

## **Effect of water parameters on the behaviour of Indo-Pacific humpback and Irrawaddy dolphins in Cowie Bay, Sabah, Malaysia**

### **ABSTRACT**

Many dolphin species around the world are found generally in coastal areas and may be affected by water parameters. Of particular attention are two species of dolphin inhabiting the Cowie Bay on the eastern coast of Sabah; the Indo-Pacific Humpback (*Sousa chinensis*) and Irrawaddy (*Orcaella brevirostris*) dolphins. The objective of this study is to determine effects of water parameters (sea surface temperature (SST), salinity and turbidity) on the behaviour (feeding, socializing and travelling) of the two dolphin species. A boatbased survey was conducted monthly from April 2008 to March 2009 (one year) during spring and neap tides. There were 47 surveys conducted for both species. Irrawaddy dolphins were found in 43 surveys (91.5%). The feeding and socializing behaviour of Irrawaddy dolphins were positively correlated with SST and negatively correlated with turbidity. None of the water parameters affected dolphins' travelling behaviour. The behaviour of the Irrawaddy dolphin was not correlated with salinity. Indo-Pacific humpback dolphins were found only in 41 surveys (87.2%) where its behaviour did not correlate with any water parameters. The socio-economic activities such as logging, agriculture and fisheries highly contribute to suspended sediment and also contribute to high water turbidity in the bay. These are possible causes for the changing of water parameters and may affect the food chain of vast marine life including dolphins. As a recommendation, those activities should be controlled and an the application of sustainable development practices in order to sustain the dolphin population in the bay.