Mogollon VII

The Collected Papers of the 1992 Mogollon Conference
Held in Las Cruces, New Mexico
Traditionally, researchers have interpreted the presence of cultigens, ceramics, and pithouse architecture, marking the beginning of the Early Mogollon period, to indicate a sedentary, agricultural settlement system (Cordell 1984:214; Haury 1962; Jennings 1956; LeBlanc 1980, 1982a, 1983; Martin and Plog 1973; Reed 1964). However, a number of researchers have suggested that the Early Mogollon settlement system, for at least part of this period, was not fully sedentary nor significantly dependent on agricultural (Bluhm 1960; Martin 1940:35, 1943; Martin and Rinaldo 1947:316-317; Pool 1980, 1985; Rice 1975, 1980a, 1980b; Wills 1988). While the revisionist view suggests that the Early Mogollon settlement system was a nomadic or semi-sedentary, mixed hunting-gathering-agricultural one, the specific form is not generally considered. Because the Western Apache inhabit a similar environment and part of the same range as the Early Mogollon and because there are similarities in subsistence systems, the Western Apache settlement system provides a baseline model for considering the Early Mogollon.

Environment

A high degree of topographical and ecological diversity characterized Western Apache territory and resulted in significant spatial and temporal variability in the distribution of wild subsistence resources. The Western Apache exploited these resources with an almost continuous movement of gathering parties, family units, and local groups between exploitation areas, the home locality, and non-home locality winter camp areas.

The variability of annual precipitation and the spring moisture deficit required that crops be irrigated below 5,000 feet elevation in more than half the years, and even above 5,000 feet, irrigation is desirable due to inadequate precipitation in some of the years (Aschmann 1974:254). Dry farming was risky, and simple irrigation is required in order to minimize the risk of crop failure.

Social Organization

The basic socio-economic and residential unit was the extended family cluster which usually, but not exclusively, consisted of a set of matrilineally related and matrilocal nuclear families affiliated by consanguinal, affinal, clan, and economic ties (Basso 1970a:5, 1970b:14; Goodwin 1935:57, 1942:123). Each extended family cluster usually acted independently in economic activities (Goodwin 1942:130). Although the members of an extended family cluster camped together and cooperated in subsistence production and storage activities, each nuclear family prepared and consumed food independently and had its own shelter (Goodwin 1942:128).

In contrast, the local group, consisting of one or more extended family clusters, formed the basic sociopolitical unit (Basso 1970b:14; Goodwin 1942:257). Essentially, the local group was the set of extended family clusters attached to a farm site or set of farm sites (Goodwin 1942:127, 130).

The area around the farm site(s) for a radius of three to eight miles was the home locality (Goodwin 1942:149). Although the farm sites were the focus of the home locality, home locality camps tended to be located some distance away from farm sites during the 19th century,
often on hilltops and mountains adjacent to the farm site valley, due to the danger of attack by
the U.S. Army (Buskirk 1949:34; Goodwin 1942:158). The local group had exclusive rights to
the farms and hunting and gathering within the home locality (Goodwin 1942:130). In general,
the home locality provided a base from which hunting and gathering parties departed and to
which they returned with collected resources.

The band and subtribal group formed successive levels of spatial social organization (Figure 1).
These social units were mainly territorial-classificatory units, functioning as nested "resource
holding units" (Basehart 1967, 1971), whose major expression was in the right of access to
subsistence resources and the denial of access to those outside the unit (Goodwin 1942:9-10, 55).
However, during times of stress, bands within a subtribal group had access to hunting and
gathering resources, but not to farms, in the territory of other bands (Goodwin 1942:9-10).

The matrilineal phratry-clan system cross cut the spatially defined social units of local group,
bond, and subtribal group and provided a network that united these social units and the extended
family cluster together (Basso 1969:133, 1970b:14; Goodwin 1942:98). The phratries and clans
were neither formal political nor property owning units but formed an extensive and intricate
network of obligations and relationships crosscutting territorial units and regulating the relations
between local groups, both locally and regionally, as well as regulating marriage (Basso 1970a:9;
Buskirk 1949:18; Goodwin 1935:58; Kaut 1957:39, 47). This system provided the basis for
corporate action and the arbitration of social problems and conflicts within and between local
groups and other social units.

Subsistence System

Prior to disruption by U.S. military activities, the Western Apache based their subsistence on
approximately equal amounts of meat (35-40%), wild plant foods (35-40%), and cultigens (20-
25%) provided by hunting, gathering, agriculture, and raiding/trading (Aschmann 1974:255;
Buskirk 1949:387; Goodwin 1935:61, 1942:354-355). Despite the relatively significant
proportion of agriculture in the diet, hunting and gathering were the dominant modes of
production. They structured their settlement system to take advantage of the spatial and
elevational distribution of wild resources and the differential temporal maturation of plant
resources (Aschmann 1974:238, Buskirk 1949:428). In order to take advantage of the nearly
continuous availability of plants maturing at staggered intervals throughout the growing season,
especially July through November, the Western Apache constantly moved through and resided
in several ecological zones (Aschmann 1974:238, 248; Basso 1969:11, 1970a:3; Buskirk

The Western Apache settlement system was essentially a logistical one (Binford 1980) in which
resources were gathered in different areas of their annual range and then transported to their home
locality and/or non-home locality winter camp areas for later consumption (Buskirk 1949:295-
296; Goodwin 1942:160). Although pack horses were available and used, travel was generally
on foot, and resources were usually carried in burden baskets (Goodwin 1942:285).

Storage was absolutely critical to the survival of the Western Apache during the winter and into
the summer (Aschmann 1974:199; Buskirk 1949:295-296). Each family had five to ten variously
sized caches, scattered in a number of hidden locations in the home locality and/or in the non-
home locality winter camp areas. Some were filled with cultigens and others with wild food
products. Resources were stored in ground caches, rockshelters or caves, trees, and wickiups.

Gathering Procurement System (Figure 2)

Staple wild plant foods included mescal (agave), acorns, pinyon nuts, juniper berries, Spanish
bayonet yucca fruit, sunflower seeds, prickly pear fruit, mesquite beans, and saguaro fruit
(Goodwin 1942:62). Mescal was the most important wild plant food in terms of volume and
dependability with acorns second in importance (Buskirk 1949:307, 354). The availability of

90
Figure 1. Western Apache Subtribal Groups and Bands (1850-1875)
Figure 2. Hunting and Gathering Loci and Seasonal Camps (1850-1875)
mescal throughout the year rather than for short periods of time was a factor in its importance (Goodwin 1935:62).

Gathering parties were generally small and formed by individual nuclear families, extended family clusters, or several unrelated nuclear families, commonly from the same local group, making trips lasting from ten days to a month or more (Buskirk 1949:283; Goodwin 1935:62, 1942:149, 159). Gathering parties for mescal, saguaro, and mesquite beans were small (five to eight women and families) and generally short in duration (10 to 14 days) (Buskirk 1949:283, 297). In contrast, midsummer acorn harvest expeditions were larger, sometimes the entire local group, and longer in duration, a month or more (Buskirk 1949:283).

**Hunting Procurement System (Figure 2)**

Deer was the most important source of meat, followed in importance by other large game, small game, and livestock from raiding (burros, horses, and cattle) (Buskirk 1949:280). Deer and small game were the most dependable sources of meat, and small game was frequently more important than large game other than deer, as they were not a dependable source of meat and were not as regularly hunted (Buskirk 1949:224-245, 280). Adult men hunted the large game, primarily with bow and arrow (Buskirk 1949:196; Goodwin 1935:61; Griffin et al. 1971:70). In contrast, only adolescent males regularly hunted and trapped small game (Griffin, et al. 1971:70).

Generally, hunting was sporadic, unorganized, and desultory and was based from farm sites, home locality sites, and gathering camps (Buskirk 1949:158, 224-225). Hunting intensified during two principal periods: in the late spring and summer between planting and the maturation of the first wild plant crops in July and in the fall through winter (Goodwin 1935:61). Hunting was one of the few subsistence resources available during the winter (Goodwin 1935:61).

**Raiding Procurement System (Figure 2)**

The Western Apache undertook raiding to secure supplies for consumption and trading to supplement and augment subsistence needs during periods of low productivity and shortages (Basso 1971a:16; Getty 1963:6, 8). The objects of raiding were livestock (horses, mules, sheep, and goats), cereal grains, cloth and clothing, blankets, metal, and occasionally, firearms, saddles, bridles, leather, and cowhide (Basso 1971a:19, 1983:466; Getty 1963:6; Griffin, et al. 1971:70; Schroeder 1974:554).

**Agricultural Procurement System (Figure 3)**

Agriculture was based on the cultivation of maize (Zea mays); tepary beans (Phaseolus acutifolius var. latifolius), small kidney beans (P. vulgaris), and other beans; squash (Curcubita moschata or C. pepo); and sunflower seeds (Helianthus spp.), as well as a number of introduced European cultigens not discussed here (Buskirk 1949:106-148). Agricultural technology was simple and was based on the digging stick and stone axe (Buskirk 1949:30). Fields were small in size with plots ranging up to a half acre; each family cultivated several plots totalling 1/10 to three acres every year (Buskirk 1949:59-60). Buskirk (1949:62) estimated yield at 5,000 ears of maize per acre.

Due to the rugged terrain, scarcity of water, and simple agricultural technology, the Western Apache located farms on the basis of levelness of terrain, availability of moisture, and sparseness of vegetation (Buskirk 1949:30). Although moisture was supplied to fields by surface or arroyo runoff diversion, direct precipitation, or moist subsoil, most Western Apache fields were irrigated (Buskirk 1949:76-73). Therefore, most fields were selected for accessibility to surface water and were generally located on grama grass-covered bottomlands, where vegetation was sparse and shallow ditches were easily dug to the fields (Buskirk 1949:32, 67). Irrigation canals were usually short and shallow and served five to 15 families, although the longest observed ditch was two miles long and served 30 families (Buskirk 1949:68-70; Goodwin 1942:374).
Figure 3. Farm Site Locations (1850-1875)
Subsistence Scheduling (Figures 4 and 5)

The annual subsistence cycle can be organized into four seasons in which the Western Apache alternated between the home locality, farm sites, hunting and gathering areas, and, in some cases, non-home locality winter camp areas.

During the winter (November/December to March/April), hunting, raiding, and mescal gathering were the only available subsistence activities (Basso 1983:469; Buskirk 1949:200, 288, 289; Getty 1963:6; Goodwin 1942:158). Nuclear families, extended family clusters, and entire local groups either wintered in the home locality or in the non-home locality winter camp areas at lower elevations along and south of the Salt and Gila Rivers (Buskirk 1949:298; Goodwin 1935:63, 1942:158; Griffin, et al. 1971:69). Non-home locality winter camps were located in mescal gathering areas and were moved approximately every 15 days (Buskirk 1949:288).

Large male hunting parties made extended hunting trips to timbered, mountainous areas, primarily to hunt deer (Buskirk 1949:406; Getty 1963:6). If they wintered in the non-home locality winter camps, mescal was gathered upon arrival and just before returning to the home locality in the spring (Buskirk 1949:288). Additional supplies of mescal were gathered as needed during the course of the winter (Buskirk 1949:298). Otherwise, they depended heavily on stored resources (Aschmann 1974:199).

Three main subsistence activities characterized the spring (March/April through June): mescal gathering, agriculture, and hunting. Basically, the Western Apache subsisted on stored resources and a limited amount of available wild plants and animals. Due to the general lack of wild plant foods other than mescal, hunting was the principal subsistence producing activity (Buskirk 1949:200; Goodwin 1935:61).

Mescal was collected in early spring (March-May), usually in April, either before leaving the non-home locality winter camp area or by small parties making short (10-14 days) trips from the home locality (Buskirk 1949:298).

They then returned to their farm sites between February and May, usually March or April (Basso 1969:11, 1983:468; Buskirk 1949 41,99). They prepared fields and planted crops from March through July, usually in April at higher elevations and in May and June at lower elevations (Buskirk 1949:41-42, 106-107). Fields were usually irrigated after preparation and before planting. Subsequently, they weeded and irrigated fields as needed, generally every 2-3 weeks. When the success of the crop was assured after 2-3 irrigations or after a good rain, usually in late June or early July, the local group left the farm site(s) for other home locality camps, while small groups left to exploit resources outside the home locality (Goodwin 1942:156, 654). Until the midsummer wild crops matured, they stayed in the home locality, returning to the farm site to irrigate and cultivate the crops; however, in some cases, they left the elderly, disabled, captives, and young at the farm sites to tend and protect crops (Basso 1983:468-469; Goodwin 1942:513, 654).

During the summer (July through August) with the beginning of wild plant food maturation, the Western Apache moved around their home locality and band territory hunting and gathering resources for storage, as well as for immediate consumption. The principal wild plant foods were lower elevation succulents and acorns. Small parties also returned to farm sites to check on crops and gather green maize (Goodwin 1942:157).

During late June and early July, small parties collected the fruit and seeds of saguaro, prickly pear, cholla, and other cacti, as well as mescal (Basso 1969:11, 1970a:3, 1983:469; Buskirk 1949:316; Getty 1963:5; Goodwin 1942:159; Indian Claims Commission 1974:505).
Figure 4. Subsistence Activity Scheduling
Figure 5. Model of the Western Apache Settlement System
From mid-July through August, the Western Apache collected acorns (Goodwin 1942:156-159). After four or more weeks, when an adequate supply was gathered, the extended family clusters either returned to their home localities or stayed in the harvest area until the next wild crop ripened. Because the acorn harvests were near the home localities, the harvest were characterized by long stays and fairly large concentrations of people, with different local groups forming adjacent camps. These concentrations provided a major locus for visiting and interaction between differing local groups.

A wide variety of subsistence activities that provided the bulk of stored food characterized the fall (September through November), including the agricultural harvest, hunting, and several major wild plant harvests. From Late August through October, mesquite beans were harvested. (Buskirk 1949:312; Getty 1963:5; Goodwin 1942:157, 159). In early September, Spanish bayonet yucca fruit was harvested (Buskirk 1949:223-224; Goodwin 1942:62).

From September through November the agricultural crops ripened, and the extended family clusters returned to the farm sites to wait for the harvest (Buskirk 1949:42; Goodwin 1942:157). Hunting and gathering were suspended during the harvest which usually lasted for a month, normally September through mid-October (Basso 1983:469; Buskirk 1949:115, 286; Goodwin 1935:63, 1973:45).

The fall, especially October and November, was also the principal time for hunting, particularly deer and antelope (Basso 1983:409; Goodwin 1935:61). During the same time, large harvest parties, sometime consisting of whole local groups, harvested large quantities of pinyon nuts and juniper berries in the home locality and in other areas (Basso 1983:469; Buskirk 1949:330, 334; Goodwin 1942:157). Often, women and children collected, while the men hunted (Basso 1983:469).

If wintering in the home locality, the last gathering activity of the fall was collecting mescal for storage for winter consumption (Buskirk 1949:298).

Implications for the Early Mogollon Period

With two qualifications, the Western Apache settlement system model provides a model for the Early Mogollon period, especially the Early Pithouse period. First, the presence of villages with permanent architecture indicates that these sites served as the focus of the settlement system rather than a diffuse home locality. Second, the absence of the horse suggests that the range of exploitation may have been less, smaller amounts of resources may have been transported, raiding was not present or was less important, and hunting and gathering activities were more foraging than with the Western Apache.

The model of the Early Pithouse period (Figure 6) that develops is one in which the pithouse site and its surrounding area functioned as a "home locality", except that occupation was more focused on the pithouse site (Pool 1985). The pithouse site would have been occupied during the winter and for agricultural activities in the spring and fall but would have been generally abandoned otherwise. Small segments of the population may have remained at the pithouse site cultivating and protecting the crops, while the majority of the population pursued hunting and gathering activities. These seasonal movements were probably more foraging than logistical, especially in the spring and early summer when production and stored resources would have been low. However, resources in the summer and fall would have produced enough of a surplus to transport to the pithouse site for storage. In general, the settlement system was a logistical one (Binford 1980), and the pithouse site served as the logistical base camp.

The primary subsistence items were the same as the Western Apache. Mescal would have provided a staple food that was available throughout the year when other resources were not available or had failed.
Figure 6. Model of the Early Pithouse Period Settlement System
Given the size range of Early Pithouse sites, they were probably occupied by groups ranging in size from extended families to groups comparable to the Western Apache local group. Examination of Early Pithouse period structure areas suggests that the primary habitation unit was the nuclear family (Pool 1980). The presence of interior storage pits suggests that the primary unit of storage and, probably, consumption was also the nuclear family. Although there is no evidence, the extended family may have been the basic unit of production. There is also no evidence for a phratry or clan system; however, the utility of the system in integrating the Western Apache and its presence in a group with a relatively low level of social complexity suggests that the presence of a clan system should be considered.

The Western Apache settlement system implies several other things for the Early Pithouse period. First, given the basic climatic similarities, simple irrigation would have been necessary to minimize agricultural production failure, even for groups not heavily dependent on agriculture.

Second, in contrast to LeBlanc (1978, 1980, 1983) and Martin and Plog (1973), the mere presence of the differential use of agriculture does not necessarily imply that hostility or tension will result between "farmers" and "nonfarmers". Differences in agriculture within the Western Apache and within local groups ranged from 0 to 30 percent. Tensions within the Western Apache appear to have resulted from the maintenance of band and subtribal group boundaries for hunting and gathering rather than differences in the amount of agriculture. Agricultural products were circulated within social units and even between subtribal groups by exchange and "hiring out" agricultural labor (Buskirk 1949:77, 85-86).

Lastly, a group's exploitation annual range needed to include a variety of biomes for hunting and gathering. These biomes are: 1) the conifer forest biome in the Transition life zone; 2) the Great Basin conifer woodland biome, the encinal biome, and the semidesert grassland biome in the Upper Sonoran life zone; and 3) the Sonoran desertscrub biome in the Lower Sonoran life zone. The extent of the annual range would have depended on the actual distribution and density of these biomes. In some case, e.g. the Southern Tonto subtribal group, relatively local elevational gradients would suffice. In other cases, e.g. the White Mountain subtribal group, a large scale elevational gradient crosscutting physiographic zones from the Colorado Plateau Province to the Basin and Range Province would be necessary.

Acknowledgments:

I would like to thank Dr. James Neely and Dr. William Doolittle for their guidance in writing the thesis upon which this paper is based. I would also like to thank Dr. Symes C. Oliver and my wife, Juliann, for their critique of the first draft of this paper and of my presentation of it for the 1992 Mogollon Conference.

References Cited

Aschmann, Homer

Basehart, Harry W.
Basehart, Harry W.

Basso, Keith H.


Binford, Lewis R.

Bluhm, Elaine

Buskirk, Winfred
1949 Western Apache Subsistence Economy. Unpublished Ph.D. dissertation, Department of Anthropology, University of New Mexico, Albuquerque.

Cordell, Linda S.

Getty, Harry T.

Goodwin, Grenville


Griffin, P. Bion, Mark P. Leone, and Keith H. Basso
Haury, Emil H.

Indian Claims Commission

Jennings, Jesse D.

Kaut, Charles R.

LeBlanc, Steven A.


Martin, Paul S.
1940 The SU Site: Excavations at a Mogollon Village, Western New Mexico, 1939. Field Museum of Natural History, Anthropological Series 32(1).

Martin, Paul S. and Fred Plog

Martin, Paul S. and John Rinaldo
1943 The SU Site: Excavations of a Mogollon Village, Western New Mexico. Field Museum of Natural History, Anthropological Series 32(2).

1947 The SU Site: Excavations at a Mogollon Village, Western New Mexico, Third Season, 1946. Field Museum of Natural History, Anthropological Series 32(3).

Pool, Michael D.

1985 The Western Apache Settlement System and Its Implications for the Early Mogollon Period. Unpublished M.A. Thesis, Department of Anthropology, University of Texas at Austin, Austin.
Reed, Erik K.

Rice, Glen E.


Schroeder, Albert H.

Wills, W.H.