



**Gametogenic cycle with seasonal variation of *Perna viridis* in Moheshkhali Channel, Bangladesh**

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**A thesis submitted in the partial fulfillment of the requirements for the degree of  
Master of Science in Marine Bioresource Science**

**Department of Marine Bioresource Science  
Faculty of Fisheries**

**Chattogram Veterinary and Animal Sciences University  
Chattogram 4225, Bangladesh**

**JUNE 2019**

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(Aysha Rahi Noor)

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**This is to certify that we have examined the above Master's thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made**

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**The author  
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## **List of Abbreviation**

CI	Condition Index
GI	Gonad Index
GSI	Gonadosomatic index
SPSS	Statistical package for social science
Sp	Species
PAST	Paleontological statistics
ANOVA	Analysis of variance
g/cm <sup>3</sup>	Gram per centime cube
DO	Dissolve oxygen
MI	Milligram
M	Meter
Ppt	Parts per thousand
Mg/L	Milligram per liter
°C	Degree Celsius
m/s	Meter per second
<	Less than
>	Greater than
Et al	And his associates
Etc.	Et cetera
%	Percentage
Ppm	Part per million
Ft	Feet
Cm	Centimeter
CVASU	Chattogram Veterinary and Animal Sciences University

## **ABSTRACT**

Green mussel (*Perna viridis*) is one of the most potential mariculture shellfish species not only in context of Bangladesh but also for the world. A thorough study on the reproductive biology of *P. viridis* and determination of the accurate spat collection time is essential to develop the green mussel culture technology. Therefore, the main purposes of this study was to determine dynamics of the gonadal development accurately through histology, and to find how condition index (CI) is linked with the spawning of the green mussel. Twenty green mussel were collected each month from November 2017 to October 2018 from Moheskhali Channel, Chawfaldandi, Cox's Bazar. Collected samples were brought to the laboratory to measure body length, body weight, muscle weight, and dry weight. The general reproductive condition of the population were assessed by calculating mean gonadal index (GI). From the histological analysis, the sex ratio of male and female was found as 1:0.93 and no evidence of hermaphroditism in *P. viridis* were documented. There was a significant relationship between length and weight where  $R^2$  value was found to be 0.92, indicating a positive correlation between these parameters. The male CI value was relatively higher than female. The highest value of female and male GI were observed to be 2.1 and 2.4 in the month of January and February, respectively, and a minor increase was observed in the month of June. GSI (gonadosomatic index) value was found to be generally higher in male than female. The study confirmed that the spawning of green mussel occurred twice in a year with major spawning season from November to March and a very minor spawning during the month of June to July. However the study will be helpful for naturally occurring green mussel stock management and to develop future aquaculture aspect in Moheskhali Channel.

