

INTISARI

Dinamika *Upwelling* di Laut Sawu Periode 2003-2022

Laut Sawu berperan penting bagi ekosistem laut di Nusa Tenggara Timur karena memiliki kelimpahan sumber daya perikanan yang tinggi, kondisi tersebut menyebabkan masyarakat pesisir Laut Sawu bergantung pada sektor perikanan tangkap. Zona potensi penangkapan ikan umumnya berasosiasi dengan daerah *upwelling* karena perairannya memiliki nutrisi tinggi di permukaan. Penelitian ini bertujuan untuk mengetahui dinamika *upwelling* di Laut Sawu periode 2003-2022. Data yang dianalisis adalah data klimatologi bulanan klorofil-a dan Suhu Permukaan Laut (SPL) dari AQUA-MODIS, angin dari reanalisis ERA5, serta model distribusi vertikal klorofil-a, suhu, dan salinitas dari Copernicus Marine Environment Monitoring Service (CMEMS). Data yang didapatkan akan diolah menggunakan perangkat lunak SeaDAS, Microsoft Excel, ArcGIS, dan Spyder. Hasil penelitian menunjukkan *upwelling* terjadi ketika Monsun Tenggara (Mei-September) dengan puncak di bulan Agustus dan rata-rata klimatologi bulanan konsentrasi klorofil-a di permukaan sebesar 0,52 mg/m³, SPL sebesar 27,2 °C, dan kecepatan angin sebesar 3,2 m/s. *Upwelling* terkonsentrasi di lapisan percampuran di kedalaman 0-50 m. Proses *downwelling* mendominasi Laut Sawu ketika Monsun Barat Laut (Desember-Februari), sehingga menyebabkan permukaan Laut Sawu bersifat oligotrofik karena nutrisi tinggi terdapat di lapisan massa air dalam. Secara keseluruhan, hasil penelitian ini dapat digunakan nelayan untuk menentukan waktu dan lokasi penangkapan ikan.

Kata kunci: angin, klorofil-a, lapisan percampuran, monsun, suhu permukaan laut

ABSTRACT

Upwelling Dynamics in the Savu Sea During the Period of 2003-2022

The Savu Sea plays an important role in the marine ecosystem in East Nusa Tenggara due to the high abundance of fishery resources, this condition causes the coastal communities of the Savu Sea to depend on the capture fisheries sector. Fishing potential zones are generally associated with upwelling areas because the area contains high nutrients on the surface. This study aims to determine the dynamics of upwelling in the Savu Sea for the period 2003-2022. The data analyzed include monthly climatological data of chlorophyll-a and sea surface temperature (SST) from AQUA-MODIS, wind from ERA5 reanalysis, and vertical distribution models of chlorophyll-a, temperature, and salinity from the Copernicus Marine Environment Monitoring Service (CMEMS). Data processing was conducted using SeaDAS, Microsoft Excel, ArcGIS, and Spyder software. Research indicates that upwelling occurs during the Southeast Monsoon (May-September), with a peak in August and an average monthly climatological surface chlorophyll-a concentration of 0,52 mg/m³, sea surface temperature of 27,2 °C, and wind speed of 3,2 m/s. Upwelling is concentrated in the mixed layer at depths ranging from 0 to 50 m. During the Northwest Monsoon (December-February), the downwelling process dominates the Savu Sea, resulting in an oligotrophic surface due to the high level of nutrients located in the deeper water mass layer. Overall, the findings of this study can be used by fishermen to determine the time and potential locations of fishing grounds.

Keywords: chlorophyll-a, mixed layer, monsoon, sea surface temperature, wind