
Seagrass is a complex aquatic ecosystem in trophic area with high productivity and biodiversity. This ecosystem play role of physics, chemistry, and biology. Biologically, seagrass used as spawning, feeding, and nursery ground for aquatic biota, especially fish. Seagrass is part of the coastal region where there are many human activities, such as coastal development, overfishing, boat traffic, and sand mining. One of the seagrass areas with high human activity around is Karang Lebar shallow waters, Kepulauan Seribu, Jakarta.

Types of data taken in this research is primary data, including environmental parameters, condition of seagrass and fishes that live in it. Fishes caught by gill net with mesh size from 0.5 - 3 cm. Sampling conducted in day and night, started from March until May 2011 with the arrest period twice a month. Observations were made at three stations of seagrass beds with different covering conditions (healthy, less healthy, and poor). Sorensen similarity index, constancy index, and fidelity index were used to determine the relationship of fish associated with seagrasses. In addition, it also used statistical tests such as Pearson correlation, biplot analysis, and Two Way ANOVA as a tool to test the truth of descriptive analysis results based on the facts as represented by data.

Three seagrass species found in the observation area include Thalassia hemprichii, Cymodocea rotundata, and Halophila ovalis. The highest cover obtained from Cymodocea rotundata. Value of total cover ranged between 26.5 % - 82.13 %. The highest INP of the species obtained from Cymodocea rotundata, indicate that these organisms have a great influence to the ecosystem.

Fish were caught consist of 37 species and 22 genera. Total abundance was found in all three observation stations for 2287 individuals (healthy seagrass), 547 individuals (less healthy seagrass), and 889 individuals (poor seagrass). Pre-adult fish dominate at each station. While the most commonly species found are Hypoatherina temmincki, Gerres oyena, and Scolopsis lineatus.

The catch composition on day and night differ in terms of abundance, type and size of the species. Adult fish were more common at night, although abundance in day were more than in the night. Based on size and species composition, healthy seagrass and less healthy seagrass functioning as nursery ground and feeding ground, while poor seagrass tend to play a role as feeding ground, especially for carnivorous fish. Change of the diversity and dominance value in the day and night allegedly due to the activity or movement of fish, which is not a permanent resident in seagrass. Referring Tomascik et al. (1997), permanent resident fish found in the observation area is Apogon margaritiphorus.

Based on Sorensen similarity index, the fishes were divided into six groups of species. Constancy index ranging from 0-1, while fidelity index ranges from 0-3. Group of species 1 has a high preference on healthy and poor seagrasses, and low preference in unhealthy seagrasses. Healthy seagrass also preferred by group 6, which include Apogon kallopterus, Apogon margaritiphorus, Hemirhapus far,
Chrysiptera hemicyanea, and Syngnathoides biaculeatus. Groups of species that have a high preference towards less healthy habitat is group 4, with Stethojulis balteata, and Chaetodon octofasciatus. Poor seagrass habitats favored by burrowing species.

Based on Two Way ANOVA, using 95% confidence interval obtained an obvious influence of different seagrass conditions on the abundance of individual. While the influence of the catch time (day-night) to the abundance of fish according to the statistic results are not significantly different.

Keywords: seagrass, fish association, nursery ground, feeding ground, spawning ground.