

## ABSTRAK

Indonesia has the highest mangrove forest area in the world, which is 33.15 million ha, but around 1.82 million ha has been damaged, this requires reforestation activities, one of which is at Rancong Beach in 2019 *A. alba* reforestation was carried out in accordance with environmental conditions this is because this activity is proven to have a positive effect on ecological functions, one of which is an effort to mitigate global warming by reducing CO<sub>2</sub> concentrations through the photosynthesis process. The purpose of the study was to determine the estimation of carbon stocks produced by *A.alba* mangrove stands resulting from reforestation at Rancong Beach, Lhokseumawe City. The results of the study showed that the biomass was between 439.8-2542.7 kg and carbon stocks ranged from 2118.2-11946.9 tons ha with water quality conditions at the research site with still in normal criteria. The amount of biomass and carbon stock stands increase in diameter in diameter and age of mangrove stands. Density is inversely proportional to biomass and carbon storage if the mangrove stand has a larger diameter.

**Keyword:** *A. alba*, biomass, carbon stocks, Rancong Beach, reforestation