



Ny-Ålesund Newsletter

24th Edition – June 2009

Integrating the terrestrial research in Ny-Ålesund:

The third flagship programme is initiated!

In beginning of May, SSF organized a workshop to define the "Terrestrial Ecosystems Research Flagship" programme for Ny-Ålesund. This is the third flagship programme in a series of research flagships proposed in the revised version of the Ny-Ålesund Science Plan. Two flagship programmes, a marine and an atmospheric one, have already been initiated.

24 researchers from 11 countries gathered in Oslo to discuss the state of terrestrial research, future goals and better integration of current and future research initiatives in Ny-Ålesund.



Ny-Ålesund as High Arctic Observatory

During the first day of the workshop, the participants gave an overview over current research activities within the terrestrial ecosystem. These activities include e.g. microbial inventories, plant and invertebrate physiology studies, population monitoring of arctic fox and reindeer, studies on gas fluxes, hydrology and permafrost, as well as integrative system approaches.

There was broad consensus about Ny-Ålesund being a unique area for terrestrial Arctic research. The high heterogeneity of geological features, soil types and habitats as well as a broad range of glacier types enables researchers to conduct comparative studies in a high variety of settings within a relatively small area. The interdisciplinary background of research in Ny-Ålesund additionally provides unique long-term data series of abiotic parameters relevant to terrestrial ecosystems.

Ideas concerning the future development of Ny-Ålesund as terrestrial research observatory in the High Arctic were discussed. In particular, the importance of developing Ny-Ålesund as a long-term reference site in order to provide a solid baseline for detecting future changes in the terrestrial ecosystem was emphasized. It is important to establish a coordinated effort with other Arctic research facilities, e.g. Zackenberg in Greenland, in order to put Ny-Ålesund in a broader perspective and get a better pan-Arctic

understanding of terrestrial environments. It was also suggested to establish dedicated natural reference areas and areas where large scale manipulations of e.g. snow melt or nutrient input, could be deployed. Such areas would then provide unique possibilities for studies and experiments on the mechanisms of Arctic ecosystems.

Integrative system studies needed

In order to understand the complexity of terrestrial ecosystems it is important to conduct integrated system studies. Several proposals for international and interdisciplinary research projects were developed for this purpose. One focus area in the future should be studies on the resilience of polar ecosystems to variability and change. Biodiversity, dispersal and phylogeography of Svalbards biota need to be investigated, as well as the dynamic interactions of cryosphere and biosphere. Finally, terrestrial systems can only be properly understood when the links with the marine system are acknowledged and vice versa. Thus, there is a need for studies of the interactions between marine and terrestrial ecosystems.

The result of this workshop will be a guiding document for future research directions as well as a scientific paper of the terrestrial ecosystem in Kongsfjorden.

By Christiane Hübner, Svalbard Science Forum

Ny-Ålesund Symposium 2009

The Symposium was held in Ny-Ålesund 8-10 June 2009. The theme of this year's Symposium was "Climate change: Understanding and influencing global politics towards Copenhagen and beyond".

This year's high-level meeting in Ny-Ålesund focused on the global energy and climate challenge. The ambition was not only to understand the situation, but to make a contribution towards the global solution which hopefully will be agreed in COP15 in Copenhagen in December 2009. The Symposium is solution oriented and has a prime focus on how science and business can contribute optimally towards COP15 and beyond. Among this year's participants were the Norwegian Minister of Research and Higher Education Ms. Tora Aasland and the Chinese Vice Minister of Science and Technology Mr. Liu Yanhua.

The Symposium is organized by Kings Bay AS in cooperation with the Ministry of Education and Research, the Ministry of the Environment, the Ministry of Foreign Affairs, the Ministry of Trade and Industry, the Ministry of Justice and the Police, and the Research Council of Norway. Statkraft AS is a co-organizer and sponsor of the Symposium.

Source: <http://www.ny-aalesundsymposium.no>

New NySMAC chariman

Paal Berg (NILU) has succeeded Hajime Ito (NIPR) as Chairman of Ny-Ålesund Science Managers Committee (NySMAC).

Introducing NSINK

A new, interdisciplinary project, NSINK (*Sources, sinks and impacts of atmospheric nitrogen deposition in the Arctic*), will bring researchers from across Europe to Ny-Ålesund to investigate reactive nitrogen in the arctic. The NSINK collaboration consists of researchers from the Norsk Polarinstitutt, University of Uppsala, University of Innsbruck, the Centre for Ecology and Hydrology and the University of Sheffield, where Andy Hodson is the project leader. UNIS (University Centre in Svalbard), AWI (Alfred Wegner Institute), NILU (Norwegian institute for air research), NINA (Norwegian institute for nature research) are also part of the collaboration.

The EU-funded NSINK project brings together 9 PhD students and 3 Post-Doctoral researchers from a multitude of scientific backgrounds covering research in the atmosphere, glaciers, rivers, ice-cores, sediment-cores, terrestrial and aquatic ecology. Ny-Ålesund is chosen as the primary base for the interdisciplinary field-investigations and training over the project period 2009-2012.

NSINK aims to investigate the fate and impacts of reactive nitrogen in the arctic, from the atmospheric transport and deposition, to interactions in snow, into the melt-water and impacts on terrestrial and aquatic ecosystems. NSINK will combine present-day measurements of reactive nitrogen and investigations of ecological impacts, with historic records from ice-cores and lake-sediment-core records and archived monitoring data. Methods will include the sampling of reactive nitrogen isotopes ($^{14,15}\text{N}$, $^{16,17,18}\text{O}$) to trace reactive nitrogen throughout the entire system, and modeling techniques for data interpretation and projection of future scenarios.

In this way, we will bring a multi-disciplinary approach to address the fate and impacts of reactive nitrogen in the arctic. This scientific knowledge is vitally needed to tackle a pressing issue in future Arctic environmental management: namely the enrichment of arctic terrestrial and aquatic ecosystems by reactive atmospheric nitrogen from low latitude emissions centres.

We look forward to seeing you in Ny-Ålesund!



NSINK fellows (PhD and Post-Doc): Rafael Kühnel, Mats Björkman, Tjarda Roberts, (Norsk Polarinstitutt), Trine Holm, Jakub Zárský, (University of Innsbruck), Aga Nowak-Zwierz, Aimeric Blaud, Arif Ansari, (University of Sheffield), Carmen Vega, Denis Samyn (Uppsala University)

NSINK members: Andy Hodson, Claire Plant, Gareth Phoenix, Mark Osborn, (University of Sheffield), Malcolm Press (University of Birmingham), Kim Holmèn, Elisabeth Isaksson, Johan Ström, (Norwegian Polar Institute), Birgit

Sattler, Karin Koinig, Roland Psenner (University of Innsbruck), Veijo Pohjola, Rickard Pettersson, (University of Uppsala), Chris Evenas, Ed Rowe (Centre for Ecology and Hydrology), Time Heaton (NERC isotope geosciences lab), Carl Egede Bøggild, Anne Hormes (UNIS)

Weblinks: <http://www.nsink.group.shef.ac.uk/>
<http://nsinkproject.group.shef.ac.uk/NSINK/Home.html>

By Tjarda Roberts, Norwegian Polar Institute

A new Svalbard ice core



A team of scientists lead by Elisabeth Isaksson from the Norwegian Polar Institute and Margit Schwikowski from Paul Scherrer Institut (Switzerland) have together successfully recovered a 149 m deep ice core from Lomonosovfonna at 1200 m elevation. The ice core is estimated to cover roughly the last 1000 years. The core will be analyzed for a variety of components related to climate and pollution such as oxygen isotopes and black carbon.

ARCFAC V: Call for proposals (open for submission after 1 August 2009)

European research teams are offered free access (including travel) to the Ny-Ålesund Research Infrastructure (European Centre for Arctic Environmental Research) in Svalbard, Norway upon successful evaluation of the scientific proposal. This is part of the Transnational Access Programme of the European Community FP6.

Successful teams will be offered free from costs stay at Ny-Ålesund for the time of fieldwork necessary for completion of their project. In addition the travel costs will also be reimbursed. Please note that it may be selected project participants who would receive this support.

We invite scientific research proposals within all fields of Arctic environmental research, especially within the following disciplines:

- **Geodesy and space geodesy**, *Climate research in the troposphere and stratosphere, Surface phenomena, snow and ice, Air quality research and pollution, Multidisciplinary environmental sciences, Marine and terrestrial biology*

Please note that this is the last Call for Proposal and therefore the fieldwork shall take place in 2010 only. Please go to the programme's website at: <http://arcfac.npolar.no> for details (eligibility criteria, application forms, deadlines, content of scientific project proposals, terms of access and funding etc.).

Proposal application should be submitted directly via the website (www.arcfac.npolar.no) while the scientific description and CVs should be sent by e-mail to: arcfac@npolar.no.

Proposal submission deadline: 30 Sept 2009

Contact: ARCFAC Secretariat, Norwegian Polar Institute, N-9171 Longyearbyen, Svalbard, Norway; tel.: +47 7902 2611; Fax: + 47 7902 2604; Email: arcfac@npolar.no

Summary of the 30th NySMAC meeting

Short summary of the previous NySMAC meeting held in Bergen 23 March 2009:

- Status reports from member institutions
- Information from Kings Bay AS
 - Main topics:*
 - Building of new power station postponed
 - Further development of the “Greener Ny-Ålesund” concept
 - Ny-Ålesund symposium 2009
 - Land-use plan adopted
 - Status of the new information centre – opening this summer
 - The Amundsen-Nobile tower will be operative as of the fall
 - Kings Bay AS is now partner in MesoAqua which is an EU-supported infrastructure development
- NySMAC will produce a code of conduct for respect of the environment that each station will have to follow
- Status of ESFRI –SIOS proposal was presented. December 1st is the deadline for submitting the “preparatory phase” proposal to EU.
- Update on flagship workshops and activities by Svalbard Science Forum
- Routines for VIP visits to Ny-Ålesund
- Preliminary results for monitoring of the local environment in Ny-Ålesund carried out by NILU
- Aerial photos of Kongsfjorden area soon available on Google Earth
- Electric vehicles and sharing of equipment were discussed
- Paal Berg, NILU was elected new chairman
- KOPRI/KORDI will host the next NySMAC meeting 3-5 November 2009 in South Korea

The Sverdrup station

At the Sverdrup station they have installed a display that shows the weather for the past 6 hours. The data is provided by the Norwegian Meteorological Institute.

This summer there will be a lot of activity at the station. There is also going to be some change of staff and new station manager is expected to be in place this summer.

The AWIPEV Corbel Station



The AWIPEV Corbel Research Station has been undergoing restoration since 2008, the second phase ended in the beginning of June 2009.

The photo shows the station in May, with solar panels on 2 of the 4 buildings.

An additional 37 m² of monocrystallin solar panels have been installed, providing power output of 8 to 10 Kwh in early spring and sunny events. A windmill has also been set up, to test power output ready for the polar night. The last phase should be completed in spring 2010 (including the installation of an additional 30 m² of voltaic panels and a windmill prototype).

The two particle counters were re-installed at the end of the working phase this spring, by the KOPRI Institute who has also contributed to the purchase of the solar panels. A call for proposals will be released in 2010, with the aim to begin campaigns in early 2011.

As additional information, Franck Delbart will be on leave from the French Polar Institute from the 1st of July 2009. He should come back at work in March 2010. IPEV hasn't decided who will take over his position yet. In the meantime R. Neuber/AWI, will be responsible for AWIPEV field activities.

Paper related to Corbel : J. Ström, A.C. Engvall, F. Delbart, R. Krejci, R. Treffeisen. On small particles in the Arctic summer boundary layer : observations at two different heights near Ny-Alesund, Svalbard. Tellus (2009).

By Franck Delbart, IPEV

Input to Ny-Ålesund Newsletter

If you would like to contribute to future editions of this newsletter, please e-mail nysmac@npolar.no.

Any ideas or suggestions for topics are also welcomed. Next edition: December 2009

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E-mail nysmac@npolar.no and write **subscribe/unsubscribe** in the subject field.

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