

From Roman *Mutina* to Present-Day Modena (Po Plain, Northern Italy): Human Settlements and Inundations

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The city of Modena (180,000 inhabitants, 35 m a.s.l.) is located in the southern part of the Po Plain (northern Italy).

In Modena the archaeological finds of ancient *Mutina*, which was founded by the Romans in 183 B.C., are usually found at a depth of about 5,50 to 6 m, in some cases up to 8 m. On the basis of cross interpretation on about 200 archaeological data, 900 Cone Penetration Test diagrams and 150 boreholes, carried out for engineering planning, it was shown that *Mutina* rose in a valley trough formed in a rather flat alluvial plain, during a period ranging between 19,000 (Flandrian interstadial regression in Europe) and 4,500 years BP. This paleo-valley was evidently subjected to alluvial hazard and, owing to still unknown causes, was filled only in the Early Middle Ages (6th-7th century A.D.), following several inundations.

Particle-size analysis has allowed two main alluvial episodes to be identified, which buried the Roman city under a cover of silty-clayey deposits up to 4 m thick. The subsequent medieval settlement which was built on the newly formed soil did not rise exactly over the Roman one, but was slightly shifted to the west, giving origin to the modern town. If on the one hand hydraulic risk marked the end of the Roman city, on the other hand the subsequent alluvial cover has permitted the conservation of a considerable buried archaeological heritage.