

ABSTRAK

Risal Tarahim. NPM 0518161103. Karakteristik dan Kelimpahan Mikroplastik Sedimen Ekosistem Mangrove di Perairan Laromabati Kecamatan Kayoa Utara Halmahera Selatan. Di bimbing oleh Halikudin Umasangaji S.Pi., M.Si, Ph.D selaku pembimbing I dan Dr.Najamuddin S.T., M.Si selaku pembimbing II

Ekosistem mangrove telah mengalami pencemaran yang diakibatkan polusi yang berasal dari darat. Dampak kontaminasi tersebut terjadi secara global maupun lokal yang disebabkan oleh aktifitas manusia di ekosistem mangrove, pantai dan laut terbuka. Potensi sampah menjadi masalah utama pencemaran pesisir. Pencemaran sampah khususnya mikroplastik di ekosistem mangrove belum menjadi perhatian dalam merencanakan strategi pengelolaan ekosistem mangrove. Kurangnya informasi menjadikan penelitian mengenai identifikasi dan kepadatan mikroplastik pada sedimen ekosistem mangrove harus dilakukan

Penelitian ini dilakukan dengan tujuan untuk menganalisis karakteristik dan kelimpahan mikroplastik pada sedimen ekosistem mangrove dan menganalisis korelasi antara kelimpahan mikroplastik dengan kepadatan mangrove.

Pengambilan data mikroplastik pada penelitian ini pada tanggal 17 Juni 2023, di pantai Laromabati, Kecamatan Kayoa Utara, Kabupaten Halmahera Selatan. Data yang dikumpulkan merupakan data primer dengan melakukan pengambilan sampel di lapangan dan analisis sampel di laboratorium. Prosedur penelitian dilakukan melalui tiga tahapan yaitu : tahap persiapan, tahap pengambilan data, tahap analisis sampel di laboratorium.

Berdasarkan penelitian dan identifikasi jenis mangrove di lokasi penelitian diperoleh 5 jenis mangrove yaitu : *Sonneratia Alba*, *Rhizophora Mucronata*, *Avicennia Alba*, *Bruguiera gymnorhiza* dan *Xylocarpus granatum*. Hasil analisis kepadatan mangrove di stasiun 1 transect 1 menunjukkan nilai kepadatan tertinggi adalah jenis *Sonneratia Alba* dengan nilai 1000 tegakan/ha, Sementara untuk stasiun 2 di transect 1 jenis yang memiliki nilai kepadatan tertinggi adalah jenis *Rhizophora mucronate* dengan nilai 1400 tegakan/ha. Berdasarkan data yang diperoleh dari stasiun 1 terdapat lima jenis mikroplastik yang ditemukan pada stasiun satu diantaranya jenis fiber, film, pellet, granula dan fragmen dan enam warna yaitu hitam biru merah ungu kuning dan putih. Populasi mangrove pada kedua stasiun ditemukan berapa spesies didominasi oleh *Sonneratia alba* dan diikuti oleh *Bruguiera gymnorhiza*, *Rhizophora mucronate*, *Aegiceras Corniculatum* dan *Xylocarpus granatum* dengan nilai kepadatan 99%. Hasil uji statistik menunjukkan bahwa ada korelasi antara kepadatan mangrove dengan kelimpahan mikroplastik tetapi dalam kategori sangat rendah. Hal ini menunjukkan bahwa mayoritas faktor lain yang memegang peranan penting terhadap akumulasi mikroplastik sedimen di ekosistem mangrove.

Kata Kunci : Mikroplastik, Sedimen, Mangrove. Laromabati Kayoa Utara

ABSTRACT

Risal Tarahim. NPM 0518161103. Characteristics and abundance of sedimentary microplastics in the mangrove ecosystem in Laromabati waters North Kayoa District South Halmahera. Guided by Halikudin Umasangaji S.Pi., M.Si, PhD as supervisor I and Dr. Najamuddin S.T., M.Si as supervisor II

The mangrove ecosystem has experienced pollution originating from land. The impact of this contamination occurs globally and locally, caused coastal and open sea ecosystems. The potential for waste to become pollution. Waste pollution, especially microplastics in mangrove ecosystems, has not been a concern in determining mangrove ecosystem management strategies. The lack of information means that research regarding the identification and density of microplastics in mangrove ecosystem sediments must be carried out. The research was conducted with the aim of analyzing the characteristics and abundance of microplastics in mangrove ecosystem sediments and analyzing the correlation between microplastic abundance and mangrove density.

Microplastic data was collected in this research on June 17 2023, at Laromabati beach, North Kayoa District, South Halmahera Regency. The data collected is primary data by taking samples in the field and analyzing samples in the laboratory. The research procedure was carried out in three stages, namely: preparation stage, data collection stage, sample analysis stage in the laboratory. Based on research and identification of mangrove types at the research location, 5 types of mangrove were obtained, namely: *Sonneratia Alba*, *Rhizophora Mucronata*, *Aegiceras Corniculatum*

, *Bruguiera gimnorhiza* and *Xylocarpus granatum*. The results of the analysis of mangrove density at station 1 in transect 1 show that the highest density value is the *Sonneratia Alba* type with a value of 1000 stands/ha, while for station 2 in transect 1 the type that has the highest density value is the *Rhizophora mucronata* type with a value of 1400 stands/ha. Based on data obtained from station 1, there were five types of microplastics found at station one, including fiber, film, pellets, granules and fragments and six colors, namely black, blue, red, purple, yellow and white.

The mangrove population at both stations was found to be dominated by *Sonneratia alba* and followed by *Bruguiera gymnorhiza*, *Rhizophora mucronata*, *Aegiceras Corniculatum* and *Xylocarpus granatum* with a density value of 99%. The statistical test results show that there is a correlation between mangrove density with microplastic abundance but in the very low category. This shows that the majority of other factors play an important role in the accumulation of sedimentary microplastics in mangrove ecosystems.

Keywords: Microplastics, Sediment, Mangrove. Laromabati North Kayoa