

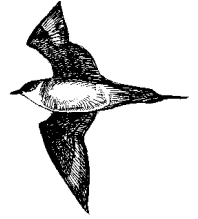
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Ny-Ålesund Newsletter



6th edition
Nov 1999

Inauguration of Sverdrupstasjonen

The official inauguration of Sverdrupstasjonen took place on 10 August. The station was handed over to Director of Norwegian Polar Institute, Professor Olav Orheim by the Minister of the Environment, Guro Fjellanger.

Invited guests attended the official inauguration which took place in the afternoon of 10 August. The presentation ceremony was followed by dinner at 'Mellageret'.

The station is named after Harald Ulrik Sverdrup, born in 1888. He was a world-famous polar explorer and professor of oceanography. From 1918-1925 he conducted the scientific work of the 'Maud'-expedition through the Northeast Passage and the New-Siberian islands. In 1931 he led the scientific work of the Wilkins-Ellsworth-expedition with 'Nautilus'. Three years later he conducted an expedition to West-Spitsbergen together with professor Hans Ahlman.

From 1936 he was director of Scripps Institution of Oceanography in California. He was appointed Director of Norwegian Polar Institute in 1948, a position he held until he passed away in 1957.

The new station is 800 m² and contains offices, laboratories, and instrument rooms in addition to meeting room and storage rooms. 1st floor is purposed for guest scientists and offers access to basic office facilities, laboratories and field equipment. Researchers wishing to use the NP facilities are requested to send a written application to the station well ahead of their arrival.

New French station in Ny-Ålesund

Gérard Jugie the director of the Institute Français Pour La Recherche et la Technologie Polaires (IFRTP) visited Svalbard with the aim to give a new impulse to French activities in Svalbard, especially in Kongsfjord area, on the north west coast of Spitsbergen. Thursday August 19. Gérard Jugie signed a contract with Kings Bay AS. The contract indicates that under the agreement a French station will be established in Ny-Ålesund as a main base for activities. The main station will be named after the famous explorer and geographer Charles Rabot. The station Rabot will house laboratories, offices and logistic facilities.

Some field activities in Kongsfjord will continue to be carried out from the present field station (commonly known as the 'French Camp', 5 km east of Ny-Ålesund) that is named after Professor Jean Corbel, who initiated the start of the French scientist activity in Kongsfjord area in 1960. There will be done some improvements at this station. IFRTP want to develop co-operative programs in Ny-Ålesund's international context.

Professor Bernard Lefauconnier will be the station manager and will join NySMAC. He is a glaciologist and has been doing research in Svalbard since 1982 including 8 years on behalf of the Norwegian Polar Institute. Lefauconnier has initiated three European projects in Svalbard, the present one "Ice mass" which is lead by Professor Jon Ove Hagen from University of Oslo is in co-operation with NPI.

The new monitoring station on Zeppelinfjellet on schedule

More than 100 helicopter lifts were needed in order to transport the large building materials almost to the top of the 554 meters high Zeppelinfjellet. Most of the materials were stored on supports fixed to the steep inclines around the building site but the 13,5 meter long steel girders were positioned directly by use of helicopter. Less spectacular -

the little sturdy Zeppelin cable car has been used as carrier for both personnel and materials.

The construction work started July 26 and the completion date is set for mid-November. The official inauguration will be in April 2000.

News

News from Kings Bay AS:

Scouts take care of cultural monuments

Two groups of scouts have spent time renovating the old protected buildings in Ny-Ålesund this summer. The first group scraped and painted both the old shop/infocentre building, the little balloon house outside the Koldewey station and the white house. The Ny-Ålesund area was also cleared of rubbish. The last group gave Trønderheimen a face-lift. Kings Bay AS offers free plane ticket, bed and meals and excellent mountaineering and tramping areas in return for their work.

Nature & Heritage Trail

A new nature and heritage trail was opened in late June this summer. It is a 1 km long trail following the roads in a circle around the city with 18 posts displaying information on Ny-Ålesund flora, fauna, geography and history. All information is translated into English and German. Now all the 10 – 15 000 cruiseship tourists that enter Ny-Ålesund every year have a definite guideline to follow when visiting the town.

An information board was constructed of timber logs to the Governor's specifications. The same type of board is in Magdalenafjorden. General information about Ny-Ålesund, our environment, waste management and the nature and heritage trail are displayed.

New bridge between Rabben and town centre

Now the traffic between the airport and town centre is secured for the winter. A new, solid bridge with high railing was opened at Sunday 26th of September

Waste management for Ny-Ålesund

A waste management plan was developed for the Ny-Ålesund community in 1995 and the aim was to recycle a minimum of 80 % of waste in Ny-Ålesund by 1998 and in 1996 as much as 65 % of the total waste was sent away to be recycled. In 1998 financing from Norwegian Pollution Authorities through the Governor of Svalbard was used for developing a waste minimisation plan and to improve information about waste management. Kings Bay AS hired Anna-Krzyszowska-Waitkus for three months and she:

- worked out a waste minimisation plan for all divisions in KB and for scientific stations
- improved handling of the waste to recycling companies on the mainland
- improved waste sorting by easily readable information
- produced a "Reduce-Reuse-Recycle" brochure on how to behave in a waste minimisation aspect
- held a waste management seminar for everybody

In 1999 this was followed up with seminars, improvement of some routines and new informative poster.

The largest category of waste that is produced in Ny-Ålesund today is the food waste. Kings Bay therefore bought a dry-composting unit from Green Mountain Technologies in USA.

In Ny-Ålesund today there are recycling stations in all buildings where people live, work or eat. And the new mess will also accommodate the recycling/waste handling centre. All divisions in Kings Bay and scientific stations have

especially adapted rules concerning waste management.

The composting is still a pilot project, but the aim is to compost all food waste. In 1998 the food waste was about 42 % and sorted waste sent away 42 %, which means that 16 % will be left over for dumping on the landfill if composting all food waste. This is according to the waste management plan of 1995, but Kings Bay is aiming at a zero production of rubbish in Ny-Ålesund.

Special wastes can become a source of hazardous waste if they are not stored and treated properly. Special wastes are sent away from Ny-Ålesund with the majority of these wastes consisting of used oil, water contaminated with oil, and chemicals. Waste minimisation plan for the special wastes includes the installation of electronic device for checking the fuel level in oil tanks. In the future there is a need to install a leak detection device controlling leaks in pipelines carrying fuel oil.

Waste management at Ny-Ålesund can be a model for polar communities around the world. The specific location of Ny-Ålesund creates a unique opportunity to control all delivered materials and generated wastes. Waste management rules will reach everyone before coming to the settlement.

Visitor statistics

The visitor statistics for Ny-Ålesund show that the total number of overnight stays in the period of January-September has increased from 18,732 in 1998 to 20,923 in 1999. In 1997 52 % of the overnights stays were related to science, in 1998 46 % and in 1999 41 %.

The total number of planes and helicopters has decreased from 250 in 1998 to 240 in 1999 while the number of passengers has increased from 3,363 to 3,458.

The total number of boats calling in Ny-Ålesund has increased from 106 in 1998 to 121 in 1999 while the total number of passengers has decreased from 14,338 to 9,665.

New blockhouse for SvalRak.

In order to make the launch operations smoother Andøya Rocket Range has build a new Blockhouse. The building is joint to the main assembly hall and has a floor space of 31m². The blockhouse is a concrete building, built in accordance with DBE's directives.

REMINDER

The 5th Ny-Ålesund Scientific Seminar will be hosted by the NIPR in Tokyo during 23-25 February 2000, jointly organized by NIPR, NySMAC and Ny-Ålesund LSF. The conference will be multidisciplinary covering Environmental Research in the Arctic. All research communities of Ny-Ålesund are encouraged to participate, with registration/abstract deadline 15 December 1999.

The Ny-Ålesund LSF secretariat wish to remind all former users of the Ny-Ålesund LSF about the possibility to apply for travel grants to the conference.

Scientific divers of AWI-Marine Botany Group investigate UV-protection of Macroalgae in the Kongsfjord

Between June and September 1999 investigations were carried out by the marine botany group of the AWI on the effects of UV radiation on marine macroalgae from the Kongsfjord. Photoinhibition of photosynthesis and growth as well as the formation on sunscreen substances (e. g. mycosporine-like amino acids) and of antioxidants were studied. Algae from different water depths have been transplanted by divers from deeper to shallow waters with a different light climate. Additionally, the algae were exposed to various radiation scenarios by use of UV-screening (cut-off) filters and their physiological reactions tested. The results show in some species a remarkable acclimation potential to UV radiation, whereas other species could not cope with the UV-stress at all. The studies will be continued in the following years in order to predict changes in the Kongsfjord ecosystem under increased UVB radiation due to stratospheric ozone depletion.

International Research Programs

NICE (The **N**itrogen **C**ycle and **E**ffects on the oxidation of atmospheric trace species at high latitudes) has received the GO from the European Commission in the 5th Framework Program. The project will be co-ordinated by CNR-IIA, the consortium includes NILU (Norway), U. Essex (U.K.), NCRS Demokritos (Greece), and FMI (Finland). The abstract below informs on the scope of the program. Fieldwork will be carried out during the spring of 2001 for ca. 3 months at the new Zeppelin station.

NICE Abstract: Very recent findings of NO_x production in snow interstitial air suggest that photochemical production of NO_x in or above snow surfaces is sufficient to alter the composition of the overlying atmosphere. The mechanism of this NO_x release is largely unknown; Nitrates in aerosols in or above snow surfaces are reduced in a surface phase to nitrite and subsequently photolyzed to produce NO_x. This work will identify the reactive medium and species through measurements of chemical and physical properties of aerosols in clean background air. The re-activation of nitrates effectively increases the lifetimes of active Nitrogen species. The production of ozone per molecule of NO_x emitted may increase several-fold. Both will be quantified. This process is of central importance for Europe, as > 50% of the land surface north of 20°N is snow covered during winter. Additionally, it is likely that similar processes also occur in the upper troposphere, upon cirrus ice particles. We will contribute with two experiment to the large international effort **PSE 2000** (Polar Sunrise Experiment) during the winter/spring of 2000 at Alert, Nunavut, Canada. Measurements of NO_x, NO_y, and J(NO₂) will be performed in collaboration with Michigan Tech. University, USA, and HONO and other atmospheric trace species will be measured together with AES in Toronto, Canada. The goal of this effort is to clarify the role of halogen and nitrogen chemistry on boundary layer ozone depletion in northern latitudes. For both projects international collaborations are essential.

We would therefore like to invite through NySMAC all interested parties to contribute to the NICE program. For more information please contact Harry@mlib.cnr.it

5th Framework Programme of EU

Norwegian Polar Institute has received positive evaluation on 2 new proposals for the Human Potential Programme under the 5th Framework Programme of the European Union; ARCFAC III ("Large Scale Environmental Research and Monitoring Facilities in the European Arctic") and ENVINET (European Network for Arctic-Alpine Multidisciplinary Environmental Research). The Ny-Ålesund International Research and Monitoring Facility and the permanent research stations there are central in both activities. If the contract negotiations are successful, both proposals are likely to receive funding for the 3 year period 2000-2002.

ARCFAC III is a continuation of the Ny-Ålesund Large Scale Facility programme which has run 4 years now. About 120 individual researchers and 70 – 80 research projects have received grants from the program since 1996. The main aim of the programme is to increase the European collaboration and use of the advanced research facilities in Ny-Ålesund through financing from the European Commission. The program gives the partner institutions new possibilities for international collaboration and complementary activities at their research stations, and the guest researchers receive, if their projects are accepted by the evaluation panel, reimbursement of their travel and subsistence costs. The Ny-Ålesund LSF is run as a consortium between NP, NILU, NMA, AWI, NERC and Kings Bay in Ny-Ålesund, and will, if the new contract under the 5th Framework Programme is signed, offer access to another 70 – 80 research scientists in about 40 – 50 new research projects. New interested scientists should visit the LSF web site at <http://www.npolar.no/nyaa-lsf> for more info about calls for proposals, how to apply etc..

ENVINET is a thematic network between 15-20 large European research infrastructures and international organizations and networks from the Arctic to the Alps. The main aim of the network is to establish a forum for increased co-operation and networking between operators and users of research infrastructures in the field of environmental sciences, with special emphasis on multidisciplinary sciences involving marine and terrestrial biology, atmospheric chemistry and physics. The network will also seek to enhance the use of the research infrastructures and to improve the access and services provided for the scientific user community.

More information about both activities can be received from **Dr. Jon Børre Ørbæk, NP**

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Ny-Ålesund Diary

April 2000

Inauguration of the monitoring station on Zeppelinfjellet.

Calendar of Arctic Meetings

February 2000

2nd international symposium on environmental research in the Arctic and 5th Ny-Ålesund scientific seminar will be held jointly at the National Institute of Polar Research, Tokyo, Japan 23-25 February 2000.

April 2000

Ny-Ålesund LSF Workshop

For a comprehensive list of published meetings, look at Survey of Arctic Meetings:

<http://www.iasc.no/sam.htm>

Staff News

Alfred Wegener Institute (AWI):

Christian Wille substituted station engineer *Nicole Spelten* on 30 August.

Norwegian Polar Institute (NP):

Arne Roy Solås replaced logistic technician *Geir Arne Nestun* on 5 August and *Ole E. Jensen* replaced operational engineer *Einar Darre Kaarbø* on 16 August. *Geir Aasebøstøl* is engaged as station manager from November replacing *Tor Ivan Karlsen* who has entered a permanent position at NP in Tromsø

Norwegian Space Centre (NSC):

Kjell Bøen, head of operational services Andøya Rocket Range has taken over as NSC's representative in NySMAC after *Ivar K. Nyheim*.

New members in NySMAC:

University of Tromsø (UoT)

Bjørn Solheim

Institut Français pour la Recherche et la Technologie (IFRTP)

Bernard Lefauconnier

Publications

Winther, J.-G., Gerland, S., Ørbæk, J.B., Ivanov, B., Blanco, A. & Boike, J. (1999): Spectral reflectance of melting snow in a high Arctic watershed on Svalbard: Some implications for optical satellite remote sensing studies; Hydrological Processes 13 (12), 2033-2049.

Gerland, S., Winther, J.-G., Ørbæk, J.B., Liston, G.E., Øritsland, N.A., Blanco, A., & Ivanov, B. (1999): Physical and optical properties of snow covering Arctic tundra on Svalbard; Hydrological Processes 13 (14/15), 2331-2343.

Research in Svalbard 1999

A yearly information. Available from Svalbard Science Forum and on <http://www.npolar.no/ris/>

Ny-Ålesund - International Research at 79°N

3rd revised edition. By the Norwegian Polar Institute in co-operation with Kings Bay AS.

The Ny-Ålesund Safety Guide

By Nick Cox, NERC (2nd edition 1998)
An introduction to safety in Ny-Ålesund and its surroundings. The guide is obtainable in Ny-Ålesund from Kings Bay AS and Sverdrupstasjonen.

NySMAC Internet Homepage:

<http://www.lby.npolar.no/nysmac/>
As well as a general introduction to Ny-Ålesund and to the work of NySMAC, this site contains the complete contents of the *Ny-Ålesund Newsletter* and links to the home-pages of the NySMAC member institutions.

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