

THE RELATIONSHIP OF OCEANOGRAPHIC PARAMETERS AND CORALS CONDITION IN WAKATOBI ISLANDS

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This research aims to evaluate the relation of some oceanographic parameters to coral conditions in Wakatobi Islands. The evaluated parameters are temperature and salinity in water surface and in 30 m depth, and also chlorophyll-a concentration in surface. The correlation of those parameters with hard coral cover area is evaluated using correlation matrix. The data of hard coral cover area was acquired from COREMAP-LIPI program in 2001, 2005, 2006, 2007, and 2009, and from TNC-WWF joint-program in 2003. Parameter oceanographic data used here was obtained from NOAA-AVHRR satellite from 1990 to 2009, while chlorophyll-a data was obtained from Seawifs satellite from 2000 to 2009. Temperature and salinity data in 30 m depth and surface salinity are from Hycom model in 1992-2010.

Observation shows that surface temperature rises 1.80 degree Celcius while surface salinity rises 0.108 psu. There is negative correlation of hard coral cover with temperature and chlorophyll-a, which means that the higher the temperature or chlorophyll-a the lower the hard coral cover in that area. The change of temperature more that normal coral temperature (25 - 30 degree Celcius), makes zooxanthelae stress and makes the coral can not live. Whereas when chlorophyll-a have a high number, the sunlight will be partly blocked. The distribution of surface temperature and chlorophyll-a gives the indication of upwelling phenomenon on east monsoon session that acts as refuge for the coral to be in their normal temperature.

Keywords: hard coral cover, surface temperature, salinity, upwelling, wakatobi islands