

The palaeogeographic setting and the local environmental impact of the 130 ka Falconiera tuff-cone eruption (Ustica island, Italy)

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This research focuses on the effects of the last eruption at Ustica (Southern Tyrrhenian Sea, Italy), which formed the Falconiera tuff-cone at around 130 ka BP in the north-eastern tip of the island. This eruption was mainly explosive and phreatomagmatic, and emplaced a series of pyroclastic surge beds that formed an asymmetric tuff cone. This is the most easily recognizable volcanic edifice on Ustica, although its north-eastern sector has been partially eroded. A section of the feeding conduit is exposed northward, and is composed of lavas that fed the last stages of the eruption characterized by an intracrateric lava lake and a Strombolian scoria-fallout deposit.

The eruption occurred during Upper Pleistocene Marine Isotopic Substage 5.5, a warm period characterized by a high sea-level stand (6 ± 3 m above the present sea level in stable areas) and the diffusion of subtropical flora and fauna across the Mediterranean sea. This eruption slightly modified the morphology of Ustica, but impacted both marine and terrestrial environments, burying beach deposits rich in mollusk shells (i.e. *Strombus bubonius*, *Conus testudinarius*, *Brachidontes puniceus*), colonies of corals (*Cladocora caespitosa*) and subaerial plants (*Chamaerops humilis*). These organisms, found in some cases in their life position, along with other lines of evidence, provide information on the palaeogeography of this sector of the island at the time of the eruption, and on the local impact of this event on the environment.