



# The role of plants in the early human settlement of Northwest South America



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## ABSTRACT

This paper presents a synthesis on the existing of the role of plants on the adaptive strategies of human groups that settled in Northwest South America since the Pleistocene/Holocene transition. To contextualize the analysis, a brief description of the Colombian Pleistocene sites is presented. The paper presents a broad description of the lithic technology, archaeobotanical record and radiocarbon dates. Plant resources played a key role in the settling of human groups in the forests of the Neotropics. Furthermore, it is suggested that for some areas there is evidence of cultivation as a strategy to increase the carrying capacity of the surrounding environment.

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## 1. Introduction

Due to its geographical position, Northwest South America, mostly corresponding to the current Colombian territory, is a crucial area to address the issues of adaptive strategies, and the process of early human dispersion in northern South America since the Pleistocene/Holocene transition. The earliest date was found at Pubenza (Fig. 1), an open air site located in the lowlands of the Magdalena River Basin, where mastodon bones have been found associated with eight stone flakes in a layer dated at  $16,460 \pm 420$  BP (Van der Hammen and Correal, 2001). El Abra, a rock shelter located 2600 m asl at the Sabana de Bogota (Eastern Cordillera) (Fig. 1) where archaeologists recovered Holocene faunal remains associated with unifacial lithic tools dated  $12,400 \pm 160$  BP, is the second oldest site in Colombia (Correal et al., 1966–1969; Hurt et al., 1977; Correal, 1986).

The Sabana de Bogota (Fig. 1) has one of the longest and most complete occupation sequences in Northwest South America, starting at ca. 12,400 BP through the XVI Century AD (Correal and van der Hammen, 1977; Correal, 1981, 1986). Regarding the earliest humans, Correal, the archaeologist who lead the research at the Sabana de Bogota, suggested that between ca. 11,000 and 10,000 BP, “semi-specialized hunters had adapted to the semi-open environment of the Bogota highland” (Correal, 1986, p. 119).

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The high frequency of faunal remains in the sites from Sabana de Bogota including the Pleistocene megafauna remains (*Cuvieronius hyodon*, *Haplomastodon* sp. and *Equus amerhippus* sp.) from Tibito ( $11,740 \pm 110$  BP) indicates that hunting was an important activity that prevailed through the middle Holocene (Correal, 1982, 1986, p. 124–125). The emphasis on hunting was also suggested by López (1999) writing about the middle Magdalena River Basin (Middle Magdalena) (Fig. 1), where he stated that, “so far, the lithic assemblages recovered suggest the existence of a tradition of specialized hunters that reminds us of the definitions of Paleoindian cultures” (López, 1999, p. 100). Along with the evidence found at Sabana de Bogota and Middle Magdalena, the superficial recoveries of projectile points through Colombia (López, 1995, p. 75), forged the widespread idea for Colombian archaeology that the early human groups focused their economic strategies mainly on hunting. During the 1960s, Reichel-Domatoff (1997 [1965] p. 40) argued that Northwest South America environmental conditions must have determined a strong emphasis on minor species hunting strategies as well as in gathering during the Paleoindian stage. This idea challenged the traditional view of Paleoindian human groups as mainly megafauna hunters and was based on the fact that neither the amount of projectile points nor the megafauna remains associated with human activities in Colombia supported that idea.

By the Pleistocene/Holocene transition (ca.10,500 BP), archaeological data suggest that the adaptive strategies had strong emphasis on plant resources. The aim of this paper is to present a compilation of archaeobotanical and paleoecological data suggesting that, along with strategies such as hunting and perhaps fishing, plant resources were an important part of the adaptive

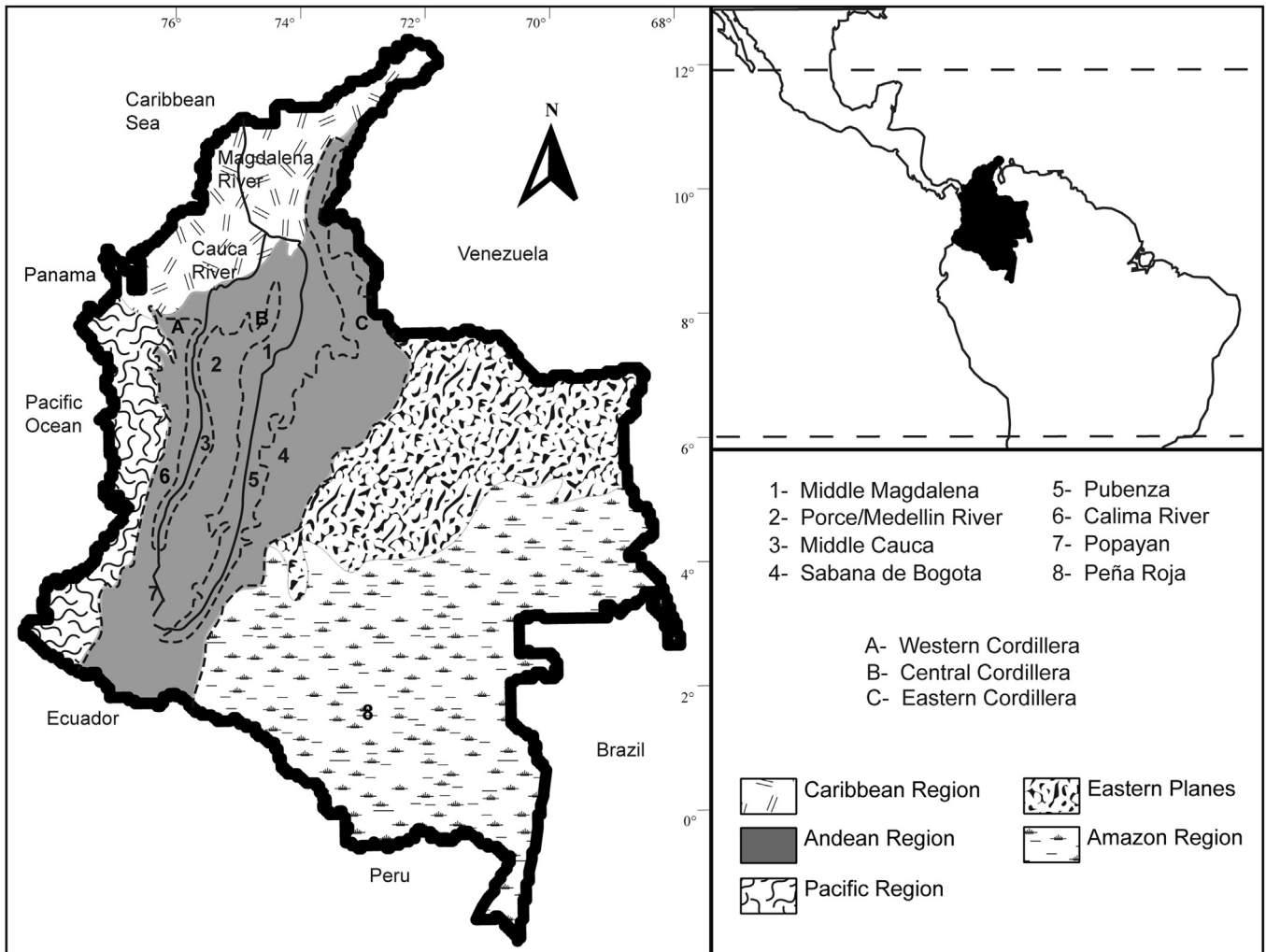


Fig. 1. Colombian geography and archaeological areas distribution.

strategies that enabled human settlement and, possibly, the incipient construction of cultural traditions that spread through Colombia at the Pleistocene/Holocene transition (ca.10,500 BP) until the early Holocene (ca. 8000 BP) (Aceituno et al., 2013).

## 2. The role of tropical forests in the early peopling of Central America and Northwest South America

The Paleoindian evidence found in moist forests in Central and South America allowed a debate around the role that this environments had in the peopling of the Neotropics during the final Pleistocene, a time in which environments were different from today's, mainly due to changes in temperature and rainfall (Piperno and Pearsall, 1998; Ranere, 2006, 2008). Broadly speaking, the paleoecological data from Central America suggest the existence of several types of landscapes: montane forest, thorn scrub, savannah, tropical moist forests, etc. (Snarkis, 1979; Bush and Colinvaux, 1990; Piperno and Pearsall, 1998; Ranere, 2008). This situation has been studied in Panama, where the relation between paleoenvironments and archaeological sites has been analyzed in order to suggest subsistence strategies in tropical ecosystems for the earliest settlers of the isthmus (Piperno and Pearsall, 1998; Ranere, 2006). Facing the assumption that tropical forests must have posed a barrier for human migrations, Ranere (2006) suggested that human groups must have taken advantage a wide range of ecosystems, which included tropical forests. Ranere noted that hunting was the main subsistence

strategy at the beginning. With the decrease of game and demographic increase towards the final Pleistocene, human strategies shifted towards the exploitation of plant resources. The oldest indirect evidence for environmental management comes from a sediment layer extracted from a core at La Yeguada Lake and dated between ca 11,000 and 10,000 BP, where charred phytoliths of grasses and *Heliconia* were recovered along with an abrupt increase of the frequency of microscopic charcoal, suggesting forest burning by human groups that took advantage of the natural resources of this environment (Piperno, 1995; Piperno and Pearsall, 1998).

For Colombia, the most complete sequence of occupations comes from the highlands of the Sabana de Bogota (about 500 km SE of the Panama–Colombia border on the Pacific Ocean, ~2600 m asl) in an Andean forest in today's environmental classification. The environmental reconstructions of the Guantiva Interstadial, dated ca 12,500 to 11,000 BP, indicate that the Andean moist forest that was replaced by sub-Paramo vegetation during the Abra Interstadial (Correal, 1986; Marchant et al., 2002). The archaeological evidence for this time frame comes from El Abra II, Tequendama I and Tibito (Table 1) (Correal and van der Hammen, 1977; Correal, 1981, 1986). Faunal remains as well as the associated lithic technology suggest that hunting was the main economic strategy in the Sabana de Bogota. There are no direct indicators of edible plant usage. Nonetheless, Correal (1986, p. 121) mentions the presence of the pollen record of the Dodoneae plant family towards ca. 10,000 BP and associates it with forest clearance.

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