

**SCOR AFFILIATED PROGRAMME - International Antarctic Zone (iAnZone)**  
**Report of Activities for 2004 - 2005**  
**38th Executive Committee Meeting of SCOR, Cairns, September 2005**

Dr Karen J. Heywood (Chair of iAnZone)

**iAnZone mission and activities**

iAnZone was conceived in the early 1990s as a sequence of informal biennial meetings of Southern Ocean researchers, primarily physical oceanographers, interested in understanding the Southern Ocean and its role in climate. Accorded status as a SCOR Affiliated Programme in early 1997, iAnZone's goal is to advance our understanding of climate-relevant processes within that region of the Southern Ocean poleward of the Antarctic Circumpolar Current. iAnZone is now also affiliated to SCAR; this was approved in autumn 2004. The Chair of iAnZone also represents the programme on the CLIVAR/CliC/SCAR Southern Ocean Panel, and the SCAR/SCOR Expert Group in Oceanography.

iAnZone (i) provides for exchange of ideas, plans, results and data; (ii) identifies, develops and coordinates research projects; (iii) facilitates coordination among Antarctic and global climate programmes, and among other Southern Ocean programmes; and (iv) advises on the development of appropriate observing systems, datasets and modelling strategies needed to assess the scales and mechanisms of climate variability in the Antarctic Zone. Highly successful iAnZone projects completed in recent years include AnzFlux and DOVETAIL.

This has been an exciting and busy year for iAnZone. In August 2004 we held a three-day iAnZone open workshop at UEA for our next iAnZone project, SASSI, of which more below. Input was presented from the US, UK, Germany, Spain, Italy, France, Norway, Japan, Finland, Russia and New Zealand. In September 2004 the Chair represented iAnZone at a SCOR Marine Coordination workshop in Venice. This proved to be a stimulating meeting which has led to a number of initiatives and future collaborations, as well as increased awareness and communication.

Much of our attention has been taken with the forthcoming International Polar Year (IPY) in 2007-2009. In December 2004 an Expression of Interest was submitted to the IPY committee (one of over 900) describing the SASSI project. In April 2005 we heard that we had been nominated as the lead project in a cluster of 9 projects addressing scientific topics on the Antarctic coasts and margins. A full proposal is being prepared for the June 2005 deadline on behalf of this cluster.

**Current Scientific Activities**

***ANSLOPE***

Recognition of the importance of shelf and slope processes to deep water formation led to the fourth international iAnZone project: the Antarctic Slope project (ANSLOPE). This seeks to define the roles of the Antarctic slope front and continental slope morphology in the exchanges of mass, heat and freshwater between the shelf and oceanic regimes. Emphasis is on processes that control deep-reaching outflows of shelf water mixtures in the Ross Sea. Although primarily US-led, other participation includes the Italian CLIMA programme. The German BRIOS-2 coupled ice-ocean modelling programme provides a large-scale modelling capability to complement process-driven field studies. The project is now in a mature data analysis and publication phase, having completed the final intensive field campaign at the end of 2004. Further information is on the Anslope website: <http://www.ldeo.columbia.edu/res/div/ocp/projects/anslope.shtml>

***ISPOL-1***

The Ice Station Polarstern (ISPOL-1) field programme took place during austral spring-summer of 2004-2005. This is the fifth international iAnZone project and is led by Germany with international collaborations. It used the concept of a manned drifting station to study spring to early summer ocean and sea ice conditions along the western Weddell Sea outer continental shelf and upper slope region. Further information is on the ISPOL website: <http://www.ispol.de/>

### **Future Scientific Activities**

The next (sixth) major project to be coordinated by iAnZone is scheduled for 2007-2008 as a contribution to the International Polar Year (IPY). The first dedicated coordination workshop for this project took place at the University of East Anglia (UEA) in Norwich, UK during August 2004. The resulting proposal, Synoptic Antarctic Shelf-Slope Interactions (SASSI), is available on the iAnZone website. The intention is to cast a web of sections radiating from Antarctica across the continental slope and shelf. These would measure water mass properties and transports, deploy moorings, drifters and floats, and provide a resource for other measurements such as biogeochemical analyses. The scientific goal is to monitor and understand the processes of water mass formation and transformation on the Antarctic continental shelf and slope. Participation by countries new to iAnZone, or new to Antarctic research, is warmly welcomed. SCOR, through this report, may be able to extend our invitation to such scientists to join our research cruises where appropriate.

### **Future Meetings**

The 9<sup>th</sup> iAnZone biennial coordination meeting is planned to take place in Venice on Sunday 9<sup>th</sup> October 2005. This meeting will be collocated with an IPAB meeting, a SCAR/SCOR Oceanography Expert Group meeting and a major conference on work in the Ross Sea the following week. It is hoped that this will provide a successful mechanism for coordination of ongoing Southern Ocean research in much the same fashion as the September 2003 Southern Ocean Science Week held at AWI.

### **Committee Membership**

The current steering committee members are as follows. There has not been a formal meeting in person since the last Report to SCOR; there will be one in Venice in October 2005. However members have been active in email discussions.

Karen Heywood (UK) Chair  
Robin Muench (ex officio as previous Chair, USA)  
Hartmut Hellmer (ex officio as previous Co-Chair, Germany)  
Vicky Lytle (Australia)  
Alexander Klepikov (Russia)  
Shuki Ushio (Japan)  
Russell Frew (New Zealand)  
Zhanhai Zhang (China)  
Andrea Bergamasco (Italy)  
Mauricio Mata (Brazil)  
Mike Schroeder (Germany)  
Timo Vihma (Finland)

The iAnZone website, open to all, is available at <http://www.ldeo.columbia.edu/res/fac/physocean/ianzone/> and is used for exchange information regarding projects and opportunities in the Antarctic Zone. We are very grateful to Bruce Huber (LDEO) for maintaining the website on our behalf. He also maintains an iAnZone mailing list ([ianzone@ldeo.columbia.edu](mailto:ianzone@ldeo.columbia.edu)) to which anyone may subscribe, that greatly facilitates rapid exchange of information and project planning.