

## Potensi produktivitas dan stok karbon hutan mangrove Suaka Margasatwa Pulau Rambut DKI Jakarta = Potential productivity and carbon stock of Mangrove Forest in Pulau Rambut Wildlife Reserve, DKI Jakarta

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### Abstrak

Mangrove memiliki kemampuan menyimpan dan menyerap karbon dalam biomassa hidup maupun mati, dan sedimen. Penelitian ini bertujuan untuk mengetahui besarnya produktivitas serasah, besar serasah yang dilepas ke perairan, laju dekomposisi serasah, potensi karbon yang dapat diserap dan disimpan oleh hutan mangrove Pulau Rambut. Penelitian dilakukan dari bulan September-November 2020 dan Maret-Juni 2021. Metode pengambilan data terkait komposisi vegetasi dan stok karbon menggunakan purposive sampling dan dihitung dengan persamaan allometrik. Produktivitas serasah dan laju dekomposisi diukur selama 42 hari dengan pengamatan setiap 2 minggu sekali. Serasah yang dilepas ke perairan diukur dengan menyaring serasah ketika air laut surut. Karbon pada sedimen diukur dengan mengambil sedimen pada kedalaman 0—30 cm. Vegetasi pohon dan pancang didominasi oleh *Rhizophora mucronata* dan semai oleh *Excoecaria agallocha*. Stok karbon dan serapan karbon pada hutan mangrove Pulau Rambut sebesar 278,60 ton/ha dan 951,41 ton/ha. Stok karbon pada sedimen sebesar 19,36 ton/ha. Besarnya produktivitas serasah dan potensi karbonnya sebesar 2,741 g/m<sup>2</sup>/hari dan 9,72 g/m<sup>2</sup>/hari. Laju dekomposisi paling cepat diraih oleh *Rhizophora mucronata* yaitu 0,191 g/hari. Besar serasah yang dilepas ke perairan adalah 21,27 g/m<sup>3</sup>/hari dengan kandungan karbon sebesar 50,82%.

.....Mangroves have the ability to store and absorb carbon in living and dead biomass, and sediments. This study aims to determine the amount of litter productivity, the amount of litter released into the waters, the rate of litter decomposition, the potential for carbon that can be absorbed and stored by the Rambut Island mangrove forest. The research was conducted from September-November 2020 and March-June 2021. Methods of collecting data related to the composition of vegetation and carbon stock using purposive sampling and calculated by allometric equations. Litter productivity and decomposition rate were measured for 42 days with observations every 2 weeks. Litter released into the waters is measured by filtering litter when the sea water recedes. Carbon in the sediment was measured by taking sediment at a depth of 0-30 cm. Tree vegetation and saplings were dominated by *Rhizophora mucronata* and seedlings by *Excoecaria agallocha*. Carbon stock and carbon sequestration in Rambut Island mangrove forest were 278.60 tons/ha and 951.41 tons/ha, respectively. Carbon stock in sediment is 19.36 ton/ha. The amount of litter productivity and carbon potential are 2.741 g/m<sup>2</sup>/day and 9.72 g/m<sup>2</sup>/day. The fastest decomposition rate was achieved by *Rhizophora mucronata*, which was 0.191 g/day. The amount of litter released into the waters is 21.27 g/m<sup>3</sup>/day with a carbon content of 50.82%.