Apirak Songrak 2015: Fisheries Biology of Blue Swimming Crab: A Case Study from Small-Scale Fisheries in Trang Province. Doctor of Philosophy (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Thanitha Darbanandana, Ph.D. 121 pages.

The samples of blue swimming crab from small-scale fisheries in Trang province were collected monthly during October 2010 to September 2011 **by** using four types of fishing gear operated along the coast of the province, i.e. fixed box trap, collapsible vertical trap, collapsible box trap and gill net. A total number of caught crabs were 9,582. The study showed that inner carapace width (ICW) and body weight (W) of crabs ranged between 4.24-13.71 cm and 10.00-430.00 g, respectively. The relationship between ICW and W was $W=0.234ICW^{2.768}$ and the growth pattern was allometric. The average fecundity was 481,753$\pm$ 221,503 eggs and spawning season was all the year. However, the highest spawning periods were occurred during December to February and July to September. The size at first maturity of male and female were 8.02 and 8.09 cm, the size of actively breeder of female crab ($ICW_{25\%}$ - $ICW_{75\%}$) was 7.88-8.30 cm. The ICW of good female broodstock ranged between 7.88-8.30 cm.

The results on growth parameters showed that the asymptotic inner carapace width (ICW_{∞}) was 14.80 cm, curvature parameter was 1.41 yr^{-1}. The total mortality coefficient (Z), fishing mortality coefficient (F) and natural mortality coefficient (M) were 7.14, 5.23 and 1.91 yr^{-1}, respectively. The inner carapace width at first recruitment ranged between 4.00-4.50 cm and the number of substitutes was 13,227,418. The exploitation rate (E) was 0.73, the maximum sustainable yield (MSY) was 211.67 $tons.yr^{-1}$ and the maximum economic yield (MEY) was 26.23 million $Baht.yr^{-1}$. The economic loss of young crab was 495,795 $Baht.yr^{-1}$. The results of the study indicated that the fishing of blue swimming crab at more than 9.50 cm in the size of ICW and control the crab yield at lower than 206 $tons.yr^{-1}$ are recommended to ensure sustainability of the blue swimming crab stock in Trang province.

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