

## Changing Geomorphosites in a Changing Lake: How Environmental Changes in Urmia Lake Have Been Driving Vanishing or Creating of Geomorphosites

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**Abstract :** Any variation in environmental characteristics of geomorphosites would lead to destabilisation of their geotouristic values all around the planet. The Urmia lake, with an area of approximately 5,500 km<sup>2</sup> and a catchment area of 51,876 km<sup>2</sup>, and to which various reasons over time, especially in the last fifty years have seen a sharp decline and have decreased by about 93 % in two recent decades. These variations are not only driving significant changes in the morphology and ecology of the present lake landscape, but at the same time are shaping newly formed morphologies, which vanished some valuable geomorphosites or develop into smaller geomorphosites with significant value from a scientific and cultural point of view. This paper analyses and discusses features and evolution in several representative coastal and island geomorphosites. For this purpose, a total of 23 geomorphosites were studied in two data series (1963 and 2015) and the respective data were compared and analysed. The results showed, The total loss in geomorphosites area in a half century amounted to a loss of more than 90% of the valuable geomorphosites. Moreover, the comparison between the mean yearly value of coastal area lost over the entire period and the yearly average calculated for the shorter period (1998-2014) clearly indicates a pattern of acceleration. This acceleration in the rate of reduction in lake area was seen in most of the southern half of the lake. In the region as well, the general water-level falling is not only causing the loss of a significant water resource, which is followed by major impact on regional ecosystems, but is also driving the most marked recent (last century) changes in the geotouristic landscapes. In fact, the disappearance of geomorphosites means the loss of tourism phenomenon. In this context attention must be paid to the question of conservation. The action needed to safeguard geomorphosites includes: 1) Preventive action, 2) Corrective action, and 3) Sharing knowledge.

**Keywords :** geomorphosite, environmental changes, changing lake, Urmia lake, northwest of Iran

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