

Title : Analyzing Erosion Hotspots of Pa Sak River, Lom Sak District, Phetchabun Province Using Fluvial Geomorphic Indices.

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ABSTRACT

This study aims to analyze cut-bank erosion hotspots along an 85-kilometer stretch of the Pa Sak River in Lom Sak District, Phetchabun Province. The research integrates Geographic Information Systems (GIS) with four key geomorphological and environmental factors: specific stream power index (SSPI), stream bend curvature, land use, and infrastructure density. All of these factors were derived from a Digital Elevation Model (DEM) and were processed using weighted overlay analysis (WOA) to prioritize their influences and classify erosion risk into five levels. The findings indicate that the majority of the study area is under high erosion risk (31.01%), followed by low (7.78%), moderate (22.03%), very low (9.82%), and very high (9.36%). Field validation revealed significant physical correlations: high- to very-high-risk areas exhibit pronounced erosion scars, steep banks, and high sinuosity (meandering). Conversely, very low to low-risk areas are characterized by slight curvatures, dense vegetation that enhances soil stability, and minimal evidence of erosion. These spatial insights provide a critical framework for strategic planning and disaster mitigation efforts.

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