

Hanon Volcanic Crater: A New Potential Geosite of Jeju Island Geopark, Korea

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The Hanon volcano on the southern coast of Jeju Island, Korea, has an unusual maar-type crater with the largest caliber in the island, where a phreatomagmatic eruption took place ca. 34 kyr BP as a result of the explosive interaction of rising magma with groundwater. The crater is surrounded by thin (ca. 40 m thick) and gently outward-dipping rim beds of a tuff ring and is filled with lacustrine or wetland sediments as thick as 15 m in topographic lows. In sediment cores from the crater-lake deposit, the paleo-climatic proxy records (TOC and MS) obviously reflect the rapid climate change at the Pleistocene-Holocene boundary. However, the anthropogenic modification and destruction of topography and ecosystem have continued in the Hanon area since the crater lake was artificially drained for farming a thousand years ago, and the area has been exposed to serious threats from attempts to construct sports and entertainment facilities. Fortunately, the municipal government and civil organizations recently realize that the Hanon crater deserves one of the outstanding natural heritages because of its topographic scarcity (i.e., a maar-type crater) and the climatic, ecological and environmental values of crater-lake deposits (i.e., a time capsule of the Earth's environment). As a result, various efforts are being undertaken to establish a comprehensive plan for restoration and conservation of the crater, and to operate environment-friendly utilization programs. One of the practical actions is to designate the Hanon volcano as a new geosite of the Jeju Island Geopark.