

RINGKASAN

ANGGELITA YUSINTA SNAE (23380008). Analisis Kelimpahan Fitoplankton *Harmful Algal Bloom* (HAB) Berdasarkan Kedalaman Berbeda Pada *Surface Layer* Di Perairan Teluk Kupang. Ir. Yohanes Merryanto S, M.Si., Ph.D sebagai Pembimbing I dan Dr. Fanny Iriany, S.Pi, M.Si sebagai Pembimbing II. Program Studi Manajemen Sumberdaya Perairan, Fakultas Perikanan dan Ilmu Kelautan, Universitas Kristen Artha Wacana.

Penelitian ini dilaksanakan di Perairan Teluk Kupang, Provinsi Nusa Tenggara Timur, yang merupakan kawasan konservasi Taman Wisata Alam Laut (TWAL) dan daerah penangkapan ikan. Secara oseanografi, perairan ini dipengaruhi oleh pasang surut, arus, dan gelombang yang berperan dalam distribusi nutrisi serta dinamika fitoplankton. Aktivitas antropogenik di wilayah pesisir juga berpotensi meningkatkan masukan nutrisi yang dapat memicu pertumbuhan *Harmful Algal Bloom* (HAB). Pengambilan sampel dilakukan pada tiga stasiun yang mewakili wilayah penangkapan ikan menggunakan alat tangkap bagan.

Penelitian ini bertujuan untuk mengidentifikasi jenis, menganalisis kelimpahan dan menganalisis korelasi antara faktor lingkungan (fisik-kimia) dengan kelimpahan fitoplankton HAB berdasarkan kedalaman berbeda pada *surface layer* di perairan Teluk Kupang.

Penelitian ini telah dilaksanakan pada bulan November-Desember 2025 di tiga stasiun berbeda yaitu stasiun I (Kelapa Lima), Stasiun II (Oesapa) dan Stasiun III (Lasiana) yang terdapat di perairan Teluk Kupang. Metode yang digunakan dalam penelitian ini adalah metode survei yang bersifat eksploratif. Metode ini merupakan pendekatan penelitian lapangan yang dilakukan untuk mengkaji kondisi nyata di lokasi penelitian melalui pengambilan sampel air secara langsung. *Paralytic Shellfish Poisoning* (PSP) 2 spesies, *Diarrhetic Shellfish Poisoning* (DSP) 6 spesies, *Neurotoksin* 1 spesies, *Anoksia* dan *Hipoksia* 26 spesies, *Red Tide*, *Anoksia* dan *Hipoksia* 8 spesies. Kelimpahan fitoplankton potensial HAB yang ditemukan pada perairan Kelapa Lima pada kedalaman 0 m memiliki jumlah 2.810 sel/L, kedalaman 1 m 2.386 sel/L dan kedalaman 3 m 1.736 sel/L dengan jumlah total kelimpahan pada perairan Kelapa Lima 6.932 sel/L. Perairan Oesapa pada kedalaman 0 m memiliki jumlah 2.050 sel/L, kedalaman 1 m 3.650 sel/L dan kedalaman 3 m 3.906 sel/L dengan jumlah total kelimpahan pada perairan Kelapa Lima 9.606 sel/L. Perairan Lasiana pada kedalaman 0 m memiliki jumlah 2.534 sel/L, kedalaman 1 m 3.130 sel/L dan kedalaman 3 m 4.042 sel/L dengan jumlah total kelimpahan pada perairan Kelapa Lima 9.706 sel/L. Total kelimpahan fitoplankton potensial HAB di perairan Teluk Kupang 26.244 sel/L.

Kata Kunci : Analisis Kelimpahan, Jenis Fitoplankton Potensial HAB, Metode Eksploratif, Perairan Teluk Kupang

SUMMARY

ANGGELITA YUSINTA SNAE (23380008). Analysis of Phytoplankton Abundance in Harmful Algal Blooms (HABs) Based on Different Depths in the Surface Layer of Kupang Bay. Ir. Yohanes Merryanto S, M.Si., Ph.D. as First Advisor and Dr. Fanny Iriany, S.Pi., M.Si. as Second Advisor. Department of Aquatic Resource Management, Faculty of Fisheries and Marine Sciences, Artha Wacana Christian University.

The objective of this study is to identify species, analyze abundance, and examine the correlation between environmental factors (physical-chemical) and the abundance of HAB phytoplankton based on different depths in the surface layer of Kupang Bay waters.

This study was conducted in the waters of Kupang Bay, East Nusa Tenggara Province, which is both a Marine Nature Park (TWAL) conservation area and a fishing ground. Oceanographically, these waters are influenced by tides, currents, and waves, which play a role in nutrient distribution and phytoplankton dynamics. Anthropogenic activities in the coastal area also have the potential to increase nutrient input, which can trigger the growth of Harmful Algal Blooms (HABs). Sampling was conducted at three stations representative of the fishing area using bagan fishing gear. Translated with DeepL.com (free version)

This study was conducted from November to December 2025 at three different stations: Station I (Kelapa Lima), Station II (Oesapa), and Station III (Lasiana), all located in the waters of Kupang Bay. The method used in this study was an exploratory survey method. This method is a field research approach conducted to assess actual conditions at the study site through direct water sampling. Paralytic Shellfish Poisoning (PSP) 2 species, Diarrhetic Shellfish Poisoning (DSP) 6 species, Neurotoxin 1 species, Anoxia and Hypoxia 26 species, Red Tide, Anoxia and Hypoxia 8 species. The abundance of HAB-potential phytoplankton found in the waters of Kelapa Lima at a depth of 0 m was 2,810 cells/L, at a depth of 1 m it was 2,386 cells/L, and at a depth of 3 m it was 1,736 cells/L, with a total abundance in the waters of Kelapa Lima of 6,932 cells/L. The Oesapa waters at a depth of 0 m had a count of 2,050 cells/L, at a depth of 1 m 3,650 cells/L, and at a depth of 3 m 3,906 cells/L, with a total abundance in the Oesapa waters of 9,606 cells/L. The waters of Lasiana at a depth of 0 m had a count of 2,534 cells/L, at a depth of 1 m 3,130 cells/L, and at a depth of 3 m 4,042 cells/L, with a total abundance in the waters of Kelapa Lima of 9,706 cells/L. The total abundance of HAB-potential phytoplankton in the waters of Kupang Bay is 26,244 cells/L.

Keywords : Abundance Analysis, HAB-Potential Phytoplankton Species, Exploratory Method, Waters of Kupang Bay