

MEMBER COUNTRY: PORTUGAL

National Report to SCAR for year: 2012-13

Activity	Contact Name	Address	Telephone	Fax	Email	web site
National SCAR Committee						
SCAR Delegates						
1) Delegate 2) Alternate Delegate	Adelino V M Canario	Centre of Marine Sciences, University of Algarve, Gambelas, 8005-13	+ 351 28980057	+ 351 28979971	acanario@ualg.pt	
Standing Scientific Groups						
Life Sciences						
1) 2) 3) 4)	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
Geosciences						
1) 2) 3) 4)						
Physical Sciences						
1) 2) 3) 4)						

Activity	Contact Name	Address	Telephone	Fax	Email	web site
Scientific Research Program						
ACE 1) 2) 3) 4)						
AGCS 1) 2) 3) 4)						
EBA 1) 2) 3) 4)	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
AAA 1) 2) 3) 4)						

Activity	Contact Name	Address	Telephone	Fax	Email	web site
ACTION GROUPS						
1) SCAR CBET	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
2) Development Council	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
3)						
4)						
insert others as needed						
EXPERT GROUPS						
1) EGBAMM	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
2) ICED	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
3) ANTPAS	Gonçalo Vieira	Centro de Estudos Geográficos / IGOT - Universidade de Lisboa	+ 351 217940218	+ 351 217938690	vieira@campus.ul.pt	
4)						
insert others as needed						
SCADM						
1)						
2)						
SCAGI						
1)						
2)						
NATIONAL ANTARCTIC DATA CENTRE						
SCAR DATABASE						
insert name of database for which your country has responsibility						

A BRIEF SUMMARY OF SCIENTIFIC HIGHLIGHTS*:

The FISHWARM project - Centre of Marine Sciences (CCMAR) at University of Algarve - studies the effects of global warming on the stress and metabolic response of Antarctic fish. Adelino Canário, Pedro M Guerreiro and Bruno Louro, based in the Polish Antarctic Station Henryk Arctowski (Admiralty Bay, King George Island) acclimated fish (*Notothenia rossii* collected by boat using hook and line and stocked under controlled conditions in the Station) to gradual and/or abrupt changes of temperature and/or salinity to evaluate the physiological response and determine the sensitivity and saturation thresholds of the endocrine stress system. Samples were collected to analyse electrolytes, hormones, enzymatic activities and determine the differentially expressed genes in such environmental conditions. Funded by PROPOLAR, CGD, CCMAR and FCT-FP(PEst-C/MAR/LA0015/2011).

Activities of IMAR- UC from January until December 2012 consisted of:

- . Fieldwork at Livingston Island (in collaboration with UK, Spain, Bulgaria and France) and collection of samples in the Antarctic (and adjacent waters) were conducted by colleagues scientists from the United Kingdom (South Georgia and South Orkneys) and New Zealand (Antipodes and Adams) on albatrosses and penguins. Laboratory work related to Antarctic research was carried out in UK, France and Portugal.
- . SCIENCE. Scientifically, José was awarded the National award Seeds of Science award for “Earth, Marine and Atmospheric Sciences” by Ciência Hoje. Two major results were published: Study 1: the examination of the seasonal, latitudinal and bathymetric distribution of mesopelagic fish, particularly myctophid fish, in the Scotia Sea (Southern Ocean), work resulted out of three international Antarctic cruises (coordinated by the UK); Study 2: Using GPS tracking, diet and stable isotopic analyses, we assessed the foraging niche (habitat use, trophic level and prey selection) of the endangered species, the wandering albatross, at Bird Island (South Georgia).
- . EDUCATION & OUTREACH: José Xavier organized numerous science communication, education and outreach activities including POLAR WEEKS (bringing together scientists and educators from Europe, Americas, Africa, Oceania, and the Antarctic), with the association of APECS and PEI, convened educational sessions and discussion panels at SCAR Portland and IPY Montreal (keynote talks in both), and gave more than 20 oral presentations and skype calls to schools around the world.

Activities of the CEG/IGOT (Univ. Lisbon) focused on:

- . HOLOANTAR - Late Holocene Evolution of the South Shetlands Permafrost Environment (PI M. Oliva), in November in Byers Peninsula for very successful lake coring activities.
 - . PERMACHANGE - Permafrost monitoring and mapping in the South Shetlands (PI G. Vieira), with research in Deception and Livingston islands: GTN-P borehole, monitoring terrain deformation, ground truthing and ERT surveying for permafrost detection (A. Correia).
- The project Permafrost and Climate Change in the Antarctic Peninsula (PI G Vieira) started in April 2013. Dr C Mora continued research on snow cover in the ice-free areas of the South Shetlands using SAR.

NITROEXTREM - is focus on the relevance of nitrogen biogeochemistry and the microbial communities that mediate nitrogen transformations in terrestrial Antarctica environments (Transantarctic Mountains). This project was integrated in an ongoing interdisciplinary research and included in a New Zealand research program focusing on the evaluation of the Biocomplexity of the Dry Valleys. The 2013 Antarctic field campaign (K020) covered a sampling area of proximately 300 km² in Victoria Valley and surrounding areas. One main field camp and three sub camps were set up to cover a total of 75 random sampling locations during three weeks of field campaign, with the main goal of building a model to link biodiversity with landscape and environmental factors. Samples collected within the 75 random tiles, were used for different scientific proposes, like invertebrate, geochemical, cosmo-dating, microbial, and vegetation analysis by integrating interdisciplinary complementary studies. On behalf of the NITROEXTREM project samples will be processed for the diversity and abundance of the Nitrogen microbial communities involved in N transformations in these extreme Antarctica ecosystems. NITROEXTREM, was co-financed by PROPOLAR, NZ-TABS, ANTRACTICA NEW ZEALAND, and FCT.

Long-term studies on the demography and ecology of black-browed albatrosses on the Falkland Islands

In 2012-13 the long-term study on the demography and ecology of black-browed albatrosses on the Falkland Islands, coordinated by ISPA – Instituto Universitário, continued for its 10th year of existence. A total of 4 researchers and field assistants worked on the islands of Steeple Jason and New Island (Falkland Islands). Work started in early October 2012 and continued uninterrupted until the end of February 2013. The main aims for the past season were to better document individual foraging specialisations of albatrosses in relation to human fisheries, the at-sea distribution of albatrosses from Steeple Jason (the largest world colony for the species) and to start studies of personality of individual birds. Regular tasks related to the demographic study (ringing, visual recapture of study birds for survival monitoring, monitoring of the nesting success, etc) were also carried out. This long-term study has received regular support from the Falkland Islands Government and from the Portuguese Foundation for Science and Technology, amongst others.

CONTANTARC 2 - Speciation, partition and transport of trace elements in aquatic systems of King George Island (Antarctica)

João Canário (joao.canario@ist.utl.pt), Centro de Química Estrutural – Instituto Superior Técnico, Lisboa

Compared to Arctic much less is known about contaminant fate and biogeochemistry in Antarctica. However, relatively high levels of contaminants have been reported in aquatic organisms in this austral environment.

The aim of this project was to study the biogeochemical processes related to the fate and speciation of key contaminants (e.g. As, Cu, Cd, Hg, Pb, POPs) in the marine and fresh waters systems of Fildes Peninsula, King George Island. The contaminant sources and their specific pathways were also evaluated.

The research took place in January 2013, as part of the Portuguese Polar Program and in direct collaboration with the Chilean Antarctic Institute (INACH).

This project was funded by the Portuguese National Foundation for Science and Technology (FCT) through PROPOLAR program and by Instituto Superior Técnico. Results of the study will be presented at the SCAR open science conference in 2014 as well as other International Conferences.

ANATOCU - Anthropology of Antarctic Tourism Culture.

David Picard (piccccc@gmail.com) and Dennis Zuev (tungus66@gmail.com)

The aim is to study the human presence in Antarctica with a particular focus on the motifs, values and experiences of tourists. The focus is primarily on commercial cruise ship based mass tourism. The research took place in Ushuaia, Argentina, in January and February 2013, as part of the Portuguese Polar Program and in direct collaboration with the Austral Centre for Scientific Research of the Argentina National Research Centre CADIC in Ushuaia. Funding came from the Portuguese National Foundation for Science and Technology FCT. Results of the study were presented at the SCAR Social Sciences Action Group meeting at the British Antarctic Survey in Cambridge in July 2013.

* Please include any scientific activities you believe might be considered bioprospecting (<http://www.scar.org/treaty/atcmxxxiii/> see WP2)