

**Konservasi Telaga Bromo Pada Ekosistem Karst di Desa Karangasem,  
Kecamatan Paliyan, Kabupaten Gunung Kidul, Daerah Istimewa Yogyakarta**

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**INTISARI**

Telaga Bromo merupakan salah satu sumber air permukaan pada ekosistem karst yang berlokasi di Desa Karangasem, Kecamatan Paliyan, Kabupaten Gunung Kidul, Daerah Istimewa Yogyakarta. Telaga Bromo merupakan dolin yang terbentuk akibat karstifikasi dalam jumlah dan area yang cukup besar yang dapat menampung air sepanjang tahun. Masyarakat memanfaatkan air telaga untuk kebutuhan domestik khususnya saat musim kemarau. Volume air telaga setiap tahun mengalami penurunan. Hal tersebut disebabkan oleh kenaikan permukaan sedimen dasar telaga. Kenaikan sedimen dasar telaga bersumber dari erosi pada lahan sekitar telaga. Sekitar 21,4181 hektar lahan pada daerah penelitian sudah mendapat perlakuan lahan dalam memanfaatkan lahan berupa terasering. Keberadaan terasering berdampak pada laju erosi yang terjadi pada lahan tersebut. Penelitian ini bertujuan untuk mengkaji laju erosi pada daerah penelitian, prediksi umur telaga, dan teknik konservasi telaga yang tepat dan berkelanjutan.

Metode penelitian yang digunakan adalah metode survei dan pemetaan lapangan, tongkat ukur, analisis laboratorium, matematis, dan grafik. Pengukuran dan perhitungan laju erosi dilakukan sebanyak 16 kali selama 56 hari periode penelitian. Pengukuran volume air telaga dilakukan dengan pemetaan topografi, kemudian dilakukan perhitungan matematis berdasarkan beda tinggi dan luas tiap kontur. Perhitungan prediksi umur pemanfaatan telaga berdasarkan perbandingan volume telaga dan jumlah sedimen yang masuk ke telaga. Jumlah sedimen tersebut disandarkan pada laju erosi yang terjadi pada area batas pengaruh erosi terhadap sedimentasi telaga.

Hasil penelitian menunjukkan bahwa rata-rata laju erosi pada daerah penelitian adalah 12,382 – 14,255 ton/ha/tahun pada lahan terasering dengan tingkat bahaya erosi ringan dan 18,812 – 43,602 ton/ha/tahun pada lahan non terasering dengan tingkat bahaya erosi sangat berat. Prediksi umur pemanfaatan air telaga  $\pm$  18 – 31 tahun. Konservasi Telaga Bromo yang dapat diterapkan adalah pembentukan teras batu pada lahan di area batas pengatur erosi terhadap sedimentasi telaga dengan acuan dasar model teras yang sudah berkembang di luar area area batas pengaruh erosi terhadap sedimentasi telaga.

**Kata Kunci: Konservasi, Telaga, Karst, Erosi, Terasering.**

***Conservation of Bromo Lake on Karst Ecosystem in Karangasem Village,  
Paliyan District, Gunung Kidul Regency, Special Region of Yogyakarta***

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***ABSTRACT***

*Bromo Lake is one of the surface water sources in the karst ecosystem located in Karangasem Village, Paliyan District, Gunung Kidul Regency, Yogyakarta Special Region. Bromo Lake is a dolin which is formed due to karstification in a large enough amount and area that can hold water all year round. The community uses lake water for domestic needs, especially during the dry season. The volume of lake water has decreased every year. This is due to the rise of the lake bottom sediment surface. The increase in lake bottom sediment originates from the erosion of the land around the lake. About 21,4181 hectares of land in the study area have received land treatment in utilizing land in the form of terraces. The existence of terraces has an impact on the rate of erosion that occurs on the land. This study aims to assess the rate of erosion in the study area, predict the age of the lake, and appropriate and sustainable lake conservation techniques.*

*The research method used is survey method and field mapping, measuring sticks, laboratory analysis, mathematics, and graphics. Measurement and calculation of erosion rates were carried out 16 times during the 56 days of the study period. Measurement of lake water volume is done by topographic mapping, then mathematical calculations are carried out based on differences in height and area of each contour. Calculation of the age prediction of lake utilization based on the comparison of lake volume and the amount of sediment entering the lake. The amount of sediment is based on the rate of erosion that occurs in the area of the effect of erosion on lake sedimentation.*

*The results showed that the average rate of erosion in the study area was 12,382 - 14,255 ton / ha / year on terraced lands with a mild erosion hazard level and 18,812 - 43,602 ton / ha / year on non-terraced lands with very heavy erosion hazard levels. Prediction of lake water utilization age  $\pm$  18 - 31 years. The conservation for Bromo Lake that can be applied is the formation of stone terraces on the land in the erosion boundary area against lake sedimentation with the basic reference of the terrace model that has developed outside the area of the limit of the effect of erosion on lake sedimentation.*

***Keywords: Conservation, Lake, Karst, Erosion, Terraces.***