



Arboreal archaeology and early Navajo land use

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ABSTRACT

Arboreal archaeology is the use of tree-ring data to examine past human exploitation of forest resources. Arboreal archaeology can identify how and when past groups procured wood for artifact manufacture, medicine, fuel, and construction timbers. More importantly, dendroarchaeological sampling of these non-site resources can significantly enhance our understanding of past land use patterns. This research shows the utility of the arboreal archaeological record in understanding early Navajo land use in northwestern New Mexico, USA, and suggests archaeologists should promote wider application of the research on these endangered parts of the archaeological record.

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1. Introduction

Every human society, past or present, has used wood or woody plants. Even those societies in treeless environments, such as the Arctic, extreme elevations, or vast deserts have used wood resources. Exploitation of such forest resources has left significant evidence on the landscape, but this important source of archaeological and anthropological data has been little used by archaeologists. This paper shows the utility of exploiting this “arboreal” archaeological record to explicate early Navajo land-use histories in northwestern New Mexico and suggests it may provide valuable data in other areas as well.

Arboreal archaeology, broadly defined, is the study of past human use of trees—living or dead—on the landscape. It differs from “dendroarchaeology” which examines wood from archaeological contexts, although there is certainly overlap between the two approaches. Sometimes referred to as Culturally Modified Trees (CMTs), the database of arboreal archaeology is incredibly varied. CMTs may include trees peeled of their cambial layer for food, medicine, or sweets, (Prince, 2001; Towner and Galassini, 2013; Swetnam, 1984); trees where pieces of xylem (wood) have been removed to make artifacts, such as bow staves, cradle boards, or dance paddles (Jett, 2005; Towner and Johnson, 1998; Towner et al., 1998; Turner et al., 2009; Wilke, 1988,); trees that may have been manipulated into specific growth configurations as trail markers (Downes, 2011); witness trees that have been “blazed” for property boundaries or land survey lines (Van Gundy and Strager, 2012); and trees and stumps that simply retain evidence of wood harvesting for construction, artifact manufacture, and fuel. It is the latter group, ax-cut limbs and stumps, that provide most of

the data for this project. Arboreal archaeology can make significant contributions to understanding land-use histories of historic, protohistoric, and even pre-Columbian groups. Samples from the arboreal archaeological record are often “non-site features” on a landscape, and often provide the only means of deriving precise dates for their associated archaeological sites. Determining whether a CMT is part of a site, or a non-site feature, is determined by proximity to architectural features or artifacts. In this research, such a determination was determined qualitatively by the original site surveyors; if they determined a CMT was within site boundaries, I include it in interpreting the site occupation. If a CMT is not within site boundaries, it is used to delineate temporal parameters of general land use. This research illuminates the utility of CMTs for illuminating aspects of early Navajo land use in northwestern New Mexico. The methods and theory of arboreal archaeology, however, are broadly applicable wherever wood use, tree age, and preservation permits its application.

2. Early Navajo archaeology

The Navajo entry into and occupation of the Southwest have been discussed by anthropologists and archaeologists for more than a century. The routes and timing of the Athapaskan migration have long been debated (Seymour, 2013; Towner, 2003; Wilcox, 1981), but the earliest archaeological evidence of Navajos in the Southwest is found in the ancestral Navajo homeland of Dinétah in northwestern New Mexico (Fig. 1). Thousands of tree-ring samples have been collected from Navajo sites stretching from Dinétah in the east to Black Mesa and the Grand Canyon in the west (Begay and Roberts, 1996; Kemrer 1974). Of concern here are those samples collected in the eastern area simply because that is where CMT sampling has been concentrated in the last two decades.

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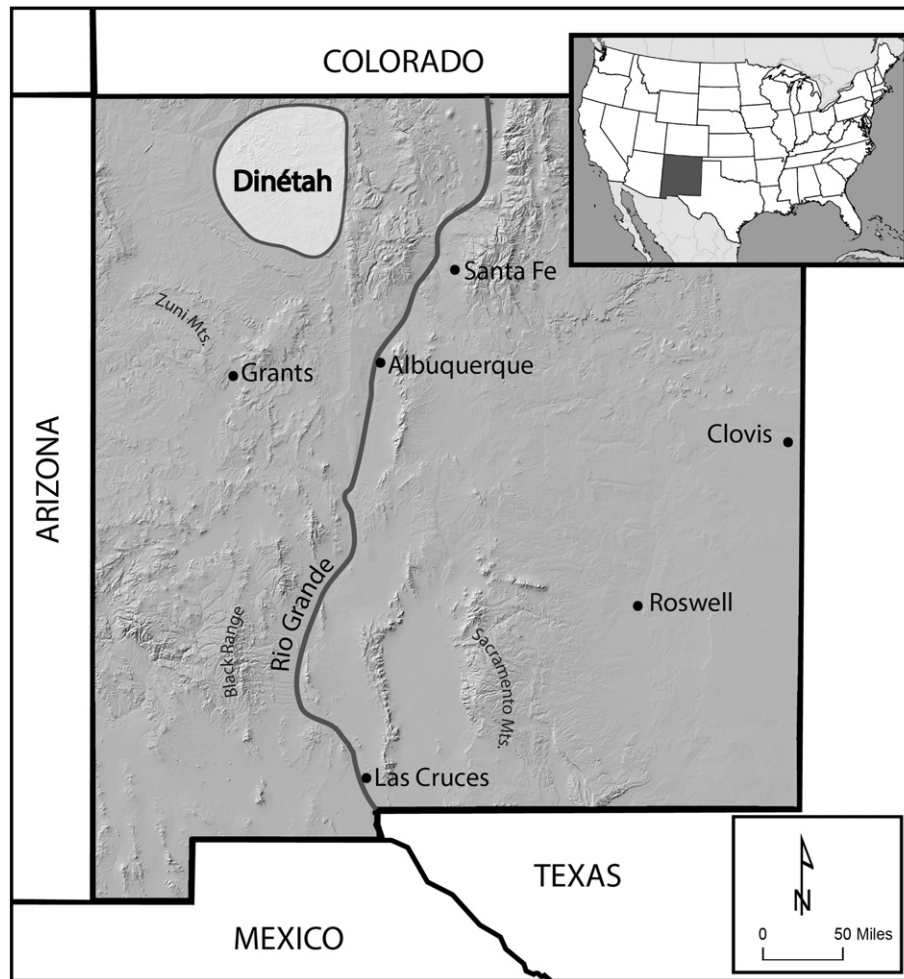


Fig. 1. The project area in northwestern New Mexico, USA.

Pre-1864 Navajo archaeology has been divided into three phases: Dinétah, Gobernador, and Cabezon. The Dinétah phase of Navajo history is the earliest identified Navajo manifestation, and is dated from approximately 1500 CE (possibly earlier) to 1625 CE (Brown, 1996; Dykeman, 2003). Dinétah phase sites are concentrated in the Largo-Gobernador area, but may include sites farther north near the Colorado–New Mexico border. Dinétah phase Navajos constructed wooden structures, such as forked-pole hogans, sweatlodges, and ramadas, practiced corn-bean-squash agriculture, made grayware ceramics, and lived in nuclear or extended-family groups; it is uncertain whether or not the Navajo possessed many domestic animals at this time.

The subsequent Gobernador phase (1625–1765 CE) was a time of tremendous change in Navajo culture. For decades, these changes have been attributed to a massive influx of Puebloan refugees following the Spaniards' 1692 reconquest of New Mexico (Brugge, 1963; Kidder, 1920; Keur, 1941, 1944; Hester, 1962). More recently, Hogan (1991) and Towner (2003) have argued that Puebloan influence on Navajo culture during the Gobernador phase has been overstated. Gobernador phase Navajos continued to build forked-pole hogans and sweatlodges, but also built masonry-based hogans and masonry “pueblitos” – multi-room structures on mesa rims, boulder tops, and in other defensible locations (Carlson, 1965; Marshall, 1991, 1995). It is the pueblitos that have attracted most of the attention of archaeologists over the years and pueblito roof beams that have been the most heavily tree-ring sampled (Towner, 2003). Reed and Reed (1996) suggest an “early” Gobernador phase (1625–1690) that included polychrome pottery but no pueblitos, and a “late” Gobernador phase that included both.

Traditionally, the end of the Gobernador phase has been associated with the depopulation of Dinétah, and a migration of Navajo people to the south and west (Hester, 1962). There are a few Gobernador phase sites in the Chaco Canyon area (McKenna and Windes, n.d.; Vivian, 1960) and west of the Chuska Mountains (Gilpin, 1996; Kemrer, 1974), but their paucity may be more a result of survey coverage, site recording and sampling techniques than past population movements (Begay and Roberts, 1996; Warburton and Begay, 2005). Although the 1748 drought may have induced some Navajos to migrate (Reeve, 1959), increased intensity and severity of Ute and Comanche raiding in the Dinétah forced the depopulation of the area in the 1750s (Towner, 2008).

After the Gobernador phase, Navajo culture history is divided into eastern and western sections that supposedly reflect different destinations of Dinétah emigrants. In the east, Hester (1962) suggests that the Cabezon phase (1770–1863 CE) was typified by an increasing reliance on pastoralism, a concurrent increase in weaving, the adoption of western style dress, and the decline of native skills such as stone tool, ceramic, and basketry production. Cabezon phase sites are found south of the Dinétah heartland, mostly in the Rio Puerco Valley, but research in other areas has been limited. Brugge (1963) suggested a nativistic revitalization movement that developed with the depopulation of Dinétah elevated Blessingway to its preeminent position in Navajo theology and generated taboos against foreign activities, such as stone construction and painted pottery. After 1800, it is clear that the Navajo economy shifted towards a pastoral sheep herding regime with high mobility and more seasonal permanent architecture (Bailey and Bailey, 1986; Brugge, 1985; Jett and Spencer, 1981). Different types of

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