

**SIMPANAN DAN NILAI EKONOMI KARBON JENIS-JENIS
TUMBUHAN PENYUSUN RUANG TERBUKA HIJAU (RTH) TAMAN
HUTAN KOTA, KOTA SURAKARTA**

Ichsan Nur Kholilah¹, Ris Hadi Purwanto²

INTISARI

Penyediaan Ruang Terbuka Hijau (RTH) merupakan bagian dari upaya mitigasi dampak perubahan iklim yang paling implementatif dibandingkan dengan cara lain. Tujuan Penelitian ini untuk (1) mengidentifikasi keanekaragaman jenis tumbuhan penyusun RTH di Kota Surakarta, (2) mengestimasi potensi simpanan biomassa dan karbon (3) mengestimasi potensi serapan gas karbondioksida (4) mengestimasi nilai ekonomi serapan karbon dioksida dari tumbuhan penyusun ruang terbuka hijau taman hutan Kota Surakarta.

Penelitian ini menggunakan data primer dan data sekunder. Pengambilan sampel di lapangan diperoleh melalui perhitungan jumlah titik sampel berdasarkan formula *Fitzpatrick*. Data yang diambil pada saat inventarisasi meliputi jenis pohon, diameter pohon setinggi dada (DBH), tinggi pohon, dan jumlah pohon. Data/informasi pendukung lainnya berupa, kondisi umum lokasi penelitian, peta sebaran RTH, *Shapefile* batas administrasi dan penggunaan lahan serta data *Wood Density* masing-masing jenis hasil inventarisasi.

Hasil penelitian ini menunjukkan, terdapat sepuluh jenis tumbuhan yang mendominasi ruang terbuka hijau taman hutan Kota Surakarta yaitu Trembesi, Mangga, Angsana, Jati, Mahoni, Glodokan Pecut, Kunto Bimo, Cemara kaut, Ketapang kencana, dan Ketapang dengan nilai indeks keanekaragaman Shanon Wiener (H') sebesar 3.317. Potensi biomassa, karbon dan serapan gas karbon dioksida tumbuhan penyusun ruang terbuka hijau taman hutan Kota Surakarta berturut-turut sebesar 870.03 ton biomasa/ha, 408.91 ton karbon/ha, dan 1499.48 ton CO₂/Ha. Berdasarkan serapan gas CO₂-nya, nilai ekonomi dari total luasan ruang terbuka hijau taman hutan Kota Surakarta dapat ditaksir sebesar Rp. 4.761.437.794,26. Nilai ekonomi ini memberi peluang kepada Pemerintah Daerah Kota Surakarta dalam perdagangan karbon dunia.

Kata Kunci: Ruang Terbuka Hijau, Taman Hutan Kota, Serapan gas CO₂, Nilai Ekonomi

¹Mahasiswa Departemen Manajemen Hutan, Fakultas Kehutanan, Universitas Gadjah Mada

²Dosen Departemen Manajemen Hutan, Fakultas Kehutanan, Universitas Gadjah Mada

CARBON STOCKS AND ECONOMIC VALUE OF URBAN FOREST IN THE GREEN OPEN SPACE, SURAKARTA DISTRICT

Ichsan Nur Kholilah¹, Ris Hadi Purwanto²

ABSTRACT

The provision of green open space (RTH) is one of the most implementing mitigation efforts for climate change compared to other ways. The purpose of this research is to (1) identify the diversity of types of RTH components plants in the city of Surakarta, (2) estimate the potential for storage of biomass and carbon, (3) estimate the potential for absorption of carbon dioxide gas, and (4) estimate the economic value of the absorption of carbon-dioxide from open space components on the open space in the forest of the City of Surakarta.

This study uses primary and secondary data. Field samples are obtained by calculating the number of sample points based on the Fitzpatrick formula. The data taken at the time of the inventory included the type of tree, the diameter of a tree as high as the chest (DBH), the height of the tree, and the number of trees. Other data such as the general conditions of the research site, RTH distribution map, Shapefile administrative boundaries and land use as well as Wood Density data of each type of inventory results.

*The results of this study showed that ten types of plants dominate the green open space of the forest park of Surakarta City: *Samanea saman*, *Mangifera indica*, *Pterocarpus indicus*, *Tectona grandis*, *Swietenia mahagoni*, *Polyalthia longifolia*, *Kigellia pinnata*, *Casuarina equisetifolia*, *Terminalia mantaly*, and *Terminalia catappa*, has an Shanon Wiener (H') diversity index value of 3.317. The biomass, carbon, and carbon dioxide absorption potential of the plant component of the forest park of the City of Surakarta are consecutive; 870.03 tons of biomass/ha, 408.91 tons of carbon/ha, and 1,499.48 tons of CO₂/ha. Based on the absorption of CO₂, the economic value of the total area of the green open space in the forest city of Surakarta can be estimated at Rp. 4.761.437.794,26. This economic value gives the Surakarta City Regional Government an opportunity in world carbon trade.*

Keywords: *Green Open Space, City Forest Park, Carbon, CO₂ Absorption, Economic Value*

¹*Student of Department Forest Management, Faculty of Forestry, Universitas Gadjah Mada*

²*Lecture of The Department Forest Management, Faculty of Forestry, Universitas Gadjah Mada*