



Geoheritage Sites of Quaternary Loess–Palaeosol and Palaeo-fluvio-lacustrine Deposits in Northwest Himalaya: a Necessitate Protection

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Abstract

This paper is an effort to highlight the importance, possible threats, conservation, and promotion of the loess–palaeosol sediments exposed as Quaternary sediments of Karewa Group in Kashmir valley and palaeo-fluvio-lacustrine deposits of Ladakh Trans-Himalaya, as panoramic geotourism sites and an archive of palaeoclimatic records in context to Himalayan tectonics and geomorphic evolution of scenic landscape. Here, we are trying to showcase the importance of using georesources in a sustainable manner. Although all the geosites cannot be preserved, but few with comparatively greater scientific importance need to be retained and preserved for present scientific research and future generations. We discuss a few Quaternary geosites of Jammu and Kashmir (J&K) and Ladakh, NW Indian territories, as these are from the present and the ongoing period of Earth's history — the Quaternary Period and it is already under a threat. These sites are a treasure trove of information on the geomorphology, landscape evolution, palaeoclimate, palaeoecology, and neotectonics of this recent period. These can prove very helpful in understanding of climate change, hydroclimate, ecology, mountain geomorphology, etc., of this important part of the Third Pole apart from geotourism which attracts over a million tourists every year to these beautiful Himalayan states of India. To cater the floating population, the construction activities have been taking a toll of these sites and the mysteries in their records are being depleted. Erosion, mining, agriculture, urbanization, and industries are causing major harm to them. These geosites are having great Geotourism potential which can prove helpful in enhancing the socio-economic status of local population. In no time, several of these sites will be replaced by modern day construction, and hence, it needs a necessitate protection.

Keywords Geoheritage sites · Quaternary · NW Himalaya · Karewa Group · Loess–Palaeosol · Fluvio-lacustrine · Geotourism

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Introduction

The Northwestern (NW) Himalaya (J&K and Ladakh) displays diverse nature of rocks, ranging from Precambrian crystalline to Quaternary deposits which make it geologically diverse, in addition to the diversity observed in the landscape, flora, fauna, civilization, archaeological sites, ongoing mountain building/orogenesis, and the sediment archive. This wide range of geobiodiversity has made this part of the Himalaya, a site of world-wide attraction to a natural scientist. The most recent and ongoing period of the Earth's geological history is the Quaternary Period — a witness to the recent changes in the climate, environment, ecology, human evolution, and dispersal. The sediment archive of this crucial Period comprises an array of records of the glacial, fluvial, aeolian, and lacustrine processes of the