La Peña de Estebanvela is a rock shelter located at an altitude of 1065 m in the Sierra de Ayllón on the northern border of Spain's Sistema Central range. It lies on a slope on the right bank of the River Aguisejo, a tributary of the River Riaza which eventually flows into the River Duero. Its archaeological infilling stretches from the Middle to Late Magdalenian. Research undertaken between 1999 and 2009 returned long lithic (51,000 pieces) and faunistic (64,155 remains of macrofauna) inventories, as well as elements of personal ornaments, bone industry objects, a unique collection of objets d’art, and a number of hearths.

The site's micromammal assemblage indicates a damp, temperate climate similar to that currently reigning in the area. The taxa found are those of an environment with a watercourse and abundant plant cover, forested areas, and zones of transition towards more open landscapes with wood border vegetation and shrubs, and both dry and damp meadows. The herpetological remains found also suggest climatic conditions were similar to those of the present.

Zooarchaeological and taphonomic studies of the animals hunted by the occupants of La Peña de Estebanvela reveal different habitats were exploited, including open areas with Equus ferus and Equus hydruntinus, wooded areas with Capreolus capreolus and Cervus elaphus, and mountainous areas with Rupicapra pyrenaica, Capra pyrenaica, and Vulpes sp. Anatomical analyses have shown that animals were transported whole to the site, irrespective of their size, suggesting they were killed at a distance of no more than 10 km. The majority of animals hunted were between three and six years of age, although some juveniles and young specimens were taken. Analysis of the ungulate remains of Levels I, II and III suggest that there were two periods in the year when these animals were hunted: spring–early summer and autumn, i.e., when young were being born, increasing the vulnerability of these items, and during the reproductive period, when large numbers gathered together. This pattern of usage of the shelter is repeated throughout the sequence.

The presence of personal ornaments, mainly made from the shells of Atlantic and Mediterranean gastropods, implies that the occupants of La Peña de Estebanvela were mobile. They may have journeyed to the coast and collected the raw materials they required, or have traded with other groups with direct access to the sea.

The chars and bone found indicate the use of wood, mainly willow, as a domestic fuel. Indeed, the dominance of willow suggests an intensive and recurrent use of the riparian environment. Although the fruits have not been found, the presence of charred wood suggests that different wild plant foods (cherry, sloe, hazelnut, crabapple...) were available and may have formed part of the diet. Certainly, fish were consumed; the vertebrae of brown trout (Salmo trutta) have been found at the site.

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