



**SCAR Sub-Group**

**ANTPAS**

SG

GS

Person  
Responsible:

Mauro  
Guglielmin

## **SCAR Delegates Report 2020**

# **ANTPAS**

## **2018-2020 Report**

### **Summary**

**Report Authors:** Mauro Guglielmin (Italy), Marc Oliva (Spain)

#### **2020**

Unfortunately, COVID-19 caused the cancellation of the 2 main international conferences in which ANTPAS researchers were concentrated “12th International Conference on Permafrost at Lanzhou on 22/26 June” and the 9th Open Scar Conference at Hobarth on 3 – 7 August 2020. The latter has been virtualized.

#### **2019**

ANTPAS has participated in the XIII International Symposium on Antarctic Earth Science (ISAES 2019) that took place in Incheon (Republic of Korea) between 22 and 26th July 2019. Here, ANTPAS chairs coordinated a session on “Permafrost and Periglacial ice free areas in Antarctica” that included contributions from researchers working with permafrost temperatures, active layer thermal regime, past permafrost environments, etc (8 orals and 8 posters). The co-chair of ANTPAS Prof. Mauro Guglielmin gave a keynote presentation with the title “*Permafrost distribution and evolution in Antarctica*” in which the major results of the last 20 years and the more important gaps of knowledge and future perspectives of the Antarctic research were summarised. In addition, some researchers of ANTPAS were involved also in some other sessions like “*Modern landscape change in Antarctic ice-free areas*” or “*Significance of Antarctic Inland Freshwater Bodies - Revealing Past Processes and Projecting Responses to Change*” indicating a relevant interdisciplinarity of the community.

ANTPAS funded 4 grants of \$750 each, for early-career researchers who attended the ISAES.

In addition, ANTPAS also organized a session also at the 1st Southern Hemisphere Conference on Permafrost (SouthCOP), a regional conference of the International Permafrost Association (IPA) that was held in Queenstown (New Zealand) between 4 and 14 December 2019 (Figure 1). This was the first IPA conference organized under the auspices of the IPA in the Southern Hemisphere and was an excellent opportunity for permafrost researchers working in Antarctica to present their latest findings and explore future collaborations. The session “*Past environments in*

## ANTPAS: 2018-2020 Report, cont.

*permafrost regions/Methods to measure, monitor, and sample cryosols and permafrost*” received several contributions, both as oral and poster format, including a wide range of topics such as: permafrost thermal state, active layer dynamics, cryogenic soils, infrastructures in permafrost areas, past permafrost environments, etc.

1 grant of 750\$ for early research career was funded for the 1st SouthCop.

In addition, the Iberian permafrost community held its bianual Meeting in Jaca (Huesca, Spain) between the 25 and 27th June 2019 (<https://ipaiberico2019.csic.es/>). This was the VII Iberian Conference of the International Permafrost Association, where several ANTPAS members met and discussed their latest research activities on permafrost dynamics in the Antarctic Peninsula region.

### 2018

After the 1st ANTPAS workshop held in Varese on 4-5 October 2018 was focused mostly on the POLAR2018 conference, which has held in Davos (Switzerland) between 15th and 25th June 2018. ANTPAA co-chairs attended several official meetings concerning the role of ANTPAS within the Scientific Committee on Antarctic Research (SCAR) as well as organized a meeting to discuss about the future of ANTPAS. In addition, ANTPAS coordinated three sessions: “*Permafrost landforms in the two Poles as possible Mars analogue*”, “*Life distribution and responses to environmental changes in Polar ecosystems*” and “*Reconstructing past environmental change in the Polar Regions*” that were attended by hundreds of polar scientists.

During 2018 ANTPAS researchers also participated in the 5th European Conference on Permafrost held in Chamonix-Mont Blanc between 23th June and 1st July 2018, exposing recent findings on permafrost state in Antarctica.

Since 1st January 2018, Marc Oliva become Co-Chair of the Antarctic Permafrost, Soils and Periglacial Environments (ANTPAS), replacing Gonçalo Vieira.

Mauro Guglielmin was re-nominated co-chair.

### Summary of activities from 2018-20

A better coordination of the permafrost research especially in Maritime Antarctica was achieved also with the approval from PROPOLAR of the Jointed Project “Nunantar” led by Marc Oliva is an example in which many nations (Spain, Portugal, Czech Republic, Italy, Turkey, Chile, UK, France) are working together also with the national scientific programs logistic and financial supports.

### Summary Budget 2019 to 2022

	2019	2020	2021	2022
	Spent	Allocated	Request	Request
(US\$)	4354	2500	2000	6500

## Progress to date

### Sub-group Outcomes Summary

(Summarize the above and in each case provide your sub-group name in left hand column to assist Science Group COs in compiling their reports)

Sub-group	Activity/Outcome/Benefit/Achievement
ANTPAS	Coordination and jointed proposal (see Nunantar)
ANTPAS	Increase national representatives within ANTPAS
ANTPAS	Maintaining own web site
ANTPAS	Funding Travel grants for International Conferences

### Sub-group Cash Flow

(From previous Delegates meeting to date)

Sub-group	Allocation	Amount spent		
		2018	2019	2020
ANTPAS	5000?	?	4354	0

## Future plans

### Planned activities in 2020 to 2022

Sub-group	Planned activity
ANTPAS	12 <sup>th</sup> International Conference on Permafrost Lanzhou 2022
ANTPAS	SCAR OPEN Science conference 2022
ANTPAS	Arctic Science Summit Week session on comparison Antarctic and arctic permafrost 20/26 March 2021
ANTPAS	Regional Permafrost Conference Boulder July 2021
ANTPAS	Meeting for Research Program 2021

### Planned use of funds for 2020 to 2022

Year (YYYY)	Purpose / Activity	Amount (in USD)	Contact Name	Contact Email
2021	grants for early career researchers Lisbon	1000	Mauro Guglielmin	mauro.guglielmin@uninsubria.it
2021	grants for early career researchers IPA Boulder	1000	Mauro Guglielmin	mauro.guglielmin@uninsubria.it
2022	grants for early career researchers SCAR	3000	Mauro Guglielmin	mauro.guglielmin@uninsubria.it
2022	grants for early career researchers ICOP	2500	Mauro Guglielmin	mauro.guglielmin@uninsubria.it
<b>Total</b>				

**Any additional detail on funds usage and desired results/outcomes**

We would like to forward the \$3146 not spent in 2020 for activities in 2021.

**Percentage of the budget to be used for support of early-career researchers**

2020: 100%

2021: 90%

2022: 90%

**Percentage of the budget to be used for support of scientists from countries with developing Antarctic programmes**

2020: 60%

2021: 60%

2022: 70%

## Membership

### Leadership

Role	First Name	Last Name	Affiliation	Country	Email	Date Started	Date Term is to End
<b>Co Chair</b>	Mauro	Guglielmin	Insubria University	Italy	Mauro.guglielmin@uninsubria.it	2008	
<b>Co Chair</b>	Marc	Oliva	Barcelona University	Spain	marcoliva@ub.edu	2018	
<b>Secretary</b>	Megan	Balks	Waikato University	New Zealand	Megan.balks@waikato.ac.nz	2008	
<b>Steering Com</b>	Jeronimo	Lopez Martinez	Madrid University	Spain	Jeronimo.lopez@uam.es	2008	

*Please identify early-career researchers with \* in first column*

### Other members

First Name	Last Name	Affiliation	Country	Email
Joseph	Levy	Colgate University	USA	jlevy@colgate.edu
Dan	Morgan	Vanderbilt University	USA	dan.morgan@vanderbilt.edu
Berry	Lyons	Ohio State Univ	USA	lyons.142@osu.edu
Mike	Gooseff	Colorado University	USA	Michael.gooseff@colorado.edu
Andrey	Abramov	IPCBPSS RAS	Russia	
Tanya*	O'Neill	Waikato Univ	New Zealand	tanya.oneill@waikato.ac.nz
Goncalo	Vieira	Lisbon Univ	Portugal	vieira@campus.ul.pt
Jan	Meiklejohn	Rhodes Univ	South Africa	I.Meiklejohn@ru.ac.za
Filip*	Hrbacek	Masaryk Univ	Czech Rep	hrbacekfilip@gmail.com

*Please identify early-career researchers with \* in first column*

## Additional information (optional)

*Please add any more detail here that you wish, on your subgroup activities, papers published, etc.*

The actual mailing list of ANTPAS included 181 researchers coming from USA, Russia, Belarus Republic, South Korea, China, Canada, Peru, Argentina, Chile, Australia, New Zealand, South Africa, Malaysia, India, Italy, Spain, Portugal, Germany, UK, Norway, Sweden, Finland, Ukraine, Nederland, France, Switzerland, Japan, Brasil.

## Notable Papers

*(Five to ten most notable papers – see the example below, which includes a brief statement (shaded) indicating the link to the group)*

- 1) Biskaborn B. et al., (2019) Permafrost is warming at a global scale. NATURE COMMUNICATIONS 10:264 | <https://doi.org/10.1038/s41467-018-08240-4>

This work provides a comprehensive overview of the permafrost state in the world enhancing the difference between Arctic and Antarctica and giving a large audience to the Antarctic permafrost research considering also the very large number of citations already achieved.

- 2) Oliva, M., Ruiz Fernandez J., Editors, 2020 Past Antarctica. Paleoclimatology and Climate Change. Academy Press, London, 300 pp.

This work presents a comprehensive research of past and present Antarctica multidisciplinary related the ice-free areas of Antarctica and involved many ANTPAS researchers.

- 3) Ruiz Fernandez J., et al. 2019 . Patterns of spatio-temporal paraglacial response in the Antarctic Peninsula region and associated ecological implications. Earth-Science Reviews 192 (2019) 379–402.

This paper provides a review of the knowledge on the spatio-temporal paraglacial (and periglacial) response to the climatic changes since the last Glacial Maximum up to the modern conditions of a very sensitive area like Antarctic Peninsula involving not only landforms changes but also related ecological changes.

- 4) Hrbáček et al. 2018 Active layer monitoring in Antarctica: an overview of results from 2006 to 2015. Polar Geography, DOI: 10.1080/1088937X.2017.1420105.

This paper represents an overview of active layer thickness measurements from almost all the part of Antarctica and give also some important suggestion to follow for improving the protocol of measure of this climatic key.

- 5) Guglielmin et al., 2018 The origins of Antarctic rock glaciers: periglacial or glacial features? Earth Surface Processes and Landforms, 43, 7, .1390-1402

The paper presents new geophysical and geological results on the possible glacial origins of the Antarctic rock glaciers, especially for which occurring in Continental Antarctica.

**Direct support from outside organisations received for your activities**

*(Numbered list with values indicated if direct cash support. Please restrict in-kind support to substantive in-kind support only)*

No support from other international organization was received by ANTPAS.

**Major collaborations your Science Group has with other SCAR groups and with organisations/groups beyond SCAR**

*(Numbered list of substantive collaborations)*

**Within SCAR**

1. AnT-ERA
2. AntEco
3. ANTOS

**Outside SCAR**

1. IPA (International Permafrost Association)
2. LTER Long Term Ecological Research
3. ITEX (international Tundra Experiment)
4. IAG (International Geomorphology Association)

**Outreach, communication and capacity-building activities**

*Brief highlights of any activities undertaken since the SCAR Delegates meeting in 2018.*

A wide outreach of the Antarctic permafrost research was achieved in the different international conference where several papers were presented. In addition the meeting that were held at least by 12-15 up to more than 30 people were a moment of dissemination above all about protocol to monitor permafrost environment.

**SCAR fellowship reviewers**

*As part of SCAR's Capacity Building efforts, such as the Fellowships and Visiting Scholar Awards, we are looking for people from all the SCAR groups to form a 'review panel' so if applications in your field are submitted we have people to contact to help assess relevant applications. Please list one or more people (name and email address) from your group who would be willing to serve as reviewers for the next few years, along with 1-3 keywords on their principal expertise.*

First Name	Last Name	Email	Principal Expertise
Mauro	Guglielmin	Mauro.guglielmin@uninsubria.it	Permafrost, Ecology
Berry	Lyons	Lyons.142@osu.edu	Ecology Aquatic
Nicoletta	Cannone	Nicoletta.cannone@uninsubria.it	Ecology Terrestrial
Marc	Oliva	marcoliva@ub.edu	Permafrost Quaternary Geology