

MEDIA RELEASE

NEWS FROM THE UNIVERSITY OF TASMANIA

DATE: TUESDAY 7 JUNE, 2011

ATTENTION: Chiefs of Staff, News Directors



Oceans of data from world-first buoy deployment

The first weather buoy deployed in the remote Southern Ocean has been successfully retrieved after surviving 13 months of hostile conditions.

Marine and climate scientists are still analysing the wealth of data relayed back to shore by the South Ocean Flux Station about this climatically important region of the world. The data includes hourly observations of wind, temperature, humidity, air pressure, sunlight and rain.

“The buoy is providing up-to-the-minute information on the conditions in the Southern Ocean, allowing us to build a climate record and also improve our local weather forecasts,” says Dr Eric Schulz from the Bureau of Meteorology. “Not only are the observations contributing to day-to-day weather forecasting, they are providing the first sustained look at how the ocean to the south of Australia directly exchanges heat with the atmosphere as part of the global climate system.”

Melbourne-based Dr Schulz, who was chief scientist on the deployment cruise, will visit Hobart tomorrow as part of World Oceans Day.

In a remarkable technical and engineering achievement for the Integrated Marine Observing System (IMOS) and the Bureau of Meteorology, the flux station was moored on March 17 last year in water 4.6 km deep, 580 km southwest of Tasmania in the Sub-Antarctic Zone, home of the Roaring Forties.

The flux station’s deployment and eventual retrieval by CSIRO scientific staff and crew of the Marine National Facility Research Vessel *Southern Surveyor* was no mean feat, given the size of the waves and the buoy itself.

Built by the Woods Hole Oceanographic Institution in Massachusetts at a cost of \$1M, the flux station is 2.7m in diameter, 4.3m high and weighs 1300 kg.

The mooring is tethered to the sea floor with 6 km of chain, wire and rope, and attached to 3900 kg of railway wheels.

The flux station will be redeployed in the Southern Ocean in November.

The Southern Ocean is responsible for around 30 per cent of the total global ocean uptake of human-induced CO₂ emissions. Waters formed at the surface in this region slide under warmer subtropical and tropical waters and carry CO₂ into the deep ocean, out of contact with the atmosphere. This process also supplies oxygen for deep ocean ecosystems and nutrients to much of the global ocean.

The Sub-Atlantic Zone is changing with global warming but until the flux station's deployment, little was known about the potential impact of these changes.

“What is happening in the open ocean is vitally important to all Australians and their understanding of local and regional climate,” says IMOS Director, Tim Moltmann. “It drives our climate and weather extremes, is the workplace for offshore industries and maritime defence activities and contains a diversity of marine life that currently is barely described.”

“We need to observe this part of the earth system to understand how it's changing, and what the impacts might be on current and future generations of Australians.”

IMOS is led by the University of Tasmania on behalf of the Australian marine and climate science community. It was established in 2007 under the National Collaborative Research Infrastructure Strategy, with initial funding of \$50M and co-investment of \$44M from partners.

IMOS has successfully deployed a range of observing equipment in the oceans around Australia, making all of the data freely available through the IMOS Ocean Portal.

With the injection of an additional \$52M from the Education Investment Fund (EIF) in 2009, and up to \$66M in further co-investment, IMOS has been extended to mid-2013 and has enhanced its monitoring in the Southern Ocean and northern Australian waters.

Information Released by:

The Media Office, University of Tasmania

Phone: (03) 6226 8518; 0429 336 328 (Peter Cochrane)

Email: Media.Office@utas.edu.au

