

# **2001 Progress Report**

## **Southern Hemisphere Permafrost and Periglacial Environments**

The objectives are to create a scientific platform to stimulate interaction between permafrost and periglacial researchers in the Southern Hemisphere, and to synthesise permafrost and periglacial data and information, including existing IPA initiatives in the region. Jan Boelhouwers (Sweden) and Kevin Hall (Canada) are co-chairs.

The publication of the reviews on Southern Hemisphere permafrost and periglacial research, initially presented at the 1999 INQUA Congress, is in its final stages with the *South African Journal of Science*. A synthesis of these papers is in preparation for publication in *Permafrost and Periglacial Processes*. A second activity of the WG is the preparation of a Southern Hemisphere bibliography. A draft copy was compiled and contains close to 1000 references. The final copy will be included on the CAPS CD II. Our next focus is to compile an initial inventory of maps containing information on the permafrost and periglacial landform distribution in the Southern Hemisphere.

Several developments have taken place regarding the advancement of permafrost science in the Antarctic. Following the May 2000 presentation to the Scientific Committee for Antarctic Research (SCAR) programme on Regional Sensitivity to Climate Change (RiSCC) in Antarctic Terrestrial Ecosystems, active layer monitoring was accepted within the RiSCC science plan. Monitoring protocols for the Antarctic are in the process of being finalised. Objectives for Antarctic permafrost science were formulated as follows:

1. Monitoring of the permafrost spatial distribution, temperature and active layer thickness (GTN-P, CALM).
2. Monitoring and analysis of environmental parameters (especially temperature, radiation, moisture) that act as controls on permafrost and periglacial processes.
3. Field-based monitoring of permafrost and periglacial processes in soil/rock, and the rates at which these operate.
4. Field-based analysis of the physical/chemical manifestations/morphology that result from these processes.
5. Past climate reconstructions using permafrost indicators.
6. Permafrost and periglacial process interactions with other abiotic (hydrological, pedological) and biotic components of ecosystems.

During the 1st European Permafrost Conference in Rome the relationship of IPA with the SCAR was further discussed. As the scientific objectives are unlikely to be accommodated in a separately funded scientific activity a working relationship with the RiSCC programme was seen as an appropriate approach. This was proposed and

accepted at the RiSCC workshop in Amsterdam in September 2001. Temperature monitoring in the active layer and soil disturbance measurements were included in the RiSCC methodology descriptions; protocols are being prepared by Mauro Guglielmin and Jan Boelhouwers, respectively. Where appropriate, geomorphological expert input will be invited for studies at the RiSCC core sites.

A further development is that the IPA will table a document at the SCAR 2002 meeting in Shanghai, China, that proposes the establishment of a formal working relationship between the SCAR and IPA. The documentation will include information on current and planned permafrost activities by national programmes in the Antarctic. Scientists involved in such programmes should send this information to Jan Boelhouwers by early 2002.

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