



NEWSLETTER

NO 14. April 2010

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A drained thermokarst lake in the Nymto Regional Park, Russia, where an experimental site of a new member of SCANNET is located.

SCANNET

www.scannet.nu

Editorial

It is with great pleasure that I write this editorial to the current SCANNET Newsletter: much has happened since the last Newsletter and the future for SCANNET has become very optimistic.

Firstly, new sites and a new network have joined SCANNET making SCANNET now truly Circumpolar. The sites are Kluane Lake Research Station in Canada, Mukrino Field Station and Nymto Regional Park in Russia and the network is the impressive Centre for Northern Studies (CEN) in Canada with its 8 sites. We warmly welcome all of you to SCANNET and look forward to close cooperation and friendship in the future (please see the descriptions of these sites and the CEN later in this Newsletter).

Secondly, we submitted a proposal to the EU 7th framework call “INFRA-2010-1.1.19: Research Infrastructures for Polar Research”. The application was based initially on ideas from a small core group (the SCANNET Secretariat, Morten Rasch from Zackenberg and Kari Laine from Oulu) and a subsequent meeting of many members of SCANNET. The resulting application included requests for funding (a little over 10 million Euros) for coordination, networking activities, a Station Managers’ Forum, transnational access, joint research activities to develop and extend our monitoring activities, and outreach. We were favourably evaluated and have started negotiations with our project officer in Brussels. We hope to have available 7.3 million Euros over a four year period and have a provisional starting date of the 1st of October this year. Although this is an EU proposal, some funding will be available for our Russian colleagues and for limited participation by our colleagues in Canada and the US. We were delighted to receive many letters of support from eminent international organisations and even an Ambassador. The negotiations are progressing and the original proposal (which can be found on the SCANNET web site) is being currently refined in line with EU recommendations. Please note that the proposal is called INTERACT and we realise there will be some confusion between SCANNET and INTERACT. However, we view SCANNET as a network without time limit whereas INTERACT is a 4 year project that comes under the auspices of SCANNET.

While SCANNET has been developing, SAON (the Sustaining Arctic Observing Network), an Arctic Council initiative, has also been developing with a recent meeting in Miami. It is clear that SCANNET is regarded as an important network and a building block for Arctic terrestrial and freshwater sciences within SAON. Further, SCANNET and CBMP (The Circumpolar Biodiversity Monitoring Program) have been approached as candidates for initial approval by SAON.

I hope you will all agree with me that SCANNET’s future is very bright and I would like to thank all of you that have contributed to our proposal or joined SCANNET for transforming a group of friends with common interests, but no funding, into a highly visible and active network.

Terry Callaghan
Co-ordinator SCANNET

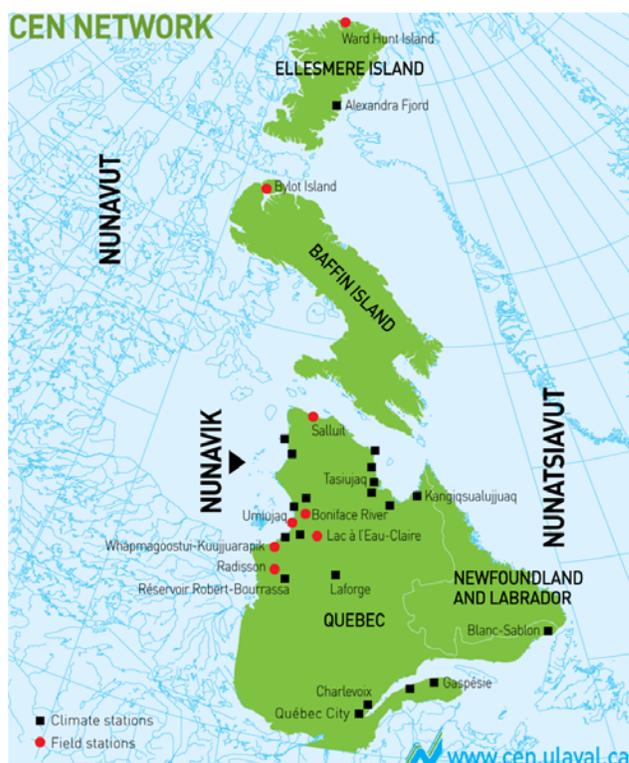
Activities

SCANNET is now truly circum-arctic

In October 2009, SCANNET signed two new Memoranda of Understanding, one between the SCANNET Secretariat and The Centre for Northern Studies (CEN), Université Laval that runs 8 sites in Canadian Arctic and a second between the Secretariat and the University of Alberta that runs the Kluane Lake Research Station in northwest Canada. In November, the Secretariat also signed a new MoU with Mukrino Field Station and Nymto Regional Park in Russia. We welcome all the new members to SCANNET and below you can find short descriptions of the new SCANNET sites.

CEN Network

The Centre for Northern Studies (CEN: Centre d'études nordiques) is an interuniversity, multidisciplinary centre of excellence for research on northern environments, with emphasis on continental geosystems and ecosystems including lakes, rivers and wetlands. Its secretariat is based at Laval University in Québec City, Canada (www.cen.ulaval.ca). CEN's mission is to contribute to the sustainable development of northern regions by way of an improved understanding of environmental change. Environmental monitoring in Canada's Eastern sub-Arctic, Arctic and High Arctic regions is accomplished through the CEN Network – over 75 climate stations and eight field stations distributed across a 4000 km North-South gradient. The eight field stations are situated at the following sites: Radisson, Whapmagoostui-Kuujuarapik, Umiujaq, Lac à l'Eau Claire, Boniface River, Salluit, and Bylot and Ward Hunt Islands, which are part of two National Parks in Nunavut. The main field station at the heart of the CEN Network is on Hudson Bay at Whapmagoostui-Kuujuarapik, and is soon to include a Community Science Centre for summer schools and outreach.



Note that the Alexandra Fjord observation site is operated by the University of British Columbia: <http://www.geog.ubc.ca/itex/>.

Radisson Ecological Research Station

The Radisson Ecological Research Station is located within the municipality of Radisson and provides lodging in three houses that are operated by the CEN researchers from Université Laval, INRS-ETE and Université du Québec à Rimouski. This facility comprises one garage, one laboratory and three residences. It can be used by about 20 researchers to work in the James Bay region and near the main hydroelectric reservoirs. Several climate stations of CEN Network operate year-round in the area. On site, there is a dry and a wet lab. The station is accessible by road and by scheduled commercial air service. Trucks, snowmobiles, and ATVs can be rented in Radisson. Helicopter services can be purchased from local outfitters.

Current research activities focus on forest dynamics at the limit between boreal and subarctic environments in relation to natural disturbances and climate change; ecology of boreal conifers; influence of large northern water bodies and variations in water levels; tree ring analysis of past hydro-climatological variations; recent dynamics of peatlands and impacts of climate change.



For further information, please contact: Yves Bégin, director of Centre Eau, Terre et Environnement, Institut national de la recherche scientifique (INRS); Email: yves.begin@ete.inrs.ca or Dominique Arseneault, professor in the Department of Biology, Université du Québec à Rimouski; Email: dominique_arseneault@uqar.qc.ca

Whapmagoostui-Kuujuarapik Research Station

Whapmagoostui-Kuujuarapik is located at the terrestrial boundary between the taiga and the tundra and at the maritime limit of James Bay and Hudson Bay. The community is built on a sandy headland, at the mouth of the Great Whale River, on the east coast of Hudson Bay. The Whapmagoostui-Kuujuarapik Research Station has been a hub for CEN research in the North since 1968. The present station was built in the early 1980s and is the main CEN research facility for studies on geosystems and ecosystems in northern Quebec. It is operated throughout the year with a fulltime station manager. The station consists of 7 buildings renovated in 2007, 2009 and 2010 which can accommodate up to 25 people throughout the year. In 2010, the CEN

Community Science Centre will be built to serve needs of the circumpolar science and local community for research planning, coordination, information exchange, summer schools and outreach activities. This facility will also include a display area open to schools. Research installations comprise a dry and a wet lab, an experimental greenhouse, a growing tunnel, and a climatological station operated by the CEN SILA Network. Leisure areas include bedrooms, lounge, and a cafeteria. The cafeteria can accommodate up to 40 people. In summertime, a cook prepares meals for lunch and dinner.

The facility is accessible by air and boat (summer only) through commercial services. CEN can also make arrangements for aircraft rentals. CEN offers logistical support to researchers working on site and in the area in a radius of about 350 km. Research teams establish temporary camps in summer and winter. Snowmobiles, ATVs and boats (rowboat and zodiac) are available for rent at the station. 4X4 trucks are available for rent in the community. Helicopter services can be purchased from regional providers.

Current projects focus on biodiversity and dynamics of northern aquatic ecosystems; impacts of melting permafrost in the context of global warming; wetlands paleoecology; restoration of vegetation in degraded sites; research on mercury dynamics (air, precipitation, snow). CEN's research station and services are available to researchers from all sectors (university, collegiate, government, and private). CEN welcomes students from high school, college, or university levels, conducting northern internships.



For further information, please contact: Claude Tremblay, station manager; email: claudetremblay@cen.ulaval.ca or Christine Barnard, CEN science coordinator; email: christine.barnard@cen.ulaval.ca

Umiujaq Research Station

The Umiujaq facility consists of climate stations which are part of the CEN Network, and permafrost monitoring sites. No accommodation is available yet (room rentals in village), but a 3-room house will be built in 2010 behind the existing laboratory. An Inuk manager is available year-round, part-time in winter and full-time in summer. On site there is a laboratory and two containers for storage operated by the CEN in partnership with the Nunavik Research Centre (Makivik Corporation) and the community. The station is accessible by commercial air services and daily flights are available from Whapmagoostui-Kuujjuarapik. 4x4 trucks, snowmobiles, and ATVs are available for rent in the community, but prior arrangements must be made. Helicopter services can be purchased from local operators.

Current research focuses on biodiversity and dynamics of northern aquatic ecosystems; impacts of melting permafrost in the context of global warming; wetlands paleoecology; research on mercury dynamics (air, precipitation, snow); snow and ice dynamics.



For further information, please contact: Claude Tremblay, station manager, email: claudetremblay@cen.ulaval.ca or Christine Barnard, CEN science coordinator, email: christine.barnard@cen.ulaval.ca

Clearwater Lake Station

This station is situated on the shores of Clearwater Lake (Lac à l'Eau Claire), Nunavik. It is the property of the Kativik Regional Government (KRG) and operated by CEN. This field camp is located within the future provincial park of Tursujuq. It has 3 permanent buildings including sleeping quarters, kitchen and storage spaces. This field camp can accommodate about 15 persons. A climatological station of the CEN Network is located on an island and operates year-round.

Access to the station is possible via chartered flights only. This is a remote site and a high degree of self-sufficiency is expected as the nearest community is Umiujaq (130 km). Motorized boats

are available on site, but helicopter services can be purchased from local outfitters. The KRG must be contacted to inform them of planned activities.

About 30 years of research by the CEN and the KRG has been conducted at this site. The main research topics are: ecological dynamics of shoreline vegetation; influence of large subarctic lakes and changes in water levels; climate change impacts on subarctic lakes; archaeology.



For further information, please contact: Josée Brunelle, park section Kativik Regional Government (KRG); Email: jbrunelle@krg.ca or Christine Barnard, CEN science coordinator; email: christine.barnard@cen.ulaval.ca

Boniface River Field Station

This field camp is located on the shores of Boniface River, Nunavik, Quebec and operated by the CEN. It is located within the forest-tundra less than 10 km from the tree limit and some 30 km from Hudson Bay. It comprises three insulated buildings (one with a shower) that serve primarily as laboratories and a kitchen. Dormitory tents and sleeping bags are provided by CEN. Typically, between 5 and 20 people are present during the summer season. Climatological stations of CEN Network operate year-round on the site. This is a remote site and a high degree of self-sufficiency is expected. Access is by air charter (300 m long airstrip situated on the opposite shore from camp). Access to the different research sites is primarily by helicopter (provided by local outfitters) or by navigating the Boniface River, accessible for some 20 km. Motorized boats (including 2 zodiacs) are available on site.

Meteorological stations have been recording the prevailing conditions at the treeline since 1988, including the thermal contrast (air and soil) between tundra and forest environments. In addition, tree growth has been measured with the aid of a dozen electronic dendrometers since the summer of 2005. Ongoing projects study recent and Holocene dynamics of forest ecosystems at their northern limit of distribution, impacts of natural disturbances and climate change on natural ecosystems at the treeline.



For more information see the station webpage:

www.chairenordiquecrsng.ulaval.ca/chaire_en/page.php?68 and contact Claude Tremblay, station manager, email: claudetremblay@cen.ulaval.ca or Serge Payette, professor, email: serge.payette@bio.ulaval.ca.

Salluit Research Station

The station will be located within the municipality of Salluit, Nunavik and will be built during summer 2010. The station will be a Permafrost Community Research Training Centre for community involvement linked to permafrost monitoring, a data archive and relay centre, as well as a meeting place for the coordination of village relocation studies in relation to changes in permafrost. This station is operated by the CEN and will accommodate 3 to 4 researchers year-round. Climate stations of the CEN Network operate year-round on the site.

This strategically important site lies near the entrance to Hudson Strait and is a major observatory site for CEN permafrost studies, in partnership with the municipality and other agencies. Studies at this site aim to assess the potential effects of climate change in the continuous permafrost zone. Automated thermistor cables are in place as well as 7 climate stations, with a CEN storage facility for ATVs. Built on sensitive permafrost, the infrastructure of the village is also being monitored by CEN researchers in collaboration with the community, the Kativik Regional Government and higher levels of government. Over the past 6 years, permafrost, archaeological and social science research has been undertaken by CEN members who also use the climate data in conjunction with local human knowledge. Given its location, this site offers considerable potential for marine studies. Access is possible via commercial airlines. 4x4 trucks, snowmobiles, and ATVs are available for rent in the community, but prior arrangements must be made. Helicopter services can be purchased from local outfitters.



For more information contact Dr. Michel Allard, professor, CEN and Université Laval; Email: michel.allard@cen.ulaval.ca

Bylot Island Field Station

The Bylot Island Field Station is located in Sirmilik National Park, Nunavut. The facilities can accommodate up to 15 people on a regular basis. One Weatherhaven shelter and one insulated laboratory are on site year round. The Weatherhaven serves as a kitchen. Both are heated and have a limited power supply (generator and solar panels). During the operating season (summer), additional tents are used for sleeping, there is an outside shower, a drinking water supply, and camping equipment (cooking and camping gear, tools) are available as well as dry & propane toilets, radio & satellite phone communication (including low-speed e-mail), bear deterrent & protection devices (electric bear fence surrounding the station), first aid kits, & storage facilities. Some scientific equipment is also available. Several climate stations of the CEN Network operate year-round on site.

The station is accessible via scheduled flights to Pond Inlet and then by helicopter (landing area 50 m from camp), Twin Otter on skis (until approx. 31 May; landing on lake 50 m from camp) or wheels (June to August; landing strip 5 km from camp) and by snowmobile on sea ice from Pond Inlet (until approx. 20 June; approx. 8 hours one-way). For helicopter time and snowmobile use, contact PCSP (Polar Continental Shelf Project): <http://polar.nrcan.gc.ca/>. This site is remote and a high degree of self-sufficiency is expected. The site is located within Sirmilik National Park; hence, all persons going to the site must first report to the Parks Canada office in Pond Inlet. It is also recommended to meet with the wildlife officer and Hunters and Trappers Organization representatives from Pond Inlet before going to the field.

The current ecological studies on Bylot Island started in 1988 as a joint collaboration between CEN and the Canadian Wildlife Service. Over the years, the Bylot Island research project has grown into one of the largest and longest ecological studies in Nunavut. Current projects include trophic dynamics in the arctic tundra in relation to environmental changes; Greater Snow Goose

ecology; long-term monitoring of animal populations, vegetation and climate in the arctic tundra; impacts of bird populations and climate change on lake ecosystems; geomorphology of ice wedge polygons.

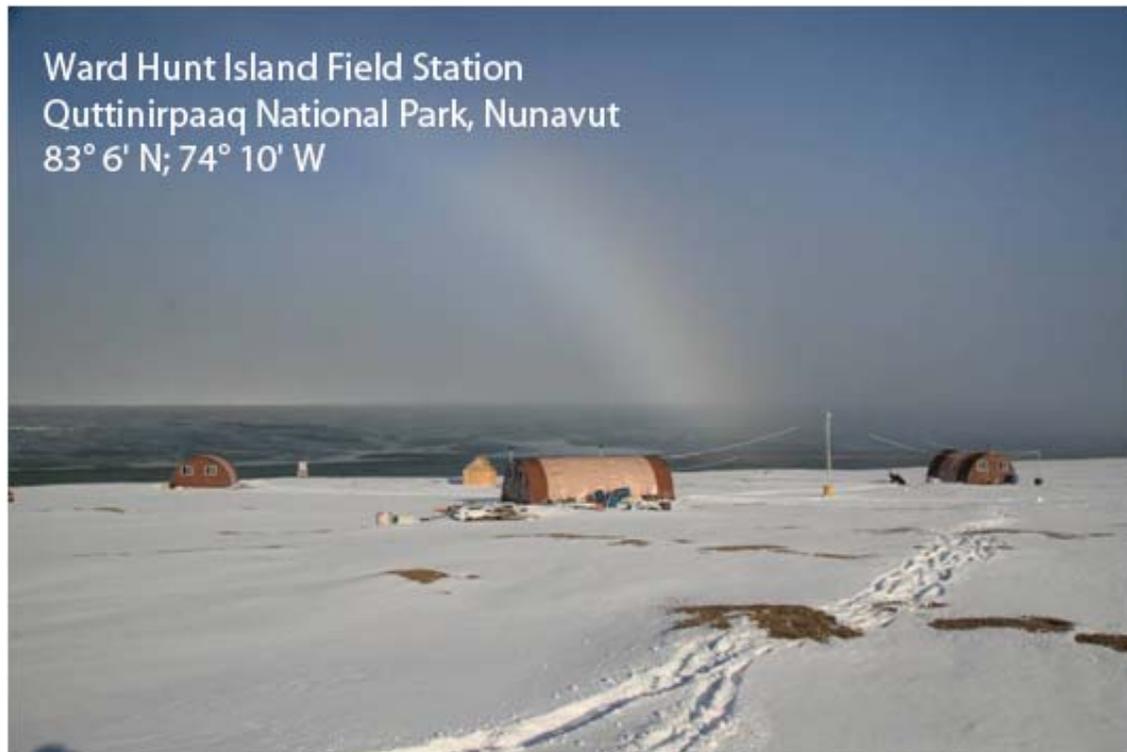


For more information, contact: Dr. Gilles Gauthier, professor, Department of Biology & CEN, Université Laval; Email: gilles.gauthier@bio.ulaval.ca and Dr. Dominique Berteaux, professor, Department of Biology & CEN, Université du Québec à Rimouski; Email: dominique_berteaux@uqar.qc.ca. Other Information: <http://www.cen.ulaval.ca/bylot/>

Ward Hunt Island Field Station

Ward Hunt Island Field Station is located in Quttinirpaaq National Park, Nunavut. Parks Canada has 3 Weatherhaven shelters with oil burner furnaces, each can sleep 12 people. CEN operates two climatological stations of the CEN Network year-round. A laboratory (insulated fiberglass building) is planned for 2010. Access is via chartered Twin Otter and helicopter and northern air carriers, contact PCSP (Polar Continental Shelf Project: <http://polar.nrcan.gc.ca/>). Helicopter time and snowmobiles can be obtained through PCSP. No ATV can be used at the site. This is a remote site and a high degree of self-sufficiency is expected. The site is located within Quttinirpaaq National Park and hence, all persons going to the site must first contact Parks Canada.

Current ongoing projects include research on the structure and functioning of lake and river ecosystems at high latitudes; dynamics of northern ice shelves; cyanobacteria ecology; impacts of UV radiation and climate change on aquatic ecosystems.



For more information on Parks Canada logistics contact: Ross Glenfield, Park Manager; Phone: +1-867- 975-4673 or 975-4643; Email: Ross.Glenfield@pc.gc.ca and for other research, contact: Dr. Warwick Vincent, professor, Department of Biology, Université Laval; Email: warwick.vincent@bio.ulaval.ca. Other Information: www.cen.ulaval.ca/warwickvincent/.

Christine Bernard
The Centre for Northern Studies

Kluane Lake Research Station

The Kluane Lake Research Station (KLRS) is located in the Yukon Territory, at the southern tip of Kluane Lake, approximately 250 km from Whitehorse. The Station is situated at the convergence of major climatic systems and in close proximity to Canada's highest mountains -the St. Elias -and ice fields. The environmental gradient available for research from the station is unparalleled in Canada. The extreme elevation difference (>5000 m) between Kluane Lake and the crest of the St. Elias Mountains establishes a strong environmental gradient and creates exceptionally diverse research opportunities within a small geographical area. Since 1961, KLRS has hosted several generations of academic and government scientists and their students in a wide variety of fields of inquiry, ranging from glaciology, geomorphology, geology, ecology, botany, zoology, hydrology, limnology, climatology, high-altitude physiology, anthropology and archaeology.

The Station is open from May to October. It can also be opened during the winter for smaller groups if there is a need. KLRS occupies 60 ha of land, adjacent to a gravel airstrip, leased from the Yukon Government. A privately operated on-site fixed-wing STOL charter aircraft equipped with ski wheels, GPS, and antenna mounts for wildlife survey is available. Other services

provided include emergency services (evacuation and rescue), expediting, equipment and specimen storage, tools, mail, and radio telephone. In addition to on-site air support, a charter helicopter operates from Haines Junction 60 km (0.4 hr flying time) to the south. In the past several years, annual use has remained fairly constant at around 4000 user days. In 2009, KLRS received \$3.393 million from the Arctic Research Infrastructure Fund to upgrade all facilities.

The station is available to all researchers regardless of institutional affiliation or nationality. Neither the Arctic Institute of North America (AINA) nor the KLRS Users Committee sets research priorities or screens research projects, although safety and ethical concerns may be addressed by the station manager. Research permitting follows standard federal and territorial requirements. The Station is characterized by long-term research programs and is in the process of attracting a new cohort of researchers at the beginning of their careers.

Research projects based at KLRS have resulted in more than 1000 publications, many of which are described in the Kluane Lake Research Station Bibliography:

<http://www.aina.ucalgary.ca/scripts/minisa.dll/144/klrs?DIRECTSEARCH>



The Mess Hall at the Kluane Lake Research Station.

More information about KLRS can be found at:

http://www.arctic.ucalgary.ca/index.php?page=kluane_station

*David Hik
University of Alberta*

Mukrino Field Station and Nymto Regional Park

The International Field Station, opened in 2009, is located in the Middle taiga vegetation-climatic zone of West Siberia (60.9 N, 68.7 E). The site is unique, specially designed and is located in pristine peatlands. Because of the severe continental climate the environmental conditions in the region are comparable with the Sub-Arctic zone of Northern Europe. Mean annual air temperature is -1.3°C and the mean monthly temperature of July is 18.0°C . The long term mean annual total precipitation is 0.55 m of which 30% falls as snow, giving a snow cover of 0.5 – 0.7 m. The pristine carbon accumulating peatland ecosystems (“mires”) cover about 60% of the land surface of this zone.

The Mukrino Field Station is located at the (primary) forested eastern margin of a very large, pristine (bog) mire complex and is therefore highly representative for mire ecosystems as sources/sinks of greenhouse gases and aerosols. During the less frequent periods with eastern and northeasterly winds the exchange effects between the surface of very large river floodplains of the rivers Ob and Irtysh (20-40 km wide) and the lower atmosphere can be determined above the forest canopy by tower measurements. The mire complex is a net sink of atmospheric CO_2 , as the mire-ecosystems actively accumulate organic carbon (peat). However, both areas are sources of methane because of anoxic decomposition of the peat and of organic matter in the floodplain sediments source.

The International Mukrino Field Station is situated 26 km west from the town of Khanty-Mansiysk, which was built on the East bank of the Irtysh River, not far from the confluence with the Ob River (in area size 4th river system of the world). The MFS is accessible from Khanty-Mansiysk by road (first 20 km) and further on by boat (in spring and early summer only), by foot (7 km: late summer) or snowmobile. Khanty-Mansiysk has an international airport with daily connections to Moscow and frequent connections to Germany, as well as to Ekaterinburg, Novosibirsk and other towns in W-Siberia.

The facilities of the Field Station include a 2-floor wooden building in a primary mixed forest, with study/laboratory rooms, simply equipped dining/kitchen room, beds for 14 persons and a (Russian) sauna. The energy for both the accommodation and the field equipment (see below) is supplied by a wind-generator and solar cells (5 kW). A fuel generator is available for use in the building as a back-up.

The experimental field site is equipped with a 1 km long board walk, which crosses the main mire ecosystem types and facilitates research without disturbing the ecosystems. For an overview of the field site see: <http://photosynth.net/view.aspx?cid=a8f38dca-6155-42b5-8f12-3c476dd18be2>

The main mire types of the site are raised bogs units of the type “Pine-dwarf shrubs-bogs” (in Russian: ryam) with pine trees (*Ledum palustre*, *Chamaedaphne calyculata*) and other dwarf shrubs, and *Sphagnum fuscum*, alternated with mire units of the type “poor fens” (with *Carex rostrata*, *Menyanthes trifoliata* and cotton-grass species, and *Sphagnum fallax*, *S. jensenii* and other *Sphagnum* species). Beside large raised bogs and poor fens, ridge-hollow complexes are present. These consists of bog ridges and water logged hollows with *Carex limosa*, *Scheuchzeria palustre*, *Sphagnum balticum*, *S. jensenii* and *S. papillosum*. Part of the poor fens are flooded in the summer season and the rest has water tables of -0.05 to 0.2 m below the moss surface. The water table under the raised bogs is 0.4 to 0.8 m below the moss surface. Peat depth is 3 to 4.5 m. Permafrost is absent in the area. The field site is equipped with automated hydrological devices for continuous monitoring of water levels and water discharge. Also, GHG fluxes between vegetation/soil and atmosphere are measured by 9 half automatic chambers (1 m^2).



Mukhrino Field Station

The Yugra State University possesses a general field station near the village of Shapsha, 25 km East of the city of Khanty-Mansiysk. This Shapsha Station provides accommodation for researchers, students, lecture rooms and a laboratory. The Shapsha Station is the permanent base for research at various research sites scattered over the taiga and tundra zones of West Siberia. The Field research site “Mukhrino Field Station” is the main site for bog research.

An additional experimental site has been operated in the northern Tundra zone in the Nymto Regional Park (63.7°N, 70.9E; see front page of this Newsletter). There the raised bogs are replaced by flat palsas which have permafrost. Between the palsas, unfrozen fens are present. This additional site is very suitable for comparing frozen and unfrozen peatlands, while studying the effects of (future) thawing of permafrost. The “Nymto Park Station” has a basic field accommodation which can be reached by helicopter only.

The main topics of current scientific work are: environmental conditions, biodiversity, carbon and water cycling of peat ecosystems in Western Siberia. The Mukhrino Field Station and the Nymto Park Station welcome foreign and national guests for collaborating in research and for educational purposes.

More information is available from Prof dr Elena D. Lapshina E_Lapshina@ugrasu.ru (for contact in Russian or German) and Prof dr Wladimir Bleuten W.Bleuten@geo.uu.nl (for contact in English, French or Dutch). Post address: UNESCO Chair of Environmental Dynamics and Climate Change, Yugra State University, 16 Chekhova ul., 628012 Khanty-Mansiysk, Russia.

Wladimir Bleuten
Elena Lapshina

SCANNET participated in the SAON Workshop, Miami 18-19 March 2010



SAON (the Sustaining Arctic Observing Network) held a Workshop in Miami on the 18-19 of March 2010. This workshop had the overall objective of seeking the inputs from the funding agencies on feasible mechanisms for harmonizing actions involving priority-setting, decision-making, and implementation regarding long-term observing activities in the Arctic. SCANNET was invited to give a presentation. SCANNET is regarded as an important network and a potential building block for Arctic terrestrial and freshwater sciences within SAON. More information on the SAON process can be obtained from www.arcticobserving.org

SCANNET Meeting in Lund

SCANNET arranged a meeting on the 1-2 of October 2009 that brought together 14 people representing 9 research stations. The main aim of the meeting was to plan and start to write the EU proposal (see editorial below).

SCANNET Application to EU

SCANNET sent in an application to EUs 7th Framework call: INFRA-2010-1.1.19: Research Infrastructures for Polar Research. The project is called INTERACT and the proposal can be downloaded from SCANNET web site. The application included funding for coordination, networking activities (such as a Station Managers' Forum), transnational access, joint research activities and outreach.



The INTERACT application was favourably evaluated and negotiations with Brussels have now started. The project will run over four years and the tentative starting date is the 1st of October 2010. Although this is an EU proposal, some funding will be available for the Russian SCANNET sites and for limited participation by the SCANNET sites in Canada and the US.

Forum

No items for the Forum have been received for this issue.

News from the sites

Zackenberg Research Station extends its facilities again

Based on generous funding from the Aage V. Jensen Charity Foundation and Aarhus University it has become possible to extend the facilities belonging to Zackenberg Research Station further. In 2010 we will build a 154 m² research house in Daneborg with accommodation facilities for ten scientists, laboratory and storage facilities. This house will together with a 144 m² boat house built in 2005 constitute the base for marine research at Zackenberg Research Station. The marine facility is situated 20 km south of the main station - mainly servicing terrestrial projects - at

Zackenberg. Any scientists interested in using the facilities in Daneborg (incl. transport to/from Daneborg) from 2011 and onwards can apply by using the application form at the Zackenberg Research Station homepage www.zackenberg.dk.

We will extend the facilities in 2010 at Zackenberg also. The activities at Zackenberg have increased significantly since IPY, and accordingly we need more storage facilities both for the station and research projects. We will therefore build a 50 m² storage facility at Zackenberg in August 2010.

The two projects have a total budget of c. 1 mio. EURO.

Both buildings will be pre-fabricated in Denmark before being shipped to Northeast Greenland. This allows for the building period in Northeast Greenland to be less than three weeks.



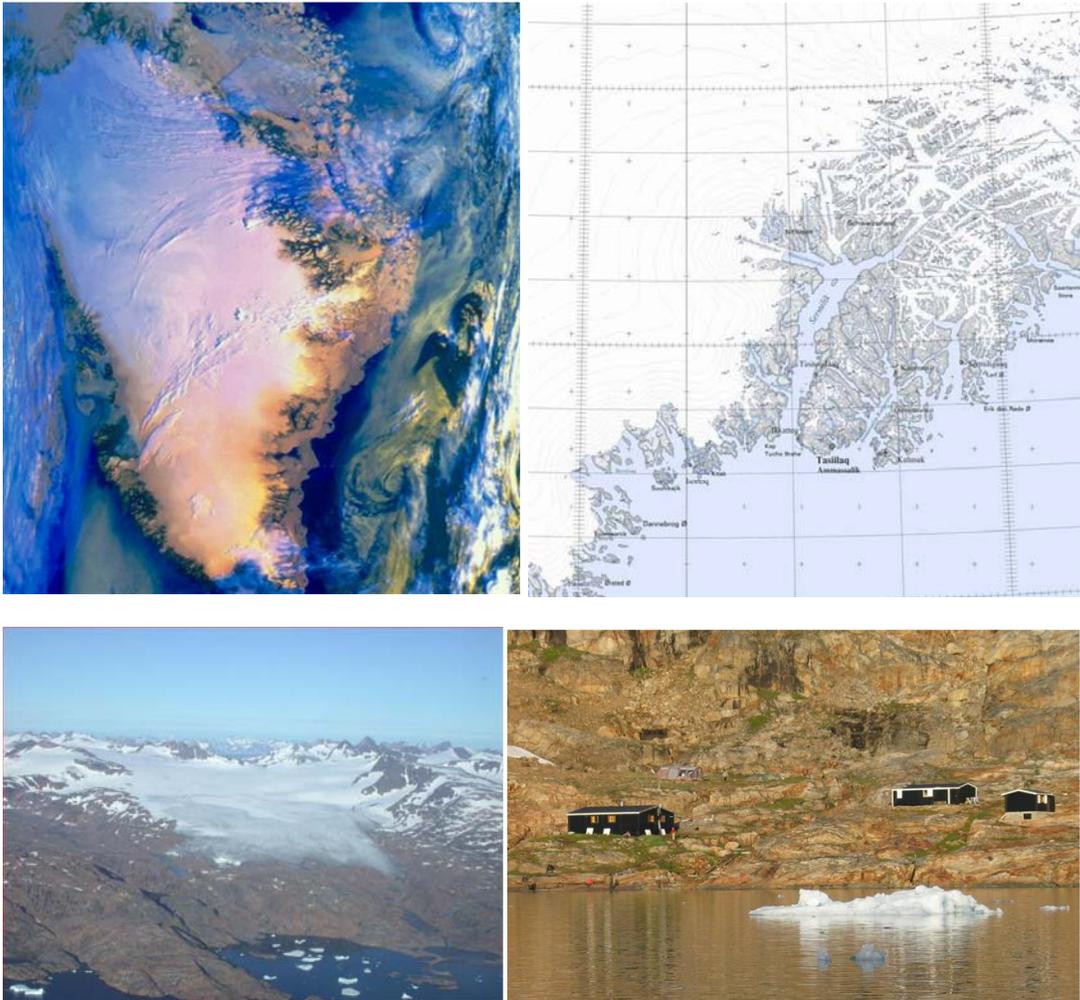
The Zackenberg Station in northeast Greenland expands again.

*Morten Rasch
PhD, Scientific leader
Zackenberg Research Station*

Sermilik Scientific Research Station

The Sermilik Station is an important new contributor to the Greenland Ecosystem Monitoring (GEM) initiative which is an intensive cross-disciplinary baseline study of climate change effects on marine and terrestrial ecosystems in Greenland.

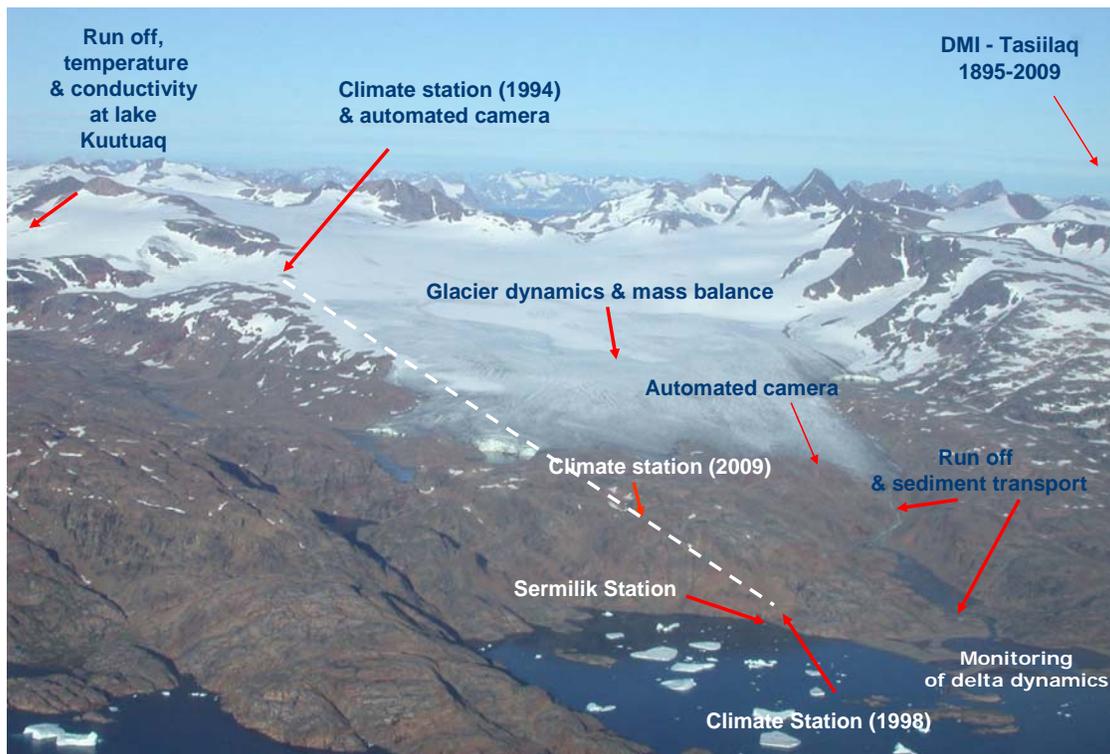
The environment in the low arctic maritime southeast sector of Greenland is presently experiencing pronounced changes. The regional temperatures, the cyclonic influence from lower latitudes and the impact from the Irminger Current are changing. The region is warming, and consequently the Inland Ice, among these the huge Helheim outlet Glacier, and local glaciers are melting back. Increasing amounts of melt water and calving ice are strongly influencing the Sermilik Fjord region and significantly add to an accelerating globally rising sea level. Since 2003 a ten-fold increase has been observed from glaciers in Greenland, to a sea level rise now at more than ½ mm per year, which means that Greenland is one of the most significant contributors of water to the rising global sea level, and that the long term stability of the Greenland ice sheet could be challenged.



Map of Greenland, the Sermilik Fjord region, the Mittivakkat glacier catchment and the Sermilik Research Station

The Sermilik Research Station http://geo.ku.dk/english/research/field_station/ is run by the Department of Geography and Geology, University of Copenhagen. In 1970 a permanent field station was established in the Sermilik Fjord, where several expeditions - going back to Gustav Holms “Konebådsekspeiditionen” to east Greenland in 1883-85 - and research activities during the International Geophysical Year in 1957-1958 had created a unique documentation of the history of the land. From 19970 and during the following decades, a systematic landscape system monitoring programme was developed, and from the mid 1990s the Sermilik Station has supported a comprehensive automated year-round monitoring programme. This covers basic climatology and local climate gradients in the Mittivakkat Glacier drainage basin, glacier mass balance, run off and sediment transport as well as the development of coastal and delta geomorphology. Based on monitoring data models have been developed to test future scenarios and present hind casts and forecasts of responses to climate change. The emphasis of research projects at the station is on the control of climate on landscape processes, on different elements of energy and water balances, hydrology and sediment transport and on proglacial weathering. Furthermore geomorphology (polysequent soil profiles, niveo aeolian sediments, and sedimentary archives from lakes and fluvial, estuarine and near coastal environments) are studied

to elucidate Holocene climate dynamics and environmental history, focussing on the late Holocene, the period after the culmination of The Little Ice Age and on present Global Change.



Picture and outline of the Sermilik Ecosystem Monitoring Activity

Education of future students is an important task, to guarantee our ability to work in the Arctic and improve our insight into the environmental dynamics of Polar Regions. It is also important to build capacity to study the impacts and feed backs of these regions on global environments. Field courses for master and PhD students are part of the Sermilik Station objectives, and during august 2009, 23 students took part in a two weeks geography field course covering climatology, glaciology, glacio-hydrology and geomorphology as well as other topics.



Field course participants in 2009 visiting the automated climate station at the Mittivakkat glacier equilibrium line, 515 m.a.s.l.

During 2009-2010, Geocenter Denmark http://geocenter.dk/about_us_uk/uk-main.html is carrying out an integrated geography-geology project in the Sermilik Fjord called "SEDIMICE - Linking terrestrial and marine sediments with ice-sheet response and glacier retreat in Greenland" <http://www.geus.dk/program-areas/nature-environment/greenland/sedimice-dk.htm> This project is focused on climate variability in the region around Sermilik Fjord and Helheim Glacier in East Greenland. The aim is to investigate the processes behind past fluctuations in the Greenland ice sheet and in local glaciers. Climate variability is investigated on short time scales by monitoring and modelling, and variability on longer time scales is investigated by palaeoenvironmental reconstructions based on marine fjord sediment cores, lake sediment cores, moraine deposits, polysequent soils and niveo-aeolian deposits. The significant changes that are presently observed in the southeast Greenland sector and in the Sermilik Fjord-Helheim Glacier region have started a number of independent research projects from different countries in Europe and North America. During March 25 and 26, 2010 an international workshop was held by the Geocenter Denmark and the SEDIMICE project aiming at exchanging ideas and data, and coordinating future research efforts in the Sermilik Fjord region.

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Abisko Scientific Research Station

In the last newsletter we announced that the Abisko Station was to be transferred from the Royal Swedish Academy of Sciences ownership to the Swedish Polar Research Secretariat (a government organisation) on the 1st of January 2010. However, contract preparations have not been completed and the current estimated date for the handover is the 1st of June 2010.

Terry Callaghan
Director

Production of the Newsletter

This newsletter is produced by Margareta Johansson at the SCANNET Secretariat, Abisko, Sweden. Our next Newsletter will be produced in March 2011. Please send contributions and comments to Margareta: Margareta.Johansson@nateko.lu.se