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Diversity Seagrass in Pink Beach Lombok

Husnayati Hartini[a], Baiq Liana Widiyanti[a]
[a]*Departement of environmental Engineering, Faculty of Engineering, Universitas Hamzanwadi, Lombok, Indonesia*
E-mail: husnayatiqarira@gmail.com

Abstract: The purpose of this study was to determine the diversity of seagrass ecosystems in the coastal waters of Pink Beach Lombok. We conducted the study using the line transect method, divided into 10 stations. Descriptive method use as data analysis. Based on the results of the study got 7 species of seagrass in Pink Beach comprising Enhalus acoroides, Cymodocea rotundata, Cymodocea serrulata, Halophila minor, Halophila ovalis, Syringodium isoetifolium, and Thalassia hemprichii. Seagrass diversity at each station evenly distributed with a percentage of the area of the cover that is not too dense ranging between 40-75%. Environmental factors, on average, still support the growth of seagrass.

Keywords: Diversity, pink beach, seagrass

INTRODUCTION

Seagrass ecosystem is one compiler of the coast that has an important role in the ecological structure of the coastal area, among others as (1) primary producers in shallow seas; (2) living habitats of biota; (3) sediment traps; and (4) nutrient recyclers (Azkab, 1999; Ginsburg & Lowenstam, 1958; KikuchI & Peres, 1977; Phillips & Milchakova, 2003; Qasim & Bhattathiri, 1971; Thayer, 1975; Thorhaug & Austin, 1976). In pharmaceuticals, seagrass also plays a role in producing important bioactive compounds such as antioxidants (Amudha, Jayalakshmi, Pushpabharathi, & Vanitha, 2018). In addition, seagrass ecosystems also have an economic role, namely as a producer of fish and tourist destinations. Lombok Island has a fairly good seagrass potential where seagrass ecosystems are found in almost every district (Syukur, 2015). Based on (Hartini & Lestarini, 2019) research in the regency of East Lombok, seagrass beds scattered in several beaches in the south, one of them is Pink Beach (Tangsi Beach). The existence of seagrass on Pink Beach is important to analyze this because this beach is one of the leading tourist sites in East Lombok Regency. This study aims to analyze the diversity of seagrass plants in Pink Beach. Data about the diversity of seagrasses is very important to know for later can support data in the development of ecotourism activities.

METHOD

It conducted this research in March-April 2019. It carried observations and out using the line transect method (Kirkman, 1996; Rahmawati, Irawan, Supriyadi, & Azkab, 2014). We carry seagrass observations out when the seawater experiences receding with an average depth of 0.8 meters. It divides observation stations into 10 stations. It places each observation station on line transects from land to the sea (perpendicular to the coastline along seagrass zonation) in the intertidal area to near sea shores. The quadrant transect used is 50x50 cm in size and subdivided into 4 small boxes, this is to make it easier to identify sea grasses (McKenzie, 2008). Identify sea-grasses using an identification key based on guidelines (Hartog, 1970) and (Ronald C Phillips & Menez, 1988). Sampling types of sea grasses use random technique calculated and counted the number of individuals of each type and percentage of seagrass cover. Data analysis performed descriptively by calculating the diversity index and percentage of the seagrass cover area.

RESULTS AND DISCUSSION

Pink Beach is one of the leading tourist locations in East Lombok Regency. The actual beach called Tangsi Beach. The people who lived around the beach create the term Pink Beach because the color of the sand dominated by the fracture of pink coral and has a very impressive natural panorama and natural beauty that is so amazing. The beach in Sekaroh Village, Jerowaru District, and East Lombok Regency (Figure 1).

Figure 1. Pink Beach Located study

Based on observations on Pink Beach waters, it scattered seven seagrass species at each research station comprising Enhalus acoroides, Cymodocea rotundata, Cymodocea serrulata, Halophila minor, Halophila ovalis, Syringodium isoetifolium, and Thalassia hemprichii. We can find the distribution of seagrass at each point coordinates, as presented in Table 1.

Table 1. Coordinate Distribution of Seagrass

Observation station	Coordinate
1	S 08°51'38,3" E 116°34' 20,3"
2	S 08°51'39,2" E 116°34' 19,8"
3	S 08°51'41,1" E 116°34' 18,3"
4	S 08°51'42,0" E 116°34' 18,1"
5	S 08°51'42,7" E 116°34' 16,6"
6	S 08°51'42,4" E 116°34' 15,0"
7	S 08°51'41,7" E 116°34' 14,5"
8	S 08°51'42,6" E 116°34' 14,4"
9	S 08°51'43,3" E 116°34' 13,5"
10	S 08°51'40,0" E 116°34' 17,3"

Cymodocea serrulata is the most dominant type. *Cymodocea serrulata* has characteristics including jagged leaf tips, leaf blade with 4-9mm width, leaf length 6-15cm (often striped), and leaf sheath in the shape of a triangle (Arriesgado et al., 2015; M Hutomo & Nontji, 2014; Lanyon, 1986; Mefiez, Phillips, & Calumpong, 1983; Short & Frederick, 2003; Tanaka & Nakaoka, 2006). The percentage of seagrass covers area ranges between 40-75% (Figure 1). We can see data on the percentage of seagrass cover area at each research station in the following graph (Figure 2).

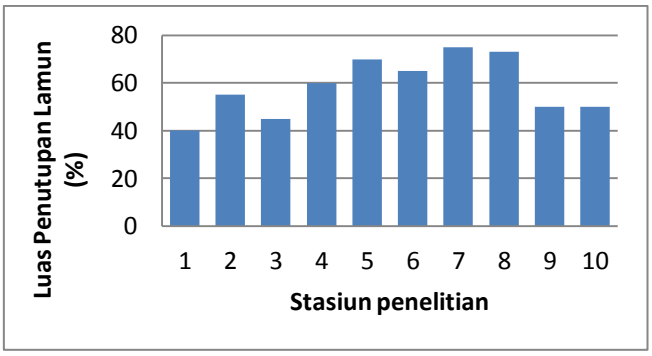

Figure 2. Percentage of Seagrass Cover**ed** Area

Based on the figure above, it shows that the percentage of seagrass cover area is classified as moderate (not too dense). This is likely because, at some point, found much damage seagrass plants. Visitor activities can cause seagrass damage, such as being trampled while traveling or because of the activities of the fishermen around when leaning the boat. Based on the results of measurements of several environmental factors such as the substrate base, current speed, depth of seagrass and the brightness of the waters average results got are still supportive for the growth of seagrass (Table 2).

Table 2. Supporting Environmental Factors

Environmental Factors	Value
Types of substrates	White sand
Number of association biota	>10
Current speed (cm/dt)	9
Seagrass depth (m)	0,7
Waters brightness (%)	85

The existence of seagrass ecologically is very important as supporting the balance of coastal ecosystems (Duarte et al., 2010; Fourqurean et al., 2012). Economically seagrass beds can support fisheries productivity and support ecotourism activities for the surrounding community. One type of seagrass ecotourism is *snorkeling*. The high diversity of seagrass at Pink Beach can be a special attraction when *snorkeling*. This is because one function of seagrass is as a shelter for marine biota (Cullen-Unsworth & Unsworth, 2013; Gullström et al., 2002; Malikusworo Hutomo & Moosa, 2005; Nyabakken, 1992; Robbins & Bell, 1994; Tol et al., 2017). We can also use the diversity data about seagrass as a basic reference, especially in making policies related to the development of ecotourism activities in the area.

CONCLUSION

Based on the results of the study found 7 (seven) species of seagrass in Pink Lombok Coastal waters consisting of *Enhalus acoroides, Cymodocea rotundata, Cymodocea serrulata, Halophila minor, Halophila ovalis, Syringodium isoetifolium, and Thalassia hemprichii*. The percentage of non-dense seagrass covers ranges from 40-75%. Environmental factors on average still support for the growth of seagrass.

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