

ABSTRAK

STRUKTUR KOMUNITAS KARANG DAN IKAN KARANG DI PERAIRAN PULAU PAHAWANG

Oleh

AWWALIYANSYAH AKBAR

Pulau Pahawang merupakan salah satu pulau di Provinsi Lampung yang memiliki ekosistem laut yang beragam, salah satunya adalah terumbu karang. Terumbu karang dimanfaatkan biota asosiasinya sebagai tempat mencari makan, berlindung, dan berkembang biak. Penelitian bertujuan untuk menganalisis struktur komunitas karang dan ikan karang, serta menganalisis keterkaitan hubungan tutupan karang dan komposisi ikan karang dengan faktor fisika kimia perairan. Penelitian dilaksanakan pada bulan Agustus 2023 yang berlokasi di perairan Pulau Pahawang. Pengambilan data karang menggunakan metode *underwater photo transect* (UPT) dan pengambilan data ikan karang menggunakan metode *underwater visual census* (UVC). Data kualitas fisika kimia perairan yang diambil adalah suhu, kecerahan, arus, salinitas, pH, DO, fosfat, dan nitrat. Hubungan persentase tutupan karang dan komposisi ikan karang dengan parameter fisika kimia perairan dianalisis menggunakan metode *principal component analysis* (PCA). Persentase tutupan karang di keempat stasiun dengan dua kedalaman berbeda berkisar antara 41,75-63,3% yang dikategorikan sedang hingga baik. Nilai indeks keanekaragaman karang dan ikan karang pada semua stasiun di 2 kedalaman yang berbeda berturut-turut berkisar 2,1828-2,9031 dan 2,1670-2,5886 yang dikategorikan rendah hingga sedang. Persentase tutupan karang dan komposisi ikan karang di perairan Pulau Pahawang memiliki korelasi positif dengan kecerahan, arus, DO, pH, salinitas dan berkorelasi negatif dengan suhu, fosfat, dan nitrat.

Kata kunci: karang, ikan karang, struktur komunitas, *principal component analysis*.

ABSTRACT

THE COMMUNITY STRUCTURE OF CORAL AND CORAL FISH IN THE WATERS OF PAHAWANG ISLAND

By

AWWALIYANSYAH AKBAR

Pahawang Island is one of the islands in Lampung Province that has diverse marine ecosystems, one of which is coral reefs. Coral reefs are utilized by their associated biota as feeding ground, nursery ground, and spawning ground. The study aimed to analyze the structure of coral and reef fish communities, and analyze the relationship between coral cover and coral-associated fish composition with physical and chemical factors of the waters. The research was conducted in August 2023, located in the waters of Pahawang Island. Coral data were collected using the underwater photo transect (UPT) method and reef fish data were collected using the underwater visual census (UVC) method. Physical and chemical data of sea water are water temperature, clarity, current, salinity, pH, DO, phosphate and nitrate. The relationship between the percentage of coral cover and coral-associated fish composition with physico-chemical parameters was analyzed using the principal component analysis (PCA) method. The percentage of coral cover at the four stations with two different depths ranged from 41.75-63.3% which was categorized as moderate to good. Coral and coral-associated fish diversity index at all stations at two different depths ranged from 2.1828-2.9031 and 2.1670-2.5886, respectively, which were categorized as low to moderate. Percentage of coral cover and coral-associated fish composition in Pahawang Island waters had a positive correlation with clarity, current, DO, pH, Salinity and negatively correlated with water temperature, phosphate, and nitrate.

Keywords: coral, reef fish, community structure, principal component analysis.