Research Article

Spatio-temporal distribution of the invasive Knifefish *Chitala ornata* (Gray, 1831) in Laguna De Bay, Philippines

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ABSTRACT

To determine the environmental factors influencing the dynamics of knifefish invasion in Laguna de Bay, spatio-temporal distribution of *Chitala ornata* was evaluated at 11 sampling stations in East, West and Central Bay. Overall knifefish catch was highest in May 2015 and dropped to 50% in August 2015. Total knifefish catch was higher at East Bay than that recorded in West and Central Bay. Knifefish caught from West and Central Bay were longer and larger than those caught at East Bay. Generalized Linear Mixed Modelling showed that the most significant predictors of total knifefish catch were dissolved oxygen, secchi depth, and pH, with the first two factors inversely correlated, and pH positively correlated with total catch. Temperature was the significant predictor for knifefish mean total length, and the combination of salinity and conductivity influenced their mean weight. Higher knifefish catch at East Bay could be attributed to high turbidity and pH, and low dissolved oxygen, suggesting that measures to improve environmental conditions such as better water quality management are needed to prevent increase of invasive knifefish. Results demonstrate the importance of local environmental influences on population characteristics of invasive fish and provides framework on how to control and manage invasive species.

Key words: bioinvasion; freshwater fish; water quality