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Obsidian in the Casas Grandes world: Procurement, exchange, and interaction in Chihuahua, Mexico, CE 1200–1450

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ABSTRACT

The Casas Grandes area in Chihuahua, Mexico and the site of Paquimé was the center of one the largest regional systems in the U.S. Southwest and Mexican Northwest (SW/NW) during the Medio period (CE 1200–1450). People participated in local and distant exchange networks with groups in the SW/NW, Mesoamerica, and West Mexico. Our knowledge of which obsidian sources people used in Casas Grandes is limited, despite how obsidian could have derived from many different places. We examine how the use of specific obsidian sources may relate to broader political and economic relationships within the Casas Grandes regional system and its association with the Mimbres and Animas regions of the SW/NW. We sourced 116 artifacts using EDXRF spectrometry from four sites that neighbor Paquimé. Results demonstrate people used obsidian from Chihuahua, Sonora, and New Mexico. There were varying levels of social interaction and regional integration because there is diversity in source use at the site level, and Casas Grandes were more connected to the Animas region than Mimbres regarding obsidian resource procurement.

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1. Introduction

The UNESCO World Heritage Site of Paquimé in Casas Grandes, Chihuahua, Mexico was one of the largest and most socially complex polities of the prehispanic U.S. Southwest and Mexican Northwest (SW/NW). Paquimé was the center of a political, economic, and ceremonial regional system during the Medio period (CE 1200–1450), in part because there is evidence for the long-distance exchange and procurement of copper, marine shell, turquoise, scarlet macaws, cacao, iconography, and pottery from the SW/NW, Mesoamerica, and West Mexico (Bradley, 1999; Crown et al., 2015; Di Peso, 1974; Di Peso et al., 1974; Minnis et al., 1993; Vargas, 1995; Vokes and Gregory, 2007). Charles Di Peso partially excavated the site between 1958 and 1961, and due to the high amount of exotica, as well as Mesoamerican-style platform effigy mounds and ball courts, he argued that elite Mesoamerican merchants (*pochteca*) who belonged to high-status families founded Paquimé as the northern-most Mesoamerican outpost by controlling the distribution of goods and services over a vast distance (Di Peso, 1974; Di Peso et al., 1974). Early studies provided evidence for high levels of social stratification and differential access to resources (e.g., Ravesloot, 1988), but this was based on research exclusively at Paquimé since no other sites were thoroughly investigated until decades later. Later research including a revised chronology and field work helped to refute the establishment of Paquimé through Mesoamerican actors, and refine the extent of the Casas Grandes regional system in the SW/NW (Dean and Ravesloot, 1993; Kelley et al., 2012; McGuire, 1980, 1993; Minnis, 1984; Whalen and Minnis, 1999, 2001a, 2001b, 2003, 2009a).

Casas Grandes archaeologists have primarily focused their research on exotics, ceramics, ritual architecture, and religion and iconography (VanPool and VanPool, 2015; Whalen, 2013; Whalen and Minnis, 1996; Woosley and Olinger, 1993). While these material studies are critical for understanding Medio period life, archaeologists have yet to incorporate the geochemical source provenance of chipped stone raw materials to investigate the scope and scale of social and regional interaction and integration in northwestern Chihuahua. The availability and circulation of lithic raw materials are important for how groups manufactured and used stone tools on the landscape. Consequently, by studying which materials people used and where they acquired them from is central for gaining perspective into larger anthropological questions concerning social interaction. Obsidian played a small role in lithic manufacture in most parts of the SW/NW, but this highly knappable and extremely sharp volcanic glass can be accurately and reliably sourced to its primary outcrop to connect people, places, and things through time and across space. As a result, determining the source of obsidian artifacts is a major component of contemporary archaeological research around the world.

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Unlike the Ancestral Pueblo, Hohokam, and Mimbres Mogollon regions to the north of Casas Grandes where obsidian sourcing is common (Arakawa et al., 2011; Duff et al., 2012; Ferguson et al., 2016; Fertelmes et al., 2012; Graves, 2005; Mills et al., 2013; Putsavage, 2015:240–282; Taliaferro et al., 2010; VanPool et al., 2013), sourcing studies are limited for northwestern Chihuahua (Darling, 1998; Dolan, 2016; Vierra, 2005). This is despite how archaeologists have circulated in the literature that obsidian at Medio period sites comes from Mesoamerica, West Mexico, and New Mexico without providing geochemical sourcing data or how many artifacts were sampled (Di Peso, 1974:2:631; Fish and Fish, 1999:39–40; VanPool et al., 2000:171). Because there are many obsidian sources in the SW/NW (Fig. 1), Mesoamerica, and West Mexico (Cobean, 2002; Glascock et al., 2010; Shackley, 2005), and there is documented interaction between these three regions (Riley, 2005), people in Casas Grandes could have obtained obsidian from many different sources and from diverse cultural groups. Therefore, the precise geochemical source identification of Medio period obsidian artifacts is invaluable information for understanding social interaction and regional integration with groups near and far.

Our goal for this paper is twofold, but our main contribution is to put the geographic extent of the Casas Grandes regional system into perspective using obsidian sourcing data. First, we sourced 116 obsidian artifacts from four Medio period sites that neighbor Paquimé using energy-dispersive X-ray fluorescence (EDXRF) spectrometry. With these data, we report on which sources people used to help answer if elites controlled and circulated obsidian from a limited number of sources to outlying communities, or if communities were autonomous and acquired obsidian from a variety of sources. Since archaeologists do not understand the obsidian exchange and procurement networks connecting Casas Grandes with the rest of the SW/NW, our second goal is to examine the geographic range of the Casas Grandes regional system to the north by comparing obsidian sourcing data from sites dating to CE 1200–1450 in the Mimbres and Animas regions of southwestern New Mexico. We examine how the use of specific obsidian sources may relate to broader political and economic relationships within the Casas Grandes regional system and its association to Mimbres and Animas. There are material and ideological connections between Casas Grandes, Mimbres, and Animas, but the magnitude to which groups interacted with one another during the thirteenth through mid-fifteenth centuries is debated (Carpenter, 2002; DeAtley and Findlow, 1982; Douglas, 1995, 2007; Fish and Fish, 1999; LeBlanc, 1980; Lekson, 2000; Minnis, 1984; Putsavage, 2015). We suggest that if people in all three regions used similar obsidian sources, then they would be involved in possibly the same obsidian trade and procurement networks. Although if there is variation between the groups, then we might expect the occurrence of different trading networks and partnerships, thus influencing the extent of the regional system.

2. Background

2.1. The Casas Grandes regional system

The dispersal and circulation of, for example, shared iconography, architecture, and the production and exchange of pottery over a large

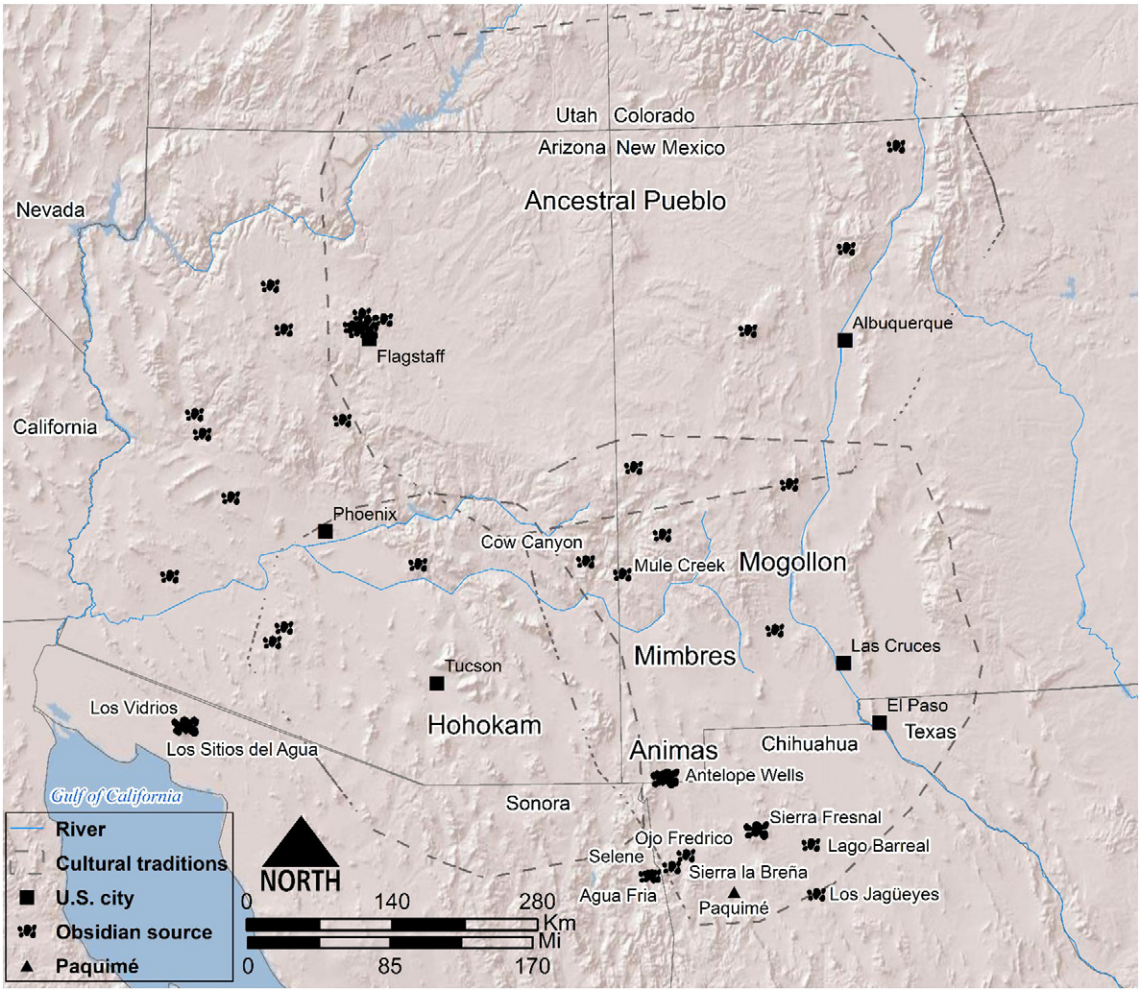

Fig. 1. Map of the North American Southwest and Mexican Northwest with known obsidian sources in relation to the Ancestral Pueblo, Hohokam, and Mogollon regions. Only sources discussed in text are labeled.