PERBEDAAN KARAKTERISTIK HABITAT MANGROVE PADA KAWASAN REHABILITASI DAN *SILVOFISHERY* DI MANGUNHARJO SEMARANG

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INTISARI

Pembukaan hutan mangrove menjadi tambak diakibatkan oleh permintaan hasil–hasil perikanan terutama ikan bandeng dan udang yang semakin meningkat telah merusak ekosistem mangrove. Usaha untuk memulihkan fungsi ekosistem mangrove salah satunya melalui kegiatan rehabilitasi yang meliputi penghijauan pantai dengan menanam mangrove dan dengan memanfaatkan *silvofishery.* Penelitian ini bertujuan untuk (i) mendeskripsikan karakteristik habitat mangrove pada kawasan rehabilitasi dan *silvofishery* (ii) mengidentifikasi perbedaan karakteristik habitat mangrove pada kawasan rehabilitasi dengan *silvofishery*.

Pengambilan data vegetasi di mangrove rehabilitasi menggunakan metode *systematic sampling with random start* dengan intensitas sampling sebesar 1 % karena lokasi penelitian termasuk kawasan rehabilitasi dengan vegetasi yang ditanam jenisnya homogen. Variabel yang diukur adalah kerapatan vegetasi kepadatan plankton, dan karakteristik habitat yang meliputi suhu, ketebalan lumpur, kandungan oksigen terlarut, salinitas, dan pH. Untuk lokasi *silvofishery* menggunakan metode sensus dan pada tiap lokasi *silvofishery* diukur parameter kualitas fisik, kimia, dan biologinya.

Hasil penelitian ini menunjukkan bahwa pada kawasan mangrove rehabilitasi dan mangrove *silvofishery* memiliki karakteristik habitat yang berbeda. Suhu pada kawasan mangrove rehabilitasi berkisar 29-37,5˚C dan di mangrove *silvofishery* berkisar 31-37,5◦C. Rata-rata ketebalan lumpur pada mangrove rehabilitasi 40,93 cm dan *silvofishery* 35 cm; rata-rata pH pada mangrove rehabilitasi 7,20 dan *silvofishery* 7,27; rata-rata kandungan oksigen terlarut pada mangrove rehabilitasi 3,30 mg/l dan *silvofishery* 1,89 mg/l; rata-rata salinitas pada mangrove rehabilitasi 1,93 ‰ dan *silvofishery* 2,07 ‰; kepadatan plankton pada mangrove rehabilitasi 92.826,09 individu/ml dan *silvofishery* 58.666,67 individu/ml; serta kerapatan vegetasi pada mangrove rehabilitasi pada tingkat hidup semai 32.608 individu/ha; pancang 14.382 individu/ha; tiang 300 individu/ha dan *silvofishery* pada tingkat hidup semai 154 individu/ha; pancang 26 individu/ha; tiang 3 individu/ha. Hasil analisis statistik menggunakan uji t independen dan uji *Mann-Whitney* menunjukkan faktor yang berbeda secara signifikan adalah ketebalan lumpur (t= 2,122; p= 0,038; db=59) dan kandungan oksigen terlarut (z= -1,994; p= 0,046). Karakteristik habitat tersebut menunjukkan bahwa program rehabilitasi konvensional lebih efektif untuk pemulihan ekosistem mangrove dari segi ekologi dan diutamakan untuk diterapkan. Sementara itu, program rehabilitasi dengan pola *silvofishery* dapat diterapkan dengan tetap memperhatikan baku mutu lingkungan yang berlaku.

Kata kunci: rehabilitasi, mangrove, *silvofishery,* karakteristik habitat

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DIFFERENCES IN MANGROVE HABITAT CHARACTERISTICS IN REHABILITATION AND SILVOFISHERY AREAS IN MANGUNHARJO SEMARANG

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ABSTRACT

The opening of mangrove forests into ponds due to the increasing demand for fishery products, especially milkfish and shrimp, has damaged the mangrove ecosystem. Efforts to restore the function of mangrove ecosystems one of them through rehabilitation activities that include coastal reforestation by planting mangroves and by utilizing silvofishery. This research aims to (i) describe the characteristics of mangrove habitat in the rehabilitation area and silvofishery (ii) identify differences in the characteristics of mangrove habitat in the rehabilitation area and silvofishery.

Vegetation data collection in rehabilitated mangroves using systematic sampling method with random start with sampling intensity of 1% because the research site includes a rehabilitation area with vegetation planted homogeneous type. The variables measured were vegetation density, plankton density, and habitat characteristics including temperature, mud thickness, dissolved oxygen content, salinity, and pH. For silvofishery locations using the census method and at each silvofishery location, physical, chemical, and biological quality parameters were measured.

The results of this study indicate that the rehabilitated mangrove area and mangrove silvofishery have different habitat characteristics. The temperature in the rehabilitation mangrove area ranged from 29-37,5˚C and in the silvofishery mangrove ranged from 31-37,5◦C. The average mud thickness in rehabilitated mangrove was 40,93 cm and silvofishery 35 cm; average pH in rehabilitated mangrove was 7,20 and silvofishery was 7,27; average dissolved oxygen content in rehabilitated mangrove was 3,30 mg/l and silvofishery was 1,89 mg/l; average salinity in rehabilitated mangrove was 1,93‰ and silvofishery was 2,07‰; plankton density in rehabilitated mangrove was 92.826,09 individuals/ml and silvofishery 58.666,67 individuals/ml; and vegetation density in mangrove rehabilitation at a seedling survival rate of 32.608 individuals/ha; saplings 14.382 individuals/ha; pole 300 individuals/ha and silvofishery at a seedling survival rate of 154 individuals/ha; saplings 26 individuals/ha; 3 individual poles/ha. The results of statistical analysis using the independent t test and Mann-Whitney test showed that the factors that were significantly different were mud thickness (t= 2,122; p= 0,038; df=59) and dissolved oxygen content with a significance value of (z= -1,994; p= 0,046). These habitat characteristics indicate that conventional rehabilitation programs are more effective for restoring mangrove ecosystems from an ecological perspective and should be prioritized for implementation. Meanwhile, rehabilitation programs using the silvofishery can be implemented while still paying attention to applicable environmental quality standards.

Keywords: rehabilitation, mangroves, silvofishery, habitat characteristics

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