

# **Sedimentation in Coral Reefs and Seagrass Communities at Samui Island, Gulf of Thailand**

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Poor land-use practices always cause soil erosion in developed islands in Thai waters. This increased erosion is threatening estuaries, coral reefs and seagrass communities. Sedimentation rates in 8 stations on coral reefs and seagrass communities at southern Samui Island, Gulf of Thailand were investigated in 2006 – 2007. Bottom-mounted sediment traps, with a diameter of 5 cm and 11.5 cm in length, were mounted at the study sites. All of these traps were deployed for a period of seven days, after which they were replaced with new traps. The sediment trap data showed both temporal and spatial variation in sedimentation rates. In coral reef areas, sedimentation rates were in a range of 1.93 – 39.30 mg/cm<sup>2</sup>/d. However in seagrass communities sediment rates were higher, in a range of 3.91 – 52.45 mg/cm<sup>2</sup>/d. Sedimentation rates increased with heavy monsoon and boat traffic. The sedimentation rates in coral reefs of Samui Island were relatively high. The findings of the present study are applicable to many impacted coral reefs by river runoff in the Gulf of Thailand. Land-based pollution management in Samui Island is very essential for sustainable development of the island and for improving quality of coastal resources and environment.

Keywords: sedimentation, coral reef, seagrass