

Development of Kutwall Lake as indicator of changes in dynamics of Mani Glacier, Haramosh

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Abstract

The glaciotectonic processes are effective landscape architectures in the glacier valleys. The variation in glacier movements creates environment of folding structures in moraines and influence bedrock materials. The surging of glacier develops folding waves in end moraines. In case of retreat of glacier area between end moraine and snout turns into Glacier Lake. The development of Kutwall is typical example of Mani glacier changing dynamics. The end moraines wave structure illustrates the surging glacier which is converted into distributary at Kutwall Lake. The present Mani glacier lateral moraine working as embankment between glacier and lake allows suggest scenario of development of Kutwall Lake which reflects dynamics of Mani Glacier. The end moraine folds were developed during advancing of Kutwall glacier (Now distributary). The younger Mani glacier surging perpendicular to Kutwall glacier force it to change direction of flow and convert into distributary. The observation of change axis of fold waves from perpendicular to parallel in ice of Kutwall glaciers supports above mentioned scenario. The lateral moraine of younger Mani glacier became embankment of Kutwall Lake. The melting of ice between lateral moraine of Mani glacier and Kutwall glacier end moraine form Kutwall Lake. The above mentioned scenario of glaciotectonic dynamics of Mani glacier determine importance of role of gravitational force in the Mani glacier which converting small glaciers in to distributaries. However, the isotopic studies of Kutwall lake water, Mani glacier and Kutwall glacier distributary and composition and age identification of lateral moraine sediments of Mani and end moraine of Kutwall glaciers will prove or reject above mentioned hypothesis about development of Kutwall Lake.