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# Between the Venetian Alps and the Emilian Apennines (Northern Italy): Highland vs. lowland occupation in the early Mesolithic

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ABSTRACT

The territory extending between the Venetian Alps and the Emilian Apennines is formed by a mosaic of environments which span from high mountains to hilly and plain areas. These present rather varied features from one extreme (Alpine watershed) to the other (Emilian Apennines watershed). In the early Holocene, the plain area included between the two mountain chains – the Venetian-Po plain – was extended some tens km to the south with respect to the present day coast.

This vast territory has been the object of research since the 1970s and 1980s. Field activities have allowed identifying a rich set of sites that occupy different topographic and geographic locations, thus composing an articulated mosaic characterised by a much wider variability with respect to the well-known case of the Adige basin, located at the western limit of the examined area, which is exclusively included within a mountain territory.

In this paper, we analyse for the first time the rich record from this area in its whole with the aim of investigating the territorial organisation of hunter–gatherer groups on a wide scale. This research has allowed us to set hypotheses on the mobility and occupation strategies of human groups and on the key-aspects that may have favoured the extensive and intensive occupation of this area. Besides the supposed presence of a biomass compatible with the demographic increase that has characterised this period, we also suggest that the "pragmatic" Sauveterrian technological systems played an important role in the adaptation of early Mesolithic hunter–gatherers to the varied ecosystems offered by this area.



## 1. Introduction

The definition of settlement strategies and mobility patterns represents one of the main topics in the study of prehistoric hunter–gatherers. As indicated by ethnographic data these aspects are subject to considerable variability, which involves both the intensity and the modality of displacements. Particularly they are strictly related to the environment and to the availability of resources in terms of distribution and abundance as first recognised by Binford (1980). These factors, to which social interactions should be added, do influence not only the type of mobility but also the total area of land exploited by each group. A strong relationship is recognised between the latter aspect and the nature of the foraging (hunting vs. fishing vs. gathering) in a particular environment based on the assumption that, "high-return-rate resources can be procured at a longer distance from camps than low-return-rate resources" (Kelly, 2007, p. 131). According to the same author, this aspect is clearly shown in the present populations by the fact that hunting becomes more important towards the pole where the fauna need larger territories. He therefore clearly states that, "as dependence on hunting increases, the size of the territory increases", while hunter–gatherers that either base their activities on fishing or that integrate hunting with gathering usually move shorter distances.

From an archaeological point of view, it is usually recognised that the possibility to set hypotheses on the extension of territories of past populations and on their mobility is strictly dependent on the availability of a sufficiently rich record of sites (geographic and topographic location) along with multidisciplinary data attesting the natural resources exploited (raw materials that can give information about the distances covered) and consumed (vegetal and animal). Further information may come from the types of activities

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carried out within the sites as well as from their internal organisation (Geneste, 1991; Newell and Constandse-Westermann, 1996; Cusinato et al., 2003; Djindjian, 2009).

Northern Italy extends from the Southern Alps to the northern slope of the Apennines including the widest plain of the peninsula, the Venetian-Po plain (Fig. 1). This area has one of the richest Mesolithic records in Europe, which appears mostly concentrated in its eastern sector, corresponding to the area included between the present regions of Lombardia to the northwest, Friuli to the northeast, and Emilia to the south. Most of the known sites are surface lithic scatters while a smaller group has been the object of extensive excavations and multidisciplinary studies. Among this evidence, a discrete set of Sauveterrian (early Mesolithic) sites is known (Biagi et al., 1980; Broglio, 1980; Dalmeri and Pedrotti, 1992; Fontana, 2011; Fontana et al., 2013).

Research over this territory has mostly focused on Alpine and Apennine territories which are also those that yielded the first evidence in the late 1960s and early 1970s. Here, sites were first identified after quarry and road works carried out along the sides of the Adige valley-bottom (south-eastern Alps) and in the highlands of the Alps and the Emilian Apennines (1300–2300 m a.s.l.), especially in open-air areas subject to erosion processes and/or animal/anthropic activities, and more rarely under rock boulders (Broglio, 1980; Fontana et al., 2011; Broglio, 2015). Besides this rich record, starting from the 1980s other Sauveterrian sites, although less numerous, have been discovered in the Po and Venetian plains, highlighting that Mesolithic hunter–gatherers had potentially occupied the whole northeastern Italian territory.

Strictly related to the abundance of the available evidence, the definition of settlement strategies has so far focused on mountain districts, which have been considered as close systems. Most significantly, a model based on the seasonal mobility of groups from the valley-bottoms to the highlands has been proposed in the 1980s for the upper course of the Adige river basin (Trentino Alto-Adige region). This model has been supported by evidence of the use of the same lithic resources across this territory and the environmental constraints imposed by the frequentation of high altitude pastures (Broglio, 1980; Broglio and Lanzinger, 1990; Broglio and Improta, 1994–95). Only recently, starting from ethnographic data the hypothesis of the presence of a larger territory that could include both the mountainous and plain area of North-eastern Italy has been postulated (Grimaldi, 2005) and the richness and importance of the evidence highlighted in the plain area has been underlined (Fontana, 2011). Differently from the Alpine territory, in the Southern Po plain, lowland and Apennine sites have been considered as part of the same settlement system (Fontana et al., 2011).

Starting from these considerations, we have focused our attention on part of this vast territory between the Venetian Alps and the Emilian Apennines, in order to investigate the territorial organisation of early Holocene Sauveterrian hunter–gatherers. In contrast to the Trentino (Adige valley) area, which is exclusively comprised within the Alpine district, this includes a vast mosaic of landscapes spanning from the Adriatic coast to the highlands of the Alps and the Apennines.

## 2. Geographical and palaeoenvironmental background

The analysed area includes the modern Italian regions of Veneto and Emilia Romagna and covers a surface of around 40,000 km$^2$ stretching north-west/south-east (Fig. 1). It is crossed in its mid part by the river Po with its numerous southern tributaries originated in the Apennines and by the rivers Adige, Bacchiglione, Brenta, and Piave running northwest to southeast in its north-eastern sector. Both the Po and the Venetian rivers flow into the Northern Adriatic Sea. Standing out in the middle of the Venetian plain, two isolated mountain groups, Monti Berici and Euganei, reach altitudes of 450 and 600 m respectively.

In the Venetian region, the highland part is mostly included within the Dolomites, with a Permian to Cretaceous sequence mostly composed of sedimentary rocks, with interbedded volcanic layers. Towards the south, the pre-Alps are formed of Mesozoic and Cenozoic sedimentary rocks, mainly limestones, sandstones, and pelitic sediments. Some of these formations, in particular the

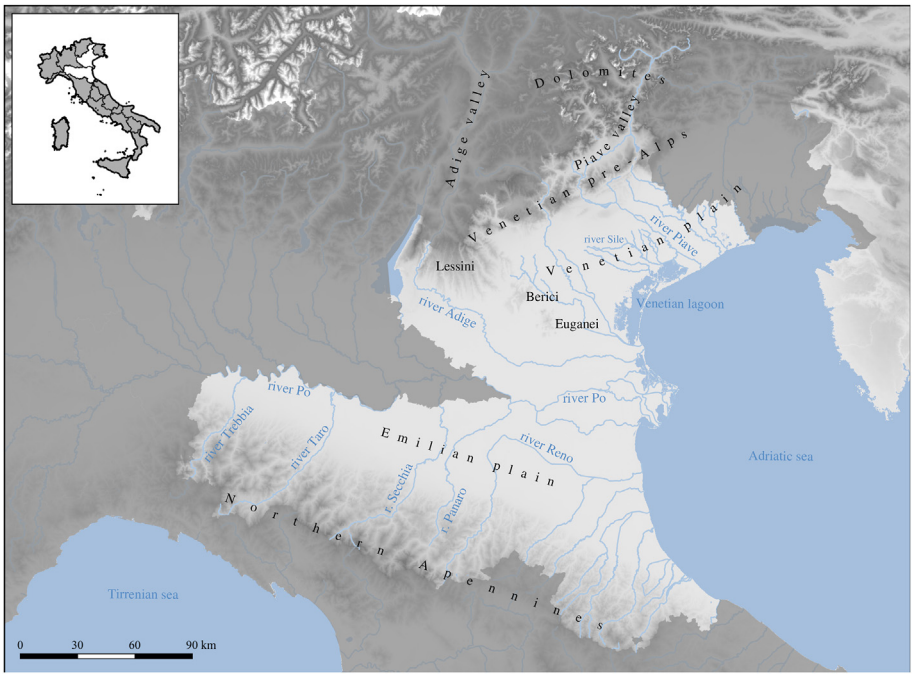


**Fig. 1.** Location of the investigated territory with indication of the main geographic entities.

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