



Giant Holocene landslides in the Crimean Mountains (Ukraine): types, distribution and predisposition

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The Crimean Mountains rank among the regions with the highest concentration of slope deformations within Europe. As a part of Caucasus-Crimean thrustbelt, the region evolved as a consequence of several geodynamic stages involving Early Cretaceous orogenesis, Cretaceous-Eocene burial under a thick sequence of sediments and subsequent post-Eocene exhumation and uplift. Despite the preservation of widespread ancient (Berriasian) palaeosurfaces, some of the landscape domains reveal signs of intensive transformation by Holocene landslides. The greatest abundance of active landslides was recorded in the main ridges along the Black Sea coast, which are seismically active and rich in precipitation (>1000 mm/y). However, gigantic landslides occur also in a semiarid area of the low-lying northern periphery which is considered to be recently aseismic. Detailed study was carried out in landslide complexes in the western part of the range and in wide water gaps cutting northernmost cuestas in the northern foreland. Large landslides ($5.4\text{--}18.9$ km²) located in the water gaps of the Belbek, Kacha, Alma and Byiuk-Karasu Rivers represent almost stabilized features. According to radiocarbon dating they emerged prior to the Atlantic chronozone and their toes were reactivated between 1-2 ka ¹⁴C BP. The main landslide phase (>6 ka ¹⁴C BP) probably followed a strong earthquake whereas minor reactivation of toes can be attributed both to climatic and seismic factors. Giant landslides occupying the main mountain range can be classified as highly catastrophic morphosystems characterized by the landslide succession involving deep-seated spreading, toppling, rockslides and abundant rockfalls and debris flows. Contemporary recognizable deformations usually <5 ka ¹⁴C BP old originated due to more complex factors including

seismicity, karstification, human action and wildfires.