

## **Water Quality and Marine Resources in the Southern Gulf of Thailand**

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### **Abstract**

Investigation on water quality and marine resources from 23 stations of Southern Gulf of Thailand was conducted monthly in February, March, May and August 2006. Sampling zone was grouped into 3 areas i.e. area VII: Samui Island, Surat Thani Province - Tasala District, Nakhon Sri Thammarat Province, area VIII: Tasala District, Nakhon Sri Thammarat Province - Sathing Phra District, Songkhla Province, area IX: Sathing Phra District, Songkhla Province - Takbai District, Narathiwat Province. The results was as follows: water depth was 10.0-48.9 meter, water transparency was 1.5-25.5 meter, temperature was 27.2-31.8 °C, salinity was 31.1-34.1 ppt., pH was 7.97-8.38, dissolved oxygen was 5.18-7.95 mg/l, total suspended solid was 11.4-41.2 mg/l, current speed was 0-820 cm/sec, nitrite was ND-0.012 mg/l, nitrate was ND-0.170 mg/l, ammonia was ND-0.048 mg/l and phosphates was ND-0.193 mg/l. From PCA analysis, water quality factors could be classified into 5 groups by area i.e. group 1: nearshore and offshore areas from Samui Island, Surat Thani Province to Singhanakorn District, Songkhla Province group 2: nearshore and offshore areas from Ranod District, Songkhla Province to Takbai District, Narathiwat Province group 3: mouth of Nakhon Sri Thammarat bay group 4: nearshore area around Sathing Phra District, Songkhla Province and group 5: offshore area around Pak Phanang District, Nakhon Sri Thammarat Province. Four groups were categorized by time: group 1 was February, group 2 was March, group 3 was August and group 4 was May. There were 134 species of marine resources, of which *Leiognathus spendens*, *Photololigo duvaucelii*, *L. bindus*, *P. chinensis* and *L. leuciscus* was predominant with 11.60 % 11.39 % 10.69 % 8.63 % and 5.32 % of the total catch, respectively. Fish assemblage were identified by Cluster and MDS analysis into 6 groups by area i.e. group 1: nearshore area around Chana District, Songkhla Province, group 2: nearshore area from Samui Island, Surat Thani Province to Tasala District, Nakhon Sri Thammarat Province, group 3: nearshore area from Sathing Phra District, Songkhla Province to Sai Buri District, Pattani Province, group 4: offshore area from Kanom District to Pak Phanang District, Nakhon Sri Thammarat Province, group 5:

offshore area from Pak Phanang District, Nakhon Sri Thammarat Province to Takbai District, Narathiwat Province and group 6: nearshore area from Hua Sai District, Nakhon Sri Thammarat Province to Ranod District, Songkhla Province. Two temporal groups were also classified: group 1 was February whereas group 2 were March, May and August.

**Keywords :** marine resources, water quality, southern Gulf of Thailand

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