

Summer 2014

PROGRAMME COORDINATOR: JEREMY WILKINSON

BRITISH ANTARCTIC SURVEY, UK

It only seems like yesterday that we were all in Brussels for the ICE-ARC kick-off meeting, and now the summer is well and truly with us. They say time flies when you are having fun...

... And it has been fun. Now the hard work we have put in over the past few months is starting to bear fruit. The project office is up and running, we have completed our first field season, new staff are in place, essential collaborations are taking shape, and first Deliverables have been submitted. As with any project of this size it takes time to build up a head of steam, but we are making good progress.

For a complex and diverse project like ICE-ARC it is very difficult to get a full understanding of how all the parts fit together, or indeed why and when they fit together. Our regular newsletter should help to solve this problem, as we believe it will be an effective method of communicating ICE-ARC successes, challenges, and upcoming events.

As this is our first newsletter we would appreciate feedback on the layout, content etc., and with this feedback, we will settle on an agreed format. The success of this newsletter is in our hands and therefore it would be appreciated if any requests for information that comes from the project office could be responded to in a timely fashion. Katie Gosling has kindly accepted the role of Editor of the ICE-ARC Newsletter.



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MEETINGS AND EVENTS

9-10 July : **Indigenous peoples in the Arctic**, with the EU ACCESS project, *Paris*.

9 September : **WP4 PAGE-ICE modelling workshop and economic integrated assessment modelling workshop**, *Rotterdam*.

15-16 September : **6th International Workshop on Sea-Ice Modelling and Data Assimilation**, *Toulouse*.

22-25 September: **Arctic Sea Ice Reduction: the evidence, models, and global impacts**, *London*.

31 October - 2 November: **Arctic Circle 2014 Assembly**, *Reykjavik*.

18-21 November: **ICE-ARC First General Assembly Meeting, and Steering Committee and Advisory Board meetings**, *Barcelona*

10-12 December: **Polar-lower latitude linkages and their role in weather and climate prediction**, *Barcelona*.

15-19 December: **AGU Fall Meeting**, *San Francisco*

FURTHER DETAILS:

<http://www.ice-arc.eu/events/>

WP2 UPDATE

Dag Slagstad,
WP2 Leader,
SINTEF,
Norway



Works related to the forcing function from fresh water run-off from rivers and fresh water melting from ice caps (especially around Greenland) are ongoing. Interannual variability, seasonal cycle, and linear trend over the last two decades have been treated explicitly and implemented in the numerical model.

In order to have an effective way of comparing ecosystem model performance with data, work has been started to put together and store measurements in an efficient way (netCDF), and then construct software that more or less automatically make comparisons between the model output and the measurements.

WP4 UPDATE

Gail Whiteman,
WP4 leader,
RSM, The Netherlands



We have successfully hired a post-doc, Dr. Dmitry Yumashev, and he joined the RSM team, on the 1st June. Previously, Dmitry was a post-doctoral researcher in Applied Mathematics at the University of Manchester. He will lead the economic modelling efforts within WP4 together with input from Dr. Chris Hope.

In addition, we have hired a PhD student, Jimena Alvarez, to assist in the modelling work. Jimena worked on the PAGE model with Chris Hope for her thesis for her MPhil at Cambridge.

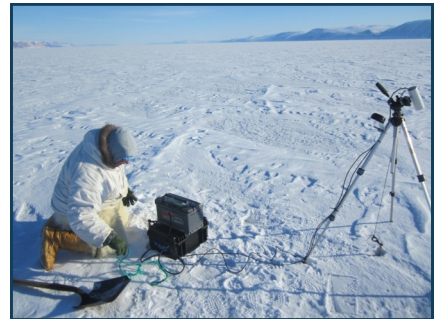
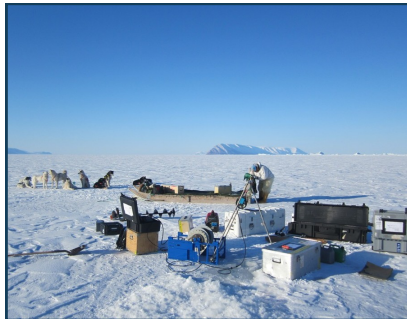
A cross-partner workshop on modelling is taking place on 9th September in Rotterdam.

FIRST ICE-ARC FIELDWORK

The first field program for ICE-ARC began in March 2014. Researchers from DMI (Danish Meteorological Institute), Steffen Olsen and Gorm Dybkjær, were working on the ice with Inuit hunters to observe ocean and sea ice in the Arctic. They profiled the water column and installed instruments to measure the variability in ocean currents and sea-ice surface properties.

Data collected will serve to build a better understanding of the ocean processes, how layers in the water column are maintained, and how they partly inhibit warm water from below from reaching the sea ice. It will also help to better understand the processes of the ocean - sea-ice - atmosphere interaction.

The region being studied is hunting ground for the village of Qaanaaq in NW Greenland; its traditional Inuit culture relies on the fast ice for transport and hunting. | Photos: Steffen Olsen |



LAPTEV SEA EXPEDITION

Igor Semiletov and Natalia Shakhova from AME (Arctic Marine Exploration), Russia, have recently completed the first phase of their field work in the East Siberian Arctic Shelf, looking at methane escaping from submarine permafrost.

They carried out a 24-day expedition, using a transport caravan, to the Laptev Sea. The main goal was to obtain new data for determining rates of subsea permafrost degradation in order to address the following questions:

- ◆ Are changing East Siberian Arctic Shelf thermal conditions causing the permafrost to thaw? Do accelerated rates of permafrost degradation lead to the development of taliks (thaw bulb beneath a body of water) that act as CH₄ vents to the overlying seawater and potentially to the atmosphere?

Read the full report on the website: <http://www.ice-arc.eu/news>



Left: Transport caravan, Right: Electromagnetic system towed by all-terrain vehicle (Photos: I.Semiletov)



FIRST SATICE GPS BUOY FOR ICE-ARC—WPI

Pedro Elosegui, WPI Leader, CSIC, Spain

Testing for the first SATICE buoy for ICE-ARC is well underway, currently on the roof of the Institute of Marine Sciences (ICM-CSIC), Barcelona. The high-precision GPS buoy will be deployed in the Beaufort Sea in early August, as part of the Korean icebreaker Araon 2014 science cruise to the Arctic Ocean.

The buoy will collect continuous GPS data and other geophysical data (atmospheric, cryospheric, as well as oceanographic) while drifting on a sea-ice floe. The data will be streamed over an Iridium satellite link in near-real time to a central computer, where they will be post-processed to obtain time-varying buoy positions with few-cm precision. Estimates will help improve our understanding of sea ice and ocean circulation changes.

An Iridium antenna, two suitcased-domed GPS receivers, and a power unit can be seen undergoing burn-in testing against the backdrop of Frank Gehry's copper-coloured gargantuan fish from the Barcelona 1992 Summer Olympics. | Photos: Monica Villegas |



COLLABORATION WITH OTHER EU PROJECTS

ACCESS (<http://www.access-eu.org/>): Several ICE-ARC partners are also involved in the EU FP7 programme ACCESS, the predecessor to ICE-ARC. Its main objective is to assess climatic change impacts on marine transportation (including tourism), fisheries, marine mammals, and the extraction of oil and gas in the Arctic Ocean. ACCESS is also focusing on Arctic governance and strategic policy options. BAS hosted the General Assembly in Cambridge in March, and ICE-ARC are joint funding the Access Indigenous Peoples in the Arctic Workshop in July.

Ocean Certain (<http://oceanertain.eu/>): A four year EU FP7 programme which started in Autumn 2013. Ocean Certain will investigate the impact of climatic and non climatic stressors on the food web and the connected biological pump, and the important feedback mechanisms. They will use ecosystem modelling to identify and quantify impacts, and use the resulting knowledge to assess socio-economic vulnerabilities and adaptive capacity. ICE-ARC has had initial contact with the coordinator.

WP3 UPDATE

**Mark Nuttall
WP3 Leader**

**Greenland
Climate
Research
Centre
(GCRC)**



The planning and implementation of our community-based research in northwest Greenland has proceeded well. Team members from the Greenland Climate Research Centre are embarking on community consultations and initial fieldwork in the Uummannaq, Upernavik and Qaanaaq areas of Greenland in May and June 2014.

Mark Nuttall and Lene Kielsen Holm visited Qaanaaq in May and June, with a stopover in Upernavik; Natuk Lund Olsen visited Uummannaq and the village of Niaqornat in June; also during June Niels Kleeman (who is originally from Upernavik) visited Upernavik and the villages of Innaarsuit and Kullorsuaq. In April, Steffan Olsen from DMI carried out fieldwork and held local community consultations in Qaanaaq about the design of the sea ice/oceanography programme between 2014 and 2017.

NEW ICE-ARC MEMBERS

We welcome a number of new members to ICE-ARC:

- ◆ **Gorm Dybkjær**, Researcher at DMI
- ◆ **Dmitry Yumashev**, Post-doc, RSM
- ◆ **Jimena Alvarez**, PhD student, RSM
- ◆ **Lydia Prieg**, PhD Student, BAS WP4 economic modelling (starting later this year).

PROGRAMME OFFICE NOTICES

Since the Kick-Off Meeting in Brussels which took place in February this year we have been busy working on creating systems and tools for ICE-ARC as well as developing the website. The first deliverables have been submitted to the EC:

- ◆ D5.21 Dissemination and communications plan
- ◆ D5.31 Launch of the website
- ◆ D6.01 Steering Committee Meeting Minutes Spring 2014
- ◆ D6.12 Kick-off meeting report

www.ice-arc.eu – We have been developing the website and have added the following pages: Participants, People, and Events. We still need your input so if you would like to write something for your area of work or have any photos please send them in. We also have an [Instagram](#) account for which we need a regular supply of images.

Dropbox ICE-Shared Folder - All ICE-ARC members should have received an invite to join the ICE-ARC shared [dropbox](#) folder; if you have not please let the programme office know. In the folder you will find useful information including: templates, logos, posters, presentations, photos, and reports. Please add your reports and photos (of field work, at meetings, etc) that we can use for publicity.

Recording dissemination activities - If you have attended a conference and presented on ICE-ARC, or written a blog or news articles relating to the programme, please ensure you have recorded it on [SESAM](#) (the EU portal). This is an important requirement from the EU and they may check expenses claimed against recorded activities.

The Science Lead for each partner can create SESAM logins for individuals so you can enter your own activities, or, if you prefer, please complete the template saved in [Dropbox](#) and email it to the programme office so we can add them on your behalf.

UPCOMING DELIVERABLES AND MILESTONES

Deliverable/ Milestone	Month Due
MS601 - Establishment of the stakeholder user-group	6
MS311 - The design of socio-economic scenarios for communities in NW Greenland	9
D6.02 - Steering Committee Meeting Minutes 2014 Autumn	10
D2.71 - Assessment of the relative importance of nutrient sources in present climatic regime	12
MS421 - Detailed report of Industry Sector Analysis	12

Thank you to those who contributed to our first newsletter. If you would like to contribute to the next edition please send your text and images to ice-arc@bas.ac.uk.

Deadline for contributions: 15th September 2014.

