INVENTORY OF MANGROVES AND OTHER FLORAL SPECIES AND DESCRIPTION OF ENVIROMENTAL FACTORS IN BARANGAY WAKAS/POBLACION IN KAWIT, CAVITE

A Thesis Presented to the Faculty of Biological Sciences Department College of Science and Computer Studies De La Salle University – Dasmariñas

In Partial Fulfilment of the Requirements for the Degree Bachelor of Science Major in Human Biology

> DANNA MAE T. BONDOC LOI D. DOLLETE

> > March 2013



ABSTRACT

Mangrove areas serve as habitat for aquatic organisms, tidal control and are said to be very useful for humans in many different ways. This study was conducted to identify the mangroves and their associated species that dwell within the study site and also to describe the environmental factors that can be observed in the area. Plant specimens were gathered and different environmental factors were recorded. Results revealed that there were a total of 28 species belonging to 18 families. Out of 28 species, 6 species belonging to 4 mangrove families and 22 species belonging to mangrove-associated families were found. Nitrite, Phosphorus, water temperature, aerial temperature, dissolved oxygen, pH, salinity, conductivity, total dissolved solids, soil particle size, soil moisture content and soil texture gave good and normal results while Nitrate, Hardness and soil temperature gave high results. The results just show that the study site is still capable of supporting the plant species as well as the other organisms that habituate the mangrove area.



De La Salle University - Dasmariñas BIOLOGY PROGRAM



TABLE OF CONTENTS

Title Page	1	
Approval Sheet	2	
Acknowledgements	3	
Abstract	4	
Table of Contents	5	
CHAPTER 1: INTRODUCTION		
1.1 Background of the Study	11	
1.2 Objectives of the Study	12	
1.3 Scope and Limitations	13	
1.4 Significance of the Study	13	
1.5 Definition of Terms	14	
CHAPTER II: REVIEW OF RELATED LITERATURE		
2.1 Conceptual Studies	17	
Mangal	17	
Distribution of Mangal	19	
Nature of Mangroves	22	
Threats to Mangroves and Their Associated Species	23	
Mangroves and Environmental Factors	25	
2.2 Related Studies	30	

De La Salle University - Dasmariñas BIOLOGY PROGRAM



CHAPTER III: METHODOLOGY	
3.1 Research Design	33
3.2 Research Setting	33
3.3 Research Procedure	34
Collection of Mangrove Flora and Other Floral Species	34
Identification of Collected Species	36
Presentation of Results	36
Determination of the Environmental Factors	37
CHAPTER IV: RESULTS & DISCUSSION	
4.1 Results	41
Mangroves and Other Floral Species	41
Taxonomic Key and Plant Description	43
Environmental Factors	72
4.2 Discussion	
Mangroves and Other Floral Species	74
Environmental Factors	79
CHAPTER V: CONCLUSION & RECOMMENDATIONS	
5.1 Conclusions	85
5.2 Recommendations	86
CITED REFERENCES	88

De La Salle University - Dasmariñas



LIST OF APPENDICES

A.	Map of the Site	98
B.	Standard Procedures	100
C.	Photo Documentation	113
D.	Raw Data	117
E.	Herbarium Certificate	120
F.	Curriculum Vitae	122



De La Salle University - Dasmariñas



LIST OF TABLES

Table No.	Table Title	Page No.
Table 4.1.1	Mangrove Plants at Brgy. Wakas/Poblacion	41
Table 4.1.2	Mangrove-Associated Plants at Brgy.	42
	Wakas/Poblacion	
Table 4.1.3	Nitrogen, Phosphorous, Hardness Content,	72
	Dissolved Oxygen, pH, Salinity, Conductivity,	
	and TDS Level at Brgy. Wakas/Poblacion	
Table 4.1.4	Aerial, Water and Soil Temperature at Brgy.	72
	Wakas/Poblacion	
Table 4.1.5	Soil Particle Size, Soil Moisture Content and	73
	Soil Texture at Brgy. Wakas/Poblacion	
Table 4.1.6	Longitude, Latitude and Elevation at Brgy.	73
	Wakas/Poblacion	

De La Salle University - Dasmariñas BIOLOGY PROGRAM



LIST OF PLATES

Plate No.	Plate Title	Page No.
Plate 4.1.1	Close-up view showing the fruits of Rhizophora apiculata	46
Plate 4.1.2	Close-up view showing the fruits of <i>Rhizophora</i> mucronata	47
Plate 4.1.3	Close-up view showing the leaves of <i>Bruguiera</i> gymnorrhiza	48
Plate 4.1.4	Close-up view showing the flowers of <i>Sida acuta</i>	49
Plate 4.1.5	Close-up view showing the leaves of Sida rhombifolia	50
Plate 4.1.6	Close-up view showing the leaves of Malachra capitata	51
Plate 4.1.7	Close-up view showing the flowers of Hibiscus tiliaceus	52
Plate 4.1.8	Close-up view showing the leaves of Malvastrum coromandelianum	53
Plate 4.1.9	Close-up view showing the leaves of <i>Cayratia trifolia</i>	54
Plate 4.1.10	Close-up view showing the leaves of Cyperus flabelliformis	55
Plate 4.1.11	Close-up view showing the leaves of <i>Cyperus radiatus</i>	56
Plate 4.1.12	Close-up view showing the leaves of Sonneratia alba	57
Plate 4.1.13	Close-up view showing the fruit of Xylocarpus granatum	58
Plate 4.1.14	Close-up view showing the flowers of Mimosa pudica	59
Plate 4.1.15	Close-up view showing the leaves of Acacia farnesiana	60
Plate 4.1.16	Close-up view showing the leaves of Leucaena leucocephala	61
Plate 4.1.17	Close-up view showing the leaves of <i>Melothria indica</i>	62
Plate 4.1.18	Close-up view showing the flower of Ruellia tuberosa	63

De La Salle University - Dasmariñas



Plate 4.1.19	Close-up view showing the leaves of <i>Alternanthera</i> sessilis	64
Plate 4.1.20	Close-up view showing the stems of Achyranthes aspera	65
Plate 4.1.21	Close-up view showing the leaves of Euphorbia hirta	66
Plate 4.1.22	Close-up view showing the flowers of Antigonon leptopus	67
Plate 4.1.23	Close-up view showing the fleshy stem of Sesuvium portulacastrum	68
Plate 4.1.24	1	69
Plate 4.1.25	Close-up view showing the leaves of Hyptis brevipes	70
Plate 4.1.26	Close-up view showing the leaves of Eclipta alba	71
Plate I	Mangrove areas in Barangay Wakas/Poblacion	113
Plate II	Procedures for the herbarium of plant specimens	114
Plate III	Procedures for the determination of environmental factors	115
Plate IV	Procedures for the determination of environmental factors	116