

## KARAKTERISTIK DAN PENGARUH PARAMETER OSEANOGRAFIS TERHADAP TUTUPAN TERUMBU KARANG DI PULAU DERAWAN KALIMANTAN TIMUR

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### Intisari

Pulau Derawan terletak di sisi timur Pulau Kalimantan yang secara geografis memiliki perairan laut yang dinamis dan memiliki keragaman terumbu karang tertinggi kedua setelah Raja Ampat di Papua. Namun, persentase tutupan karang di Pulau Derawan cenderung menurun akibat berbagai faktor, seperti kondisi dinamika oseanografis, perubahan iklim, sedimentasi, dan intensifnya kegiatan wisata dengan kelalaian protokol. Penelitian ini bertujuan untuk mengetahui karakteristik oseanografis di perairan Pulau Derawan, mengetahui luas terumbu karang melalui persentase tutupan karang dan sebaran spasial karang di Pulau Derawan, serta mengetahui pengaruh karakteristik oseanografis terhadap tutupan dan sebaran spasial terumbu karang di Pulau Derawan. Karakteristik oseanografis berupa suhu, salinitas, dan arus diperoleh melalui *Ocean Forecast System* oleh Badan Meteorologi, Klimatologi, dan Geofisika dan observasi lapangan, sementara batimetri diperoleh di lapangan menggunakan *single-beam echosounder*. Karakteristik tutupan karang diperoleh melalui pengolahan citra Sentinel-2 yang divalidasi dengan transek garis menggunakan video sehingga diperoleh persentase tutupan karang, indeks mortalitas karang, serta sebaran karang secara spasial. Hasil penelitian menunjukkan bahwa suhu permukaan laut, salinitas, arus, dan batimetri berada dalam kondisi optimal untuk mendukung kehidupan terumbu karang, sedangkan tutupan karang berada dalam kondisi sedang hingga baik yang tersebar di lokasi transek dengan sebaran koloni karang terbanyak berada di sisi barat perairan Pulau Derawan. Klasifikasi kesesuaian menunjukkan bahwa salinitas merupakan parameter yang paling mendukung keberlangsungan hidup karang.

**Kata kunci:** suhu, salinitas, arus, terumbu karang, penginderaan jauh, kesesuaian, Derawan

**CHARACTERISTICS AND EFFECT OF HYDRO-OCEANOGRAPHIC  
PARAMETERS ON CORAL REEF COVER IN DERAWAN WATERS  
EAST KALIMANTAN INDONESIA**

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***Abstract***

*Derawan Island is located on the eastern side of Kalimantan Island, which geographically has dynamic seawater and has a high number of coral diversity, ranked second after the Raja Ampat Islands in Papua. Unfortunately, the percentage of coral cover in Derawan Island tends to decrease due to various factors, e.g., hydro-oceanographic dynamic conditions, climate change, sedimentation, and mass tourism with inappropriate protocols. This study aims to determine the hydro-oceanographic characteristics in the waters of Derawan Island, to determine the extent of coral reefs through the percentage of coral cover and the spatial distribution of corals on Derawan Island and their relation with the cover and spatial distribution of corals on Derawan Island. Hydro-oceanographic factors such as sea surface temperature, salinity, and currents were obtained through direct measurement and the Ocean Forecast System by the Indonesian Agency for Meteorological, Climatological, and Geophysics. In contrast, bathymetry was obtained directly in the field with a single-beam echosounder. Coral cover characteristics were obtained through Sentinel-2 image processing, validated with video recorded line transects to get the percentage of coral cover, coral mortality index, and spatial distribution of corals. The results showed that sea surface temperature, salinity, current, and bathymetry were in optimal conditions to support coral reef life, while the coral cover was in moderate to good condition spread over transect locations with the highest number of coral colonies distributed on the west side of Derawan Island waters. Furthermore, the suitability classification shows that salinity is the parameter that most supports coral survival in Derawan waters.*

**Keywords:** *temperature, salinity, current, coral reef, remote sensing, suitability, Derawan*