

Ocean robots network achieves universal coverage

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Scientists' efforts to fathom how the oceans influence climate and fisheries productivity enter a new era this month with the milestone establishment of a network of 3,000 futuristic, 1.5-metre tall ocean robots operating simultaneously throughout the world's oceans.

The Argo project has already helped Australian scientists to: closely track how fast and where the ocean is warming due to anthropogenic emissions of greenhouse gases; provide a core data stream for the new endeavour of ocean-forecasting: and, underpin efforts to include the Indian Ocean in forecasting Australian drought/flood cycles.

“Conceived of just seven years ago by a small group of oceanographers, Argo is maturing to be one of ocean science's great steps forward and one from which all countries can benefit,” says Dr Susan Wijffels from the Wealth from Oceans National Research Flagship.

“Argo will allow us to grapple with some of the big climate questions, as well as provide insight into how the ever-changing ocean weather affects marine ecosystems.”

Using a satellite-based data delivery system, the Argo robots provide ocean forecasters and climate scientists with a detailed sub-surface view of nearly all corners of the world's oceans every 10 days. Vast regions of the Southern Hemisphere oceans, which were previously unmeasurable because of their remoteness and often stormy conditions, are now being systematically probed for the first time.

The milestone comes as scientists representing 26 countries meet in Hobart this week to discuss the key task of ensuring the smooth running of the Argo data engine – the centralised system which relays data provided by many national Argo data centres around the world to aid in the provision of accurate ocean, weather and climate forecasts.

Dr Wijffels says that having built up the array to uniform global coverage and constructed an effective data-delivery system, the next challenge is to maintain the full array for a decade in a pre-operational ‘sustained maintenance’ phase.

“This will allow the array’s design to be optimised and its value fully demonstrated and exploited,” Dr Wijffels says. “The US has committed to maintaining half of the array for the next four years and other contributing countries are striving to enhance the array’s strong international nature. As more is learned about the floats and their sensors, float lifetimes will be extended, further improving the cost-effectiveness of the program.”

Source: CSIRO

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