

# DE LA SALLE UNIVERSITY

The Forest Structure of  
Irawan, Palawan

A Masteral Thesis Presented to the Faculty  
of the Biology Department of  
De La Salle University  
in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science in Biology

by

George V. Banez

Graduate School  
De La Salle University  
Taft Avenue, Manila  
April 1991



# DE LA SALLE UNIVERSITY

## ABSTRACT

The structure of one hectare of Irawan, Palawan was studied using the strip transect method. Five hundred eighty-eight (588) trees with DBH  $> 10$  cm or more were found in the plot. These belonged to 192 species, 70 genera and 35 families. Based on the importance value, the two co-dominant species were Dysoxylum rubrum (Lambuanao) and Canarium asperum (Sahing). Based on the profile diagram, the trees in the plot were stratified in 3 layers: Layer A trees were 25-50 m in height; Layer B trees with height of 12-20 m and Layer C trees of not more than 10 m in height.

The computed species diversity index was 9.2 and the total basal area cover was 46 m<sup>2</sup>. The study indicates that the Irawan forest is stable, diverse and a typical example of a primary tropical rain forest making its conservation imperative.



# DE LA SALLE UNIVERSITY

## TABLE OF CONTENTS

1.0	Introduction .....	1
1.1	Objectives of the study .....	4
1.2	Significance of the study .....	5
1.3	Scope and limitation .....	6
2.0	Review of related literature .....	8
3.0	Methodology .....	17
3.1	Study site .....	17
3.2	Sampling methodology .....	20
3.3	Data collection .....	22
	a. Physiognomy .....	22
	b. Floristic composition .....	26
4.0	Results and Discussion .....	33
	Physiognomy .....	33
4.1	Tree Height .....	33
4.2	Bole Height .....	38
4.3	Diameter at Breast Height .....	39
4.4	Buttress .....	41
4.5	Crown Diameter .....	43
4.6	Profile Diagram .....	45
4.7	Spatial Distribution .....	49
	Floristic Composition .....	53
4.8	Species Composition .....	53
4.9	Dominance .....	70
4.10	Species Diversity .....	77
4.11	Species Area Curve .....	79
4.12	Species Distribution .....	82
5.0	Summary and Conclusion .....	86
	Bibliography .....	88





# DE LA SALLE UNIVERSITY

## APPENDICES

- Appendix 1 Frequency Distribution of Tree Height in meters
- Appendix 2 Frequency Distribution of Bole-Height in meters
- Appendix 3 Frequency Distribution of the Diameters at Breast Height DBH (meters)
- Appendix 4 Table of the  $P_i \log (P_i)$  Frequency, Mean Density, Variance, Variance to Mean Ratio and the Distribution of each Species
- Appendix 5 The Number of Individuals per Species ( $N/S$ ) and the Number of Species ( $S$ )
- Appendix 6 Species encountered per Subplot
- Appendix 7 The Number of Trees per Quadrat and the Mean Number of Trees per quadrat as more quadrats are sampled (travelling mean)
- Appendix 8 The Number of Individuals per Species per Subplot
- Appendix 9 Glossary of Terms

# DE LA SALLE UNIVERSITY

## LIST OF TABLES

Table No.	Title	
1	Measurement of the Different Parameters Used to Describe the Physiognomy of the Forest Plot in Irawan	34
2	Species and their Families with Measurable Props and Buttresses	42
3	Species found in the Irawan Forest Plot	54
4	The Number of Individuals, Basal area, Relative Frequency, Density, Dominance and the Importance Value of each Species found in the Irawan Forest Plot	71
5	Species found in the Irawan Forest Plot with High Importance Value	75
6	Families found in the Irawan Forest Plot arranged in Decreasing Importance Value	76
7	Species found to be Uniformly and Randomly Distributed within the Irawan Forest Plot	84



# DE LA SALLE UNIVERSITY

## LIST OF FIGURES

Figure No.	Title	
1	Map showing the Islands of Palawan and of Mindoro	18
2	Map showing the location of the Irawan Fauna and Watershed Reserve, Iwahig and Puerto Princesa	19
3	Map showing the location of the 1 hectare Forest Plot within the Irawan Flora, Fauna and Watershed Reserve just outside of the KKK Plot	21
4	Map showing the arrangement of the Subplots within the one hectare study area	23
5	Frequency Distribution of Tree Height (in meters) in the Irawan Forest Plot	36
6	Forest Profile Diagram with the corresponding Species Number	46
7	Map showing the location of each tree in the Irawan Forest Plot	50
8	The N/S versus S curve S - number of species N/S - number of individuals per species	80
9	Species area curve of the Forest Plot	81
10	Travelling mean curve	83

