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KEY WORD: MANGROVE FOREST, BENTHIC MACROFAUNA, FIDDLER CRABS

JUMLONG TO-ON : BENTHIC MACROFAUNA AND DISTRIBUTION OF FIDDLER CRABS IN
MANGROVE FOREST, THA CHIN ESTUARY, SAMUT SAKHON PROVINCE. THESIS ADVISOR :
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Species composition, abundance and biomass of benthic macrofauna in the mangrove forest, Tha Chin Estuary, Samut Sakhon province were investigated during May 1997 to May 1998. The samplings were scheduled every four months. The transect along the western coastline of the estuary comprised of abandoned shrimp farm, mangrove plantation of 1 year, mangrove plantation of 5 years, *Nypa* forest, natural forest and tidal mudflat. The deteriorating mangrove forest on the eastern coastline was also investigated. A total of 68 species/taxa were collected from this area. Major benthic groups were crustaceans, gastropods, bivalves and polychaetes. Benthic community structure were categorized into 4 major groups : those under the tree canopy of natural forest, *Nypa* forest and mangrove plantation of 5 years ; those in the open area of mangrove plantation of 1 year and abandoned shrimp farm ; those in the tidal mudflat outside the forest and those in the deteriorating mangrove forest. The densities of these benthos in the natural forest, *Nypa* forest and mangrove plantation of 5 years were similar. The high biomass recorded in the natural forest of $6.39 \pm 2.22 \text{ gm.m}^{-2}$. The lowest biomass of $2.26 \pm 1.06 \text{ gm.m}^{-2}$ was recorded from the tidal mudflat. Density and biomass was highest in the deteriorating mangrove forest on the eastern coastline due to the abundance of bivalves, *Tellina* sp.

The distribution, abundance and biomass of fiddler crabs in the mangrove forests along the western coastline excluding the abandoned shrimp farm, were investigated during November, 1997 to September, 1998 on bimonthly schedule. *Uca (Deltuca) forcipata* and *U. (D.) dussumieri spinata* were the two species found in the area. Fiddler crabs, *U. (D.) forcipata*, were found distribution on the landward mangrove forests with the highest density and biomass occurring in the mangrove plantation of 1 year. *U. (D.) dussumieri spinata* limited their distribution on the seaward tidal mudflat and the mangrove fringes. They were not found in the landward mangrove forests namely the mangrove plantation areas and *Nypa* forest. Density and biomass of this fiddler crab were higher in the tidal mudflat than the natural forest. Comparative studies on allometric growth of these two fiddler crabs were also carried out. The present study revealed that the organic content in the sediments of the Tha Chin estuary were quite high. Thus the distribution and abundance of fiddler crabs were significantly related to the sediment characteristics.

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