ABSTRAK

ANALISIS STOK KARBON EKOSISTEM MANGROVE DI TAMAN NASIONAL WAY KAMBAS

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Penelitian mengenai peran ekologis mangrove sebagai ekosistem yang mampu menyerap karbon (CO_2) termasuk informasi mengenai stok karbon ekosistem mangrove di Taman Nasional Way Kambas (TNWK) belum tersedia. Penelitian dilakukan pada bulan Januari-Maret 2021 di Taman Nasional Way Kambas, Lampung Timur, Provinsi Lampung untuk mengetahui stok karbon yang tersimpan pada tegakan, serasah dan sedimen mangrove serta mengestimasi total dan potensi karbon tersimpan pada keseluruhan ekosistem mangrove. Metode yang digunakan dalam penelitian ini dianalisis dengan persamaan alometrik untuk tegakan mangrove, bahan organik dari serasah, dan metode pengabuan kering (LOI) untuk sedimen. Hasil penelitian menunjukkan ekosistem mangrove TNWK terbagi ke dalam empat komunitas yaitu bakau, api-api, campuran dan nipah. Estimasi karbon yang terserap pada tegakan, serasah dan sedimen mangrove dari keempat komunitas adalah 278,80 ton/ha karbon tegakan; 4,89 ton/ha karbon serasah; dan 177,6 ton/ha karbon sedimen. Estimasi karbon yang tersimpan pada setiap komunitas adalah bakau 143,02 ton; api-api 15.692,86 ton; campuran 2.457,15 ton; dan nipah 2.734,46 ton. Ekosistem mangrove Taman Nasional Way Kambas diperkirakan mampu menyimpan karbon hingga sebesar 21.027,49 ton.

Kata kunci: Karbon, Mangrove, Sedimen, Serasah, Tegakan.

ABSTRACT

CARBON STOCK ANALYSIS OF MANGROVE ECOSYSTEM IN WAY KAMBAS NATIONAL PARK

By

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Research on the ecological role of mangroves as an ecosystem capable of absorbing carbon (CO_2) including information on the carbon stock of mangrove ecosystem in Way Kambas National Park (TNWK) is not yet available. The research was conducted in January-March 2021 in Way Kambas National Park, East Lampung, Lampung Province to determine the carbon stock stored in mangrove stands, litter and sediments, and to estimate the total and potential carbon stored in the entire mangrove ecosystem. The methods in this research were analyzed by allometric equations for mangrove stands, organic materials of litter, and the loss on ignition (LOI) method for mangrove sediments. The results showed that the mangrove ecosystem of TNWK was divided into four communities, namely rhizopora, avicenna, mixed species, and nypah. The estimated carbon absorbed in stands, litter and mangrove sediments from four communities is 278,80 tons/ha standing carbon; 4,89 tons/ha of carbon litter; and 177,6 tons/ha of sedimentary carbon. The estimated carbon stored in each community was 143,02 tons at rhizopora; 15.692,86 tons at avicenna; 2.457,15 tons at mix species; and 2.734,46 tons at nypah. The Mangrove Ecosystem of Way Kambas National Park was estimated to be able to store up to 21.027,49 tons of carbon.

Keyword: Carbon, Litter, Mangrove, Sediment, Stands.