

## **Missing EPA wave buoy still contributes to scientific research**

One of the Environmental Protection Agency's (EPA) 12 wave measuring buoys went adrift from its monitoring station just off the coast near Brisbane in November 2002, probably due to an accidental bump from a passing ship.

A satellite positioning system tracked the buoy on its 5,500 km drifting journey around the Tasman and Coral Seas as seen in figure 1.

When the buoy broke adrift it moved rapidly south with the East Australian Current paralleling the coast until reaching the mid New South Wales coast.

From there it moved eastward and, after completing a number of loops moved northwards to be level with Fraser Island before moving westward.

Once again it followed a rapid southward track entrapped in the East Australian Current, moving along the Queensland and then New South Wales coast to finally come ashore near Kempsey in May 2003 during strong onshore winds.

The buoy was successfully recovered and returned to Brisbane where it was checked and found to be none the worse for its adventures. This was fortunate as it saved the cost of a replacement buoy.

The buoy has now been redeployed elsewhere in the EPA's wave buoy network where it again continues to provide valuable information on wave conditions in Queensland.

During the buoy's travels its position was monitored by the French ARGOS satellite system. This information was then relayed back to EPA scientists who could only sit and wait while the buoy drifted around the ocean. A rescue mission (unless close to shore) would have been prohibitively expensive and risky.

Although the EPA's scientists lost wave information while the errant buoy was adrift, they did provide the position fixes to the CSIRO who found this invaluable for validating their ocean current models (see figure 2).

The wave buoy track also confirms that marine mammals could traverse large ocean distances and return to the east coast of Queensland without the need to expend large amounts of energy. Recent monitoring of turtles – also using the ARGOS system - (Dean the Green) is an example of how EPA scientists study the movement of marine animals in the south Pacific basin.

For further information:

David Robinson (EPA) 07 3869 9503 or Dr David Griffin (CSIRO) 03 6232 5244

<http://www.epa.qld.gov.au/waves>

<http://www.epa.qld.gov.au/tides>

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