

## HUBUNGAN ANTARA INFILTRASI DAN DAYA DUKUNG PADA KAWASAN WISATA ALAM HUTAN PINUS DI PUNCAK BECICI KABUPATEN BANTUL

### Intisari

Hutan Lindung Mangunan merupakan tegakan pinus (*Pinus merkusii*) dengan bentang alam yang potensial untuk jasa wisata, dan pemanfaatan kawasan hutan lainnya. Hutan pinus ini merupakan hasil rehabilitasi lahan yang dilakukan tahun 1980an yang mampu mengubah kawasan gersang menjadi kawasan hutan yang dapat dijumpai sekarang. Di Puncak Becici dengan luas 4.41 Ha menawarkan pemandangan alam puncak, *sunset*, makam Abdi Dalem dan peninggalan sejarah Watu Belah. Puncak Becici menjadi semakin terkenal antara lain karena kunjungan dari mantan Presiden Amerika Serikat Barack Obama pada 28 Juni 2017. Peningkatan kunjungan dapat menimbulkan pemadatan tanah sehingga air permukaan menjadi tinggi, berpengaruh terhadap sifat fisik dan kimia tanah. Tingginya kunjungan wisatawan berdampak terhadap kelestarian lingkungan ekosistem hutan. Kerentanan terhadap daya dukung lingkungan dan ekologis juga harus diperhatikan dalam pengelolaannya.

Penelitian ini bertujuan mengetahui kapasitas infiltrasi pada berbagai jenis area wisata alam di Puncak Becici; Menganalisis hubungan sifat fisik dan kimia tanah terhadap kapasitas infiltrasi pada masing-masing area wisata alam di Puncak Becici; Mengevaluasi daya dukung lingkungan (fisik, riil, dan efektif) dan daya dukung ekologis. pengukuran infiltrasi menggunakan *double ring infiltrometer*.

Hasil dari penelitian menunjukkan kapasitas infiltrasi kontrol 441 mm/jam dengan klasifikasi sangat cepat, parkir 41 mm/jam klasifikasi cepat, *camping ground* 201 mm/jam klasifikasi cepat, panggung 152 mm/jam klasifikasi cepat dan ayunan *hammock* 257 mm/jam klasifikasi sangat cepat. Kunjungan wisatawan di area parkir, *camping ground*, panggung dan ayunan *hammock* kapasitas infiltrasi lebih rendah dibandingkan dengan area kontrol. Sifat fisik dan kimia tanah di objek wisata puncak becici termasuk kelas tekstur lempung sedangkan untuk area parkir geluh lempungan. Nilai *bulk density* tertinggi pada area parkir 1,38 g/cm<sup>3</sup> terendah area kontrol 1,03 g/cm<sup>3</sup>, nilai porositas terendah pada area parkir 39,12% dan tertinggi area *camping ground* 47,43%, permeabilitas terendah pada area panggung 0,10 cm/jam dan tertinggi pada area kontrol 5,50 cm/jam, bahan organik tertinggi pada area kontrol 3,94% dan terendah pada area parkir 1,64%. Vegetasi pohon yang ditemukan ada tiga jenis pohon yaitu pinus kerapatan 262 ind/ha, kemiri 27 ind/ha dan bringin bibis 1 ind/ha. Daya dukung fisik untuk objek wisata Puncak Becici jumlah pengunjung 3.392 wisatawan/hari, daya dukung riil 3.213 wisatawan/hari, daya dukung efektif 2.137 wisatawan/hari dan ekologis untuk pemulihan akibat adanya gangguan aktivitas wisatawan untuk piknik 812 wisatawan/hari dan *camping ground* 433 wisatawan/hari.

Kata kunci : Puncak Becici, Wisata Alam, Infiltrasi, Daya dukung

## **THE RELATIONSHIP BETWEEN INFILTRATION AND CARRYING CAPACITY ON PINUS FOREST TOURIST AREA IN PUNCAK BECICI BANTUL REGENCY**

### **Abstract**

Mangunan Protection Forest is a pine (*Pinus merkusii*) stand with a potential landscape for tourism services, and other forest area uses. This pine forest is the result of land rehabilitation carried out in the year around 1980 that was able to turn arid areas into forest areas that can be found now. At the Puncak Becici with an area of 4.41 Ha, it offers a view of the peak, sunset, the grave of Abdi Dalem and the heritage of Watu Belah. Puncak Becici is becoming increasingly famous, among others, because the former president of the United States Barack Obama had visited Puncak Becici on June 28, 2017. The increased visits can cause soil compaction that surface water becomes high, affecting the physical and chemical properties of the soil. The high level of tourist visits has an impact on the sustainability of the forest ecosystem. In tourism management, vulnerability to environmental and ecological was carrying capacity must be considered.

This study aims to find out infiltration capacity in various types of natural tourism areas on Puncak Becici; Analyze the relationship of physical and chemical properties of soil to infiltration capacity in each area of natural tourism on Puncak Becici; Evaluate environmental carrying capacity (physical, real, and effective) and ecological carrying capacity. Infiltration measurements using double ring infiltrometer.

The results of the study showed that the control infiltration capacity was 441 mm/hour with very fast classification, parking lot was 41 mm/hour belong to fast classification, camping ground was 201 mm/hour belong to fast classification, stage was 152 mm/hour belong to fast classification and hammock was 257 mm/hour belong to very fast classification. Tourist visits in the parking area, camping ground, stage and hammock infiltration capacity was lower than the control area. The nature of physical and chemical of soil in Puncak Becici attractions include the clay texture class, while for parking areas the clay loam. The highest bulk density value in the parking area was 1,38 g/cm<sup>3</sup> in the lowest control area was 1,03 g/cm<sup>3</sup>, the lowest porosity value in the parking area was 39,12% and the highest camping ground area was 47,43%, the lowest permeability in the stage area was 0,10 cm/hour and the highest in the control area was 5,50 cm/hour. The highest organic matter in the control area was 3,94% and the lowest in the parking area was 1,64%. The vegetation of tree found that there were three types of trees, namely pine density 262 ind/ha, candlenut 27 ind/ha and bringin seeds 1 ind/ha. The physical carrying capacity of Puncak Becici tourism object was 3.392 tourists/day, real carrying capacity was 3.213 tourists/day, effective carrying capacity was 2.137 tourists/day and ecological recovery due to disruption of tourist activities for was 812 tourists/days and camping ground was 433 tourists/day.

**Keywords:** Puncak Becici, Nature Tourism, Infiltration, Carrying Capacity