



Voyage SS04-2006

Continental shelf processes between Cape Leeuwin and the Great Australian Bight during the summer.

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Contribution to Australia's national benefit:

This research was undertaken to support the development of an improved understanding of ocean current circulation in Summer along the continental shelf between Cape Leeuwin and the Great Australian Bight. Australia's South coast is unique. The Southern coast and continental shelf is the world's longest coastline with an East-West orientation. The Leeuwin Current plays a dominant role in controlling the marine life and climate of the region.

And yet this current is anomalous, flowing in a direction opposite to that observed in other ocean basins. It affects the lifecycle of Southern Blue-Fin Tuna and other fin-fish stocks, the distribution of seagrass and algae, corals, western rock lobster, scallops and sea-birds. This current system is more productive than theory presently predicts. Understanding why has important implications for fisheries and the management of anthropogenic impacts on the inner continental shelf.

Higher regional winter temperatures and rainfall rates in comparison to other similar latitudes elsewhere may also be attributable to the current. Understanding the current's dynamics will assist climate researchers to assess the potential impact of change on the current and its influences on the region.

This voyage gathered data that will be used to:

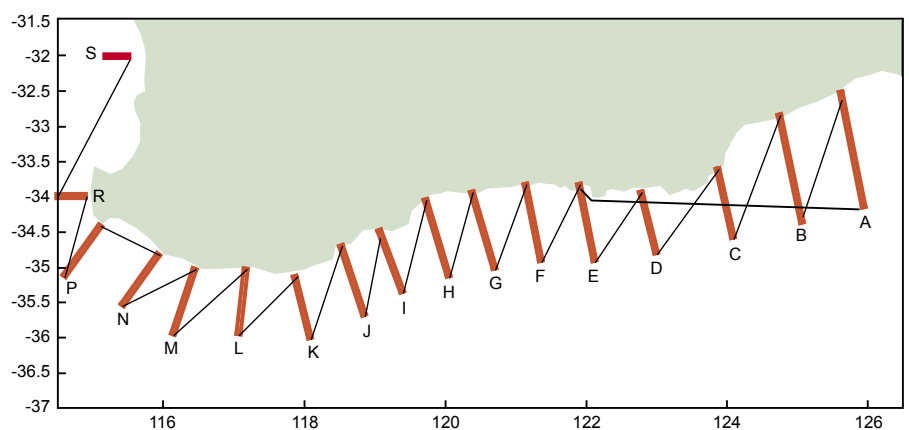
- Investigate the interaction of the Leeuwin Current with a colder westward flowing inshore current that is similar to the Capes and Ningaloo currents on the North West coast.
- Assess connections between the Leeuwin Current, the Flinders Current (a cold current that runs Westward underneath the Leeuwin Current) and the Leeuwin Under Current (a cold current that runs Northward underneath the Leeuwin Current off the West coast).
- Determine the interaction between coastal currents, phytoplankton dynamics and the transfer of nutrients in the coastal waters of southern Australia.

The results that arise, from the study of data gathered during this voyage, will improve our understanding of Australia's ocean environment and its resources, supporting the protection of marine biodiversity and ecologically sustainable management practices. Our investigation of the physical influences on primary productivity will enable the Western Australian Department of Conservation and Land Management to define the productivity of the region and to determine the physical and biological connections between proposed Marine Parks, Marine Protected Areas and the broader marine environment of SW Australia.

Itinerary:

Depart Esperance 1600 hrs, Wednesday 12th April 2006.

Arrive Fremantle 0800 hrs, Monday 1st May 2006.



> SS04-2006 voyage track