



## **The influence of volcanic activity in the Campi Flegrei coastal depositional system**

Crescenzo Violante, Eliana Esposito, Flavia Molisso, Sabina Porfido, and Marco Sacchi

Istituto per l'Ambiente Marino Costiero (IAMC-CNR), Napoli, Italy (crescenzo.violante@iamc.cnr.it)

The Campi Flegrei coastal area includes the bay of Pozzuoli, Procida and Ischia islands, characterized by active tectonics and volcanism since the Pleistocene. Numerous monogenic volcanoes occur close to the shoreline and volcanic debris interpreted as submarine counterpart of subaerial flows and surges, have been detected offshore. In the Pozzuoli area the most recent eruptive volcanic activity occurred from 10.0 to 8.0 ky B.P and 4.5 to 3.7 ky B.P. followed by the September 1538 Monte Nuovo eruption. Here magma-related activity is testified by extensive hydrothermalism, and recent episodes (1970-71 and 1982-84 on Pozzuoli coast) of shallow seismicity and ground deformation, exceeding rates of 100 cm/year in the years 1983-1984.

The most recent volcanic activity on Ischia island starts around 10.0 ky B.P. to which associates several eruptive centres mostly located in the western sector. The last eruption dates back to Arso flow in 1302. Nevertheless the landscape of Ischia is dominated by Mount Epomeo in the central part of the island, which is the highest peak (788 m). It is a volcano-tectonic structure that raised above sea level between 33 and 28 ka BP, due to the intrusion of magma at shallow depth.

Procida island is composed of five monogenic Volcanoes (Vivara, Terra Murata, Pozzo Vecchio, Fiumicello and Solchiaro) that have been active over the last 80 ky producing pyroclastic deposits and a lava dome. A sixth volcanic structure has been reported recently off P.ta Serra by marine investigations and confirmed by airborne magnetic surveys.

The emplacement of large amount of volcanoclastic material from volcanic and volcano-tectonic activity in the Campi Flegrei coastal area produced extensive avalanche deposits off Ischia island, seafloor instabilities in the form of creep/slump, channelled sediment flow and deep sedimentary fans, and is largely responsible for aggradation/progradation of the coastal area during the Quaternary. Moreover, numerous volcanic bank and pyroclastic structures have been detected off the bay of Pozzuoli and Ischia island, both in the shelf area and deeper waters.