

**APPLICATION OF GLOBAL POSITIONING SYSTEM
(GPS) IN FORESTRY**

By

NAZLIAH BTE HUSIN

**Final Project Submitted in Partial Fulfillment for the
Diploma in Wood Industry, Faculty of Applied Science,
Universiti Teknologi MARA**

September 2002

ACKNOWLEDGEMENTS

First of all, I would like to take opportunity to express my special thanks to ALLAH S.W.T for His Blessing and Strength rendered to completed my final project.

I would like to offer my special thanks to my project advisor, Cik Mazlin binti Kusin for her encouragement and guidance towards the completion of this study.

Sincere thanks also due to Associate Prof. Dr. Jamaluddin Kassim, Program Head of Diploma in Wood Industry, UiTM, Pahang, and En. Wan Nazri Wan Abdul Rahman for kindly extending all facilities and cooperation given during the course of my study.

Thanks are also due to my beloved parents and my lover for their moral support and financial assistance throughout the study. I also would like to extend my appreciation to those who are involved either directly or indirectly in completing this project. I believed, without their helps, I would not be able to complete this final project.

TABLE OF CONTENTS

	Page
APPROVAL SHEETS	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
LIST OF FIGURES	vi
ABSTRACT	vii
ABSTRAK	viii
 CHAPTER	
I INTRODUCTION	1
 II LITERATURE REVIEW	4
2.0 The New Technology.....	4
2.1 Forest Resources Management.....	6
2.2 Aerial Photograph.....	7
2.3 Land Area	10
2.4 Remote Sensing.....	13
2.5 Geographic Information System (GIS).....	16
2.6 Global Positioning System (GPS).....	19
 III DISCUSSION	23
3.0 Land Management.....	23
3.1 Application of GPS in Forestry.....	25
3.2 Advantages of GPS in Forestry.....	27
3.3 Disadvantages of GPS in Forestry.....	30
 IV CONCLUSION AND RECOMMENDATIONS	31
4.1 Conclusion.....	31
4.2 Recommendations.....	33
 V REFERENCES	34
 VITA	36

LIST OF FIGURES

Figure		Page
1	Global Positioning System (GPS).	3
2	Infrared photography, using special film that is sensitive to different wavelengths of light, is used to detect forest problems such as stress to trees to trees due to drought conditions or insect infestations.	9
3	A stereoscope is used to prepare forest type maps by combining the images of two different Aerial photographs of the same area taken from slightly different locations.	12
4	Satellites placed in orbits that cross over every segment of the earth during its rotation are capable of photographing the entire surface of the planet.	15
5	The GIS combines satellites technology with computer mapping technologies to evaluate changing needs in forest environments.	18
6	The GPS consist of 24 satellites at the orbit of the earth.	20
7	A small GPS receiver, carried by a forest worker into the woods can use to pinpoint exact location using the GPS.	22

CHAPTER I

INTRODUCTION

1.0 Introduction

Future generations can enjoy the benefits of the Malaysia's forest resource, better, and more careful sustainable development of our forest resources is needed. In the establishment of sustainable development of this forest resources, planners, managers, policy maker and researchers alike need to understand the complexity of factors involved. They must collect and interpret the required data and work together with professional from other disciplinary fields (Kamaruzaman, 2002).

Forest management practices can be improved through the use of current technologies including Remote Sensing, Geographic Information System (GIS), and Global Positioning System (GPS) (Khali et. al, 2002). GIS is satellite technology that is used to make observations and photographic images of the earth's surface feature and conditions. GPS is the use of satellite technology to accurately and consistently identify exact locations (Burton, 1999). Figure 1 showed a Global Positioning System (GPS) (Mohd Hizamri, 2002).

According to Mohd Hizamri (2002), GPS is a tool or equipment that used as one system in navigation to determine time, distance of place and location of the