



MORPHOLOGICAL APPROACH TO THE IDENTIFICATION, DISTRIBUTION AND DIVERSITY OF FISH SPECIES UNDER CLUPEIDAE FAMILY IN THE CHATTOGRAM COAST

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Roll No: 0119/07

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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

Khulshi, Chattogram-4225, Bangladesh

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(Fahmida Sultana)

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



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List of Acronyms and Symbols Used

Abbreviation and symbols	Elaboration
cm	Centimeter
g	Gram
DoF	Department of Fisheries
<i>et al.</i>	Associates

ABSTRACT

In the case of marine fisheries resources of Bangladesh, Clupeidae is considered as the leading fish family and in terms of availability of marine fishes, Chattogram coast is at the top position. The present study aimed to identify the available Clupeidae fish species in the Chattogram coast on the basis of morphological characters and to highlight their distribution and diversification. During the one year sampling period a total of 375 fish specimens were collected from three sampling stations among them six species (*Tenualosa ilisha*, *Escualosa thoracata*, *Sardinella fimbriata*, *Sardinella longiceps*, *Hilsa kelee* and *Anodontostoma chacunda*) were identified as the member of Clupeidae fish family. By analyzing the morphometric and meristic characters it was found that the meristic characters remained constant. On the other hand due to having variations, the morphometric characters were taken for further analysis. Application of Pearson Correlation revealed most of the morphometric characters are highly correlated with each other, cluster analysis indicated monthly variation among the characters and Principal Component Analysis and its biplot demonstrated similarities between the sampling stations based on the morphometric characters. Finally length-weight relationship was measured for *Tenualosa ilisha*, *Escualosa thoracata*, *Sardinella fimbriata*, *Sardinella longiceps*, *Hilsa kelee* and *Anodontostoma chacunda* as $W=0.0386L^{2.6523}$, $W=0.0167L^{2.7344}$, $W=0.0084L^{3.0346}$, $W=0.0609L^{2.4474}$, $W=0.0032L^{3.4408}$ and $W=0.002L^{3.7169}$ respectively. The findings of the study will provide baseline information for both future research and management of the fish family in the Chattogram coastal region.

Key words: Clupeidae, Morphometric, Meristic, Correlation, Cluster analysis

