

ABSTRAK

Muhammad Fauzi Dwi Ramdhany Aswar. 105951100621. Laju Sedimentasi di Sungai Pondoh pada Sub DAS Poboya Kelurahan Poboya Kecamatan Mantikolure Kota Palu. Dibimbing oleh **HASANUDDIN MOLO** dan **M. DAUD**.

Penelitian ini bertujuan untuk menganalisis laju sedimentasi dan pengaruh curah hujan terhadapnya di Sungai Pondoh pada Sub DAS Poboya, Kota Palu. Daerah hulu sungai memiliki laju sedimen yang cenderung lebih tinggi dibandingkan dengan bagian tengah dan hilir, dengan nilai tertinggi tercatat 2,520 ton/hari pada 7 Agustus 2025. Kondisi ini disebabkan oleh erosi yang lebih signifikan di hulu karena karakteristik lereng yang curam, aliran air yang deras, dan sifat tanah yang mudah tererosi. Sementara itu, laju sedimen di bagian hilir lebih rendah (tertinggi 0,619 ton/hari pada 9 Agustus 2025 dan terendah 0,019 ton/hari pada 14 Agustus 2025) karena sebagian besar sedimen telah mengendap di sepanjang jalur aliran. Analisis regresi linear menunjukkan bahwa curah hujan berpengaruh terhadap laju sedimen, tetapi bukan merupakan faktor dominan.

Berdasarkan hasil perhitungan korelasi antara curah hujan dengan laju sedimen, diperoleh nilai koefisien korelasi sebesar $r = 0,441$. Nilai ini menunjukkan adanya hubungan positif dengan kategori sedang. Berdasarkan persamaan regresi $y = 0,4441x + 0,1127$ dan koefisien determinasi $R^2 = 0,1724$, curah hujan hanya menjelaskan 17,24% variasi laju sedimen, sedangkan 82,76% sisanya dipengaruhi oleh faktor lain seperti kondisi tutupan lahan, kemiringan lereng, dan aktivitas penggunaan lahan. Dengan demikian, upaya konservasi tanah dan air, terutama di hulu dan tengah DAS, sangat disarankan untuk mengendalikan erosi dan sedimentasi.

Kata kunci: Curah hujan, Daerah Aliran Sungai (DAS), Erosi, Laju Sedimentasi, Sungai Pondoh, TDS, TSS.

ABSTRACT

Muhammad Fauzi Dwi Ramdhany Aswar. 105951100621. *Sedimentation Rate in the Pondoh River at the Poboya Sub-watershed, Poboya Village, Mantikolure District, Palu City. Supervised by HASANUDDIN MOLO and M. DAUD.*

This study aims to analyze the sedimentation rate and the influence of rainfall on it in the Pondoh River at the Poboya Sub-watershed, Palu City. The upstream area of the river tends to have a higher sediment rate compared to the middle and downstream sections, with the highest value recorded at 2.520 tons/day on August 7, 2025. This condition is caused by more significant erosion in the upstream area due to steep slopes, rapid water flow, and easily eroded soil characteristics. Meanwhile, the sediment rate in the downstream section is lower (highest at 0.619 tons/day on August 9, 2025, and lowest at 0.019 tons/day on August 14, 2025) because most of the sediment has settled along the flow path. Simple linear regression analysis shows that rainfall influences the sediment rate, but it is not the dominant factor.

Based on the correlation analysis of rainfall and sediment discharge rate, a correlation coefficient of $r = 0.441$ was obtained. This value indicates a moderate positive relationship. From the regression equation, $y = 0.4441x + 0.1127$, and the coefficient of determination $R^2 = 0.1724$, rainfall only explains 17.24% of the variation in the sediment rate, while the remaining 82.76% is influenced by other factors such as land cover conditions, slope, and land-use activities. Therefore, soil and water conservation efforts, especially in the upstream and middle parts of the watershed, are highly recommended to control erosion and sedimentation.

Keywords: *Erosion, Pondoh River, Rainfall, Sedimentation Rate, TDS, TSS, Watershed.*