

DAMPAK KEBAKARAN HUTAN TERHADAP KEANEKARAGAMAN VEGETASI DAN KARAKTERISTIK TANAH GAMBUT TROPIKA

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INTISARI

Ekosistem rawa gambut memiliki berbagai fungsi lingkungan seperti menyimpan cadangan karbon, habitat dari keanekaragaman plasma nutfah, dan beragam sistem dalam penyangga kehidupan. Kebakaran hutan berpotensi mempengaruhi fungsi ekosistem rawa gambut dan mengakibatkan kerusakan lingkungan yang ditandai dengan hilangnya vegetasi pengisi lahan serta terjadi perubahan sifat fisika dan kimia tanah gambut. Penelitian ini bertujuan untuk menganalisis dampak kebakaran hutan gambut tropika atas keanekaragaman vegetasi, sifat fisika dan kimia tanah gambut.

Kajian atas keanekaragaman vegetasi, sifat fisika dan kimia tanah gambut dilakukan di KHDTK Tumbang Nusa, Kalimantan Tengah pada empat lahan pasca kebakaran hutan: (1) lahan pasca kebakaran berat tanpa tutupan vegetasi, (2) lahan pasca kebakaran berat sudah tertutup vegetasi, (3) lahan pasca kebakaran sedang, (4) hutan sekunder. Selanjutnya, dilakukan pengujian beberapa karakteristik tanah seperti kandungan karbon organik tanah, pH, daya hantar listrik, N, P, dan K tersedia, kapasitas pertukaran kation, kadar asam humat dan asam fulvat, *water holding capacity*, warna tanah, berat volume serta analisis mikrostruktur dan komposisi kimia tanah menggunakan alat *Scanning Electrone Microscope* (SEM).

Hasil penelitian menunjukkan kebakaran hutan berdampak pada rendahnya keanekaragaman vegetasi yang ditandai dengan rendahnya indeks diversitas Shanon-Whiener dan terjadi perbedaan yang signifikan pada jumlah individu pancang, tiang dan pohon. Sifat fisika dan kimia tanah gambut setelah terbakar cenderung tinggi pada nilai berat volume, karbon organik tanah, pH, N-tersedia, K-tersedia, dan ditemukannya unsur mikro esensial Cu, Zn, Si. Selain itu nilai *water holding capacity*, kapasitas pertukaran kation dan daya hantar listrik cenderung rendah. Sehingga pemulihan lahan gambut pasca kebakaran perlu dilakukan dengan dikombinasikan campur-tangan manusia berupa pengembangan dan penerapan teknologi penghutanan kembali.

Kata kunci : ekosistem rawa gambut, tanah gambut, kebakaran hutan, vegetasi, karakteristik tanah

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THE IMPACT OF FOREST FIRE ON VEGETATION DIVERSITY AND SOIL CHARACTERISTICS OF TROPICAL PEATLAND

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ABSTRACT

Peat swamp ecosystems have many environmental functions such as carbon storage, habitat for germplasm diversity, and life buffer system. Forest fires potentially affect the function of peat swamp ecosystem and result in environmental damage which was indicated by loss of vegetation and changes in the physical and chemical characteristics of peat soils. This research aimed to analyze impact of fire on vegetation diversity, physical and chemical characteristics of peat soils.

This research was conducted in KHDTK Tumbang Nusa, Central Kalimantan on four land which was burned: (1) post-high fire severity land without vegetation cover (2) post-high fire severity land with vegetation cover, (3) post-moderate fire severity land, (4) secondary forest. This study conducted a few tests, includes the characteristics of peat soil such as soil organic carbon, pH, electrical conductivity, available N, P, and K values, cation exchange capacity, humic acid and fulvic acid, water holding capacity, soil color, bulk density, microstructural analysis and soil chemical composition using Scanning Electrone Microscope (SEM).

The results showed that forest fire make vegetation diversity low, which was indicated by low Shannon-Wiener diversity index and there is a significant differences in the number of individual saplings, poles, and trees. Soil physics and chemistry characteristics after burned have a high value at bulk density, soil organic carbon, pH, available N and K values, and micronutrients Cu, Zn, and Si. In addition, value of water holding capacity, cation exchange capacity, and electrical conductivity tend to be low. So that post-fire peatland recovery needs to be combined with human intervention and application of reforestation technology.

Keywords : peat swamp ecosystems, peatland, forest fire, vegetation, soil characteristics

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