



## Voyage SS03-2006

PULSE: Role of mixed-layer dynamics in Southern Ocean plankton production and carbon transports, including air-sea exchange of carbon dioxide and particulate carbon fluxes to the ocean interior.

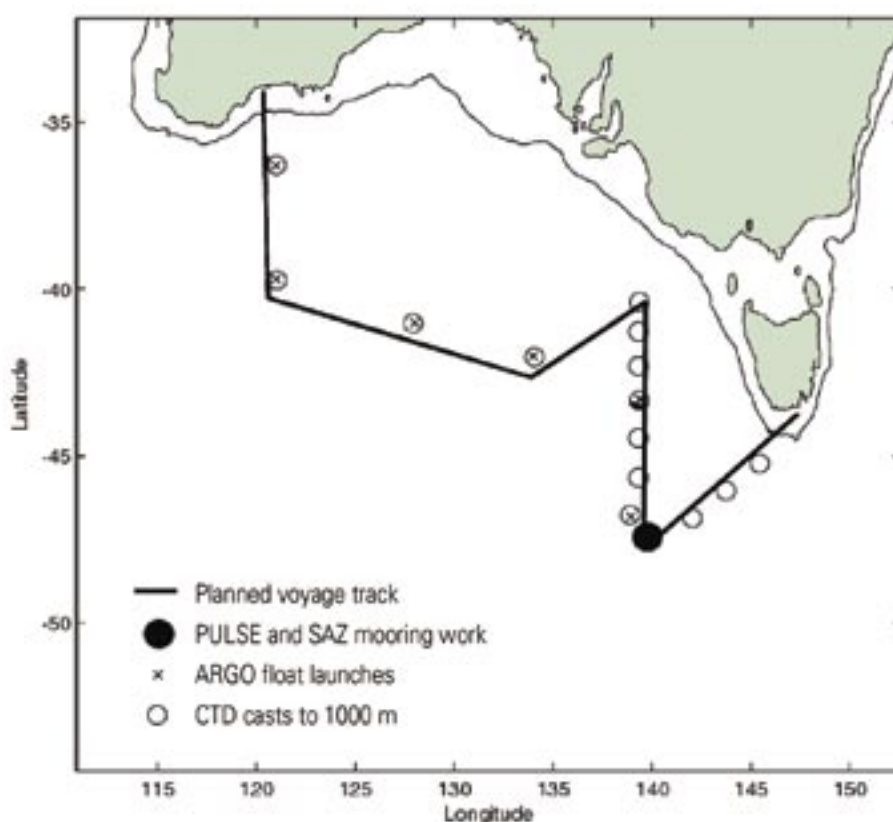
Associate Professor Thomas W Trull, CMAR-UTAS-ACECRC (Chief Scientist)

SS03-2006 •

## Contribution to Australia's national benefit:

The voyage achieved a crucial advance in the assessment of the productivity of Australia's Sub-Antarctic pelagic marine ecosystems. This was done by deploying an automated mooring, which will eventually determine the seasonal cycles of nutrient utilization and phytoplankton accumulation and their coupling properties.

The automated mooring system provides continual information that is impossible to achieve from research voyages alone. This information is essential in order to evaluate the ability of Sub-Antarctic ecosystems to transfer carbon dioxide to the deep sea. It also allows us to estimate ecosystem responses to the increased ocean stratification and acidification, which is expected to result from greenhouse gas emissions. It helps us to assess how the increases in greenhouse gas will affect our oceans.



## > SS03-2006 voyage track:

The voyage track is shown by the solid line. CTDs were carried out on the transit to the mooring site, and then north along ~140°E. SeaSoar was towed from the mooring site north and then west. At the mooring site the PULSE mooring was deployed and the SAZ mooring recovered and redeployed.

## Itinerary

Depart Hobart 1000 hrs,  
Tuesday 28th March 2006.

Arrive Esperance 0800 hrs,  
Monday 10th April 2006.