

E1-25: Investigation of hydrological processes in the Weligama bay

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Weligama Bay is a coastal body of water occupying approx. 8.5 sq.km and mean depth around 10 metres.

Physical oceanographic parameters such as salinity, currents in the Weligama Bay and Pollwatta Ganga (which supplies fresh water to the Bay) were observed monthly for 6 months from January 1993. Salinity was measured using a digital salinometer in the field and laboratory measurements were made using "Autosal". Pendulum current meters were used for the current measurements.

The monthly mean surface salinity values in the Weligama Bay exhibit maximum 33.5 ppt and minimum 26 ppt from January to May and the current measurement in the Bay shows vertical velocity component in varying directions. Physical oceanographic conditions in the Bay are governed principally by the geometry of the Bay, the magnitude of river flow into the Bay, and the magnitude and extent of the tidal motion.

During the dry season, the Weligama Bay showed well mixed conditions where there is no significant variation in the salinity due to the strong water circulation and lack of fresh water input.

Funding by NARESA under the grant RG/92/P/5 is acknowledged.