

GTOS activities in 2008/2009

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Short summary (please consider main findings, and the integration within the GTOS mandate including the interpanel integration - narrative, max 20 lines)

The Global Terrestrial Network for Permafrost GTN-P forms a GCOS/GTOS baseline network for frozen ground (permafrost temperatures and depth of seasonal freezing/thawing [active layer]). It is coordinated by the International Permafrost Association (IPA), together with the Geological Survey of Canada (Ottawa) and the US National Snow and Ice Data Center (NSIDC). The data produced by the GTN-P has served as the backbone of validation efforts for recent permafrost models and concurrent prognoses of carbon dioxide and methane fluxes.

GTN-P currently involves 16 participating countries, with hundreds of active sites in the Circumpolar Active Layer Monitoring (CALM) network and identified boreholes for monitoring the Thermal State of Permafrost (TSP),

The 2008/2009 period has seen the completion of the fourth International Polar Year and the expansion of the coverage of both CALM and TSP, mostly through national funding, with temperature measurements performed at 300 new boreholes and active layer measurements at 159 sites in the Arctic and in the Antarctic. The Norwegian part of TSP, TSP Norway (<http://tspnorway.com>) has led the data management effort during these past two years by implementing an ISO-compliant queryable and fetchable database (NORPERM) with live temperature data from boreholes on Svalbard and in Northern Norway. This new effort has been acknowledged by the IPA as a model for the data management and dissemination effort the IPA envisions to promote at the global level. In the Alps, the setup of the PERMOS and PermaNet networks, although at different stages of operation, will help to strengthen the current monitoring activities. The Executive Committee Panel of Experts on Polar Observations, Research and Services of the World Meteorological Organisation has acknowledged the contribution of GTN-P as one of the key contributions to the future of polar observations during its inaugural meeting in October 2009 and has suggested making the IPA-operated networks candidates for pilot status in the upcoming Global Cryosphere Watch (GCW).

Presently, GTN-P in situ data acquisition operates on a largely voluntary basis, through individual national and regionally-sponsored programmes. The strong development of these national programmes has superimposed national technological and methodological requirements which become increasingly difficult to articulate with the global strategy of GTN-P. In addition, the level of activity at national and regional level has developed faster than the capacity of the GTN-P management structure.

The International Permafrost Association is currently devising a scheme to address the changes needed in the GTN-P observational framework and management strategy to address pressing issues such as the pressing need for a strengthened central management, the development of a data management and dissemination strategy emphasizing products, web-based geospatial tools and outreach, or the preparation of ISO-compliant reporting standards. The continuation of observing efforts under the umbrella of the International Permafrost Association is necessary to ensure that current data recording methods and data management standards are consistent across the wide range of actors involved in permafrost observing actions, but future observing efforts will not be established in a sustainable manner unless

current permafrost observing programs are integrated into institutionalized national observing strategies and that a considerable push is given to support coordination efforts.

Future strategy/Recommendations (in bullets)

- GTN-P will devise a new strategy and action plan to address the growing dichotomy between its global reach and its current management capacity
- GTN-P will seek to include data management, data quality standards as part of this action plan and will stress the need for a clear dissemination strategy
- GTN-P will provide a snapshot on the thermal state of permafrost under the leadership of the IPA for June 2010
- The IPA will seek to expand the number of institutional partners and operational agencies involved in GTN-P support and management

Questions/guidance/feedbacks from the GTOS SC (in bullets)

- GTOS SC to provide input and feedback during the elaboration of new GTN-P strategy and action plan through the involvement of GTOS SC members and/or appointments of other panel experts.
- GTOS SC to help identify the institutional partners with the capacity and expertise to host and support GTN-P's central management.

Proposed actions to be endorsed by GTOS SC (in bullets)

- Cooperation with GCW on potential synergies between GTN-P and the upcoming Global Permafrost Watch (GPW)