



IASC INTERNATIONAL ARCTIC
SCIENCE COMMITTEE

IASC PROGRESS

FALL 2013

IASC support for thematic Networks

The IASC mission is to encourage and facilitate cooperation in all aspects of Arctic research, in all countries engaged in Arctic research and in all areas of the Arctic region. One specific instrument that IASC is providing to foster the development of thematic groups is the support and endorsement of

Networks. IASC Networks are international, address specific scientific issues on a circum-Arctic scale and strive to involve early career scientists. Networks may be created by IASC or may apply for affiliation with IASC. Once accepted as IASC networks, they carry the IASC logo.

For more information, please see the [Terms of Reference for IASC Networks](#).

This edition of the IASC Progress provides an overview of the ongoing Networks. More information can be found on the Network's websites.

The Arctic Coastal Dynamics (ACD) Network: current and planned activities

An important challenge facing Arctic coastal research is creating and maintaining monitoring capabilities in order to detect changes in this sensitive region. A key recommendation of the State of the Arctic Coast (SAC) Report (Forbes, 2011) was the establishment of a circumpolar coastal observatory network, as an offshoot of ACD and its International Polar Year activities.

Recommended steps include:

- creating an inventory of existing coastal stations, actors, and networks.
- developing common mapping tools for circumpolar data.
- improving communication about Arctic coastal issues.
- enlisting the critical support of government agencies for monitoring.
- involving coastal communities as important proponents and players in monitoring.

A modular approach to building a monitoring network could capitalize on support from national agencies, research funding bodies, academia, and communities.

Representatives of the ACD Network, IASC, the International Permafrost Association, and Land-Oceans Interactions in the Coastal Zone (LOICZ) met at the ArcticNet conference in Montréal, Canada in April 2012 and at IASC offices in Potsdam, Germany in December 2012. Talks have also been held with members of the International Arctic Social Sciences Association. Discussions have focused on coordinating future arctic coastal research. Other recent activities include coastal contributions to the Arctic Resilience Report, an Arctic Council project spearheaded by the Stockholm Resilience Institute, which describes the important socio-ecological shifts underway in the Arctic and

identifies ways to increase the resilience of human-natural systems. An interim version of the report issued in 2013 is available online (<http://www.arctic-council.org/arr/>). Significant increases in infrastructure that support Arctic coastal research have recently been achieved through expanded monitoring facilities -- for example at Alaska (Barrow), Greenland (Zackenberg) and Svalbard (Ny Alesund) -- improved stations such as the Samoylov Station in Russia's Lena Delta, and the allotment of resources for the Canadian High Arctic Research Station (CHARS) in Cambridge Bay. Researcher exchange is being facilitated by such projects as the EU's INTERACT network (<http://www.eu-interact.org/>). All these activities feed into meetings planned for 2014 that will focus on developing the coastal component of the 3rd International Conference on Arctic Research Planning (ICARP III) in 2015.

References

Forbes, D. L. (ed.) 2011. State of the Arctic Coast 2010: Scientific Review and Outlook. International Arctic Science Committee, Land-Oceans Interactions in the Coastal Zone, Arctic Monitoring and Assessment Programme, International Permafrost Association. Helmholtz-Zentrum, Geesthacht, Germany, 178p.
<http://arcticcoasts.org>.



Muostakh Island, Laptev Sea

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ACD website: www.arcticportal.org/acd



Mamontovy Khayata on the Bykovsky Peninsula

Arctic Freshwater System Synthesis Network

The Arctic Freshwater Synthesis is a joint initiative of IASC, the Climate and Cryosphere (CliC) Project and the Arctic Monitoring and Assessment Programme (AMAP). It combines our current scientific understanding of Arctic freshwater sources, fluxes, storage and effects, with the project structured around 5 major components: atmosphere, ocean, terrestrial hydrolo-

gy, terrestrial ecology and resources. During spring and summer 2013, planning of the structure of the synthesis has been carried out. Currently, the process of identifying and inviting scientists to fill the lead writing and coordinating roles of the five themes is under way. Also, abstracts for an AFS-related session at the AGU Fall Meeting in San Francisco in 2013 have

been solicited. Next steps include a first working meeting to gather the scientific leads and the steering group, identification of knowledge gaps, and formation of writing teams.

Network Coordinator | Johanna Mård Karlsson
Network Coordinator | Arvid Bring

Arctic in Rapid Transition (ART) Network

ART is a pan-Arctic scientific Network developed and steered by early-career scientists, which aims at studying the impact of environmental changes on the Arctic marine ecosystem. ART has a focus on bridging across time-scales, by incorporating paleo-studies with modern observations and modelling. Initially endorsed by the IASC marine working group, ART recently transitioned to a new status by becoming an official IASC Network.

The recent ART Executive Committee (EC) originates from a network of early-career Arctic marine scientists who have been involved in multidisciplinary national and international research programs during the last decade. To ensure the unique ART characteristic of early career involvement the ART structure will be adapted in a way that part of the initial EC members will step back into an active advisory committee. New early career scientists will

step in. The application deadline for EC membership has passed. The 6 new applicants from 5 different nations and different disciplines will take part in the planned ART EC meeting at the International Council of the Exploration of the Sea (ICES) in Copenhagen, Denmark, November 11-13, 2013. To ensure the continuity some of the recent members will stay in the EC as well. Members of the active advisory committee will support the new EC members, take part in on-going and future ART activities, and will organize "senior" ART activities additionally. During the ART EC meeting in November the new committees will form and start with their activities. The meeting will focus on ART cruises planning, Canadian-European ART collaboration (cruises and science programs), and planning of 2nd ART Science Workshop 2014. The meeting will be divided into three parts: a senior meeting only to discuss the ART cruise

proposal, the second part will be a joint meeting with senior and junior EC members, and the third part a junior-only meeting.

The ART cruise proposal TRANSIZ (Transitions in the Arctic Seasonal Sea Ice Zone) is included in the trip planning of the German research vessel Polarstern. Intended period of time is likely to be 05/2015 (ARK-XXIX / 1).

The ART Special Issue on "Interdisciplinary and multi-scale approaches to understanding and modeling the Arctic in Rapid Transition" as a long-term outcome of the ART-APECS Science Workshop 2012 in Sopot, Poland, is planned to be submitted as part of the peer-reviewed journal Polar Research by the end of this year.

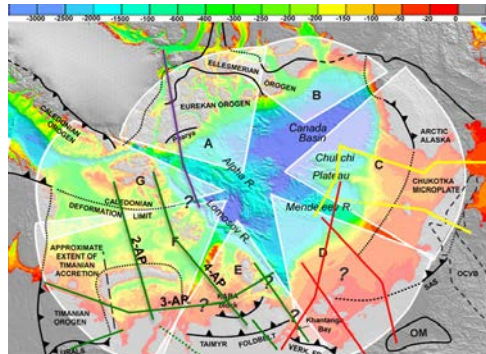
Carolyn Wegner (ART Senior Chair)
Alexandre Forest (ART Junior Chair)
ART website: <http://www.iarc.uaf.edu/ART>

Circum-Arctic Lithosphere Evolution (CALE) Network

Circum-Arctic Lithosphere Evolution (CALE) is a multinational and multi-disciplinary research program investigating important questions associated with understanding circum-Arctic lithosphere evolution. The CALE project was officially launched in 2011.

Current activities

The 2013 year began with working group meetings of six of the seven CALE teams: Greenland & Ellesmere Island (Team A) and the Arctic Canada (Team B) teams met in Halifax, Nova Scotia in March 2013. The Bering Strait Team (Team C) met at Stanford University, California in January 2013. A 'supergroup' of the Taimyr,



CALE transects - 2013: Eocene Arctic showing the CALE teams and their 2D transects.

Timan, and N. Atlantic teams (Teams E, F, & G, respectively) met in St. Petersburg in April 2013. These meetings are the primary venue for assessing/refining the state of team project deliverables and were attended by our 'cross-team fertilization' representative (J. Skogeid).

This year industry sponsorship for the CALE project was expanded when SHELL subscribed to the project for its final 3 years. In addition, 2013 provided the first distribution of several CALE Small Grants in support of research within the project. These included basic support to Team A, field support for work in the Brooks Range (Alaska) to Team C, and partial support for a one-year post-doc for advancement of knowledge on Arctic magmatism, a topic which is shared between Teams A, E, & F. Additional Small Grants are anticipated for 2014. Annual Workshop 2013.

The third CALE Annual Workshop. Our one-day Workshop will be held 8 Dec 2013 preceding the international conference of the American Geophysical Union (AGU) in San Francisco, California, USA. This third Annual Workshop will

include Team leaders, team members, and industry sponsors, and is also linked to an AGU session on Circum-Arctic Lithosphere Evolution chaired by CALE Team Leaders (Pease & Miller). The annual meeting is important for consolidating, unifying, and sharing Team goals, as well as for connecting Team leaders with CALE sponsors. In addition, progress on deliverables will be presented, discussed, and revised as needed, and then integrated with the coming year's goals. The major deliverable at this meeting is expected to be the regional 2D integration of geology and geophysics along the defined transects (Fig. 1) in preparation for our final 3D synthesis.

Date of next Annual Workshop. The date of the 2014 CALE Annual Workshop will be decided at the Annual Meeting in Dec. 2013, but is likely to be linked to the 2014 International Conference on Arctic Margins to be held in St. Petersburg.

Project Leader | Victoria Pease

CALE website: <http://www.cale.geo.su.se>

Network on Arctic Glaciology (NAG) Network

The IASC Network on Arctic Glaciology aims at making a significant contribution to assessments on the impact of climate change in the Arctic region. The focus is on the effect of glaciers on sea-level change and on the fresh water input into fjords and embayments. The Network works by initiating scientific programs and facilitating international cooperation between glaciologists and climate modellers.

In order to facilitate international cooperation, the Network annually organizes the Workshop on the Dynamics and Mass Budget of Arctic

Glaciers. In 2013 the annual workshop and the Network's annual open forum meeting took place in Obergurgl, Austria, from February 26 - 28, 2013. The meeting included an open discussion session on tidewater glacier research, which is part of an effort started by the Network and the IASC Working Group on the Cryosphere to develop an on going research and training program in this area of science. The tidewater glacier initiative already resulted in a very successful training workshop for young scientists on board the Polish Research Vessel MV Horyzont II in Svalbard in September 2012, and the

next workshop, with the title 'glacier and ice-stream calving - Observations and Modelling' will take place from 2-3 June 2014, in Grenoble, France. The coming Workshop on the Dynamics and Mass Budget of Arctic Glaciers & the IASC Network on Arctic Glaciology Annual Meeting, will take place from 3 - 5 February 2014 in Ottawa, Canada. This meeting will mark the 20th anniversary of the network, formed out of the Working Group on Arctic Glaciology, which held its first formal meeting in Wisla, Poland, in September 2014.

NAG website: <http://www.iasc.info/nag>



NAG annual open forum meeting, Obergurgl, Austria

Palaeo-Arctic Spatial and Temporal Gateways (PAST Gateways) Network

'PAST Gateways' is a network research programme which started in 2012. The scientific goal of the program is to understand Arctic environmental change during the period preceding instrumental records and across decadal to millennial timescales. The focus of the six year programme is on the nature and significance of Arctic gateways, both spatial and temporal, with an emphasis on the transitions between major Late Cenozoic climate events such as interglacials to full glacials and full glacial to deglacial states, as well as more recent Holocene fluctuations. There are three major

themes to the program:

- (1) Growth and decay of Arctic Ice Sheets
- (2) Arctic sea-ice and ocean changes; and
- (3) Non-glaciated Arctic environments and permafrost.

The First PAST Gateways International Conference and Workshop was organised by St. Petersburg University and held in Zelenogorsk, St. Petersburg, Russia from May 13-17th 2013. The meeting brought together over 50 scientists for a fieldtrip and several days of oral and poster presentations. The group comprised a balanced mix of senior scientists and early career

researchers including postgraduate students. Presentations were given on a wide range of topics as befits the inter-disciplinary focus of the network including Arctic palaeoceanography, ice sheet history, recent glacier change, reconstructions of palaeoclimatic change from lacustrine and terrestrial palaeo-ecological archives and the history of circum-Arctic palaeo-river discharge. The second PAST Gateways International Conference and Workshop will be held in Trieste, Italy, from May 19-23, 2014.

PAST Gateways website:

<http://www.geol.lu.se/pastgateways>



Participants at the First PAST Gateways International Conference and Workshop, Zelenogorsk, Russia, May 2013.

Polar Archaeology Network (PAN) Network

The Polar Archaeology Network (PAN) is an international organization dedicated to issues impacting archaeology in the Arctic, Subarctic, and Subantarctic. Its main goals are 1) the protection of cultural heritage; 2) the promotion and support of research, particularly through the expansion of international networks and cooperation; 3) the meaningful integration of archaeology with communities; and 4) the dissemination of research results in both scholarly and popular forums.

One of the main goals of PAN is to foster working groups to promote international collaboration among Polar archaeologists. This year, a new working group was organized by Debora Zurro Hernández: "PAN Archaeobotanical Net". This working group is designed to counter the longstanding neglect of archaeobotanical remains by archaeologists working at high latitudes, which results from generally poor preservation and difficulties in recovery, and also from the ethnographically documented dependence of the regions' peoples on animal food sources. Nevertheless, archaeobotanical remains are seasonally important sources of calories and vitamins, and also served technological and medicinal functions. Thus, there is a need for a working group to coordinate communication among relevant researchers, and to

build databases of reference collections and publications, to be made available via the internet. Interested individuals are encouraged to contact Ulla Odgaard (contact information below). PAN executive members Max Friesen and Maribeth Murray attended the Arctic Observing Summit (AOS) in Vancouver in April. The purpose of this participation was to introduce the issues surrounding modern climate change impacts on the archaeological record to the broader scientific community, and to assess whether AOS is a good forum for pursuing a more formal monitoring regime for heritage resource management.

Additional PAN activities over the past year have centred on organizational aspects of the network. In particular, the PAN web site has been extensively re-worked and updated by Hans Peter Blankholm, with Spanish translations provided by Debora Zurro Hernández.

The PAN executive are currently planning a general meeting for Polar archaeologists, to be held in conjunction with an international archaeology conference in 2014.

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PAN website:

http://uit.no/prosjekter/prosjekt?p_document_id=270892



One of the Polar Archaeology Network's main goals is to encourage monitoring and mitigation of archaeological sites being destroyed by erosion and development. Here, Lawrence Rogers of Inuvik examines the remaining portion of a half-destroyed prehistoric Inuvialuit house in the Mackenzie River Delta, northwestern Canada. All driftwood in the eroding bluff face was once part of the walls and floor. Photo: Max Friesen.

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