Study on relationships between environmental factors and distribution of echinoderms in coral reefs and seagrass beds in Thailand, during March, 2005 to January, 2006 was carried out. Echinoderms in coral reefs were found in 3 Classes 5 Orders 7 Families 11 Genuses and 14 species, whereas in seagrass beds were found in 3 Classes 5 Orders 5 Families 5 Genuses and 6 species and in sandy shore and rocky shore were found 1 Class 1 Order 1 Family 2 Genuses and 10 species. Results from statistics analysis showed that the highest values of species diversity index (1.75) , eveness index (2.41) and richness index (0.90) in sandy shore. In these areas, the concentrations of nitrite and nitrate-nitrogen and total organic matters were among 0.05-4.80 μM and 42.57-65.72 mg/g dry weight, respectively. The results clearly showed that water temperature, salinity, dissolved oxygen, pH and concentrations of ammonium-nitrogen, silicate-silicon and orthophosphate-phosphorus in surface water had no relation with the distribution of echinoderms. However, the concentrations of nitrite and nitrate-nitrogen in surface water had significant positive relation with the density of *Holothuria (Halodeima) atra*, *H. (Halodeima) edulis* and *H. (Mertensiothuria) leucospilota*. Moreover, *H. (Halodeima) atra* had significant positive relation with total organic matter. Overall results implied that *H. (Halodeima) atra* can be used as biological index for total organic matter. Since echinoderms are deposit feeder and the environmental condition of study site were suitable for echinoderms growth, the distribution of echinoderms had been affected by factors which related with their food more than other factors.

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