

# **ANTPAS Workshop - ICOP Potsdam, 18 June 2016 (15:00 -19:00)**

## **Participants:**

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Apologies: Jerónimo López-Martínez, Ron Sletten and Mauro Guglielmin

## **Agenda**

0. Presentation of members
1. Informations
2. Discussion of the future of ANTPAS
3. Possibilities for future projects
4. Review of structure of ANTPAS
5. Conclusions

### **0. Presentation of members**

Short round for presentation by members, including a brief description of ongoing research and plans.

Goncalo Vieira (Portugal) reported that The University of Lisbon Group are working in the South Shetland Islands and on the Antarctic Peninsula in collaboration with a number of groups including Spain, Argentina, South Korea, USA, Russia and Bulgaria.

Thomas Schmid (Spain) working in ice free areas on South Shetland Islands, particularly on soil geomorphology, remote sensing and climate change dynamics. He also has expertise in soil conservation/contamination.

Stéphane Guillaso (France/Germany – collaborating with Spain). Working on radar remote sensing particularly in ice free areas on South Shetland Islands.

Miguel Angel de Pablo (Spain) Worked in the Antarctic permafrost team since late 2000s. Remote sensing, ground temperature regime, snow cover.

Filip Hrbacek (Czech) – Grad student working on soil thermal regime in Antarctic peninsula.

Sebastian Ruiz, (Chile) – MSc student Working in climatology and frozen ground physics in the Andes, Terra del Fuego. Permafrost is a new area of activity for Chile.

Alexey Lupachev (Russia – Puschino Soil cryology lab). Issues he is concerned with: educating people that there are soils in Antarctica, organic matter in Antarctic soils, what counts as a “soil” – mosses, lichens, biogeochemical processes. Most years Russian research vessel travels around Antarctica. Limited time on land for soil workers. Soil mapping in Marie Byrd land, Fildes Peninsula, King George Island.

Andrey Abramov (Russia, Puschino). Manager of permafrost-related activities. Microbes, active layer monitoring, CALM sites at all Russian Antarctic stations.

Ian Meiklejohn (South Africa). Rhodes University. Working in Dronning Maud Land. Have 9 60 cm deep soil temperature monitoring sites, 3 going since 2008. Moving towards microbial work studying link between microtopography and ecosystem niches. Observed that surface populations have to be adapted to rapid changes, deeper have more consistent environment.

Megan Balks (New Zealand). Work in McMurdo Sound - Dry Valleys region. 9 soil climate stations + 2 x 30 m boreholes with some data back to 1999. Also worked on cryosol distribution and impacts of human activities.

## 1. Information on ANTPAS

Gonçalo Vieira presented information on the recent activities of ANTPAS:

- Structure of ANTPAS (Co-chairs, Secretary and thematic key-persons)
- Review of past meetings (Portland 2012, Auckland 2014)
- Organization of ANTPAS sessions in major conferences: SCAR OSC Auckland (2014), SCAR ISAES Goa (2015), IPA ICOP Potsdam (2016), SCAR OSC Kuala Lumpur (2016).
- Special issues in Geomorphology (2012, 2014)
- Travel support to young researchers (Auckland, Goa, Kuala Lumpur)
- Liaison with GTN-P (G. Vieira)
  - Goncalo is on the Executive Committee.
  - Annual input into "The State of the Climate Report" in BAMS (M. Guglielmin and G. Vieira).
- the authorship in the article to be derived from GTN-P (permafrost thermal state), will include all those providing data. GTN-P will contact community for contribution. Boris Biskaborn is AWI funded to manage GTN-P.
- A report to GCOS is under preparation (via national representatives)
- Liaison with IPA "Permafrost research priorities" (M. Guglielmin)
- Letters of support to project applications. One letter of support was given to project "Permafrost and Climate Change in the Antarctic Peninsula (PI: Gonçalo Vieira), submitted to the Portuguese Science and Technology call of 2015.
- A session on "Networking of ecosystem sciences in South Shetland Is. and Antarctic Peninsula" is being promoted by Soon Gyu Hong (KOPRI, South Korea) and by Angélica Casanova Katny (Univ Católica de Temuco, Chile). It will be organized at SCAR OSC in Kuala Lumpur, Saturday, August 27th 14-18 h. This will be after the ANTPAS session. Gonçalo Vieira sent an email to those members of ANTPAS working in the Antarctic Peninsula with a survey form on research activities.

## 2. Discussion of the future of ANTPAS

ANTPAS has been very active during the IPY and was shaped for objectives that were largely achieved during the past few years. In the Auckland meeting we have decided to review the objectives of ANTPAS and to implement a new strategy through a series of workshops. This is the first of such workshops. The process started with a survey sent to members in the end of May 2016, which included questions on:

- Synthesis of research;
- Research Plans for 2016-2019;
- Main difficulties of team's research activity?
- What can you offer for partners? (i.e. drilling equipment, soil lab, ...)
- SWOT Analysis of ANTPAS.
- Suggestions to improve the role of ANTPAS

The objective is to start an evaluation of the current state of ANTPAS, identifying its main strengths, weaknesses, opportunities and threats. The survey will be open until mid-June and input will be discussed here and later in the meeting in Kuala Lumpur in order to implement a strategical plan.

Until the 18 June, 10 answers to the questionnaires have been received and they were presented to the members during the session (see attached document). The feedback was positive, especially given that only 2-3 weeks passed since the call was launched. There is already a good global representativeness (North America, South America, Europe and Oceania) in the replies and also a wide coverage of Antarctica. Some members in the session have promised to send their replies soon.

The Strengths and Weaknesses in the SWOT analysis were discussed with care and the members agreed in a first synthesis to be further discussed by email and in Kuala Lumpur:

#### Strengths (Internal):

- large group of experts
- active cooperation between members
- integration in networks (SCAR, IPA, GTN-P)
- Strong presence in the field all over Antarctica with unique observatories
- long-term goals of many groups
- frequent sessions in major conferences
- ability to publish thematic issues

#### Weaknesses (internal):

- Lack of visibility as a group (in SCAR community, we are a niche, the Arctic permafrost the impact of Antarctic permafrost);
- Website (not actively updated)
- Large gap between meetings (normally 1-2 years)
- Antarctica is very large and ice-free environments very disconnected spatially.
- Small involvement of members.
- Lack of funding.
- Lack of clear integration with other groups and disciplines
- No clear strategy since the IPY
- limited membership

The opportunities and threats were not yet discussed and they will be commented later by email and then in Kuala Lumpur.

A set of questions were prepared with answers to be discussed in a brainstorming session in small groups. Three groups were formed and a number of answers were compiled, which will feed in to the discussion that will follow by email and in KL in August.

#### **a. Which are the key hot-topics for Antarctic permafrost and soils research?**

- Soil contamination, disturbance, recovery and resilience (human impacts)
- Soil microbial diversity

- Age of permafrost
- Response of permafrost and soils to environmental change and infrastructure impacts
- Baseline data for decadal change
- Comparisons between permafrost environments in high-altitude mountains and Antarctica
- Wind/microclimate effects on soil properties, distribution and ecology (bipolar approach)
- Potential for increased ice-free areas due to glacier retreat and inception of cryopedogenesis
- Mars analogues
- Modelling and ecosystem-permafrost coupling / atmosphere-permafrost coupling - scale issue
- Review of the existing soil description protocol and further development for a multipurpose soil sampling protocol, easy to apply (allowing 3D assessment of environmental variables - using remote sensing and GIS)
- 39 and 42 SCAR HORIZON SCAN

#### **b. How to use ANTPAS as a frame for project applications?**

- Publish a set of key questions that people can cite when preparing applications,
- Publish a regular report - "State of the Antarctic Permafrost and Soil Environment" - outreach
- Database on who and what is doing in ANTPAS,
- Framework document that includes the goals of ANTPAS and the key questions.
- National - letters of support, framed within the ANTPAS strategy
- International level - use ANTPAS as a niche topic with interest at a Global scale

#### **c. What is the importance of ANTPAS?**

- Promote the importance of studying the ice-free areas
- forum/network for discussion and framework for research

#### **d. What do we want ANTPAS to be?**

- rich, active and effective
- provides collaboration and scientific exchange, especially on methods and data (ensures scientific consistency)

#### **e. How can ANTPAS connect with other groups/organizations?**

- well connected already, but advertise our expertise (website),
- APECS, SCAR, PYRN, IAG, IPA
- SH publication list needs updating - prepare a SH/Antarctic review on permafrost and soils.

### **3. Possibilities for future projects**

The survey has indicated that a common issue to most groups is lack of funding. Gonalo Vieira explained about possible use of ANTPAS for attracting funding, with the following possibilities:

- at the national/bilateral level - writing letters of support if projects address ANTPAS/SCAR key priorities (to be defined);
- at the international level, the community needs to find very significant and high impact topics during the process of strategy definition, if large program funding is sought. However, currently most focus on Antarctica is on the Southern Ocean and on the Ice-sheets.
- still at the international level, ANTPAS has significant expertise and unique field observations, which could provide very significant input for large projects from other disciplines that traditionally have no/limited expertise on permafrost and soils (for example, remote sensing calibration and validation, climate modelling, terrestrial ecology...). This may be the best avenue for ANTPAS.

#### **4. Revision of the structure of ANTPAS**

- co-chairs + steering committee
- ask current steering committee if they want to continue
- ask other if they would like to volunteer

#### **5. Conclusions**

Gonçalo Vieira will do another round of emails for members to send the surveys and in Mid-June, the survey results will follow to all members. By then, the steering committee will start preparing the documents to be discussed in Kuala Lumpur, so that the strategy document can be finalised afterwards.

There is an urgent need to update the website. The webmanagers will be contacted for updating.

Need to update guide to soil description and sampling to include permafrost and wider detail. Cryosol working group (which has links to ANTPAS but also includes northern hemisphere workers) is keen to liaise on this and widen soil description/classification summary to include WRB classification and Arctic soil properties. Megan Balks offered to co-ordinate.