ABSTRACT

NIRMALASARI IDHA WIJAYA. General Use Zone Governance by Optimizing of Scylla serrata Utilization in Kutai National Park on East Kalimantan Province. Under direction of FREDINAN YULIANDA, MENNOFATRIA BOER, and SRI JUWANA.

Mud crab is one of the resources in Kutai National Park (Kutai NP) mangrove ecosystem that can be utilized for the sylvofishery. This is an alternative livelihood for local residents, that doesn’t damage the forest to meet their necessity. The objectives of this study were: 1) to identify bioecological status of crabs resources in Kutai NP mangrove forest, 2) to review environmental carrying capacity for sylvofishery of S. serrata in Kutai NP’s mangrove ecosystem, and 3) make recommendations of mangrove crabs management to ensure the sustainability of its utilization and at the same time preserving the mangrove forest in the Kutai NP. The data was collected since Oktober 2008 to June 2010. The S. serrata’s bioecological status was analyzed by calculating the growth parameters and prediction of the exploitation rate of S. serrata using FISAT II instrumen. The carrying capacity of region was analyzed using Habitat Suitability Index (HSI) method, and the analysis of management sustainability was done using dinamic models. The results showed that there was a high interest from the public to cultivate mud crabs with sylvofishery system. But the catching of S. serrata, to meet of the mud crab seed, necessary to be regulated carefully. It was caused the factual exploitation rate of the Muara Sangatta and Teluk Perancis was exceeds the rate of allowed exploitation. The rate of exploitation was between 0.524-0.67/year. However, exploitation in Muara Sangkima is still slightly below the allowed exploitation. To reduce fishing pressure on S. serrata, sylvofishery cultivation needs to be done. The cultivation make the growth coefficient (K) of S. serrata to be higher, or the growth of crabs more faster than in wild live. HSI analysis showed the highest carrying capacity in the Muara Sangatta region was 0.622 and capable to supporting 490 of sylvofishery pen units. Based on the bioecological status of S. serrata and the carrying capacity of the region, it is known that the Muara Sangatta suitable for sylvofishery zone and Muara Sangkima according to fishing zone of S. serrata. Dynamic model analysis shows that the optimistic scenario provides a more optimal and sustainable resource in utilization of S. serrata.

Key words: Scylla serrata, mangrove, Kutai National Park, bioecology, sylvofishery, zoning.