

PENAKSIRAN KANDUNGAN KARBON TERSIMPAN DI BAWAH PERMUKAAN TANAH DI TAMAN NASIONAL GUNUNG MERBABU

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INTISARI

Hutan menyimpan karbon baik di atas permukaan ataupun di bawah permukaan tanah. Karbon bawah permukaan tanah tersimpan dalam bentuk karbon akar dan karbon tanah. Tujuan dari penelitian ini adalah untuk mengetahui sifat biofisik tanah dan mengetahui simpanan karbon di bawah permukaan tanah di berbagai tipe tutupan lahan di Taman Nasional Gunung Merbabu.

Metode penelitian ini menggunakan metode contoh gabungan menurut GPG / LULUCF untuk karbon tanahnya dan persamaan allometrik menurut Cairns et al. untuk karbon akar. Pembuatan plot ukur pengambilan contoh tanah dan vegetasi dilakukan berbagai tipe tutupan lahan di TNGMb.

Hasil penelitian menunjukkan sifat biofisik tanah di berbagai tipe tutupan lahan Taman Nasional Gunung Merbabu untuk *bulk density* tertinggi di tutupan semak, kelembaban tertinggi di tutupan rumput, karbon organik tanah tertinggi di kerapatan rendah dan bahan organik tanah tertinggi di kerapatan rendah. Simpanan karbon bawah permukaan tanah berturut-turut dari yang tertinggi ke terendah adalah kerapatan rendah sebesar 200,604 Mg/Ha, kerapatan tinggi sebesar 195,143 Mg/Ha, tutupan rumput sebesar 192,531 Mg/Ha, kerapatan sedang sebesar 190,958 Mg/Ha dan tutupan semak sebesar 108,594 Mg/Ha.

Berdasarkan hasil penelitian dapat disimpulkan besarnya simpanan karbon bawah permukaan tanah lebih tinggi yang tersimpan dalam bentuk karbon tanah dibandingkan di dalam karbon akar. Hal ini terlihat dari nilai simpanan karbon bawah permukaan tanah tertinggi pada kerapatan rendah yang mempunyai nilai simpanan karbon tanah tertinggi pula. Simpanan karbon bawah permukaan tanah rata-rata di TNGMb sebesar $170,491 \pm 38,323$ Mg/Ha.

Kata kunci: Karbon tanah, karbon akar, Taman Nasional Gunung Merbabu

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BELOW GROUND CARBON STOCK ESTIMATION IN GUNUNG MERBABU NATIONAL PARK

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ABSTRACT

Forest stores carbon both above and below ground. Below ground carbon is stored in form of root carbon and ground carbon. Aim of the study is to find the ground biophysic characteristic and to estimate below ground carbon stock in some types of vegetation in Gunung Merbabu National Park.

The method used was composite sample based on GPG / LULUCF for the ground carbon and allometric formula based on Cairns et al. for the root carbon. Plot sampling for taking the soil sample and vegetation was purposively sampled in each kind of vegetation types in the location.

The result shown that the ground biophysic characters in each vegetation types in Gunung Merbabu National Park are the highest bulk density was in shrubs cover, highest moisture was in grasses cover, highest organic ground carbon was in the lowest dense cover and highest organic material was in the low dense cover. The below ground carbon stock is the lowest dense cover = 200,604 Mg/Ha, the dense cover = 195,143 Mg/Ha, grasses cover = 192,531 Mg/Ha, the lower dense cover = 190,958 Mg/Ha and shrubs cover = 108,594 Mg/Ha.

Conclusion of the study is below ground carbon stock in the form of ground carbon was higher than root carbon. The consideration was the highest below ground carbon stock was in the lowest dense cover that also had the highest ground carbon stock. Mean of below carbon stock in Gunung merbabu National Park = $170,491 \pm 38,323$ Mg/Ha.

Key words: ground carbon, root carbon, Gunung Merbabu National Park

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