

MEMBER COUNTRY:

Portugal

National Report to SCAR for year:

2011 - 2012

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	
ICESTAR 1) 2) 3) 4)						
SALE 1) 2) 3) 4)						
AAA (2010-) 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) ANTPAS	Gonçalo Vieira	Centro de Estudos Geográficos / IGOT - Universidade de Lisboa	+ 351 217940218	+ 351 217938690	vieira@campus.ul.pt	
2) EGBAMM	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
3) ICED	José Xavier	Institute of Marine Research, Depart. Life Sciences, Univ. Coimbra, Portugal	+ 351 936728419		JCCX@cantab.net	
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*:

Activities of CCMAR (Centre of Marine Sciences at University of Algarve) consisted of:

The FISHWARM project (*Adaptive responses of fish to environmental change*), PI Adelino Canário and Pedro M Guerreiro - studies the effects of global warming on the stress and metabolic response of Antarctic fish. Based in the Polish Antarctic Station Henryk Arctowski (Admiralty Bay, King George Island) from January to March 2012, 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, CCMAR and FCT-FP(PEst-C/MAR/LA0015/2011).

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

- The HOLOANTAR project (Late Holocene Evolution of the South Shetlands Permafrost Environment - Maritime Antarctic), PI Marc Oliva - aims to study landscape evolution and climate changes in the South Shetlands Islands following Holocene environmental evolution. Based in King Sejong South Korean Station and in the Jubany Argentinean station (King George island), field activities took place from January to February 2012 and focused on lake sediment coring in both peninsulas.

Funding: PROPOLAR/FCT, CGD Mobility Grants.

- The PERMANTAR-2 project (Permafrost and Climate Change in Antarctic Peninsula), PI Gonçalo Vieira - aims at monitoring and modelling permafrost distribution and thermal state and is framed with the Global Network for Permafrost. Field activities took place in Livingston and Deception Islands mainly for data collection (Bulgarian station St Kliment Ohridski and Argentinean Station Deception). Two new permafrost boreholes were drilled in a collaborative project with NSF ANT-6900673 (PI James Bockheim, Univ. Wisconsin-Madison) in Amsler Island (Palmer station) and in Cierva Cove (Argentinean station).

Funding: PROPOLAR/FCT, FCT (PTDC/AAC-CLI/098885/2008), Gulbenkian Ambiente Program and Mobility Grants CGD.

Activities of CEG/IGOT and CERENA/IST focused on:

- The SNOWCHANGE project (Snowpatch dynamics and the changing permafrost environment), PI Gonçalo Vieira - aiming at characterizing and mapping late-lying snowpatches for field validation of TerraSAR-X remote sensing imagery and to produce detailed snow cover evolution maps. Field activities took place in Fildes Peninsula in January 2012 (Chilean station Prof. Julio Escudero).

Funding: PROPOLAR/FCT.

Activities of IMAR-UC (University of Coimbra) consisted of:

The PENGUIN project (Inter-specific dietary competition between 3 penguin species: do they compete for the same prey?), PI José Xavier - Assessment on how penguins are adapting to climate change. Activities in Antarctica took place from December 2011 to January 2012 based in the Bulgarian station St Kliment Ohridski (Livingston island). Funded by PROPOLAR in collaboration with IMAR, BAS (UK), CSIC (ES) and CNRS-CEBC (FR). Renata Medeiros, a collaborator of our project on Penguins ecology won a scholarship from the journal Antarctic Science to assess DNA analyses of penguin scats to identify their prey (extremely useful for monitoring programs). Research work on Antarctic trophic interactions confirmed that the component of cephalopods in the diet of top predators has been underestimated both in terms of number and biomass (Xavier et al. 2011). Further research published in 2011 characterised the diet of Antarctic and Patagonian tooth fish from samples collected around South Sandwich islands (Roberts et al. 2011). The work carried out by early career scientists during IPY was also published (Baeseman et al. 2011). José Xavier won the Marta T. Muse prize in 2011.

Activities of CQE/IST, in Lisbon, consisted of:

The CONTANTARC project (*Trace Element Fate, Transport and Speciation in Environmental Compartments in Deception Island, Antarctica*), PI João Canário - aims 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 in Antarctic Peninsula. Based in the Spanish station Gabriel de Castilla (Deception Island), the activities took place from November to December 2011. Funded by PROPOLAR/FCT.

Activities of the CGE-UE (Evora Geophysics Centre-Evora University) concentrated on the workplan of the MATAGRO project (executed in collaboration with the Italian project SAMOA). The main works done in the frame of the 2 projects are:

- i) installation at the Mario Zucchelli Station (MZS) of a new control device for the old GASCOD (Gas Analyzer Spectrometer correlating Optical Differences spectrometric) in order to assure the continuation of the observations (started in 1996) for nitrogen dioxide (NO₂) and ozone (O₃) total columns allowing for the identification of the ozone hole phenomena occurrence during the austral spring season over MZS.
- ii) preliminary works for the installation at MZS of a new spectrometric system called GASCODNG (New Generation) developed and upgraded thanks to the experience acquired with the setup of the SPATRAM (Spectrometer for Atmospheric Tracers Monitoring) instrument installed at CGE since 2004. The new system allows for measurements of zenith sky scattered radiation in multiple spectral interval allowing for the observation of more atmospheric compounds than GASCOD such as bromine and chlorine oxides and formaldehyde.
- iii) Re-processing of the whole dataset of the measured spectral data obtained with the old GASCOD instrument and comparison/validation of the retrieved NO₂ total columns with analogous data from satellite borne instruments (GOME, GOME2, SCIAMACHY, OMI)

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