

# Variability of Up Welling in the Southern Java Based Index Up Welling and Sea Surface Temperature in 2006-2007

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**Abstract :** Upwelling is an oceanographic phenomenon that involves strong wind-driven motion, cold and usually brings a mass of rich nutrient to the surface of the sea. Upwelling is phenomenon or events related to the movement of the rising masses of sea water. The vertical movement is the integration of the ocean circulation but millions of times smaller than the horizontal flow. The vertical movement is occurring due to the sea water density stratification because with the addition of depth resulting in decreased temperature and density increase that raises energy to move water masses vertically. The sea is also stratified by other factors, such as increasing nutrient content with added depth. Thus the presence of vertical water movement will cause a significant effect on the nutrient content on a layer of depth.

The research made for the conduct of monitoring and observation of the phenomenon of upwelling that occurs in the waters of the Indian Ocean south of Java, precisely in the area of Management of Fisheries (WPP)-RI 576 by using satellite images of MODIS Terra/Aqua monthly in 2006 until 2007 as well as using wind data was later changed to transport vertically (Vertical Transport) and later became the Upwelling Index.

The results of this research are the distribution of Chlorophyll-a concentration of the highest occurred in September 2006 reached  $37353 \times 4\text{km}^2 = 149412\text{km}^2$  with chlorophyll concentration of  $0.05 \text{ mg/m}^3$  in the WPP-RI 573, January until March, Sea surface temperature is warmer compared to the month of September to December on WPP-RI 576, the location of up welling found plenty happening in the months September until November on WPP-RI 576. Satellite images Aqua/MODIS Terra can be used as a tool to detect the occurrence of Up Welling in the waters of Indonesia.

Keyword: Aqua/Terra MODIS Image, Up Welling, WPP-RI 576