Piyathap Avakul 2010: Population Dynamics of Greenback Mullet (*Chelon subviridis* Valenciennes, 1836) in Pak Phanang Bay, Nakhon Si Thammarat Province. Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Assistant Professor Thanitha Thapanand Chaidee, Ph.D. 138 pages.

The study on population dynamics of greenback mullet (*Chelon subviridis* Valenciennes, 1836) was carried out in Pak Phanang Bay, Nakhon Si Thammarat Province. The samplings stations were separated into 3 stations. Total of 1,651 fish belong to total length of 0.6 to 23.6 cm were monthly sampled by push net, set bag net during March 2006 to June 2007 and gill net during May 2007 to October 2007. Length of first capture (L_c) of push net was 8.30 cm, set bag net was 11.33 cm, gillnet was 15.10 cm and mixed gears were 9.83 cm, respectively. Sample length frequency distribution was adjusted using selection curve separated by gear. Unbiased samples of 5,784 fish composed of 4,303 fish (push net), 1,254 fish (gillnet), 227 fish (set bag net) Catch composition in term of number among 3 gears were: push net: gillnet: set bag net = 0.74: 0.22: 0.04, respectively.

Weight-length relationship was $W = 0.0157TL^{2.8438}$. Von Bertalanffy growth model was $L_t = 26.27 \times \left(1 - e^{-0.91 \times (t - 0.0983)}\right)$ and longevity was approximately 3 year 3 month. Recruitment pattern occurred once a year in October which gave the recruitment as 33.05%. Mortality parameters were as follows: natural mortality rate (M) was 1.81 yr^{-1}, total mortality rate (Z) was 4.73 yr^{-1} in push net, 3.27 yr^{-1} in set bag net, 6.23 yr^{-1} in gillnet and 5.59 yr^{-1} in mixed gears. Fishing mortality rate (F) was 2.92 yr^{-1} in push net, 1.45 yr^{-1} in set bag net, 4.71 yr^{-1} in gillnet and 3.78 yr^{-1} in mixed gears, respectively. Length at 50% maturity (L_m) was 15.80 cm.

An analysis of yield per recruit revealed that greenback mullet was over utilized in all gears with under maturity size compared to L_m. Therefore, it should control the fishing intensity in Pak Phanang Bay by 17% reduction of fishing mortality rate

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