

**KAPASITAS INFILTRASI PADA LOKASI KEGIATAN WISATA ALAM
DI KEMUNING SKY HILLS KECAMATAN NGARGOYOSO
KABUPATEN KARANGANYAR**

Saritining Nurani¹, Ambar Kusumandari²

INTISARI

Desa Kemuning yang merupakan salah satu hulu Sub DAS Samin, mengalami bencana banjir lumpur untuk pertama kali pada tahun 2024 yang disebabkan sungai Soewatu tidak dapat menampung aliran air hujan. Hal tersebut diduga karena adanya pembangunan wisata di Kemuning Sky Hills dengan alat berat pada tahun 2023. Aktivitas antropogenik di Kemuning Sky Hills juga diduga menyebabkan pemadatan tanah sehingga berpengaruh pada menurunnya kapasitas infiltrasi di sekitarnya. Oleh karena itu, penelitian ini disusun dengan tujuan mengetahui kapasitas infiltrasi, karakteristik tanah dan hubungannya dengan kapasitas infiltrasi, serta strategi pengelolaan lahan di Kemuning Sky Hills.

Pengukuran infiltrasi menggunakan metode *random sampling* dengan *double ring infiltrometer* pada kegiatan wisata di Kemuning Sky Hills yaitu bawah jembatan kaca, glamping, bukit teletubies, jalan, kebun teh wisata, parkir, dan kebun teh tanpa wisata sebagai kontrol. Karakteristik tanah yang diukur adalah tekstur, struktur, berat jenis, berat volume, porositas, dan bahan organik. Dilakukan uji korelasi untuk mengetahui hubungan kapasitas infiltrasi dengan sifat tanah. Strategi pengelolaan lahan dianalisis dengan matriks SWOT.

Kapasitas infiltrasi pada kegiatan wisata alam di Kemuning Sky Hills memiliki nilai mulai dari 34,75 mm/jam sampai dengan 318 mm/jam dengan kategori sedang hingga sangat cepat. Sifat fisik tanah yang mempunyai hubungan signifikan dengan kapasitas infiltrasi adalah persentase lempung, struktur, berat jenis, berat volume, porositas, dan bahan organik. Dengan demikian perlu strategi pengelolaan lahan mengenai pengolahan tanah, rotasi wisata, pemberlakuan kuota, dan penanaman vegetasi.

Kata Kunci: Pemadatan tanah, sifat tanah, uji korelasi, strategi pengelolaan lahan, analisis SWOT.

¹ Mahasiswa Fakultas Kehutanan UGM

² Staff Pengajar Fakultas Kehutanan UGM

**INFILTRATION CAPACITY AT THE NATURE-BASED TOURISM SITE OF
KEMUNING SKY HILLS, NGARGOYOSO SUB-DISTRICT,
KARANGANYAR REGENCY**

Satitining Nurani¹, Ambat Kusumandari²

ABSTRACT

Kemuning Village, located in the upper stream of the Samin Sub-watershed, experienced its first mud flood disaster in 2024, caused by the Soewatu River's inability to accommodate rainwater runoff. This incident is suspected to be linked to the development of tourism infrastructure in Kemuning Sky Hills using heavy machinery in 2023. Anthropogenic activities in the area are also presumed to contribute to soil compaction, which in turn lowers infiltration capacity. This study aims to assess infiltration capacity, analyze soil characteristics and their relationship with infiltration, and formulate land management strategies for Kemuning Sky Hills.

Infiltration measurements were conducted using the random sampling method and a double ring infiltrometer across various tourism sites in Kemuning Sky Hills, including areas under the glass bridge, glamping zones, Teletubbies Hill, access roads, tea gardens with tourism activities, parking areas, and non-tourism tea gardens as control sites. Soil characteristics measured include texture, structure, bulk density, particle density, porosity, and organic matter content. Correlation tests were performed to examine the relationship between infiltration capacity and soil properties, while land management strategies were formulated using a SWOT matrix.

The infiltration capacity across tourism activities in Kemuning Sky Hills ranged from 34.75 mm/hour to 318 mm/hour, categorized as moderate to very fast. Soil properties that significantly influenced infiltration capacity were clay percentage, structure, bulk density, particle density, porosity, and organic matter. Consequently, land management strategies are necessary and should include soil tillage, tourism activity rotation, visitor quota implementation, and vegetation planting.

Keywords: Soil compaction, soil properties, correlation test, land management strategies, SWOT analysis.

¹ Student of Faculty of Forestry UGM

² Lecturer of Faculty of Forestry UGM