



Voyage ss2010_t04

An Examination of the Temperate Reef and Deep Sea Benthic Fauna of the South Eastern Australian Shelf and the Trophic Relationships between Euphausiids and Larval Fish.

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Contribution to Australia's national benefit:

The inventory of benthic macro fauna obtained, combined with the ongoing analysis of their stable isotope signatures, contributes to the first National Research Priority (Goal 6) by providing a baseline for future investigations/research and by detailing the trophic status/interactions of rarely studied deep sea fauna.

The deployment of BOAGS coupled with the swath mapping undertaken, is key to the ongoing and generally serendipitous mapping of the Australian marine habitat (see Kloser et al., 2006 for details¹). On this voyage in particular, we discovered a new uncharted seamount (Amelia's mount) off St Helens Hill.

The successful collection of the reef forming coral, *Solenosmilia variabilis*, for Thresher's work on ocean chemistry and coral distribution, in line with the 1st NRP (goal 7), is essential if we are to understand the future effects of climate change on marine communities.

The collection of specimens for natural chemistry research (UoW) increases the potential value and knowledge about Australia's natural marine resources, whilst the deployment of the CPR (Kerrie Swadling) allows us further elucidate how populations/ regions may be connected.

As a result of this voyage:

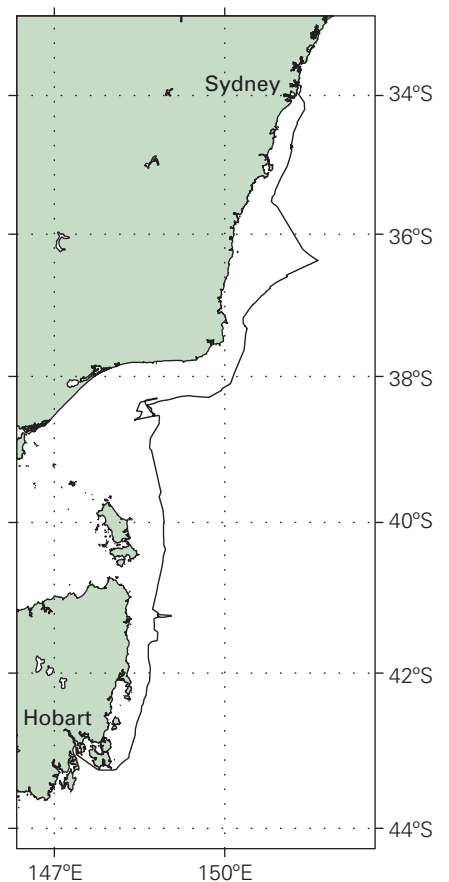
1. We have a better understanding of a unique geological feature off Wollongong and the benthic macro fauna of Bass Canyon.
2. We have found a new seamount (Amelia's mount) off St Helens Hill.
3. We have mapped a section of the mid-upper slope of the continental shelf along a transect from Sydney to Hobart, including filling in some of the shallower gaps of Bass Canyon and the canyon heads associated with it.
4. We have commenced a program of examining the stable isotopes of the benthic fauna collected (Holmes) to better understand the trophic ecology of deep sea communities and measuring the physiological response and performance of *Solenosmilia variabilis* (Thresher) with a view towards determining how climate change may have impacted their distribution.

Itinerary

Departed White Bay, Sydney
06:00, Wednesday 3 November 2010

Arrived Hobart
08:00, Monday 8 November 2010

> Voyage track ss2010_t04



¹ Kloser, R.J., Williams, A., and Butler, A.J., 2006, Exploratory surveys of seabed habitats in Australia's deep ocean using remote sensing – needs and realities, in Todd, B.J., and Greene, H.G., eds., Mapping the Seafloor for Habitat Characterization: Geological Association of Canada, Special Paper 47, p. 93-110.