

**ESTIMASI CADANGAN KARBON PADA HUTAN MANGROVE YANG
TERINVASI TUMBUHAN INVASIF DI KAWASAN NAGARI MANDEH,
SUMATRA BARAT**

SKRIPSI SARJANA BIOLOGI



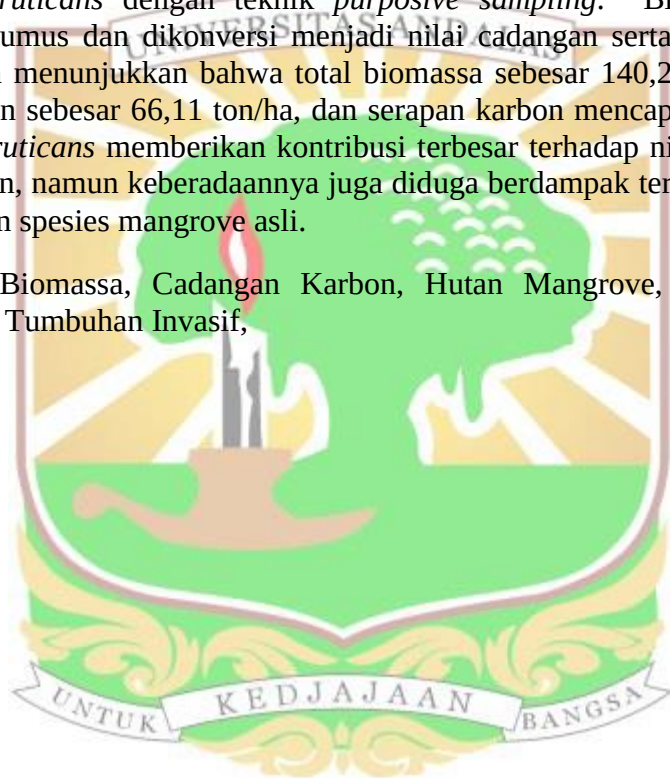
DEPARTEMEN BIOLOGI
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS ANDALAS
PADANG

2024

ABSTRAK

Penelitian mengenai Estimasi Cadangan Karbon pada Hutan Mangrove yang Terinvasi Tumbuhan Invasif di Kawasan Nagari Mandeh, Sumatra Barat. Invasi tumbuhan asing telah menjadi salah satu faktor yang memengaruhi kestabilan fungsi ekologis suatu ekosistem, termasuk pada hutan mangrove. Penelitian ini bertujuan untuk mengestimasi biomassa, cadangan karbon, dan serapan karbon pada hutan mangrove yang terinvasi tumbuhan invasif di Kawasan Nagari Mandeh, Kabupaten Pesisir Selatan, Sumatra Barat. Penelitian dilaksanakan dari bulan November sampai Desember 2024. Pengambilan data dilakukan dengan metode plot bersarang pada jalur *transect*, dengan pengamatan terhadap struktur vegetasi pohon, sapling, dan spesies invasif *Nypa fruticans* dengan teknik *purposive sampling*. Biomassa dihitung menggunakan rumus dan dikonversi menjadi nilai cadangan serta serapan karbon. Hasil penelitian menunjukkan bahwa total biomassa sebesar 140,21 ton/ha, dengan cadangan karbon sebesar 66,11 ton/ha, dan serapan karbon mencapai 241,82 ton/ha. Spesies *Nypa fruticans* memberikan kontribusi terbesar terhadap nilai biomassa dan cadangan karbon, namun keberadaannya juga diduga berdampak terhadap penurunan keanekaragaman spesies mangrove asli.

Kata Kunci: Biomassa, Cadangan Karbon, Hutan Mangrove, *Nypa fruticans*, Tumbuhan Invasif,



ABSTRACT

Research on Carbon Stock Estimation in Mangrove Forests Invaded by Invasive Plants in the Nagari Mandeh Area, West Sumatra. Invasion of foreign plants has become one of the factors that affect the stability of the ecological function of an ecosystem, including mangrove forests. This study aims to estimate biomass, carbon stocks, and carbon sequestration in mangrove forests invaded by invasive plants in the Nagari Mandeh Area, Pesisir Selatan Regency, West Sumatra. The study was conducted from November to December 2024. Data collection was carried out using the plot placement method on the transect path, with observations of the vegetation structure of trees, seedlings, and invasive *Nypa fruticans* species using a purposive sampling technique. Biomass was calculated using the formula and converted into carbon stock, and carbon sequestration values. The results showed that the total biomass was 140.21 tons/ha, with carbon stocks of 66.11 tons/ha, and carbon sequestration reaching 241.82 tons/ha. The *Nypa fruticans* species makes the largest contribution to biomass and carbon stock values, but its presence is also thought to have an impact on reducing the diversity of native mangrove species.

Keywords: Biomass, Carbon Stock, Mangrove Forests, *Nypa fruticans*, Invasive Plants,

