Plateau and Great Basin
(English Translation)

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The Great Basin and Plateau encompass a vast region of western North America bracketed on the west by the Sierra Nevada and Cascade mountains and the east by the Rocky Mountains (Figure 1). The region is diverse but characterized by ecologically limiting, generally more arid conditions, and higher elevations than other parts of North America. It is also characterized by a type of archaeology that focuses largely on hunter-gatherers, making it critical to understanding the development of lifeways not dependent on agriculture in the diverse but mostly high and dry environments of western North America.

Physical Setting and Environment

Stretching from the Sierra Nevada-Cascade Mountains in the west to the Wasatch Range in the east, the Great Basin covers much of the Western USA (Figure 1). It is a land of extremes, with elevations ranging from 86 m below sea level to 3,000+ m. The basin-and-range physiography of Great Basin, consisting largely of north-south oriented ranges and valleys, is internally drained. The region is arid or semi-arid but due to its northern latitude and higher elevation, it is characterized as a cold desert. Precipitation averages 18-30 cm/year; rivers emanating from the adjacent mountain ranges feed wetlands and lakes in both the western and eastern Great Basin. Floristically, the region contains distinct vegetation zones comprised of xeric-adapted shadscale (*Atriplex conferifolia*) and greasewood (*Sarcobatus* sp.) communities in some valley bottoms, large swathes of sagebrush (*Artemisia* sp.), juniper (*Juniperus* sp.) and in some places singleleaf piñon pine (*Pinus monophylla*), and conifers (e.g., limber pine [*Pinus flexilis*]) at higher elevations. There is substantially variability in the landscape, with marshes occurring in otherwise arid valley bottoms, which in turn border mountain ranges containing alpine taxa.

To the north lies the Plateau, an area drained by the Columbia and Fraser rivers and bordered by the Cascade and Coast ranges (west), Rocky Mountains (east), and Blue-Ochoco Mountains (south). To the north, the Plateau grades into central British Columbia where its boundary is defined by cultural, not physiographic, features. Although it is more topographically varied than the Great Basin and contains more grasslands, forests (in drier areas dominated by ponderosa [*Pinus ponderosa*] and lodgepole [*Pinus contorta*] pine and wetter areas dominated by Douglas fir [*Pseudotsuga* sp.] and western red cedar [*Thuja plicata*]), and deeply-incised river drainages, the Plateau is similar to the Great Basin in elevation range, temperature, flora, and fauna. Some parts of the Plateau receive precipitation amounts similar to the Great Basin (16-30 cm/year) while others including the Cascade and Coast ranges and highest parts of the Rocky Mountains receive ~250 cm/year – roughly 10 times that of the Great Basin.

Theoretical Perspectives

Much of Great Basin and Plateau archaeology is hunter-gatherer archaeology, although at times Plateau groups exhibited social complexity that corresponds better with Pacific Northwest than Great Basin groups (Prentiss and Kuijt 2004). With few exceptions, populations did not engage in agriculture and instead relied on seasonally available resources, which were often stored. In the Great Basin, Steward's (1938) ethnographic accounts characterized Numic-speaking (the northernmost branch of the Uto-Aztecan language) populations as small, mobile bands that targeted a variety of resources and occasionally congregated to socialize, harvest resources, and exchange information. Steward's Great Basin work contributed to his later development of the theory of cultural ecology (Steward 1955), which argued that historical trajectories resulted in technologies that allowed groups to exploit specific resources within a given environment. When cultural ecology was first developed, many researchers assumed that the environment had been relatively stable throughout the Holocene; as such, the archaeological record of the Great Basin should reflect that stability. Jennings' (1957) inter-pretation of stratified cave and rockshelter occupations in the eastern Great Basin was influenced by Steward's ethnographic and theoretical work, and he argued that lifeways had varied little across time. Those lifeways, which he

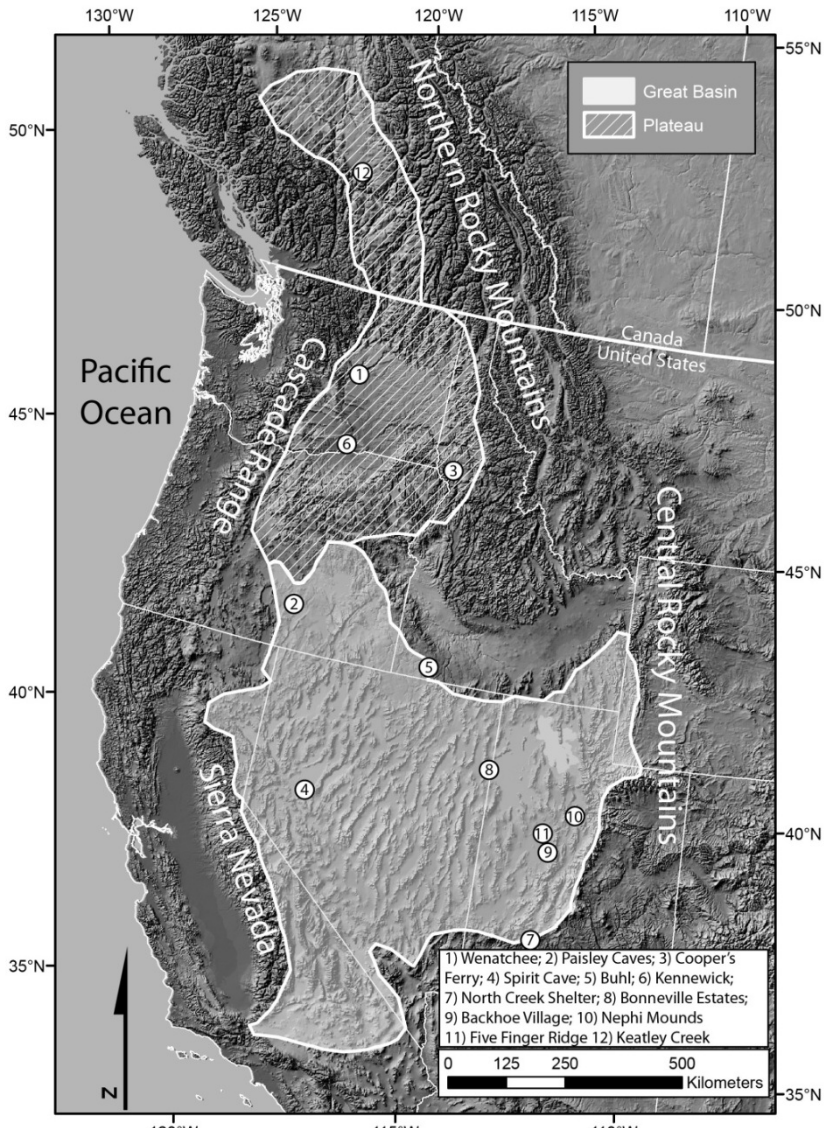

Figure 1. The Great Basin and Plateau showing locations of archaeological sites discussed in the text.

termed *the Desert Culture* (later renamed the *Desert Archaic*), reflected Steward's ethnographic observations and theoretical perspective. Others (e.g., Heizer 1956) working in the wetlands of the western Great Basin did not subscribe to the Desert Archaic concept. Instead, they argued that marshside occupations in the western Great Basin indicated that groups practiced a *limnosedentary* lifestyle focused on wetland resources. Although both treatments of Great Basin lifeways – the Desert Archaic and limnosedentism – are in hindsight overly-simplistic, the debate they generated led to the recognition that foraging strategies varied across both space and time.

After a short period during which researchers tried to apply Binford's (1980) forager-collector continuum to explain variability in the archaeological record, dissatisfaction arose. Criticisms of how Binford's model, which linked settlement systems to environmental factors, was applied in the Great Basin centered on the fact that it was not well-suited for generating testable hypotheses that tied theory to empirical data. In the following decades, optimal foraging theory (e.g., diet breadth and patch choice models) became the theoretical paradigm of choice for many researchers (Morgan and Bettinger 2012). The basic idea behind such approaches is that modeling foraging decisions using currencies (often energy) and cost/benefit models produces testable predictions using archaeological data. Although some researchers (e.g., McGuire and Hildebrandt 2005) have recently argued that some trends in the archaeological record are better accounted for by social rather than economic factors, optimal foraging theory remains a primary means of understanding the past.

Plateau archaeology was initially influenced by the culture-area concept (e.g., Kroeber 1939) and like elsewhere in North America, research before World War II generally occurred within the culture-historical paradigm. This paradigm continued to shape research until the 1960s, when the processual paradigm led archaeologists to move away from descriptive summaries and focus on understanding human behavior. Steward's (1955) culture ecology was popular on the Plateau, and researchers worked to explain how and why changes occurred in the archaeological record (Lohse and Sprague 1998). Applications of Binford's (1980) forager-collector continuum were common during the 1980s and continue to this day. But as was the case in the Great Basin, some researchers ultimately argued that it failed to capture the range of influences on, and variation in, hunter-gatherer behavior (Chatters 1987). Recently, attention has been directed at explaining the evolution and organization of complex hunter-gatherer communities found on the Plateau (Prentiss and Kuijt 2004). Hayden's (e.g., 1997, 2005) work has been especially important in these latter efforts in that it posits that socially-prescribed aggrandizing behaviors rather than ecology drove the development of social complexity.

Reconstructions of Great Basin and Plateau lifeways that developed within these and other paradigms are generally informed by paleoenvironmental data. Although by no means unique to the region, the importance of paleoecology cannot be overstated on both the Plateau and in the Great Basin. We are fortunate to have access to diverse sources of data with which to reconstruct past environments. Such reconstructions are informed by pollen and sediment cores, woodrat middens, small and large mammal remains, and pluvial lake features. Using these materials and methods, we have a fairly good understanding of both the natural and cultural history of the Great Basin and Plateau and how they have changed over the past ~15,000 calendar years before present (cal BP).

The Terminal Pleistocene/Early Holocene (TP/EH): 15,000-9,300 cal BP

During the Terminal Pleistocene (TP), the Great Basin was covered by ~150 pluvial lakes, the largest of which were Lake Bonneville in western Utah and Lake Lahontan in western Nevada. Although each lake responded to changes in temperature and precipitation differently, most followed a similar trend: they reached highstands and began to recede 15,000-13,000 cal BP. Temperatures were generally cooler than today, especially during the Younger Dryas (12,900-11,600 cal BP), which caused many lakes and marshes to expand following a millennium-long dry period (Madsen 2007). Vegetation was characterized by many of the taxa present today (e.g., sagebrush, shadscale, juniper), although mesic communities were more widespread and the economically important piñon pine remained confined to the southern Great Basin (Wigand and Rhode 2002). Mesic-adapted small mammal ranges were larger and incorporated lower elevations (Grayson 2011). Artiodactyls may have been less common due to greater seasonality during the TP/EH (Broughton et al. 2008). Twenty of the 36 genera of mammals that went extinct in North America during the TP inhabited the Great Basin; mammoth (*Mammut*), horses (*Equus*), and camels (*Camelops*) persisted until after ~13,900 cal BP (Grayson 2011). Given recent estimates of when humans colonized the region, people and extinct Pleistocene fauna may have briefly coexisted. During the Early Holocene (EH), conditions generally grew drier and warmer although different parts of the region responded differently to broader climate change. Conifers retreated upslope, xeric-adapted plant communities expanded, and many small mammal populations contracted (Grayson 2011). By the onset of the Middle Holocene ~9,300 cal BP, only a handful of lakes and wetlands remained.

Conditions were markedly different on the Plateau during the TP. By ~13,000 cal BP, glaciers were gone except on the highest peaks. Between ~13,000 and ~11,100 cal BP, conifers occupied higher than today, suggesting that summers were warmer. Grasses, sagebrush, and other steppe taxa covered much of the landscape during what was likely one of the driest and warmest periods of humans' tenure in the region (Chatters 1998). This period of generally warmer and drier conditions was interrupted by the Younger Dryas, which marked a brief return to cooler and wetter times (Mathewes 1993). During the EH, effective precipitation increased in some regions (e.g., the northern Rocky Mountains) while it decreased in others (e.g., the Columbia Plateau) (Chatters 1998). Many of the fauna that occupied the Great Basin during the TP/EH were also present on the Plateau, although elk (*Cervus elaphus*) and bison (*Bison bison* and the extinct *B. antiquus*) occurred in higher numbers.

When humans first arrived in the region is hotly contested. Researchers long assumed that Clovis fluted points, dated elsewhere in North America to ~13,300-12,800 cal BP (Waters and Stafford 2007), mark that arrival. Fluted points are not uncommon in the Great Basin and Plateau but remain poorly dated because most are found at open-air sites. One exception is the East

Wenatchee Site in Washington, where a cache of Clovis artifacts (sometimes referred to as the Richey-Roberts cache) contained a fluted point with Glacier Peak tephra adhering to its underside, suggesting that the artifacts are younger than ~13,100 cal BP (Mehringer and Foit 1990). Recent work at Oregon's Paisley Caves in the northern Great Basin suggests that people arrived there ~14,000 cal BP, almost a millennium before the Clovis culture appeared elsewhere in North America (Jenkins et al. 2012). At Cooper's Ferry in Idaho, Clovis-aged radiocarbon dates have been reported but no Clovis points have been found (Davis and Schweger 2004). Instead, as is the case at the Paisley Caves (Jenkins et al. 2012), a different projectile technology assigned to the Western Stemmed Tradition (WST) (Bryan 1980) has been found, leading some researchers (e.g., Beck and Jones 2013) to conclude that the Great Basin and Plateau were not initially colonized by Clovis groups originating from the North American interior, but rather by an earlier population who colonized the Western Hemisphere using a Pacific coastal route. Not all researchers accept this proposition (Fiedel and Morrow 2012).

Evidence for human occupation of the Great Basin during the Younger Dryas is more common, with at least 10 sites, most of which contain WST and none of which contain fluted points in good stratigraphic contexts, dated to that interval (Goebel et al. 2011). On the Plateau, a similar number of WST sites date to the Younger Dryas (Andrefsky 2004). Following the Younger Dryas, dated sites in both regions increase dramatically, suggesting that populations also increased (Louderback et al. 2010). Most dated sites from this period occur in caves and rockshelters; this is likely a function of preservation as most early sites occur on landforms associated with relict pluvial lakes or, in some cases on the Plateau, major rivers (Andrefsky 2004). It is currently unclear when fluted points disappeared, but WST points, which likely tipped throwing/thrusting spears but may also have been used as knives, persisted until ~8,900 cal BP (Andrefsky 2004; Beck and Jones 2012). During the EH, leaf-shaped Cascade points became the dominant projectile point type on much of the Plateau (Ames et al. 1998). Other artifacts from this period include bifaces, unifaces, and a type of artifact unique to the Great Basin: crescents. Crescents are usually found near relict lakes and wetlands although their function remains unknown. Milling stones, which reflect costly seed processing, were not a routine component of early toolkits in the Great Basin until ~9,500 cal BP (Rhode and Louderback 2007); a rise in milling stone use may date to roughly the same period on the Plateau (Chatters and Pokotylo 1998). Fiber sandals, mats, and baskets have been recovered in some Great Basin caves and rockshelters, reflecting an aspect of TP/EH technology not typically found in open-air contexts (Connolly and Barker 2004).

Most of what we know about TP/EH land-use and settlement systems is derived from surface sites. Source provenance data suggest that early groups – either referred to as *Paleoindian* (to stress adaptive discontinuity with later Archaic groups; also the term employed herein) or *Paleoarchaic* (to stress adaptive continuity with later groups) – operated within broad geographic territories (Jones et al. 2003). With few exceptions, Paleoindian sites are small, possess high tool-to-debitage ratios, and lack residential features, suggesting high residential mobility (Chatters and Pokotylo 1998; Jones et al. 2003).

TP/EH subsistence residues are largely confined to caves and rockshelters. We have no direct evidence of what fluted point-users hunted but based on the distribution of surface sites, wetland and riverine resources were likely critical; ethnographically, these included fish, waterfowl, aquatic plants, and small and large game (Fowler 1986; Hunn et al. 1998). Direct evidence of TP/EH diet comes from the remains of three post-Clovis individuals: (1) Spirit Cave Man, a 40+ year-old male dated to ~10,600 cal BP (Napton 1997); (2) the Buhl Woman, a 20-year old female dated to ~12,600 cal BP (Green et al. 1998); and (3) Kennewick Man, a ~40-year old male dated to ~9,400 cal BP (Chatters 2000). Spirit Cave Man's gut contained small freshwater fish and aquatic plant seeds, while isotopic analysis of the Buhl and Kennewick skeletons revealed diets high in anadromous fish and meat (Buhl) and marine mammals and fish (Kennewick). Fauna from TP/EH sites in the Great Basin consist of birds, leporids, insects, freshwater shellfish, and artiodactyls (Grayson 2011). Large game dominates some EH assemblages on the southern

Plateau but others contain diverse resources similar to those reflected in Great Basin assemblages (Ames et al. 1998; Chatters and Pokotylo 1998). Seeds and roots may have been consumed although again they were likely not processed using milling stones until the EH.

The Middle Holocene (MH): 9,300-5,200 cal BP

By 9,300 cal BP, most pluvial lakes and wetlands were gone in the Great Basin. In Lake Tahoe, drowned trees reflect drought between ~6,000 and 5,000 cal BP; other lakes experienced similar recessions (Grayson 2011). Conifers retreated upslope, xeric-adapted plants expanded at the expense of mesic ones, and piñon pine expanded northward, moving faster in the east than west, although this critical species did not arrive in the central and western Great Basin until the end of the MH or later (Wigand and Rhode 2002). Mesic-adapted small mammal ranges decreased while those of xeric-adapted ones increased (Grayson 2011). Artiodactyl populations likely remained low during the MH (Broughton et al. 2008). On the Plateau, MH conditions were variable: in the north, effective precipitation increased while in the south, it decreased. This dichotomy intensified between ~8,600 and 8,300 cal BP (Chatters 1998). Towards the end of the MH, cooler and wetter conditions characterized the Plateau as a whole and forests returned to lower elevations.

Technological developments during the MH include corner- and side-notched points propelled using atlatls (i.e., spear-throwers), which appeared earliest in the eastern and northern Great Basin and later in other parts of the region (Beck and Jones 2012). On the Plateau, foliate points were initially the main projectile point style although notched points also appeared after ~7,700 cal BP (Andrefksy 2004). Although they date to the EH at some sites, microblades reached their zenith on the northern Plateau during the MH (Pokotylo and Mitchell 1998) and ground, polished, and battered stone tools became major components of the region's assemblages (Andrefsky 2004). Milling stones became common in both the Great Basin and Plateau (Grayson 2011).

Radiocarbon date frequencies in many parts of the Great Basin suggest population contraction or abandonment of some areas during the MH (Louderback et al. 2010), with many caves and rockshelters showing hiatuses in occupation (Beck and Jones 2012). Groups tended to live near dependable water sources during dry periods (Grayson 2011) while at the same time, increasingly exploited middle and higher elevation zones. Source provenance studies show a reduction in exotic toolstone at many sites, which may reflect reduced residential mobility (Goebel 2007; Smith 2010). Together, these trends, along with the first widespread occurrence of substantial residential structures including semi-subterranean pithouses (Ames et al. 1998; Grayson 2011), suggest increased investment in place during the MH.

While these and other changes suggest that Paleoindian and Archaic (i.e., post-9,300 cal BP) lifeways differed substantially, there is less evidence for discontinuity in subsistence strategies between the two periods. Madsen (2007:15) describes the transition in the Great Basin as a shift from "broad-spectrum foraging to very broad-spectrum foraging", highlighting an increased focus on low-return seeds by Archaic groups. As noted, milling stones occur in far greater frequencies at MH sites than TP/EH sites. Evidence from other Great Basin sites such as North Creek Shelter (Janetski et al. 2012) and Bonneville Estates Rockshelter (Hockett 2007) show changes in the *frequencies* of prey species consumed although not necessarily the *types* of prey species consumed. At both sites, artiodactyl consumption increased during the MH, a trend mirrored across the northern Great Basin (Pinson 2007). On the Plateau, the Paleoindian-Archaic transition may have been similar, although many MH sites show evidence of increased root and salmon consumption along with increased frequencies of milling stones similar to those observed in the Great Basin (Ames et al. 1998).

The Late Holocene (LH): 5,200 cal BP-Present

Compared to the MH, the LH was marked by increased moisture, increased biotic productivity, and the establishment of essentially modern climate and biotic distributions. But the LH was also characterized by substantial climatic variability across both time and space, making generalizations about climate somewhat problematic. In its grossest sense, however, the LH was marked by several cold periods, one between ~3,800 and 2,600 cal BP, a warmer and in some places drier span between ~2,600 and 2,000 cal BP, a period of pronounced climatic variability, warmer temperatures and several long and severe droughts (less so on the Plateau but particularly so in the central and southern Great Basin) coincident with the Medieval Warm Period (1,100-600 cal BP), and a colder period associated with the Little Ice Age (600-150 cal BP) (Grayson 2011).

On both the Plateau and across the Great Basin, the early LH (~5,200-2,600 cal BP) saw significant changes in lifeways, a phenomenon many attribute to generally cooler and moister climates. On the Plateau, these changes were associated with the occupation of the first true pithouse village sites along major water courses, the earliest of which dates to nearly 6,000 cal BP (Andrefsky 2004). But for the most part, Plateau pithouse villages and the increased sedentism, increased human population densities, and more complex settlement and subsistence practices associated with living in pithouse villages did not develop until ~3,500 cal BP. It was at this time that mobile lifeways began to give way in earnest to delayed-return economic systems based mainly on catching, drying, and storing large quantities of salmon (*Oncorhynchus* sp.), living in permanent or semi-permanent villages like Keatley Creek, and targeting highland resources like camas (C*amassia* sp.) root, which necessitated moving specialized task groups away from villages and into the highlands on a seasonal basis to gather and process these resources (Andrefsky 2004; Chatters 1995; Rousseau 2004). In contrast, in the Great Basin, people developed settlement and subsistence systems that entailed high degrees of group mobility based in large part on hunting artiodactyls like mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), and mountain sheep (*Ovis canadensis*). Some attribute this shift to the increased biotic productivity of the early part of the Late Holocene (Broughton et al. 2008); others see these changes as having been driven by the development of prestige-based social systems that rewarded successful hunters with higher status and greater access to mates (McGuire and Hildebrandt 2005). In short, during the early part of the LH, Plateau hunter-gatherers started settling in semi-permanent villages focused to a large degree on storing and eating anadromous fish while in the Great Basin, people became particularly mobile and focused on hunting seasonally transhumant large game.

These patterns continued for several millennia, with Plateau groups becoming increasingly aggregated into larger and larger pithouse villages, a phenomenon that peaked between ~2,000 and 1,000 cal BP. This period was marked on the Plateau by the introduction of the bow and arrow, increasing degrees of interpersonal violence, substantial increases in human population density, increasingly complex settlement systems and the development of redistributive economies based at least in part on leaders who gained and maintained power through aggrandizing behaviors at least superficially akin to the potlatching behaviors seen in ethnographic times on the northwest coast of North America (Andrefsky 2004; Hayden 2005; Rousseau 2004). The Great Basin saw different changes in settlement and subsistence, particularly in the eastern Great Basin. There, people known as the Fremont began experimenting with farming maize (*Zea mays*) brought in from the American Southwest perhaps as early as ~2,200 years ago (Simms 2008). Between 1,500 and 500 cal BP, maize horticulture became fairly well established at sites like Backhoe Village, Nephi Mounds, and Five Finger Ridge, with groups settling in small hamlets and eventually larger villages, but never completely giving up the mobile hunting and gathering lifeway of the earlier part of the LH (Madsen and Simms 1998), a pattern which may have been facilitated by the introduction of the bow and arrow ~1,500 cal BP.

The last millennium saw major changes in Plateau and Great Basin lifeways and the emplacement of the cultures encountered by Euroamericans in the eighteenth through early twentieth centuries. On portions of the Plateau, there is evidence for a decline in human population density, a move away from living in large, aggregated pithouse villages, decreased root exploitation and storage, and the inception of living in multi-family longhouses (Andrefsky 2004; Rousseau 2004). Some attribute this shift to the onset of the Little Ice Age, which reduced the productivity of upland areas. This caused scheduling conflicts for pithouse village groups who had to move farther afield to obtain these critical upland resources, ultimately forcing the abandonment of many villages (Kuijt and Prentiss 2004). The last millennium in the Great Basin saw the establishment of a very mobile lifeway focused on exploiting small-seeded plants and piñon pine nuts. Some assert this was based on a migration of people who had already developed an intensive, seed-focused subsistence base in southern California; it is contentiously hypothesized that these behaviors allowed migrating populations to outcompete earlier hunting-focused ones and resulted in population replacement across the region (Bettinger and Baumhoff 1982). The social organization of these groups was based mainly on the family band, consisting usually of a married couple, their children and a few related kin who moved about frequently to exploit the desert's patchy and unpredictable resource base (Steward 1938). In the eastern part of the Great Basin, this lifeway replaced the part-time horticultural one of the Fremont between ~700 and 500 cal BP (Simms 2008).

Conclusion

In sum, the archaeology of the Great Basin and Plateau reflects over 13,000 years of mostly hunter-gatherer adaptation to environmental change and variation in human population density across North America's arid west. These adaptations run the gamut from technological innovations (e.g., the adoption of bow and arrow and milling technologies), to changes in mobility (e.g., increased sedentism on the Plateau), to subsistence intensification (e.g., small seeds in the Great Basin) and specialization (e.g., salmon on the Plateau), to experiments with farming (e.g., the Fremont of the eastern Great Basin), to hierarchical social structure (e.g., the pithouse dwellers of the Plateau). What these patterns show is that human behavior and the behaviors of hunter-gatherers in particular are indeed diverse, even within the contexts of environments often thought of as marginal or limiting to human occupation.

References Cited

Ames, K.M., D.E. Dumond, J.R. Galm, and R. Minor (1998). Prehistory of the Southern Plateau. In *Handbook of North American Indians, Volume 12: Plateau*, edited by D.E. Walker, Jr., pp. 103-119. Smithsonian Institute, Washington D.C.

Andrefsky, W., Jr. (2004). Materials and Contexts for a Culture History of the Columbia Plateau. In *Complex Hunter-Gatherers, Evolution and Organization of Prehistoric Communities on the Plateau of Northwestern North America*, edited by W.C. Prentiss and I. Kuijt, pp. 23-35. University of Utah Press, Salt Lake City.

Beck, C., and G.T. Jones (2012). The Emergence of the Desert Archaic in the Great Basin. In *From the Pleistocene to the Holocene: Human Organization and Cultural Transformations in Prehistoric North America*, edited by C.B. Bousman and B.J. Vierra, pp. 267-317. Texas A&M University Press, College Station.

Beck, C., and G.T. Jones (2013). Complexities of the Colonization Process: A View from the North American West. In *Paleoamerican Odyssey*, edited by K.E. Graf, C.V. Ketron, and M.R. Waters, pp. 273-291. Texas A&M Press, College Station.

Bettinger, R.L. and M.A. Baumhoff (1982). The Numic Spread: Great Basin Cultures in Competition. *American Antiquity* 47(3):485-503.

Binford, L.R. (1980). Willow Smoke and Dog's Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45(1):4-20.

Broughton, J.M., D.A. Byers, R.A. Bryson, W. Eckerle, and D.B. Madsen (2008). Did Climatic Seasonality Control Late Quaternary Artiodactyl Densities in Western North America? *Quaternary Science Reviews* 27:1916-1937.

Bryan, A.L. (1980). The Stemmed Point Tradition: An Early Technological Tradition in Western North America. In *Anthropological Papers in Memory of Earl H. Swanson, Jr.*, edited by L.B. Harten, C.N. Warren, and D.R. Tuohy, pp. 77-107. Special Publications of the Idaho State Museum of Natural History, Pocatello.

Chatters, J.C. (1987). Hunter-Gatherer Adaptations and Assemblage Structure. *Journal of Anthropological Archaeology* 6:336-375.

Chatters, J.C. (1995). Population Growth, Climatic Cooling, and the Development of Collector Strategies on the Southern Plateau, Western North America. *Journal of World Prehistory* 9(3):341-400.

Chatters, J.C. (1998). Environment. In *Handbook of North American Indians, Volume 12: Plateau*, edited by D.E. Walker, Jr., pp. 29-48. Smithsonian Institute, Washington D.C.

Chatters, J.C. (2000). The Recovery and First Analysis of an Early Holocene Human Skeleton from Kennewick, Washington. *American Antiquity* 65(2):291-316.

Chatters, J.C., and D.L. Pokotylo (1998). Prehistory: An Introduction. In *Handbook of North American Indians, Volume 12: Plateau*, edited by D.E. Walker, Jr., pp. 73-80. Smithsonian Institute, Washington D.C.

Connolly, T.J., and P. Barker (2004). Basketry Chronology of the Early Holocene in the Northern Great Basin. In *Early and Middle Holocene Archaeology of the Northern Great Basin*, edited by D.L. Jenkins, T.J. Connolly, and C.M. Aikens, pp. 241-250. University of Oregon Anthropological Papers No. 62, Eugene.

Davis, L.G., and C.E. Schweger (2004). Geoarchaeological Context of Late Pleistocene and Early Holocene Occupation at the Cooper's Ferry Site, Western Idaho, USA. *Geoarchaeology: An International Journal* 19(7):685-704.

Fiedel, S.J., and J.E. Morrow (2012). Comment on "Clovis and Western Stemmed: Population Migration and the Meeting of Two Technologies in the Intermountain West" by Charlotte Beck and George T. Jones. *American Antiquity* 77(2):376-385.

Fowler, C.S. (1986). Subsistence. In *Handbook of North American Indians*, *Volume 11: The Great Basin*, edited by W.L. D'Azevedo, pp. 64-97. Smithsonian Institute, Washington D.C.

Goebel, T. (2007). Pre-archaic and Early Archaic Technological Activities at Bonneville Estates Rockshelter: A First Look at the Lithic Artifact Record. In *Paleoindian or Paleoarchaic: Great Basin Human Ecology at the Pleistocene-Holocene Transition*, edited by K.E. Graf and D.N. Schmitt, pp. 156-184. University of Utah Press, Salt Lake City.

Goebel, T., B. Hockett, K.D. Adams, D. Rhode, and K. Graf (2011). Climate, Environment, and Humans in North America's Great Basin During the Younger Dryas, 12,900-11,600 Calendar Years Ago. *Quaternary International* 242:479-501.

Grayson, D.K. (2011). *The Great Basin: A Natural Prehistory*. University of California Press, Berkeley.

Green, T.J., B. Cochran, T.W. Fenton, J.C. Woods, G.L. Titmus, L. Tieszen, M.A. Davis, and S.J. Miller (1998). The Buhl Burial: A Paleoindian Woman from Southern Idaho. *American Antiquity* 63(3):437-456.

Hayden, B. (1997). *The Pithouses of Keatley Creek: Complex Hunter-Gatherers of the Northern Plateau*. Case Studies in Archaeology Series. Harcourt Brace College Publishers, Fort Worth, TX.

Hayden, B. (2005). The Emergence of Large Villages and Large Residential Corporate Group Structures among Complex Hunter-Gatherers at Keatley Creek. *American Antiquity* 70(1):169-174.

Heizer, R.F. (1956). Recent Cave Explorations in the Lower Humboldt Valley, Nevada. *University of California Archaeological Survey Reports* 33:50-57.

Hockett, B.S. (2007). Nutritional Ecology of Late Pleistocene to Middle Holocene Subsistence in the Great Basin. In *Paleoindian or Paleoarchaic: Great Basin Human Ecology at the Pleistocene-Holocene Transition*, edited by K.E. Graf and D.N. Schmitt, pp. 204-230. University of Utah Press, Salt Lake City.

Hunn, E.S., N.J. Turner, and D.H. French (1998). Ethnobiology and Subsistence. In *Handbook of North American Indians, Volume 12: Plateau*, edited by D.E. Walker, Jr., pp. 525-545. Smithsonian Institute, Washington D.C.

Janetksi, J.C., M.L. Bodily, B.A. Newbold, and D.T. Yoder (2012). The Paleoarchaic to

Early Archaic Transition on the Colorado Plateau: The Archaeology of North Creek Shelter. *American Antiquity* 77(1):125-159.

Jenkins, D.L., L.G. Davis, T.W. Stafford, Jr., P.F. Campos, B. Hockett, G.T. Jones, L.S. Cummings, C. Yost, T.J. Connolly, R.M. Yohe II, S.C. Gibbons, M. Raghavan, M. Rasmussen, J.L.A. Paijmans, M. Hofreiter, B.M. Kemp, J.L. Barta, C. Monroe, M.T.P. Gilbert, and E. Willerslev (2012). Clovis Age Western Stemmed Projectile Points and Human Coprolites at the Paisley Caves. *Science* 337:223-228.

Jennings, J.D. (1957). *Danger Cave*. University of Utah Anthropological Papers No. 27, Salt Lake City.

Jones, G.T., C. Beck, E.E. Jones, and R.E. Hughes (2003). Lithic Source Use and Paleoarchaic Foraging Territories in the Great Basin. *American Antiquity* 68(1):5-38.

Kroeber, A.L. (1939). Cultural and Natural Areas of Native North America. *University of California Publications in American Archaeology and Ethnology* 38:1-242.

Kuijt, I., and W.C. Prentiss (2004). Villages on the Edge, Pithouses, Cultural Change, and the Abandonment of Aggregate Villages. In *Complex Hunter-Gatherers, Evolution and Organization of Prehistoric Communities on the Plateau of Northwestern North America*, edited by W.C. Prentiss and I. Kuijt, pp. 155-170. University of Utah Press, Salt Lake City.

Lohse, E.S., and R. Sprague (1998). History of Research. In *Handbook of North American Indians, Volume 12: Plateau*, edited by D.E. Walker, Jr., pp. 8-28. Smithsonian Institute, Washington D.C.

Louderback, L.A., D.K. Grayson, and M. Llobera (2010). Mid-Holocene Environments and Human History in the Great Basin. *The Holocene* 21(2):366-373.

Madsen, D.B. (2007). The Paleoarchaic to Archaic Transition in the Great Basin. In *Paleoindian or Paleoarchaic: Great Basin Human Ecology at the Pleistocene-Holocene Transition*, edited by K.E. Graf and D.N. Schmitt, pp. 3-20. University of Utah Press, Salt Lake City.

Madsen, D.B., and S.R. Simms (1998). The Fremont Complex: A Behavioral Perspective. *Journal of World Prehistory* 12(3):255-336.

Mathewes, R.W. (1993). Evidence for Younger Dryas-Age Cooling on the North Pacific Coast of America. *Quaternative Science Reviews* 12:321-331.

McGuire, K.R. and W.R. Hildebrandt (2005). Re-Thinking Great Basin Foragers, Prestige Hunting and Costly Signaling During the Middle Archaic Period. *American Antiquity* 70(4):695-712.

Mehringer, P.J., Jr., and F.F. Foit, Jr. (1990). Volcanic Ash Dating of the Clovis Cache at East Wenatchee, Washington. *National Geographic Research* 6:495-504.

Morgan, C.T., and R.L. Bettinger (2012). Great Basin Foraging Strategies. In *The Oxford Handbook of North American Archaeology*, edited by T. Pauketat, pp. 185-198. Oxford University Press, New York.

Napton, L.K. (1997). The Spirit Cave Mummy: Coprolite Investigations. *Nevada Historical Society Quarterly* 40(1):97-104.

Pinson, A.O. (2007). Artiodactyl Use and Adaptive Discontinuity across the Paleoarchaic/Archaic Transition in the Northern Great Basin. In *Paleoindian or Paleoarchaic: Great Basin Human Ecology at the Pleistocene-Holocene Transition*, edited by K.E. Graf and D.N. Schmitt, pp. 187-203. University of Utah Press, Salt Lake City.

Pokotylo, D.L., and D. Mitchell (1998). Prehistory of the Northern Plateau. In *Handbook of North American Indians, Volume 12: Plateau*, edited by D.E. Walker, Jr., pp. 81-102. Smithsonian Institute, Washington D.C.

Prentiss, W.C., and I. Kuijt (2004). Introduction: The Archaeology of the Plateau Region of Northwestern North America – Approaches to the Evolution of Complex Hunter-Gatherers. In *Complex Hunter-Gatherers, Evolution and Organization of Prehistoric Communities on the Plateau of Northwestern North America*, edited by W.C. Prentiss and I. Kuijt, pp. vii-xvii. University of Utah Press, Salt Lake City.

Rhode, D., and L.A. Louderback (2007). Dietary Plant Use in the Bonneville Basin During the Terminal Pleistocene/Early Holocene

Transition. In *Paleoindian or Paleoarchaic: Great Basin Human Ecology at the Pleistocene-Holocene Transition*, edited by K.E. Graf and D.N. Schmitt, pp. 231-247. University of Utah Press, Salt Lake City.

Rousseau, M.K. (2004). A Culture Historic Sytnthesis and Changes in Human Mobility, Sedentism, Subsistence, Settlement, and Population on the Canadian Plateau, 7000-200 B.P. In *Complex Hunter-Gatherers, Evolution and Organization of Prehistoric Communities on the Plateau of Northwestern North America*, edited by W.C. Prentiss and I. Kuijt, pp. 3-22. University of Utah Press, Salt Lake City.

Simms, S.R. (2008). *Ancient Peoples of the Great Basin and Colorado Plateau*. Left Coast Press, Walnut Creek, CA.

Smith, G.M. (2010). Footprints Across the Black Rock: Temporal Variability in Prehistoric Foraging Territories and Toolstone Procurement Strategies in the Western Great Basin. *American Antiquity* 75(4):865-885.

Steward, J.H. (1938). Basin Plateau Aboriginal Sociopolitical Groups. *Bureau of American Ethnology Bulletin* 120.

Steward, J.H. (1955). *Theory of Culture Change: The Methodology of Multilinear Evolution*. University of Illinois Press, Urbana.

Waters, M.R., and T.W. Stafford, Jr. (2007). Redefining the Age of Clovis: Implications for the Peopling of the Americas. *Science* 315:1122-1126.

Wigand, P.E., and D. Rhode (2002). Great Basin Vegetational History and Aquatic Systems. In *Great Basin Aquatic Systems History*, edited by R. Hershler, D.B. Madsen, and D.R. Currey, pp. 309-368. Smithsonian Contributions to Earth Sciences 33, Washington D.C.