



SCAR XXIX/COMNAP XVIII Workshop

Establishing a coordinated Southern Ocean Observing System (SOOS)

09:00 –17:00 Saturday 15 July

CSIRO Marine Laboratories, Castray Esplanade, Battery Point, Hobart

Introduction

The importance of the Southern Ocean in global climate and its role in climate change are well known, and this region has become an important focus in climate and oceanographic research. The region is remote and logistically difficult to operate, so a range of methods are used by many different national research programs to collect the data required to conduct this research. Ship-based techniques and ARGO floating buoys are commonly used at present, and there is increasing interest in data that can be obtained from birds and mammals that live in the region.

Antarctic seals and seabirds range widely over the Southern Ocean, often using regions of the Southern Ocean at times of the year inaccessible to research vessels and ocean buoys. These animals also operate along physical features such as the continental shelf, the marginal sea-ice zone and frontal regions, areas of particular interest to oceanographers. The success of the CoML TOPP (Tagging of Pacific Pelagics: <http://www.toppcensus.org/>) program has demonstrated the feasibility of a large-scale multi-species approach to investigating predators and their interactions with the marine environment. The more recent SEaOS (Southern Elephant seals as Ocean Samplers: <http://biology.st-andrews.ac.uk/seaos/>) program, has seen the maturation of sensor technology which now enables high resolution temperature and conductivity sensors to be incorporated into satellite transmitters small enough to be carried by seals. This provides a powerful tool for investigating the fundamental relationships of predators and the physical properties of their environment, and also a means of collecting high resolution physical oceanography data that will be an important supplement to existing data sets.

This workshop will bring together oceanographers, biologists and engineers, to investigate the development of a coordinated program for Southern Ocean Observing System (SOOS). The Census of Antarctic Marine Life (CAML) is coordinating projects on top predators, as part of an integrated approach to the diversity of organisms and their environment. The potential of this approach has been recognised by the International Polar Year (IPY), which has endorsed Marine Mammal Exploration of the Oceans – Pole to Pole (MEOP) as one of its programs. Such a program would be an important adjunct to major biology and oceanographic programs such as CoML and GOOS.

Workshop Objectives

The overall objective of this workshop is therefore to examine the feasibility of establishing a Southern Ocean Observing System (SOOS) and in particular to investigate the possibility of incorporating data collected by marine mammals and seabirds. Specifically the workshop will:

- Briefly review existing technology, and assess suitability and shortcomings
- Review existing oceanographic data sets collected by seals and seabirds
- Briefly review the important biological questions
- Consider what species would be suitable for on-going studies
- Assess data-handling and compatibility issues, consider protocols for integrating data sets
- Consider existing ocean data-sets that would benefit from such data
- Establish a framework for on-going (post IPY) data collection
- Address outreach facilities to share the vision beyond the technical community

Sponsors

CSIRO and POGO are hosting the workshop; CAML is providing the refreshments.