Title : Sedimentary Characteristics of Ping River Point Bar in Ki Lek Subdistrict, Mae Rim District, Chiang Mai Province by Ground Penetrating Radar and Electrical Resistivity Surveys

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ABSTRACT

The Ping River is the main watercourse of the Chiang Mai Basin, exhibiting continuous channel shifts and sediment deposition, particularly in point bars formed by sediment accumulation on the inner bends of meanders. In the Ki Lek Subdistrict of Mae Rim District, Chiang Mai Province, significant point bar deposits have developed due to changes in the river's course. This study investigates the sedimentological characteristics of these deposits along the Ping River using ground-penetrating radar (GPR) and electrical resistivity tomography (ERT) to provide insights into the sedimentary structures and evolution of point bars in the area. The interpretation of radar facies from GPR data, combined with ERT sections, distinguishes four sedimentary zones. Zone 1 consists of fine-grained sediments such as clay and silt, interpreted as an ancient floodplain with an estimated thickness exceeding 30 meters. Zone 2 is composed of coarse-grained sediments such as gravel, sand, and silt, representing a reworked sand layer approximately 4 meters thick and a small channel deposit 18–20 meters wide. Zone 3 consists of fine-grained sediments, including clay, silty clay, and sandy silt, interpreted as an abandoned channel approximately 40 meters wide. Zone 4 comprises coarse-grained sediments, including gravel, sand, and silt, arranged in parallel layers and overlain by floodplain clay, representing a small channel deposit about 5 meters wide. These findings illustrate the river's historical migration patterns and contribute to a deeper understanding of the fluvial processes shaping the local landscape.

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