

## **SCAR Expert Group ANTPAS – Antarctic Permafrost, Soils and Periglacial Environments**

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### **1. Rationale for the group**

Permafrost in the Antarctic is widespread in the ice-free areas and a key variable for ecosystems, hydrology and geomorphological dynamics. It was only in the last decade that it was possible to have a more accurate overview of the thermal state of permafrost and active layer dynamics in the Antarctic. This followed the installation of new GTN-P boreholes and active layer monitoring sites (CALM) within IPY projects ANTPAS and TSP. However, there is still a lot to be understood about Antarctic permafrost and active layer and mainly on their relationships to other environmental variables. Even in cold permafrost areas, extreme warm events can induce significant modifications in the active layer dynamics as has been shown in the McMurdo Dry Valleys. Other areas of the Antarctic show warm permafrost and several sites suggest that it is thawing fast due following climate change, such as the South Shetlands and Northwest Antarctic Peninsula region. An interdisciplinary approach is needed to fully unravel consequences of this changes in the highly sensitive Antarctic environments.

The Antarctic Permafrost, Soils and Periglacial Environment (ANTPAS) Expert Group aims at promoting international collaboration towards the development and consolidation of Antarctic permafrost research. Such is done through annual organization of workshops and conference sessions, dissemination of an annual newsletter on member activities and promotion of discussion of needs for Antarctic permafrost research. As such and following the IPY approach, ANTPAS promotes the main science guidelines for international cooperation on hot topics in permafrost science in key areas of the Antarctic. ANTPAS links with other SCAR bodies on advisory issues related to permafrost, as well as with other associations, such as the IPA.

### **2. Report on progress**

ANTPAS is currently in a transition stage after the IPY, when more funding has been available for research and coordination. However, in 2011-12 several nationally-funded projects involving international collaboration of ANTPAS members have taken place. ANTPAS has been an essential

gathering for developing the concepts and cooperation within these projects. A synthesis of these will be presented to members in the annual Newsletter in the XXXII SCAR Open Science Conference.

In the same event, ANTPAS will be organizing a workshop in the 14 July, aiming at planning future activities of ANTPAS, including the identification of leaders and objectives for the subgroups identified in the past meeting in Edinburgh: a) permafrost, b) soils, c) terrestrial ecosystems, d) geomorphology, e) paleoenvironments.

In 2010-11 ANTPAS activities also included:

- a) Preparation of the SCAR Open Science Conference session 19, on “Antarctic Permafrost, Periglacial and Ice-Free Environments” co-chaired by M. Guglielmin, G. Vieira and L. Zhao. This session will include 12 oral presentations and 34 posters.
- b) Preparation of the ANTPAS workshop to be held in Portland in the 14 July 2012.
- c) Final editing of the special issue of Geomorphology, issue 155-156 entitled “Advances on Permafrost and Periglacial Research in Antarctica”, edited by M. Guglielmin, containing 12 papers of the XXXI SCAR Osc held on 3-6 August 2010.
- d) Participation in the IPA working group for the revision of the Global Terrestrial Network for Permafrost, by G. Vieira and M. Guglielmin, with the participation of M. Guglielmin in the Potsdam workshop at 10-11 November 2011
- e) Preparation of the 2011-12 ANTPAS Newsletter for distribution in Portland;
- f) Preparation of the new ANTPAS website.

### **3. Future plans**

The meeting in Portland during the SCAR Conference will be of high importance to define the future of ANTPAS. The implementation of the sub-groups will aim at defining a vision for permafrost research in Antarctica after the major outcomes of the IPY. ANTPAS will also continue to promote annual workshops and sessions at the major SCAR meetings or IPA. The implementation of the twin IPA ANTPAS Interest group still needs to be done in 2011-12. A proposal will be discussed in Portland. ANTPAS aims at continuing to play a leading role in the reorganization of the Global Terrestrial Network for Permafrost (I agree that we should do, but at Potsdam Antarctic group was deleted in favour of China group). ANTPAS will continue promoting multi-lateral collaboration in Antarctica, through identification of research needs, fostering contacts and supporting national or international applications when contributing to ANTPAS objectives.

### **4. Budgetary implications**

ANTPAS has been using its annual allowance of 2,000 USD for promoting its workshops integrated

into SCAR conferences. In 2011 four students/early career scientists received 500 USD grants to participate in the ANTPAS organized session in ISAES in Edinburgh. In 2012, 1,000 USD will be used to sponsor two students/early career scientists to travel to the SCAR Portland conference and 1,000 USD will be used to contribute to travelling expenses of the co-chairs that will organize the ANTPAS workshop and session.

Extra-funding could be extremely useful for coordination meetings for promoting ANTPAS activities, since our current approach to try to promote access to students to conferences is limiting the planning of a mid-year coordination meeting.