

Prehistoric Use Trends in the Uinta Mountains of Northeastern Utah
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Overview

We recently began to pull together archaeological research conducted on the Ashley National Forest between 1991 and 2000. Initially there seemed to be little unity or coherence to the mix of sites and methodological approaches, other than all our activities were focused in the Uinta Mountains of northeastern Utah. There was considerable variability in site function, site location including vegetation zone and elevation, and individual project purpose and execution. As the analysis was completed and data gaps were filled we came to the realization that essentially all this information came from between 4600 to 800 BP (cal.), the Late Archaic through Fremont periods. This is an exciting and dynamic period in Utah prehistory. Significant economic, social, demographic and probably ceremonial changes were occurring among the populations of the area as they made the transition from nomadic hunter-gatherers to more sedentary horticulturalists.

We agree with others (e.g. Simms 1990, Madsen and Simms 1998) who feel that too much unproductive effort has been exerted to define the Fremont. Madsen and Simms (1998: 322-323) provide the most useful definition, they state: "we do think that farming 'defines' the Fremont archaeological complex. It does so, however only in the sense that farming changes the behavior of everyone, farmers and foragers alike, who live within the matrix of farming communities." Janetski (1996) was probably thinking similarly when he referred to the Fremont as a "sphere of influence." The Fremont, then, are those groups associated with farming, either through actual participation in horticulture or through exchange and other social ties to farming communities.

With the recognition our data was from a limited time frame, the initial apparent disunity in site types now became a significant strength. The variety of sites provides an opportunity to examine how people from a particular period utilized different resources, elevations, and settings in the mountains as they made the transition to a more sedentary life-way. This broad panorama of their adaptation, particularly to the higher elevations, will supplement the more researched lower elevation village and rock art sites that tend to be the focus of Fremont archaeological study. So although the Fremont are the most studied and documented of prehistoric groups in Utah, our work fills an important niche in our understanding of that period.

Setting

Ashley National Forest includes over one million acres of land in the eastern Uinta Mountains at elevations of 1829 meters (m) or 6000 feet (ft) to over 4115 m (13,500 ft) on both the north and south slopes of the east-west running Uinta Mountain chain. Northeastern Utah is an area with immense contrast in topography and climate. A

geologic uplift under the Uinta Mountains has pushed sedimentary strata from the last billion years to considerable height. Today geologic strata on both slopes stand steeply angled. The High Uintas are characterized by extensive glaciated features, deep cirques, lakes, and moraine deposits. Deep, steep walled colorful canyons flank the Uintas. Mostly notable is Red Canyon cut by the Green River, but Sheep Creek Canyon, Little Brush Creek Gorge and Uinta Canyon are all nearly 600 m (2000 ft) deep and offer spectacular vistas.

There are dramatic differences in precipitation between the desert basins on either side of the Uinta Mountain range, which receive only eight inches a year, and the High Uintas, which can receive over 40 inches of precipitation annually. This variation in moisture has created marked differences in vegetation. The lowland basins, where population is centered today, consist of large intermontane basins with sparse vegetation of shadscale and other desert communities. Vegetation changes from pinyon/juniper to open sagebrush steppe interspersed with aspen groves, to Ponderosa pine, to dense stands of Lodgepole pine, to spruce/fir forest, and finally alpine areas as elevation is increased.

The deep canyons, dense forests, and severe weather of the Uintas created a formidable barrier to historic and prehistoric populations. They form a convenient border for geographic (D'Azevedo 1986:7), climatic (Loosle and Johnson 2000:205) and cultural regions (Loosle 2000). However, there is an extensive and lengthy record of prehistoric activity in the Uintas.

Based our work at Dutch John on the northeast flank of the Uintas, we (Loosle and Johnson 2000) argued the Uinta Fremont accepted and developed horticulture in approximately 2000 BP, during a period of warmer conditions that produced a longer growing season, which coincided with increased effective moisture. These conditions lasted for several generations as farming became widespread. Fremont sites were small and dispersed during this optimal period. By 1600 BP (Loosle and Johnson 2000:260) the environment began to decline to be more like that of today. Farming had become entrenched economically and socially, however, and families struggled to maintain a difficult strategy in the face of deteriorating conditions. One of their adjustments was to retreat, perhaps consolidate, to better-watered locations like the Ashley- Dry Fork, Whiterocks and Uinta River drainages. Logistical forays into higher elevations also became more important.

High Country Use

A total of 70 radiocarbon dates from the Ashley suggests small residentially mobile groups that left few traces only lightly utilized the Uintas before 2000 BP. After 2000 BP economic patterns shifted to increased use of higher elevations, culminating in intense use of all elevations between 1500 – 800 BP (cal.). There appears to be a dramatic change to limited transitory use after 800 BP. The Fremont period in northeastern Utah (included in the Late Prehistoric Period in southwest Wyoming archaeology) is characterized by increasing populations (Talbot and Richens 1999:112-118; Thompson and Pastor 1995:54, Figures 12-14; McKibbin 1992:420; Spangler 1995:497), evident as a larger number of sites and increased deposition at sites caused by larger

populations or extended occupations. Fremont sites tend to be more visible and recognizable than earlier sites due to several unique artifact types (ceramics, faceted manos, projectile points, basketry), and more substantial architectural and visible features (pithouses, rock art, granaries). Both quantitative and qualitative changes make Fremont occupation much more visible on the landscape.

Our dates were not collected in a statistical fashion and combined with the more visible nature of Fremont material culture may skew our observations, so we welcome testing and challenges to these tentative conclusions. However, we feel the use pattern represents a real phenomenon that will be supported with additional data.

Theoretical Orientation: A Plethora of Models Farmers in the High Country

Why was there a significant increase of people in the Uintas during the Fremont period? There are several potential models to explain this phenomenon such as migrations, changing cultural boundaries, warfare, cultural innovations, and the creation of distinct forager/farmer groups. However, for this brief discussion today I will focus on two of the more relevant explanations, climatic stress and a shift in economic strategy. One model for high country use suggests occupation flourishes during periods of drought in the lower country (Benedict 1978). Spangler (1995) summarizes optimal foraging models of Simms (1979) and Madsen et al (2000) to suggest that the cost of “exploiting mountain resources may have exceeded the profitability of those resources” during most periods of time. He continues, “if periods of climatic stress made horticulture untenable, Fremont populations theoretically would have exploited less profitable resources. These human populations would have redistributed themselves across the landscape in proportion to the availability of those resources. The Uinta Mountains may have been included in this redistribution.” (Spangler 1995:489). Madsen and Simms follow Berry (1972, 1974) to propose, “that during years of limited agricultural production, farmers would switch to pine nuts (pine nuts are storable, and ripen soon after the maize crop is in) which, at a minimum, require logistic forays away for the residential base, if not temporary relocation.” (Madsen and Simms 1998:288-289). However, there is no convincing evidence of pine nut use in the Uintas or Uintah Basin. This is especially surprising at Dutch John, which has an abundance of pinyon. Collection of Cheno-ams, a dominant activity at several upland Fremont sites, may have served a similar buffering mechanism. However, an analysis of Fremont temporary structures where Cheno-ams were collected (Loosle and Johnson 2000:251) shows these sites were visited repeatedly over nearly 1000 years, suggesting long-term resiliency rather than short-term adaptive changes.

Talbot and Richens (1999:120-121) respond to Madsen and Simms (1998) discussion of what archaeological signatures would be present if farming were abandoned for a time by arguing there is no evidence for complete abandonment of farming. The Uinta Fremont were committed to an agricultural strategy. In addition to a dramatic economic shift to accommodate the planting, tilling, harvesting, and storing of crops, social and ceremonial community structure would inevitably develop to support and validate this endeavor. This life-way would not have been abandoned for a brief period in response to drought, insects, or plague. Others have noted that farmers have developed

buffering mechanisms to handle shortages (Dean et al 1994). Anticipated responses for a farmer faced with a difficult period that increased storage could not meet would be to move to a more favorable location for farming, live with kin or associates that have adequate resources, intensify or improve irrigation, genetically improve adaptability of crops, make adjustments to social or ceremonial aspects of the community, use exchange to emolliate shortages (Blakeslee 1975), or intensify resource acquisition (Talbot and Richens 1999:120).

Talbot and Richens (1999:110) hint at such a situation developing in the mid to late Fremont times when small groups only seasonally tied to their fields would have been forced to marginal agricultural lands by the stable, year-round residents of villages. Village dwellers had invested considerable energy into agricultural and domestic features supported by economic and social institutions, so it was important for them to maintain their territory. These two groups would probably have been closely linked through economic, social and kinship ties, however. The smaller groups would actually be more flexible and resilient in the long term, in the face of deteriorating climate for farming.

Fremont population movement into Browns Park, Red Canyon and other marginal areas may have been lower status individuals attempting to continue a farming tradition. This strategy should be manifested in smaller sites (no true villages), fewer exotic goods, less social complexity, and more reliance on wild resources. The abundance of maize and storage features in these outlying areas strongly suggests these marginal groups were still attempting to farm and had not “switched” (Madsen and Simms 1998:289-290) to foraging. In addition, late Fremont dates from small sites on the periphery of the Uinta Basin, including the Uintas, (Wilson and Loosle 1996) show the resiliency of these smaller groups. They were able to continue their way of life several generations after the village dwellers had abandoned their irrigated fields and more complex social organization in the Uintah Basin proper.

One aspect of our research is we are obtaining a clearer picture of one of these peripheral groups in Red Canyon and Dutch John. This group created some unusual items including; a painted pottery style, decorated baskets, an atypical style of maize, a particular style of storage facility, and was heavily involved in transport and use of Tiger chert.

Evidence for upland use during periods of drought has been noted at Dutch John on the flanks of the Uintas. The Dutch John area was first exploited during the Altithermal, when conditions were extreme in the Wyoming Basin (Loosle and Johnson 2000:253-254). As conditions improved at lower elevations, the Dutch John area was apparently abandoned for several generations. Near the end of the period when slab-lined basins were constructed in Wyoming, these features began to be utilized in Dutch John. This shift suggests that changing climate may have encouraged people to exploit resources at higher elevations. After 3000 BP there appears to have been a cooling with more effective moisture (Loosle and Johnson 2000:218). This favorable climate between 3000-1800 BP (the Late Archaic – Fremont transition) probably led to an increase in game and other resources in the mountains, which had only been lightly exploited previously. Available lowland resources would also have increased during this period,

which according to the drought model would have made the Uintas less attractive. Only after 1800 BP, as climatic conditions deteriorated and sedentism increased, would exploitation of high altitude resources become more important. Hence, the climatic model does not appear to explain the increasing use of the Uintas before 1800 BP.

Economic Strategy

Why is there a significant presence in the high country of northeastern Utah during a favorable climatic period when people became increasingly reliant on domesticated products? In contrast, further to the west the Wasatch Range above heavily occupied Utah Lake margins appears to have only been lightly occupied during the Fremont period (Shaun Nelson, personal communication, 1999). Similar to a reduction in resources predicted in the climatic model, stress created by increasing population is frequently presented as an impetus for new or intensified resource exploitation (e.g. Fagan 1998:232; Dean et al 1994; B. Smith 1995). This explanation is convenient for resources or ecotones in or near previously occupied areas. However, this explanation is problematic for areas 35-70 km (20-40 miles) distant across difficult to access terrain, as the High Uintas were for Fremont villagers from the Uinta's south slope. Wills and Huckell (1994) present a model that may be applicable to the Uintas. They suggest the advent of domesticates allowed for a "protracted presence" in remote and marginal environments that had not been possible before. "Cultivation in certain areas makes it possible for natural resources to be utilized more intensively by allowing longer occupation and more effective foraging tactics. In short, the introduction of one subsistence tactic (agriculture) into a new niche allows another set of procurement tactics (foraging) to be reorganized for greater efficiency" (Wills and Huckell 1994:52). The example they offer is from the rain forest of Africa. The pygmy foragers cannot live in the forest exclusively because resources are thin and difficult to obtain. The foragers have developed a symbiotic relationship with neighboring farmers. The supplemental resources provided by the farmers allow pygmies to make long trips into the forest that would not have been possible otherwise. Wills and Huckell warn against drawing too much from such disparate conditions, but the Uintas have at least one similarity to a rain forest. Mountain resources are relatively limited and spread out, except for perhaps mountain sheep. Bettinger (1994:51) notes the marginal return rates of most high altitude resources compared to lower elevation alternatives. A reliable food source (maize) would allow logistical groups to travel farther and stay longer without fear of failure or hunger.

Support for Will and Huckell's model can be found in a number of places. Instead of broad-spectrum resource utilization that characterizes the Archaic period, there is more focused, efficient resource extraction during the Fremont period. We have found a series of specialized sites intended for storage, Cheno-Am gathering, stone tool production and game processing. There is also a shift in faunal resource exploitation. Early to Middle Archaic individuals gathered a wide range of fauna, especially lagomorphs, while Fremont hunters focused on medium to large mammals (Loosle and Johnson 2000:228). It should be noted that the Uintas trend is opposite to what Bettinger (1994) documented in the White Mountains, where Archaic peoples focused on large mammals and Late Prehistoric peoples killed a range of game.

A change in economic strategy will allow people to stay longer at each site warranting investment in more substantial features (granaries or pithouses) or creating deeper cultural deposits. Numerous rockshelter and cliff face sites near Red Canyon and in the Uintas contain deep cultural deposits of predominately Fremont material culture. These deep depositions only accumulate through lengthy, frequent, repetitive or intense (many people) occupations.

Production of domesticates should permit surpluses that would allow more nonlocal resources to be obtained through trade or long distance direct access. In support of this there is an increase in nonlocal materials in Fremont sites like obsidian, and Tiger chert and Sheep Creek quartzite from north of the Uintas. If Fremont people were using domesticates as a food source to exploit the high country we should find evidence of domesticates at high elevation. Extremely limited excavation of high altitude sites does provide some tentative support. At 42Dc823, (located above 10,000 feet in elevation) the only economic species recovered were oak and cattail, both lowland species. The upland plants being gathered at this site appear to be medicinal (Watkins 2000). At 42Da791, around 7000 feet), evidence of maize has also been recovered.

Another potentially important aspect of the Uintas occupation linked to economic strategy is development of new technologies that allowed people to exploit high altitude resources. Larson (1997:364) notes a dramatic shift around 4000 years ago in Wyoming. She suggests adoption of refinements in basketry and possibly meat drying led to mobile storage practices. Drying helped preserve meat for storage and would have allowed logistical groups to transport supplies back to residential villages. Adoption of meat drying may have been a critical development in the exploitation of the Uintas. Small logistical groups could travel long distance to hunt game and then reduce and preserve the meat to take back to a larger group. Meat no longer had to be consumed quickly after it was obtained.

Summary

We believe human presence in the Uintas intensified after 4600 BP due to the improvement in climatic conditions and development of new technology. Adoption of domesticates around 2000 BP allowed a "protracted presence" in the Uintas resulting in more features, deeper deposits, and more sites. Deteriorating climatic conditions after 1800 BP lead to frequent drought conditions, which encouraged intensified exploitation of the high country by Fremont farmers. As climatic conditions deteriorated after 1800 BP small marginal Fremont groups moved into areas like Browns Park and Red Canyon and struggled to continue farming. These groups had links to villagers to the south and although of lower status, were more resilient so they continued their life-way longer than the village dwellers. Abandonment of farming after 1000 BP made upland use more difficult and less desirable for the same reasons it had become popular during the Fremont period.