



Potential for green mussel (*Perna viridis*) Culture in the Naf River of Bangladesh

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Master of Science in Marine Bioresource Science**

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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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*This thesis is
dedicated to my
beloved parents*

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List of Abbreviations

DO	-	Dissolve Oxygen
NO ₂	-	Nitrite
NO ₃	-	Nitrate
PO ₄	-	Phosphate
NH ₄	-	Ammonia
mL	-	Milliliter
m	-	Miter
mg	-	Milligram
ppt	-	Parts Per Thousand
mg/L	-	Milligram Per Liter
°C	-	Degree Celsius
µg/L	-	Microgram Per Liter
m/s	-	Minute Per Second
<	-	Less than
>	-	Greater than
e.g	-	Example
et al.	-	And his associates
etc.	-	Et cetera
%	-	Percentage
ppm	-	Parts Per Million
ft	-	Feet
cm	-	Centimeter
NTU	-	Nephelometric Turbidity Unit
Min-max	-	Minimum-Maximum
St	-	Station
EPA	-	Ecosapentaenoic Acid
DHA	-	Docosahexaenoic Acid
Sig.	-	Significance
NS	-	No Significance difference
Ref.	-	Reference
MS	-	Master of Science

ABSTRACT

Green mussel (*Perna viridis*) is an important source of affordable animal protein for coastal communities. The suitability of the environment influence the success and sustainability of this green mussel culture technic. The study was carried out to evaluate the possible aspect to culture *Perna viridis* in Naf River, Teknaf, Cox's Bazar. In this study, site suitability of Naf River for green mussel farming was evaluate based on the month wise variations of physico-chemical water quality parameters, and as well as the quantitative and qualitative abundance of plankton community from March 2018 to September 2018. Five stations were selected chronologically from downstream to upstream maintaining specific interval. The result showed that most of the water quality parameters were considered as suitable for green mussel culture. Salinity was fluctuated from 8 to 30 ppt during this period which was the major issue for green mussel culture. In Naf River, a total number of 29 genera of phytoplankton and 11 genera of zooplankton were identified, and their abundance varied from 12.27×10^3 to 126.67×10^3 cells/L depending on the months and stations. The class Bacillariophyceae dominated among the phytoplankton community with 62.05% of the total plankton count. After analyzing all the water quality parameter, qualitative and quantitative abundance of plankton, the selected stations exhibited site suitability for green mussel culture. In conclusion, the stations of Naf River are capable and moderately suitable for green mussel culture. This research will help to take initiative on proper management strategy to evaluate the aspect of *P. viridis* culture and guide the future research as baseline studies in this aspect.

Key words: *Perna viridis*, physico-chemical variations, plankton abundance, Site suitability, suitability rating