

I. INTRODUCTION

1.1 Background

Indonesia is home to the nation's biggest tropical rain forest and the widest variety of plant species (Indrawan *et al.*, 2007). Forest is a unified system that takes the form of a swath of land dominated by trees, where the environment cannot be separated in nature (UU No. 41, 1999). The interaction of biotic and abiotic components that make up an ecosystem result of the formation of forests. The structure and composition of the vegetation reflect this interplay (Soerinegara and Indrawan, 2005).

Forest is one of several natural resources that strongly impact in human life. Forests as the world's lungs, providing water reserves and supporting in the maintenance of the world's ecosystems' balance and integrity. Sumatra is one of Indonesia's islands with a high level of biodiversity and endemism (Susanti *et al.*, 2013). West Sumatra is one of the provinces on the island of Sumatra with a great amount of protected forest areas. Forest lands for conservation purposes, production forests, and protection forests make West Sumatra's forest area (KLHK, 2018).

There is secondary forest in addition to primary forest. Primary forest regenerates into secondary forest. In scientific terminology, the phrase secondary forest has been used since 1950 (Richards 1996). Many countries do not use the term secondary forest since they prefer to refer to a "area assemblage of various local tree species" as a forest or natural forest. Whether the forest is logged over original forest or regenerated forest, it is referred to as natural forest. As a result, the phrase secondary forest is unfamiliar. The phrase secondary forest is sometimes used interchangeably

with the term primary forest in many countries.

At the Key Biodiversity Area determination workshop conducted by Conservation International (CI) in connection with Andalas University in January 2006, HPPB was identified as one of the key areas of significant biodiversity in Sumatra. HPPB has also been used as a location for biodiversity research since 1982. (Rahman, 1994). The HPPB has been recognized as a research area. HPPB is located in the Andalas Limau Manis University Campus area, which is categorized as a lowland tropical rain forest with an area of 150 hectares and is located at an altitude of 250-460 meters above sea level. This forest is classified as secondary forest because it has a lot of open regions with a lot of logged trees and pioneer vegetation. This area, according to Rahman (1994), has three types of communities: primary forest, secondary forest, and shrub community. There are 174 tree species and 96 plant species in HPPB, according to studies.

The Hemispherical Photography (HP) method is one of the new methods for describing the forest canopy and light regime in Indonesia (Baksir *et al.*, 2018). (Bianchi *et al.*, 2017). used to calculate the light environment above the canopy of the forest Individual plants' canopy structure and light environment can be sampled for demographic studies. The Mobile Application of Gap Light Analysis (GLAMA) is a new program that supports this technology (Rich 1990). The program, according to Tichý (2016), was recently built by the author and may be downloaded for free from the Google Play website. Hemispherical, wide-angle, and standard samples also can be analyzed with it.

Based on the above description, it is necessary to conduct research using this

promising method of technological progress to know the current status and condition of the forest, whether it is in good, medium, or bad condition, using the GLAMA method has been conducted in the area. It is important to perform research on The Biological Education and Research Forest Of Andalas University (HPPB) By Using Glama Application as part of a long-term rehabilitation effort.

1.2 Problem Formulation

Based on the background described, the problem that can be formulated in this study: How is the forest condition by using GLAMA application in the Unand, Padang, West Sumatera Forest of Education and Research Forest (HPPB)?

1.3 Research Objectives

The objective of this research is:

To clarify the health condition of Forest of Education and Research Biology (HPPB) by using *GLAMA*.

1.4 Benefit of Research

It is hoped that the results of this study can be used as a guideline for forest conservation in the future.

