



Human civilisations, forest impact and river evolution in the Central Po plain (Mincio river system, N-Italy) during the last 3000 yr

Marco Zanon (1), Massimiliano Deaddis (1), Renata Perego (1), Mattia De Amicis (2), Raffaele Carlo de Marinis (3), Mauro Marchetti (4), Tommaso Quirino (3), and Cesare Ravazzi (1)

(1) C.N.R., Istituto per la Dinamica dei Processi Ambientali - Milano, Italy (silver_arrow@alice.it), (2) DISAT, Università di Milano Bicocca, Italy, (3) Dip. Scienze dell'Antichità, Università degli Studi di Milano, Italy, (4) Dip. Scienze della Terra, Università di Modena e Reggio Emilia – Modena, Italy

The evolution of the central Po plain (N-Italy) during the Holocene is the result of the interplay between fluvial dynamics, natural subsidence, sea level changes, forest cover, and, during the last four thousand years, of land use and exploitation.

After a phase of lateglacial entrenchment of the fluvioglacial plain, the alpine rivers tributaries of the Po river, among which the Mincio river, were constrained within their terraced valleys, so that the evolution of their valley floor was controlled by the dynamics of the Po river (i.e. the main river) and by the interplay of tectonics and subsidence.

One of the most important of the Etruscan villages (Forcello, 16 m a.s.l., VI to IV century b.C.) settled along the valley floor of the Mincio river acted as a river harbour for fluvial trades connecting the eastern Mediterranean Basin and continental Europe (De Marinis & Rapi, 2005).

We present here multidisciplinary stratigraphical and palaeoenvironmental evidence that this harbour actually rose on a large perfluvial lake (the "Bagnolo lake"), formed into the terraced valley at the beginning of the Iron Age. Independent archeological evidence suggests the lake was dammed by the main river, after diversions related to the "Iron age cold phase" alluvial events (VIII sec. b.C.). The diversion of the main river modified the fluvial network of the lower alluvial plain, and promoted upstream shipping from the northern Adriatic till the Bagnolo perfluvial lake, where a main harbour was thus settled.

The Bagnolo lake was kept until Middle Age reclamation, hence lacustrine sediments registered the forest history and human activities since the time of the Etruscan settlement till XIV century AD. A palynological and archeobotanical record, supported by radiocarbon dating on terrestrial macrofossils, testifies the Roman forest clearings and shows the unprecedented evidence of an early Middle Age phase of abandonment. Finally, an overall change in land use is dated at the X century AD.