

## Intisari

### **ANALISIS DISTRIBUSI SPASIAL DAN TEMPORAL KLOOROFIL-A DAN SUHU PERMUKAAN LAUT DI LAUT BANDA MENGUNAKAN CITRA SATELIT**

Konsentrasi klorofil-a dan suhu permukaan laut (SPL) dapat digunakan untuk menduga lokasi *upwelling* dan zona potensi penangkapan ikan. Penelitian ini bertujuan untuk mengetahui variasi spasial dan temporal konsentrasi klorofil-a dan SPL di Laut Banda periode 2003-2019. Data klorofil-a dan SPL diperoleh dari satelit Aqua MODIS *level 3*, data angin diperoleh dari data model ECMWF *ReAnalysis v5*, dan data profil vertikal klorofil-a diperoleh dari the Copernicus Marine Service. Data yang diunduh berupa data bulanan yang diolah menggunakan perangkat lunak IDL dan microsoft excel dengan luaran berupa peta spasial dan *time series* konsentrasi klorofil-a, SPL, kecepatan angin, dan profil vertikal klorofil-a. Hasil penelitian menunjukkan bahwa konsentrasi klorofil-a permukaan tinggi 0,33 mg/m<sup>3</sup> dan SPL rendah 26,6 °C mendominasi Laut Banda pada Monsun Timur (JJA) yang diduga ditimbulkan oleh kecepatan angin permukaan tinggi >4 m/s. Pada monsun tersebut, konsentrasi klorofil-a tinggi ditemukan di sekitar Pulau Buru dan Pulau Seram sehingga diduga sumber daya ikan pada tempat dan waktu tersebut melimpah. Saat Monsun Timur, profil vertikal konsentrasi klorofil-a pada kedalaman 1-47 m menunjukkan nilai yang lebih tinggi (0,15-0,32 mg/m<sup>3</sup>) dibandingkan monsun lainnya di kedalaman yang sama (0,08-0,13 mg/m<sup>3</sup>) dengan konsentrasi klorofil-a di perairan pantai lebih tinggi (0,27-0,32 mg/m<sup>3</sup>) dibandingkan di perairan lepas pantai (0,15 mg/m<sup>3</sup>) akibat dugaan intensitas *upwelling* di perairan pantai yang lebih kuat.

Kata kunci: klorofil-a, Laut Banda, suhu permukaan laut, *upwelling*

*Abstract*

**ANALYSIS OF SPATIAL AND TEMPORAL DISTRIBUTION OF  
CHLOROPHYLL-A AND SEA SURFACE TEMPERATURE  
IN THE BANDA SEA USING SATELLITE IMAGERY**

Chlorophyll-a concentration and sea surface temperature (SST) can be used to predict the locations of upwelling and fishing potential zone. This study aims to determine the spatial and temporal variations of chlorophyll-a concentration and SST in the Banda Sea for the period of 2003-2019. Chlorophyll-a and SST data were obtained from the satellite of Aqua MODIS level 3, wind data were obtained from the ECMWF ReAnalysis v5 model data, and chlorophyll-a vertical profile data were obtained from the Copernicus Marine Service. The monthly data downloaded is processed with IDL software and Microsoft Excel to produce spatial maps and time series of chlorophyll-a concentration, SST, wind speed, and chlorophyll-a vertical profile. The results showed that high surface chlorophyll-a concentrations of 0.33 mg/m<sup>3</sup> and low SST of 26.6 °C dominated the Banda Sea during the East Monsoon (JJA) which were thought to be caused by high surface wind speeds of >4 m/s. During the monsoon, high concentrations of chlorophyll-a were found around Buru Island and Seram Island, so it is suspected that fish resources were abundant at that time and place. During the East Monsoon, the vertical profile of chlorophyll-a concentration at a depth of 1-47 m shows a higher value (0.15-0.32 mg/m<sup>3</sup>) than other monsoons at the same depth (0.08-0.13 mg/m<sup>3</sup>) with higher concentrations of chlorophyll-a in coastal waters (0.27-0.32 mg/m<sup>3</sup>) compared to offshore waters (0.15 mg/m<sup>3</sup>) due to the expected stronger upwelling intensity in coastal waters.

**Keywords:** Banda Sea, chlorophyll-a, sea surface temperature, upwelling