STRUKTUR PERMUDAAN ALAM SETELAH KEBAKARAN HUTAN DI TAMAN NASIONAL GUNUNG MERBABU

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INTISARI

Hutan merupakan sebuah sistem yang kompleks, namun kerusakan hutan oleh kebakaran hutan mengancam keberlangsungan sistem ekologis di dalamnya. Taman Nasional Gunung Merbabu tercatat beberapa kali mengalami kebakaran hutan yang merugikan manusia dan mengancam kelestarian keanekaragaman hayati. Setelah kebakaran diikuti permudaan oleh jenis-jenis pionir yang menyediakan unsur-unsur lain yang dibutuhkan untuk permudaan selanjutnya, namun tidak semua tumbuhan bawah mampu beradaptasi dan memberikan respons yang sama. Penelitian ini bertujuan untuk mengetahui struktur permudaan alam setelah kebakaran dan perbedaannya dengan kawasan yang tidak mengalami kebakaran hutan di Taman Nasional Gunung Merbabu.

Penelitian dilakukan di wilayah Resort Wonolelo, Selo, dan Ampel pada ketinggian 1.400–2.800 mdpl. Jumlah petak ukur 111 buah terdistribusi 42 plot dengan jarak 100 meter di kawasan yang terbakar dan 69 plot dengan jarak 200 meter di kawasan yang tidak terbakar. Bentuk pertumbuhan yang diamati terdiri atas herba, liana, paku, semak, perdu, dan semai. Data yang diambil meliputi nama jenis dan jumlah individu, suhu, kelembaban, dan intensitas cahaya matahari. data dianalisis dengan indeks nilai penting, indeks diversitas Shannon-Wienner, indeks kekayaan Margalef, indeks kemerataan jenis, indeks Morisita yang telah distandarisasi, indeks kesamaan Sorensen dan uji chi-square untuk mengetahui perbedaan struktur permudaan alam.

Struktur permudaan alam setelah kebakaran hutan di TN Gunung Merbabu menunjukkan kerapatan tumbuhan bawah mencapai 162.273,8 individu/ha dengan kerapatan tertinggi pada jenis *Isachne pangerangensis*, keanekaragaman jenis 3,09, kekayaan jenis 6,82, kemerataan jenis 0,77, dan pola distribusi mengelompok. Hasil analisis chi-square menunjukkan tidak ada perbedaan yang signifikan antara struktur permudaan alam di kawasan yang mengalami kebakaran hutan dan kawasan yang tidak terbakar.

Kata Kunci: *Struktur permudaan alam, kebakaran hutan, perbedaan, Taman Nasional Gunung Merbabu*

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STRUCTURE OF NATURAL REGENERATION AFTER FOREST FIRE IN MOUNT MERBABU NATIONAL PARK

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ABSTRACT

Forest is a whole complex system, however the sustainability of the ecological system could be threatened by forest fire that cause forest destruction. Mount Merbabu National Park has been recorded several times of forest fires cases which are detrimental to humans and threatens the preservation of biodiversity. Following the forest fire, pioneer species have regenerated which provide the other elements needed for further regeneration, but not all undergrowths can adapt and respond in the same way. The purpose of this study is to determine the structure of natural regeneration after fire and the differences with the unburned area in Mount Merbabu National Park.

This research was conducted in the Resort area of Wonolelo, Selo, and Ampel at an altitude of 1,400–2,800 masl. The total number of plot samples was 111 plots, distributed 42 plots with a distance of 100 meters in the burned area and 69 plots with a distance of 200 meters in the unburned area. The growth forms observed consisted of herbs, lianas, ferns, subshrubs, shrubs, and seedlings. The data taken includes the name of the species and the number of individuals, temperature, humidity, and light intensity. Data were analyzed using importance value index, Shannon-Wienner diversity index, Margalef richness index, species evenness index, standardized Morisita Index, Sorensen similarity index and chi-square test used to determine differences in the structure of natural regeneration.

The structure of natural regeneration after forest fires in Mount Merbabu National Park showed that the density of undergrowths reached 162,273.8 individuals/ha with the highest density in the *Isachne pangerangensis* species, species diversity index was 3,09, species richness index was 6,82, eveness index was 0,77, and species were found in a clustered distribution pattern. The results of the chi-square analysis showed that there was no significant difference between the structure of natural regeneration in burned area and unburned area.

Keywords: *Natural regeneration structure, forest fire, differences, Mount Merbabu National Park*

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