LOSS OF AQUATIC FAUNA DURING COLLECTION OF *Penaeus monodon* POST LARVAE IN KUMIRA, COASTAL REGION OF CHATTOGRAM

Roll No. 0120/12

Registration No. 864

Session: 2020-2021

A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Fisheries Resource Management

Department of Fisheries Resource Management

Faculty of Fisheries

Chattogram Veterinary and Animal Sciences University

Chattogram-4225, Bangladesh

AUGUST, 2022

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August, 2022

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ACKNOWLEDGMENTS

All praises are due to **Almighty Allah** for blessing me with the strength, aptitude and patience and enabled me to pursue higher education and to complete the thesis for the degree of **Masters of Science (MS) in Fisheries Resource Management** under Department of Fisheries Resource Management, Chattogram Veterinary and Animal Sciences University, Chattogram, Bangladesh.

The author expresses his gratitude and indebtedness to Dean, **Professor Dr. Muhammad Nurul Absar Khan** from the bottom of his heart for their immense administrative support to complete his research work.

The author expresses his deepest sense of gratitude and sincere appreciation to **Dr. Sk. Ahmad Al Nahid,** Associate Professor and Head, Department of Fisheries Resource Management, Faculty of Fisheries, CVASU for his unfailing support, advice, and continuous motivation.

The author would like to express his deepest sense of gratitude, sincere appreciation, profound regards to her respected teacher and research supervisor **Abrar Shakil** Assistant Professor, Department of Marine Bioresource Science, Faculty of Fisheries, CVASU, for his unflinching co-operation, constant inspiration, warmth and indomitable guidance throughout the period of research work and preparation of the manuscript.

The author finds it a great pleasure in expressing his heartfelt gratitude to his research co-supervisor **Mrs. Shahida Arfine Shimul,** Assistant Professor, Department of Fisheries Resource Management, Faculty of Fisheries, CVASU, for his valuable suggestions for the completion of the research work.

The author expresses his gratefulness to Mohammad Bokhteyar Hasan, Mrs. Supriya Biswas and all other laboratory technicians, Faculty of Fisheries, CVASU, for their sincere cooperation.

The author finds it important to mention Jannatul Mawa and Md. Ullah Adnan for their sincere support and help for the completion of the research work.

Last, but not the least, the author expresses his heartfelt gratitude to his beloved parents **Md. Milonur Rahman** and **Sultana razia** for their selfless love, blessings, care, dedicated efforts, valuable prayers and continuous support during the academic life.

The Author

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LIST OF ABBREVIATION

Acronym	Definition
PL	Post larvae
Mm	Millimeter
Ft	Feet
ANOVA	Analysis of variance
SD	Standard deviation
QGIS	Quantam Geographic Information System

Abstract

In Bangladesh, due to a lack of hatchery-produced post-larvae compared to demand, shrimp farming is dependent on wild post larvae (PL). The activity of indiscriminate wild PL fishing has a notorious impact on biodiversity in coastal ecosystems due to significant amounts of by- catch. Samples were collected from three different selected stations using push and pull net in Kumira, Chattogram from January to December 2021 to analyze the quantity of black tiger shrimp (*Penaeus monodon*) post larvae (PL) and estimate the harm to various aquatic species during shrimp PL collection. The investigation revealed that approximately 261 crustacean, 53 fin fish and 297 unidentified larvae in station-1, 222 of crustacean, 47 fin fish and 231 unidentified larvae in station-2, 196 of crustacean, 52 fin fish and 224 unidentified larvae in station-3 were cruelly damaged at the time of collection for every 100 PL of *P. monodon. P. monodon* larvae were found to occupy a small portion of the total annual catch composition, such as 14%, 17% and 18% at station-1, 2 and 3, respectively. Higher number of *P. monodon* PL was found in August in all three sites. Finfish larvae were more abundant in rainy season (July to October) than other time of the year. *P. monodon* PL was also found to be higher in rainy season compared with the other groups. Whereas, their abundance reduced during winter season when PL of *Macrobrachium lamerrei* was in peak position. The statistical analysis revealed that, there was no significant difference ($P > 0.05$) among mean catch composition from different sampling stations. Also, the mean number didn't significantly differ with the change of different season. But the monthly mean catch composition of three sampling stations showed significant variation ($P < 0.05$). The findings show that the current seed harvesting approach severely harms other valuable aquatic fauna, which has an impact on the faunal diversity, natural productivity and self- recruitment pattern of mother stock.

Keywords: *P. monodon* PL, finfish, crustacean, damaged, catch composition