



CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Five species of seagrasses were found at Koh Samui. At Yai Point, on the west coast of Koh Samui, 3 species of seagrasses, *Halodule uninervis* (wide-leaved form), *Halophila ovalis* and *H. ovata* were found mixed together at the depth of 5-7 meters, on fine sand to medium sand substrate. *Halodule uninervis* (wide and narrow varieties), *Halophila ovalis* and *H. ovata* found at Chon Khram Point with *H. uninervis* (wide-leaved form) as the dominant species, growing on medium sand to coarse sand at 2.5-3.2 meters depth. The Halophilid seagrass namely *Halophila ovalis*, *H. decipiens* and *H. ovata* were found at Hin Com Point, growing on fine to medium sand at 4.2-4.5 meters depth. *Enhalus acoroides*, the large seagrass species, was found at Chaweng Beach locating on the east coast of Koh Samui.

2. The seagrass biomass estimated was in the range of 0.004-1111.53 g.dry wt./m². Different species of seagrasses contributed to the variations in biomass. The above ground (shoot) portion in small species such as *Halophila ovalis*, *H. ovata* and *H. decipiens* was the major component in seagrass biomass. The large species *Halodule uninervis* biomass was from the root and rhizome system. The highest biomass recorded in *Enhalus acoroides* the largest seagrass species in the area with the majority of the biomass in the root and rhizome

system in the sediment. Seasonal variations in seagrass biomass were observed. This was probably related to the flowering and fruiting season in those seagrass beds.

3. The major environmental factors determining the seagrass distribution at Koh Samui were substrate types, water depth in relation to turbidity and competition among seagrass species.

4. Zooplankton communities in the seagrass beds at Koh Samui revealed that calanoid copepods was the dominant group at Yai Point. Copepods, mysidacea and brachyuran zoea were abundant at Chon Khram Point. Ostracod, mysidacea, tanaidacea and brachyuran zoea were the dominant groups at Chaweng Beach. These zooplankters are important food sources for invertebrates and fishes.

5. Amphipods, polychaetes and molluscs were the three dominant groups of benthic fauna associated in the seagrass beds at Koh Samui. In the mixed seagrass bed of *Halodule uninervis*, *Halophila ovalis* and *H. ovata* at Yai point, the dominant groups were corophiid amphipods, nereid and eunicid polychaetes and pelecypods (Mytilidae) respectively. Whereas at Chon Khram Point dominated by *Halodule uninervis*, nereid polychaetes, corophiid amphipods, pelecypods and gastropods were abundant. As for the mixed *Halophila* bed at Hin Com Point, two distinct groups were found, the corophiid amphipod and the cerithiid gastropods. The benthic fauna were more diverse in the *Enhalus acoroides* bed at Chaweng Beach. Tanaidacean, amphithoid amphipods, nereid, syllid and capitellid polychaetes, gastropods and turbellarian worms were recorded.

6. Nekton in the seagrass bed was more diversified than those on the

sand flat at Chaweng Beach. Caridean shrimps were the major component in the nekton found at Koh Samui. The night trawled samples revealed more diversified species of shrimps and crabs as compared to the day samples. Nekton in the seagrass beds at Koh Samui can be divided into two groups: Permanent resident such as caridean shrimps and small fishes, *Favonigobius sp.*, *Pelates quadrilineatus* and *Arceichthys hajam*, and seasonal resident such as brachyuran zoea and economical important fishes, *Siganus spp.*, *Epinephalus tauvina*, *Psammoperca waigiensis* and *Gerres sp.*. The role of seagrass beds as nursery was supported by the rich juveniles of penaeid shrimps, portunid crabs and fishes collected in the area.

7. It can be concluded from this study that the seagrass beds at Koh Samui play several important ecological roles in the marine ecosystem as food sources, habitat and shelter and nursery ground for numerous associated faunas.

Recommmendations

1. It is evidenced from this study that seagrass beds area of prime importance in terms of nursery ground for fishery resources. Detail studies on the relationship of economical important species of fishes, crabs on shrimps should be carried cut in more detail in order to understand the real function of seagrass to those species which also can be very usefel to the mariculture aspect if the larval behavior of those species are well understood. The studies, should lead to the manage ment aspect of fishery resources.
2. Detail contributions of seagrass beds to the coastal waters should be studied in the future in order to understand the function of seagrass beds to the production in the coastal areas. These studies should include distribution patterns, procutivity, phenology of seagrass and trophic relationships of associated faunas.
3. Seagrass beds are often found associated with coral reefs and mangrove. Future studies should be on the understanding the relationships of these 3 important ecosystems. Particulary special emphasis should be given to the interaction among these 3 ecosystems as well.
4. Few endanger species, i.e., dugongs, turtles etc. are depending on seagrasses, knowledge about their relationship and consurvation aspect should be emphasis. The study should also lead to the protection of seagrasses to those endanger species.