UNIVERSITI TEKNOLOGI MARA

FISH COMMUNITY AND FISH DIETS OF THE REPLANTED MANGROVES OF SUNGAI HAJI DORANI, SELANGOR, MALAYSIA

MUSTAQIM BIN KAMARUL ARIFFIN

MSc

October 2021

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student	:	Mustaqim Bin Kamarul Ariffin
Student I.D. No.	:	2017661778
Programme	:	Master of Science in Applied Biology – AS730
Faculty	:	Applied Sciences
Thesis Title	:	Fish Community and Fish Diets of the Replanted Mangrove of Sungai Haji Dorani, Selangor, Malaysia
Signature of Student	:	
Date	:	October 2021

ABSTRACT

This study was conducted at the replanted mangroves of Sungai Haji Dorani, located in the state of Selangor, on the west coast of Peninsular Malaysia. The aim of the study was to determine the species composition, diversity, morphometrics and diets of the fishes of the replanted mangroves. A total of 570 fishes from 9 families comprising 9 fish species were sampled by utilising a barrier net. The abundant and commercially important fish taxa were *Nibea soldado*, *Chelon subviridis* and *Plotosus canius*. The diversity indices recorded were of low measure (H' = 1.24, D = 2.90 and J = 0.56). The total fish density and biomass of the fishes was $0.52 \text{ no/m}^2/\text{hr}$ (mean= 0.17 ± 0.11) and $28.48 \text{ g/m}^2/\text{hr}$ (mean= 9.49 ± 7.18) respectively. A majority of the fishes sampled were juveniles except for *Strongylura strongylura*. Levin's niche breadth showed that all fish species were specialist feeders. Stomach fullness analysis showed low fullness while the Index of Relative Importance (IRI) showed that the diet consisted mainly of crustaceans, bivalves and gastropods. The Length-Weight Relationship assessment of the fishes followed negative allometric growth where, *b*<3. The replanted mangrove habitat of Sungai Haji Dorani functions as nursery and feeding grounds for coastal fish.

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my MSc and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor Dr. Harinder Rai Singh.

My appreciation goes to the Encik Salleh who provided the facilities and assistance during sampling. Special thanks to my colleagues and friends for helping me with this project.

Finally, this thesis is dedicated to my father, mother and wife for the vision and determination to educate me. This piece of victory is dedicated to all of you. Alhamdulillah.

TABLE OF CONTENTS

CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iiii
ABSTRACT	ivv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	xi
LIST OF PLATES	xiii
LIST OF SYMBOLS	xiv
LIST OF ABBREVIATIONS	XV

CHAPTER ONE: INTRODUCTION			
1.1	Research Background	1	
1.2	Problem Statement	3	
1.3	Hypothesis and Research Questions	4	
1.4	Objectives	5	
1.5	Research Framework Design	6	
1.6	Significance of Study	7	
1.7	Scope of Study	7	
1.8	Limitations of Study	7	

CHAPTER TWO: LITERATURE REVIEW			8
2.1	Mang	8	
2.2	Mangrove Fisheries		
	2.2.1	Fish Diet and Feeding Habits	12
	2.2.2	Length Weight Relationship	13
2.3	Mang	rove Forest Degradation	14