

Exploring Great Basin Archaeology

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Foreword

This booklet is an overview of the history of Native American cultures in the semi-arid Great Basin region of western North America. The distinctive cultures of this region have been studied by anthropologists since the nineteenth century. They have explored the evolution of a Great Basin lifeway and how peoples use culture to adapt to changing environmental circumstances. The story of how Great Basin peoples made a living in what is a challenging environment is told from the perspectives of cultural anthropology and archaeology. These ways of living have left an enduring archaeological heritage that historic preservation seeks to conserve for the benefit of future generations.

1 § introduces the Great Basin region, a vast area of interior drainage named by the explorer John C. Frémont in 1844. It describes the physical characteristics of the region and its importance in North American cultural anthropology.

2 § describes the environments, past and present, that have shaped the cultural behaviors of Great Basin peoples.

3 § describes the prehistory of the Great Basin and the ways cultures adapted to changes in climate and environment. Archaeology focuses on the economic basis of prehistoric lifeways, as subjects such as kinship, mythology, and language are largely invisible to archaeology because it is based on the study of the material remains of the past.

4 § is an ethnographic overview of the cultures of Great Basin peoples at the time they were encountered by Euro-Americans. The wealth of information available to ethnographers regarding Great Basin cultural lifeways allows detailed understanding of the languages, kinship systems, and social organization of the region's Native American cultures.

5 § presents an overview of the styles of prehistoric rock art found in the Great Basin and the different approaches archaeologists have used to understand it. Rock art is one of the most visible and enigmatic monuments that prehistoric cultures left behind and provides a unique glimpse into their social lives.

Last, **6 §** gives an overview of historic preservation in the Great Basin. Preserving the past for future generations has been a national policy since the early twentieth century. This section describes the philosophy of historic preservation and the legislative framework that regulates how archaeological resources are managed and conserved.

1 §

INTRODUCING THE GREAT BASIN

The Great Basin is, at its most basic, a geographic term describing an area in western North America where rivers and streams do not drain out to an ocean. The Great Basin can also be defined by its distinctive environmental features, such as botany, zoology, and geology. These various ways of defining the Great Basin provide information important for understanding the region's unique human cultures and the ways they adapted to changing environmental conditions. This booklet tells the story of the cultural Great Basin from prehistory through to the recent past.

Because of its relatively late settlement by Euro-Americans, the Great Basin is an area of great *anthropological* interest for understanding hunter-gatherer ways of life. Agriculture first developed only 10,000 years ago in the Old World. Thus, for much of human history, people lived by hunting, fishing, and gathering wild plants, in ways similar to those of *indigenous* Great Basin peoples. Hunter-gatherers are mobile, moving to specific places based on the seasonal availability of various plants and animals.

Hunter-gatherer ways of life have often been regarded by anthropologists as critical to understanding evolutionary trends in human culture, society, and economy. As one of the last areas in North America to have been affected by the spread of Euro-American settlement, traditional Great Basin ways of life have been of great interest to anthropologists for understanding how humans adapt to their environments. The region has a long archaeological record that allows evolution in cultural and economic strategies to be identified.

Anthropology is the study of humanity and comprises the subdisciplines of archaeology, biological anthropology, cultural and social anthropology, and linguistic anthropology. Archaeology is the study of past human cultures from their material remains. Biological anthropology studies physical evolution. Cultural and social anthropology study the dynamics of human societies. Linguistic anthropology studies the influence of language on social life. Ethnography is the division of anthropology that describes individual cultures, either by observation in the field or through surveys of knowledgeable consultants.

Indigenous refers to the original inhabitants of an area who are bound by a common culture and tradition. Other terms are native, aboriginal, or first peoples.

Prehistoric Great Basin refers to the study of the region and its peoples before the arrival of Euro-Americans.

Hydrography is a science that describes the physical features (such as flow and depth) of bodies of water.

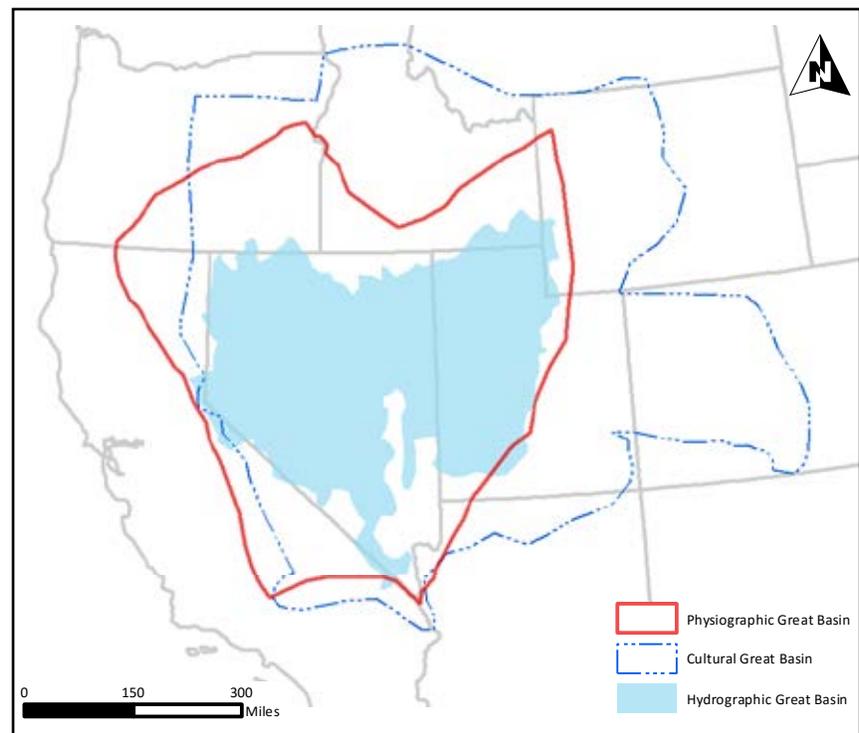
Figure 1.1. Map showing the hydrographic, physiographic, and cultural boundaries of the Great Basin.

To understand how Great Basin peoples in prehistory and the recent past made a living in its generally arid landscape, the region's physical and environmental attributes first are described. The environment provides constraints and opportunities within which Great Basin peoples adopted various strategies for survival. These led to a distinctive lifeway, recognized by anthropology as the Great Basin culture area. The following descriptions of the physical, environmental, and cultural definitions of the Great Basin are centered on a core region but differ in their geographic boundaries.

Hydrographic Great Basin

The Great Basin was named and defined by the explorer John C. Frémont in 1844 during his second expedition to explore the American West. He saw what would become Nevada and surrounding areas as a “great desert” where rivers and lakes did not connect to any ocean. The Great Basin is the largest area of internal drainage in North America and encompasses an area of 209,162 square miles (FIGURE 1.1). Put simply, water that falls in the Great Basin stays in the Great Basin.

The western boundary of the Great Basin is formed by the Sierra Nevada and Cascade ranges. Its northern boundary is the Columbia Plateau. Its eastern boundary is the Wasatch Range. The rim of the Colorado River drainage is the Great Basin's southern boundary. Only the hydrographic definition of the Great Basin has definitive boundaries.



Physiographic Great Basin

Defined by its physical geography (physiography), the Great Basin is a subdivision of the vast Basin and Range Province that includes much of western North America and extends south into northwestern Mexico (FIGURE 1.1). Basin and Range topography is characterized by a series of massive north-south-trending mountain ranges separated by wide desert valleys and basins.

Basin and Range topography was created by the movement (subduction) of the vast tectonic plates that form the crust of the earth. The Pacific tectonic plate collided with the North American plate, creating the mountain/valley topography, pulling the existing land apart with mountain ranges rising and valley floors falling (horst and graben geology). These processes created a region characterized by earthquakes and extensive volcanic activity. The boundaries of the physiographic Great Basin extend farther south than its hydrographic boundaries, encompassing the Colorado River drainage in southern Nevada and northwestern Arizona.

Floristic Great Basin

The Great Basin can also be defined by its plant communities (flora) that are strongly dependent on elevation, which influences precipitation and temperature. There are abrupt elevation changes between mountain ranges and valleys and basins. The highest mountain peaks are over 10,000 feet in elevation compared to an average elevation of 4,000-5,000 feet for valley floors and basins. This elevation difference vastly influences weather and, subsequently, vegetation. The floristic Great Basin is distinguished by sagebrush and saltbushes. It extends well beyond the boundaries of the hydrographic Great Basin and includes the Snake River Plain, the Colorado Plateau, the Uinta Basin, and parts of Arizona north of the Mogollon Rim.

Three broad plant communities, determined by elevation, can be discerned within the Great Basin floristic province: the sagebrush-grass zone, the piñon-juniper zone, and the alpine-tundra zone. The sagebrush-grass zone is found at lower-middle elevations and comprises sagebrush, saltbush, and a variety of seeds, roots, and berries. A range of mammals, reptiles, birds, and insects are associated with the sagebrush-grass zone. The piñon-juniper zone is composed of middle-upper elevation piñon-juniper woodlands and contains nutrition-rich piñon nuts as well as various mammals. The alpine-tundra zone is found at elevations above 11,000 feet and comprises scarce trees and low grasses, sedges, and forbs. Bighorn sheep and small mammals are also found in the alpine-tundra zone.

The sagebrush-grass zone provided Great Basin peoples with a multitude of grasses, seeds, roots, and berries. Mammals that live in this zone include deer, bighorn sheep, antelope, rabbit, and small mammals, as well as fish, waterfowl, birds, insects, and reptiles.

The piñon-juniper zone provided nutrition-rich piñon nuts. These were the focus of an intensive harvesting complex accompanied by ceremonies of thanksgiving and renewal, and social gatherings. Many Great Basin peoples relied on stored piñon nuts to get through the winter.

High altitude alpine-tundra zones are cold deserts where water is scarce, temperatures are cold, and with biting winds year round. Trees are sparse and seed plants rare. Instead, alpine-tundra plants produce edible roots in the ground that are protected from the elements. Bighorn sheep and small mammals seasonally live in the alpine-tundra zone. Great Basin peoples generally used these areas for specialized hunting, with less emphasis on plant gathering.

In summary, the floristic Great Basin is an area where the lowest elevations are dominated by saltbush and sagebrush, middle elevations are covered by piñon-juniper woodlands, and upper elevations by alpine-tundra plant communities.

Ethnographic Great Basin

The Great Basin is also defined by the *cultures* of the people who lived there before Euro-Americans entered the area. The ethnographic Great Basin includes lands settled, at contact, by the Hokan-speaking Washoe and Numic-speaking peoples, including the Kawaiisu, Mono, Owens Valley Paiute, Northern Paiute, Northern Shoshone, Bannock, Eastern Shoshone, Western Shoshone, Southern Paiute, and Ute (FIGURE 1.2). These peoples all lived by practicing some form of hunter-gatherer economy. The ethnographic Great Basin is bounded on the west by the Sierra Nevada. It extends north to southern Oregon, southern Idaho and the Snake Valley plain, and western Wyoming. To the east, it encompasses Utah and western Colorado. Its southern boundary extends to northern Arizona and the Colorado River drainage below Las Vegas. The ethnographic Great Basin is defined by the findings of cultural anthropology regarding shared cultural attributes of the peoples living within this area.

Cultural anthropology

From the nineteenth century through the first half of the twentieth century, anthropologists systematically described the cultures of the Great Basin. The Great Basin was the last major frontier of North America to be explored and settled by Euro-Americans. It was regarded by anthropologists as potentially providing information about traditional Native American ways of living unaffected by *acculturation*. This, it was hoped, would shed light on the evolution of human cultures. In the nineteenth century, anthropologists such as Auguste Comte, Herbert Spencer, and Lewis Henry Morgan all argued that human cultures and societies tended to develop from simple to more complex forms of organization, much like animal and plant life. This type of unilineal evolutionary view, that all cultures passed through similar stages of cultural evolution, was used to justify the study of non-Western cultures as analogies for the origins of agriculture, religion, urban life, etc. During the first half of the twentieth century, cultural anthropology began to focus more on the relationship between the environment and people, leading to the definition of the Great Basin as a culture area or province.

Culture area

The anthropologist Alfred Kroeber played the leading role in defining the Great Basin culture area. He linked the geographic region to a distinctive distribution of languages

One of the most widely used definitions of “culture” is Sir Edward Tylor’s (1871):

“Culture, or civilization, taken in its broad, ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society.” Humans acquire culture through socialization, daily experience, and formal teaching.

Acculturation is the process of culture change that occurs when cultures interact. It often refers to the changes in culture and social practices that happened when indigenous peoples were subjugated by Euro-Americans.

A variety of methods are used by ethnographers to study indigenous peoples, including interviews, surveys, and participant observation. The ethnographic data collected by these methods are then explored from cultural anthropology’s interests in environmental settings, economy, material culture, language, social norms, and social organization.

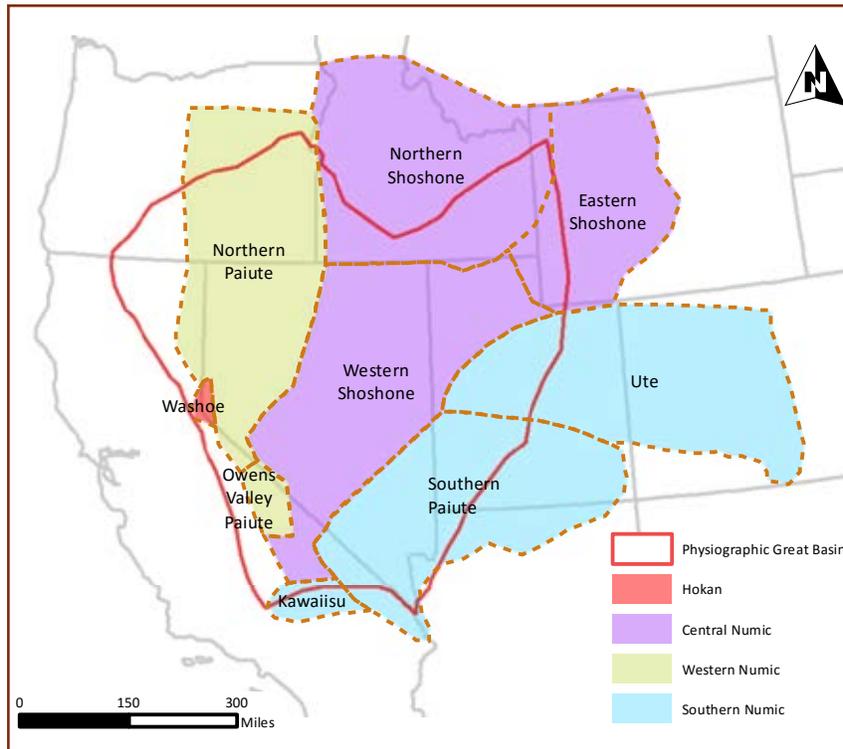


Figure 1.2. Map of the Great Basin culture area showing languages and tribes.

and cultural traits that were connected with environmental features. Cultures were defined by their features, both material (objects) and nonmaterial (ways of doing). Material culture traits include distinctive production techniques, or styles of things such as baskets, hunting implements, or housing, for example. Nonmaterial culture traits include methods of kinship reckoning, narrative styles in myths, and beliefs. This approach assumed that individual cultures could be identified by their distinctive cultural traits, that traits were *normative* and varied from culture to culture.

Using this approach, anthropologists noted a correlation between the distribution of associated traits and ecological areas, leading to the identification of culture areas. Other assumptions, critical to the culture area concept, were that age of culture traits could be inferred from their distribution pattern. Based on analogy with the distribution of languages, it was assumed that cultural traits spread from a geographic core (where they originated) to surrounding areas.

One problem with the culture area approach is that indigenous groups are seemingly regarded as frozen in time, the *ethnographic present*. For example, the focus on identifying traditional cultural practices sometimes overlooked that these evolve over time and also change through interactions with other cultures. Another problem is that the boundaries of cultures and political organizations are often very difficult to identify,

Normative is the assumption that a people or culture share common beliefs, artistic styles, methods of making tools, ceramics decoration, and clothing, for example.

The ethnographic present refers to the practice of defining indigenous peoples at one point in time and assuming it is reflective of all time. This produces a static rather than dynamic view of human behavior and history. The culture area concept captures a moment in time (contact with Euro-Americans), that does not reflect historical or future cultural developments.

well illustrated by those of Great Basin peoples. The culture area approach tried to circumvent this problem by using shared language to identify individual cultural groupings. But languages do not necessarily delineate cultural boundaries or political groupings. As will be seen later in this booklet, the Bannock and Northern Paiute both speak the same language, but their cultures and economies are very different (see 4§ *The Ethnographic Great Basin*).

Uncritically applied, the culture area approach can be deterministic, suggesting that geography and environment determine human behavior in predictable ways. We now know that different cultures and social systems develop in identical environmental settings. Thus, the environmental constraints on human behavior are defined in part by the character of the cultures and economic organizations that humans live in. Julian Steward was one of the first anthropologists to recognize this, based on his studies of Great Basin peoples. His masterful book *Basin-Plateau Aboriginal Sociopolitical Groups* (first published in 1938) demonstrated that knowledge, social practices, and technology are the result of historical trajectories. These determine how and what environmental features are exploited. Although the environment influences the character of human adaptations, it does not determine them. Steward also highlighted the important ways social organization distributes people in the landscape as an economic strategy. This finding has been adopted in contemporary archaeology regarding the importance of residential mobility in hunter-gatherer economic organization.

Memory culture

Despite the relatively late contact between Euro-Americans and Native peoples in the Great Basin, anthropologists relied a great deal on “memory” culture as their source of information about how people lived before the arrival of Europeans. Memory culture is a consultant’s memories of traditional ways of life, not the way he or she was actually living at the time of the interview. By the 1870s, most Great Basin peoples had been displaced from their lands and traditional ways of living were generally no longer possible. Even before intensive American settlement of the Great Basin, many changes had already been wrought upon traditional cultural patterns. Disease, trade goods, and social disruption swept through the continent via trade routes and aboriginal trails. In the Great Basin, the most significant disruption to traditional lifeways before the coming of Euro-Americans was the adoption of the horse by some Great Basin peoples.

Hunter-gatherer lifeways are subject to several popular misconceptions that contrast them negatively to agricultural societies. Hunter-gatherers are often misperceived as adapting to the environment rather than controlling it. In fact, hunter-gatherers rely on deep ecological knowledge and, in the Great Basin, practiced environmental manipulations such as burning, pruning, selective harvesting, and broadcast sowing of seeds to increase harvests and the health of wild plants. Anthropologists working in other regions have suggested that hunter-gatherers avoided relying on domesticated animals and plants as a risk reduction strategy. In contrast, farmers are tied to a single place and a narrow range of domesticated resources with its encumbent risks.

Hunter-gathering is also often **misportrayed** as labor-intensive and producing low return rates. Anthropological knowledge of hunter-gatherers is based on observations of cultures suffering from the stresses of colonialism. Many hunter-gatherers had been pushed into marginal environments that early anthropologists mistook for their normal setting. Prior to colonialism, hunter-gatherers had access to favorable environments that they successfully exploited. They would have experienced periodic resource depletion due to fluctuations in temperature or precipitation, but farmers face the same stresses when crops fail due to drought, pestilence, etc.

The general Great Basin hunter-gatherer pattern was that people lived in groups of related households that were based on the nuclear family. These groups moved seasonally to specific places in their territories to hunt and gather wild resources that provided the necessities of life. At certain times of the year, usually the winter, numerous family households aggregated in villages. Social organization was generally egalitarian with economic tasks delegated according to sex. Men generally focused on hunting animals, women on foraging for plants. Leadership roles were usually short-term and task-specific, such as for organizing a bighorn sheep hunt or managing a communal gathering.

The village was the largest permanent political organization. On occasion, groups of villages gathered for important annual social meetings and ceremonials. Tribes led by chiefs did not exist before the nineteenth century spread of American settlement into the Great Basin. Tribes and chiefs were identified by Americans for the purposes of treaty making and other political interactions.

Many terms are used to describe people who live by gathering wild plants and hunting wild animals. Forager, hunter-forager, and gatherer-hunter are a few of those terms. The more familiar term *hunter-gatherer* is used here without implying that hunting was primary. In many hunter-gatherer cultures, gathering plants provided the mainstay of the diet.

Thomas Hobbes's famous observation (in *Leviathan*, published in 1651) that in non-state level societies "life is poor, nasty, brutish, and short," is frequently misapplied to characterize hunter-gatherer social life. In truth, the natural state of human culture is neither anarchy nor unconstrained pursuit of individual interests to the detriment of others.

All cultures have practices, beliefs, and institutions that regulate the conduct of daily life and establish social order. Hunter-gatherers often have highly egalitarian social structures and economic resources are distributed in highly equitable ways.

Archaeologists use analogies drawn from ethnography and anthropology to help understand the cultural behavior that formed the archaeological record (i.e., the material remains of the past that survive in the present). Great Basin ethnography is drawn upon, but studies of hunter-gatherers from across the world also play an important role.

Summary

The subject of this booklet is the cultural lives of Great Basin indigenous peoples in prehistory and the recent past. The history of human settlement in the Great Basin reflects the choices people made of how to best survive within the constraints and opportunities offered by fluctuating environmental conditions. These past hunter-gatherer ways of living have left behind a rich archaeological heritage that has endured for thousands of years and will continue to endure if treated with respect.

Suggested reading

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2 § PREHISTORIC ENVIRONMENTS

Environmental conditions determine what animal and plant resources were available for prehistoric peoples to hunt and harvest. A variety of economic strategies and cultural adaptations may be used by different cultures to exploit the *same environmental conditions*. Hunter-gatherer strategies may change in response to changing environmental conditions that affect the composition and distribution of animal species and vegetation communities. The modern Great Basin climate is the result of a long environmental trend to drier and warmer conditions.

Pleistocene Climate

The Pleistocene began around 2.5 million years ago and ended around 12,000 years ago. It was marked by repeated cycles of continental glacial advance and retreat, or Ice Ages. In North America, the last major glacial event (the **Wisconsinan glaciation**) lasted from 110,000 to around 12,000 years ago. After about 21,000 years ago, warming conditions started the gradual retreat of continental glaciers (FIGURE 2.1). At its peak, about a third of the world was covered by ice during the Late Pleistocene. Sea levels dropped by as much as 300 feet during glacial episodes as water was absorbed in massive ice sheets. The Pleistocene was succeeded by the Holocene (12,000 years ago to the present), characterized by a global trend toward warmer temperatures and rising sea levels due to melting glaciers.

The Wisconsinan glaciation included the western Cordilleran and the massive eastern Laurentide ice sheets (FIGURE 2.1). These sheets sometimes collided and covered Canada and the far northern United States with a thick, continuous ice sheet. This ice sheet effectively prevented north-south travel between Alaska

For example, the Great Basin's environment during the nineteenth century was exploited by Native Americans using hunter-gatherer strategies and by Euro-Americans for mining and ranching and mineral extraction by Euro-Americans. The environment was the same for Native Americans and Euro-Americans but their different adaptations were the result of different social organizations, technologies, and economic systems that valued some resources and not others.

The Wisconsinan glaciation is the name of the last glacial advance in North America. It began around 110,000 years ago and reached its maximum about 25,000-21,000 years ago. Cordilleran and Laurentide ice sheets waxed and waned during the Wisconsinan, alternatively exposing and submerging the Bering land bridge (Beringia) between North America and Eurasia. This land bridge was exposed during major glacial episodes when sea levels dropped dramatically.

Figure 2.1. Maximum extent of Wisconsinan ice sheets in North America



and the lower states. At other times, these sheets parted to allow animals to migrate north and south through Canada. At the height of the Wisconsinan glaciation, ice sheets covered most of Canada, the Upper Midwest, and New England, as well as parts of Idaho, Montana, and Washington (FIGURE 2.1). During much of the Wisconsinan glaciation, the sea level was low enough to permit land animals, including humans, to occupy Beringia and move between Siberia and North America. At some times continental ice sheets blocked the way south.

Although the Great Basin is well south of the maximum Wisconsinan glaciation, its climate, vegetation, and fauna were affected by Pleistocene pluvial (rainfall) events. In the northern hemisphere, Pleistocene glacial advances pushed arctic climates south along with the ice sheets. In turn, the North Temperate Zone (which today includes most of the United States) was pushed south and the northern tropical zone was compressed. This meant that at glacial maximum (ca. 21,000 years ago) the Great Basin climate was much wetter and colder than during the succeeding Holocene and had different plant communities, animal species, and water regimes.

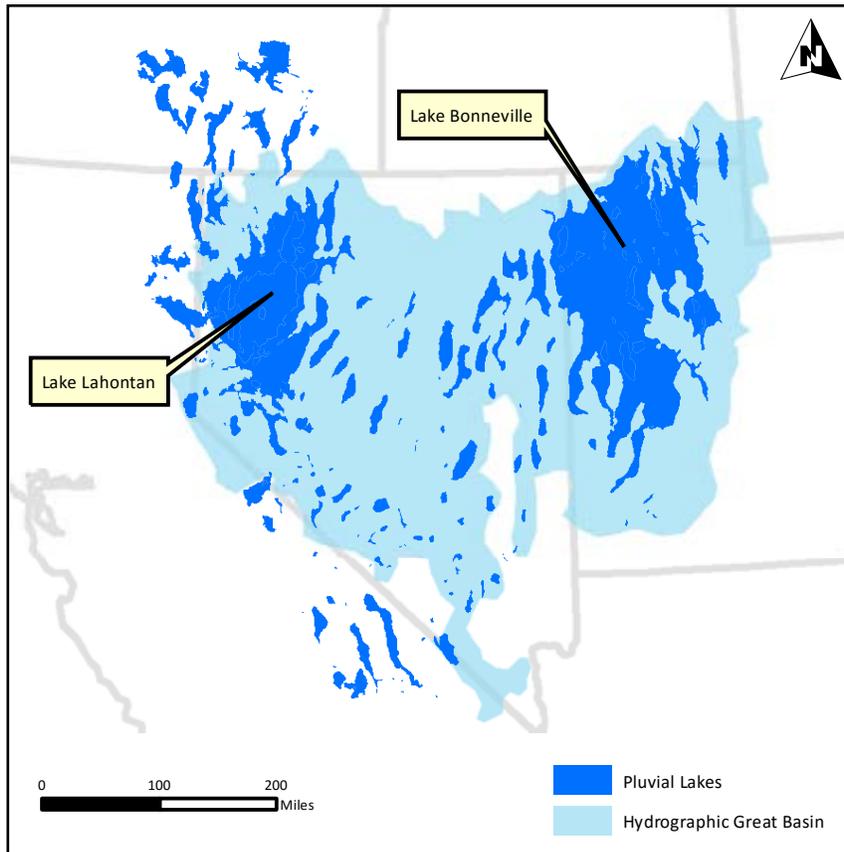


Figure 2.2. Pleistocene pluvial lakes in the Great Basin.

Pluvial lakes

The biggest difference between the Great Basin during the Late Pleistocene (21,000–12,000 years ago) and the succeeding Holocene was the presence of numerous and extensive **pluvial lakes** (FIGURE 2.2). The largest were Lake Lahontan—which covered much of the northwestern Basin—and Lake Bonneville, which covered much of the eastern Basin. Pyramid and Walker Lakes are remnants of Lake Lahontan. The Great Salt Lake and Utah Lake are remnants of Lake Bonneville. There were at least 81 other standing lakes in various basins that together inundated about 40% of the hydrographic Great Basin.

These extensive lakes both facilitated and inhibited the earliest human activities in the Great Basin. These conditions created extensive and productive marshes and wetlands, but they inundated vast areas, rendering them uninhabitable.

Finally, cold conditions created at least 42 mountain glaciers. Today, not counting a few glaciers in high mountains surrounding the Basin, there is only one short glacier (2,950 feet long) on Mount Wheeler in the Snake Range in eastern Nevada.

Pluvial lakes are landlocked basins that were filled by rainfall during the Pleistocene when precipitation was high.

At its maximum, Lake Lahontan covered 8,284 square miles and was up to 900 feet deep.

At its maximum, Lake Bonneville covered 19,800 square miles and was up to 1,000 feet deep.

Today, there are only 45 modern natural lakes that cover a total of 3,974 square miles, or only 10 percent of the area inundated by Pleistocene pluvial lakes. Compared to the Pleistocene, the succeeding Holocene was very dry.

Pleistocene mega-fauna included mammoth, giant armadillo, giant ground sloth, giant short-faced bear, saber-tooth cat, and giant beaver.

Archaeologist Paul Martin theorized that humans hunted Pleistocene mega-fauna to extinction. This theory is known as the “overkill hypothesis.” Martin based his theory on the timing of the sudden demise of Pleistocene mega-fauna. This appeared to correspond to the time when people first entered the New World. Today, changing environmental conditions at the end of the Pleistocene are seen as the primary reason for the mass extinction of North American mega-fauna.

Sagebrush and shadscale plant communities contract their range during wetter, colder eras and expand during warmer, drier times.

Fauna

The most striking difference between Pleistocene and Holocene Great Basin fauna is the dominance of mega-fauna such as mammoths during the Pleistocene. Other Pleistocene fauna now extinct included muskox, shrub ox, dhole (wild dog), capybara, horse, and tapir. Pleistocene species of deer, pronghorn antelope, sheep, and bison, different from their Holocene counterparts, also lived in the region. As the climate warmed and dried into Holocene conditions, all of these mammals went extinct by about 10,000 years ago. It was once popular to attribute these extinctions to human hunting. But now it is known that these extinctions started before people arrived, suggesting that human predation was only one contributing factor.

Vegetation

Density and distribution of plants within a vegetation community vary by temperature, precipitation, and soils. Globally, climatic zones shift north or south depending on long-term temperature cycles in the northern hemisphere. Vegetation zones in the Great Basin moved up or down in elevation depending on regional temperature and precipitation cycles. In more extreme cycles, some communities, like riparian ones, may disappear (during periods of great aridity). In other cycles, new plants can substantially change the composition of plant communities. For example, juniper woodlands have been in the Basin for at least 35,000 years. This changed in the central Basin about 6,000 years ago with the spread of piñon into juniper woodlands, changing them into piñon-juniper woodlands in many parts of the Basin. Over time, piñon nuts became the major winter staple in most of the central Basin.

Types of plants and animals vary by elevation and topography due to differences in temperature and precipitation. The bottoms of valleys, or other areas with surface water, are often home to wetland plant communities. Wetland plants include cinquefoil, rushes, sedges, bulrush, cattail, and tule. Wetlands were among the most productive vegetation zones for prehistoric peoples.

In contrast, dry valley bottoms, covered by shadscale shrub communities, were one of the least productive vegetation zones for prehistoric hunter-gatherers. The lack of moisture and the greater salinity of the shadscale zone meant productive plants were patchy in their distribution. Characteristic plants in the shadscale community include shadscale, greasewood, four-wing

saltbush, Bluejoint Wild Rye, Great Basin Wild Rye, and salt grass. Understory plants include various grasses, pickleweed, and seepweed.

Moving up in elevation, mid-elevation valley flats and slopes are covered by mixed sagebrush *steppe* community plants. Dominant plants include 15 species of *sagebrush* and understory grasses. The latter were significant plant resources for Great Basin hunter-gatherers and include Indian ricegrass, Great Basin wild rye, galleta grass, needle-and-thread grass, blue bunch grass, and wheatgrass.

In low uplands areas, the sagebrush steppe blends into piñon-juniper woodlands. These woodlands are dominated by Utah juniper and single-needle piñon. Tree species intermixed with them include Rocky Mountain juniper, western juniper, double-needle piñon, and single needle/double-needle piñon hybrids. Sagebrush steppe associations constitute the understory throughout the piñon-juniper woodlands. At higher elevations it may intermix with mountain brush or alpine community plants.

The mountain brush community is dominated by snowberry, bitterbrush, cliffrose, mountain mahogany, serviceberry, ephedra, and chokecherry. The mountain brush community can be intermixed with high-elevation forest stands that include yellow pine, white fir, limber pine, whitebark pine, bristlecone pine, and, in a few areas, Douglas fir.

Alpine tundra plants grow above 11,000 feet elevation. This plant community is dominated by low perennial herbaceous plants, including grasses, sedges and forbs that form dense mats intermixed with dwarf and prostrate shrub species, and a few *geophytes*. These adaptations reduce stress from cold temperatures, snow, and wind on these plants.

Holocene Climate

Around 21,000 years ago a slow warming and drying trend began that ended Pleistocene climatic conditions around 12,000 years ago and eventually led to modern climates. This trend fluctuated greatly before settling down to essentially modern conditions about 3,000 years ago.

Early Holocene (12,000-7,500 years ago)

Although Pleistocene pluvial lakes were gone by about 10,000 years ago, the Early Holocene was generally colder and wetter than today. Valley floors that today are dry were during the Holocene filled by shallow lakes or marshes and relict modern lakes were much deeper than today. Early Holocene temperature and precipitation fluctuated between wet or dry and

Steppes are plains covered by grass or shrubs that do not have trees. Steppes are often semi-arid deserts.

The most common species of sagebrush are Wyoming big sagebrush, basin big sagebrush, mountain big sagebrush, low sagebrush, and black sagebrush.

A geophyte is a plant with a root that stores carbohydrates or water. The underground root is protected from environmental extremes.

Early Holocene animals were modern species that replaced Pleistocene mega-fauna and other glacial species.

cold or warm conditions. Precipitation also fluctuated between falling mostly during the winter or the summer. Water regimes, along with plant and animal communities, were relatively stable when precipitation fell mostly during the winter but were more variable during periods of summer-dominated precipitation.

The distribution and composition of vegetation communities continued to be closely related to elevation during the Early Holocene. When wetlands expanded upslope during wetter and colder conditions, sub-alpine forests moved downslope. These trends led both sagebrush and shadscale communities to contract. In contrast, during warmer and drier conditions, wetlands contracted downslope, sub-alpine forests moved upslope, and shadscale and sagebrush communities expanded. In many places, lower elevation sub-alpine forests were replaced by sagebrush or shadscale intermixed with juniper and mountain mahogany.

By the beginning of the Early Holocene, Pleistocene mega-fauna and other species had been replaced by modern species of deer, bighorn sheep, pronghorn antelope, elk, and buffalo, along with a host of small mammals. The distribution and types of animals generally followed vegetation patterns. For example, when grasslands replaced sagebrush steppe, buffalo moved into the Great Basin.

Middle Holocene (7,500-4,500 years ago)

The Middle Holocene was hotter and drier than either the Early or Late Holocene. During dry cycles, wetlands and lakes contracted or disappeared; shadscale replaced sagebrush at lower elevations; and sub-alpine conifers retreated upslope. Wetter conditions produced the reverse effects.

Longstanding marshes disappeared and lakes became much shallower. Throughout the Late Pleistocene and Early Holocene, Ruby Marsh in northeastern Nevada, fluctuated between being a 200-foot-deep lake (Lake Franklin) and a wetland that was 16 miles long by 3 miles wide (38,000 acres). During the Middle Holocene (ca. 6,800 years ago), it went completely dry and did not fill with water again until about 4,500 years ago. Plants in the salt-tolerant shadscale community replaced wetland plants at Ruby Marsh during this period.

In western Nevada, the lake level at Lake Tahoe dropped at least 20 feet between 5,500 and 4,200 years ago. Similarly, the Humboldt River was dry from 6,200 to 4,800 years ago and Pyramid Lake shrank between 7,200 and 4,800 years ago. In

addition, sediment cores show that dry conditions significantly reduced sedimentation rates throughout the Great Basin during the Middle Holocene.

Piñon entered the Great Basin during the Middle Holocene and significantly affected how people lived. Where piñon grew in abundance, piñon nuts became the major winter staple as they can be stored. People focused their economic activities on gathering sufficient piñon nuts to last the winter. Piñon also allowed people to forage in the central Nevada uplands that, prior to the Middle Holocene, only supported short-term activities such as travel and hunting.

Piñon grows at elevations of 5,000-8,000 feet where there is 12-18 inches mean annual precipitation. The average width of the piñon elevation band is 1,150 feet in the north to 1,300 feet in the south. Piñon elevation bands narrow and eventually disappear entirely north of the Humboldt River. The eastern boundary of piñon in the Great Basin is roughly the Nevada-Utah border and the western boundary is the Sierra Nevada. Piñon entered the Great Basin from the south and its southern boundary is somewhere in Mexico.

Late Holocene (4,500 years ago – Present)

The Middle Holocene ended as climate conditions became essentially modern with temperature and precipitation generally the same as today. Late Holocene conditions were wetter and cooler than during the preceding Middle Holocene, but not as cool and wet as in the Early Holocene.

Middle Holocene shadscale communities receded or were replaced by wetlands communities at lower elevations and by sagebrush steppe at intermediate elevations. The piñon-juniper woodland elevation band expanded slightly, and sub-alpine forests also moved slightly down slope as arctic tundra expanded above the forests. But environmental conditions were not stable during the Late Holocene, as significant climatic fluctuations did occur.

An important phenomenon associated with the Late Holocene is a significant increase in buffalo in the northern and eastern Basin. Archaeologists have documented buffalo at 89 Late Holocene sites, ranging in age from 3,630 to 170 years ago, compared to 35 sites attributed to other periods. Buffalo are adapted to grasslands. The number of Late Holocene sites with buffalo remains indicates periods when grasslands replaced shrublands at lower and intermediate valley elevations. Elk and deer also appear to have increased in numbers during the Late Holocene as grasslands expanded.

Piñon first entered the Great Basin from the south and spread first to the eastern and central Basin around 6,800 years ago, and then to the western and northern Basin around 500 years ago.

Piñon elevation bands are confined by temperature with both lower and upper temperatures that are colder than in the band itself. Upper temperatures are constrained by elevation and lower temperatures from inversion layers that trap cold air.

Summary

Long-term changes in climate conditions affected the composition and distribution of plant and animal communities throughout the Holocene. These changes affected the resources available to Great Basin peoples in prehistory and the ways in which they made a living. Archaeology documents the different strategies used in prehistory to adapt to the Great Basin's changing and challenging environment. These are described in the next section.

Suggested reading

Fowler, Catherine S. & Don D. Fowler (editors)

2008 *The Great Basin: People and Place in Ancient Times*. School for Advanced Research Press, Santa Fe.

Grayson, Donald K.

1993 *The Desert's Past: A Natural Prehistory of the Great Basin*. Smithsonian Institution Press, Washington, D.C.

Rhode, David

2002 *Native Plants of Southern Nevada: An Ethnobotany*. University of Utah Press, Salt Lake City.

3 § GREAT BASIN PREHISTORY

People have lived in the Great Basin for 14,000 years, adapting their ways of living to changes in a generally semi-arid and challenging environment. For most of this period people lived by hunting animals, fishing, and gathering wild plants. Hunter-foragers were mobile, traveling to different places based on the ripening of certain plants or the movement of game. Knowledge of where and when resources were available was key to making a living as a hunter-forager in the Great Basin.

The first people to enter the Great Basin around 14,000 years ago were highly mobile **Paleo-Indian** big game hunters (hunting mammoth and buffalo). Between 20,000-14,000 years ago people first entered North America by crossing Beringia, a land bridge between Siberia and North America that formed when glaciers had captured much of the ocean's water. People crossed Beringia from Eurasia, following the movement of herds of large game. The crossing was a gradual movement of populations, not a dedicated migration to the New World. For early Paleo-Indian peoples, the New World was not separated from the Old

In North American archaeology, the names applied to periods refer to both chronology and cultural stage. Paleo-Indian describes the period when people led a highly mobile way of life focused on hunting large game. The term Archaic refers to periods of mobile hunter-gatherers who relied more on a balance between plants and animals. Formative refers to periods when some cultures practiced some type of food production (agriculture or horticulture).

Paleo-Indian/ Pre-Archaic	14,000-8,000 years ago	Highly mobile big game hunters
Early Archaic	8,000-6,000 years ago	Atlatl adopted
Middle Archaic	6,000-1,500 years ago	Introduction of smaller notched and unnotched points
Late Archaic	1,500-650 years ago	Bow and arrow adopted
Formative	1,500-700 years ago	Fremont and ancestral Puebloan cultures
Late Prehistoric	700-150 years ago	Numic cultures in place

Great Basin Cultural Chronology

Broad spectrum subsistence refers to widening the range of animals hunted and plants harvested to include resources that were previously ignored or of marginal value. This usually happens when populations have to move into environments they had not used before to make a living.

World. During Paleo-Indian times the Great Basin was not settled permanently. Instead, parties of hunters following large game herds made forays into the region from elsewhere.

By 10,000 years ago, mega-fauna (very large animals such as mammoth) had gone extinct and the Paleo-Indian way of life was succeeded by Archaic hunter-gatherers who relied on a ***broad spectrum*** of plants and game. From 8,000 to 700 years ago, Archaic hunter-foragers gradually settled most of the Great Basin, living there year-round. The Archaic is subdivided into three broad periods (Early, Middle, and Late) that correspond to changes in technology and economy. This hunter-gatherer economic pattern was interrupted by semi-horticultural cultures (Formative period) in areas of the eastern Basin and Colorado Plateau ca 1,500-700 years ago. Then, beginning 700 years ago, hunter-gathering lifeways returned throughout the Great Basin (Late Prehistoric period) associated with peoples ancestral to the Native American cultures encountered by Euro-Americans in the late eighteenth and early nineteenth centuries.

Prehistoric Hunter-Gatherer Strategies

During prehistory, Great Basin hunter-gatherers followed strategies that, at one end of a continuum, entailed a highly mobile way of life focused on hunting large game. At the opposite end of the hunter-gatherer continuum, lifeways were much less mobile and based on harvesting a broad spectrum of plants and smaller mammals.

A highly mobile way of life was led by people who lived in environments where high-quality resources were predictable in distribution but occurred in patches. Resources were brought to the group by moving the entire group to the location of these resource patches (high residential mobility). These high quality resources were usually large or medium game animals that required greater mobility to procure. These resources required less effort to process (low handling costs), offsetting the travel “costs” or high mobility that this way of life entailed.

At the other end of the hunter-gatherer continuum is a more sedentary (less mobile) strategy where resources are brought to the group by small work groups ranging from a base camp (logistical mobility). This strategy tends to be practiced by people living in relatively varied and unpredictable environments that have abundant low-quality resources. These low-quality resources (such as hard seeds) required more effort to process (higher handling costs). This “cost” was offset by the abundance of low-quality resources, which reduced the need for

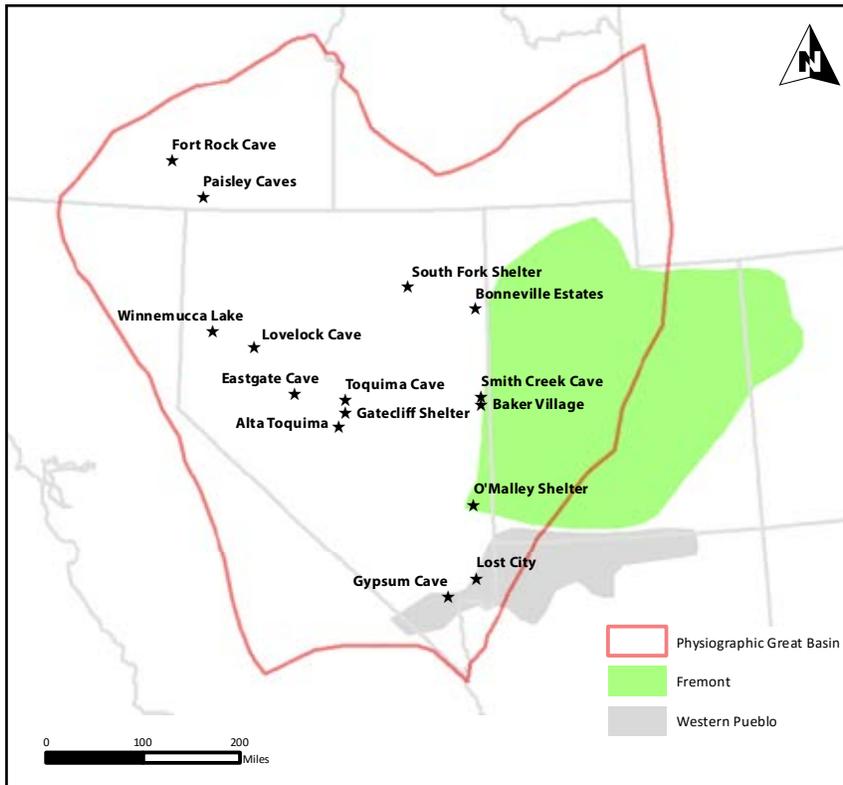


Figure 3.1. Map showing major archaeological sites and Formative cultures.

residential mobility (reduced travel costs). This more sedentary strategy also used the bulk storage of seasonally abundant resources to sustain larger winter populations.

During Great Basin prehistory, these broad hunter-gatherer strategies were variably used according to which was the most efficient way to harvest the resources of the environment at hand. During the Paleo-Indian period, people mostly used a strategy of high residential mobility, ranging widely to hunt large game. During the Early and Middle Archaic, populations appear to have adopted a mixed mobile-sedentary strategy as residential mobility was reduced. During the Late Archaic, people mostly adopted a strategy of low residential mobility, using logistical camps to bring resources to the group. During this period, people used environments of sporadic economic interest during preceding periods, as growing populations in-filled the landscape.

Paleo-Indian Period (ca. 14,000-8,000 years ago)

People first entered North America ca. 18,500-15,500 years ago when small groups crossed the Bering Strait from Eurasia over a land and ice bridge (Beringia). The development of ice-free corridors along the Pacific coast and North American valleys allowed people to settle the interior. The earliest evidence for human settlement in the Great Basin comes from the Paisley Caves sites, southeastern Oregon (FIGURE 3.1), where

Figure 3.2. Rock art at Winnemucca Lake, northwest Nevada.

Winnemucca Lake is North America's oldest known rock art site.



excavations found a 14,300-year-old human coprolite (dried feces). These caves have cultural deposits that span the past 12,000 years, including 10,000-year-old braided and twined cordage, among the oldest textiles discovered in North America. At Fort Rock Cave (Oregon), 11,000 year old sandals made from sagebrush bark were found that are the oldest footwear known. At Smith Creek Cave (eastern Nevada), hearths show that people started using the cave as perhaps as long ago as 13,200 years ago, but more likely 12,700 years ago. The Winnemucca Lake (northern Nevada) rock art site also apparently belongs to this period (FIGURE 3.2), with dates suggesting it is at least 10,500 and possibly as much as 14,800 years old (see Chapter 4). This shows that cultural modification of the landscape occurred early in the history of human settlement of the Great Basin.

Despite these finds, archaeological remains predating 12,000 years ago are rare in the Great Basin, attesting to the very small-scale and short-term nature of human settlement in the region during the early Paleo-Indian period. Paleo-Indian archaeology typically consists of isolated surface finds of large fluted or stemmed points that were hafted on spears (Clovis, Folsom, and Great Basin Stemmed points) (FIGURE 3.3) and limited remains found in caves or on lowland lake features and

Figure 3.3. Paleo-Indian projectile points.

Clovis points (left) and Great Basin Stemmed points (right) were hafted on spears.



terraces. The region appears to have been used for short-term hunting expeditions by groups based outside the Great Basin and many areas received little or no human visitation. Artifact assemblages from this period are characterized by large spear points (FIGURE 3.3), as well as a variety of other tools, including crescents (FIGURE 3.4), graters, scrapers, punches, and flake tools. **Ground stone tools**, used for processing plants and seeds, are largely absent from early Paleo-Indian assemblages. This indicates that big game hunting, not plant harvesting, was the focus of economic activities and suggests these hunting parties were composed only of men. Populations probably lived in small, highly mobile groups and, while they undoubtedly collected plant foods and vegetal materials, there is little evidence suggesting what these were. Settlement appears to have been focused in wetlands and around the margins of lakes. Cordage from Bonneville Estates Rockshelter (northeastern Nevada) indicates that nets were also used for hunting, suggesting small mammals were also taken.

From 10,000-8,000 years ago, Paleo-Indian settlement of the Great Basin intensified, marked by an increase in the number of known sites and their wider distribution. During this time, the pattern of specialized big game hunting by small groups focused on wetland areas gave way to a pattern of procuring a broader variety of resources. Multiple environments were used and the range of plants and animals harvested was diversified, especially along the margins of the remnant Pleistocene lakes and in riverine and marsh areas. The preceding focus on wetlands was broadened to include alluvial fans, terraces, and montane areas, suggesting a broad-spectrum subsistence pattern. Ground stone tools first appear in the archaeological record indicating that processing of hard seeds and plant resources became more significant than in the earliest phases of human settlement. These suggest that women were also part of foraging parties. In hunter-gatherer societies, women largely focus on harvesting and processing plants. This broader economic and settlement pattern developed as an adaptation to warming and drying trends during



Ground stone tools are a type of stone tool formed by grinding or pounding hard materials. The components of ground stone technology are a hand-held stone (or *mano*) used to grind or pound; and a larger stone grinding slab (*metate*) that serves as the surface on which the grinding or pounding is done. Over time, grinding will produce a polish or sheen on the grinding slab; pounding will produce deep holes (mortars). Grinding slabs and mortars can be shaped stones or large boulders and bedrock.

Figure 3.4. Crescent stone tools.

Crescents are a stone tool of unknown purpose that went out of use after 7,000 years ago.

the Early Holocene. But the Great Basin still was not settled year-round and much of the region remained little-used, if at all, by people.

Early Archaic Period (8,000-6,000 years ago)

The Early Archaic broadly corresponds to the Middle Holocene (7,500-4,500 years ago), a period of great aridity, hot temperatures, and significant droughts leading to wetlands contracting and many lakes and marshes drying out. Piñon entered the Great Basin from the south beginning in the Early Holocene around 9,000 years ago, reaching the central Basin around 6,800 years ago and northwestern Utah 7,000 years ago. It did not reach the northwestern Basin until the last 500 years or so. Wherever piñon was abundant, piñon nuts become a dietary staple.

During the Early Archaic, the first substantial human settlement of the Great Basin occurred, although populations were small and not all parts of the region were settled. As formerly large and concentrated resource patches around remnant lakes shrank or disappeared, people shifted to a broader, more diverse range of environmental niches away from the lakes. This meant people had to travel farther and relocate their camps more frequently to effectively exploit resources. The shift may have resulted in more time spent at camps, accompanied by fewer opportunities to exploit distant toolstone sources, such as known obsidian quarries. The archaeological record for the earlier Paleo-Indian period exhibits exotic **toolstones**, transported significant distances from their sources, reinforcing the pattern of high mobility of big-game hunters. This is not seen as vividly in the Early Archaic record. Despite the evidence of greater movement of camps, people lived most of the year in groups of several nuclear families in villages. This pattern reflects reduced residential mobility and greater reliance on logistical camps to bring resources to the group (i.e., groups split into smaller work groups to acquire resources).

During the Early Archaic, evidence of the strong sexual division of labor that characterized later periods is first seen. In hunter-gatherer societies, women tend to focus on gathering plants and hunting small animals in short (less than a day) foraging trips, providing most foods and materials for daily life. The importance of female labor in securing the basic necessities meant that male hunting was subordinated to the need to move to new resource patches for female foraging activities. Men presumably adapted their hunting activities to the women's economy and focused on hunting large game (deer, antelope, and bighorn sheep) for the group. Hunting large game is less

Toolstone is a type of stone that was used to make stone tools. Particularly in the case of obsidian, the location or source of a toolstone can be identified by chemical analysis.



Figure 3.5. Early dart points.

Humboldt concave-base dart points (left) and Northern Side-notched dart points (right).

predictable than foraging for plants and small mammals. But it is a high-yield strategy that, in particular contexts, justifies the risks of an unsuccessful hunt.

The Early Archaic toolkit reflects this shift with the appearance of woven baskets and trays, and the greater frequency of nets, snares, and ground stone tools. Hafted knives, bone awls and needles, and steep-edged scrapers are also common, documenting the importance of tools used for processing animal hides and basketry fibers. The increased prominence of ground stone tools demonstrates the importance of hard seed and plant processing in this period. These technological changes indicate that the groups now living in the Great Basin probably were clusters of family households. A wider variety of projectile point styles appeared during this period including Pinto, Humboldt, and Northern Side-notched varieties (FIGURE 3.5), marking the transition from spears to dart technology hurled by *atlatls*. Larger village sites, many with more substantial dwellings, also appeared in this period.

Despite these changes, populations remained small and most people continued to live in winter residential bases, located along the margins of wetlands and riparian areas. Small groups moved frequently about the landscape within broad territories to forage in resource patches. But at times, logistical expeditions for acquiring toolstone or hunting large game were made by specialized work parties splitting off from the primary economic unit. They based their activities from small, temporary campsites. Important Early Archaic sites include Gatecliff Shelter (central Nevada), with its deep stratigraphic sequence, and O'Malley Shelter (eastern Nevada) (FIGURE 3.1), which were both first used in this period. These sites provided information that refined knowledge of the chronology of human settlement of the Great Basin.

Atlatls are dart throwers. They comprise a dart point hafted to a shaft that is propelled from a longer shaft that has a cup or spur at one end that holds the end of the dart. Atlatls are most efficiently used in close-range hunting and ambushing by groups of hunters.

Figure 3.6. Lovelock wickerware.



Middle Archaic Period (6,000–1,500 years ago)

During the Late Holocene (4,500 years ago to present), precipitation returned to a winter-dominated pattern, with decreased aridity, cooler temperatures and significant alternating wet/dry seasonal cycles about every 1,500 years as wetlands, marshes, and lakes began to assume their modern configurations. Around 2,300 years ago conditions became unstable, with rapid shifts between wet-cold and hot-dry conditions with major droughts. This phase of extreme climactic fluctuations ended around 1,200 years ago.

These generally more favorable conditions compared to the Early Archaic prompted population increase marked by the beginning of intensive use of sites such as South Fork Shelter, Eastgate Cave (central Nevada), and Gypsum Cave (southern Nevada) (FIGURE 3.1), as well as the introduction of Lovelock wickerware basketry (FIGURE 3.6). Lovelock wickerware basketry is restricted to the western Great Basin and was used for a thousand years, from 3,000 to 2,000 years ago. The distinctive way Lovelock wickerware was made allows it to be identified easily. It illustrates that baskets and textiles were important utensils although these do not necessarily survive at most archaeological sites.

Middle Archaic population growth was accompanied by a broadening of the settlement pattern to include environments not used intensively during preceding periods. For the first time, sites are found in upland areas away from lake basins and associated rivers, though lowland springs and cave sites remained important. The increasing number of higher-elevation sites for seasonal hunting and foraging was enabled by the spread of piñon into ecozones that lack evidence of earlier settlement. This shift may be a result, in part, of Middle



Figure 3.7. Elko Series dart points. Elko corner-notched (left) and Elko Eared (right).

Holocene fluctuations in aridity and diminishing lake and marsh resources in basins. Diminishing lowland resources and increasing population may have driven groups to diversify their economic activities by finding other resource niches (less economically attractive in preceding periods) to compensate for the loss of formerly predictable and productive lacustrine (lake) resources.

Technological changes include smaller dart points—Gatecliff Split-stem and Elko Series (FIGURE 3.7)—and an emphasis on making large bifaces from quarried toolstone sources. People began living in more substantial villages—often with multiple house pits, hearths, and food caches—from which smaller foraging parties would range. Bifaces are a good multi-functional tool type, highly transportable, that allowed foraging parties to make tools as required at foraging or hunting locales, rather than relying on finding adequate locally available toolstone to make expedient flake tools (FIGURE 3.8). Bifaces are also consistent with the planning necessary for such a system of logistical foraging to function efficiently.

Late Archaic Period (1,500-700 years ago)

The Late Archaic period coincides with yet another shift in climate to warmer temperatures with greater extremes. This climatic change had a consolidating effect on local populations, evidenced by increasing numbers of residential structures at sites and a greater focus on small game in the lowlands. Economic intensification is inferred from the wider range of resources and environments that were used compared to earlier periods. The density of sites increased dramatically as populations increased and expanded the settled landscape to areas that had previously received small-scale or irregular use. Summer villages

Figure 3.8. Obsidian bifaces.



Figure 3.9. Early arrow points (Rosegate points).



The introduction of bow and arrow technology is marked by the advent of small projectile points that were hafted on to shafts and propelled by bows. Projectiles propelled by bows can travel farther than those propelled by atlatls. The bow and arrow allows more efficient solitary hunting.

The western (Sevier) and eastern branches (San Rafael) of the Fremont culture vary by their degree of reliance on cultivated plants. The Sevier Fremont in central and western Utah and eastern Nevada harvested wild plants more than the San Rafael Fremont in eastern Utah and the Colorado Plateau.

Horticulture relies on cultivating a variety of plants in small plots of mixed crops. In contrast, agriculture is larger in scale and cultivates plants in large fields of single crops.

appeared in uplands and high alpine environments (such as the White Mountains and Alta Toquima) that previously had been used for small hunting camps. At these villages, families camped throughout the summer, hunting game and harvesting root crops. These high-altitude villages illustrate the diverse environments that Great Basin hunting-gathering could adapt to depending on environmental conditions and population pressure. Territoriality probably became more fixed, reducing the size of seasonal ranges and the availability of distant toolstone sources other than by exchange or through extended social networks.

This shift in settlement structure is reflected in changes in technological organization. Stone tool production strategies began to move away from biface technology and the use of quarried toolstone. Instead, stone tool production was based on making simpler flake tools from locally available toolstone sources. Around 1,500 years ago, **bow-and-arrow** hunting technology began replacing the atlatl, resulting in the gradual phasing out of Elko and Gatecliff style points by similar, but smaller, Rosegate corner-notched points by 1,300 years ago (FIGURE 3.9). Plant processing technology became more elaborate and small game was emphasized at the expense of large game. The basketry complex remained relatively unchanged, except for a slight shift in preference for use of one-rod-and-bundle construction techniques. Ceramic technology also appears in the area by around 1,500 years ago and is generally associated with the appearance of Late Archaic Fremont and Late Prehistoric Numic groups.

Formative Period (1,500-700 years ago)

Beginning in the Late Archaic, horticultural adaptations emerged in the eastern Basin and the southwest (FIGURE 3.1). The Fremont culture settled most of Utah and parts of eastern Nevada for a brief period late in prehistory. **Fremont** horticulturalists cultivated maize, beans, and squash (with varying degrees of economic emphasis) while continuing to supplement their diet with hunting and gathering. Maize was first domesticated in Mexico and ca. 4,500 years ago began spreading north, reaching southern Arizona as early as 3,500 years ago. Around 2,500 years ago maize was being farmed by ancestral Puebloan cultures in the Four Corners region of the Southwest.

The Fremont cultural adaptation is closely related to Western Puebloan presence in the southern Great Basin, which has its origins in the ancestral Puebloan cultures of the Southwest. Although the material culture and economic adaptations of Fremont and Western Puebloan are similar, there are sufficient differences to suggest that Fremont is not simply an eastern



Figure 3.10. Fremont anthropomorphic pictographs, southeastern Nevada.

expansion of Western Puebloan. For example, Western Puebloan is defined by material culture traits such as longer use of the atlatl, sandals, distinct textiles types, and a greater reliance on maize cultivation, all contrasting with the Fremont culture. Western Puebloan peoples lived in small sedentary communities that practiced small-scale irrigation using diversion channels. Their villages comprised semi-subterranean pit-houses that had external slab-lined storage bins. Over time, these structures became adobe surface structures built in contiguous alignments, as at Lost City, southern Nevada (FIGURE 3.1). Western Puebloan ceramics include grayware, corrugated vessels, and black-on-gray wares that were decorated with designs from the ancestral Puebloan core territory in the Southwest.

The Fremont lived in permanent or semi-permanent villages, had semi-subterranean pithouses, used stone and adobe surface storage structures, and built granaries in defensive positions high on cliff faces. Fremont material culture includes distinctive one-rod-and-bundle basketry, split-twig figurines, grayware pottery, triangular-bodied *anthropomorphs*, moccasins, and “Utah” trough milling stones (FIGURE 3.10). As the Fremont and other groups in this period shifted from atlatl-and-dart to bow and arrow hunting, large dart points were replaced with smaller, lighter arrow points such as Rosegate, Bull Creek, Parowan Basal-notched, and Bear River Side-notched.

The Fremont had a frontier presence in eastern Nevada, evidenced by rockshelter deposits, or surface ceramic scatters at short-term camps or limited activity areas, and rock art. The only Fremont villages in Nevada are the Baker Village site (FIGURE 3.1) and suspected villages in the Franklin Marshes. However, seasonal upland camps have been recorded elsewhere in eastern Nevada, suggesting the Fremont made expeditions to gather specialized resources or possibly were scouting suitable locations for future expansion of their settlements.

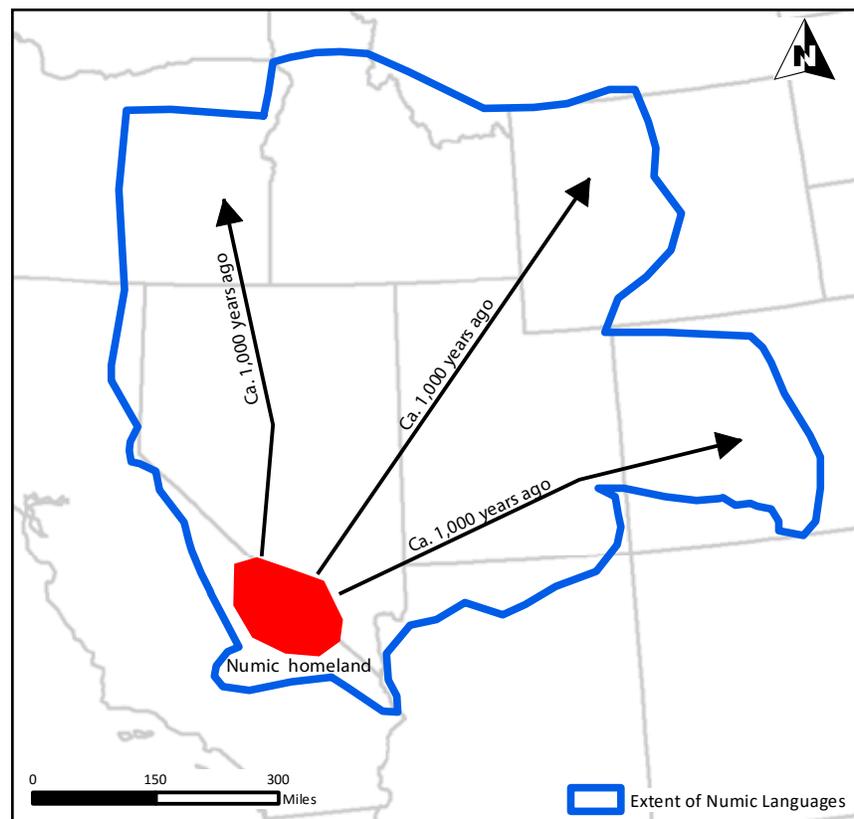
Fremont rock art anthropomorphs are discussed in *5§ Prehistoric Rock Art*.

Both Fremont and Western Puebloan adaptations in the Great Basin ended around 700 years ago for reasons that are not well understood. Climate changes likely made reliance on horticulture and permanent village sites (always a marginal adaptation) no longer sustainable. Fremont and Western Puebloan economic systems were supplanted by Late Prehistoric hunter-forager groups who display striking discontinuities in material culture and economic practices. The architecture, masonry, basketry, and burials of these horticultural groups are distinctive from those of the Numic groups, who historically settled the eastern and southern Great Basin and relied on the harvesting of wild resources.

Late Prehistoric Period (700 years ago to Contact)

Around 1,000-700 years ago peoples ancestral to modern Great Basin Native Americans appear to have migrated from a Death Valley or western Basin “homeland” and spread north and east throughout the Great Basin (FIGURE 3.11; see also 4§ *The Ethnographic Great Basin*). Identifying such a migration through archaeology is hampered by the difficulty in distinguishing the material culture of Numic peoples from that of preceding Late Archaic groups. The different material cultures, settlement patterns, settlement architecture, and economic focus of Fremont and ancestral Puebloan groups compared with Late Prehistoric hunter-foragers are relatively easy to discern. The replacement

Figure 3.11. Map showing the traditional archaeological view of a Numic dispersal from a homeland in the southwestern Basin.



of these semi-horticultural economies by hunter-forager ones was one of the original strands of evidence archaeologists used to infer a Basin-wide Late Prehistoric population replacement. But discriminating between Numic and Late Archaic hunter-forager material cultures has proved very difficult. The one obvious technological change (adoption of the bow and arrow) happened long before or long afterward (depending on whether archaeologists date the Numic dispersal to around 5,000 years ago or 1,000 years ago) and its spread is unrelated to population movements. The idea of population movement is largely based on studies of Great Basin languages.

All Great Basin languages but one (Washoe) belong to Numic, the most northerly branch of the Uto-Aztecan language family (See 4§ *The Ethnographic Great Basin*). The dispersal of this language family into the Great Basin and beyond into the Plateau and the fringes of the Plains has been dated by archaeologists to two very different periods. Some archaeologists suggest that the Numic settlement of the western Great Basin has considerable antiquity (at least 5,000 years ago) with a late expansion eastwards. The mobile lifeway of the Numic hunter-gatherers was suited to the dry conditions of the central Great Basin, but not the moister conditions that prevailed in parts of Utah and the southwest. With the dry climactic interval around 800-700 years ago, sedentary, semi-agricultural populations could no longer be supported in the eastern and southwestern Basin, leading to the Fremont and Western Puebloan retreat. The void they left was filled by an eastern expansion of the Numic in the Late Prehistoric period.

Other archaeologists, in contrast, believe that the Numic settled throughout the Great Basin beginning around 1,000-700 years ago. They argue that the use of pottery and distinctive small arrow points (Desert Side-notched points) (FIGURE 3.12) are evidence of a Late Prehistoric northern and eastern expansion of Numic peoples into the Great Basin. In addition, references to population movements can be found in some Numic mythologies. One Northern Paiute myth relates that the early Paiute drove off a preceding group in western Nevada. A Southern Paiute myth recognizes an earlier settlement by the “Mukwic” or “Moqui” who are thought to be responsible for pictographs in the area. Some archaeologists believe that such myths provide plausible evidence of Late Prehistoric population movements north and east from the southwestern Great Basin, as these would have taken place late in time to still be present in oral traditions. However, other bodies of traditional knowledge insist that Numic groups have lived in the Great Basin from the beginning of time.

Figure 3.12. Late prehistoric arrow points (Desert Side-notched).



Regardless of the timing, Numic cultures were among the last in North America to face Euro-American colonization. The story of how they made a living in the Great Basin can be told in much greater detail than that of prehistoric hunter-gatherers. Theirs is the story of the next section.

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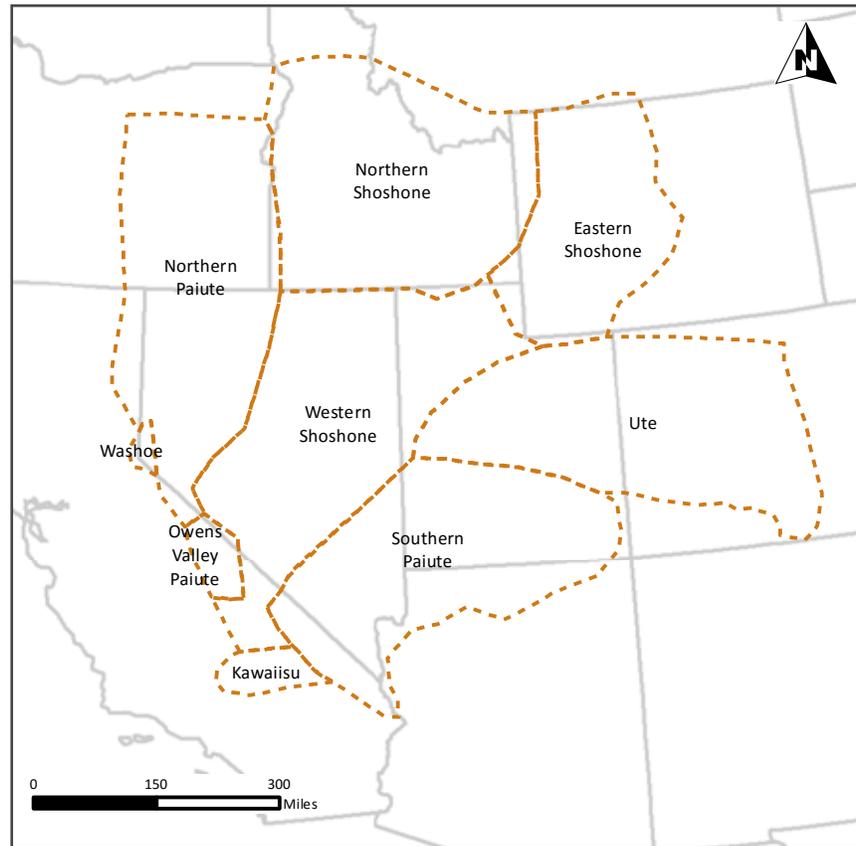
4 § THE ETHNOGRAPHIC GREAT BASIN

Archaeologists theorize that the ancestors of modern Great Basin Native Americans migrated from a homeland in Death Valley or the western Great Basin around 1,000-700 years ago or 5,000 years ago (see page 28). The idea of this population movement is largely based on studies of Great Basin languages, which (with one exception) belong to the most northerly branch of the Uto-Aztecan language family, called Numic (FIGURE 4.1). However, modern Native Americans believe that their ancestors lived in the Great Basin since the beginning of time, citing their traditional narratives and the strong cultural meanings the land has for them. The Great Basin was one of the last areas of North America to be intensively settled by Euro-Americans. The Great Basin is perhaps the last region where traditional Native American ways of living could be observed.

By the 1700s, European influences were beginning to be felt in the Great Basin. Spanish explorers and missionaries recorded the earliest European encounters with Great Basin cultures in 1776, followed in the 1800s-1840s by trappers and famous explorers such as Merriwether Lewis, William Clark, and John C. Frémont. These various expeditions opened up overland travel routes across the Great Basin to California that were used by Euro-American emigrants trying to resettle in the west. The California Gold Rush (1848-1855) stimulated a wave of emigrants crossing the region heading west (in 1849 some 300,000 miners reached California either by boat or via overland routes). The biggest influx of Euro-Americans into the Great Basin happened following the discovery of silver on the Comstock lode (Virginia City, Nevada), which was made public in 1859.

Two separate Spanish expeditions, one led by de Anza and Garcés and the other by Domínguez and Escalante, passed through the southern tip of the Great Basin in California and southern Utah. Escalante's journal recorded aspects of Ute and Southern Paiute culture. Lewis and Clark's 1804-1806 expedition to explore the lands of the Louisiana Purchase (1803) and find a route across the western half of the continent encountered the Northern Shoshone people in 1805. From the 1810s through the 1840s, trappers and explorers encountered the Northern Paiute, Ute, Bannock, and Western Shoshone. In the 1840s, John C. Frémont's expeditions explored Utah, Nevada, and eastern California, establishing that the eastern and western halves of the continent were not connected by a waterway as popular belief had it.

Figure 4.1. Map of the historic boundaries of Great Basin peoples. (All boundaries are approximate)



The North American horse became extinct at the end of the Late Pleistocene and was re-introduced to North America by the Spanish. On the Plains, adoption of the horse in the seventeenth century led to a relatively short-lived but dramatic period of equestrian culture. The horse allowed Plains Indian peoples to rely on buffalo hunting by leading a very mobile way of life. Buffalo provided meat, hides, and a wealth of resources. The horse also allowed for more raiding against competing tribes on the Plains, fostering the development of militaristic societies among young men who sought horses and accolades of bravery and daring.

Native Americans were affected by Euro-American encroachment long before the first European explorer actually entered the Great Basin. Once Europeans entered North America, disease, trade goods, and social disruption swept across the continent via trade routes and aboriginal trails. Not all changes were so destructive. The introduction of the *horse* was perceived by Native Americans as a tremendous boon. It was adopted by some Great Basin peoples from other Native American groups on the Plains and in the Southwest during the late eighteenth century. This led peoples such as the Eastern Shoshone, Bannock, Ute and Northern Shoshone to focus on buffalo hunting, traveling farther than possible by foot and introducing them to outside cultural influences. They became more stratified in social organization as leadership positions developed that better served the hunting and raiding activities facilitated by horses. But the discovery of precious minerals in California and the Great Basin (and the ensuing rush of Euro-American emigrants) was the greatest agent of change for traditional Native American cultures.

Intensive Euro-American colonization of the Great Basin meant that by the 1870s it was no longer possible for most Native American peoples to depend on a traditional way of life. The plants and animals upon which they relied were

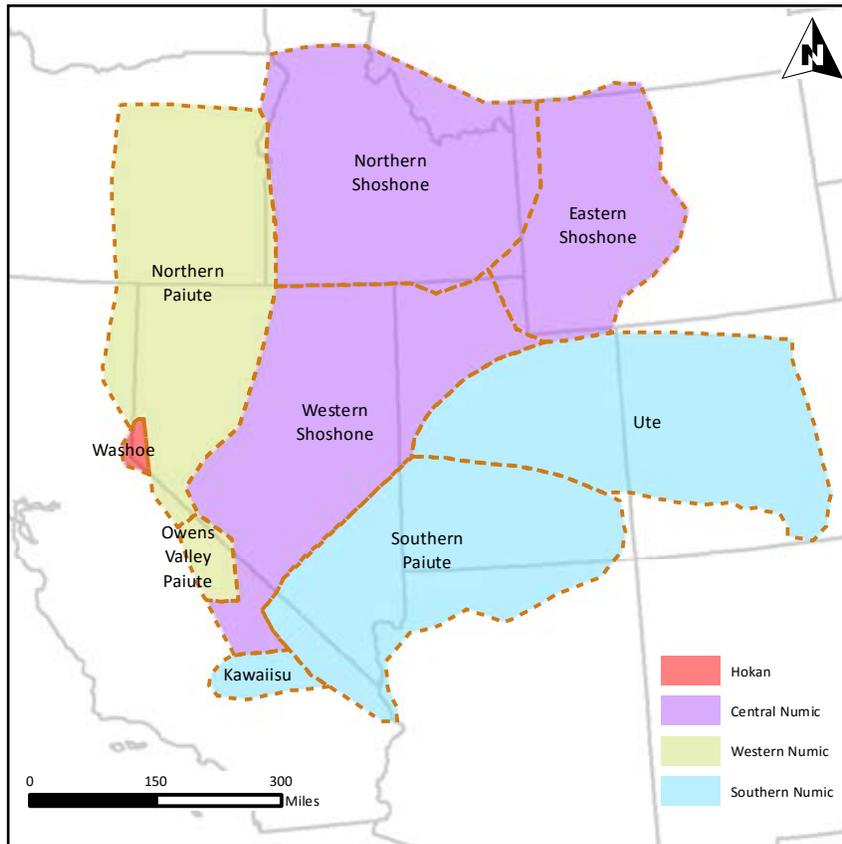


Figure 4.2. Map of Great Basin languages.
(All boundaries are approximate)

depleted by the competing needs of Euro-American settlers. One dramatic example is the Comstock mining boom that brought an estimated 20,000 people into western Nevada. By 1860, the agriculture that developed in Carson Valley to support mining on the Comstock lode was farming 5,000 acres of land and pasturing 10,000 head of cattle, horses, sheep, and hogs, with subsequent overgrazing. Commercial fishing at Lake Tahoe was so exhaustive that a ban on fishing was enacted by 1880. Mining also resulted in extensive deforestation of large areas around major mining towns, as vast quantities of timber were needed for construction and charcoal production (to fuel smelters). By 1875, most Great Basin peoples had been forcibly resettled on reservations or dependent satellite “colonies” next to American settlements.

Great Basin Languages and Territories

The languages spoken by Great Basin peoples are grouped into families based on shared characteristics in vocabulary and grammar. All Great Basin languages, with the exception of Washoe, belong to the Uto-Aztecan family (FIGURE 4.2), a vast language family that extends, relevant to the Great Basin, from southern Idaho to southern California. The northernmost branch of the Uto-Aztecan language family is

The Great Basin was acquired for the United States by the 1848 Treaty of Guadalupe Hidalgo, which ended the Mexican-American War of 1846-1848. Mexico ceded most of its territories in the American West and Southwest. The United States organized this acquisition as territories as the prelude to statehood. On being organized as a territory, the federal government regulated relations with Native Americans in that area. Federal policy was that Native Americans were to be removed (alienated) from their lands and resettled on reservations where they would acquire the agricultural skills to become self-sufficient citizens.

Numic, divided into Western, Central, and Southern branches. Washoe is tentatively classified as belonging to the Hokan language family.

Dialectical variation among speakers of a common language provides an indication of how long a language has been spoken in a particular area. The concentration of dialectical differentiation in small areas is thought to indicate a longer tenure for those languages and people, a line of evidence that was used by archaeologists in tracking the Numic spread. Correspondingly, large areas with minimal dialectical differences are thought to be relatively younger. The Northern Paiute, Shoshone, and Ute languages cover greater areas with significantly less dialectical diversity, suggesting a more recent tenure.

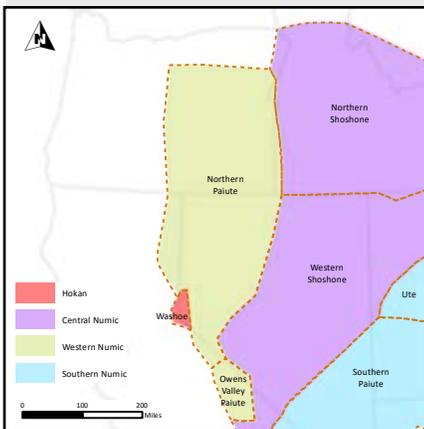
Western Numic

Western Numic comprises the Northern Paiute and Mono languages. Northern Paiute is spoken by the Northern Paiute people of northwestern Nevada and southern Oregon, and the Bannock tribe in Idaho. There is minimal dialectical variation within the language, which covers a very large area. The Northern Paiute people led a traditional Great Basin hunter-gatherer way of life and their territory encompassed approximately 70,000 square miles (FIGURE 4.2). The Bannock spoke the same language but followed a way of life different from a traditional Great Basin hunter-gatherer. Their way of life was similar to that of the Eastern and Northern Shoshone, being oriented to buffalo hunting and the Plains horse-culture following their exposure to Plains peoples during the eighteenth century.

Mono was spoken by the Owens Valley Paiute people who lived in the rich Owens River Valley and other well-watered valleys along the eastern flank of the Sierra Nevada and the western flank of the Inyo and White Mountains (FIGURE 4.2). The Owens Valley Paiute are culturally similar to the Northern Paiute but their economy incorporated the irrigation of wild root crops. This allowed more permanent camps that were seasonally settled by the same family households. One of the effects of the more sedentary way of life followed by the Owens Valley Paiute was the fostering of greater dialectical diversity.

Central Numic

Central Numic comprises the Shoshone, Panamint, and Comanche languages. The Comanche people were originally a Great Basin people speaking a dialect of Shoshone. Until 1700, they lived in the Green River region of Wyoming adjacent to other Shoshone peoples. Some time after 1700 they adopted the



horse and moved into the southern Plains, following the buffalo. It was after this separation that the Comanche language changed from a dialect of Shoshone to a separate language.

The Shoshone language, like Northern Paiute, is spread across a large geographical region of the central and northern Great Basin (but east of the Northern Paiute area). The Shoshone people were divided into the Eastern Shoshone of western Wyoming; the Western Shoshone of eastern Nevada and northwestern Utah; and the Northern Shoshone of Idaho (FIGURE 4.2). There is little dialectical differentiation in the language, reflecting the Shoshone peoples' high degree of mobility. The Western Shoshone followed a traditional Great Basin hunter-gatherer way of life, while the Eastern and Northern Shoshone adopted Plains horse-culture and hunted buffalo.

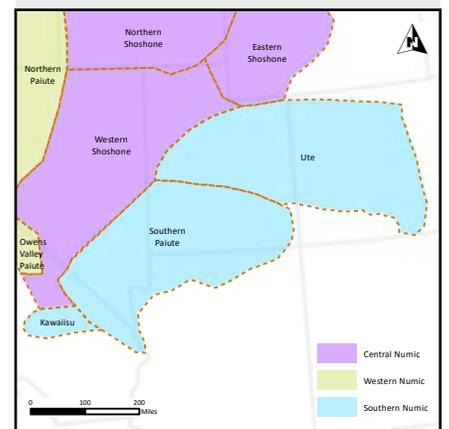
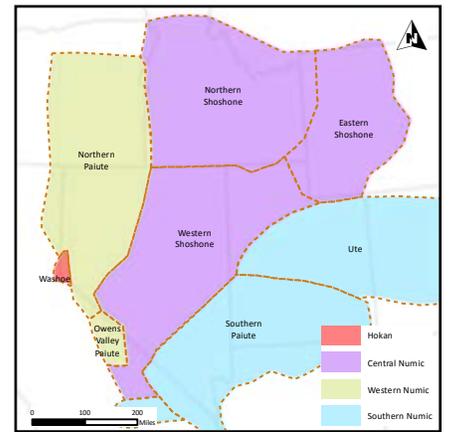
Panamint is spoken by the Panamint Shoshone people of Death Valley, who, like Mono speakers, settled a smaller area with resulting greater dialectical diversity and presumably greater time of tenure. Culturally, the Panamint are considered to be part of the Western Shoshone tradition, but the Panamint Shoshone people lived in Death Valley, an even harsher environment than the Great Basin, and incorporated the mesquite bean as a staple to their diet. The Panamint Shoshone occupied the northern end of Death Valley, whereas the Kawaiisu people occupied the southern end.

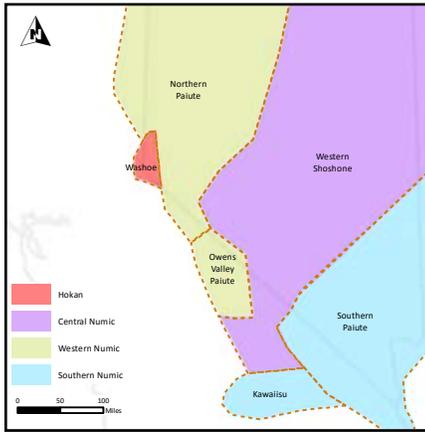
Southern Numic

Southern Numic comprises Ute and Kawaiisu. The Southern Paiute and Ute people speak Ute, and the Kawaiisu people, whose home is in the extreme southwestern corner of the geographic range of Southern Numic, speak Kawaiisu.

The Southern Paiute people included, at the time of contact, 16 identifiable bands that inhabited lands across southern Utah, southern Nevada, and into the eastern Mojave desert of California (FIGURE 4.2). Only one Southern Paiute band, the San Juan people, had lands south and east of the Colorado River.

Prior to the arrival of Spanish explorers, Ute territory extended more than 130,000 square miles across eastern Utah and western Colorado (FIGURE 4.2). The eastern Ute people lived as far east as the Rocky Mountains, while the western Ute lived as far west as the Wasatch Mountains. The Wasatch Range separates the hydrographic Great Basin from the Colorado Plateau.





Kawaiisu territory covered both sides of the south end of the Sierra Nevada watershed, with the core area in eastern California (FIGURE 4.2). Both California and the Great Basin culture provinces influenced Kawaiisu cultural patterns.

Hokan

The Washoe people speak a language that is not part of the Uto-Aztecan language family, and is unrelated to the Maiduan and Miwokan languages of their California neighbors. Washoe also does not have a universally accepted relationship with any other language but is tentatively grouped with the Hokan language family, which is represented by 13 branches in California and the southwest, with an outlier in southern Mexico. Washoe is a language isolate with minimal dialectical diversification that is thought to have long been in approximately the same area in which it is now found. This is evidenced by a residue of unanalyzable place names and of apparent older loanwords from surrounding language stocks.

Culturally, the Washoe have much in common with their Great Basin neighbors but were also influenced by neighboring California cultures. They benefited from certain environmental advantages as a result of their location on the far western edges of the Great Basin and the northern Sierra Nevada (FIGURE 4.2). Washoe lands originally covered almost 4,000 square miles of core territory within a larger extended range of 10,000 square miles. Today, Tribal trust lands comprise approximately 6,000 acres.

Tribal Names

The *names* by which Great Basin peoples are known are generally not the names they called themselves. Only the name of the Washoe is derived from a self-referent, *wá-š'w*, that possibly means “people from here.” All other Great Basin peoples referred to themselves by their name for “the people” or “person,” from which the name Numic is derived.

Other than the Washoe, the names Great Basin peoples are known by are names applied to them by other Native American groups or Euro-Americans. The name “Paiute” was originally only applied to the Southern Paiute and may have been derived from a Hispanicized Native American name for a neighboring group. Likewise, the Kawaiisu are known by the name used by a neighboring Californian people to identify them. The name Ute comes from a shortening of the English word Utah, which is a borrowing from Spanish *yuta*. The Spanish most likely adopted

The Northern Paiute identified themselves as “the people” (*nimi*) from which the Numic language family is named. Likewise, the Ute referred to themselves as *nú-čí* (“person”) or *nú-číu* (“people”); the Southern Paiute called themselves *niminci* (“person”); the Eastern, Western, and Northern Shoshone referred to themselves as *nimi* (“person”) or *níwí* (“people”); the Owens Valley Paiute called themselves *nimi* (“person” or “the people”); and the Kawaiisu self-identified as *níwí* (“person”) and *níwíwí* (“people”).

the name from other Native Americans, but its origin is not for certain. Several neighboring languages have variations of *yuta*, and most likely one of them is the origin of the term.

The name Shoshone was first applied to the Eastern Shoshone early in the nineteenth century and extended to the Western and Northern Shoshone as the cultural affinity of these peoples became better known. The Eastern and Northern Shoshone were usually referred to by outsiders as either Shoshone or Snake people (of Snake River). Their horse-riding cultures were used by outsiders to distinguish them from the related foot-traveling Western Shoshone, called Shoshoko, Walkers, Root-Diggers or Diggers.

Great Basin peoples tended to self-identify with subgroups composed of a small number of family households or a larger seasonal village-based group. These subgroups were **named** after geographic features, distinctive plant or animal resources, or lifestyle, and were associated with generalized territories. Naming subgroups often followed identifiable patterns. Among the Northern Paiute, subgroup names were compounds that referred to foods or geographic features. These group names were flexible, however, and did not exclusively identify social units. For example, Western Shoshone families were generally identified with loosely defined named districts over which they maintained use-rights to its resources and controlled access. However, Western Shoshone people maintained extensive kinship and sharing connections outside their home districts, providing access to exotic goods and a safety net during times of need.

Kinship

The general pattern of family life was centered on the nuclear family (a man, woman, and their children) that flexibly expanded to include grandparents, uncles, aunts, and other relatives, for economic and social purposes. Individual family households formed the main economic unit, but families lived in camps with a small number of related households for much of the year for economic co-operation. These household clusters were largely economically self-sufficient and socially and politically independent. Relatives on both the father's and mother's side were recognized (i.e., **bilateral kinship**).

However, household membership was fluid, as a person could abandon one group and join another. Divorce was relatively common and obtained informally by one of the spouses choosing to leave the household. Household groupings could also expel or recruit members. While this flexibility to leave and attach to another group was available in principle,

Northern Paiute examples include the Trout-eaters (*agaidikadi*) or Red Butte-dwellers (*acakudakwa tibiwaga?u*). Likewise, the Shoshone-Bannock people named groups according to resource: the Groundhog-eaters of the Boise region; the Salmon-eaters of the Snake River; and the Mountain Sheep-eaters of the Sawtooth Mountains. The Washoe distinguished northerners (*welmelti?*), valley dwellers (*pa-wa?lu?*), and southerners (*hajaletti?*) and possibly easterners and westerners as relative identifications from the perspective of one's winter village location.

Specialized characters, such as *i* and *ʔ* represent sounds in Great Basin languages that have no equivalent in English. These two symbols are known, respectively, as the barred *i* and the glottal stop.

Under bilateral kinship, relatives are recognized from both the mother and father's side. Other kinship systems may only recognize one side of an individual's relatives. Matrilineal systems recognize descent only through the mother's side. Patrilineal systems recognize descent only through the father's side.

The sexual division of labor describes how different tasks are allocated according to sex. In general terms, in the Great Basin, men hunted and women gathered plant resources.

Polygamy is the practice of having more than one spouse at the same time. Polyandry is the practice of having multiple husbands. Fraternal polyandry refers to the practice of marrying brothers.

Polygyny is the practice of having several wives at the same time. Sororal polygyny refers to the practice of marrying sisters.

most people lived their lives in one or two groups, usually the group into which they were born or the group into which they married. Also, although divorce was common, the institution of marriage and the nuclear family still formed the center of social life. Divorced individuals quickly formed new unions due to the economic dependence of spouses upon each other.

The economic interdependence of married couples is reflected in the *sexual division of labor*, where men largely focused on hunting and women on gathering seeds and other plant resources. Men and women worked together at certain times in collecting plants or in communal game drives. When in camp, men helped women gather and process plant foods: while gathering plants, women also took fish and set traps to hunt small game. Both men and women worked hides and made rabbit-skin blankets. In net making, women made the cordage while men knotted the net. Men were chiefly responsible for making hunting equipment, while women usually made baskets, sewed, and made handicrafts. Men's and women's activities were complementary to the economy of the family household and supplemented by the household cluster.

Although the relationship between men and women was generally egalitarian, there were exceptions. Among the Eastern Shoshone, women were socially subordinated to men and younger women were married to older men, often as one of several wives. With age, however, women had more opportunities for self-direction and could garner status from their abilities to cure, act as a midwife, or from luck in gaming, at least until their husband died. With widowhood came dispossession of goods, leaving widows dependent on extended family. This reflects the more structured political organization of the equestrian Eastern Shoshone, with more strongly developed leadership roles for warfare, self-defense, and organizing the buffalo hunt.

Polygamy (having multiple spouses) was sometimes practiced. Among the Southern Paiute instances of multiple wives and even multiple husbands was known. Western Shoshone men could take more than one wife if they could support them through their hunting activities. Overall, the general pattern was of monogamous marriages that were consensually entered into even if they were suggested or arranged by relatives.

Villages

The size of household clusters and their composition varied according to seasonal movements to gather resources or hunt. Larger aggregations of household clusters (directly related

or distantly related) formed villages in the winter; during the spring through the fall, these villages or large household clusters would disperse into groups of 2-3 household units for hunting and foraging. Village membership was oriented around kinship, but that was not required and visitors were welcome. A headman advised the winter camp, based on his wisdom and success, like the summer camp.

Periodically, various villages or households from different villages gathered for specific events, such as dances, communal hunts, social gatherings, or other activities. These events, which could last several weeks, were organized and managed by temporary leaders with a reputation for conducting successful events. At larger events, village headmen talked together and assisted the event leader by exhorting their people to behave, have a good time, cook for everyone, and help with communal activity.

These larger gatherings did not constitute a “tribe” in the sense understood by Euro-Americans. The identification of tribes arose from the Euro-American need for a person or council to represent an entire “people” so that treaties and other political interactions could be handled. Before Euro-American exploration and colonization, there were no permanently constituted groups above the village level.

Economy

Great Basin peoples generally lived as hunter-gatherers making seasonal movements to harvest a broad range of resources by foraging, hunting, and fishing. Specific resources were focused on according to their environmental availability. The seasonal round was chosen by Great Basin peoples as the most efficient way of harvesting food resources and provisioning the technology and material culture (tools, clothing, shelter, etc.) by which people adapted to seasonally changing environmental conditions and features. The general pattern was of mobile family households living on a broad range of plants and animals during the spring through fall, storing piñon nuts and seeds for the winter when people joined villages composed of numerous households. Cultural rules on sharing (reciprocity) helped reduce long-term risk by establishing exchange networks that allowed households to give surplus resources to others and call in favors in times of need.

The general Great Basin hunter-gatherer economic pattern was one where plants were the major food source, supplemented by large and small mammals and fish in riparian areas. Piñon nuts, seeds, and grasses were gathered, and birds, bighorn sheep, antelope, mule deer, jackrabbits, cottontail rabbits,

The Northern Paiute are representative of this general settlement pattern. People lived mostly in small family camps (called *nogadi* or “a place to sit”) that were moved as necessary to take advantage of seasonally available plants and animals. These camps were advised by a headman (an older man) on what resources to harvest and the timing of camp movements. During the winter, people lived in large groups composed of several family household clusters or villages, known as *nonobia?a* or “neighbors together.”

Caches are collections of valuable items that are hidden or stored for retrieval at a future date.

Camas is in the lily family and has blue or purple flowers. Its bulb was roasted and eaten. When dried, the bulb could be ground into a flour.

Wickiup is a term that originated with the Algonquian Tribes, but has been used to describe the conical brush structures built by many Native American groups.

pocket gophers, and ground squirrels were hunted. Fish were an important food in well-watered areas and people traveled great distances to fish. Piñon cones were stored in *caches* near winter villages to get families through the lean winter.

Environmental manipulation or management was practiced by some groups to increase yields of important wild plants. The Owens Valley Paiute dammed and diverted streams by digging feeder ditches to flood low-lying meadows along the river and creek banks where root plants occurred. This increased the yield of wild hyacinth, nutgrass, and spikerush, which were favored plants. Irrigation required the co-operation of several family households and represented a more communal organization than typical for Great Basin people. The Southern Paiute people also dug irrigation ditches to water garden plots used to cultivate corn and squash. This garden horticulture supplemented their more regular hunter-gatherer activities and was most likely introduced from the Pueblo people to the Southwest a few decades before the arrival of the Spanish. Other forms of environmental manipulation included setting fires to burn land to increase plant yields and pruning, particularly native tobacco.

The main exceptions to this general pattern are those Great Basin peoples whose economies were focused on buffalo hunting. The Eastern Shoshone were most reliant on buffalo for food and as a source of hides and leather. Horses were essential in hunting buffalo, allowing people to follow the seasonal movements of buffalo herds and in the actual hunt itself. Although the seasonal rounds focused on buffalo, other large game (deer, elk, and mountain sheep) and small mammals (marmots, rabbits, and beaver) were also hunted. Fish, seeds, greens, berries, and roots were also important parts of the diet. Among the Northern Shoshone and Bannock, buffalo hunting was supplemented by salmon fishing, hunting large game, and gathering berries, seeds, and roots. Along the southern portion of the Shoshone-Bannock region, people also focused on typical Basin resources, like the piñon nut. Once the northern extent of piñon was reached, *camas*, a plant with a carbohydrate-rich bulb that forms vast “camas prairies,” became a principal resource (FIGURE 4.3).

Housing

Dwelling structures were largely variations on conical brush structures (*wickiups*) but varied according to season and the degree of Plains influences. Winter houses were conical or dome-shaped structures with a framework made of poles that was covered by bark, grass, tule, or mats. These had a smoke hole and the entrance faced away from prevailing winds. Variations on this general pattern are Washoe winter houses that had a central fire pit lined by rocks and Western Shoshone



Figure 4.3. Camas prairie.

huts that were sometimes surrounded by a tier of stone to keep the supports firmly planted. These winter houses were typically left during the summer for shades or brush windbreaks or, in the case of the Southern Paiute, caves and rockshelters. Plains-style teepees (covered by hides) were used by Eastern Shoshone, Bannock, and Northern Shoshone groups that were most strongly tied to horse culture and buffalo hunting (e.g., the Fort Hall and Lehmi peoples), but some subgroups continued to use traditional Basin-style conical brush structures. Similarly, the Ute used traditional wickiups until after adopting the horse when teepees came into use.

Material Culture

Baskets were widely used for containers, gathering trays, seed harvesting, and cooking. Pitch was applied to the interior of baskets intended to be used as water containers to make them watertight. With the spread and adoption of equestrianism, rawhide containers became increasingly common among peoples such as the Northern Shoshone and Bannock. Utilitarian pottery was made by the Southern Paiute, Owens Valley Paiute, the Western Shoshone, and some Kawaiisu and Ute groups.

A long hooked pole was often used to gather piñon nuts by pulling down the cones. A digging stick was used to gather root crops. Seeds were usually knocked loose from their host plant by a wrapped stick or seed beater. These were then threshed by sticks or wooden paddles. Small seeds might be roasted on parching trays and then winnowed to remove the chaff. Shaped stone slabs and bowls were used for processing a variety of

hard seeds and roots by grinding them with a smooth hand-held stone. Stone mortars and pestles were also used for pounding nuts, seeds, and other resources.

Arrow points were traditionally made of obsidian or chert but metal and glass were also used after Euro-American contact. Bows were made of wood, though sometimes bighorn sheep and elk horns were also used (Northern Shoshone and Bannock), and backed with sinew. Leather shields were made by groups associated with equestrian culture (Eastern Shoshone). Nets were widely used for hunting and trapping small game and fishing.

Clothing was made from a variety of materials, including tule, animal skins, and buffalo hides and leather. The equestrian Northern Shoshone-Bannock, Eastern Shoshone and Ute wore buffalo robes, dressed elk skins, leggings, and breechclouts, and moccasins of elk, deer or buffalo hide. Ute buckskin in general was considered to be very fine and an important trade item. Plains-style feather headdresses were found among groups strongly tied culturally with the Plains and Plateau. The Southern Paiute people began to wear poncho-like shirts for men and skin capes for both sexes once Plains influences reached their lands. Fringed shirts, leggings, and full length dresses for women were adopted by the mid-nineteenth century.

Among the Northern Paiute, Southern Paiute, Western Shoshone, Western Ute, and Washoe people, dress included woven fiber breechclouts and aprons, and robes of rabbit and other small mammals during colder months. Animal-skin caps, textile caps, sandals, and moccasins, along with body adornment such as piercing, tattooing, and face and body painting, were varyingly used among groups.

Political Organization

Political organization and group leadership beyond the family depended on the need for cooperation and management of specific activities. A household head led the family in daily activities and represented the family in winter villages and at other multi-family activities. The oldest or most experienced household head directed activities when several families informally worked or camped together. His authority rested on willing deference by other household heads.

The winter camp or village consisted of a group of up to 20 related households. Within a named foraging territory, village families tended to travel together and camp near each other. Village members shared resources and defended each other from external threats. A village head's authority was normally limited to specific activities—hunts, dances, wars, and ceremonies—

at specific places and times. However, a leader's continuing success and longevity in office could lead to an expansion of his or her advice and counsel beyond a specific activity or group. Village heads could use larger gatherings to manage inter-village relationships by persuasion. Political alliances were fluid and the authority of recognized leaders was not hereditary. "Chiefs," in the western sense of political leaders who exerted political authority over a regional grouping, did not exist until late after Euro-American contact. Only the Kawaiisu incorporated a chief (male), who was recognized on a local level. He was a person who displayed wealth and generosity, as local chiefs sponsored celebrations and were expected to be lavish hosts. Hereditary succession was not practiced and personal qualities and achievements of chiefly candidates decided succession.

The principal exceptions to this general pattern of consensual group leadership and egalitarianism are Great Basin peoples, particularly the Eastern Shoshone, who were influenced by Plains culture. Here, political organization was much more structured and stratified. This was the result of life on the Plains and the need for larger numbers of people to hunt and process buffalo, as well as for self-defense and offense against Plains and other tribes. Eastern Shoshone tribal leaders, winter-band leaders, and military societies helped to organize hunting, defense, and the Sun Dance. These *positions* were marked by differential wealth, housing, and clothing. Shamans, midwives, runners, gamblers, hunters, and traders all had specialized roles and access to greater wealth. Individuals of higher status were considered to have greater access to supernatural power. Although Plains-influenced cultures were more stratified than other Great Basin peoples, social status was determined by personal achievements rather than inherited. These elevated statuses were all marked linguistically.

The Eastern Shoshone also had social practices that placed constraints on social stratification. High status was dependent on the acquisition of supernatural power, obtained through a vision quest or dream, not something easily accomplished. Proof of such power had to be demonstrated in action, not just in speech. Generosity was still a cultural norm. Death required destruction or abandonment of property, which limited the accumulation of wealth through inheritance, but also left widows vulnerable.

The Northern Shoshone and Bannock, despite also following a Plains lifestyle, were more Great Basin in political organization. They had minimal political centralization and preferred the flexibility of individual autonomy. But the needs of organizing buffalo hunts created greater stratification periodically. "Chiefs" were needed to organize the hunt and

Among the Eastern Shoshone, a chief was called *te-kwahni* (from *te-kwa*, meaning to talk, to order), a trading partner was *tattakanti*, a servant or slave (captured enemies) was *titewappi*, and a shaman was *pohakanti*; rich was differentiated linguistically from poor: *canahkanti* versus *tittannahkanti* (*~kanti* meaning "to have").

maintain order among the hunting party, but their functions were limited to the hunt. These hunting bands were seasonal and dispersed once the hunt was over. For most of the year, people lived a more traditional Great Basin social order, with political authority resting with band councils. Hostilities with other tribes (particularly the Blackfeet) also created periodic needs for leaders (“chiefs”) to organize war parties for self-defense.

Group Relations

The generalized pattern for Great Basin people was to have relatively peaceful relations with neighbors, reinforced through marriage and trade, resulting in sharing of traits and language along transitional zones of territory. Conflicts were not unknown, but were small in scale and limited.

In groups along the northern, eastern, and southern peripheries of the Great Basin, interactions with other groups had the potential for conflict, particularly after the adoption of the horse by the Utes, Comanches, and Northern Shoshone. The Western Shoshone and Southern Paiute peoples only became wary of the Utes after the latter began raiding for slaves. In turn, the Ute people were pressured by mounted tribes to the east and north. The Northern Shoshone and Bannock people were threatened by the mounted Blackfeet and aligned with the Flathead and Nez Perce peoples for protection.

Religion

The world was created by mythic animal figures, who talked and acted like humans, in the time When Animals were People. These mythic beings had supernatural power but also retained certain attributes of their animal form. The actions of these animal progenitors shaped most of the physical features of the environment and reality. Creation myths focused on water as the primal element from which land and vegetation were rescued or created through the actions of mythic ancestors building the new land and populating the world with people. Wolf and Coyote are the most prominent of these beings. Wolf was wise and caring and created the earth and the heavens. His brother Coyote, the most notorious of mythic characters, was clever, hungry, and full of tricks. It was Coyote who introduced death to the world. The mythic time of Wolf and Coyote and other progenitors came to an end as a consequence of Coyote’s mischief. These beliefs demonstrate a recognition of causal events and a belief in logical sequence. They were based on a complex history of actors and events to account for all aspects of people and nature. These beliefs were revered as truths to be memorized and passed on to future generations.

The natural world was perceived to be suffused by supernatural **power** that people could avoid or enlist as a source of good health, success, or a desired skill. This supernatural power was distributed in patterned ways throughout the landscape and was potentially present in animals as well as inanimate things. As an animating force in the world, it was everywhere, but could be concentrated in specific places (mountains, caves, springs), animals, or features associated with animal progenitors of mythic time. Supernatural power could be beneficial as well as dangerous if not controlled. It could come to people in various forms and generally came unsought in dreams. Power could be deliberately sought by visiting certain places if an individual desired. Most people acquired limited amounts of power from a single source that helped them perform specific tasks, such as hunting deer or rabbits. Those who obtained considerable powers became **shamans** or traditional doctors.

Shamans had the strongest connection to the spirit-world and cured illness through their mastery over spirit-helpers. Most shamans acquired their healing powers unsought in normal dreams after an illness. A spirit-helper that normally took the form of an animal would appear during a dream and give the shaman powers and the knowledge necessary to heal illness. This knowledge included a special song that the shaman used to summon the spirit-helper to aid in healing. Shamans might have many spirit-helpers and many powers in addition to doctoring ones. Some shamans could also exert control over antelope and used this power at communal antelope drives to facilitate the hunt. Other powers included weather control (very rare other than among the Kawaiisu) and the ability to find lost objects.

Although shamans typically did not deliberately acquire power, there were places, such as certain caves and mountain peaks, that were known to be particularly powerful places where power could be obtained. A person could visit one of these places and sleep there, during which a spirit-helper would appear to them in a dream. Among Great Basin peoples who adopted the horse and were influenced by Plains cultures (such as the Eastern and Northern Shoshone and the Ute), the vision-quest (the deliberate seeking of power) was more common. A person seeking power or wishing to become a shaman would visit a remote place where power was known to reside and induce a trance state through physical privation.

Both men and women could be shamans, but historically it was more common for men to be doctors. Shamans were ambivalent figures as their source of power was neutral and could be used for good or bad. Shamans who were unsuccessful in curing a sick person could be suspected of witchcraft or

Power was named *puha* or *poha* by peoples who spoke a Numic language and *wegeleyu* among the Washoe people.

Shamanism refers to traditional healing practices that rely on a doctor's control over spirits or supernatural beings. The term shaman derives from an indigenous Siberian culture. North American traditional doctors were frequently called "medicine" men or women by outsiders. Indigenous names for shamans in the Great Basin generally translate as "one who possesses power". The Kawaiisu called shamans "one who has song" (*huviyagadi*) because of the importance of songs in their practices. Across the Great Basin, shamans used songs to record important shamanic knowledge as well as summon their spirit-helpers.

World renewal ceremonies are rituals intended to pacify the supernatural to prevent natural disasters and the failure of economic resources.

Great Basin peoples faced tremendous cultural change and upheaval in the face of Euro-American colonization. They were removed from their traditional lands, the environments on which they depended were despoiled by the activities of Euro-Americans, and they were subjected to atrocities. Ultimately, Great Basin peoples were unable to live a traditional way of life. Great Basin peoples responded in various ways, including modification of traditional practices and beliefs to explain and counter the disastrous effects of Euro-American settlement. Anthropologists describe such cultural responses to extreme social stress as *revitalization movements* that allow cultures to restructure and adapt to their changed circumstances.

deliberately withholding their healing powers. In such cases, the shaman risked retribution from the kin of the sick person. Although shamans may have been influential, they did not have specific social authority and were not political leaders.

Ceremonialism was generally small-scale, with the Round Dance the most formal ritual practiced. This was a community ceremonial performed on occasions when groups aggregated in larger than usual numbers. The group danced around a pole and made prayers of thanksgiving for the abundance of economic resources. These communal gatherings also provided an occasion for socializing, acquiring marriage partners, exchange, and renewing social ties. Groups influenced by Plains culture had more formal ceremonialism. The Eastern Shoshone adopted the Sun Dance from Plains cultures who performed it as a ***world renewal*** ceremony. During the ceremony, the spirit-world was thanked through prayers and acts of self-torture. Among the Eastern Shoshone, the Sun Dance was performed to ensure the community's welfare, prevent prophesied disasters from happening, for curing, and to experience power-giving visions. The Ute also performed the Bear Dance, which was more social in nature than the Sun Dance, but was also important for expressing group identity and social cohesion.

Revitalization movements

The Great Basin is the birthplace of the Ghost Dance, perhaps the most famous ***revitalization movement*** in North America. The first Ghost Dance began in 1869 among the Northern Paiute in the Walker River area. It was inspired by the teachings of the Northern Paiute spiritual leader *Wodziwob*. The traditional circle or Round Dance was the basis for the Ghost Dance. If performed correctly, *Wodziwob* believed the Ghost Dance would restore the dead, replenish the plants and animals on which Native Americans depended, and make the Euro-Americans leave. A new and happy world would be created free of economic deprivation and the Euro-Americans who had wrought such devastation. The movement spread to other Northern Paiute groups, the Washoe, and into California. The Ghost Dance faded, however, after the prophesied better life failed to materialize.

In 1889-90, a new Northern Paiute prophet reintroduced the Ghost Dance with a more accommodative purpose. *Wovoka* (Jack Wilson) experienced a vision during which he visited heaven and spoke to God who gave him the teachings of the Ghost Dance religion. *Wovoka* preached that if Native Americans worked hard, lived without quarreling, and loved one another they would be reunited with the dead in an afterworld free of death and sickness where resources were abundant. Highlighting the

accommodative character of *Wovoka's* vision is that he saw Euro-Americans in his visit to heaven. Although the prophecy did not materialize, *Wovoka* remained a respected healer (shaman) until his death in 1932.

The Ghost Dance of 1889-90 had a brief but intense florescence and spread far beyond the Great Basin where it was interpreted very differently, particularly among Plains peoples. Delegations from various Native American peoples visited *Wovoka* to receive his prophesy and teachings. Plains groups interpreted the Ghost Dance in revolutionary terms, believing that it would rid the world of Euro-Americans. Lakota Sioux warriors wore Ghost Dance shirts that were believed to have bullet-resisting powers. Euro-Americans feared Plains peoples practicing the Ghost Dance, as they resisted forced re-settlement on reservations. To suppress the Ghost Dance religion, several Lakota chiefs were arrested or killed, culminating in the Wounded Knee Massacre (South Dakota) in 1890. After the Wounded Knee Massacre, *Wovoka* urged Plains peoples to stop dancing the Ghost Dance and, in 1893, he retired into semi-reclusion.

Both the 1869 and 1889-90 Ghost Dance movements reflected the different ways that the Northern Paiute responded to the changed conditions of their lives. The 1869 Ghost Dance arose in circumstances of extreme economic hardship and cultural disruption. The population had been decimated by epidemics and starvation. In contrast, the 1889-90 Ghost Dance developed when a traditional way of life was no longer possible and the Northern Paiute in the Mason Valley area had been largely absorbed into the Euro-American economy as wage laborers. Although marginalized economically and facing great hardships, the conditions of the Northern Paiute in the 1880s were better than in preceding decades and deprivation was not on the same scale. The 1869 Ghost Dance can be seen as a cultural response to intolerable conditions where a better future under prevailing conditions could not be envisaged by the Northern Paiute. The 1889-90 Ghost Dance occurred when conditions were improving and where a better life could be envisaged by accepting the changed world, since a return to a traditional way of life was no longer possible.

Summary

The cultural lives of Great Basin peoples documented by anthropologists represent a distinctive set of adaptations to the environment and other cultures. The ethnographic Great Basin is a hunter-gatherer way of life based on seasonal movements to harvest plants and hunt animals, and then over-wintering in villages and relying on stored foodstuffs. This adaptation to the

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Great Basin's arid climate, where plant and animal resources are patchy in distribution, was facilitated by technologies (material culture) that efficiently harvested the region's resources. Social organization was a key adaptive strategy in distributing people across the landscape. For much of the year people dispersed in small groups for mobile hunter-gathering forays and then aggregated with the wider social group in the winter months. A rich, complex cultural life accompanied all aspects of Great Basin hunter-gatherer lifeways. The natural and physical worlds were viewed as animated by supernatural forces (power) that could be a source of help but required careful navigation.

Great Basin peoples formed political tribal governments in the early twentieth century, and negotiated land claims, education, healthcare, economic opportunity, housing, and religion on behalf of their tribal members. Today, tribal governments and tribal members focus on creating economic opportunities while celebrating and ensuring the continuation of tribal languages, stories, customs, ceremonies, arts, and lifeways.

5 § PREHISTORIC ROCK ART

Rock art comprises images made on rock surfaces (boulders, cliffs, caves, etc.) or boulders and cobbles that were arranged to form patterns (geoglyphs). Rock art is found throughout the world and ranges in age from ca. 40,000 years ago to the recent past. In the Great Basin, it spans the period 10,500 years ago (and perhaps as much as 14,800 years ago) to the nineteenth century. Rock art is strongly associated with hunter-gatherers (particularly in Ice Age Europe, Australia, and South Africa) but is also known to have been made by pastoralists (in North Africa) and Bronze and Iron Age farmers in Europe. European Ice Age cave art has been widely studied because it seemed to offer a window on the development of fully human cognition. Australian rock art's detailed ethnographic contexts demonstrated the complex social uses of rock art, disproving that it was only the result of artistic impulses. The Great Basin's rich tradition of prehistoric **rock art** is found in association with mundane domestic activities (such as seed or plant processing). It provides evidence that prehistoric hunter-gatherers (like their descendant communities) led complex cultural lives and complements the picture of their lives derived from the archaeological remains of economic activities.

How Old Is Great Basin Rock Art?

The age and purpose of Great Basin rock art are not well understood. It is an enigmatic monument that provokes much debate about its cultural uses. Determining the age and the evolutionary sequence of Great Basin rock art is complicated by many factors. Rock art was reused and its locations revisited. Superimpositioning of design elements and discernible differences in the surface **patination** of designs show that rock art was made and modified episodically over long periods.

The main types of Great Basin rock art are:

Petroglyphs—where images were made by removing the patina of a rock face by pecking or pounding, scratching, or abrading. This is the most common type of Great Basin rock art and it usually occurs in open settings. Petroglyphs are more durable and erode at a much slower rate than pictographs, the other main form of Great Basin rock art.

Pictographs—where images were made by applying pigment (“paint”) or charcoal to a rock face. Pictographs are very fragile and sensitive to exposure to the elements. They survive best in protected settings, such as caves or rock shelters, and are much less frequent than petroglyphs.

Due to environmental processes, rocks develop a dark-colored patina or weathering rind (desert varnish). Petroglyphs are usually made by removing this patinated surface, creating a strong contrast with the rock's natural, lighter color. The petroglyph's surface will also weather over time and a new patina will slowly develop over it.

Some rock art sites appear to have provoked cultural responses over hundreds and perhaps thousands of years. This makes chronologies and evolutionary trends rather generalized.

Great Basin rock art predominantly takes the form of petroglyphs. These can rarely be scientifically dated, as they are not usually found in dateable, stratified deposits, and generally lack organic or other materials that can be radiocarbon dated. Pictographs do contain organic or other materials that can be radiocarbon dated. But taking a sample for radiocarbon dating is destructive. Only in cases where painted material has flaked off its parent rock art panel are such analyses tried. The general lack of scientific dating opportunities means that the age of rock art sites is usually estimated by *relative dating methods*.

Identifying artifacts or themes of known age portrayed in rock art (iconographic analysis) allows a broad estimate of the age of rock art. Only a narrow range of such subjects is portrayed in Great Basin rock art. Anthropomorphs with cowboy hats, or depictions of horses and wagons, for example, are easy to identify as Contact period and historic rock art (FIGURE 5.1). Dateable prehistoric themes are generally limited to rare portrayals of projectile points (FIGURE 5.2) and, rather more frequent but still statistically minor, the atlatl and the bow (FIGURE 5.3). The latter only allow for a broad Middle or Late Archaic age determination.

Despite the limitations in knowledge of the chronology of much Great Basin rock art, it is clear from contextual evidence that its production and use span the history of human settlement of the Great Basin, albeit concentrated in the Middle and Late Archaic. The oldest site, Winnemucca Lake (northwestern

The principal relative dating methods are:

Iconographic analysis: dating rock art by its portrayal of objects and themes of known age.

Stylistic analysis: dating rock art because its style is of known age.

Contextual: using rock art's proximity to archaeological remains of known age to provide a general indication of when people were using its location.

Superimpositioning: determining relative sequences as rock art that overlies other rock art is more recent than the art it superimposes.

Figure 5.1. Historic themes in rock art.

(Stuart Ranch, southern Nevada)





Figure 5.2. Possible Middle Archaic projectile points portrayed in rock art.

(Lagomarsino Canyon, northwestern Nevada)

Nevada), is believed to be at least 10,500 years old, and possibly as old as 14,800 years old (FIGURE 3.2). It is also the oldest rock art site in North America to be ***dated by scientific methods***. The site is believed to have a distinctive style of abstract imagery, the Great Basin Carved Abstract (GBCA). This style comprises deeply pecked designs with wide lines that are densely packed and leave little ***white or negative*** space. This style was first discovered at Long Lake, southern Oregon where a rock art boulder was found partly buried by ash from the eruption of Mt Mazama (ca. 8,850 years ago). Other examples of this style have been found to be much younger in age. For example, at Massacre Lake (northern Nevada), organic material trapped in patina covering rock art in this style was radiocarbon dated to 4,000-2,900 years ago.

Sites such as Long Lake and Winnemucca Lake show that the most ancient rock art sites currently known are in the northern Basin, dating to the earliest phases of the region's settlement by

At Winnemucca Lake, rock art was indirectly dated based on the age of carbonate crusts, formed by deep lakes, overlaying rock art.

White or negative space is the blank space that surrounds an image. White space may be used as an integral part of a design, such as "I" and "H" shapes in Grapevine Canyon style rock art.

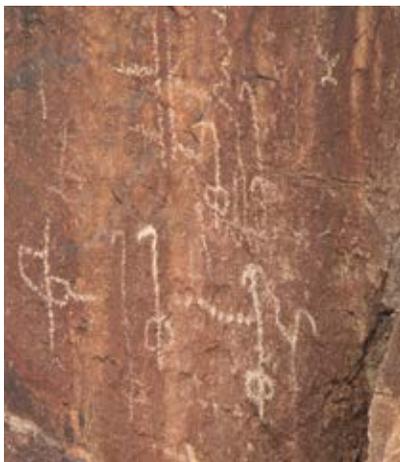


Figure 5.3. Rock art portrayals of the atlatl and the bow and arrow.

Left—Schematic designs conventionally believed to portray Middle Archaic atlatls (Grapevine Canyon, southern Nevada).
Right—hunting scene showing the use of a Late Archaic or Late Prehistoric bow and arrow (High Basins, northwestern Nevada).

Artists are not free to portray whatever they like however they want. Cultural beliefs establish what subjects can be portrayed and how these are to be depicted.

In most cultures artists select from a set of styles depending on context. Art that portrays everyday life tends to be stylistically different from those depicting ceremonial themes. For example, in parts of Australia, rock paintings portraying ancestral beings are stylistically very different from rock art made by the same artists for the purposes of sorcery. The former are very formal and carefully made, in contrast to the more elemental rock paintings made for sorcery.

Archaeological cultures are identified by shared material cultural traits (e.g., pottery styles, funerary architecture), in a manner reminiscent of cultural anthropology.

A good example that a recognizable artifact style does not necessarily reflect cultural identity is Beaker Culture ceramic vessels (late Neolithic-Early Bronze Age Europe). Beaker Culture ceramic vessels were once seen as evidence of a migration of a culture (the Beaker Folk) across western Europe. They are now known to be the product of a specific practice (the interring of distinctive ceramic vessels as grave goods) that was widely shared among elite groups during the late Neolithic and Early Bronze Age.

Figure 5.4. Distribution of major rock art styles in the Great Basin.

people. Rock art appears to become more common over time as populations grew and human settlement expanded to fill most of the Great Basin. Thematic elements such as atlatls and bows show that many sites probably date to the Middle and Late Archaic (ca. 5,500-700 years ago); historic themes (cowboys and horses) show that some rock art was made around the Contact period. This is further supported by the fact that rock art sites are most frequently associated with archaeological remains of Middle and Late Archaic logistical camps and work areas.

Styles of Rock Art

Styles of rock art are identified by considering how artists made it and what they chose to portray. The choices that prehistoric artists made were constrained by their **cultural beliefs**. Archaeologists try to assign different styles to specific periods and relate them to known **archaeological cultures** (FIGURE 5.4). But archaeologists recognize that it is not straightforward to attribute specific rock art styles with individual archaeological cultures. Individual cultures usually have several styles of art that are used for different purposes, similar to having different styles of ceramic vessels for different functions. Styles of art and artifacts are also the result of cultural and social practices that may be **shared by different cultures** (such as the Ghost Dance movement, see page 46).

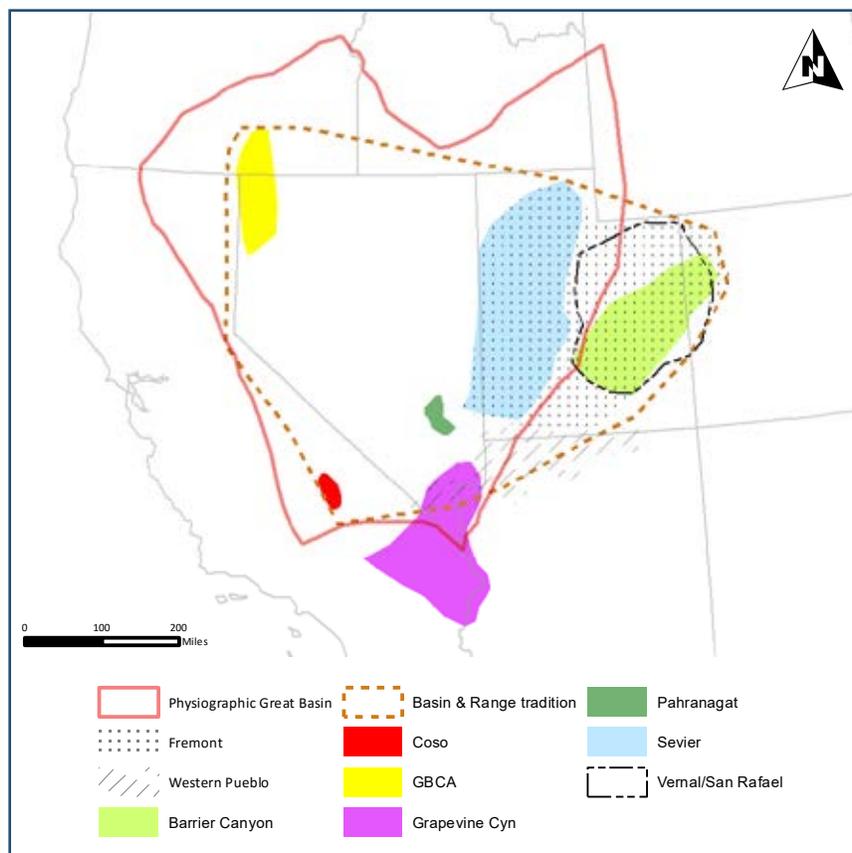




Figure 5.5. Heavily patinated cupules.
(Grimes Point, northwest Nevada)

Great Basin rock art ranges from abstract designs to schematic representations that closely resemble people or animals (“representational” designs). Abstract motif types predominate throughout the region. These are difficult to separate into individual styles because their shapes are often very similar. Individual styles are most easily recognized by identifying the different choices made by artists in what themes to portray and in how to depict those themes (form and method). The best defined Great Basin rock art styles, therefore, are based on distinctive stylistic treatments of people and animals.

Circular depressions, usually a few centimeters wide and deep, pecked or ground on boulders are called cupules or the Pit-and-groove style. These are very distinctive in appearance and were once believed to be the earliest Great Basin rock art style. At Grimes Point (western Nevada), cupules on basalt boulders have been coated by patina so dark (and therefore old) that they are very hard to see (FIGURE 5.5). Cupules are not abundant in the Great Basin and are also found in association with Late Archaic or Late Prehistoric archaeological remains.

The abundant curvilinear and rectilinear abstract designs that are found throughout the Great Basin culture area are called either Basin and Range tradition or Western Archaic Tradition (FIGURE 5.4). *Curvilinear motifs* usually predominate, accompanied by rectilinear motifs (FIGURE 5.6), smaller numbers of stick-figure anthropomorphs (FIGURE 5.7), and a narrow range of *animal species*. Basin and Range tradition rock art spans the Archaic and the Late Prehistoric (8,000-150 years ago) and is strongly associated with Archaic hunter-gatherer cultures in the Desert West. It is a less prominent component of anthropomorph styles associated with Fremont and Western Puebloan groups in the region.

Curvilinear motifs comprise a wide variety of circular designs (such as concentric circles, connected circles, spirals, dots, etc.), curvilinear meanders, and serpentine lines.

Rectilinear motifs comprise grids, rectangles, rakes, cross-hatching, etc.

Only a limited range of animal species are portrayed in Great Basin rock art. By far the most common zoomorphic theme is bighorn sheep, with other mammals and reptiles portrayed in small numbers.

Figure 5.6. Basin and Range tradition curvilinear and rectilinear designs.
(Lagomarsino Canyon, northwest Nevada)

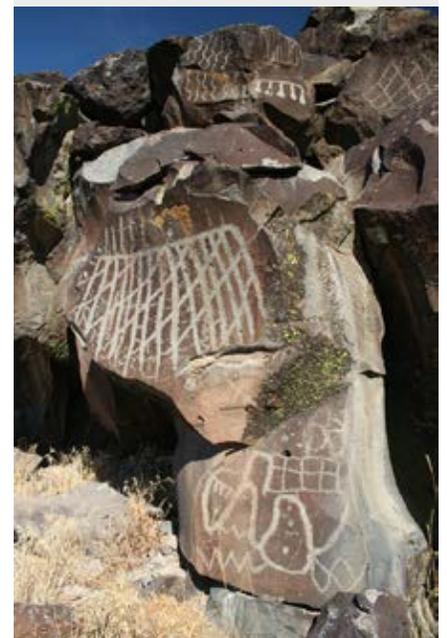


Figure 5.7. Stick-figure anthropomorphs.
(Black Point, western Utah)



People do not perceive the landscape in neutral terms solely based on its physical attributes. Ethnographically Great Basin peoples viewed the landscape as suffused by power, which affected how they interacted with certain places, plants, and animals (see page 45)..

The exceptions are the Coso and Pahrnagat styles that were made by Archaic hunter-gatherers.

Basin and Range tradition motifs have often been treated as a separate style when they were made by scratching or incising using a sharp stone tool. This Great Basin Scratched style comprises dense crosshatching, squares, rectangles, and circles with lines radiating from their disks, but only dense cross-hatching is truly a unique element. This style is widely found throughout the Great Basin but rarely predominates at any site. Scratched rock art has been assumed to be recent in age (1,000 years ago to the ethnohistoric period) and associated with Numic peoples, because it sometimes superimposes other styles of rock art. This has been explained as evidence that Numic groups deliberately obliterated earlier pre-Numic rock art. This pattern of scratched art overlaying other rock art is not regularly observed throughout the Great Basin.

The GBCA style is the oldest rock art style known but can also be regarded as a variant of Basin and Range tradition rectilinear and curvilinear elements. First identified at Long Lake (southern Oregon), this style's distribution is restricted to the northern Great Basin (FIGURE 5.4). As noted above, the style takes the form of very deeply pecked curvilinear and rectilinear motifs with wide lines that form intricate, tightly packed designs with little white space (FIGURE 3.2). Although this style's origins appear to have great antiquity, its use continued into at least the Middle Archaic. The style is important for showing that the earliest settlement of the Great Basin was accompanied by cultural behavior that marked the new landscape, perhaps to **socialize or mark territory**.

The Grapevine Canyon style is a geometric style found in the southern Basin along the Colorado River drainage and the eastern Mojave Desert (FIGURE 5.4). This style skillfully uses negative space as an essential component of its complex geometric designs (FIGURE 5.8). Defining motif types include large rectangular and circular designs internally decorated with straight lines, denticulated lines, or wavy lines (FIGURE 5.8). These are often deeply pecked and arranged in dense clusters that cover extensive rock faces. This style is estimated to be Late Prehistoric in age (700–150 years ago), based on associated site contexts and its enduring cultural significance to modern Mojave peoples. The Grapevine Canyon type site is near the traditional site where the Mojave place their origins; one of its central and most imposing panels is believed by the Mojave to portray, in part, the history of their origins.

The best defined styles are based on distinctive styles of anthropomorphs and bighorn sheep, and mostly developed during the Late Archaic. These “representational” styles, with **two exceptions**, are typically associated with Fremont



Figure 5.8. Characteristic Grapevine Canyon style designs.

(Grapevine Canyon southern Nevada)

and Western Puebloan cultures (ca. 2,000-750 years ago) in southeastern Nevada, Utah, and the Colorado Plateau (FIGURE 5.4). These semi-horticultural groups made rock art that included stylized anthropomorphs that share common attributes of trapezoidal, rectangular, or triangular body shapes. These were often portrayed with bodily decoration such as headgear, jewelry, or decorated clothing.

Anthropomorphs with similar attributes were also made by Archaic hunter-gatherers in southeastern Nevada and the Cosos (eastern California). The Pahranaagat anthropomorph style is broadly contemporaneous with Fremont and Western Puebloan rock art styles, though its origins lie in the Middle Archaic. The age of Coso style rock art is poorly defined, but appears to be concentrated in the Middle Archaic. A general evolutionary sequence is apparent that stylized anthropomorphs seem to be a later development, with the exception of the Coso style.

Rock art found in Sevier Fremont territory (western Utah but extending into eastern Nevada) is the most schematic or stylized of these anthropomorph styles (FIGURE 5.4). It comprises triangular and trapezoidal anthropomorphs, usually lacking legs, sometimes with arms, and often with headgear and ear decoration, made as pictographs or petroglyphs. At their most schematic, these are trapezoid outlines that closely resemble the shape of Fremont clay figurines (FIGURE 5.9). This style contrasts with Fremont anthropomorph styles (Classic Vernal, San Rafael) in eastern Utah and the Colorado Plateau that have arms and legs, heads with facial features portrayed, and large bodies that are rectangular or trapezoidal. Classic Vernal and San Rafael anthropomorphs are usually elaborately decorated (necklaces, arm bands, earrings) and are sometimes portrayed holding circular objects, and in a few cases what appear to be severed

Figure 5.9. Sevier style Fremont anthropomorphs.

(Western Utah)



human heads (FIGURE 5.10). These have been interpreted as “trophy heads” and evidence of sporadic warfare or violent social conflict in Fremont times. Archaeological evidence of cliff granaries in Nine Mile Canyon and Range Creek, and fragmentary human remains in Fremont living areas or mixed with other refuse, suggest that the portrayals of violence in Fremont rock art were not necessarily mythic.

Also associated with the Fremont is the Barrier Canyon style, distributed largely along the western tributaries of the Green River in central and eastern Utah, and the White River drainage in northwestern Colorado (FIGURE 5.4). Anthropomorphs in this style occur as dark red pictographs, with an elongated, tapering body, stylized heads, large eyes, and minimal or no limbs (FIGURE 5.11). These are arranged “hovering” in long rows, giving figures in this style a subjectively “spectral” appearance.

Figure 5.10. Vernal style anthropomorphs portrayed holding a severed head.





Figure 5.11. Barrier Canyon style anthropomorphs.

Illustrating that particular rock art styles sometimes cross cultural boundaries are shield-bearer figures. These are anthropomorphs that have their bodies obscured by large circles that are internally decorated by geometric designs (FIGURE 5.12). They accompany Fremont rock art in the eastern Great Basin and the Plateau and also occur in areas of Western Puebloan settlement in southern Nevada, southern Utah, and western Arizona. These various anthropomorph styles often overlap in distribution and co-occur on the same rock face. For example, at Butler Wash, Utah large San Juan style anthropomorphs (Western Puebloan) co-occur with smaller Sevier Fremont types (FIGURE 5.13).

Western Puebloan rock art in the Great Basin is represented by the West Virgin Kayenta style, defined principally from sites in western Utah, the Valley of Fire and lower Moapa valley in Nevada. Anthropomorphs have triangular, rectangular, or hour-glass shaped bodies, sometimes with “horns” or

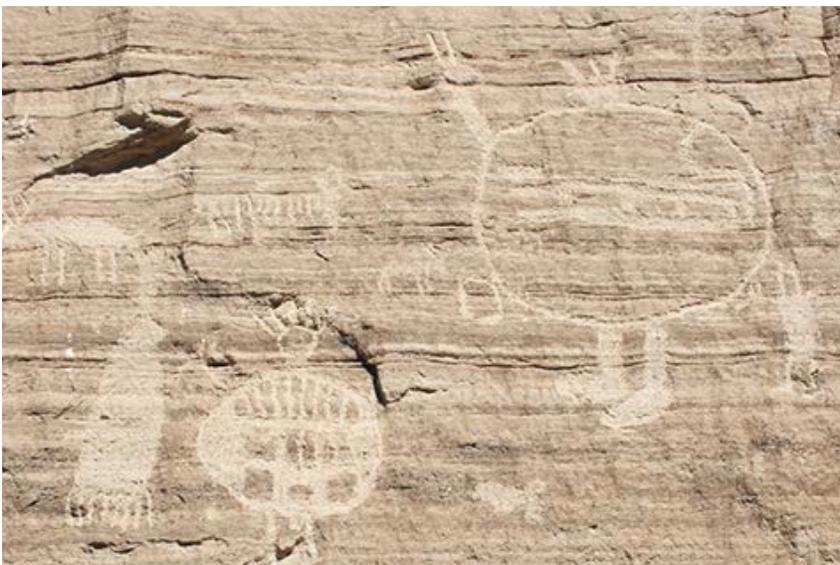
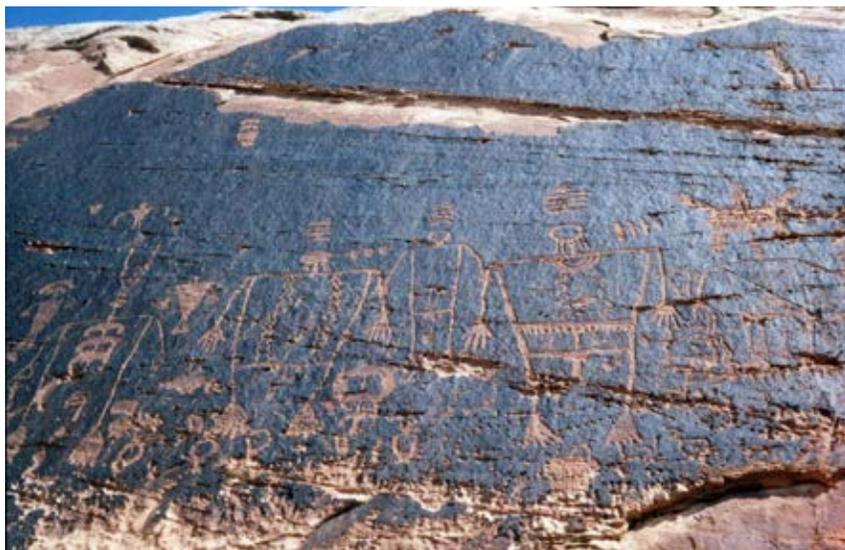


Figure 5.12. Western Puebloan shield bearer figures. (Arrow Canyon, southern Nevada)

Figure 5.13. San Juan style anthropomorphs.

These Western Puebloan style anthropomorphs are portrayed with a Fremont Sevier style anthropomorph (Butler Wash, Utah)



headgear. Most of these formal attributes are characteristic of Fremont anthropomorph styles. This suggests that cultural practices distinctive to Fremont or Western Pueblo peoples did occasionally cross cultural boundaries. Alternatively, the anthropomorphic traditions of both cultures may represent variations on shared cultural practices that symbolized social status through public presentation of self and manifested in rock art.

Both cultures were dealing with the adoption of horticulture and resulting increases in population, more permanent villages, perhaps greater social stratification, and sporadic social conflict. Rock art is one medium where idealized and ideological presentations of worldview may have been expressed to serve social needs, particularly managing social tensions. These stylized anthropomorphs may have been intended to represent new social positions and statuses that arose from economic and settlement changes and gaining acceptance of these changes.

Two distinct hunter-gatherer anthropomorph styles are known, the Coso and Pahrnagat styles (FIGURE 5.4). The Coso style is restricted to the Coso Range, eastern California and its massive rock art concentrations in the China Lake area. Coso style rock art is typified by its emphasis on representational imagery, principally life-sized (and larger) bighorn sheep figures that have boat-shaped bodies and horns often depicted in full frontal perspective and also portrayed as sheep heads only in full frontal view (FIGURE 5.14). These accompany and vastly outnumber elaborate patterned-body anthropomorphs (PBA) that are rectangular, have bodies internally decorated with complex geometric designs, and have heads depicted with headdresses (FIGURE 5.15). Like the elaborate anthropomorphs of the Fremont and Western Puebloan cultures, the Coso PBAs are



Figure 5.14. Boat-shaped Coso style bighorn sheep.

(Coso Range, eastern California)

visually arresting and command much attention. Estimates of the age of the Coso style vary greatly, ranging from 11,000 years ago to the ethnohistoric period, to 5,000–3,000 years ago. Although atlatls and bow and arrows are portrayed frequently in Coso rock art, these are never depicted in association with stick-figures and anthropomorphs.

Similar to anthropomorphs in the Coso style is southeastern Nevada's Pahrnagat anthropomorph style, which comprises two variants (FIGURE 5.16). One type is a PBA, rectangular in form, internally decorated (with grids, dots, or geometric motifs), and “fringed” by short vertical lines. This type often lacks a head but has stick-figure legs and short arms that sometimes hold an atlatl-like object (unlike the Coso PBAs). The second type has a solid-pecked oval or rectangular body, large eyes (indicated by using negative space), and a line protruding from the head; the arms are portrayed down-turned and with long fingers.



Figure 5.15. Coso style PBAs.

(Coso Range, eastern California)

Figure 5.16. Pahrnanagat style anthropomorphs.

Left—solid-body anthropomorph (Mt. Irish, southeastern Nevada).
Right—PBA (Black Canyon, southeastern Nevada).



The age and cultural affiliation of this anthropomorph style are unclear. Based on the age of associated archaeological materials, it appears to be Middle and Late Archaic in age. This age range fits with the general pattern of distinctive anthropomorph styles largely being a Late Archaic development.

What Does It Mean?

There are various perspectives from which to approach the question of rock art's meaning. One meaning is the cultural significance rock art has for contemporary Native Americans, as an expression of their long tenure on the land and their connection with their ancestors and spirit beings of the world. From an archaeological perspective, meaning is reconstructing the role rock art played in prehistoric societies.

Although rock art is a system of communication (but not writing), trying to recover specific interpretations placed upon it by its makers and users is not possible without insider commentary. For prehistoric cultures there is no insider commentary to tell us about rock art's original "meaning." Even with indigenous commentary, as among African or Australian indigenous communities, social anthropology shows that art has multiple symbolic meanings contingent on *context*. For archaeology, explaining rock art is about understanding the ways that people used rock art in their cultural lives, as its original meanings cannot be recovered.

Hunting-magic theory was the primary explanation of rock art for much of the twentieth century and was first used to explain the Ice Age art of the European caves. This theory suggested that rock art was made and used to assert magical control of game animals and other economic resources. Rock art was made to ensure success in the hunt as well as that critical

The same design may mean different things to different people depending on their age, sex, and social position. It often may have different meanings for the same person at various stages of life.

game and plants were abundant. Ethnographically, Great Basin peoples had specialists who could use power to charm antelope and bighorn sheep (see page 45). These specialists led ceremonies before a hunt to ensure its success. Archaeologists used this ethnographic analogy to understand what they believed to be a strong relationship between rock art and hunting locations in the Great Basin.

Rock art sites were perceived to be closely associated with game trails and ambush spots, evidenced by hunting blinds, game drive fences, and finds of projectile points. As bighorn sheep are the most common species portrayed in Great Basin rock art, it was believed that hunting rituals focused on this game animal, either to aid in their hunting or to increase their abundance. Abstract designs were believed to symbolize game animals and other economic resources in ways not identifiable to contemporary archaeologists. This theory associated rock art with the hunting of large and medium mammals, suggesting that men were the primary makers and users of rock art.

Hunting-magic theory was criticized for not explaining rock art imagery. If rock art was used in rituals that sought to increase or ease the procurement of critical resources, one might expect small mammals and plants to also be portrayed (as these were also important resources). It also overlooked the significance of a widespread association between rock art, logistical campsites, and work areas. Ground stone tools are regularly found at rock art sites. This indicates that plants were harvested and processed by women at many rock art sites. Other archaeological features regularly found at rock art sites (such as hearths, middens, and house rings) show that hunting large game was not the only activity carried out in proximity to rock art (FIGURE 5.17). This indicates that the work parties that visited rock art sites were likely not composed exclusively of men. Instead, individual family households or small groups of related households seem to be the main social group that visited rock art locales.

Hunting-magic is based on sound general anthropological observations regarding the deployment of magic in economic routines, making it a plausible theory. But it is difficult to prove or disprove based solely on archaeological evidence. The theory's model of the archaeological attributes of a hunting-magic rock art (its motifs and spatial distribution) can always be plausibly modified to account for criticism.

Currently, the most popular general explanation of Great Basin rock art is that it was made and used in shamanistic practices. This theory suggests that rock art portrays mental imagery (geometric percepts) experienced during trance states by traditional healers (shamans). This mental imagery is the

Figure 5.17. Late Archaic and Late Prehistoric campsite with rock art.

Top—extensive ground stone scatter and rock art.

Bottom—close-up of slab grinding stone fragments in the ground stone scatter (southeastern Nevada).



inspiration for abstract rock art designs and is the basis for figurative representations of shamanistic themes and concepts in rock art (such as spirit-helpers).

Based on ethnographic analogies of shamanism world-wide, the theory suggests that prehistoric shamans in the Great Basin made and used rock art for two main reasons. First, to ensure that important shamanistic knowledge was not forgotten; and second, to acquire supernatural powers. Rock art imagery, from this perspective, can be interpreted as a visual record of important cultural knowledge. Abstract motif types depict mental imagery that was experienced during trance states. Representational images are interpreted as depictions of spirit-helpers (zoomorphs), avian imagery as a metaphor of shamanic soul flight (images of birds), and hunting scenes as visual metaphors for entering trance (shamans commonly liken entering trance to “dying”). Rock art sites would be regarded as places where shamanistic powers could be acquired and therefore places where vision-quests were held.

Rather like hunting-magic, the shamanistic approach is difficult to prove or disprove based solely on the archaeological record. Ethnographers rarely (if at all) recorded Great Basin shamans actually making or using rock art. The primary means by which shamanic knowledge was remembered was through elaborate songs (see page 45). Rock art sites are not generally found in physically remote and difficult to reach places where vision-quest locales are situated based on data from ethnography and anthropology. The proximity of Great Basin rock art to other settlement activities suggests that shamans did not have exclusive access to rock art sites. Ethnographically, curing ceremonies (as opposed to vision-quests) did take place in public at campsites and villages. But a lot of other activities also took place at settlements and work areas. This makes it difficult to suggest that only shamans would have made and used rock art as all members of the family household or household clusters could have visited rock art sites.

Although scientific approaches to explaining rock art are seemingly elusive, rock art does show that prehistoric attitudes to the landscape were not solely based on economic considerations. Ethnographically, Great Basin peoples recognized supernatural power as distributed in patterned ways across the landscape and as potentially residing in animals, plants, or other natural objects (see page 45). It is unlikely that prehistoric populations conceived of the landscape as culturally neutral. Rock art, as it serves no obvious utilitarian purpose, may provide evidence of places that were important to visit for mainly social or cultural reasons. Although widespread, rock art only marks

a fraction of the environment used by prehistoric populations. It is strongly associated with logistical campsites and economic activity areas away from village or aggregation sites. Some dense concentrations of rock art and seasonal logistical camps are in environments of specialized economic use. Rock art is not the casual byproduct of other economic activities in its vicinity, otherwise most campsites and work areas would also contain rock art. Rock art indicates that certain places in the landscape had a cultural significance despite the economic costs of visiting and using such places. Although enigmatic, rock art does show that social practices and beliefs played some role in shaping how cultures categorized their environment and its resources.

Rock Art of Southeastern Nevada

This general pattern of a strong association between rock art and logistical camps is illustrated well in Lincoln County, southeastern Nevada. This area was settled by hunter-gatherers for most of prehistory but borders Late Archaic Fremont and Western Puebloan cultural developments. Approximately 200 prehistoric rock art sites are known in the county, concentrated in the west-central half of the county in the Pahrnagat Valley area and, in the east, along the Meadow Valley Wash drainage. Two-thirds of sites are small concentrations of rock art (fewer than 15 rock art panels) and cover a small area. The largest sites and major rock concentrations tend to be found in the west in the areas of Badger Valley, Pahrnagat Valley, and Sixmile Flat. Rock art sites span the Archaic and Late Prehistoric, but, based on themes in their art and the age of associated archaeological features, mostly date to the Middle Archaic, Late Archaic, and Late Prehistoric.

Basin and Range tradition is the most common rock art style in Lincoln County. Rectilinear and curvilinear abstract designs, stick-figure anthropomorphs, and zoomorphs co-occur at sites throughout the county. Curvilinear designs and simple lines are the most common design types with rectilinear designs types less common. Anthropomorphs account for about 5% of the area's rock art designs. Fremont style, Pahrnagat style, and stick-figure anthropomorphs occur in roughly equal numbers. But while stick-figure anthropomorphs are widely distributed, their Fremont and Pahrnagat style counterparts are localized in their distribution. Fremont figures are found mostly in the eastern half of the county and Pahrnagat figures in the west. Portrayals of bighorn sheep make up a tenth of all rock art designs found and are much more frequent than portrayals of people (FIGURE 5.18). These are widely distributed but are more abundant in the western half of the county. Here, large concentrations in the Badger Valley and Mount Irish areas have hundreds of

Figure 5.18. Bighorn sheep figures.
(Mount Irish, southeastern Nevada)



bighorn sheep figures. Away from these two areas, bighorn sheep figures generally occur in small numbers (five or fewer) at sites. Only a limited range of other animal species are portrayed in small numbers (principally coyotes and deer). Overall, Lincoln County's rock art is representative of the Great Basin preference for rock art dominated by abstract imagery with bighorn sheep as the main animal depicted. The county also shares in the Late Archaic emergence of stylized anthropomorphs.

Fremont anthropomorphs are concentrated in the eastern half of the county in Meadow Valley Wash and upper Kane Springs. These belong to the Sevier style and have triangular or trapezoidal torsos, and triangular or rectangular heads, made as either petroglyphs (at open sites) or pictographs (in rockshelters) (FIGURE 5.19). Fremont anthropomorphs occur in small numbers, rarely exceeding 10 at a site. These small rock

Figure 5.19. Sevier style Fremont anthropomorphs made as petroglyphs on a hilltop.
(Kane Springs Wash area, Southeastern Nevada)



art sites were probably made by Fremont work parties making forays from larger Fremont village sites to the north and east. They mostly made rock art while carrying out other resource procurement activities. Alternatively, these sites represent expeditions to visit culturally significant places located in an area otherwise peripheral to Fremont settlement activities.

The Pahrnatag anthropomorph style is unique to Lincoln County and comprises two distinct anthropomorphs, one a headless (usually) PBA with geometric internal decoration and the other with a solid-pecked body (FIGURE 5.20) (see page 59). This anthropomorph style is known from about 27 sites ranging from the Delamar Mountains in the south, White River Narrows in the north, Mount Irish in the west, and Kane Springs Canyon to the east. It only occurs in large numbers (over 60 figures) at two sites in Pahrnatag Valley and nearby Delamar Valley. About 220 PBAs are known compared to about 60 solid-body types.

This style is dated to the Middle and Late Archaic because nearly a third of PBAs are portrayed holding what appears to be an atlatl (FIGURE 5.20). The major Pahrnatag style sites are associated with archaeological materials that span the Middle Archaic through the Late Prehistoric. Their settings were most intensively used for seasonal campsites in the late Middle Archaic and Late Archaic. This style has continuing cultural significance for contemporary Numic peoples.

The Pahrnatag style is related to the wider phenomenon of Late Archaic stylized anthropomorphs. It seems to indicate that Archaic or Numic hunter-foragers adopted cultural traits associated with the social practices of Fremont and Puebloan groups. Bordering these cultural developments, the Pahrnatag style could be viewed as evidence that cultural information may have been a way that segments of society acquired prestige by demonstrating a connection with the exotic lifestyle and cultural practices of the Fremont and Western Puebloans.

The remainder of Lincoln County's rock art sites are associated with archaeological materials that span the Middle Archaic through the Late Prehistoric. But a late Middle Archaic through Late Prehistoric focus is discernible. This is evidenced by a small number of early arrow points, Fremont and Puebloan ceramics, Brownware ceramics, and Late Prehistoric arrow points. Rock art sites co-occur with evidence of minor economic activities (simple flake scatters), resource processing and acquisition (ground stone), or temporary campsites (middens, pottery, rock alignments). These materials show that most rock art sites are located in the settled landscape or at its margins. Sites are found mostly in valley bottoms, on and around the

Figure 5.20. Characteristic Pahrnatag style anthropomorphs.

Top—PBA apparently holding an atlatl (Black Canyon, southeastern Nevada).
Bottom—solid-body type (Sixmile Flat, southeastern Nevada).



Figure 5.21. Evocative rock art at Clover Creek, southeastern Nevada.

Rock art is evidence that Great Basin hunter-gatherers also viewed their environments as cultural landscapes.



Suggested reading

Heizer, Robert F. & Martin A. Baumhoff

1962 *Prehistoric Rock Art of Nevada and Eastern California*. University of California Press, Berkeley.

Quinlan, Angus R. (editor)

2007 *Great Basin Rock Art: Archaeological Perspectives*. University of Nevada Press, Reno.

Schaafsma, Polly

1994 [1971] *The Rock Art of Utah*. Revised edition. University of Utah Press, Salt Lake City.

Simms, Steven R. & François Gohier

2010 *Traces of Fremont: Society and Rock Art in Ancient Utah*. University of Utah Press, Salt Lake City.

slopes of low hills, or in canyons, not uplands or other settings remote from economic activity. Rock art sites that are not directly associated with other archaeological features are located close to places used for at least short-term settlement and economic activities. Rock art associated with campsites are evidence of short-term repeated settlement episodes that were small-scale. A wide range of activities took place at these campsites, which were made by groups ranging in size from specialized foraging or hunting parties to a small number of family households.

In general, Lincoln County's rock art is associated with foraging and hunting expeditions made to take advantage of seasonally available resources as environmental conditions permitted. The largest sites and rock art concentrations are accompanied by archaeological evidence indicative of repeated but short-duration stays by small groups. The associated archaeology is characteristic of settlement activities that provisioned visits to these places to make use of economic and cultural resources. Whether or not cultural or economic considerations were the primary reason people visited these places, these rock art sites do show that prehistoric peoples did not view their environment in entirely economic terms (FIGURE 5.21). Instead, how people perceived and interacted with the natural world was shaped by cultural beliefs and practices, much like ethnographic Great Basin peoples.

6 § PRESERVING THE PAST

The United States considers the preservation of its heritage in the nation's best interest. Since 1906 it has been national policy to preserve historic properties as important reflections of our American heritage. The management of *archaeological resources* is guided by laws and regulations that promote the *in situ* conservation of archaeological sites and resources for the long-term benefit of the American public and future generations.

Historic Preservation

Historic preservation is the long-term preservation of the built environment, archaeological remains, and places of historic or cultural significance. The National Trust for Historic Preservation succinctly captures the purpose of historic preservation by defining it as the preservation of places that tell a story or of places that create a sense of community and cohesion. Such places include archaeological sites as well as historic buildings, historic landscapes, great engineering works, and neighborhoods. Management of archaeological resources takes place in the broader context of the nation's efforts to preserve its heritage.

Historic properties

Historic properties are the significant prehistoric and historic archaeological sites, objects, buildings and structures, engineering works, locations, and landscapes of traditional cultural or religious importance to specific social and/or cultural groups that are worthy of listing on the National Register of Historic Places (see page 73), the nation's list of the most important historic properties, and worthy of long-

Archaeological resources are the material remains of past human life. These include artifacts and alterations to the landscape (monuments, structures, and buildings).



Figure 6.1. Stonehenge. This world-famous prehistoric monument was named in the 1882 Ancient Monuments Act (U.K.).

The 1882 Ancient Monuments Act (U.K.) created the position of Inspector of Ancient Monuments. The first holder of this post was Augustus Henry Lane Fox Pitt-Rivers, widely regarded as the father of scientific archaeology.

term preservation. The National Register recognizes that not every historic site is important or worthy of long-term historic preservation.

Why preserve the past?

Historic preservation seeks to memorialize places and objects important to our nation's history. National and cultural identities are forged by shared history and experience. The past and its material remains create a powerful sense of our shared heritage. The U.S. honors places and objects that are important in our prehistory and history, archaeological resources that tell the story of a people. Historic preservation does not preserve buildings or monuments just because they are beautiful, architecturally pleasing, the biggest, or the oldest. Instead, such places are preserved if they are significant to local, state, or national history.

Historic preservation benefits the community by preserving neighborhoods and strengthening bonds between residents, particularly for underrepresented groups. Rehabilitated historic homes and neighborhoods increase the quality of life in their communities. Historic properties may define cultural identity for particular groups or remain important in their economic or cultural practices. Lastly, archaeological sites provide information about the past not represented in historical records.

Origins of historic preservation

The historic preservation movement began as a gentlemen's pursuit in seventeenth century Great Britain. By the mid-nineteenth century, rapid population growth, urbanization, and industrialization threatened the destruction of Britain's prehistoric archaeological heritage. The 1882 Ancient Monuments Act was passed to help preserve sites like Stonehenge (FIGURE 6.1), which was one of 68 sites initially covered by the legislation. Although Conservative politicians were worried about the loss of owners' property rights, subsequent legislation expanded the authority of County Councils to protect and regulate a wider range of archaeological properties and landscapes, as well as buildings. In 1894, the National Trust was founded to preserve "historic places and spaces" by managing them as reserves. It currently is one of the largest landowners in Great Britain. It is known for the management of aristocratic country houses and estates, acquired during the twentieth century when their private owners could no longer afford to maintain them.

History of U.S. Historic Preservation

In the U.S., historic preservation began in the mid-nineteenth century by individuals or groups of private citizens looking to preserve sites associated with important figures in national history and the American Revolution. Many early efforts concerned the preservation of places associated with the founding fathers, such as George Washington and John Hancock. In 1850, Washington's New York headquarters became the first property to be preserved and operated as a historic site. In 1858, America's first preservation group formed in Virginia to save Mt. Vernon. Other structures associated with figures important in the American Revolution, such as John Hancock's house, were destroyed despite the best efforts of early historic preservation groups.

Prehistoric monuments also attracted attention, particularly large earthen mounds in the Ohio River Valley and the Southeast. Scholars speculated on the origins of these earthen mounds, wondering if contemporary Native Americans and their ancestors were responsible for constructing them. Serpent Mound, Ohio was first mapped in 1815 but a more extensive survey was made in 1846 by Squier and Davis for the Smithsonian Institute (FIGURE 6.2). Their report *Ancient Monuments of the Mississippi Valley* was published in 1848. By 1885, Frederic Putnam of the Peabody Museum at Harvard, who studied the mounds, expressed concern over the grading of mounds for development and agriculture. Putnam led a campaign to raise money to purchase 60 acres of Serpent Mound to preserve it in perpetuity.

The Antiquities Act (1906)

In 1879, members of the Archaeological Institute of America sent archaeologists west to identify and record Puebloan archaeological sites and other structures. In the American Southwest, anthropologist Frank Cushing described the *Casa Grande* ruin between Phoenix and Tucson, urging Congress to fund its protection and repair. The prevailing attitude of the government and the public was that Native American cultures and their material remains were vanishing. Archaeologists sought to record and protect what they could and lobbied Congress for a bill allowing the President to set aside reservations to protect archaeological sites and places of scientific or scenic value. After six years of wrangling, Congress passed the Antiquities Act of 1906 to preserve archaeological sites on federal lands that were being looted.

The Antiquities Act gave the President the authority to designate natural and cultural monuments. It prohibited the excavation of archaeological remains on federal lands without a



Figure 6.2. Serpent Mound, Ohio.

This prehistoric effigy mound is now designated a National Historic Landmark.

Casa Grande is the remains of a Hohokam Pueblo (ca. 900 years old). Pueblos are inter-connected structures, usually made of adobe and stone, that formed villages.

permit from the Secretary of the Interior. The Act also required artifact collections to be placed in museums, preferably in the U.S. With the passage of the Antiquities Act, the federal government affirmed its responsibility to manage historic and archaeological sites on the lands it managed. But the protection of most buildings and sites on private land was still undertaken by individuals and organizations.

The New Deal

Not until the 1930s did the federal government take a more active role in the preservation of America's heritage and not just on public lands. The Stock Market Crash of 1929 and the resulting Depression put a third of Americans out of work. On taking office in 1933, President Franklin Roosevelt set out to create jobs through make-work programs for the unemployed. These included programs for unemployed architectural historians, historians, archaeologists, architects, folklorists, and artists. These work programs demonstrated a federal interest in historic and archaeological sites that extended beyond public lands with programs such as:

- ◇ Historic American Building Survey (HABS) was created to record historic buildings. Over 6,000 buildings were recorded in detail including measured drawings, photographs, and other data.
- ◇ Works Progress Administration (WPA) employed archaeologists to record and excavate archaeological sites in advance of major federal projects such as the **Tennessee Valley Authority (TVA)**. The programs focused on the “salvage” of artifacts and other data from archaeological sites that would be inundated by waters dammed to create hydroelectric power.
- ◇ The Civilian Conservation Corps (CCC) sometimes assisted in preservation activity such as the preservation of Fort Churchill, Nevada (FIGURE 6.3).

In 1935, Congress passed the Historic Sites Act, charging the National Park Service (NPS) with surveying of historic and archaeological sites, buildings, and objects to determine which possessed exceptional value as commemorating the nation's history. Congress empowered the NPS to decide what was important and worth saving, and what was not. The Act placed archaeologists, historians, and architectural historians in federal government jobs. It established a federal interest in historic preservation beyond public lands that continues to the present day. With the Act's passage, the federal government designated National Historic Landmarks (NHL)—sites of national importance—in each state (FIGURE 6.3).

The Tennessee Valley Authority (TVA) is a New Deal program created in 1933 intended to provide economic development in a region hard hit by the Great Depression. Dam construction for hydroelectric plants was a prominent feature of TVA activities in the 1930s.

Fort Churchill was built 1860-1 to provide protection for Euro-American settlers and the Pony Express mail route. The fort was abandoned in 1869.



Figure 6.3. Fort Churchill, Nevada. Nevada's first National Historic Landmark.

Post-war development projects

New Deal programs ended with the beginning of World War II, although the Historic Sites Act and the NPS programs remained in place. After the war, the government initiated or funded a variety of projects to stimulate the economy and improve infrastructure. These included:

- ◇ The construction of reservoirs by the Army Corps of Engineers to prevent flooding and by the Bureau of Reclamation for water storage and irrigation.
- ◇ The construction of interstate highways funded through the Federal Highway Administration.
- ◇ And, eventually, urban renewal projects funded through the Department of Housing and Urban Development.

These projects had a huge impact on the nation's historic and archaeological heritage. Archaeological sites were destroyed by highway construction and, in cities, buildings and neighborhoods were demolished to build massive multi-family dwellings or were cut through by highways.

Although provisions were made for archaeological excavation of sites prior to reservoir construction, Congress never allocated sufficient funds for analysis, report writing, or artifact curation. The U.S. Conference of Mayors and the National Trust for Historic Preservation (organized in 1949) recognized the destruction of so much heritage. In 1966, they issued the report *With Heritage So Rich* that made the case that historic buildings added to the quality of the environment and consideration should be made for their preservation; and, that their wanton destruction was killing inner cities. The Society for American Archaeology also joined this effort to lobby for adequate funding for the excavation or preservation of archaeological sites.

The National Historic Preservation Act (1966)

In 1966, recognizing its responsibility for funding the destruction of national heritage, Congress passed the National Historic Preservation Act (NHPA). The Act predated the **National Environmental Policy Act** enacted in 1970 and is one of the first of the major environmental laws passed. The NHPA was intended to preserve the cultural and historical foundations of our nation. It has been amended several times and its regulations challenged in court but remains in effect. The NHPA:

- ◇ Created the National Register of Historic Places that listed historic communities, areas, structures, sites, and objects of national, state, or local significance.

The National Environmental Policy Act (NEPA) promotes the enhancement of the environment. It requires federal agencies to prepare reports (environmental assessments and environmental impact statements) that state the potential environmental effects of the agency's actions.

The main agencies created by the NHPA are State Historic Preservation Offices (SHPOs), Tribal Historic Preservation Offices (THPOs), and Certified Local Government programs (CLGs).

- ◇ Established the Historic Preservation Fund grants program to develop **state, Tribal, and local preservation programs** to implement state historic preservation plans.
- ◇ Began a tax incentive program to provide tax credits to private developers who chose to rehabilitate historic buildings in accordance with established historic preservation standards instead of demolishing the old to construct new.
- ◇ Created an Advisory Council on Historic Preservation (ACHP) to provide leadership and guidance in historic preservation.
- ◇ Charged federal agencies with considering the effects of their activities (or undertakings) on important historic and prehistoric sites. Undertakings are defined as projects on federal land or projects that are federally funded or federally permitted (Section 106 of the NHPA).
- ◇ Charged federal agencies with identifying, determining the significance of, and preserving historic properties on federal land under their jurisdiction (Section 110 of the NHPA).
- ◇ Required federal agencies to consult with Tribal governments and other concerned parties before making a decision that could affect a historic property, in accordance with amendments made in 1992.

Misconceptions about the NHPA

There are many misconceptions about what the NHPA, as amended, does:

- ◇ The Act does not prevent development projects that may damage archaeological resources. Instead, the law requires federal agencies to consider the effects of their undertakings on historic properties and consult with the ACHP if an undertaking will affect such a property.
- ◇ The ACHP or SHPO does not tell a federal agency what to do. Instead, the ACHP and SHPO provide comments and recommendations but cannot change the decision or determination of effect on a historic property made by a federal agency.
- ◇ The Act does not stipulate that all historic or archaeological sites should be preserved. Sites are individually evaluated for their eligibility for inclusion on the National Register (see below). Generally, only about 10 percent of identified sites are determined eligible (or worthy) for listing on the National Register.

◇ The Act does not give states or the federal government authority to prohibit property owners from tearing down or modifying their historic properties. A property owner has the right to demolish or modify his/her National Register listed property. The only caveat is that the property owner must obtain permits from his or her local government.

The National Register of Historic Places

The National Register of Historic Places is the official list of the Nation's historic places that are worthy of preservation. As noted above, not every site or building is significant and worthy of long-term preservation. The National Register established criteria that have to be met for a property to be included on the National Register.

Criteria for evaluation

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- ◇ That are associated with events that have made a significant contribution to the broad patterns of our history (Criterion A); or
- ◇ That are associated with the lives of significant persons in our past (Criterion B); or
- ◇ That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); or
- ◇ That have yielded, or are likely to yield, information important in history or prehistory (Criterion D).

In addition, three other conditions must be met for listing:

- ◇ A property must have *integrity* in materials, setting, workmanship, location, design, feeling, and association. To put it simply, a property must look much the way it did in the past or still convey its association with the historic events that make it eligible for the National Register. For example, for a building to be considered worthy for the National Register based on its high artistic value or because it represents the work of a master architect, it has to maintain original historic characteristics such as windows, roof, and façade. If the building has been remodeled using materials not part of the original design, it probably has lost integrity under Criterion C. Alternatively, a city parking



Figure 6.4. Cave Rock, Nevada.

Cave Rock is a place of traditional cultural significance to the Washoe despite the construction of tunnels through it.

lot may be ripped up exposing a buried archaeological site. Despite its location in a city (a context very different from its historic one), the site's archaeological deposits remain intact and contain data important to the interpretation of history or prehistory, making the site eligible under Criterion D.

- ◇ The property must also be over *50 years in age*, although exceptions are made for properties considered of exceptional significance that are younger than 50 years old.
- ◇ The property must relate to a *theme* of significance identified at the national or state level. Examples of historic themes include westward expansion, mining, ranching, or transportation systems.

Most properties originally listed on the National Register were sites of national significance, located in the eastern U.S. Many of these were associated with national leaders, famous generals, and early colonists as the NPS and others failed to recognize places of state and local significance, particularly in the west. In addition, the history of women and peoples of other cultures was under-represented. Since 1992, the National Register has attempted to be more inclusive of the heritage of other cultures, particularly of Native Americans. Recognizing that using the National Register criteria would make it difficult to recognize places important to Native American cultures, the NPS expanded the criteria to include provisions for traditional cultural properties/places. The traditional cultural significance of a historic property is derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Examples of traditional cultural properties include:

- ◇ A location associated with the traditional beliefs of a Native American group regarding its origins, its cultural history, or the nature of the world, e.g., Devil's Tower, Wyoming.
- ◇ A location used historically and today by Native American religious practitioners to perform ceremonial activities in accordance with traditional practices, e.g., Cave Rock, Nevada (FIGURE 6.4).
- ◇ A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

Managing historic properties

Listing a property on the National Register is a lengthy process, requiring the completion of National Register nomination forms, maps, and photographs, gaining the property owner's permission, and state board approval. Alternatively, historic properties may be treated as if they are eligible for the

National Register (if a federal agency and the State Historic Preservation Officer agree), giving them the same legal protection as properties officially on the Register.

The NHPA provides two avenues for preserving historic properties. Local and state governments, through Historic Preservation Fund grants, and private citizens, through Tax Act incentives, are encouraged to preserve the cultural and historic character of their communities and buildings. The other avenue is the way in which federal agencies manage historic properties, or manage projects that are federally funded or require federal permits.

Responsibilities of federal agencies

Under Section 110 of the NHPA, federal agencies are responsible for identifying and evaluating archaeological resources that they manage. Federal agencies must designate historic preservation officers for their agencies. Agencies must create and implement plans and programs to identify, evaluate, and manage the historic properties under their jurisdiction. Federal agencies are required to consult with the public as well as SHPOs and Tribes when federally sponsored or permitted projects or projects on federally managed lands may affect historic properties.

Federal agencies were originally given 20 years to identify and evaluate all their historic properties. Federal land managing agencies in the western U.S. were challenged by insufficient funding and staffing to undertake such an effort. For example, approximately 10% of Nevada has been surveyed for archaeological resources and around 80,000 archaeological sites have been recorded. Not all of these sites have been evaluated for the National Register and are treated as potential historic properties until they can be formally studied.

Most archaeologists working for a federal agency find themselves ensuring that projects taking place on federal lands are surveyed for archaeological resources, either by the federal archaeologist or by a private archaeological contractor (who holds a federal permit) working for the project proponent. Most archaeological survey work is project-driven, whereby archaeological surveys are conducted in advance of mining, energy transmission, or highway projects, rather than archaeologists conducting proactive identification and evaluation of archaeological sites on a more systematic basis.

Federal agencies have standards for recordation, consulting with tribes, the state, and the public regarding evaluation and management of archaeological resources. They have curation

agreements with museums and other institutions for the long-term storage of artifact collections found on public lands. And they maintain electronic databases for archaeological sites and projects so they know where archaeological surveys have been done, where sites are, and where there is need for further work.

The BLM in Nevada has an agreement with the Nevada SHPO to maintain a statewide database that serves all state and federal agencies rather than have several small databases for all the agencies. Contract archaeologists must have the appropriate education and experience before they can be permitted to conduct fieldwork. Federal agencies employ the same or similar standards for survey, use the same recordation forms (or similar), and collect the same kinds of information. And most land managing agencies with multiple land-use mandates are also directed to educate and provide opportunities for the public at interpreted archaeological sites.

The public often believes that archaeologists are always looking for and excavating archaeological sites. Most excavations or collections of surface artifacts (but not all) are done prior to development projects that will destroy or damage archaeological sites. Not all archaeological sites will be excavated because:

- ◇ Time and money are usually lacking.
- ◇ Archaeological sites are a nonrenewable resource: once excavated, the site is gone. The artifacts collected from a site may be housed in a museum and a report of findings might exist on a shelf, but an archaeologist has only one opportunity and cannot return to excavate a site once everything has been excavated and the site destroyed.
- ◇ Some sites are considered special places to descendant communities—they have traditional and cultural significance—and should be preserved as is.
- ◇ Some sites need to be conserved for the future when less intrusive methods of studying a site may become available and/or new research questions are posed.
- ◇ Some sites are better at conveying their association with historic events and are managed for public interpretation and visitation rather than excavation.

For these reasons, federal agencies seek to preserve significant sites for the long-term, carefully weighing requests from qualified archaeologists, who wish to conduct research, with management needs.

The Archaeological Resources Protection Act (1979)

Federal agencies also protect sites by enforcing laws to ensure the long-term preservation of archaeological sites. The Antiquities Act of 1906 (page 69) proved to be an inadequate deterrent for preventing looting of archaeological sites for sale of artifacts as financial penalties were rather small. In addition, convictions were difficult to obtain because definitions were vague. In 1979, the Archaeological Resources Protection Act (ARPA) was passed that:

- ◇ Provides protection of archaeological sites on public and Indian lands as well as sites of religious and cultural importance.
- ◇ Sets requirements for permitting archaeological work.
- ◇ Provides provisions for the preservation of archaeological collections.
- ◇ Defines archaeological resources.
- ◇ Allows federal agencies the authority to keep site location information confidential.

The law specifies that:

- ◇ No person shall excavate, remove, damage or otherwise deface, or attempt to excavate, remove, damage or otherwise alter or deface any archaeological resource on public or Indian lands unless such activity is conducted under an ARPA permit.
- ◇ No person may sell, purchase, exchange, transport or receive any archaeological resources in violation of the law.

Penalties for violating the ARPA can be substantial:

- ◇ First offense: Not more than \$10,000 and one year in prison unless restoration and repair exceeds \$500; fine may climb to not more than \$20,000 and two years in prison.
- ◇ Second violation could result in a fine not to exceed \$100,000 and ten years in prison.

Damage and destruction is not limited to collecting artifacts and can include:

- ◇ Bulldozing a road through an archaeological site.
- ◇ Torching a historic building.
- ◇ Stealing a boulder with a petroglyph on it or chiseling out a petroglyph panel.
- ◇ Defacing or adding graffiti to a site or historic building.

The ARPA is intended to deter those who would steal, damage, or destroy the nation's heritage. Agencies employ law enforcement personnel to investigate violations of the ARPA. But the vast landscapes managed by federal agencies are difficult to patrol. Therefore, federal agencies use other means to encourage protection of sites such as:

- ◇ Site stewardship programs: state and federal agencies work with volunteer members of the public who visit archaeological and historic sites on a regular basis to report changes to site condition that might be the result of illegal activities, natural erosion, etc.
- ◇ Education: the BLM and other agencies promote the Project Archaeology program to introduce archaeology and historic preservation to educators and students.
- ◇ Site interpretation: interpreting archaeological and historic sites for responsible public visitation to foster greater public awareness of historic preservation. This strategy is generally only adopted for sites that are already well-known and regularly visited.

Ultimately, the preservation of the nation's archaeological and historic heritage is a responsibility for us all. We share a duty to help ensure that the places important to our history will be conserved for future generations.

Suggested reading

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Archaeology Site Etiquette

Show respect for the site, its history,

and the people it represents by following some simple guidelines.

- § Learn more about the site and archaeology in general
- § Be safe by keeping to designated trails
- § Take only photographs and memories
- § Leave only footprints behind
- § Take time to appreciate the site and the history it represents