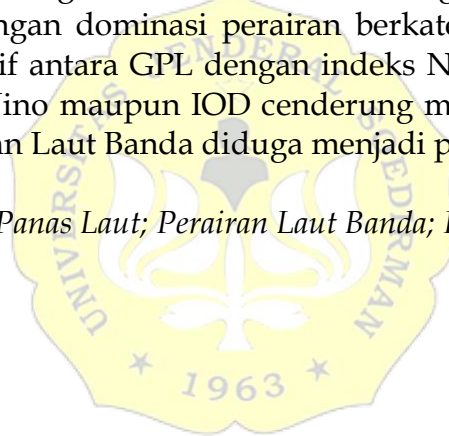


ABSTRAK

Laut Banda merupakan perairan yang dilalui sebagian besar massa air dari Samudra Pasifik menuju Samudra Hindia yang berpotensi mengalami peristiwa gelombang panas laut (GPL). Kejadian GPL merupakan peristiwa ekstrem kenaikan suhu permukaan laut (SPL) minimal lima hari berturut-turut. Penelitian ini bertujuan untuk mengidentifikasi karakteristik (frekuensi, intensitas, dan durasi), menentukan kategori, dan mengetahui penyebab terjadinya anomali suhu pada kejadian GPL di perairan Laut Banda. Metode yang digunakan dalam penelitian ini adalah deskriptif kuantitatif. Data SPL dari *Copernicus Marine Environmental Monitoring Service* (CMEMS) diolah menggunakan *software* Anaconda. Hasil penelitian menunjukkan terjadi 98 peristiwa GPL dengan frekuensi rata-rata 1-4 peristiwa per tahun, durasi rata-rata 5-20 hari, dan intensitas rata-rata 0,6-2,5 °C. Suhu dominan antara 1,1-1,5 °C, suhu maksimum mencapai 2,1-2,5 °C di wilayah tenggara. Pada tahun 2019-2020 terjadi kondisi maksimum dengan durasi terpanjang 97 hari dan suhu 1,54 °C, sedangkan pada tahun 2010, tercatat intensitas tertinggi sebesar 2,39 °C dengan durasi 48 hari. Sebaran kategori GPL terdiri dari sedang (58,16%), kuat (38,78%), dan parah (3,06%), dengan dominasi perairan berkategori sedang. Selain itu, terdapat korelasi negatif antara GPL dengan indeks Nino 3.4 dan IOD. Ketika SPL meningkat, nilai Nino maupun IOD cenderung menurun, dan sebaliknya. Proses *mixing* di perairan Laut Banda diduga menjadi penyebab kondisi ini.

Kata kunci: Gelombang Panas Laut; Perairan Laut Banda; Karakteristik; Kategori.



ABSTRACT

The Banda Sea is a water body through which a significant mass of water from the Pacific Ocean flows towards the Indian Ocean, making it prone to frequent marine heatwaves occurrences. The MHWs are extreme events characterized by sustained increases in sea surface temperature (SST) lasting for at least five consecutive days. This study aimed to identify the characteristics (frequency, intensity, and duration), determine categories, and understand the causes of SST anomalies during MHW events in the Banda Sea. A quantitative-descriptive method was employed, and surface temperature data obtained from the Copernicus Marine Environmental Monitoring Service (CMEMS) were processed using the Anaconda software. The results indicated a total of 98 MHW events with an average frequency of 1-4 events per year, an average duration of 5-20 days, and an average intensity of 0.6-2.5 °C. The dominant SST ranges from 1.1-1.5 °C, while the maximum temperature reaches 2.1-2.5 °C in the southeastern region. The year 2019-2020 experienced the longest duration of 97 days with a temperature of 1.54 °C, while in 2010, the highest intensity was recorded at 2.39 °C with a duration of 48 days. The distribution of MHW categories consists of moderate (58.16%), strong (38.78%), and severe (3.06%), with moderate classification dominating the spatial distribution. Furthermore, there is a negative correlation between MHW and the Nino 3.4 index and IOD, indicating that when SST values increase, Nino and IOD values tend to decrease, and vice versa. Mixing processes in the Banda Sea are suspected to be the cause of this condition.

Keywords: *Marine Heatwaves; Banda Sea; Characteristics; Categories.*

