

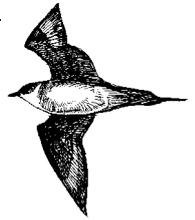
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# Ny-Ålesund Newsletter



22<sup>nd</sup> edition  
June 2008

## The Ny-Ålesund Symposium 2008

The symposium will take place on Svalbard from June 30 to July 2. The theme of this year's Symposium is "Global Climate Change and Research Challenges". Minister of Research and Higher Education Tora Aasland will act as host, and research ministers from Germany, India, and Poland will also participate.

The Ny-Ålesund Symposium is an annual event that brings together international and national policymakers, researchers, industry representatives, and other high-level decision-makers.

### Second French - German AWIPEV workshop

*Roland Neuber, AWI and Franck Delbart, IPEV*

On 8. - 10. October 2008 the second AWIPEV scientific workshop about French - German Polar Science on Spitsbergen will take place at University of Bremen. The workshop will bring together scientists from France and Germany to present and discuss polar research work conducted on Spitsbergen and in particular at the French - German Arctic Research Base AWIPEV (Ny-Ålesund). A focus will be on activities during the international polar year (IPY), and on planned research projects in the coming years. In particular long term programmes shall be presented.

Session topics will include:

- Polar atmosphere and climate
- Glaciers and Permafrost
- Marine and terrestrial ecology of Kongsfjorden
- Logistics and infrastructures

Participation at the workshop is free, but limited to about 70 persons.

If YOU have worked at AWIPEV Base or plan to do so in the future, you are cordially invited to participate. Registration will close on 15. September 2008.

Further information can be obtained from [awipev@awi-potsdam.de](mailto:awipev@awi-potsdam.de) and will be posted at <http://www.awipev.eu>

### Greenland sharks in Kongsfjorden

*Christian Lydersen and Kit M. Kovacs  
Norwegian Polar Institute and UNIS*

As part of a research programme on harbour seals, funded by the Norwegian Research Council, we are exploring Greenland sharks as a potential predator of seals in Svalbard. During the period 8-14 June 2008 we caught 50 Greenland sharks in the Kongsfjorden area. The largest shark weighed 660 kg. Samples were collected from 32 of these animals for various studies, including diet, contaminants, genetics etc. Nine sharks were released after being equipped with satellite tags that will "pop off" after a set time, float to the surface and send us information on depth, temperature and light levels along the path of the sharks, as well as providing the location of the shark at the time the tag comes off. The nine remaining sharks were partially eaten by other sharks and not useful for our studies.

A preliminary examination of the stomach contents reveals that about 20 % of the sharks had seal remains in their stomachs. In addition, we found a surprising number of stomachs contained large fishes, mainly Atlantic cod and wolffish, but also redfish, Greenland halibut and various rays. A polar bear jaw and minke whale blubber were also found in stomachs, but these items were likely scavenged by the sharks as opposed to being taken as live prey.

## News from ARCFAC - European Centre for Arctic Environmental Research

In the last round of submissions 17 proposals were received. All proposals have been reviewed by external scientific referees and the ARCFAC User Selection Panel will meet in the end of May to select these projects that will receive free access to the Ny-Ålesund Research Infrastructure in the coming seasons.

The next submission deadline is 30th September. This time we particularly encourage submission of proposals in the field of geodesy and space geodesy.

The Space Geodetic Research Facility of the Norwegian Mapping Authority hosts a 20-meter VLBI (Very Long Baseline Interferometry) antenna which contributes to the International VLBI Service (IVS) as a network station. The observatory has developed into a fundamental geodetic station with co-location of space-geodetic techniques and geophysical instruments. It has two GPS antennas in the IGS system, and both a LaCoste-Romberg gravimeter and a Super Conducting Gravimeter are installed on the site. The site also includes a CHAMP GPS, GLONASS, and a PRARE installation. The different measurements are tied together by means of an accurate control network. This network is extended to the local surroundings (30-50 km) to keep track of eventual local deformation.

For more information about the geodetic facility, please contact Svein Rekkedal ([svein.rekkedal@statkart.no](mailto:svein.rekkedal@statkart.no), tel. +47 7551 6134), Line Langkaas ([line.langkaas@statkart.no](mailto:line.langkaas@statkart.no); tel. +47 3211 8434) or Helge Digre ([dighel@statkart.no](mailto:dighel@statkart.no), tel. +47 7902 7010).

For other information about the programme please visit the website: [www.arcfac.npolar.no](http://www.arcfac.npolar.no) or contact ARCFAC Secretariat at: [arcfac@npolar.no](mailto:arcfac@npolar.no), tel. +47 7902 2611.

## Monitoring the April hydrographic conditions in Kongsfjorden

Vigdis Tverberg, NP

The MariClim project at NPI was in April able to survey the late winter hydrographic conditions in Kongsfjorden, through a collaboration with the University of Tromsø. The survey shows that the anomalous warm state of the water masses in the fjord is continuing also this winter season, the third year in a row. April measurements were conducted also the previous two years; in 2006 within the MariClim project, also in collaboration with the University of Tromsø, and in 2007 by UNIS in connection with a student cruise. It is important to be able to monitor the April state of the water environment because it provides the end product of the winter cooling, and in addition it is normally the timing of the phytoplankton spring bloom if the environmental conditions are favorable.

Recent experimental studies indicate that the warm winter water masses in the fjord can be viewed as a long term effect of the massive intrusion of Atlantic Water that occurred in February 2006, which made the shelf and fjord water not only warm, but also very salty (Cottier et.al., 2007). There has been too little freshwater added to the system since then to dilute the shelf water enough to make it less dense than the Atlantic Water in the West Spitsbergen Current during the cooling season. Atlantic Water intrusions then occurs in the surface layer where it is exposed to surface cooling which again produces high density water due to the high salinity of the Atlantic Water. This indicates that a positive feedback mechanism is established and probably only a substantial amount of freshwater added to the shelf area can change this.

**References:** Cottier F, Nilsen F, Inall ME, Gerland S, Tverberg V and Svendsen H (2007). Wintertime warming of an Arctic shelf in response to large scale atmospheric circulation. *Geophysical Research Letters* 34(L10607), 1-5. Gerland, S, and Renner AHH (2007). Sea ice mass balance in an Arctic fjord. *Annals of Glaciology* 46, pp. 435-442.

## Atmosphere vs ocean as source of mercury contamination of Arctic food webs

Katrine Aspmo, NILU

NILU and NTNU collaborate in order to investigate whether monomethyl mercury (MMHg) in Arctic food webs is of marine or atmospheric origin. Fieldwork has been conducted and samples collected throughout the spring in Ny-Ålesund and at Kongsvegen. Organisms at the top of Arctic marine food webs often contain elevated concentrations of MMHg, a toxic and bioaccumulative form of Hg. It has been postulated that springtime atmospheric Hg depletion events (AMDEs) are the source of this contamination. However, the majority of mercury deposited to snowpacks during individual AMDEs are rapidly photoreduced and lost back to the atmosphere, hence AMDEs are not the sole reason for the contamination. Correlation between MMHg and chloride ions have been found, which may indicate that MMHg has a marine origin.

## Corbel Station

There was a campaign this spring (8 May - 26 May) to set up a wood frame on 2 buildings, in the aim to strengthen the old structure and install 24 solar panels and also a new set of batteries, in September.

This first step into the Corbel rehabilitation was a full success. First scientific campaign will start spring 2009.

## Ny-Ålesund air quality

Ove Hermansen, NILU

NILU is preparing to start continuous monitoring of the air quality in Ny-Ålesund. The purpose of this project is to investigate air pollution from local sources such as car traffic, the power station, boat traffic etc.

Emphasis is put on monitoring of compounds related to fuel consumption such as CO, NO<sub>x</sub>, SO<sub>2</sub> and BTX. Measurements in Ny-Ålesund will be compared to measurements made at the Zeppelin observatory. Measurement results will be used to look at the environmental impact from all activities in the area and to investigate any influence on scientific measurement activities in Ny-Ålesund and its surroundings.

If funding and resources are available, measurements will start in late June this year. Instruments will be installed and run by NILU. Routine operation and maintenance of the equipment will be performed by staff from the Norwegian Polar Institute and Kings Bay will assist with housing and infrastructure. The project is open for any participants who can contribute with relevant measurements.

Contact: [Ove.Hermansen@nilu.no](mailto:Ove.Hermansen@nilu.no)

## Monitoring of benthic micro-organisms in Kongsfjorden, Svalbard – cruise activities in 2008

Dorthe Klitgaard Kristensen, Patrycja Jernas, Nalan Koc, NP

In 2005 monitoring of benthic micro-organisms was initiated in Kongsfjorden by researchers from the Norwegian Polar Institute. This research has multifold purposes, and one aim is to record the response of benthic foraminifera to the on-going climate and oceanographic changes in Kongsfjorden. The tracing of faunal changes along with the shifts in climate and oceanography also advances our knowledge of Arctic benthic foraminiferal ecology through quantification of their response to environmental forcing. This is important for significantly improving our ability to reconstruct past long-term natural climate and oceanographic variability beyond available instrumental time series.

The study is a collaboration project between the Norwegian Polar Institute and the University of Tromsø and is mainly funded by the Norwegian Research Council through the 'Forarc' project ('Assessment of benthic foraminifera as environmental proxy in the Arctic'). Additional funding has been received from Svalbard Science Forum (Arktisstipend)

in 2008 for supporting cruise activities in spring 2008.

The field activities related to the project will in 2008 consist of two cruises to Kongsfjorden. The first cruise was with R/V Jan Mayen and took place in April (14-23.04) together with the Norwegian College of Fishery Science, University of Tromsø, that was responsible for the cruise. The purpose of the cruise was to sample bottom sediment samples using a multicorer. In total four stations were sampled along a transect from the inner part of Kongsfjorden and out into the Kongsfjordrenna. The second cruise will be in August from 18-24 with R/V Lance and led by the Norwegian Polar Institute. During this cruise an extensive grid of bottom sediment samples in Kongsfjorden, Krossfjorden and Kongsfjordrenna will be sampled together with CTD measurements.

Project group: Dorthe Klitgaard Kristensen ([dorthe.kristensen@npolar.no](mailto:dorthe.kristensen@npolar.no)), Patrycja Jernas, Nalan Koc, Norwegian Polar Institute, Tromsø.

## Aerosol measurements at Zeppelin

Ove Hermansen, NILU

Two new projects will look at aerosols at the Zeppelin observatory this year.

Kostas Eleftheriadis from N.C.S.R. Demokritos, Greece, have installed new equipment for the *Investigation of arctic aerosol properties with emphasis on the formation and mixing state of cloud condensation nuclei.*

This summer Ernest Weingarten, Paul Zieger and Rahel Schmidhauser from Paul Scherrer Institut (PSI), Switzerland will install instruments for *Measurements of aerosol optical properties with a humidity controlled nephelometer under arctic conditions.*

Both projects receives funding from ARCFAC.

## New director – Kings Bay AS

The board of Kings Bay AS have appointed Mr Jon Erik Nygaard to take over the position as managing director for Kings Bay AS in Ny-Ålesund on Svalbard when Oddvar Midtkandal retires in August-September after completing his fixed term.

Nygaard has experience from management both in the private sector and from voluntary organizations.

## Calendar of Arctic Meetings

**29<sup>th</sup> NySMAC meeting**  
4-5 November 2008 in Brest, France

For a comprehensive list of published meetings related to the Arctic, look at **Arctic Calendar of Events** on the IASC home page <http://www.iasc.se> or <http://calendar.arcus.org/>

## Staff News

### AWIPEV-Base:

Dr. Marcus Schumacher has taken over the base leadership on 24. April 2008 from Rainer Vockenroht. Rainer headed the base for two consecutive years, making him the most experienced base leader at AWIPEV.

Additional staff are Eric Larmanou and Alan Le Tressoler as engineers, as well as Max Schwanz, who conducts the diving activities during this summer season.

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