

## Stable isotope analysis of set-net catch in Rayong, Thailand

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**【Objectives】** For evaluating the sustainability of Japanese-type set-net introduced to Rayong province, Thailand, the mean trophic level of fish caught by the set-net had been analysed for 6 years based on the FAO FishBase labelling. Here, in order to identify the real trophic level for set-net catch, the stable isotope analyses were done for commercially important species and compared with their stomach contents.

**【Methods】** The muscle tissue samples and stomach contents of 271 individuals for total of 27 species of fish, were collected from the set-net from Dec 2012 to Mar 2013. Several environmental samples including mangrove leaves and SOM were also collected. Stomach contents were divided into biological categories at the Eastern Marine Fisheries Research & Development Center in Thailand. Stable isotope ratios were analysed by Delta plus XP at Research Institute of Humanity and Nature.

**【Results】** The stable isotope ratios of muscle tissues differed among fish species, ranging from 7.1 to 13.0‰ for  $\delta^{15}\text{N}$ , and -19.7 to -13.7‰ for  $\delta^{13}\text{C}$ . The widespread values of  $\delta^{15}\text{N}$  suggested that several trophic levels are included in the fish community from set-net catch. The highest  $\delta^{15}\text{N}$  was found in *Sphyraena qenie* ( $11.8 \pm 0.6\text{‰}$ ), and the lowest in *Siganus canaliculatus* ( $8.2 \pm 0.6\text{‰}$ ), with good agreement for most of species with the results of stomach contents analysis. While, some fish species such as *Restrelliger kanagurta*, *Terapon spp.* and *Carangoides spp.* were identified with different trophic levels between isotopic and stomach contents analysis, which require further sampling and analysis, including the effect of size differences.