

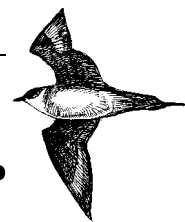
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Ny-Ålesund Newsletter



*17th edition
Jan 2006*

Winter school in atmospheric chemistry in Ny-Ålesund

We have for a long time discussed and suggested developing Ny-Ålesund as an educational platform for higher education within NySMAC and other forums. We also see to make more use of the town during the winter season. To this end we applied for support from the Norwegian Research Council to start a winter school in atmospheric chemistry at the masters' level. Our bid for funds was successful in early 2005 so we proceeded to develop the course in detail and offered it the late fall as UNIS course AGF-340. The main teaching was performed by educators from UNIS, Stockholm University, the Norwegian Polar Institute, and the Norwegian Institute of Air Research.

The course ran for the first time in November and December of 2005 and attracted 10 students from in total 8 nations. These highly motivated and clever students became a tightly knit group during the course with wonderful exchange of ideas and culture. A little more than half of the students had already begun pursuing Ph.D. educations and this also was a source of inspiration for the students that hadn't yet ventured into such an endeavor.

We used the recently released ACIA report as main course literature combined with some AMAP reports to emphasize the Arctic dimensions of atmospheric chemistry and climate change. After a two week period in the new UNIS premises in Longyearbyen we flew across to Ny-Ålesund for the field and experimental portion of the course. Some bad luck with the weather amputated a few days from the Ny-Ålesund visit but we nevertheless had a successful period of time there. All stations with activity during that week were visited: the Yellow River, Koldewey, Mt. Zeppelin, the Sverdrup, the Norwegian Mapping Authority stations and of course the Marine Lab. The students were very appreciative of the generous and warm receptions at the various stations and many of them expressed hope and desire to work in Ny-Ålesund in the future during their scientific careers. Kings Bay also contributed significantly in making the course a success.

The timing of the course was such that we also attended the Ny-Ålesund Christmas dinner; this too was a friendly and pleasant introduction to the social aspects of our village. Much enjoyed and appreciated.

The final evaluation of the course and its qualities is not yet complete but we feel it was successful. The experiences from this first round will be used to develop the concept further and we are convinced that this course will be a recurring event that can provide useful and broad education, lively exchange and network building between students from many nations and simultaneously entice new people into doing science in Ny-Ålesund. I hope to see students from all the Ny-Ålesund stations involved with atmospheric studies the next time we offer this course.

To continue on this track develop Ny-Ålesund as an educational and outreach platform during IPY is a clear goal that we all can help full filling. It is of paramount importance for stimulating future science but, furthermore, as I experienced strongly with this winters course it will be great fun for everyone involved too!

Kim Holmén

Yellow River Station

China have finished the summer field work in Yellow River Station and begun the UAP observation work over the winter. During the winter of 2005/06, 3-Wavelengths CCD All-sky Auroral Imaging Observation will be carried out and to focus on continuously monitoring the spatial and temporal developing characteristics of the three auroral wavelengths centered on 427.8 nm, 557.7 nm and 630.0 nm, and deduce the nature of the precipitating particles associated with aurorae. Additionally we will carry out auroral campaigns together with EISCAT radar, "Double Stars" and Cluster satellite observations, to provide multiple dimensional observation data mainly for cusp ionospheric signature research.

Mr. Wang Yong, the head of Science Development section of CAA was appointed as the new chief of the Yellow River Station in the future.

Award to Nick Cox

In the Queen of England's New Year's Honours list, Nicholas Ievers Cox was awarded an MBE (Ordinary Member of the Civil Division of the Order of the British Empire): for services to British polar science. Nick has worked for The British Antarctic Survey for more than 30 years. He started in 1975 as a builder/boatman, initially spending two Antarctic winters at Signy Island Research Station. In 1991, whilst Base Commander of Signy, he was asked to establish, develop and manage a new Arctic research station for the National Environment Research Council. Nick took on this job with great vigor and we now know the station that emerged as the Harland House in Ny-Ålesund.

This award is a great acknowledgement of the wit, devotion and spirit Nick has lavished on the Harland House and Ny-Ålesund. It is also an inspiration to us all in that the award represents a very strong recognition of the importance of Ny-Ålesund as a research base too. Congratulations Nick!

Kim Holmén

Presentation of measurements from NILU

NILU will present data from measurements of CFC and their replacement gases (HCFC and HFC) at Zeppelin at two workshops this winter. The first workshop is in Como, Italy in February. This is a workshop for an European network of halogenated greenhouse gases, SOGE (System for Observation of halogenated Greenhouse gases in Europe). NILU is coordinator of the EU project SOGE and participate with data from Zeppelin. The second workshop is in Hobart, Tasmania in April 2006 and is a worldwide network for the same

gases and is called AGAGE (Advanced Global Atmospheric Gases Experiment). Together with NOAA (National Oceanic and Atmospheric Administration), AGAGE is one of the most important contributors of results from measurements to the IPCC report (The Intergovernmental Panel on Climate Change (IPCC)). NILU is an associated partner in AGAGE and participate with data from Zeppelin. Responsible scientist at NILU is Chris Lunder.

Revision of land-use plan for Ny-Ålesund

Kings Bay AS has started a revision of the land-use plan for Ny-Ålesund. The existing land-use plan was approved by the Governor of Svalbard in 1998. It is now time for updates and for deciding how the settlement should be developed in the coming 10 years.

For Kings Bay AS to be able to include all the different aspects that has to be taken care of in the plan, we need input from the research community. This includes comments about activities that will make use of new land or changed use of land. In addition Kings Bay AS would like to know if there are needs for certain activities to be excluded from specific parts of the land-use planning area. Also comments about the weaknesses of the existing land-use plan will be welcomed.

Although the deadline for giving comments to the starting-up of the planning process was 12 December 2005, it is still possible to give early remarks.

Kings Bay AS hopes to be able to present a first draft of the new map for the land-use plan in the next NySMAC meeting in Potsdam, and that the new land-use plan will be subject for a debate in the meeting. It will also be possible for each institution to make their own comments to the suggested plan when the draft plan is issued for public inspections later in the spring 2006.

For further details or questions please contact adviser Aina Holst: radgiver@kingsbay.no

European Center for Arctic Environmental Research

New "Research Infrastructure" opportunity for European research and mobility in Ny-Ålesund.

The "European Center for Arctic Environmental Research", a proposal submitted to the 6th Framework Programme "Access to Research Infrastructures", is currently under contract negotiations with the European Commission. Most likely funded, it will offer access to Ny-Ålesund for new European scientists for transnational research collaboration in Ny-Ålesund. The activity is a 4 year activity expected to start

January 2006, and the program will offer up to 500 research days in Ny-Ålesund per year, representing up to 10% increase in the research activities at the site. The activity will build on previous activities of the kind (www.npolar.no/nyaa-lsf) and a web-site will be updated to reflect the new opportunities and provide more information about eligibility criteria and application rules. This new program shall stimulate the international collaboration among the existing research infrastructures and their established research groups in Ny-Ålesund, so as to offer coordinated access for new "transnational" research partners/teams from countries other than their own. It is expected to contribute significantly to the upcoming International Polar Year at the site. The activity is coordinated by the Norwegian Polar Institute. Contact person: Jon Børre Ørbæk, jonbo@npolar.no

Recent glacier volume changes on Midre Lovénbreen from mass balance and maps

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Glacier mass balance is the amount of snow and ice lost or gained on a glacier. Mass balance is measured in spring and autumn to yield winter and summer balances, and the net or annual balance is the product of the two.

The mass balance records from Austre Brøggerbreen and Midre Lovénbreen, two "local" glaciers near Ny-Ålesund, are the two longest continuous high Arctic records (since 1967 and 1968 respectively). Here we look only at Midre Lovénbreen; Brøggerbreen results are similar.

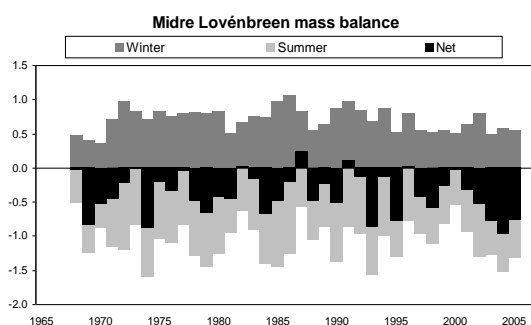


Fig. 1 Midre Lovénbreen winter, summer, and net balances.

Net balances are consistently negative since the beginning of the record (Fig. 1). That the glacier is not in balance is also evident from its continual retreat, which started already early in the 1900s.

We also measure long-term volume changes directly, by comparing glacier surface maps. We use the

following sources: digitized older topo maps (1962, 1969, 1977), a digital elevation model (DEM) constructed by NPI (1995), and a DEM from a recent NERC-sponsored (2003) airborne lidar campaign. We use the 1995 DEM as a reference, and interpolate and difference the other maps to create maps of glacier change for different epochs (Fig. 2).

Average ice loss at the tongue is currently about 0.5 m a⁻¹. Elevations in the upper part of the glacier have until recently been more or less constant, within the error limits; over the last decade, however, there has even been a decrease in the accumulation area, of about 0.5 m a⁻¹.

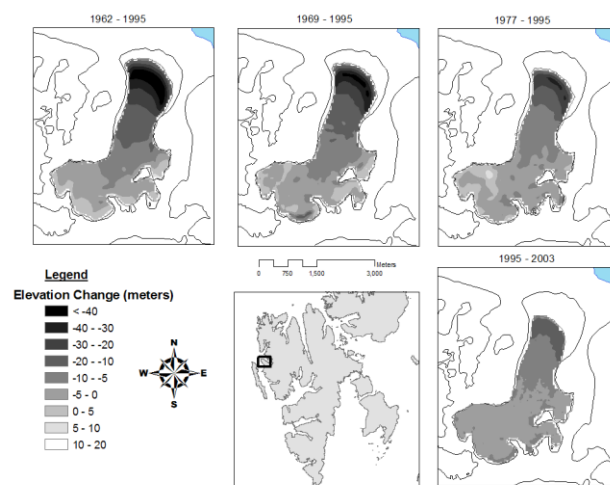


Fig. 2 Change in Midre Lovénbreen elevation, over different epochs, relative to the 1995 reference DEM.

On Svalbard, winter balance depends primarily on winter precipitation while the summer balance correlates highly with summer temperature. Winter balances are less variable than summer, but there are no statistically significant trends in any of the balances during the measuring period. The last 5 years, however, represent the longest succession of negative net balances. And from the map-derived changes, it appears that the average annual decrease in volume appears to be greatest in the last epoch (1995-2003). Both observations are consistent with the general trend of consistently higher summer temperatures in Ny-Ålesund over the past 5-10 years (Fig. 3).

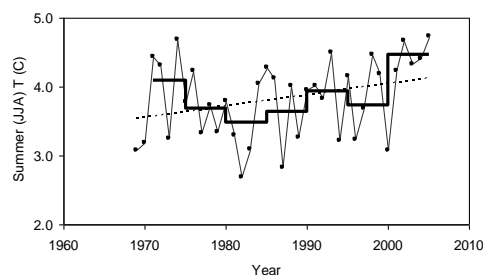


Fig. 3 Ny-Ålesund summer (JJA) temperatures, with 5-yr averages (thick line) and trend (dotted line).

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Calendar of Arctic Meetings

Arctic Science Summit Week ASSW 2006

Potsdam, Germany
22-29 March 2006.

24th NySMAC meeting

27-28 March 2006 in Potsdam, Germany

For a comprehensive list of published meetings, look at **SAM** (Survey of Arctic Meetings) on the IASC home page:
<http://www.iasc.no/>

Staff News

AWI & IPEV Joint French-German Arctic Research Platform

New engineer: **Kai Marholdt** took over from **Joann Schmidt** on 11 Sept. 2005.

An additional person will reach the AWIPEV permanent team in Ny-Ålesund. This person under contract with the French Polar Institute, will be in charge of the logistics and measurements in Ny-Ålesund and at Corbel Station.

His contract will start on the beginning of February 2006, and will be definitely located in Ny-Ålesund from April 2006 to April 2007.

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