

Glacier Deposit-Based Zonation of Chitral valley, Northern Pakistan

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The District Chitral in the northern Pakistan is well-known for its diverse glacial- derived landscape, which has been formed over millions of years triggered by the different geological process. This study aims to classify and map glacial deposits in the Chitral Valley into distinct zones, providing an improved understanding of the region's geological history. The current zonation is based on detailed analysis of the characteristics and distribution of glacial deposits in Chitral Valley. These glaciers are mapped and classified into three distinct zones based on their location by utilizing remote sensing and GIS techniques. The results indicate that three distinct zones, Booni Zom, Terich Mir, and Broghil, have been identified based on unique glacial features. These zones are crucial as they serve as the origin points for major rivers that have shaped the valley's morphology. These zones correspond to various phases of glacial advancement and retreat. This study not only offers a framework for understanding the geological past of Chitral but also serves as a practical guide for assessing natural hazards and planning land use. Future research should focus on continuous monitoring and detailed analysis of these zones to enhance our understanding and preparedness for geological changes.