New plotting method a time saver

By Rodney Nowrojee

IMAGINE being given two-hundred-and-fifty points to plot on a map, measuring by hand between the points to get distances, and dividing them by a number to get yet another number!

Laborious and time consuming? It certainly is, and until recently this method of plotting is how CALM's Marine Conservation Branch (MCB) measured ocean currents.

Now, the drudgery has been eliminated through a new computerised application, designed in a co-operative project between the MCB and CALM's Geographic Information Services section (GIS).

To monitor ocean currents, MCB staff use drifter drogues, which are similar to underwater box kites that are suspended from a float and released to flow with prevailing currents.

A number of drogues are released over a designated area, and as they move, their positions are periodically recorded using a Differential Global Positioning System (DGPS).

Recordings are then made on the spot, but before the new GIS computerised system, the plots and calculations were performed in a time-consuming operation back at the office at the end of the monitoring expedition.

This meant that any recording errors or other data problems would not become apparent until all the gear was packed up, the site vacated and the staff involved were back in Perth—too late to collect more data, especially when expeditions were in locations too remote to make a quick trip back to gather more information.

Originators of the project, oceanographer Nick D'Adamo and GIS Officer Ray Lawrie, both from MCB, contacted me at GIS section to find out if this would be an ideal application of GIS to the ocean-monitoring projects that MCB undertakes.

Now, using a portable Geographical Information System (GIS) package, adapted for the Marine Conservation Branch by GIS Section, the data can be collated, plotted and queried on screen in the field, thus saving time, money and effort.

The automated process involves entering data into a spreadsheet and then uses ArcView (the GIS package) to spatially display and calculate all related points and paths.

These graphical elements representing the points and paths have associated tables where distance and velocity values are available for query.

What used to take hours now takes a few minutes with the added advantage that results can be verified on a laptop whilst still in the field.

The GIS process successfully automates calculation and plotting and is also a simple one to use by those who don't know a lot about GIS.

Left: Rodney Nowrojee. Photo by Verna Costello.