

**ASSESSING THE SATHURUKONDAN MANGROVE
ECOSYSTEM IN TERMS OF DIVERSITY, THREATS
AND CHALLENGES**



By
MOHAMED MAZoor NUSLA SHIROMI
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DEPARTMENT OF ZOOLOGY
FACULTY OF SCIENCE
EASTERN UNIVERSITY, SRI LANKA

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ABSTRACT

The present study was carried out from May to October 2023 in mangrove patches (A-J) located on either side of A-15 highway in Sathrukondan area in Batticaloa district within Thannamunai, Sathrukondan and Pillayaradi GN Division chose as study sites. In order to find the check list and calculate the abundance, community structure and diversity indices (Shannon-Weiner index, Pielou's evenness index, and Margalef index) total of 59 line transects and 99 quadrates were laid for mangroves. The same diversity indices also calculated for associated avifauna by points transect method. Vegetation pattern of mangrove further analyzed by relative density, relative frequency, dominance and importance value index (IVI). The outcome showed that, the study area, are home to eight true mangrove species belonging to six different families, including Least Concern (LC) namely, *Avicennia marina*, *Aegiceras corniculatum*, *Excoecaria agallocha*, *Rhizophora mucronata* and *Sonneratia caseolaris* and while Near Threaten (NT) species *Avicennia officinalis*, *Rhizophora apiculata*, and *Lumnitzera recemosa*. Among them *E. agallocha* dominated, while, *A. corniculatum* showed very lowest distributions. Similarly, there were 9 mangrove associates were identified. Overall, the selected study Shannon-Weiner diversity showed a lowest value ($H' = 1.132$), with lowest evenness ($J = 0.544$) and low richness ($M = 0.794$), it could be attributed to *E. agallocha* dominance. *E. agallocha* has the greatest importance value (145.78) due to its high relative density, relative frequency, and relative dominance. subsequently, *L. recemosa* (IVI = 44.47), *S. caseolaris* (IVI = 32.34) *R. apiculata* (IVI = 27.38), and *A. officinalis* (IVI = 22.41) are next in rank to *E. agallocha*. A total of 2519 individuals of bird species representing 30 families and 46 species including two migrant species (Gull billed tern and Common sandpiper). Among 26 species of aquatic birds and 20 species of terrestrial birds. Ardeidae (8 species) were the most dominant followed by Rallidae (3 species). The overall Shannon-Weiner Diversity Index for birds of entire study area is $H' = 3.310$. In terms of overall species richness and evenness, Margalef's Index and Pielou's Index are 5.746 and 0.865 respectively. Based on direct field observations, there were many human induced threats noticed those are habitat modification, disturbances, fragmentation, waste disposal and other extractive uses of mangroves. This study indicates that the above threats are in the primary stage and this would be the right time to implement the protective measures.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF PLATES.....	xi
LIST OF ABBREVIATIONS.....	xii
LIST OF APPENDICES.....	xv
CHAPTER 01.....	1
1.0 INTRODUCTION	1
1.1 Mangroves	1
1.2 Geographical Distribution of Mangroves	2
1.2.1 Global distribution.....	2
1.2.2 Distribution in Sri Lanka.....	3
1.3 Types of mangroves – Based on habitat.....	5
1.3.1 True mangroves.....	5
1.3.2 Mangrove associates	7
1.4 Adaptations of mangroves.....	7
1.4.1 Roots.....	8
1.4.2 Leaves.....	10
1.4.3 Salt tolerance	10
1.4.4 Reproduction	11
1.5 Faunal Biodiversity of Mangroves	12
1.5.1 Mangrove avifaunal diversity.....	12
1.6 Roles of Mangroves.....	13
1.6.1 Ecological importance.....	13

1.6.2	Economic importance.....	15
1.6.3	Medicinal importance.....	16
1.6.4	Aesthetical importance.....	16
1.6.5	Spiritual.....	17
1.7	Threats to mangroves.....	17
1.7.1	Overexploitation of mangrove products.....	17
1.7.2	Habitat destruction.....	17
1.7.3	Climate Change and Global Warming.....	18
1.7.5	Invasive Alien Species (IAS).....	18
1.7.6	Tourism.....	18
1.7.7	Eutrophication.....	19
1.7.8	Trimming.....	19
1.8	Mangrove related acts and policies in Sri Lanka.....	19
1.9	Necessity of monitoring mangroves and associated avifaunal composition.....	21
1.10.	Diversity indices.....	23
1.10.1	Shannon-Weiner index.....	23
1.10.2	Pielou's evenness index.....	23
1.10.3	Margalef index.....	23
1.10.4	Simpson's diversity index.....	24
1.10.5	Dominance index.....	24
1.11	Rationale of the study.....	24
1.12	Objectives of the study.....	25
1.12.1	Overall Objective.....	25
1.12.2	Specific Objectives.....	25
CHAPTER 02.....	26	
2.0 MATERIALS AND METHODS.....	26	
2.1	Study area.....	26
2.2	Topography and Climatic condition.....	26
2.3	Site selection and Map preparation.....	26

2.4	Counting techniques.....	38
2.4.1	Counting of Mangroves.....	38
2.4.2	Birds counting	39
2.5	Diversity calculation.....	40
2.5.1	Shannon-Weiner Diversity index (H')	40
2.5.2	Pielou's Evenness (J)	40
2.5.3	Margalef index (d).....	40
2.6	Community structure or vegetation analysis.....	41
CHAPTER 03.....		42
3.0 RESULTS AND DISCUSSION.....		42
3.1	Identification of mangrove species	42
3.1.1	True mangrove species.....	42
3.1.2	Associated mangrove species.....	44
3.2	Floristic composition of mangroves.....	44
3.3	Diversity indices analysis.....	46
3.3.1	Mangrove diversity analysis.....	46
3.4	Vegetation analysis.....	49
3.5	Threats and challenges	53
3.5.1	Overexploitation of mangrove	53
3.5.2	Pollution	55
3.5.3	Urbanization	56
3.5.4	Invasive alien species (IAS).....	58
3.5.5	Eutrophication	59
3.5.6	Diseases.....	59
3.6.	Bird species in the study sites.....	62
3.7	Abundance of aquatic birds	65
3.8	Abundance of terrestrial birds	66
3.9	Abundance of migratory birds	66
3.10	Diversity indices of birds.....	67

3.11 Threats for avifaunal community.....	69
CHAPTER 04.....	72
4.0 CONCLUSION	72
CHAPTER 05.....	75
5.0 RECOMMENDATIONS	75
5.1 For Mangroves	75
5.1.1 Stakeholder mapping.....	76
5.1.2 Recommend alternate source for energy and building materials	76
5.1.3 Stop brush pile fishery.....	76
5.1.4 Proper solid waste dumping mechanism	77
5.1.5 Declaration of buffer zone.....	77
5.1.6 Smart land use planning	77
5.1.7 Sustainable mangrove management by awareness creation.....	78
5.1.8 Enforced strict laws and regulation	78
5.1.9 Introduce incentive schemes for mangrove ecosystem services	79
5.1.10 Promoting ecotourism	79
5.1.11 Invasive alien species (IAS).....	79
5.1.12 Avoid freshwater intrusion by establish proper catchment management .	80
5.1.13 Diseases management	80
5.1.14 Avoid cattle grazing	80
5.2 For Avifauna.....	81
CHAPTER 05.....	83
5.0 REFERENCES	83
APPENDIX.....	98