

RINGKASAN

NISAK NIKMATUL JANA. ANALISIS KEPADATAN DAN KEANEKARAGAMAN PLANKTON DALAM KAITAN DI TINGKAT KESUBURAN PERAIRAN MANGROVE GUNUNG ANYAR TAMBAK SURABAYA, JAWA TIMUR. Dosen Pembimbing Dr. Endang Dewi Masithah, Ir., MP. dan Prayogo, S.Pi., MP.

Plankton merupakan organisme yang hidup melayang atau mengapung di dalam air. Konsentrasi pertumbuhan plankton di hutan mangrove yang juga merupakan produsen primer zat organik kawasan perairan ini lebih tinggi dibandingkan dengan perairan terbuka seperti lautan. Keberadaan plankton dapat dijadikan sebagai bioindikator kondisi perairan karena plankton memiliki batasan toleransi terhadap zat tertentu. Kelimpahan dan keragaman jenis plankton dipengaruhi oleh kualitas fisik maupun kimia perairan.

Penelitian ini bertujuan untuk mengetahui jenis-jenis, kepadatan dan keanekaragaman serta keterkaitan jumlah kepadatan plankton dengan tingkat kesuburan perairan mangrove Gunung Anyar Surabaya. Metodologi penelitian ini menggunakan metode survei yaitu suatu metode penelitian yang ditujukan untuk menggambarkan fenomena-fenomena yang ada, yang berlangsung pada saat ini atau saat yang lampau. Hasil penelitian disajikan dalam bentuk deskriptif.

Hasil identifikasi jenis – jenis plankton yang ditemukan di perairan hutan mangrove Gunung Anyar Surabaya yaitu *Asterionella* sp., *Pleurosigma* sp., *Navicula* sp., *Synedra* sp., *Pinnularia* sp., *Nitzschia* sp., *Skeletonema* sp., *Chaetoceros* sp., *Gyrosigma* sp., *Chlorella* sp., *Oocystis* sp., *Spaerocystis* sp., *Pandorina* sp., *Richteriella* sp., *Microcystis* sp., *Dactylocopsis* sp., *Spirulina* sp., *Trachelomonas* sp., *Lipocinclis* sp., *Netrium* sp., dan *Botryococcus* sp. Hasil perhitungan kepadatan plankton pada stasiun 1 yaitu 606.000 ind/L, stasiun 2 sebanyak 575.000 ind/L dan stasiun 3 sebanyak 448.000 ind/L. Spesies dengan kepadatan tinggi yaitu *Chlorella* sp., *Asterionella* sp. dan *Nitzschia* sp. Nilai Indeks Keanekaragaman stasiun 1 sebanyak 1,59 pada stasiun 2 sebanyak 1,65 dan stasiun 3 sebanyak 1,44 ($H' \leq 2,3062$) artinya keanekaragaman dan kestabilan komunitas rendah).

Hasil pengukuran parameter kualitas air yang dilakukan di perairan mangrove Gunung Anyar Surabaya diantaranya suhu mencapai $29,9^{\circ}\text{C}$ pada setiap stasiun, pH antara 7,5 - 7,9, salinitas berkisar antara 0 - 30 ppt, untuk DO berkisar antara 1,29 - 6,27 mg/l, nitrogen berkisar antara 0,021 - 0,036 mg/l dan fosfat berkisar antara, 0,049 - 0,062 mg/l.



SUMMARY

NISAK NIKMATUL JANAH. Analysis of Plankton Density and Diversity Correlated with the Fertility Rate of Mangrove Forest in Gunung Anyar, Tambak Surabaya, East Java. Academic Advisor Dr. Endang Dewi Masithah, Ir., MP. And Prayogo, S.Pi., MP.

Plankton was living organism floating in the water area. Plankton growth was usually concentrated in the mangrove forest which became one of the main primary producer containing higher organic matters compared with the open water environment, like ocean. The existence of plankton could be used as the bioindicator of water condition, since it had limitation tolerance to the certain substances. The abundance and diversity of plankton types is influenced by the water physical and chemical quality. This study was aimed to determine the types, density, and diversity, as well as the relation of plankton density with the mangrove fertility level in Gunung Anyar Surabaya. This study used the survey method that had a purpose to describe the existed phenomena, which took place at this time or the past. The study results were presented in the form of descriptive data.

The results showed that the types of plankton identified in the mangrove forest of Gunung Anyar were *Asterionella* sp., *Pleurosigma* sp., *Navicula* sp., *Synedra* sp., *Pinnularia* sp., *Nitzschia* sp., *Skeletonema* sp., *Chaetoceros* sp., *Gyrosigma* sp, *Chlorella* sp., *Oocystis* sp., *Spaerocystis* sp., *Pandorina* sp., *Richteriella* sp., *Microcystis* sp., *Dactylococopsis* sp., *Spirulina* sp., *Trachelomonas* sp., *Lipocinclis* sp., *Netrium* sp., and *Botryococcus* sp. The calculation result of the plankton density at the station 1 was 606,000 ind/L, station 2 was 575,000 ind/L and station 3 was 448,000 ind/L. The Highest density species were found in *Chlorella* sp., *Asterionella* sp. and *Nitzschia* sp. The density index value from the station 1 was 1.59, station 2 was 1.65, and station 3 was 1.44. The result also showed that the diversity index of the mangrove forest was low in diversity and showing a community stability ($H' \leq 2.3062$).

The water quality parammeters measured in the mangrove water area of Gunung Anyar such as the temperature was reached 29.9°C at each station, pH was ranged between 7.5 – 7.9, the salinity was 0 - 30 ppt, DO (Dissolved Oxygen)

content was ranged between 1.29 - 6.27 mg/l, nitrogen content was ranged between 0.021-0.036 mg/l, and phosphate content was ranged between 0.049 to 0.062 mg/l.

