FACT SHEET EPA drops BOB on Kerry!

Summary
On Thursday, 13 January 2005, an Environmental Protection Agency (EPA) Baby Ocean Buoy (BOB) was dropped into Hervey Bay by a Queensland Rescue helicopter (see figure 1). It is a Lagrangian buoy which means that it gathers information as it moves with the tides and currents (rather than from a fixed position). Queensland Rescue is part of the Queensland Department of Emergency Services' Counter Disaster and Rescue Services' Division. The purpose of the deployment was to record storm waves generated by cyclone Kerry as it approached the Queensland coastline in an area not covered by the EPA’s network of moored wave buoys. After the cyclone threat had passed, BOB was recovered on 17 January using the Burnett Heads Volunteer Marine Rescue (VWR) vessel.

Cyclone Kerry had been present in the Coral Sea for several days, and was slowly starting to move towards the central Queensland coastline (see figure 2). With the possibility that the cyclone could come close to Hervey Bay it was important to record information on the large waves it was likely to generate. Studying large wave events provides a greater understanding of coastal processes generally, and also assists the EPA to make better coastal planning decisions.

It was therefore necessary to undertake a rapid deployment of BOB in Hervey Bay. Unlike the moored wave buoys, BOB is a Datawell 0.4m diameter Waverider buoy that drifts with the currents, collecting wave information and storing it to a data logger on board. Conventional deployment from a boat was not possible as waves from the cyclone were already too rough for safe operations.

As part of the close working relationship between the Department of Emergency Services (DES) and the EPA, DES provided a Rescue Services' Bell 412 helicopter so that BOB could be deployed. The helicopter used GPS to locate the deployment site and dropped BOB into the water from a height of about 10 metres at 1430hrs on 13 January. BOB was then free to drift with the prevailing currents within Hervey Bay, recording information on wave conditions at its location, and storing this information on an internal data logger every 30min.

Recovery
BOB has a relatively short operational life of about two weeks (due to power requirements). However, this was more than sufficient as cyclone Kerry weakened and moved away from the coast, no longer posing a threat. As a result, a recovery mission was carried out on the 17 January using the Burnett Heads Volunteer Marine Rescue vessel (see figure 4). Portable radio receiving equipment was used to obtain a transmission signal from BOB (which included its position). A GPS receiver was then used to direct the VMR vessel to BOB where it was recovered and transported back to the Coastal Services office. The stored data from BOB was then transferred to computer and the results processed (see figure 5).
Coastal erosion
During the life of cyclone Kerry, gales and rough seas were reported along a large section of the Queensland coastline. Beaches in the Mackay region were particularly affected, and some erosion was reported. Channel Seven Bundaberg reported on 17/01/2005 that although cyclone Kerry may not have hit Wide Bay hard, the low it created caused some problems for the turtle eggs at Mon Repos. Volunteers moved thousands of eggs during the week to prevent them being damaged by beach erosion.

Web links
Queensland Rescue
Bureau of Meteorology
http://www.bom.gov.au
Burnett Heads VMR
Datawell
http://www.datawell.nl
EPA fact sheets

Additional information on waves and tides can be obtained on-line at the following EPA web pages:
www.epa.qld.gov.au/waves
www.epa.qld.gov.au/tides

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Figure 5 – Time series plots 13–17 January 2005.