

Report of visit "Roundtable Meeting" in St Petersburg

On 27 November, The UK Science Innovation Network, Russia, jointly with the Embassy's Climate Section and the Consulate General in St Petersburg, held a roundtable meeting titled "Antarctic and Arctic in Focus of Science Research" at the St. Petersburg-based Arctic and Antarctic Research Institute (AARI). Three representatives of the UK polar and atmospheric sciences participated in this, along with leading Russian Arctic & Antarctic researchers from AARI, VNIIOceangeologia research institute, and Archangelsk-based North Arctic Federal University. The mission had the intention of strengthening UK-Russia Arctic & Antarctic research links, opening up new horizons for future bilateral scientific collaboration, and cementing contacts with Russian counterparts in several institutes. It allowed fact-finding on current Russian facilities in polar regions, and potential scientific and logistic collaborations between UK and Russian colleagues.

The UK party consisted of David Vaughan (British Antarctic Survey), Lucy Carpenter (University of York / National Centre for Atmospheric Sciences) and Peter Wadhams (University of Cambridge). Meetings were held at the Arctic and Antarctic Research Institute and Voeikov Main Observatory, both in St Petersburg.

Discussions over one-and-a-half days consisted of sharing of knowledge on scientific and logistics opportunities in the Arctic and Antarctic, and for atmospheric science. The following is a digest of key information gained. Several potential opportunities presented themselves.

Arctic

- The established Russian field stations, e.g. Tiksi in northern Siberia, and Barentsburg in Svalbard were discussed. Tiksi in particular, has a several-year record of atmospheric and other measurements, and boasts a clean air facility. There may be opportunities to link observations at Barentsburg with those on the UK NERC Ny Alesund station.
- A newly established field station polar station is now available in Severnaya Zemlya. This station is at Cape Baranova, Bolshevik Island. Access is usually by helicopter, as there is no official runway. Many measurements are being made on a routine basis (met, radiation, upper-air, fast sea ice). A small local glacier is also accessible (Mushtek Glacier)
- The AARI plan, to design and build of a "self-powered research platform" for deployment in the Arctic ocean was discussed. This facility would be deployed as a floating station in the Arctic Ocean for prolonged periods. It will be ice-capable, and have sufficient power for steorage in ice. Given the increasing occurrence of open water in the Arctic Ocean, making ice camps less tenable in future, this facility, yet to be named, could present many exciting opportunities for Arctic science.
- There was discussion of the fact that the above field facilities, plus access to ships, would allow western partners to work with Russian collaborators to extend their work on sea ice and kindred problems to parts of the Arctic Ocean that are within the Russian EEZ. Possible such collaborations include the use of small AUVs (autonomous underwater vehicles) to study ice topography; ground truth studies for validating satellite data retrievals; studies on wave-ice interaction (with strain measurements made by AARI on ice stations being comparable with UK-US measurements made from satellite-tracked wave buoys); and studies of offshore methane emission from Arctic continental shelves (already subject of EU-Russian collaboration which could be extended).
- Konstantin Zaykov from the Northern Arctic Federal University (Arkhangelsk) described the "Arctic Floating University", which is running annually with several partners including RosHydroMet. This provides training for physical, bio and social science students in annual cruises of around 20 days, on RV "Professor Molchanov" in the White, Barents, Greenland

and Kara seas. It has 54 places, with 27 allocated for students. It cruises around Novaya Zemlya and Franz Joseph Land. Opportunities both for UK students to participate in these cruises are possible (details were not explored), along with opportunities for experts to deploy experiments (in collaboration with Russian partners), and participate in teaching. Follow-up with KZ since the meeting indicates that proficiency in the Russian language is not a pre-requisite for participation in this activity.

- Some discussion was had concerning the need for UK researchers working in the Russian Arctic to establish partnering arrangements with Russian institutes. This is a requirement in order to secure the export of samples from Russia, with Russian partners undertaking preliminary analyses before exporting samples.

Antarctic

- Russian scientists suggested a number of themes for joint projects. For example, successors of ADMAP and BEDMAP where they would be interested to participate (German Leichenkov of the Institute of Geology and Mineral Resources). Also they suggested working together on the modelling of Antarctic paleo-topography, fast-ice studies at the Russian coastal stations, etc.
- A new icebreaker, "Academic Treshnikov", was tested in Antarctic waters last season. The vessel got to within 20km of the ice front of George VI Ice Shelf and collected oceanographic data on the way. Although, this was a testing season, the intention and capability of this vessel to work in sea ice is clear.
- There is a move to reopen the Russian station, Russkaya, located on the West Antarctic coast roughly midway between the Antarctic Peninsula and Ross Ice Shelf. This historic station has been closed for many years, but is now the site of an automatic weather station. Reopening this station would have multiple advantages for observations in an isolated part of Antarctica where few measurements are currently possible. And, in addition, the requirement for resupply would guarantee ship visits and potential repeated oceanographic measurements on-passage.
- The Deputy Director of AARI, Prof Valery Lukin expressed enthusiasm to establish an MOU with BAS to allow mutual support.

At a politically uncertain time between our countries it is intention of the British Embassy Science Innovation Network to continue supporting UK science in establishing between UK and Russian Scientists, and they have some resources to facilitate this. Requests for advice can be made to the Science and Innovation Network, c/o Marina.Sokolova@fco.gov.uk.

David Vaughan, Peter Wadhams, Lucy Carpenter, 16/12/2014.