



STUDY OF CONDITION MANGROVE VEGETATION IN SEGARA ANAKAN, CILACAP DISTRICT

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KeyWords

Mangrove, segara anakan, NDVI, density, cover, mangrove indeks, remote sensing.

ABSTRACT

The mangrove forest area in Segara Anakan is the largest mangrove forest area in Java with an area of 21,500 hectares. The types of mangroves in the Segara Anakan estuary area have various levels of variation, namely there are 26 types of mangroves out of a total of 89 types of mangrove species in Indonesia. Segara Anakan are the best habitat for the growth and development of mangrove vegetation. As time went on, the condition of mangroves in segara anakan continued to decline. The mangrove health index from 2017-2018 experienced a positive trend due to reforestation, but in 2018-2020 there was a decline again and showed a negative trend so that it can be concluded that the condition of mangroves in segara anakan is classified as poor at this time.

INTRODUCTION

Mangrove ecosystems have an important role in terms of ecology, socio-economy and socio-culture. Mangrove forests have several important functions in this ecosystem, including the mangrove ecosystem as a nursery area, a place to find food, and a spawning area for various kinds of fish and other marine biota. Another ecological function of the mangrove ecosystem is as a place for carbon sequestration, remediation of pollutants, maintaining coastal stability from abrasion, sea water intrusion, storms and waves. The mangrove ecosystem is one of the ecosystems that has high adaptability to extreme environmental conditions. Mangrove forests are forests that are in flooded areas and are influenced by tides where these plants tolerate the salt content in the water.

The mangrove forest area in Segara Anakan is the largest mangrove forest area in Java with an area of 21,500 hectares^[5]. The types of mangroves in the Segara Anakan estuary area have various levels of variation, namely there are 26 types of mangroves out of a total of 89 types of mangrove species in Indonesia. The vegetation in all the tillers is still classified as diverse and the distribution is random, the species that exist there include *Avicennia marina*, *Avicennia alba*, *Sonneratia caseolaris*, *S. alba*, *Rhizophora apiculata*, *Rhizophora mucronata*, *Bruguiera cylindrica*, *Bruguiera gymnorhiza*, *Aegiceras corniculatum* and *Nypa*. Segara Anakan are the best habitat for the growth and development of mangrove vegetation, this is due to the existence of a natural barrier, namely the island of Nusakambangan which causes the tidal influence of the Indian Ocean from the West Palawangan Canal and the East Palawangan

Canal which meets the fresh water supply from various large rivers so that Segara tiller area is a meeting area that carries nutrients.

The use of remote sensing technology to map natural resources has been widely used. One of the ways is to invest in mangrove vegetation data. Mangrove forests are located in an intermediate area between land and sea, this gives a distinctive recording effect in remote sensing forest vegetation compared to other terrestrial forest vegetation^[4]. The purpose of writing this article is to assess the condition of the mangrove ecosystem in the area of Cilacap district, based on image data from previous studies conducted in the area, this is to review whether there have been significant changes to the condition of the mangrove ecosystem in segara anakan cilacap district.

Mangrove Kondition

Research on the condition and density of mangrove forests in segara anakan has been widely carried out. From year to year the area of mangroves in this area has changed. Based on the results of image data analysis for several years, it is known that the condition of mangrove forests in segara anakan from the period 1994-2015 decreased the mangrove area of 3643 hectares. and continues to experience a decrease in both area and density, it is caused by a lot of land conversion and many other factors^[7].

In other research, it shows that the decline in mangrove area continues from year to year. According to Ardli (2013) in 2012, the mangrove area in the Segara Anakan area was 8000 hectares. While research from Purwanto (2014) the area of mangroves in 2013 in segara anakan was 6,716 hectares^[4]. This is also strengthened by the research of Listyaningsih (2013) which states that the mangrove area of Segara Anakan has decreased from year to year^[3]. This indicates mangrove degradation. Degradation that occurs continuously in the Segara Anakan mangrove ecosystem can cause changes in the condition of the ecosystem. Human activity is the main factor causing the decline in mangrove area in all tillers. These activities include: illegal logging, change of function and land use.

Mangrove Density

The potential for the preservation of mangrove vegetation in segara anakan is quite high, however from year to year the mangrove area has decreased. The mangrove vegetation density level in the segara anakan is in the medium category with a percentage value of 68%, while the dense density is 27% and the low density is 5%, with the vegetation index value (NDVI) ranging from 0.06-0.6^[4].

The mangrove tree density in Segara Anakan is in the low category at 90.6 ind / ha. Decree of the Minister of Environment No. 201 of 2004, the density of mangroves in Segara Anakan is categorized as damaged / rare where it has a density of <1000 ind / ha. The low tree density is influenced by the relatively high sedimentation rate in Segara Anakan, which has the characteristics of mangrove estuaries and deltas^[1].

Based on the mangrove health index in Segara Anakan using the NDVI measurement method, mangrove in Segara Anakan has changed. The mangrove health index from 2017-2018 experienced a positive trend due to reforestation, however in 2018-2020 there was a decline again and showed a negative trend, so it can be concluded that the condition of mangroves in all tillers is classified as poor at this time^[8].

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