

Chatchai Preecha 2012: Biology and Population Dynamics of Bocourti's Catfish (*Pangasius bocourti* Sauvage, 1880) in the Mekong River, Nong Khai Area. Doctor of Philosophy (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Thanitha Thapanand-Chaidee, Ph.D. 94 pages.

Biology and Population Dynamics of bocourti's catfish (*Pangasius bocourti* Sauvage, 1880) were studied in the Mekong River, Nong Khai Area. The samples were collected monthly by gillnets of mesh size; 4, 7, 9 and 14 cm (stretched mesh), from September 2007 to October 2008. A total of 2,673 fish were caught in size range from 9.3-55.5 cm. Catch per unit effort was significantly different station and month. The relationship between total length (TL) and body weight (W) was $W=0.0077TL^{3.0056}$ and complied by isometric growth pattern. The sex ratio of males > females was significantly noticeable (male: female = 1:1.38). The weather conditions varied moderately. The size at first maturity of male and female were 24.41 and 23.28 cm. The average fecundity was $95,671 \pm 99,285$ eggs. The relationship between fecundity (Fe) and total length was $Fe=0.0115TL^{4.1330}$. The spawning season was between April to July and Bueng Kan district was spawning area. The obtained parameters from the seasonal VBGF were fitted to the LFD as: asymptotic length = 57.62 cm TL, curvature parameter = 0.56 yr^{-1} , the theoretical age at length zero = -0.0163 yr, amplitude = 0.7 and winter point = 0.9. The life-span was estimated at 5.35 year. The instantaneous total, fishing and natural mortality coefficients were 2.29, 1.25 and 1.04 yr^{-1} , respectively. The recruitment pattern was one peak in a year and maximum in June. Length at first recruitment as 10.0 cm. The number of substitutes was 6,794 fish. Fishing pattern responded to the instantaneous fishing mortality rate which, increased with the length. The exploitation rate at 50% of the unexploited B'/R was 0.34. Furthermore, the estimated Y'/R at maximum exploitation rate was 0.64, which was still beyond the current exploitation rate. The maximum relative yield per recruit was 0.64. The maximum sustainable yield and the maximum economic yield were 2.44 ton and 141,755.39 Baht respectively. The optimal retention lengths of *P. bocourti* were estimated as 11.6, 20.3, 26.1 and 40.6 cm respectively. The *P. bocourti* were caught by gillnet, mesh sizes less than 9 cm and the MSY was less than 2.44 ton would conserve *P. bocourti* and sustainable resources for this vital fish are a growing concern in the Mekong River, Nong Khai area.

Student's signature

Thesis Advisor's signature