



**LARVAL FISH IDENTIFICATION USING  
MORPHOLOGY AND TEMPORAL DISTRIBUTION  
AT THE BAKKHALI RIVER ESTUARY, COX'S  
BAZAR, BANGLADESH**

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Roll No. 0120/03

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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**

**JUNE 2022**

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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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**JUNE 2022**

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# CONTENTS

<b>Title</b>	<b>Page No.</b>
Title Page	i
Authorization	ii
Signature page	iii
Acknowledgements	iv
List of Abbreviations	vii
List of Figures	viii
List of Tables	ix
List of Appendices	ix
List of Plates	x
Abstract	xi
<b>Chapter One: Introduction</b>	1-4
1.1 Background	1-3
1.2 Significance of the study	3
1.3 Objectives	4
<b>Chapter Two: Review of Literature</b>	5-11
2.1 Estuaries as nursing ground	5
2.2 Fish Larvae and its importance	5-6
2.3 Larval family	6-7
2.4 Abundance and distribution	7-9
2.5 Diversity indices	9-10
2.6 Spawning season	10-11
<b>Chapter three: Methodology</b>	12-17
3.1 Study area	12

3.2 Sampling procedure	13
3.3 Fish larvae sorting	13
3.4 Morphological identification of fish larvae	13-14
3.5 Determination of number of larvae, diversity indices and constancy of occurrence	14-16
3.6 Determination of the spawning season	17
3.7 Statistical analysis	17
<b>Chapter Four: Results</b>	18-25
4.1 Fish larval composition and abundance	18
4.2 Constancy of occurrence	19-20
4.3 Top two abundant families	20-21
4.4 Temporal density and diversity indices	21-23
4.5 Spawning season	23-25
<b>Chapter Five: Discussion</b>	26-29
5.1 Fish larval composition and abundance	26
5.2 Constancy of occurrence	27
5.3 Temporal density and diversity indices	27-28
5.4 Spawning season	28-29
<b>Chapter Six: Conclusion</b>	30
<b>Chapter Seven: Recommendations</b>	31
References	32-39
Photo Gallery	40-42
Appendices	43-46

## LIST OF ABBREVIATIONS

Acronym	Definition
M	Meter
$\mu\text{m}$	Micro meter
Mm	Millimeter
$\text{m}^3$	Cubic meter
Jan	January
Feb	February
Mar	March
Apr	April
May	May
Jun	June
Jul	July
Aug	August
Sep	September
Oct	October
Nov	November
Dec	December
S	Summer
W	Winter
M	Rainy monsoon
SD	Standard deviation

## LIST OF FIGURES

<b>Figure No.</b>	<b>Title</b>	<b>Page No.</b>
1	Map of Cox's Bazar region and study site	12
2	Morphometric characteristics of a fish larva	14
3	Temporal variation of composition and abundance of larval family	17
4	Percentage of the families found	18
5	Temporal abundance of top two families	21
6	Shannon-Wiener index of diversity of each month	22
7	Margalef's richness index of family of each month	23
8	Pieulo's evenness index of each month	23
9	Number of families in different spawning season	24



## LIST OF TABLES

<b>Table No.</b>	<b>Title</b>	<b>Page No.</b>
1	Total number of fish larvae/1000 m <sup>3</sup> and constancy of occurrence	20
2	Temporal variation of larval abundance at Bakkhali river estuary	22
3	Spawning season of identified fish larvae with their frequency of occurrence and spawning month	25

## LIST OF APPENDICES

<b>Sl. No.</b>	<b>Title</b>	<b>Page No.</b>
1	Operation of Fish larvae sampling in Bakkhali river estuary, Cox's Bazar coasts	43-44
2	Monthly Abundance of fish larvae and their biodiversity indices	44-45
3	Temporal variation of biodiversity indices at Bakkhali river estuary	45-46

## LIST OF PLATES

Plate No.	Title	Page No.
1	Sampling by bongo net	40
2	Fish larvae sorting from sample	40
3	Larvae identification under stereo microscope	40
4	Larvae labeling and storage	40
5	Clupeidae larva	40
6	Ambassidae larva	40
7	Engraulidae larva	41
8	Gobiidae larva	41
9	Sillaginidae larva	41
10	Mugilidae larva	41
11	Megalopidae larva	41
12	Blenniidae larva	41
13	Terapontidae larva	42
14	Sparidae larva	42
15	Gerreidae larva	42

## **Abstract**

The temporal abundance and composition of fish larval families and their spawning season in the Bakkhali river estuary of Cox's Bazar coast were studied from March 2020 to February 2021. Sampling was performed by a bongo net with two mouth openings. In total 883 individuals, representing 11 larval families, with a mean abundance of 73.58 individuals per 1000m<sup>3</sup>, were collected and identified under stereo microscope in this sampling period. Larvae that were found in this area were: Clupeidae, Ambassidae, Engraulidae, Gobiidae, Sillaginidae, Mugilidae, Megalopidae, Blenniidae, Terapontidae, Sparidae, and Gerreidae. Among them, Clupeidae, Ambassidae, and Engraulidae contributed 56.41%, 34.05%, and 2.95% of the total catch. The month of June was shown as the most diversified month, which had 94 individuals/1000m<sup>3</sup>. In contrast, May had the highest number of larvae families (06). Based on the constancy of occurrence, Clupeidae and Ambassidae were termed as "constant" as their larvae were found in seven months of that year. They spawn in summer, winter and monsoon. Most of the families (07) spawn in summer (March to June) and use this estuary as their nursing ground. The highest value of the Shannon-Wiener index was 1.055, observed in September. Both Margalef's and Pieulo's index were the highest in November, with 0.91 and 0.918, respectively. However, the diversity of larval assemblages in this estuary seems lower than in most other tropical estuaries. This study will establish the groundwork for sustainable fisheries resource management strategies in the Cox's Bazar region.

Keywords: fish larvae, Bakkhali river estuary, abundance, diversity indices, spawning season.