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WANWIWA WICHITWARAKHUN : MACROBENTHIC FAUNA IN MANGROVE FOREST AT BAAN

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Species composition, abundance, and biomass of macrobenthic fauna in the mangrove forest, Baan Klong Kone, Samut Songkhram Province were investigated during October 1999 to October 2000. The samples were collected every three months. The transect along the western coastline of Prak Yai canal comprised of the tidal mudflat, 3 years old mangrove plantations, 6 years old mangrove plantations, 11 years old natural forest, inner natural forest and natural forest on landward side. The natural succession forest on the eastern of the canal was also investigated. A total of 105 species/taxa were collected from this area. Major benthic groups were polychaetes, crustaceans, and gastropods. Benthic community structure was categorized into 3 major groups: the first group comprised of those in the 11 years old natural forest, inner and landward natural forest, and natural succession forest. The second group were those in the 6 years old mangrove plantation. The last group were those in the mudflat and 3 years old mangrove plantation. The highest benthos density and biomass were recorded in the mudflat ($3,230.00 \pm 1728.60$ individuals.m⁻² and 11.67 ± 2.55 gm.m⁻² respectively) due to the abundance of polychaetes, Sabellidae sp.1, and bivalves, *Pelecypora gouldi*. This study revealed that sediment characteristics, topography, and tidal period, organic content, plant biomass, and forest structure were the major factors determining on the species composition and distribution of the benthic community in Baan Klong Kone mangrove forest.

Succession pattern of benthic community in mangrove plantation and natural succession forest were similar. Opportunistic species such as crustacean, Tanaidacean and oligochaete built up their population replacing previous major benthic groups. As the forest aged, the major benthos such as brachyurans, gastropods, and polychaetes has superseded the opportunistic species. The stability assessment of the mangrove condition in different sites, revealed that the natural succession forest was similar to the the natural forest. The stability of the 11 years old natural forest and 6 years old mangrove plantation were lower than the natural forest. However it was found that the 11 years old natural forest was more stable than the 6 years old mangrove plantation. The lowest stability was found in the 3 years old mangrove plantation as well as in the mudflat. Recolonization period of benthic fauna in the tidal mudflat would take more than 7 to 11 years depending on the degree of sedimentation and the availability of natural seedlings found in the area. It would take no less than 5 years for the recolonization processes in the natural succession forest on conditions of the degree of disturbances in the sediment and no interferences from human activities on the natural plant succession.