is to assess the risks and opportunities associated with the extraction of hydrocarbons from the Arctic Ocean. These assessments will be further considered in view of socio-economic impacts on European and world markets.**

Oil spills in the Arctic Ocean are a serious concern, especially as the potential for large-scale energy exploitation increases as the sea-ice decreases. It is generally accepted that open-ocean oil spill models are well established and do a good job in predicting the movement of oil on the ocean surface. Modelling of oil flow in the presence of sea ice is more uncertain because our knowledge of the under ice topography is limited and as a result we are unable to replicate the complexity or uniqueness of the bottom topography of sea ice. ACCESS partners are developing an under ice oil trajectory model based around the bona fide 3-dimensional (3-D) shape of the under-ice of sea ice (Fig. 4), thus allowing an accurate appraisal of the movement of oil under sea ice along with the potential oil holding capacity of sea ice.





**FIGURE 4:** Modelling the movement of oil spilled under sea ice. An example of the output from an oil spill under sea ice model using real under ice topography is shown. The underlying ice topography data has been gathered by multibeam sonar mounted on an Autonomous Underwater Vehicle (AUV).

#### **WP4 Meetings:**

**Kiel, Germany, Institut für Weltwirtschaft, 5 October 2011** – Meeting of partners involved in the socio-economic assessment of resource extraction in the Arctic Ocean and to discuss deliverables for Task 4.4.1.

#### **WP4 Publications, Presentations and Outreach:**

**Oil Spill in Sea Ice, Past, Present and Future** – Istituto Geografico Polare “Silvio Zavatti,” 20-23 September 2011, Fermo, Italy (<http://www.oilspillsinseaice.net/programme>). This timely workshop organised by the Istituto Geografico Polare “Silvio Zavatti” (Director: Maria Pia Casarini) involved 33 delegates from 12 countries, including several ACCESS partners, who presented papers covering all aspects of the problem of oil spills in sea ice, including reviews of the large experimental programmes of past years and the question of how best to cope with the impact of a blowout which leads to oil being incorporated into the structure of the ice and transported long distances during the winter. On the final day a panel discussion focused on how can we design an effective, integrated system for dealing with a potential accident in ice-covered waters, and a “Fermo Statement” was agreed listing the most urgent areas for new research on critical aspects of the problem. The *Fermo statement* has been submitted to the Arctic Council via the US and WWF memberships, and will be considered by the Arctic Task Force set up by the Council to consider protection of the Arctic against oil pollution. The papers given at the Workshop, including an introductory scene-setting paper by Walter Munk, will be published in a proceedings volume and, after refereeing, in a special issue of “Cold Regions Science and Technology”. Guest editors for this special issue are the organising committee for the workshop, comprising Peter Wadhams (Cambridge), Lawson Brigham (University of Alaska and consultant to ACCESS) and Mark Myers (Vice President for Research, University of Alaska Fairbanks). Information on this workshop can be found at <http://www.oilspillsinseaice.net/home>. Financial support was provided by Office of Naval Research Global and by the Zavatti Foundation, and since no support was received from the oil industry, NGOs or indeed the EU, the *Fermo Statement* carries weight as being based on the pure scientific problem.

Before the Fermo, workshop ACCESS partners involved in oil spill under sea ice research held a smaller meeting to discuss deliverables within Task 4.4.1, comprising assessment and recommendations regarding oil spill response capabilities and technologies in ice-covered waters. Partners present included: DAMTP, Met.No, SAMS and SINTEF.

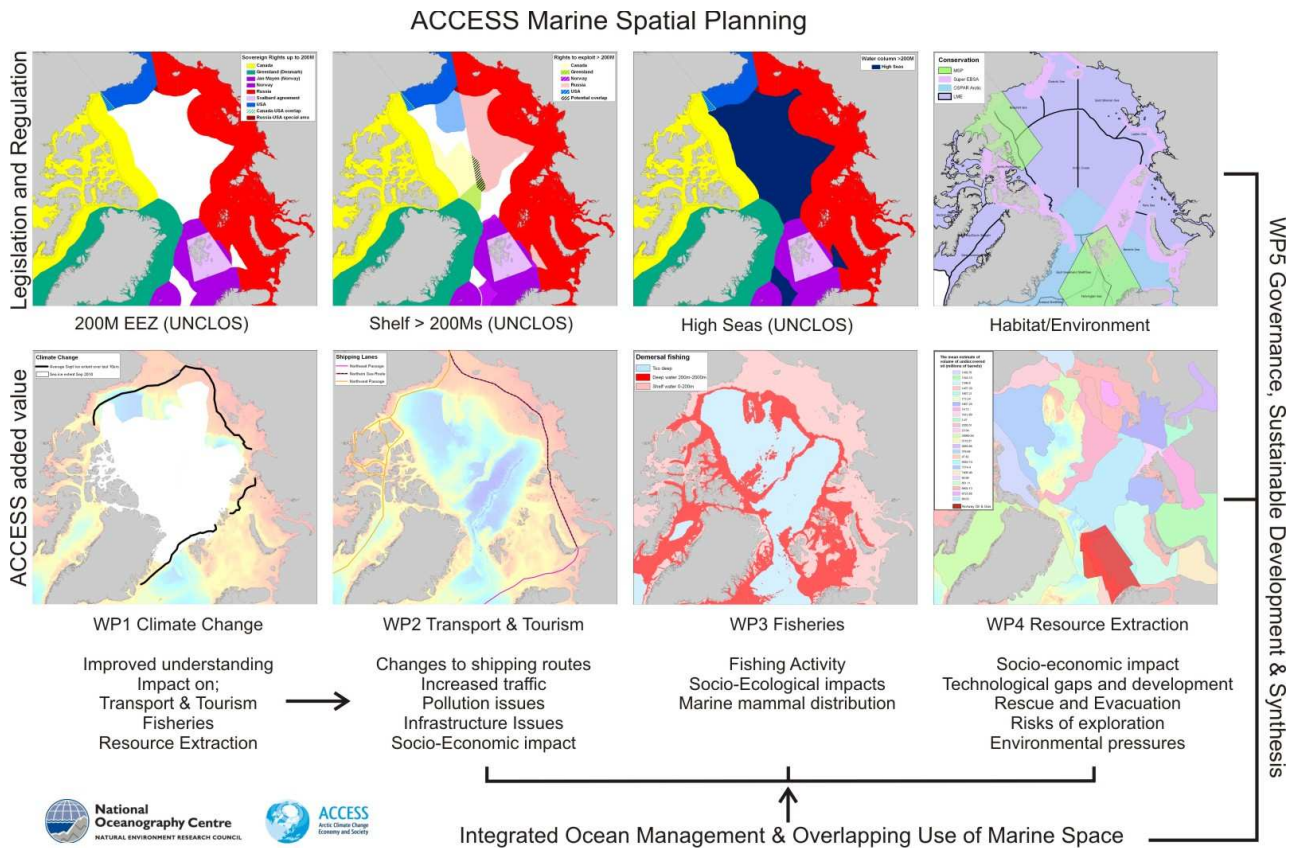
**WP4 CONTACTS**

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 Dr. Jeremy Wilkinson / +44- +44-1631-559-279 / [jeremy.wilkinson@sams.ac.uk](mailto:jeremy.wilkinson@sams.ac.uk)

**Work Package 5 (WP5)**  
**Governance, Sustainable Development and Synthesis**

The main objective of WP5 is to integrate results of WP 1-4, revealing international and interdisciplinary policy options that can be considered by decision makers to ensure sustainable development and environmental protection of the Arctic Ocean.

The Marine Spatial Planning (MSP) element of ACCESS WP5 will bring together the regulatory, scientific, socio-economic and environmental parameters associated with, and affected by long-term climate change in the Arctic Ocean. In addition, scientific and research outputs from each of the sector activities studied by ACCESS (Transport and Tourism, Fisheries and Resource Extraction) will be incorporated into the MSP, enabling direct and integrated analysis of the impact of climate change. Such outputs may, for example, demonstrate the changes in transport pathways, increasing traffic and the pollution effects (WP2), changes in fish migratory patterns and biomass (WP3) and the socio-economic impacts of increasing hydrocarbon exploitation and its potential effect on the marine environment (WP4). Incorporating such data into the MSP will provide an efficient way of observing changes in marine space use and a recognition of areas of potential conflict of use. ACCESS WP5 will use the MSP as a tool to conduct an integrated ocean management assessment, where strategic options for promoting the conservation and sustainable use of the marine environment can be developed.



**FIGURE 5:** Marine Spatial Planning (MSP) framework for the ACCESS project where interaction between legislation, marine space use, changes in Arctic climate and integrated ocean management are used to provide a tool for interdisciplinary planning.



## **WP5 Meetings**

**Stockholm, Sweden, at the Royal Academy of Sciences / Beijer Institute of Ecological Economics, 18-19 January 2012** – Discussion of WP5 progress with focus on draft reports for Deliverables 5.11 and 5.81 that are due in Month 13 as well as overall planning throughout the course of the ACCESS project. Additionally, stakeholder engagement and collaboration was discussed to broaden the utility of the WP5 deliverables.

## **WP5 Presentations, Publications and Outreach:**

Berkman, P.A. 2012. "Common Interests" as an Evolving Body of International Law: Applications to Arctic Ocean Stewardship. IN: Wolfrum, R. (ed.). *Beiträge zum ausländischen öffentlichen Recht und Völkerrecht (Contributions on Comparative Public Law and International Law)*. Max Planck Institute, Heidelberg. (in press).

Berkman, P.A. 2012. Revisiting "Our Common Future" in the Arctic Ocean. *The Roundtable. Commonwealth Journal of International Affairs*. (in press).

Berkman, P.A. and Vylegzhanin, A.N. (eds). 2012. *Environmental Security in the Arctic Ocean*. Springer, Dordrecht (in press).

**The Arctic: Territory of Dialogue** – Russian Geographical Society, 22-23 September 2011, Arkhangelsk, Russian Federation

**Polar Code Hazard Identification Workshop** – International Maritime Organization, 27-30 September 2011, Cambridge, United Kingdom.

**Sustainable Shipping Conference** – Petromedia, 12-14 October 2011, Vancouver, Canada.

**Arctic Human Development Report: Regional Processes and Global Linkages (AHDR-II)** – Sustainable Development Working Group of the Arctic Council, 18-19 November 2011, Copenhagen, Denmark

**Anticipating the Future: Risk Management for Long-term Planning** – Centre for Risk Studies, Judge Business School, University of Cambridge, Cambridge, United Kingdom.

## **WP5 CONTACTS**

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## **Work Package 6 (WP6) Dissemination**

**The main objective of WP6 is to openly share research results from WP 1-5 with policy makers, industrial and academic stakeholders, and the public-at-large via the ACCESS Website, Flyer and Newsletter as well as through other media.**

### **Wiki:**

In order to support the internal information flow of ACCESS a dedicated wiki solution has been set up. This solution has support for task management and discussion management. Contrary to the website which has a more external user perspective, all registered internal users can read and write on the wiki and dedicated areas has been prepared for each work package to utilise as they wish. The wiki can be used for preparing meetings, providing minutes of meetings and for preparation of documentation.

### **Arctic Information Centre:**

## ACCESS Website:



**FIGURE:** Layout of ACCESS website (<http://www.access-eu.org>) with diverse materials produced by this international and interdisciplinary project funded by the European Commission, as reflected by the video of WP1 workshop on *Climate Scenarios and Climate Simulations* that was convened in Bremen, Germany, in September 2011. The ACCESS website is intended to serve as a tool of collaboration within the project as well as with stakeholders and other collaborators.

### WP6 CONTACT

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## Future Activities and Initiatives

### International Arctic Research Collaboration

Building on the success of the SEARCH (<http://www.arcus.org/search/searchscience/>) for DAMOCLES (<http://www.damocles-eu.org/>) collaboration – initial discussions are underway with the SEARCH coordinators as well as with the National Science Foundation and National Oceanic and Atmospheric Administration to facilitate complementary transatlantic collaboration with the ACCESS programme. These discussions also involve ISAC (<http://www.arcticchange.org/>) along with Arctic-Net (<http://www.arcticnet.ulaval.ca/>) in Canada. In addition, planning is underway for the “*Responding to Change*” workshop that will be convened at the Queen’s University, School of Policy Science, in Kingston, Ontario, from 30 January to 1 February 2012 (<http://www.arcticchange.org/>).

### Workshop Objectives:

1. To establish, among a spectrum of stakeholders, including the science community, a common understanding and definition of what is meant by responding to arctic environmental change.
2. To produce a preliminary assessment of the alignment between information flowing from established arctic observing initiatives and stakeholder needs for information that will be used to inform the planned, international, and recurring Arctic Observing Summit, as well as other programs aimed at understanding arctic environmental change.
3. To identify tractable science questions that align with stakeholder needs for information and that can be addressed in the short-term, with an emphasis on informing risk assessment, risk management, resilience, adaptation, and mitigation over the long-term.
4. To produce recommendations for advancing science/stakeholder partnerships, and improving communications among these diverse parties.

## Future ACCESS Fieldwork in the Arctic Occen



Canada: **Louis Saint Laurent** Ice breaker  
Woods Hole Oceanographic Institution (WHOI)  
Sept-Oct 2012 - Moorings and buoy deployments, IMBs, ITPs, in the Beaufort Sea. WHOI contact : Andrey Proshutinsky  
**ACCESS contact: M. Doble (UPMC-LOV)**



Russia: Drifting Station 88 N 130 W **North Pole drifting station (NP39)**  
Arctic and Antarctic Research Institute (AARI)  
1 year operations. resupply in April, September/October  
**ACCESS contact : Vladimir Ivanov (AARI)**



Germany: **RV Polarstern**  
Alfred Wegener Institute for Polar and Marine Research (AWI)  
Aug-Sept 2012 - IceArc 2.5 m - biological stations, ice stations on-top and under the sea ice (ROV, divers, landers, traps). Ecosystem driven cruise - how ecosystem reacts to changes in ice conditions. Light distribution etc. (pelagic-benthic coupling).  
Mainly in Eurasian basin  
**ACCESS contact: R. Gerdes (AWI)**



Canada: **Amundsen** Ice breaker  
Aug-Sept 2012 - Sea ice and biology in the western Arctic (Canadian Archipelago + part of Beaufort Sea and Baffin Bay). Contact: Louis Fortier  
**ACCESS contact: ???**



Korea: **RV Araon**  
Korean Polar Research Institute (KOPRI)  
August 2012- Nome-Name 1 month cruise - biology ocean and ice physics (SAMS)  
**ACCESS contact : J. Wilkinson - Phil Hwang (SAMS)**



**Gambo** Polar Yacht  
Aberystwyth University  
June 2012- September 2013 - Interactions outlet glaciers / ocean fjords near Uummannaq  
Contact: Alun Hubbard  
**ACCESS contact: J.C. Gascard (UPMC-LOCEAN)**



Norway: **KV Svalbard** (ACOBAR)  
Mid-Aug to mid Sept (also March cruise in Fram Strait, UNIS/Smedsrud)  
Nansen Environmental and Remote Sensing Center (NERSC) + UPMC-LOCEAN  
**ACCESS contact : J.C. Gascard (UPMC-LOCEAN)**



China: **RV Xue Long** - Chinese 'Snow Dragon'  
Polar Research Institute of China (PRIC)  
June-Sept 2012 - Trans-Arctic cruise (pacific-atlantic).  
Biogeochemistry and atmosphere, ice and ocean physics. 3 week ice camp.  
**ACCESS contact: D. Ruiz Pino & J.C. Gascard (UPMC-LOCEAN)**



Norway: **RV Lance**  
Norwegian Polar Institute (NPI)  
-17 July-6 August (tentative dates) - Process studies on sea ice energy balance north of Svalbard, Longyearbyen-Longyearbyen  
**ACCESS contact: S. Gerland & Mats Granskog (NPI)**  
-19 August-13 Sept (tentative dates) - Sea-ice work, oceanography and mooring recovery and deployment in Fram Strait, Longyearbyen-Longyearbyen.  
**ACCESS contact: Edmond Hansen & Mats Granskog (NPI)**



Sweden: **RV Oden**  
July-August 2012, - UNCLoS Danish Charter North Pole and Lincoln Sea region - DTU and DMI on board  
Contacts: Rene Forsberg and Susanne Hanson  
**ACCESS contact: ???**



Russia: **Barneo**-Ice Camp at the North Pole  
12-17 April 2012- Deployment of the IA00S prototype platform drifting from April to September 2012- Platform including an ocean profiler and a SAMS Ice Mass Balance profiler for ice and snow depth measurements  
**ACCESS contact : P Lattes & J.C. Gascard (UPMC-LOCEAN)**



**Arctic Sunrise** Polar Yacht,  
GreenPeace  
May 2012 - Fram Strait - Measurements of the three-dimensional topography of the ice underside using a multibeam sonar on an AUV (autonomous underwater vehicle)  
**ACCESS contact: Peter Wadhams (UCAM-DAMPT)**

**FIGURE: ACCESS fieldwork in the Arctic Ocean with ship platforms and general research locations through 2015.**



## **International Polar Year (IPY) Meeting – From Knowledge to Action – Montreal, April 2012**

The final synthesis meeting of the IPY will be convened in Montreal, Canada, from 22-27 April 2012 (<http://www.ipy2012montreal.ca/>). Please see the IPY website for additional information and registration. Several sessions in this IPY meeting are being convened by principal investigators in the ACCESS project with presentations by ACCESS principal investigators throughout the meeting (in blue):

### **SESSION 1.1.2 – Polar Ocean Processes**

**Vladimir Ivanov:** *Arctic shelves – Alternative Source of the THC – Driving Dense Water in the Warmer Climate?*  
Rudels, B., Korhonen, M. with **Sergei Pisarev**, Rabe, B., Schauer, U., and Wisotzki, A.: *The Influence of the Barents Sea Inflow Branch on the Arctic Ocean Circulation and Water Mass Transformation Processes.*  
**Michael Karcher**, **Rüdiger Gerdes**, with Kauker, F. and Smith, J.N.: *Should we Modify our Understanding of the Arctic Ocean Circulation?*

### **SESSION 1.2.1 – Atmospheric, Physical and Chemical Processes in the Polar Regions**

**Jean-Christophe Raut** with Thomas, J. L., Law K. S., Ancellet G., Rasch P., Fast, J., Pfister, G. and Emmons, L.: *Transport of Anthropogenic Pollution and Boreal Forest Fire Emissions to the Arctic During Summer 2008.*

### **SESSION 1.2.3 – Diminishing Snow and Ice**

**Rüdiger Gerdes:** *Sea Ice Retreat and its Consequences for Fram Strait Ice Export and the Arctic Ocean Fresh Water Balance.*  
**Kathrin Riemann-Campe:** *Changes in Arctic Sea Ice Distribution and Variability During the Next Decades.*

### **SESSION. 1.4.1 – Natural Resource Exploration, Exploitation and Commercial Activities Including Tourism**

**Convenor:** **Lawson Brigham** (United States), **Co-convenor:** **Andrii Fedchuk** (Ukraine).  
**Lindsay Parsons**, **Anne-Sophie Crépin**, **Jean Claude Gascard**, **Michael Karcher** and **Katrin Rehdanz** and ACCESS Partners. *The EU ACCESS Project – Stress-Testing Governance Options in the Arctic Over the Next Thirty Years of Climate Change.*

### **SESSION 1.5.3 – Advances In Technology in Polar Research, Including Subglacial Exploration**

**Convenor:** **Jeremy Wilkinson** (United Kingdom), **Co-convenor:** **Denis Samyn** (Belgium).  
**Jean Claude Gascard**, Lattes, P., Brault, P., Simon, P., Smerdon A. and Lefevre, N. *An Autonomous, Long-Term, Long-Range Drifting System for Sea-Ice and Underwater Observations: The ACOBAR Cluster.*  
**P. Bourgain** and **Jean Claude Gascard:** *Large Staircase-like Microstructure in the Deep Arctic Ocean.*

### **SESSION 2.2.7 – Sustainable Arctic Development: Integrated Perspectives**

**Convenor:** **Paul Arthur Berkman** (United Kingdom), **Co-convenors:** **Oran R. Young** (United States) and **Sandra Rodrigues Balão** (Portugal).

### **SESSION 2.4.5 – Polar Governance, Policy and Management in the Face of Change**

**Kathrin Riemann-Campe:** *Interdisciplinary Collaboration and the Forecasting of Arctic Futures.*

## **Arctic Frontiers**

## **ACCESS General Assembly**

**Stockholm, Sweden, at the Royal Academy of Sciences 8-9 March 2012 –**

**Comments and suggestions for the ACCESS Newsletter are most welcome. For further information, please contact: Prof. Paul Arthur Berkman ([berkman@bren.ucsb.edu](mailto:berkman@bren.ucsb.edu)).**