

Watchararat Linjee 2011: Role of Aquatic Environmental Factors on Spiny Lobster Distribution around Kapoe Bay, Ranong Province. Master of Science (Marine Science), Major Field: Marine Science, Department of Marine Science. Thesis Advisor: Associate Professor Shettapong Meksumpun, Ph.D. 185 pages.

Study on roles of environmental factors to the distribution of spiny lobsters in Kapoe Bay, Ranong Province (along the mouth of the bay, Kapoe strait, Kapoe canal, Bangbon canal, and Naka canal) was carried out from February 2009 to February 2010. The result showed that the environmental factors in the areas varied seasonally. The changes in the concentrations of ammonium-nitrogen and silicate-silicon had significantly affected ($P < 0.01$) to the change of chlorophyll *a* which could indicate the nourishment of the areas. The nourishment of the areas was classified as oligotrophic to mesotrophic status. Water contents of sediment of the lobster's habitat ranged from 10.10 to 31.96%. The total organic matters ranged from 17.01 to 68.15 mg/g dry weight. The water content of sediment showed a positive relation ($P < 0.01$) to total organic matters content. In this study three species of spiny lobster found were composed of Scalloped Spiny Lobster (*Panulirus homarus*), Mud Spiny Lobster (*P. polyphagus*), and Ornate Spiny Lobster (*P. ornatus*). High density of spiny lobsters was found along the mouth of Kapoe Bay. Topography of this area was characterized by narrow watercourse which was closer to the northern shore of the bay. The sea floor of the northern bay was characterized by the 15-20 cm diameter rocks with medium sand and a lot of coquina. Larger compositions of sediment grain size in this area ranged in 250-1,000 μm . The area of southern shore of the Kapoe mouth was characterized by rocks with some fine sand and coquina, and included with moldiness and leaf detritus between the rocks. The main composition of sediment grain size in this area was 500-1,000 μm . The study of spiny lobster distribution demonstrated that Mud Spiny Lobster mainly inhabited in the southern shore, whereas Ornate Spiny Lobster mainly inhabited in the northern shore of the Kapoe mouth. Mud Spiny Lobster was dominant species in the whole area. The environmental factors which seemed to affect the spiny lobster distribution were water temperature and total organic matter in the sediment. Water temperature had affected to the distribution of lobster at different depths of water. Total organic matter was important as food and energy source for the living organisms in those were preys for the lobsters and, thus, in the levels could influence on the species distribution and abundance of the spiny lobster in the area.

Student's signature

Thesis Advisor's signature