Monte Verde: Human Subsistence and Mobility in Pre-Clovis Chile

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She/Her/Hers

My name is Jean Pickard, and graduated from CSUDH in Spring 2022 with a B.A. degree in Anthropology/Archaeology and a certificate in Cultural Resource Management. This fall, I enrolled in an Applied Archaeology master's program at CSU San Bernardino. My interests include the lifeways and lithic trade activities of the precontact coastal Gabrielino-Tongva. In addition, my independent research analyzes Monterey Chert source provenance at the Palos Verdes Peninsula.

Introduction

Along the lush banks of Chinchihuapi Creek, a tributary of southern Chile's Maullín River, lies one of the most controversial archeological sites of the twentieth century, Monte Verde. In 1978, archaeologist Tom Dillehay and his colleagues found well-preserved human artifacts and features associated with Late Pleistocene faunal remains (fig. 1) (Dillehay 1989). Initial radiocarbon analyses of materials from the Monte Verde II cultural layer consistently dated the site to 12,500 BP. With this, Dillehay (1989) asserted that Monte Verde was occupied by humans between 12,000 and 14,000 years ago, predating what was then the earliest known Paleoindian site in the Americas at Clovis, New Mexico, by some 1,000 years.

The timing and method of initial human migration into South America, particularly to the site of Monte Verde, has been the topic of much debate since Dillehay's discoveries some forty years ago. However, questions about the site of Monte Verde itself -- how it was used and how its inhabitants subsisted -- remain.

I will address these questions by merging the archaeological data collected by Dillehay and his team between 1976 and 2013, Binford's (1980) information on forager and collector subsistence strategies, and Perreault's and Brantingham's (2011) discussion on mobility regimes. In the process, I will argue that Monte Verde was a residential camp occupied by logistically organized collectors.

Fig. 1. Location map of the study area and the site of Monte Verde.

Background

In his two-volume monograph, " Monte Verde: A Late Pleistocene Settlement in Chile, " Dillehay's project at Monte Verde initially spanned seven field seasons between 1976 and 1985. During this time, Dillehay and his team carried out a detailed survey of an area around Chinchihuapi Creek where locals had found mastodon bones. They excavated 173 m2 of the area, conducted experimental archaeological studies, and brought in an interdisciplinary team of specialists, including Mario Pino who studied the site's geology (Dillehay 1989a). Among this team were a biologist, palynologist, paleontologist, dendrologist, and lithic specialist.

Dillehay's claim that Monte Verde was the site of the earliest human occupation in the Americas sparked widespread debate among archaeologists. The controversy stemmed from the discovery of 11,500-year-old fluted projectile points associated with Pleistocene fauna at Clovis, New Mexico, between 1932 and 1936. This discovery led to the Clovis-first hypothesis, arguing that there was no evidence of human habitation in the Americas prior to the Clovis complex (11,500–11,000 uncalibrated C14 yrs. B.P.). Subsequently, a theory developed arguing that the presence of an ice-free corridor across Beringia accounted for the rapid spread of Clovis-making humans throughout North America. As a result, critics such as archaeologists Junius Bird (1979) and Thomas Lynch (1990; 1991) questioned the authenticity of Monte Verde's artifacts and their associated dates. In 1997, nearly twenty years after Dillehay's first excavations at Monte Verde, an esteemed group of archaeologists (including Junius Bird) inspected the site and verified that the Monte Verde II layer was 12,500 years old. Dillehay and his team returned to Monte Verde in 2013 "to further assess the geological setting of the sites by applying sedimentological, microstratigraphic, magnetic, optically stimulated luminescence dating (OSL), and macro and micro-botanical analyses" (Dillehay et al. 2015). Over two field seasons, the team drilled fifty-four archaeological cores and excavated thirty test pits and ten excavation blocks.

In addition, the team used radiocarbon and OSL analysis to date wood charcoal, burnt plant stems, animal bone fragments, and sediments (Dillehay et al. 2015). Findings from these analyses have confirmed Dillehay's previous assertions and have established even earlier dates between ~18,500 and 14,500 cal B . P .

Temporal Associations

To establish a framework for the hypothesis discussed in the following sections, we must first consider the contemporaneity of the archaeological materials excavated from Monte Verde II (MV-II). This habitational zone forms three distinct occupation areas: Zone A, Zone D, and Zone C. All the archaeological materials (architectural features, artifacts, and ecofacts) excavated at the site were buried under a layer of peat (stratum MV-5) on a thin occupational surface designated as strata MV-7 and MV-6 (Dillehay 1989b). According to Dillehay (1989b), "there is no doubt that all of the recovered architectural features and artifact concentrations in MV-6 and MV-7 represent a contemporaneous cultural event in both Zones A and D." Evidence for this is found in the Wishbone-shaped hut foundation in Zone A at the west end of the site (fig. 2). This feature, composed of compacted soil and gravel , sits on the MV-7 use surface . Within the boundaries of this feature , the masticated quids of two species of seaweed (Sargassum sp. and Durvillaea antarctica) were found, and around its perimeter were the remains of at least seven mastodons (Dillehay 1989b).

Thirty meters east of Zone A sits zone D and the remnants of twelve wooden hut structures (fig. 2). Here, fourteen mastodon bone fragments were recovered from use surfaces within these structures and their adjacent workshop areas (Dillehay 1989b).

AMS radiocarbon dates derived from fragments of the seaweeds Gigartina sp. on the use surface of the Wishbone-shaped hut (~12,290 +/- 60 C14 yr. B.P.) and Mazzaella sp. in a brazier in a hut structure (~12,310 +/- 40 C14 yr. B.P.) are contemporaneous and agree with the dates of all other archaeological materials found across the MVII site (Dillehay et al. 2008).

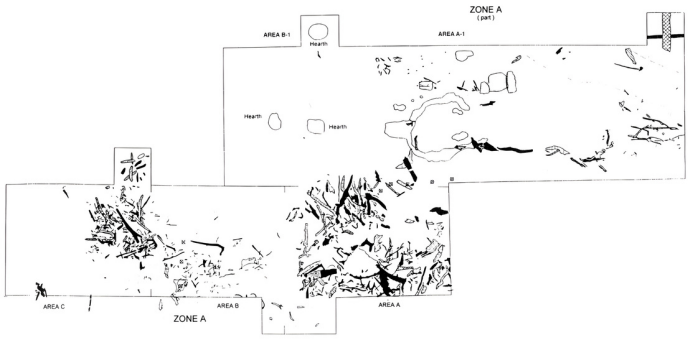

Fig. 2. Layout of the wishbone-shaped foundation, features and associated refuse in Zone A (top) and the layout of structural remains, features, and associated refuse in Zone D (bottom). From Dillehay 1989b.

Methods

According to the archaeologist Lewis Binford (1980), "We cannot hope to understand the causes of [archaeological] remains through a formal comparative study of the remains themselves. We must seek to understand the relationships between the dynamics of a living system in the past and the material by-products that contribute to the formation of the archaeological record remaining today." Therefore, using the features, artifacts, ecofacts, and botanical remains found by Dillehay and his team between 1976 and 2013 and information about subsistence strategies and mobility regimes from Binford, Perreault, and Brantingham, I will endeavor to answer the following questions: Was Monte Verde a temporary field camp, a stopping point for gathering food, hunting, and processing animals or a permanent residential camp from which its inhabitants ventured out and returned with regularity? Were the inhabitants of Monte Verde highly mobile foragers, exploiting resources as they happened upon them, or logistically organized collectors with specific strategies for procuring and storing food at their home base? To explore these questions, I will first discuss mobility regimes and how foragers and collectors differ on a mobility spectrum.

Analysis

According to Perreault and Brantingham (2011), "mobility regimes vary with the number of foraging moves groups make before returning to home base." For clarity, figure 3 below illustrates this concept in more detail:

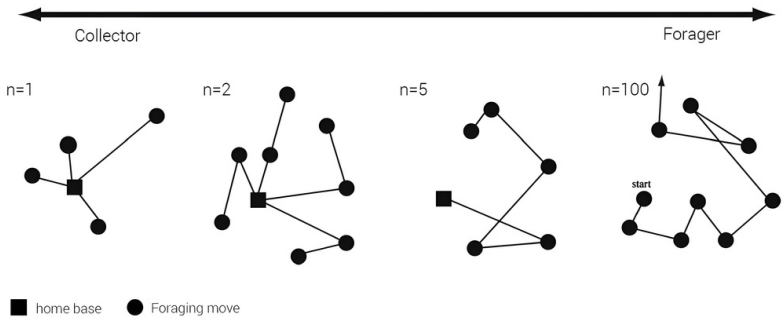

Fig. 3. Mobility Regimes. From Perreault and Brantingham 2011. When the number of foraging moves (n) equals 1, groups make one move before returning to home base (black square). This situation is characteristic of extreme cases of central-place or collector foraging and is limited by the distance that can be traveled in one day. Whereas when the number of foraging moves (n) is much greater than 1, groups are unlikely to return to their home base. This situation is characteristic of residential mobility (forager) foraging.

Binford (1980) defines foragers as people who gather food daily, exploiting resources as they wander, with no pre-planned strategy for collecting and storing food. They make many residential moves before returning to home base, if they do at all.

In contrast, logistically organized collectors frequently reoccupy their residential base after procuring food. In addition, the more sedentary the group, the greater the number and length of logistical forays (Binford 1980; Kelly 2013).

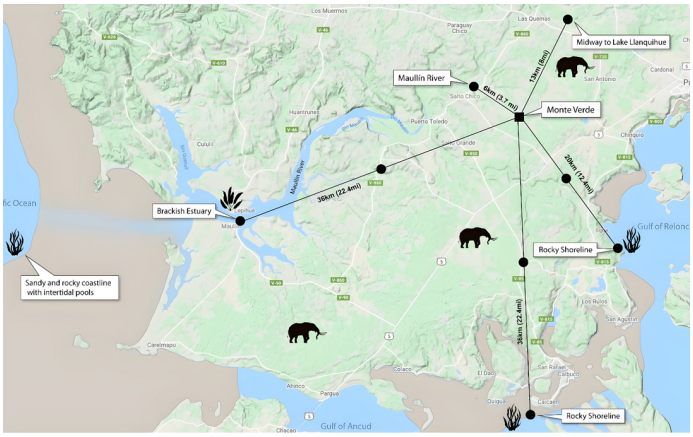

Fig. 4. Hypothetical mobility regime of the early inhabitants of Monte Verde. Note the Paleocoastal shoreline (brown areas) at ~15,000 to 14,000 cal yr. B.P.

Using Perreault's and Brantingham's model, it is possible to devise a mobility regime for the early inhabitants of Monte Verde (fig. 4). With this, I argue that the inhabitants of Monte Verde made a low number of foraging moves (between 1 and 3) before returning to their home base. Further, I contend that occupation at Monte Verde took place over a prolonged period by the same group of people, and that these people were logistically organized collectors. To support these claims, I will discuss the following archaeological evidence from Monte Verde: wood structures, faunal remains, and maritime botanical remains.

Archaeological Evidence

First, Dillehay and his team excavated the remains of twelve wooden structures and a wishbone-shaped compacted sand foundation at MVII. These structures, varying in size from 2.3 to 11.7 sq m (7.5 to 38.4 sq ft), were about 20 meters long and laid out like a row house (Dillehay1989b). The structures had been framed with large timbers anchored by wooden stakes, walled with round woods, lashed with juncus cordage, and covered with animal hides (Meltzer 2019). Considerable time and effort went into the collection of building materials and the construction of these dwellings. These factors, along with the square footage of the structures, indicate that a sizable group of people occupied the area for an extended period.

Second, Dillehay and his team found the bones of seven individual mastodons at Monte Verde. However, the likelihood that all of them died naturally at the same time and place is very low. So too, is the likelihood that Monte Verde was a kill site. If this were the case, complete skeletons would have been found. However, the 384 mastodon bones found around the perimeter of the Wishbone-shaped hut foundation were disarticulated and together did not make up one individual mastodon skeleton. Only selected sections of the animals, predominantly ribs and long bones, were present (Dillehay 1989b). In addition, many of the bones showed signs of butchering, including cut marks and fractures.

These factors suggest that the inhabitants of Monte Verde were logistically organized collectors who traveled out from their home base to hunt and returned with choice portions of their kill for the rest of the group to process. Third, Dillehay and his team found macro-botanical remains of coastal plant species associated with residential structures, hearths, and stone tools excavated at the site. According to Dillehay et al. (2008), the seasonal availability of seaweed and algae near Monte Verde was from early spring to early fall (fig. 5). It is important to note that during the site's occupation, the distance from Monte Verde to the coastal zones was much greater than it is today, varying from 12 to 22 miles (fig 4). Specialty items from the western sandy shores and the brackish estuaries of the Maullín River Delta required the most travel. This suggests that logistically organized collectors traveled from Monte Verde seasonally on multi-day treks to collect edible and medicinal seaweeds and algae. The inhabitants of Monte Verde may have acquired some seaweeds through trade with groups who lived closer to the most distant sources. Regardless, the presence of seaweeds and algae at Monte Verde shows that the people there had an organized method for collecting these items.

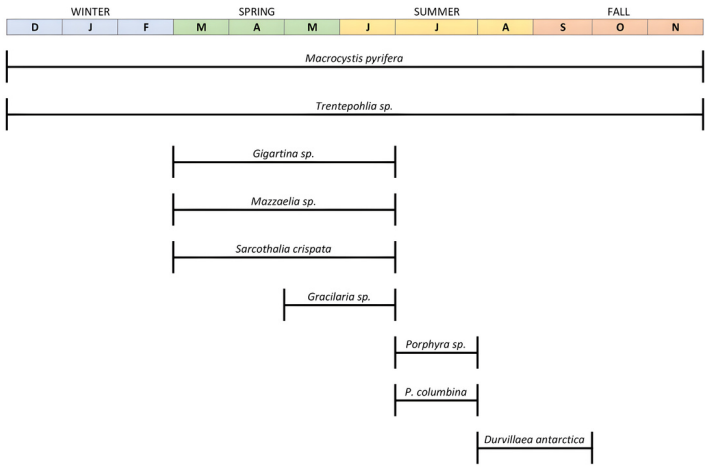

Fig. 5. Seasonal availability of algae and seaweed in the Monte Verde region. Seaweed and algae collection by the inhabitants of Monte Verde was conducted at various coastal locales from early spring to early fall.

Conclusion

Through the analysis of three key archaeological materials from Monte Verde (features, faunal remains, and seaweed), including the locations where they were found and their temporal associations, this paper argued that Monte Verde was a residential camp occupied by logistically organized collectors. In terms of location and contemporaneity, all three archaeological materials were found in association with each other within stratum MV-7 of the MVII site in Zones A and D. Furthermore, seaweed remnants and mastodon bones were located on use surfaces within and around huts structures and the Wishbone-shaped feature. The total assemblage of archaeological materials at Monte Verde reflects the year-round or seasonal occupation of the site and logistically organized economic activity (Dillehay 1989b).

Binford's (1980) definitions of foragers and collectors and the mobility regimes illustrated by Perreault and Brantingham (2011) informed this hypothesis.
Understanding the site typology and subsistence strategies of the inhabitants of Monte Verde can help inform future research into the location of seasonal camps and start a conversation about potential trade networks in the region. Future work could include analyzing the time it takes to travel by foot to the coastal seaweed harvest zones. This would help develop a more accurate mobility regime for the inhabitants of Monte Verde and inform researchers on possible midway encampments.

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