Welcome to the end of year edition of the SCAR Newsletter.

It has certainly been a full and, we believe, successful year for SCAR and for Antarctic and Southern Ocean science generally. Five new Scientific Research Programmes focusing on climate, ecosystems, icesheets and solid earth interactions officially started (http://www.scar.org/researchgroups/progplanning/); SCAR was awarded the prestigious Prince Albert II of Monaco Foundation’s Prix Biodiversité; the SCAR Antarctic and Southern Ocean Science Horizon Scan generated and continues to generate significant interest and enthusiasm (see the update on page 3) and planning for the next Open Science Conference continues apace, with abstract submission and registration now open (www.scar2014.com). This is without mentioning the numerous projects, programmes and meetings that have taken place over the last 12 months …

Having said all that, 2014 will be even busier! In April, the Science Horizon Scan retreat will take place in Queenstown, New Zealand (see www.scar.org/horizonscanning). But of course this will not be the end of this activity, so watch this space for updates …

The next Treaty Meeting will be held in Brasilia, Brazil in May, where SCAR will be carrying out part of its core mission: to provide objective and independent scientific advice (on a related topic see also the ‘Focus on…’ article on page 2 of this newsletter, which reports on SCAR’s work with the UNFCCC).

In August, we’re back in New Zealand and, barring any unforeseen problems with ringwraiths and dragons, we’ll have the SCAR business meetings, Open Science Conference and the Delegates’ meetings. Please register and submit an abstract!

Congratulations are due to Martin Siegert, winner of the 2013 Martha T Muse Prize for Science and Policy in Antarctica, who received his award at the Cryosphere Reception, held during the AGU Fall Meeting earlier this month (see the article on page 4).

Finally, we would like to wish you all …

Happy Holidays and a wonderful New Year!

Highlights in this issue

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SCAR is an organisation with a dual mission. In addition to carrying out its primary scientific role, SCAR also provides objective and independent scientific advice to the Antarctic Treaty Consultative Meetings and other organizations such as the United Nations Framework Convention on Climate Change (UNFCCC).

To ensure that SCAR can be effective in its advice to policymakers and at the behest of the Antarctic Treaty Parties, SCAR embarked on an initiative on Climate Communications sponsored by the Norwegian Ministry of Foreign Affairs, the UK Foreign and Commonwealth Office, the Antarctic and Southern Ocean Coalition (ASOC) and SCAR itself. This aims to ensure that information related to climate change in the Antarctic Region (and in particular the outputs of the Antarctic Climate Change and the Environment (ACCE) Report - http://www.scar.org/publications/occasionals/ACCE_25_Nov_2009.pdf) are communicated to bodies such as the Intergovernmental Panel on Climate Change (IPCC) and the UNFCCC in an effective manner.

As part of this, SCAR attended the UNFCCC Bonn Climate Change Meeting in June 2013, highlighting in particular the ACCE Executive Summary update which had been published in April 2013 (http://dx.doi.org/10.1017/S0032247413000296). This was the most significant SCAR publication in the area of Climate Change since 2009 and was the subject of a press briefing and invited talk at a side event in Bonn.

Following the events in Bonn, SCAR was asked to host a session on the Antarctic at an event during the November 2013 UNFCCC Conference of the Parties (COP19) in Warsaw, the “Day of the Cryosphere” organised by the International Cryosphere Climate Initiative (ICCI) (http://iccinet.org/). Taking the opportunity to promote SCAR climate science widely, on Saturday November 16th SCAR was part of both a press briefing and an official side event at the main COP19 venue, highlighting the “On Thin Ice” report by ICCI in cooperation with the World Bank.

The “Day of the Cryosphere” event on Sunday November 17th highlighted the importance of the Cryosphere within the recently released IPCC Physical Science Case of Assessment Report 5. One of the key speakers at the event was Georg Kaser, lead author of the Cryosphere chapter in the report. SCAR took the opportunity to highlight recent work relating to climate change from two of its cornerstone Scientific Research Programmes (SRPs): Past Antarctic Ice Sheet Dynamics (PAIS) and Antarctic Climate Change in the 21st Century (AntClim21). The Antarctic panel was completed by a presentation from the ice2sea project on the Antarctic drivers of sea level rise.

Carlota Escutia (SCAR-PAIS/University of Granada) presented results showing past climate history of Antarctica in scenarios of high CO₂ concentration and elevated temperatures. Work isongoing to reconstruct the extent and behaviour of the Antarctic ice sheets under these conditions using geological and geophysical records, and modelling. These reconstructions are aimed at informing models about future ice sheet behaviour.

Tom Bracegirdle (SCAR-AntClim21/British Antarctic Survey) demonstrated the impact and importance of winds around Antarctica and their climate impacts. Possible changes to the effectiveness of the Southern Ocean in absorbing heat and carbon, peninsular warming and acceleration of the West Antarctic Ice Sheet (WAIS) glaciers were all highlighted. Note was made of the continuing influence of the ozone hole and the impact of projected ozone recovery.

Hartmut Hellmer (ice2sea/Alfred Wegener Institute) identified the ocean as the primary driver of Antarctic ice sheet mass loss and presented results demonstrating the vulnerability of the continental margins to warm water intrusions from the open ocean. It was shown that this might not require ocean warming, but could be the result of changes in ocean currents alone.

Engagement with the UNFCCC forms part of the activities SCAR undertakes to highlight the key role of Antarctic science in understanding climate change. Evaluating the results and planning new activities will continue in the context of the “Communicating the Science of Climate Change” Information Paper delivered to delegates at the XXXV ATCM meeting in Hobart, 2012.

In 2014 the ACCE group will launch a “wiki” version of their report, intended to become a living document with regular updates, which will be a key part of the future of SCAR climate change communications.
Questions have been submitted, invitations issued, and planning is well advanced for staging the first ever international, community–wide Antarctic and Southern Ocean Science Horizon Scan!

Enthusiasm continues to grow within Antarctic circles and observers from other scientific communities are watching closely to see how this process works and what will ultimately be produced. Community participation has been excellent with nearly 850 questions submitted (http://www.scar.org/horizonscanning/retreatquestions/) and almost 500 nominations received for the 30 or 40 “At-Large” invitations to the Retreat (http://www.scar.org/horizonscanning/retreatattendees.html; for details of the selection process, see http://www.scar.org/horizonscanning/news/9october2013.html).

Due to space, budget, and discussion management considerations and limitations, the International Steering Committee (http://www.scar.org/horizonscanning/steeringcommittee.html), was unable to invite many highly deserving and qualified candidates to the Retreat. Those selected for attendance have been instructed that they are representatives of their community and those not at the Retreat, and that they should make every effort to communicate and encourage everyone to participate (the list of attendees is available at http://www.scar.org/horizonscanning/retreatattendees.html).

As one final piece of the planning efforts, discussion teams for Retreat sessions have been announced (http://www.scar.org/horizonscanning/news/27november2013.html) and these teams have agreed to ensure that the voices of all are heard and considered in the deliberations to come. The Science Horizon Scan Retreat is scheduled for 20 to 23 April 2014 in Queenstown, New Zealand.

Another measure of community support is that many organizations are financially supporting the Scan effort’s core funding from the Tinker Foundation (http://www.scar.org/horizonscanning/sponsors.html). The Scan organizers especially recognize the offer to host and the financial support of Antarctica New Zealand and the New Zealand Antarctic Research Institute (NZARI).

A draft agenda for the Retreat has been completed and it will include the first ever gathering of the Muse Award Fellows for a panel discussion entitled “Beyond the Horizon: Antarctica in 2060”. The panel will be managed by a local celebrity from New Zealand and is expected to receive wide media attention. The organizers are exploring ways to make this panel discussion widely accessible beyond the Retreat.

If you have any questions or concerns, please contact Chuck Kennicutt (mckennicutt@gmail.com), Renuka Badhe (rb302@cam.ac.uk), and/or the SCAR Secretariat (info@scar.org).

For full information on the Horizon Scan, visit www.scar.org/horizonscanning/
SCAR Medals open for nominations

An important SCAR activity is recognition of excellence in Antarctic and Southern Ocean science and outstanding service to the international Antarctic community, both of which are critical to advancing SCAR’s vision and mission.

Peer-recognition rewards and highlights those who exemplify the best of the Antarctic community and serve as models for the next generation of scientists and researchers. SCAR created the medals to provide this recognition: the Medal for Excellence in Antarctic Research and the Medal for International Scientific Coordination. To encourage nominations and ensure an open, fair and transparent selection process, recipients of the medals are selected by committee.

The SCAR Medal for Excellence in Antarctic Research is awarded for sustained scientific contributions over a career. This medal is awarded to persons deserving recognition based on outstanding contributions to knowledge and the impact of a person’s work on understanding the Antarctic region, the linkages between Antarctica and the Earth system, and/or observations of and from Antarctica. Nominees are welcomed in all areas of Antarctic and Southern Ocean science and research.

The SCAR Medal for International Coordination is awarded for outstanding and sustained contributions to international cooperation and partnerships. Nomination of persons who have advanced SCAR’s mission to initiate, facilitate, co-ordinate and encourage international research activity in the Antarctic region are encouraged. Awardees should have a distinguished professional career history and a record of recognition of international activities by their peers, including prizes, honorary degrees and other awards which demonstrate the person’s impact.

There are no age restrictions or limits on nominees and no higher education degree requirements - everyone is eligible to be nominated. However, self-nominations are not accepted. The deadline for nominations is 15 March 2014.

For further details and to make a nomination, please go to the SCAR Medals section: http://www.scar.org/awards/medals.html

Prof Martin Siegert awarded 2013 Muse Prize at Cryosphere Reception

Professor Martin Siegert of the University of Bristol was awarded the 2013 Martha T Muse Prize for Science and Policy in Antarctica by Ms Renate Rennie, Chair of the Tinker Foundation. The ceremony took place at the Cryosphere Reception, held at the Fall AGU meeting in San Francisco, early December 2013.

Professor Siegert was recognised for his innovative research on Antarctic subglacial lakes and the reconstruction of Antarctic glacial history. His research in this field is multidisciplinary and collaborative, and has received significant world-wide attention, which Siegert has cultivated to promote public awareness of Antarctic earth and environmental sciences.

He has maintained a successful and diverse research programme, involving multiple multidisciplinary international collaborations. His work has supported the development of early career scientists (for example, his airborne geophysics research, and his convening of major international meetings), international collaborations (including the ICECAP and subglacial lakes activities) and the public understanding of science (through outreach work on subglacial lakes, and in international symposia).

For more information on the Martha T Muse Prize for Science and Policy in Antarctica, visit the Muse Prize website: http://www.museprize.org/

Inaugural SCAR Visiting Professor awardees announced

SCAR has initiated the Visiting Professor Scheme to promote partnerships that advance Antarctic research in 2013-14. The scheme has financed five Visiting Professor placements internationally. The initiation of this scheme was made possible with a generous contribution from India.

The scheme is directed at mid- to late-career scientists and academics whose work contributes to the scientific objectives of SCAR, offering the opportunity for them to undertake a short-term visit (from one to four weeks) to another SCAR member country to provide training and mentoring. Awards provide a contribution to an international return flight and some living expenses for the visiting period.

Awards are granted to individuals based on competitive criteria and enable successful candidates to contribute their experience towards strengthening the scientific research capacity of nations with smaller or less well-developed Antarctic research programmes. The ultimate goal of the scheme is to promote capacity building in the host institute and to develop long-term scientific links and partnerships leading to advances in Antarctic research.

For details of this year’s awards and for more information on the scheme, please go to the Visiting Professor section: http://www.scar.org/about/visitingprofessor/
SCAR Data-related meetings in Japan

SCAR promotes free and unrestricted access to Antarctic data and information by promoting open and accessible archiving practices. SCAR has adopted a Data and Information Management Strategy (DIMS), developed by the SCAR Standing Committee on Antarctic Data Management (SC-ADM), to ensure that the scientific user community has adequate access to data and information. The DIMS is published as SCAR Report 34 (see http://www.scar.org/publications/reports/).

Between 13 and 18 October 2013, the following data-related meetings were held:

13-14 October: SCAR Standing Committee on Antarctic Data Management (SC-ADM)

Attended by the representatives of 15 National Data Centres and chaired by Taco de Bruin, co-chair of SC-ADM. The SCAR president Jerónimo López-Martínez attended the second day of the meeting.

15-16 October: International Forum on Polar Data Activities in Global Data Systems

Organized by the ICSU-World Data System (WDS) and the National Institute of Polar Research of Japan, and held at the National Museum of Nature and Science. Participation of about 100 Arctic and Antarctic experts on data management and researchers addressing the data legacy of the International Polar Year 2007–2008. The presidents of IASC and SCAR participated in the meeting. About 50 oral and poster presentations and several panels facilitated interesting discussions between the participants (a more detailed meeting report is included on page 9).

17-18 October: Seminar held in the National Institute of Polar Research of Japan

Participation included NIPR staff members, several participants of the International Data Forum, including the IASC and SCAR presidents David Hik and Jerónimo López-Martínez, Taco de Bruin and other SC-ADM members.

This series of meetings highlighted the importance of Polar data management and facilitated interesting discussions between Arctic and Antarctic communities. SCAR acknowledges and congratulates ICSU and all the organizers, in particular the NIPR and its director, and also the SCAR National Delegate of Japan, Dr Kazuyuki Shiraishi, for these successful meetings.

Antarctic Thresholds - Ecosystem Resilience and Adaptation (AnT-ERA)

AnT-ERA’s implementation plan is published in the journal “Polarforschung” and available to download from the AntT-ERA section of the website (http://www.scar.org/researchgroups/progplanning/#AntETR).

See the OSC conference programme for details of AnT-ERA related sessions: http://www.scar2014.com/programme

East Antarctica is sliding sideways - Ice loss on West Antarctica affecting mantle flow below

Now that West Antarctica is losing weight - that is, billions of tons of ice per year - its softer mantle rock is being nudged westward by the harder mantle beneath East Antarctica.

The discovery comes from researchers led by The Ohio State University, who have recorded GPS measurements that show West Antarctic bedrock is being pushed sideways at rates up to about twelve millimeters (about half an inch) per year. This movement is important for understanding current ice loss on the continent, and predicting future ice loss.

Half an inch doesn’t sound much, but it’s actually quite dramatic compared to other areas of the planet, explained Terry Wilson, Professor of Earth Sciences at Ohio State and Chief Officer of the new SCAR SERCE programme. Prof. Wilson leads POLENET, an international collaboration that has planted GPS and seismic sensors all over the West Antarctic Ice Sheet.

The team weren’t surprised to detect the horizontal motion as they have used GPS to observe vertical motion on the continent since the 1990s. They were surprised, she said, to find the bedrock moving towards regions of greatest ice loss.

“We predicted that this bedrock would rebound as the weight of the ice on top of it goes away,” Wilson said. “But the rock should spread out from the site where the ice used to be. Instead, we see movement toward places where there was the most ice loss.”

The seismic sensors explained why. By timing how fast seismic waves pass through the earth under Antarctica, the researchers were able to determine that the mantle regions beneath east and west are very different. West Antarctica contains warmer, softer rock, and East Antarctica has colder, harder rock.

Stephanie Konfal, a research associate with POLENET, pointed out that, where the transition is most pronounced, the sideways movement runs perpendicular to the boundary between the two types of mantle. This finding is significant, Konfal said, because we use these crustal motions to understand ice loss.

Wilson said that such extreme differences in mantle properties are not seen elsewhere on the planet where glacial rebound is occurring. “We figured Antarctica would be different,” she said. “We just didn’t know how different.”

For more details, see the Science Daily website: http://www.sciencedaily.com/releases/2013/12/131211132449.htm
**Antarctic Science**

**Oldest air on earth hiding in Antarctic ice**

Tiny puffs of air from 1.5 million years ago may be locked inside bubbles in the ice nearly two miles beneath Antarctica’s surface. That ancient air, if it exists, would be the oldest sample of Earth’s atmosphere ever recovered.

“The Mid Pleistocene Transition is a most important and enigmatic time interval in the more recent climate history of our planet,” said lead author of the new study published in *Climate of the Past*, Hubertus Fischer of the University of Bern, Switzerland, in a press release.

During the transition, the Earth went from extreme warmth and cooling cycles alternating approximately every 41,000 years to having the cycles change only about every 100,000 years. Sediment samples drilled from the bottom of the ocean recorded the temperature differences, but scientists don’t know why the global thermostat cycles slowed.

Ice samples from other areas yielded 800,000-year-old air bubbles. Those samples showed a lockstep correlation between higher greenhouse gas levels and increased temperatures over thousands of years, according to research published in *Nature*.

Greenhouse gases, such as methane and carbon dioxide, may have been the culprits behind the Mid-Pleistocene Transition, as well. However, drills will need to pluck a 2.4 to 3.2 kilometre-long (1.5 to 2 mile) ice core from the Antarctic ice to give scientists the 1.5 million-year-old sample they need.

“A deep drilling project in Antarctica could commence within the next three to five years,” Fischer said. “This time would also be needed to plan the drilling logistically and create the funding for such an exciting large-scale international research project, which would cost around 50 million Euros.”

For further details, see the item on the *Discovery News* website (http://news.discovery.com/earth/oldest-air-on-earth-hiding-in-antarctic-ice-131105.htm) or read the original article in *Climate of the Past* (http://www.clim-past.net/9/2489/2013/cp-9-2489-2013.html).

**Giant channels discovered beneath Antarctic ice shelf**

Scientists have discovered huge ice channels beneath a floating ice shelf in Antarctica.

At 250 metres high, the channels are almost as tall as the Eiffel tower and stretch hundreds of kilometres along the ice shelf. The channels are likely to influence the stability of the ice shelf and their discovery will help researchers understand how the ice will respond to changing environmental conditions.

Researchers used satellite images and airborne radar measurements to reveal the channels under the ice shelf. The channels can be seen on the surface of the ice shelf, as well as underneath, because the ice floats at a different height depending on its thickness.

The researchers also predicted the path of meltwater flowing under the part of the ice in contact with the land. They discovered that the predicted flow paths lined up with the channels under the ice shelf at the point where the ice starts to float.


**Anatomy of an ice shelf’s demise**

The sudden drainage of thousands of small lakes on the surface of Antarctic glaciers seems to have triggered the spectacular collapse of the Larsen B ice shelf in March 2002.

Some 3,000 small ponds of liquid water had emerged over the course of a decade on top of glaciers surrounding the ice shelf on the Antarctic Peninsula. These ponds disappeared in striking synchronicity a few days before the shelf’s collapse.

When recreating the events in a computer simulation, Alison Banwell of the University of Chicago in Illinois and her colleagues found that the initial drainage of a single lake would have produced fractures in the ice that were capable of sucking dry neighbouring lakes, kicking off a catastrophic chain reaction.

The spread of fractures across the ice shelf may have ultimately caused its sudden demise, the authors suggest.

Antarctic Science

Changing winds dampen Antarctic sea-level rise

Shifting, strengthening winds will help to counteract future sea-level rise in Antarctica — and by doing so, they may help to stabilize ice sheets on some parts of the southern continent.

The band of westerly winds that encircles Antarctica has been speeding up and creeping southwards since the 1950s. The trend, largely driven by the Antarctic ozone hole, is expected to continue thanks to climate change, and could alone cause a drop in sea level of up to 40 centimetres over 70 years, according to research led by Leela Frankcombe, a geophysicist at the Centre of Excellence for Climate System Science in Sydney, Australia.


Coldest (naturally occurring) spot on Earth identified by satellite

The coldest place on Earth has been measured by satellite to be a bitter minus 93.2 Celsius (-135.8F).

As one might expect, it is in the heart of Antarctica, and was recorded on 10 August 2010. Researchers say it is a preliminary figure, and as they refine data from various space-borne thermal sensors it is quite likely they will determine an even colder figure by a degree or so.

The previous record low of minus 89.2C was also measured in Antarctica. This occurred at the Russian Vostok base on 21 July 1983. It should be stated that this was an air temperature taken a couple of metres above the surface, and the satellite figure is the “skin” temperature of the ice surface itself. But the corresponding air temperature would almost certainly beat the Vostok mark.

For further details, see the item on the BBC News - Science and Environment website: http://www.bbc.co.uk/news/science-environment-25287806

ESA’s Cryosat mission detects continued West Antarctic ice loss

West Antarctica continues to lose ice to the ocean and this loss appears to be accelerating, according to new data from Europe’s Cryosat spacecraft.

The dedicated polar mission finds the region now to be dumping over 150 cubic km of ice into the sea every year. It equates to a 15% increase in West Antarctica’s contribution to global sea level rise.

Cryosat was launched in 2010 with a radar specifically designed to measure the shape of ice surfaces. The instrument’s novel design, scientists believe, is enabling the European Space Agency (ESA) satellite to observe features beyond the capability of previous missions.

The new study, presented in San Francisco to the American Geophysical Union (AGU) Fall Meeting, confirms the usual suspects to be involved in the increased ice loss. They are Pine Island, Thwaites and Smith Glaciers. These major glaciers and their associated tributaries drain the interior of West Antarctica, taking its mass into the Amundsen Sea. The ice near to their grounding lines - the places where the ice streams lift up off the land and begin to float out over the ocean - is now thinning by between four and eight metres per year.

For further details, see the item on the BBC News - Science and Environment website (http://www.bbc.co.uk/news/science-environment-25328508) or see the ESA Cryosat website (http://www.esa.int/Our_Activities/Observing_the_Earth/CryoSat/Antarctica_s_ice_loss_on_the_rise).

NASA reveals new results from inside the ozone hole

NASA scientists have revealed the inner workings of the ozone hole that forms annually over Antarctica and found that declining chlorine in the stratosphere has not yet caused a recovery of the ozone hole.

More than 20 years after the Montreal Protocol agreement limited human emissions of ozone-depleting substances, satellites have monitored the area of the annual ozone hole and watched it essentially stabilize, ceasing to grow substantially larger.

However, two new studies show that signs of recovery are not yet present, and that temperature and winds are still driving any annual changes in ozone hole size.

For further details, see the item on the NASA website: http://www.nasa.gov/content/goddard/new-results-from-inside-the-ozone-hole
New species recovered from Amundsen Sea

More than thirty new, and, as yet unclassified, species of marine life were discovered during a science expedition to the Amundsen Sea off Pine Island Bay in Antarctica. The Amundsen Sea is one of the least explored areas of the Southern Ocean. It contains several deep troughs and basins formed during previous ice ages. Some are more than 1,600 metres deep.

In 2008, a team of marine biologists from British Antarctic Survey (BAS) and collaborating institutes took part in a summer research cruise on the RRS James Clark Ross to study the sea-bed fauna in the area. Their findings are now reported in Continental Shelf Research, following a lengthy period in which experts from all over the world were asked to help identify the animals. The process of categorisation is still going on.

For more details, see the BAS website (http://www.antarctica.ac.uk/about_bas/news/news_story.php?id=2415) or read the original paper in Continental Shelf Research (http://www.sciencedirect.com/science/article/pii/S027843431300280X).

A brooding marine worm has been found in Antarctica

Brooding is a usual behaviour in animals. However, to observe it in a marine worm is exceptional and, more surprisingly, it guards eggs from external threats.

The scientific finding, published recently in the journal Polar Biology, was developed by a group of researchers in Spain and at Harvard. The study was led by Professor Conxita Àvila, from the Department of Animal Biology of the University of Barcelona (UB), who coordinates the project Actiquim developed in Antarctica.

Nemerteans are a group of invertebrates mainly found in marine waters. The research group discovered a new species of nemertean, Antartconemertes riesgoae, which has a reproductive strategy unique in this group: it broods like hens.

In marine Antarctic waters, UB experts found some 2-3 cm long cocoons brooded by female nemerteans. During reproduction, females secrete a very dense mucous through the body wall which solidifies on contact with marine water, creating an elastic layer. Once the cocoon is created, the female lays eggs and lies on top of them. Unexpectedly, they act in a non-passive way: when cocoons are disturbed, females show a defensive behaviour and go out through cocoons’ openings.


Ozone loss warmed southern Africa

The effects of Antarctica’s ozone hole may have spread much wider than previously thought. Ozone loss over the South Pole might be the reason for a two-decade rise in early summer temperatures across southern Africa, according to research published today in Nature Geoscience.

Desmond Manatsa, a climate scientist at Bindura University of Science in Zimbabwe, and colleagues analysed data sets of southern African climate from 1979 to 2010, covering the years before and after the development of the ozone hole over the Antarctic. They found that the size of the ozone hole seemed to influence wind patterns and triggered an upward shift in early summer temperatures.

Previous studies have shown that the Antarctic ozone hole has changed surface climates over the Antarctic and the Southern Ocean, as well as New Zealand, Patagonia and southern Australia. Manatsa shows that the climate effects of the ozone hole reach even farther.

For more information, see the item on the Nature - News website (http://www.nature.com/news/ozone-loss-warmed-southern-africa-1.13938) or read the full article in Nature Geoscience (http://www.nature.com/ngeojournal/v6/n11/full/ngeo1968.html).

The SAT (surface air temperature) is positively correlated with the western flank of the Mascarene High and the Antarctic region (10°E–130°E; 70°S–90°S). This provides some insight into a possible link between southern Africa and the Antarctic region.

WMO Antarctic Ozone Bulletins: 2013

The Secretariat of the World Meteorological Organization (WMO) issues bulletins containing information on the state of the ozone layer in Antarctica and surrounding regions at roughly two week intervals from August to November.

The bulletins are based on data provided by WMO Members which operate ozone monitoring stations in the southern hemisphere and satellites to observe ozone globally. Meteorological data and model results are also used to assess and interpret the observations.

For more information, visit the WMO website: http://www.wmo.int/pages/prog/arep/WMOAntarcticOzoneBulletins2013.html
Meetings and Workshops

International Forum on Polar Data Activities in Global Data Systems


To manage the considerable data legacy of the International Polar Year (IPY), National Antarctic Data Centres under SCAR initiated several dedicated data-services. To construct an effective framework for long-term stewardship, data must be made available promptly, and adequate technologies should be employed (e.g., a repository service, such as the Polar Information Commons (PIC)). In addition to activities conducted within the communities of SCAR and the International Arctic Science Committee (IASC), stronger links must be established in the post-IPY era with other cross-cutting scientific data-management bodies under the umbrella of ICSU, namely, the Committee on Data for Science and Technology and the World Data System (ICSU-WDS). To this end, SCAR’s Standing Committee on Antarctic Data Management (SCADM) and the WDS Scientific Committee, together with IASC organized a Joint International Forum on “Polar Data Activities in Global Data Systems”.

The Polar Data Forum was successfully concluded, with 84 participants from 20 countries over the two full days, including the Presidents of both SCAR and IASC. Before and after the Forum, the related meetings of the SCADM and WDS Scientific Committee were held.

The Forum addressed effective polar data management, including submission of metadata and data, sharing of data to facilitate new interdisciplinary science, and long-term preservation and stewardship of data at the international level. To ensure the IPY data legacy, presentations on the successes and challenges encountered during IPY was highlighted, not only the best practices but also the shortcomings. This event was opened to all scientific disciplines and interdisciplinary data management topics. Outcomes of the Forum could give rise to a new strategy and structure for the Arctic Data Network under the auspices of SAON, IASC and the Arctic Council. Discussions involving the different communities provided a strong foundation to forge interdisciplinary connections and explored new horizons for polar data management.

Finally, recommendations and observations arising from the “Polar Data Communiqué” were demonstrated and are available from the Forum’s website: http://www.polar-data-forum.org/home

Report submitted by Masaki Kanao

SCAR supports International Workshop on Ocean Acidification (IWOA’13)

The Laboratory of Integrative Taxonomy and Microbial Ecology, based in the Indian Institute of Science Education and Research, Kolkata (IISER-K) recently organized an ‘International Workshop on Ocean Acidification - Consequences for Marine Ecosystems (IWOA’13)’ in Kolkata, India from 20 - 21 September, 2013.

The workshop was attended by 50 enthusiastic participants, including several early career scientists from countries such as Mauritius, Bangladesh and Thailand. Four invited speakers, who are leaders in the field of ocean acidification research, including polar acidification, namely Richard Bellerby (Norwegian Institute for Water Research), Stephen Widdicombe (Plymouth Marine Laboratory), Bayden Russell (University of Adelaide) and V. Thiyagarajan (University of Hong Kong), delivered a series of lectures and actively interacted with workshop participants.

As part of this workshop, three enthusiastic young scientists, Anant Pande (Wildlife Institute of India), Priyanka Chowdhury (IISER-K) and Gitanjali Katlam (IISER-K) from the Indian Polar Research Network (IPRN) moderated a panel discussion on opportunities in ocean acidification research. The panel members comprised the four invited speakers, plus Punyasloke Bhadury. Several questions pertaining to ocean acidification research, funding opportunities for graduate students/early career researchers to work in polar regions and ways to establish collaborative links were clarified by panellists.

The IWOA’13 workshop was financially supported by SCAR, the Scientific Committee on Oceanic Research (SCOR), the Science and Engineering Research Board, Government of India (SERB) and IISER-K. Incidentally, this was the first ocean acidification workshop organized in India and also in South Asia.

It is envisaged that, to promote and strengthen ocean acidification research in South Asia, the second IWOA workshop will be organized in 2014.

Report submitted by Punyasloke Bhadury
Reports from the Regions

Antarctica Day is Romania National Day too!

On 1st December 2013, the Romanian National Commission for Antarctic Research (NCAR) of the Romanian Academy celebrated International Antarctica Day. Romania is unique, in that it is the only party to the Antarctic Treaty that celebrates its National Day on the same day as the Antarctic Treaty was signed!

Romania is also unique owing to the Romanian scientist Emil Racoviță, who was the first biologist in the world to study Antarctic life. He was a participant in the Belgica Expedition (1897-1899), the first international scientific expedition to Antarctica (his life and work were celebrated by Google on 15 November 2013).

Romanian pioneership in Antarctica was continued by the polar explorer and researcher Dr. Eng. Teodor Gheorghe Negoiță (1946-2011), the initiator and coordinator of the modern Romanian polar research programme (1987-2011), also within the Antarctic Treaty. As the founder of Law-Racoviță Station (a joint Australian-Romanian station) in East Antarctica, he was the initiator of a successful cooperation agreement for the joint use of an Antarctic base (2005), and of the first celebration of Antarctica Day in Romania. After his death in 2011, the station was renamed “Law-Racoviță-Negoiță” in his memory.

NCAR and its collaborators marked this event with a programme of activities from 30 November to 8 December, coordinated by Dr. Florica Toparceanu, Antarctic explorer and Romanian delegate to SCAR. Events included scientific conferences, poster sessions, classes for pupils and students, drawing exhibitions and essay contests.

A conference at the Ministry of Environment and Climate Change in Bucharest included presentations on: “Management of scientific research in Antarctica as per SCAR’s Environmental Code of Conduct” and “Information exchange on international commitments of Romania related to Antarctic environmental protection”.

The Astronomic Institute of the Romanian Academy held lectures on Antarctica from the global warming perspective, and on its role as an observation platform of solar-terrestrial interactions and other astronomical observations. The ‘Grigore Antipa’ Natural History Museum hosted a conference on “Scientific research expeditions in Antarctica – framework of international cooperation between Antarctic Treaty Parties”.

At the Ecological University, Bucharest, there was a lecture on the effects of the terrestrial magnetic field on the Southern Hemisphere environment, while at the Western University, Timişoara, there was a Round Table discussion on “Antarctic glaciology and permafrost – challenges in 21st century”. At the “Ovidius” University, Constanța, students attended classes on Antarctic biology and the ‘Teodor Negoiță’ Eco-Club in Bacău focused on environmental protection, under the titles: “Antarctica – Penguin Kingdom” and “Antarctic vulnerabilities”.

This is your space!

We recently introduced a new section to the quarterly SCAR Newsletter for your news, which we would like to become a regular feature.

We are looking for articles from National Committees and Delegates highlighting activities in their country, or from SCAR group leaders or meeting organisers. Perhaps there is a piece of research you would like to highlight, or you may want to share information about a workshop or meeting, maybe report on a past event or publicise a future one.

Items submitted should be limited to around 300 words and sent as text, either as an attachment in an MS Word document, or within the body of an email, to info@scar.org. If possible, please also send one or more images to illustrate your item. Please be aware that we may need to edit your text to fit the space available.

We look forward to receiving some diverse and interesting articles in the New Year!
New Director of the International Permafrost Association (IPA)

Congratulations to Karina Schollän, who has been appointed as IPA Executive Director. She started working for the IPA Secretariat on 15 November 2013.

Karina was selected from a large number of candidates and convinced the selection committee with her enthusiasm for the position and the rigour with which she identified the challenges ahead.

She studied Geography at the University of Bonn, obtaining a Masters focusing on dendrochronology in 2009. She is about to complete her PhD at the GFZ German Research Centre for Geosciences.

She had several extended stays abroad during her studies, which helped her to develop skills in English and French. She also developed administrative expertise through work in the private sector as well as through the organisation of international conferences.

New website for PEI

Polar Educators International (PEI) have launched a new website at: www.polareducator.org/

A new wall map of Antarctica

The Norwegian Polar Institute has recently published a new topographic wall map presenting the Antarctic region at scale 1:10.000.000.


APECS News and Updates

This year, the Association of Polar Early Career Scientists (APECS) was once again proud to support Antarctica Day 2013, an event created to celebrate the spirit of international peace and scientific discovery that signed the signing of the Antarctic Treaty in 1959. APECS joined ‘Our Spaces – Foundation for the Good Governance of International Spaces’ (http://www.ourspaces.org.uk/), Polar Educators International (PEI) (http://polareducator.org/), PolarTREC (http://www.polartrec.com/), the International Polar Foundation (http://www.polfoundation.org/), Gateway Antarctica (http://www.anta.canterbury.ac.nz/), the International Association of Antarctic Tour Operators (IAATO) (http://iaato.org/home), eBIRD (http://ebird.org/content/ebird/) and the British Antarctic Survey (http://www.antarctica.ac.uk/) in celebrating this event and organizing activities around the world (http://www.apecs.is/outreach/antarctica-day/antarctica-day-2013/antarctica-day-2013-activities-worldwide). Several of the APECS National Committees contributed with a variety of activities within their countries. This year, the APECS Education and Outreach Committee (EOC) coordinated with the ‘Our Space - Foundation for the Good Governance of International Spaces’ and Polar Educators International to create a variety of classroom activities, educator resources, and research projects centering around Antarctic science and exploration (http://www.apecs.is/outreach/antarctica-day/antarctica-day-2013/antarctica-day-2013-flags-and-books). APECS was proud to support this international effort to educate the public about Antarctic research and inspire a new generation of polar researchers, and looks forward to next year’s celebration of Antarctica Day.

APECS representatives continue to help with planning the SCAR 2014 Open Science Conference (OSC) on both the Local Organizing Committee and the International Scientific Organizing Committee. Plans for a variety of APECS activities during and around the SCAR OSC, including social events and workshops, are in the works with more information at: http://apecs.is/apecs-meetings-a-events/upcoming-events/scar-2014. APECS and Polar Educators International have partnered to present a Science Communication workshop on 24 August 2014, focusing on contemporary and creative forms of communication aimed at reaching both scientists and the general public. The workshop includes six themes:

- The Art of Communicating in the Classroom,
- The Power of Social Media: Making Use of Social Networks, Blogs, and Podcasts,
- Multiple Methods for Creative Communication,
- Photography: More than Words,
- Media 101: The Do's and Don'ts When Interacting with the Media,
- In-Reach: Information Exchange Within and Across Disciplines.

All sessions within the one-day workshop will be interactive, with a focus on active participation rather than lectures, and are open to anyone interested in science communication. The workshop is free and does not require attendance at the rest of the SCAR OSC. There are 60 spots available on a first come, first served basis, with registration information at: http://www.scar2014.com/registration/.

TJ Young, representing the UK Polar Network, recently attended the Antarctica 100 meeting at Dulwich College. Festivities to commemorate the centenary of the Endurance expedition will take place between January 2014 and 2016. The UKPN hopes to highlight the power of inspiration that Shackleton ignited in the minds of future generations at their “Science and Society Workshop” in April 2014, funded by the Foreign and Commonwealth Office (British Antarctic Territories). To achieve this goal, we hope to collaborate with other organisations present at the meeting to offer an innovative and interdisciplinary workshop to our members.

For more information on all APECS activities, please visit www.apecs.is
Forthcoming Events

**International Symposium on Sea Ice in a Changing Climate**
*10 – 14 March 2014, Hobart, Australia*

Although sea ice – which covers a vast though seasonally-variable area of the global ocean – is one of the fastest-moving responders to climate change (and variability) on Earth, understanding the response is far from simple. Sea ice is a sensitive indicator of climate change (and variability) and plays a key though poorly-understood role in modulating such change through, for example, complex feedback mechanisms.

This symposium represents a timely opportunity to showcase recent advances in our knowledge of the global sea-ice environment, and to encourage holistic discussion of recent change and long-term trends and their effects (physical, ecological and biogeochemical).


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**International Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change**
*26 - 30 May 2014, Chamonix, France*

Glaciers, ice-caps and ice-sheets experiencing a warming climate are expected to present an increasing contribution to sea level rise. Linkages with the other components of the climate system, especially the atmosphere and ocean, are fundamental aspects of the complexity of ice mass response to changing climate. Observations at the interfaces between atmosphere/cryosphere and ocean/cryosphere have considerably increased our understanding of the complex coupling prevailing between the systems, though strong uncertainties remain.

At the same time, ice flow models have greatly improved over the last few years, but essential processes such as basal hydrology or calving remain strongly parameterized. Strong initiatives to couple ice flow models to ocean and/or atmosphere models have emerged, but the process of integrating remains challenging. This symposium seeks to address these problems by bringing together experts in cryosphere, climate and oceanography, from both the observation and modelling sides.

For more information, please contact Adrian Jenkins (ajen@bas.ac.uk) or visit [http://folk.uib.no/ngfso/FRISP/](http://folk.uib.no/ngfso/FRISP/)


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**20th International Symposium on Polar Sciences**
*27 - 28 May 2014, KOPRI, Incheon, Korea*

The theme is “Our Collective Journey to Connect the Past and Future from the Antarctic” and will jointly celebrate the 20th anniversary of the Symposium with the 10th anniversary of the Korea Polar Research Institute as an independent institute.


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**28th International Forum for Research into Ice Shelf Processes (FRISP)**
*22 - 25 June 2014, Cologne, Germany*

For more information, please contact Adrian Jenkins (ajen@bas.ac.uk) or visit [http://folk.uib.no/ngfso/FRISP/](http://folk.uib.no/ngfso/FRISP/)


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For details of further events, please visit: [http://www.scar.org/events/](http://www.scar.org/events/)