

Manti – La Sal National Forest Plan Revision Assessments

Topic 13- Cultural and historical resources and uses

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for:

The Manti – La Sal National Forest

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Indicators

The primary indicator used to measure the stressors is numbers of sites and the conditions of those sites.

Numbers of Sites

There are 4,832 documented sites on the Forest, with the majority (80 percent) located on the Moab/Monticello Ranger District (table 1,

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figure 1). Forest sites include a wide range of site types that date from both ancient American Indian and historic European American eras. Ancient American site types include villages, single- and multiple-residential sites, agricultural terraces and check dams, kilns, isolated storage sites (granaries and slab-lined cists), rock art, rock shelters, low stone observation rooms, and artifact scatters. Historic sites include sawmills, mines, livestock camps and cabins, CCC camps, roads and trails, culinary water systems, trans-basin canal systems, and artifact scatters. Most of these are European American in origin, but there are important historic period American Indian sites on the Forest, including culturally modified ponderosa pines, hogans, and sweat lodges.

Table 1. Total number of documented sites on the Manti-La Sal NF

District	Sanpete	Ferron	Price	Moab	Monticello
Number of Documented Sites	137	708	141	636	3207

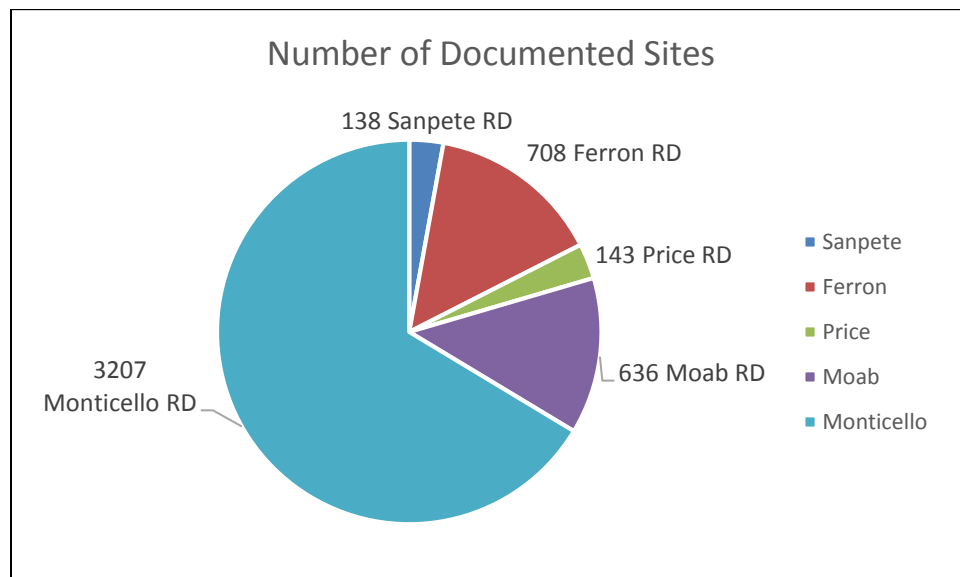


Figure 1. Total number of documented sites on the Manti-La Sal NF

These sites are both individually and collectively important, particularly when they occur within a discreet landscape along with large numbers of sites from similar time periods or from the same cultural tradition.

The best example of this is the Ancestral Puebloan landscape on the Monticello District, which includes some of the highest site densities in the state of Utah. Together these sites form a significant source of traditional and archaeological knowledge about Ancestral Puebloan history.

Most sites on the Forest (79%) have been evaluated for their eligibility to be listed on the National Register of Historic Places (NRHP; Table 2 and Figure 2). Only two sites on the Manti-La Sal National Forest are currently Listed on the NRHP. These are the Great Basin Station on the Sanpete District and the Pinhook Battle Site on the Moab District.

Table 2. Percentage of sites on MLS Districts, by National Register Eligibility

NR Status	Sanpete	Ferron	Price	Moab	Monticello
Eligible	41 percent	42 percent	33 percent	48 percent	58 percent
Not Eligible	52 percent	42 percent	55 percent	41 percent	17 percent
Unevaluated	7 percent	16 percent	13 percent	11 percent	25 percent
Listed	0.70 percent	0	0	0.01 percent	0

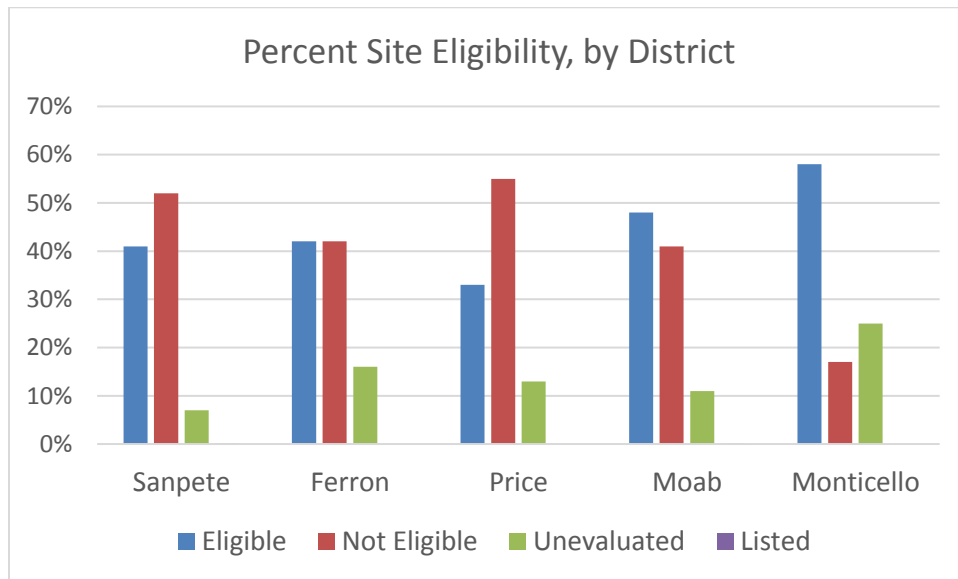


Figure 2. Percentage of sites on MLS Districts, by National Register Eligibility

Table 3. Total number of eligible sites on the Manti-La Sal National Forest, by District

NR Status	Sanpete	Ferron	Price	Moab	Monticello
Eligible	56	297	47	306	1853
Listed	1	0	0	1	0

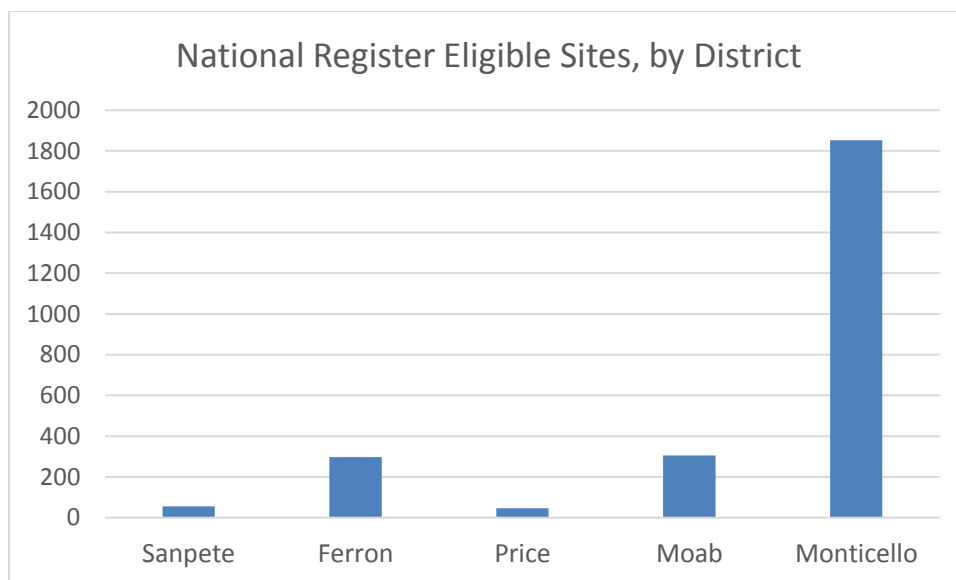


Figure 3. Total number of eligible sites on the Manti-La Sal National Forest, by District

Again, the Monticello District stands out from the other four districts on the Manti-La Sal National Forest, this time in the relative percentage of sites determined to be eligible for the NRHP (Table 3 and Figure 3). This is largely due to the nature of much of the archaeological record on that district, which consists of Ancestral Puebloan habitation or limited use sites that contain buried deposits that are of considerable archaeological value (one of the sites' characteristics that make them eligible for the NRHP).

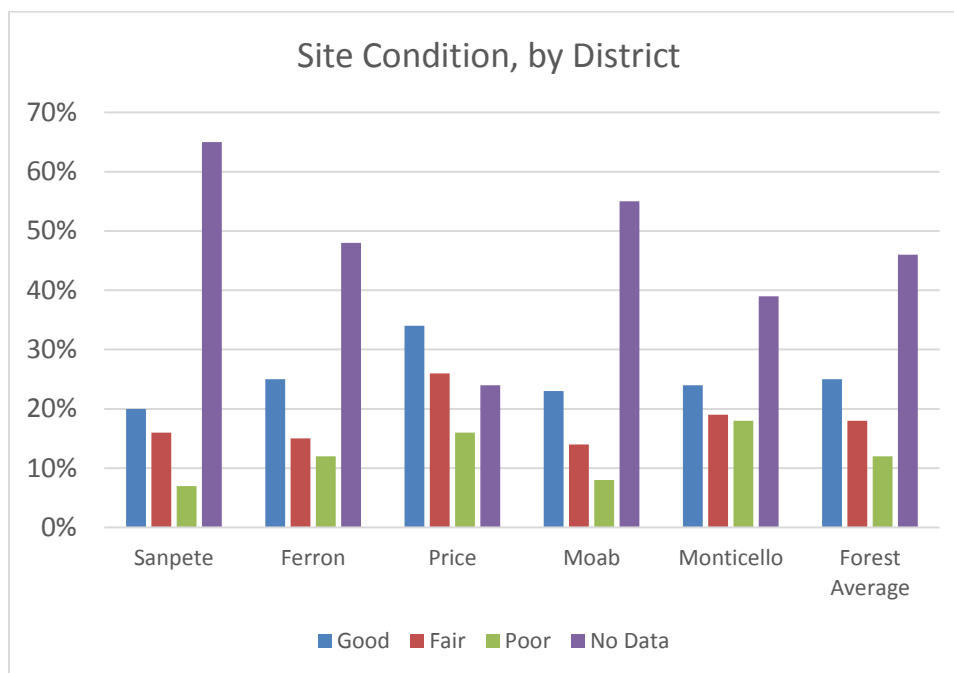
Site Condition

Data on the condition of Forest sites is incomplete, and based on relatively subjective site condition data derived from over 40 years' worth of site forms (Table 2, Figure 2). The most recent version of site form used in Utah since 1982 is the Intermountain Antiquities Computer System (IMACS). IMACS uses categories to describe site condition, as follows: excellent (virtually undisturbed); good (75 percent undisturbed); fair (50-75 percent undisturbed); and poor (more than 50 percent disturbed) (IMACS User's Guide 1992, Part A, page 13). The "excellent" category is rarely used, since most sites have at least some level of disturbance due to natural weathering. The system overall is difficult to apply, in part because to our inability to accurately assess the condition of buried or subsurface deposits. In general, 25 percent of the sites on the Forest are described as being in good condition, 18 percent in fair condition, and 12 percent in poor condition. We have no condition data in INFRA for 46 percent of the sites on the Forest.

Table 4. Site Condition on the Manti-La Sal National Forest, by District

	Sanpete	Ferron	Price	Moab	Monticello	Forest Average
Good	20 percent	25 percent	34 percent	23 percent	24 percent	25 percent
Fair	16 percent	15 percent	26 percent	14 percent	19 percent	18 percent
Poor	7 percent	12 percent	16 percent	8 percent	18 percent	12 percent
No Data	65 percent	48 percent	24 percent	55 percent	39 percent	46 percent

Figure 4. Site Condition on the Manti-La Sal National Forest, by District



The Monticello District has a higher percentage of sites described as being in “poor” condition. The reason for this is unclear, but may be the result of a tendency for site damage to be more recognizable in Ancestral Puebloan sites because they have more obvious features (such as rubble mounds, slab-lined pits, middens [trash deposits], etc.). It may also reflect the fact there are large numbers of sites on that District that were badly damaged by Forest vegetation management projects prior to the 1980’s, before NHPA required Federal agencies to assess the potential effect of these kinds of undertakings on cultural resources.

A variety of processes affect site condition. These include natural weathering / erosion, and this effect has been in action since a given site was abandoned by its users. Wildfire is another effect that has occurred since site abandonment. Trampling by game has also been at play for centuries. However, other effects have increased in the past roughly 130 years due to increases in population and use of what is now the Manti-La Sal National Forest. Intensive livestock grazing before and immediately after formation of the National Forest and the associated loss of top soil due to this overgrazing are both effects that probably damaged many sites to a large degree. As a result, many sites on the Manti-La Sal were already in fair to poor condition when the forest was created in the early 1900’s.

Other effects steadily increased in intensity and extent after formation of the national forest and before the National Historic Preservation Act (NHPA) in 1966. These include direct effects from road and trail construction, large scale vegetation removal (particularly using chaining and disking), and construction of erosion control terraces.

Scale

District boundaries are our basic units of scale for describing cultural resources. Watershed boundaries are useful for describing differences in site distribution and density on the Monticello District, where such differences are important for understanding the nature of those resources.

Existing Conditions

Cultural resource types, densities, and time periods vary on the Manti-La Sal National Forest based on local historical trends and topography. These trends vary widely based in part on the very wide distances between the four geographic units on which the Districts occur. The Manti-La Sal National Forest includes four separate land forms, including the San Pitch Mountains, the Wasatch Plateau, the La Sal Mountains and the Abajo Mountains/Elk Ridge. The San Pitch Mountains and Wasatch Plateau are close enough together that their cultural resources can be discussed together as part of the overview of the three northern ranger districts. The cultural resources of both the Moab and Monticello ranger districts are distinct and will be discussed separately.

Resources of the Wasatch Plateau / San Pitch Mountains

The Sanpete, Ferron, and Price Ranger Districts occur primarily on the Wasatch Plateau, with a portion of the Sanpete District on the much smaller San Pitch Mountains located west of the Wasatch Plateau. This area shares a common culture history. However, local history and topography influenced the ways in which past people used these land forms, and this created slightly different cultural resource records. The general distribution of documented sites is shown in Figure 5.

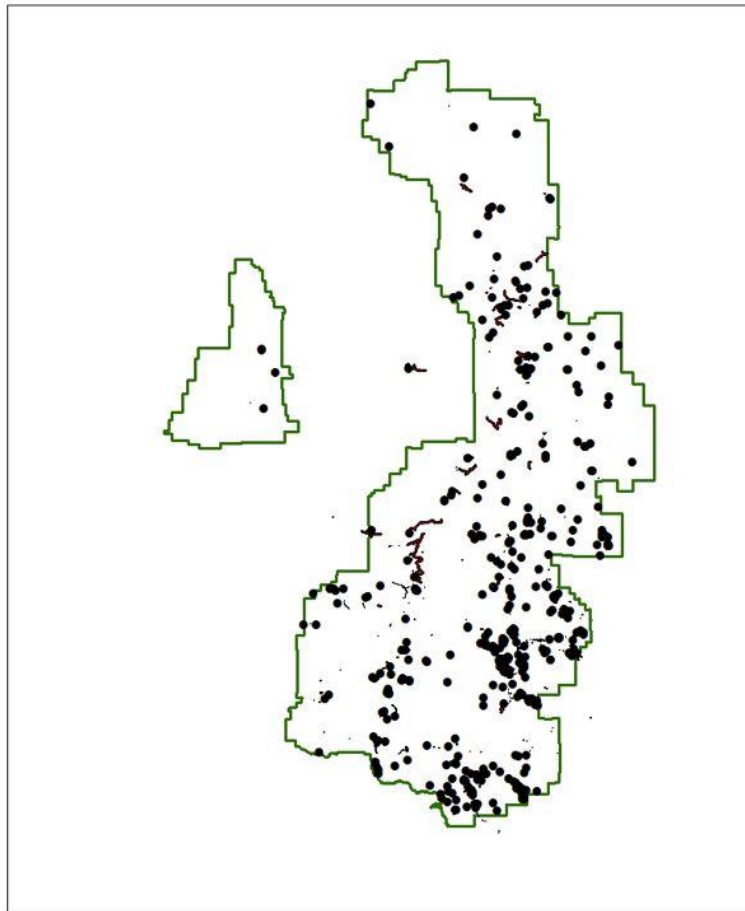


Figure 5. Distribution of documented sites on the Sanpete, Ferron and Price Ranger Districts.

Past use of the Wasatch Plateau and San Pitch Mountains was carried out by people who lived in lower elevation areas next to the Forest. These including Sanpete, Sevier, Juab, Castle, and Utah Valleys. Because of the relatively high elevation of the Forest, most of this use was seasonal. This pattern of seasonal use continues today. The general outline of human history in this area is outlined below. This will be followed by a discussion of the unique resources found on each of the three ranger districts.

Paleoindian and Archaic Cultural Resources (12,000 – 1,700 BP)

The Wasatch Plateau, in particular, has been used by ancient peoples since early Paleoindian times, as isolated Clovis spear points have been recovered in two different locations. Late Paleoindian projectile points have also been found in larger numbers on the Plateau, indicating that the mountain was particularly important to big game hunters during that era. The Plateau may have been a refugia for big game, including the Huntington Mammoth, who died around 11,500 BP. Although there is no direct evidence of human hunting or scavenging on this mammoth, the climatic data found in association with him suggests that this area might have provided early hunters with access to big game during a time of drastic climate change and animal extinction (Gillette and Madsen 1993).

As the climate dried and warmed around 8,500 BP, Archaic hunters and plant gatherers utilized the Plateau extensively. Little ground stone has been found on exclusively Archaic period sites, suggesting that hunting was the prime activity for them. Both Early and Late Archaic projectile points are the most common types found. These early sites are generally marked by open scatters of chipped stone flakes and tools, some of which contain buried deposits. But Archaic period sites also occur in alcoves where buried stratified deposits contain critical records of Archaic period activities and cultural change. Chief among these is Joes Valley Alcove, which contains one of the earliest excavated occupation dates in Utah, from about 8,200 BP (Barlow and Metcalf 1993). These rock shelters are among the most important archaeological sites on the Plateau because of their potential to significantly increase our understanding of local human history. The role that upland resources on the Plateau played in the yearly cycle of life for local Archaic populations is poorly understood and these sites could contribute in substantial ways to thousands of years of central Utah history.

Another common type of Archaic site on the Plateau is the chipped stone quarry, located in areas where abundant Flagstaff chert erodes out of Flagstaff Limestone. Use of this chert for stone tool production probably began in late Paleoindian times and persisted throughout ancient history. Archaic period rock art also occurs at several Plateau sites, including a single known example of Barrier Canyon style.

Fremont Cultural Resources (1,700 – 550 BP)

Farming populations began to occupy central Utah around 1,700 BP (or AD 300). They built year-round habitations in areas along perennial streams, at elevations low enough to support the growing of corn and other cultigens. There is evidence of small farmsteads in both Ferron Canyon and Muddy Creek, but most Fremont period sites on the Plateau are higher elevation seasonal camps. This includes Joes Valley Alcove and other rock shelters across the southern part of the Plateau. These alcoves and open air sites suggest that Fremont use of the uplands above their more settled villages in the nearby valleys was a critical part of making a living. Ground stone is found at some Fremont sites, suggesting that both hunting and plant gathering drew them to the mountains. Fremont period artifacts also occur at chert quarry sites, indicating that tool stone was also an important Plateau resource for them. As a result, the most common types of Fremont sites are open scatters of mostly flakes of chipped stone, some ceramics, and some ground stone. Most alcove sites on the Plateau contain Fremont era artifacts, suggesting that

these locales were particularly favored by Fremont peoples. Fremont rock art also occurs in limited areas on the Forest, mostly in Ferron Canyon and Muddy Creek.

The suite of Fremont sites on the Wasatch Plateau, in particular, are important to the understanding of central Utah archaeology because they represent upland resource use by two Fremont populations, those from Sanpete and Castle Valleys. Upland resource use was a critical supplement to farming in nearby valleys. Fremont life in Sanpete Valley, in particular, has received little archaeological attention and Forest sites could substantially contribute to an understanding of Fremont history in this part of Utah.

Late Prehistoric and Historic American Indian Cultural Resources (550 – 150 BP)

Following the general abandonment of farming around 550 BP (AD 1250), area residents returned to a hunting and gathering way of life. Evidence of the earliest of these people (called Late Prehistoric) consists primarily of Desert Side Notched projectile points. Open air sites containing these points are relatively widespread on the Plateau. There is also some probable Ute and Paiute rock art on the Plateau. Ute and Paiute sites dating to the period of initial European American conquest of this area are difficult to identify due to the fact that these folks also used historic era artifacts.

However, one very important category of Ute and Paiute site can be identified. These are peeled Ponderosa Pine trees, which bear marks from bark being peeled back to allow the harvest of cambium. The oldest of these trees probably date to the 1860's, when the first European American settlers arrived in the area (reference?). These trees are found widely on the southern end of the Plateau in areas where Ponderosa Pines occur naturally, but are concentrated in the Joes Valley area. These trees are living connections between modern Ute and Paiute Indians and their immediate ancestors and are tremendously important to Tribal members today.

Historic European-American Cultural Resources (150 BP to Present)

Settlement of central Utah by new emigrants from Europe/Africa/Asia began in Utah Valley in 1849, Sanpete and Juab Valleys in 1851, Sevier Valley in 1864, and Carbon Emery Counties in the late 1870's. Initial use of the Plateau and San Pitch Range was very limited, due to continuing disputes with Utes over rights to land and resources. Ute and Paiute Indians were forced onto reservations or out of the area by the late 1860's, clearing the way for final emigrant expansion in central Utah. By the 1870's, cattle and sheep herds were being moved onto the Forest, and logging had begun in its canyons. Both of these activities would accelerate into the early 1900's. Grazing, in particular, would increase at such a pace that by 1902 local communities in Sanpete Valley began to petition for the creation of Forest Reserves in order to protect the watersheds on both the Plateau and the San Pitch Mountains. The Manti Forest Reserve was created in 1903 (Wilson 2013).

Coal mining began in the area in the San Pitch Mountains in 1859, but commercial development there did not begin to rival the developments that would soon follow on the Wasatch Plateau. Coal mining began in at the head of Huntington Canyon in 1874 and in Pleasant Valley in 1875. Logging for both buildings and mine props accompanied the mining, as did other industries such as dairying and livestock production. Coal mining eventually spread down Huntington Canyon, south and west of Pleasant Valley, and into Straight and Muddy Creek Canyons by the early 1900's. Mining and the early 1900's era land claims associated with it came to profoundly affect land ownership on the Wasatch Plateau, creating large private inholdings.

Another critical resource utilized early by European settlers was water. Water diversions that captured water for irrigation and culinary use began in the late 1800's on the Wasatch Plateau. By about 1936,

there were over 30 tunnels, ditches, and diversions moving water from the spine of the plateau and its tributary canyons into nearby communities. Hydroelectric power plants were also established just below the Forest in several Sanpete County canyons, powered by water flowing from the Forest above them.

Other important historic uses of the Plateau include hunting, recreation, and travel (connecting Sanpete and Castle Valleys). The development of Forest recreation facilities, roads and trails was accelerated in the 1930's by the Civilian Conservation Corps.

Site Distribution on the Wasatch Plateau / Sanpitch Mountains

The archaeological record on the Wasatch Plateau and San Pitch Mountains has been affected by topography and natural resource abundance. As a result, sites are unevenly distributed and almost all of the documented sites occur on the Wasatch Plateau. This is in part due to the very steep nature of much of the San Pitch Mountains, as well as to the fact that less archaeological work has been conducted in the latter. Tables 5 and 6 indicate that the majority of Wasatch Plateau cultural resources occur on the Ferron District. These resources are identified as components, which is evidence of use of a place during a particular time period. Some locations (or archaeological sites) contain multiple components, as occurs when a 1950's era sawmill site is built on top of an ancient American Indian campsite.

Table 5. Prehistoric site components on the Wasatch Plateau and San Pitch Mountains, by District

Prehistoric Site Components	Sanpete	Ferron	Price
Lithic Scatter	55	480	62
Artifact Scatter	0	25	3
Rock Art	2	17	1
Rock Shelter	1	69	4
Habitation Site	0	9	0
TOTAL	58	600	70

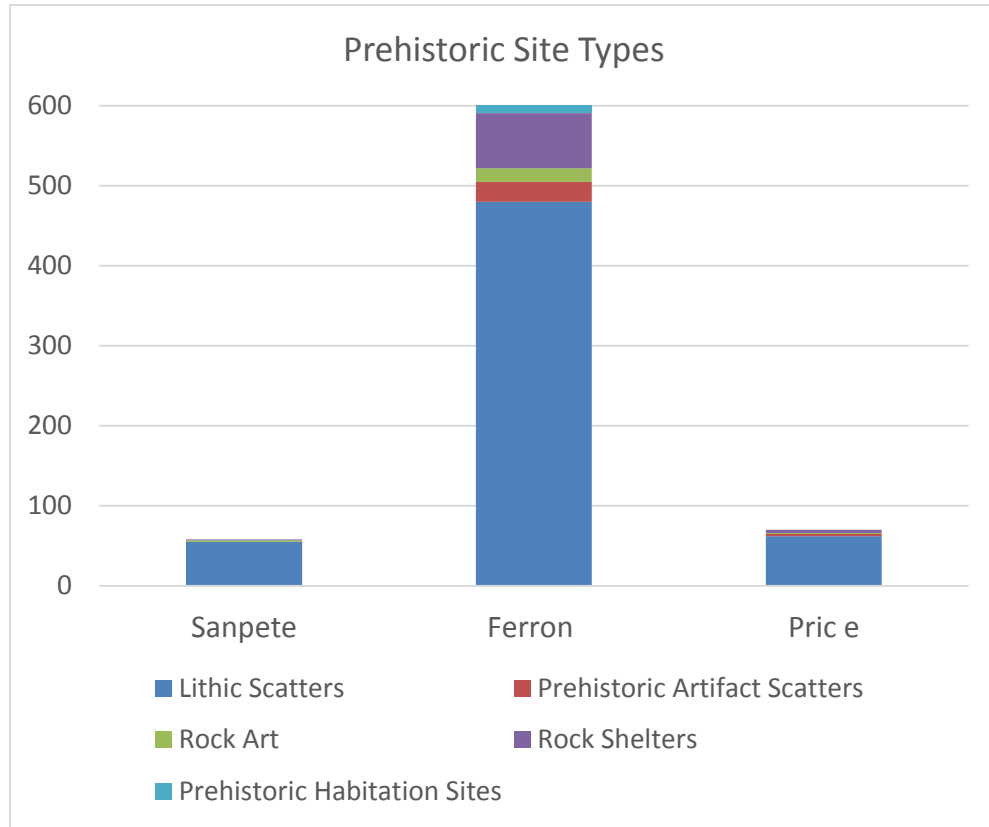


Figure 6. Prehistoric site components on the Wasatch Plateau and San Pitch Mountains, by District

The large number of sites on the Ferron District reflect in part the relatively large size of the District. However, these sites are also due to the high correlation between ancient sites and canyon rims and pinyon-juniper woodlands on the plateau, and both of these are far more extensive on the Ferron District. The Ferron District appears to have been very important to ancient peoples as upland resource use area. Rock, Ferron, Muddy and Link Canyons provided relatively quick access up onto the Plateau for people who were living in adjacent areas in Castle Valley. Fremont ceramics (Sevier Gray) found in rock shelters on the District also suggest that it was utilized by people from Sanpete and possibly Sevier Valleys.

Although historic period components are also more common on the Ferron District, there is relatively more even distribution of historic period sites across the three districts (Table 6 and Figure 7). Not all historic sites can be associated with a particular activity, but many can be identified to both general age and activity. Some sites are unique (such as Civilian Conservation Corps camps and historic monuments) and are shown as “Miscellaneous” sites.

Table 6. Historic Site Components on the Wasatch Plateau and San Pitch Mountains, by District

Historic Site Components	Sanpete	Ferron	Price
Artifact Scatters	15	23	8

Historic Site Components	Sanpete	Ferron	Price
Water Diversion / Development	16	17	8
FS Admin / Research / Recreation	37	6	4
Sawmills	0	11	9
Coal Mines	0	8	5
Livestock Management	2	4	4
Arborglyphs	3	11	7
Cabins / Dugouts	0	3	7
Roads / Trails	5	10	6
Peeled Ponderosas	0	9	0
Misc. Historic Sites	4	4	3
TOTAL	82	106	61

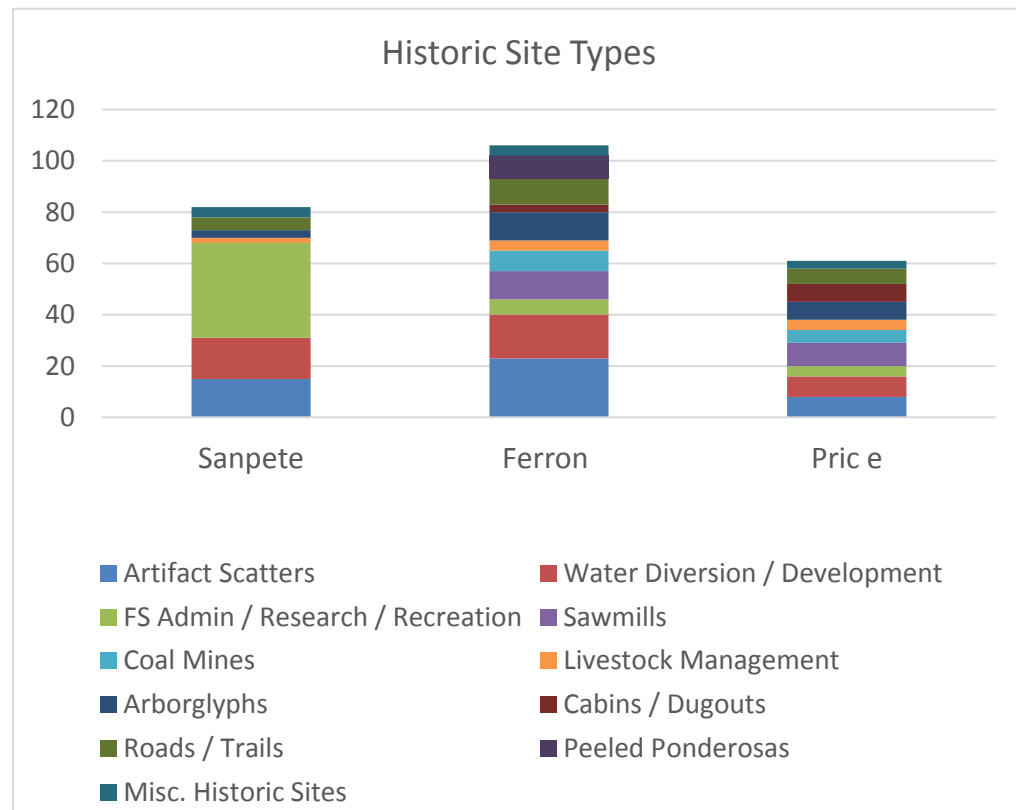


Figure 7. Historic Site Components on the Wasatch Plateau and San Pitch Mountains, by District

The most common historic site types on all three districts are artifact scatters and arborglyphs. Artifact scatters (consisting of cans, broken bottles, and/or other miscellaneous artifacts) generally represent camping associated with livestock management, hunting, logging/firewood cutting, or general recreation.

Arborglyphs are almost always on aspen trees, and generally consist of names and/or dates, with few figures. Many historic period sites are eligible for the National Register of Historic Places for their archaeological research potential and for their association with important aspects of local history. All historic period sites reflect the strong connection between the Forest and local communities and families.

Sanpete Ranger District

There are relatively few prehistoric sites located on the Sanpete District, and many of those sites are associated with Flagstaff chert outcrops both on the Plateau and lower down in the canyons on the west side of the Plateau. However, enough sites have been identified to indicate that its canyons were important travel routes between Sanpete, Sevier, and Juab Valleys and the higher portions of the Plateau and San Pitch Mountains. Fremont rock art in the San Pitch Mountains takes the form of figures on placed on protruding cobbles within conglomerate, and is an art form unique to this area.

Historic sites on the District are dominated by Forest Service administrative and research sites located largely in Ephraim Canyon (Table 6 and Figure 7). The most important of these is Great Basin Station, which is Listed on the National Register of Historic Places. This Forest Service Research Station was established in 1912 and is one of the first watershed research facilities in the world. The other historic Forest Service facility on the district is the one-room Moroni Guard Station, located in the Sanpitch Mountains.

Canal or pipe systems that convey water from springs and snow banks on the Wasatch Plateau into Sanpete Valley are also relatively common. Some of these include tunnels that move water from the eastern side of the Wasatch Plateau into Sanpete Valley on the western side of the plateau. These water systems are historically important for their role in establishing 20th century settlements in Sanpete County, and remain vital sources of water for the same communities today. The construction camp associated with completion of the mid-1930's Ephraim Tunnel Project is also an important archaeological resource on the Sanpete District.

Ferron Ranger District

Tables 5 and 6 and Figures 6 and 7 indicate the relative abundance and diversity of cultural resources on the Ferron Ranger District. It contains the highest density of ancient sites on the north end of the Forest. Prehistorically, this portion of the Wasatch Plateau was important as a travel route between Sanpete and Castle Valleys, as a summer / fall hunting and gathering area, and as a source of chert for stone tools. The relatively abundant natural rock shelters in this area were inviting natural campsites and were used extensively by ancient people. These constitute one of the most important cultural resource on the Forest because of the rich record of past human activity that they contain. The district also contains the only possible year-round Fremont habitation sites, although many of these have been badly damaged by past looting or erosion. It also has most of the rock art on the northern end of the Forest, much of it identifiable as Fremont.

The Ferron District has a relatively diverse set of historic period site types, as well. Like the Sanpete District, it has a large number of water diversions. Other site types include a number of sawmills and coal mines, and the only known homesteads on the north end of the Forest. Historic Ute peeled ponderosa pines also occur exclusively on this district. Historic Forest Service administrative sites include Indian Canyon, Orange Olsen, Seely Creek, and White Mountain Guard Stations. The historic Ferron Ranger Station is located in Ferron and is still used as an administrative site for the district.

Price Ranger District

The Price Ranger District contains slightly more prehistoric sites than Sanpete (Table 5). Most of these sites consist of temporary campsites that appear to be related to hunting, based on the types of artifacts found on them. Chert tool stone is not abundant in this area, and this may contribute to the relatively lower number of ancient sites on this district. Historic period sites record a wide variety of activities relative to the size of the district. This reflects a broad range of known historic activities, many of which were the result of the early and extensive development of coal mining in nearby Scofield and Clear Creek. These activities include logging, dairy production and livestock raising. Small scale coal mines also have been documented on the district. Forest Service sites include Mammoth Guard Station and a historic garage at the Fish Creek Trailhead which serves as a winter recreation warming hut. Stuart Guard Station, a 1930's era Forest Service administrative site in Huntington Canyon, now serves as a visitor's center on weekends during the spring and summer months.

Site Condition on the Wasatch Plateau / Sanpitch Mountains

All sites on the Sanpete, Ferron, and Price Ranger Districts have been affected to some degree by natural processes, including erosion and weathering. However, because of the highly erosive nature of the area's soils, this effect is more pronounced at many ancient American Indian sites, particularly those that were overgrazed by livestock just before and after creation of the Manti National Forest in 1903. The loss of topsoil during this era (estimated to be up to three feet in some areas; (Prevedel, McArthur and Johnson 2005:52) damaged or removed buried archaeological deposits and features (such as hearths). This is one reason why archaeological sites in rock shelters are such important resources on the Manti-La Sal National Forest, since these sites were less prone to erosion. In addition, most rock shelters and lithic scatters have been subjected to illegal surface artifact collecting to one degree or another. This is often evidenced by the presence of flake piles on sites, where modern visitors gather surface artifacts into little piles (an activity that destroys artifact patterning on sites), in part to select the best artifacts to remove illegally. Historic period sites have also been subject to weathering and to illegal artifact collecting. Some of them have also been damaged by removal of buildings or scavenging for old wood (or firewood).

Almost all of the known rock shelter sites have been damaged by looting of buried artifacts, and some of them have been nearly destroyed by this illegal activity. This has significantly reduced the sites' potential to inform us of past human use of the plateau. Several rock shelters were also destroyed by long wall coal mining subsidence in The Pines area of the Ferron District during the early 2000's.

The relatively high density of roads and trails on the Wasatch Plateau has both directly and indirectly affected archaeological sites. A small percentage of sites are directly affected by roads or trails that cross over them. However, the majority of sites are within a few hundred yards of a road or motorized trail. This kind of proximity makes them more vulnerable to indirect effects from illegal surface collection or looting. Our observation is that sites closer to roads are more likely to have evidence of illegal surface artifact collection and rock shelters that are either close to roads or relatively easy to hike into have more evidence of looting.

Past vegetation or watershed treatment projects on the Wasatch Plateau / Sanpitch Mountains conducted before agency implementation of NHPA in the 1970's affected a number of sites, particularly on the Ferron District. These include erosion control terracing and chaining to remove pinyon and juniper. Wildfire has not been a significant source of recent damage for sites on the Wasatch Plateau or Sanpitch Mountains.

Resources of the Moab Ranger District

Human use of the Moab District was seasonal and by many different groups (Figure 8). In the early prehistoric period, we mostly see use from the Northern Colorado Plateau although rock art and stone tools documented on the district indicates groups from the western Colorado area and the San Juan Basin also used the area. During the Puebloan era, people from the Ancestral Puebloan and Fremont cultural areas used the district. Later, Hopi ceramics can be found indicating continued short-term use by Puebloan peoples. Historically, the district was also important to Ute people who preceded Hispanic peoples from New Mexico and other European Americans who migrated into the area from western Colorado and northern Utah.

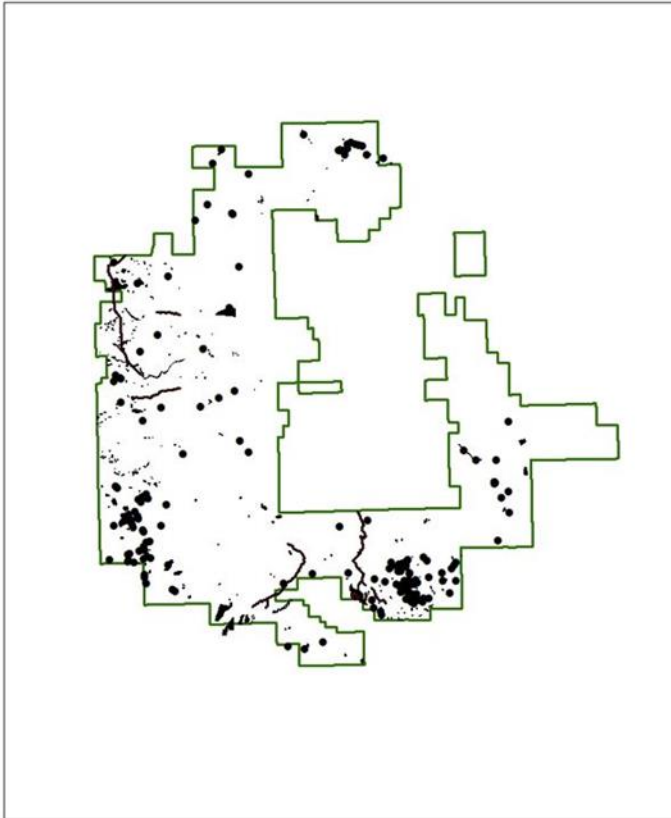


Figure 8. Distribution of documented sites on the Moab District

Paleoindian and Archaic Resources (12,000 – 1,700 BP)

Little is yet known about Paleoindian use of the Moab District. At least one Late Paleoindian projectile point has been found at a site near Buckeye Reservoir. Regionally, this continues to be a poorly documented and understood era of human history in SE Utah.

Archaic hunting and gathering groups used the Moab District and sites are found in a variety of settings. Early, Middle, and Late Archaic sites have been identified and documented on the Moab District. These sites indicate that as early as 6000 B.C. groups affiliated with the Northern Colorado Plateau. This pattern continues throughout the Archaic.

Sites are primarily open lithic scatters although rock shelter settings have also been documented. At the latter sites, ash deposits indicated repeated or longer term use. Polar Mesa Cave is the most well-known

of the rock shelter sites. Unfortunately, much of the site was destroyed by looting activities. Open air lithic scatter sites include tool stone procurement locations, temporary hunting camps, tool production locations, hunting blinds, rock art, and resource extraction sites. One hallmark of the Moab District is the presence of extensive lithic landscapes along the Moab Face and in the southeast portion of the District where high quality stone materials outcrop and provided sources of tool stone that were used for thousands of years.

Ancestral Puebloan/Fremont Resources (1,700 – 550 BP)

Ancestral Puebloan and Fremont groups utilized the La Sals area from roughly the A.D. 500-600s to the A.D. 1000-1100s. Although often difficult to distinguish cultural affiliation between these groups because the most common diagnostic of these sites are projectile points that are stylistically indistinguishable, small numbers of sites on the Moab District contain ceramic sherds diagnostic of these groups. Ancestral Puebloan/Fremont sites are primarily associated with open air artifacts indicative of plant and animal resource extraction and processing, tool stone procurement, and tool production; however, Polar Mesa Cave and some other rockshelter sites exhibit use during this period. Corn cobs found in association with the Ancestral Puebloan/Fremont occupation at Polar Mesa Cave suggest limited maize agriculture may have also been practiced in some areas of the Moab District.

Protohistoric/Historic Native American Resources (550 – 150 BP)

Following the Puebloan era, Ute Numic speaking people used the forest. Their use was seasonal. The primary indicators of Protohistoric use is the presence of micaceous-tempered Brown Ware ceramics, Desert Side-Notch projectile points, Wickiups. Isolated “culturally modified trees” are known to occur on the District; the latter resources are particularly common in the Buckeye Reservoir area. Additionally, Hopi Jeddito Yellow ceramics are found on a site on the southern end of the Moab District attesting to a continued use of the forest and surrounding country by Hopi people following Ancestral Puebloan era.

Few Protohistoric/Historic Native American resources are clearly identified in the database. These sites are primarily open air lithic and sherd scatters that represent temporary camps and resource extraction and processing locales. Numic camps have been documented at elevations above 10,000 feet in the La Sal Mountains.

Historic European-American Resources (150 BP - Present)

In the late 1800s, European American use of the Moab District began. Historic sites and components at multicomponent sites on the Moab District include a variety of different site types. Historic sites include uranium mines, Forest Service administrative facilities, a sawmill, roads, irrigation ditches, cabins, camps, grazing related facilities (fences, corrals, other), a battlefield, aspen carvings, and others types.

Mining. Gold and Uranium mining were both conducted on the Moab District. Gold was discovered in the La Sal Mountains during the late 1800s and gold mines were established in the La Sals by 1898 the Miners Basin town associated with this early gold mining was founded and was occupied until 1907. Gold mining and prospecting was also known to have occur in Bachelor Basin and Gold Basin and, following the demise of Miners Basin, Wilson Mesa witnessed gold mining activities. Several cabin sites are found in the La Sal Mountains, particularly along drainages and it is likely the majority of cabins found in the mountains are the result of early gold mining in the La Sals.

Uranium mining occurred throughout the District and these resources represent episodic use from the 1940s through the 1980s. Historic uranium mining landscapes are found in a variety of locales including Pine Ridge and the southern end of the District near La Sal, the Moab Face, Polar Mesa, and in the

southeast near Buckeye Reservoir. These uranium mining landscapes include adits, waste rock, machinery, structures, access and exploratory drilling roads, prospects, and other features.

Livestock grazing. Grazing on the Moab District was initiated during the late 1800s and continues today. Initially small cattle outfits began grazing in the 1870s followed by the entrada of large cattle companies in the 1880s. Grazing and grazing management has resulted in a variety of landscape changes and a variety of constructed features. Large scale manipulations of the landscape for forage include chaining and seeding projects over the years. Constructed features include drift fences, fence lines, corrals, cabins, camps, and other features.

Sheep grazing on the Moab District also began on the La Sals in the late 1890s. Sheep grazing on the Moab District left camps, corrals, fences, and abundant aspen carvings. Many of the carvings were made by Hispanic men who resided in New Mexico and tended sheep in the La Sals seasonally.

Timber. The timber industry focused primarily on Ponderosa Pine forests. These activities left a variety of landscape and cultural sites including logging roads, loading areas, sawmills, camps, and other evidence. Most aspects of the timber extraction landscape left physical evidence that provides little information. A defunct sawmill present on Carpenter Ridge area has provided information on some of the earlier activities on the landscape.

Irrigation and Water Developments. These developments are found in the La Sal Mountains as well as the western and southern flanks of the mountains. Irrigation continues to be an important aspect in the communities surrounding the La Sals and several irrigation systems have historic roots. These ditches often continue to support agriculture in the area.

Water and irrigation delivery systems include a variety of constructed features such as ditches, headgates, diversions, pipelines, and the like. The construction of Buckeye Reservoir and the water diversion that supplied water to the Paradox community and the dam at Warner Lake represent larger early 1900s developments; however, most ditches were less involved and diverted seasonal water from drainages using simple technology.

Forest Service Administrative Sites. Administrative sites found on the Moab District include Mea Guard Station, Warner GS, and La Sal GS. The Warner GS was a CCC era construction and has been restored and continues to be used as a recreation rental today. The La Sal GS, built in the 1960s, has also been restored and is currently in use by FS employees on a seasonal basis. Mesa GS, constructed in 1920s, was in very poor condition and was removed by the FS in 2016.

Other Historic Resources. Early travel, recreation, and other activities are also represented. Roads, trails, transmission lines, and artifact scatters have been documented that reflect these aspects of historic use.

Site Condition

Impacts to sites on the Moab District include natural and human caused disturbance. As with other Districts, erosion is constantly affecting sites. Structural decay of buildings is also a natural process that is affecting sites, principally historic structures.

Since 2002, the trend in wildfire size and intensity has affected the condition of sites on the District. The Hang Dog, Porcupine, Sunrise Mine, Lyon Creek, and other wildfires on the Moab District burned over a number of sites. To a large extent direct impacts were not severe and catastrophic, but damage to surface artifacts was extensive.

Impacts to sites on the Moab District also include a history of human alteration to sites including vandalism and looting. All of the known rock shelters have been looted. Graffiti added to rock art panels, collection piles of artifacts, the removal of artifacts from sites, and disturbance through travel and camping have all altered the fabric of sites on the District. Historic sites, such as mining areas and cabins, have seen the loss of many artifacts (bottles and other objects) in addition to the loss of projectile point, ceramics, and perishable material lost from prehistoric sites.

Resources of the Monticello Ranger District

The archaeology of the Monticello District is complex and abundant (Figure 9). It reflects the changing history of human use of the uplands and complex development of tribal society. Prehistorically, early use was by hunting and gathering people followed by settlement by Ancestral Puebloan farmers. Later, but prior to European-American contact, Numic, Navajo, and Puebloan use is documented on the District. Historic sites include the remnants of extractive activities such as mining, timber and ranching. Additionally, CCC, Forest Service administrative sites.

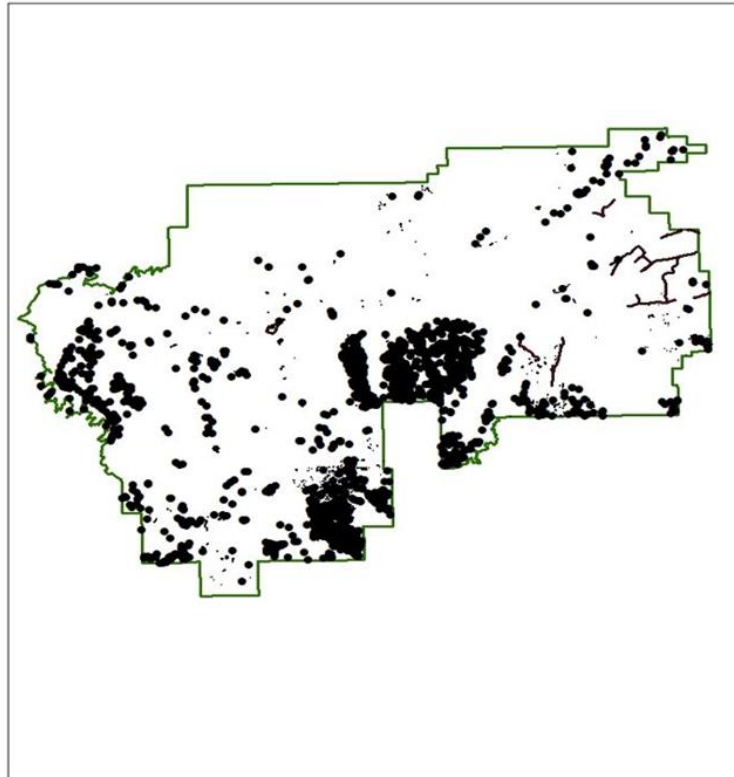


Figure 9. Distribution of documented sites on the Monticello District.

Paleoindian and Archaic Resources (12,000 – 1,700 BP)

Little is yet known about Paleoindian use of the District. Small numbers of Late Paleoindian projectile points have been found at sites including scavenged points at Ancestral Puebloan sites and those occurring at open lithic scatter sites. Regionally, this continues to be a poorly documented and understood era of human history in SE Utah.

Archaic hunting and gathering groups began using the Districts and sites are found in a variety of settings. Exploratory surveys conducted in Dark Canyon Wilderness indicate these canyons contain a rich history of Archaic use (Irwin personal communication). Early, Middle, and Late Archaic sites have been identified and documented on the District. These sites indicate that as early as 6000 B.C. groups affiliated with the Northern Colorado Plateau and the San Juan Basin, or Oshara Tradition, utilized District lands. This pattern continues throughout the Archaic.

Sites are primarily open lithic scatters although a small number of cliff and alcove settings have been documented. At the latter sites, ashy deposits indicated repeated or longer term use while open air sites include tool stone procurement locations, temporary hunting camps, tool production locations, and resource extraction sites.

Ancestral Puebloan Resources (1,700 – 550 BP)

Heritage records indicate Ancestral Puebloan affiliated resources occur throughout the District; however, for centuries the south draining drainage networks, particularly the South Cottonwood Wash watershed, were the primary focus of these farming communities (the area of high site density in the center of Figure 9).

Ancestral Puebloan occupation of the Forest becomes well-established by the A.D. 600s and continues until the middle A.D. 1200s. Much of the following discussion draws on a 2007 draft national register nomination prepared for the Forest for the South Cottonwood watershed where 2236 known sites occur the watershed, constituting 69.7 percent of the District total (n=3207). Of the known sites, 2024 Ancestral Puebloan sites were identified as contributing elements to the proposed archaeological district. Diagnostic site features and artifacts found on these sites indicate many sites exhibited either continuous occupation over several time periods, or repeat occupation, so that one site could (and many do) have more than one time period assigned to it (i.e.-multiple components). The number of components for each of the five temporal periods is summarized in Figure 10.

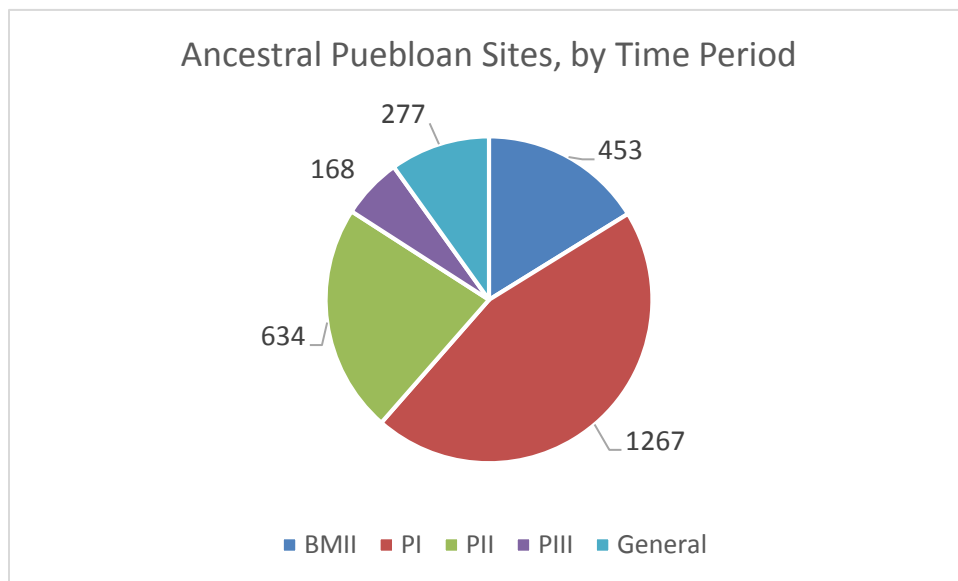


Figure 10. Ancestral Puebloan Sites by Time Period

Archaeologically, prehistoric communities are often identified on the basis of spatial clustering and communities commonly created rich cultural landscapes. Within the South Cottonwood watershed, early Ancestral Puebloan sites (Basketmaker III and Pueblo I) are distributed primarily within three communities. These communities include small villages, single- and multiple-room residences, farmsteads, agricultural terraces and check dams, kilns, storage features, and other site types (Figure 11). The Early Ancestral Puebloan sites found in the uplands of the Monticello District is the largest collection of understudied resources of this kind in southeast Utah and have great significance to understanding the origins and development of Ancestral Puebloan culture in southeast Utah.

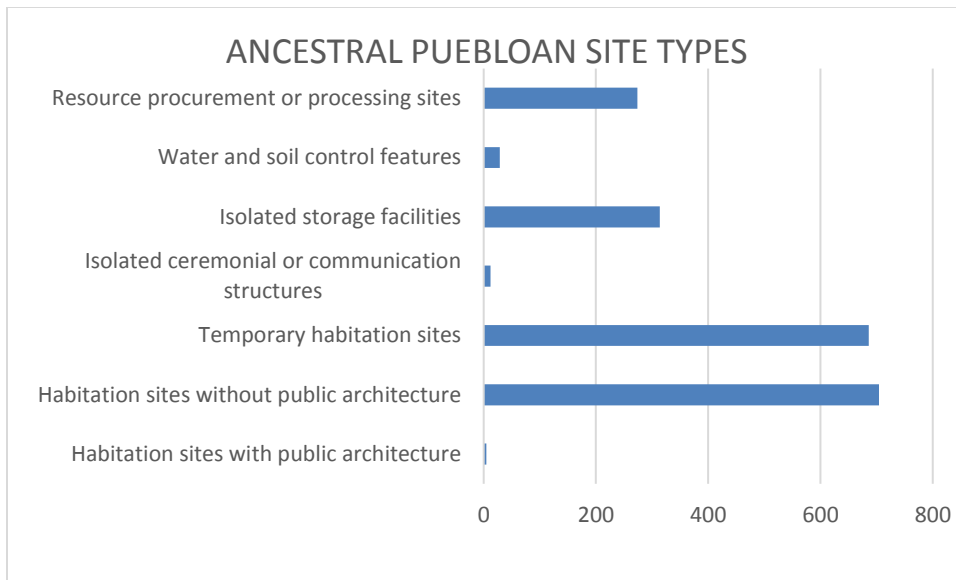


Figure 11. Ancestral Puebloan Site Types

The late Ancestral Puebloan (Pueblo II and Pueblo III) occupation of the District continued in the South Cottonwood Watershed, often re-using sites used by earlier people. Although the size and composition Ancestral Puebloan communities changes over time, the site types common to the early Puebloan period persist through late Ancestral Puebloan times. By the late 1000s and early 1100s, expansion into broader areas of the District is evident, continuing into the 1200s. Mesa top locations like Dry Mesa and Brushy Basin came into greater use during late Ancestral Puebloan times, but populations were generally low (Barclay et al 2007).

Late Ancestral Puebloan farmers also expanded into the western- and northern-draining canyons, such as Dark Canyon, Woodenshoe Canyon, North Cottonwood, and Indian Creek. This expansion included both open-air sites, as well as the construction of numerous “cliff” sites. “Cliff” sites include granaries, residential sites, and rock art. These late Ancestral Puebloan “cliff” sites are of exceptional preservation and are highly visible and great interest to the public, putting increasing pressure on these resources.

The late Ancestral Puebloan occupation of the District ends by the middle A.D. 1200s. The Doll House, a well-known and visited site, is one of the later sites found on the District and was constructed in A.D. 1232 and remodeled in 1242 according to tree-ring data (Windes). Few other cliff sites on the District have had tree ring samples collected, particularly from sites in remote locations, but most reveal complex occupational sequences that terminate in the early 1200s A.D.

Protohistoric/Historic Native American Resources (550 – 150 BP)

Following the Ancestral Puebloan era, Ute, Navajo, and Paiute seasonally used the forest. The primary indicators of protohistoric and historic native American use is the presence of Intermountain Brown Ware ceramics, Desert Side-Notch projectile points, Wickiups, Hogans, and sweat lodges. Numerous isolated “culturally modified trees” are also known to occur on the District and are generally associated with Ute groups. Additionally, Hopi Jeddito Yellow ceramics are found on the District attests to a continued use of the forest and surrounding country by Hopi people following Ancestral Puebloan era.

Few Protohistoric/Historic Native American resources are clearly identified in the database. These include wickiups, a Navajo hogan, sweat lodges, and lithic and sherd scatters. The distribution of these sites indicates there is a concentration of protohistoric lithic and sherd scatters found in the vicinity of the junction of Peavine Canyon and Dark Canyon within the Dark Canyon Wilderness, but one protohistoric lithic scatter has also been documented on Milk Ranch Point. Culturally modified trees have been observed in Dark Canyon Wilderness, Chippean Ridge, and elsewhere on the District. Currently known sweat lodges are found on South Long Point, the Cream Pots area, and the Shingle Mill area. Those found in the former location attest to the continued importance of the Bears Ears area in Navajo spiritual and cultural traditions.

Historic Resources (150 BP to Present)

In the late 1800s, Hispanic and European American use began. Historic sites and components at multicomponent sites on the District include a variety of different site types. Historic sites include uranium mines, Forest Service administrative facilities, sawmills, roads, irrigation ditches, cabins, camps, graves, municipal water systems, grazing related facilities (fences, corrals, other), aspen carvings, cadastral markers, and inscriptions.

Mining. Gold and Uranium mining were both conducted on the District. Gold Mines are few on the Monticello District and limited to locations along Duckett Ridge and Gold Queen Basin. Uranium mining occurred throughout the District and these resources represent episodic use from the 1940s through the 1980s. A recent increase in uranium prices lead to a proliferation of new claims and exploratory projects to occur although sagging uranium prices lead to little development. Historic uranium mining landscapes are found in a variety of locales including North Cottonwood Wash, South Cottonwood Wash, Brushy Basin, and Elk Ridge. These landscapes include adits, waste rock, machinery, structures, access and exploratory drilling roads, prospects, and other features.

Livestock grazing. Grazing on the District was initiated during the late 1800s and continues today. Grazing and grazing management has resulted in a variety of landscape changes and a variety of constructed features. Large scale manipulations of the landscape for forage include chaining, disking and seeding projects over the years. Constructed features include drift fences, fencelines, corrals, cabins, camps, and other features.

Scorup cabin and landscape features are a good example of early livestock grazing preserving the history of the 1920s cattle grazing era and one significant ranchers efforts. In contrast, the only sheep grazing permitted on the District occurred in the Deadman point area and the landscaped is well preserved.

Timber. The timber industry focused primarily on Ponderosa Pine forests. These activities left a variety of landscape and cultural sites including logging roads, loading areas, sawmills, camps, and other evidence. While most aspects of the timber extraction landscape provide little information, sawmills present on South Elk Ridge, Shingle Mill, and the Nizhoni areas have provided information on some of the earlier activities on the landscape.

Irrigation and Water Developments. Primarily these developments are found in the Abajo Mountains and eastern flanks. Most prominent are the Monticello Culinary Water System and the Blanding Municipal systems that lead culinary water to these municipalities from the Abajo Mountains. These systems continue to be in-use and provide culinary water to these towns. Irrigation is an important aspect in the community and several irrigation systems have historic roots. These ditches often continue to support agriculture in the area. Water and irrigation delivery systems include a variety of constructed features such as tunnels, headgates, diversions, ditches, pipelines, and the like. Tunnels constructed in Indian Creek and Dry Wash represent examples of early engineering and construction that were of great significance to the town of Blanding.

Forest Service Administrative Sites include Gooseberry Guard Station, Kigalia Guard Station on Elk Ridge, North Cottonwood GS. Additional administrative facilities, Such as Bulldog GS, have left little cultural materials behind. A catastrophic fire consumed the Kigalia facility and the remaining CCC era shed has been dismantled in 2016. Gooseberry GS and Baker Administrative site remain as excellent examples of 1930s era FS architecture and continues to be used by FS personnel. North Cottonwood GS is a good example of 1912 stone masonry architecture.

Other Historic Resources. Early travel, recreation, and other activities are also represented. Roads, trails, inscriptions, power transmission lines, and artifact scatters have been documented that reflect these aspects of historic use.

Site Conditions

Considering the condition of the resources naturally involves both natural and human processes, as well as the temporal scale of the various processes. This becomes of importance particularly with human processes. Prehistorically, successive occupations at certain locales, in part, disturbed and altered both the natural and cultural resources. The effects of early Historic use on the Monticello District are well documented. For instance, large scale range projects and intensive mining of portions of the District have resulted in damage to the cultural resources in some of the densest site areas of the forest. Examples of particular note include the 1953 Milk Ranch Point Reseeding Project and the Upper South Cottonwood Wash Mining area. In the former project, disking and seeding of the Milk Ranch area impacted large numbers of sites to varying degrees. Similarly, uranium mining and related exploration activities promoted by the Atomic Energy Commission during the 1940s created an intense network of roads through the dense South Cottonwood prehistoric cultural landscape that continued in use into the 1980s. Many of the sites listed in poor condition on the Monticello District occur within these areas and were documented during the early 1970s and information is limited concerning site condition. It is noteworthy that recent revisits to sites listed in poor condition indicate that many retain integrity and may contribute to our understanding of prehistory and are, therefore, potentially eligible to the National Register of Historic Places.

Impacts to sites are continuous from the time of their creation to the time of their destruction. Erosion is an example of a continuous process such as this. Structural decay of buildings is a natural process, but may not be considered continuous. Periodic events may change a sites condition drastically in a moment, such as the recent collapse of a wall at the Twin Kivas site.

Since 2002, the trend in wildfire size and intensity has affected the condition of sites on the District. The Hammond and Little Hammond Fires burned over 300 Ancestral Puebloan sites. Post-fire work with the sites indicated to a large extent direct impacts were not severe and catastrophic, but damage to surface artifacts and the stone used for building was extensive. There was one rock art panel damaged, but surprisingly, the combustible elements (wood and perishable remains) represented at some of the sites

were spared. Extensive erosion controls were installed at many of the sites and were effective in stabilizing sites until vegetation returned.

Impacts also include a changing history of human alteration to sites including vandalism and looting. Names and inscriptions carved into structure walls, graffiti added to rock art panels, collection piles of artifacts, the removal of artifacts from sites, dismantling and reusing of alcoves and features, disturbance through travel and camping have all altered the fabric of sites on the Forest. Historic sites, such as mining areas and cabins, have seen the loss of many artifacts (bottles and other objects) in addition to the loss of projectile point, ceramics, and perishable material lost from prehistoric sites.

Looting has been a significant problem on the Monticello and Moab Districts over time. All of the known rock shelters on the Moab District have been looted and Ancestral Puebloan sites found on the Monticello District have been a particular favorite of looters. Looting was particularly pronounced on the Monticello District in the period of the 1970s-1980s including much activity by professional looters. Currently, looting continues, but at a decreased intensity from those times. Over the past 10 years, looted sites have been identified on Milk Ranch Point, Dry Mesa, Brushy Basin, and North Cottonwood Wash apparently showing a preference for working in areas near secondary road and trail system.

Forest Priority Heritage Assets

The Forest has identified 55 archaeological or historical sites as Priority Heritage Assets (PHAs; Table 7). Priority Heritage Assets are sites or collections of distinct public value that are or should be actively maintained. They include sites whose significance has been recognized through an official designation (such as listing on the National Register of Historic Places), or whose significance is recognized through agency investment in interpretation, preservation, or use (and/or have a management plan). PHAs are also sites that have critical deferred maintenance needs with imminent threats to their significant resource values or whose condition poses safety risks.

This list is dynamic in part because the condition of sites can change. Treatments can stabilize them, and they can remain stable enough that on-going monitoring has determined that they no longer have deferred maintenance needs. In that case, they do not need to be considered a PHA any longer. In addition, new sites can be identified that have deferred maintenance needs or have received agency investments in use.

Table 7. Priority Heritage Assets on the Manti-La Sal National Forest

Forest Number	State Number	Site Name	District	Condition	Impacting Agents
ML-3187	42SP274	Great Basin Experimental Station	Sanpete	Good	Weathering
ML-3733	42SP484	Maple Canyon Rock Art	Sanpete	Fair	Graffiti
ML-5090	42SP944	Great Basin Station Trash Locale	Sanpete	Good	Erosion, rock fall
ML-1932	42EM164	Joes Valley Alcove	Ferron	Poor	Road construction; erosion; looting
ML-2143	42EM2343	Ferron Gates Rock Art	Ferron	Good	Graffiti
ML-2273		Big Muddy Fremont Habitation	Ferron	Poor	Extensive sheet erosion
ML-2276	42SV2584	Little Deer Rock Shelters	Ferron	Fair	Looting; erosion
ML-2579	42EM1559	Muddy Road Rock Art	Ferron	Fair	Graffiti
ML-2582	42EM1563	Wash Rock Canyon Rock Art	Ferron	Good	Extensive graffiti

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ML-2688	42SP88	Seely CCC Camp	Ferron	Fair	Building removal; erosion; illegal artifact collection
ML-3096	42SP226	Seely Creek Guard Station	Ferron	Good	Weathering
ML-3234	42EM2333	Surprise Pithouse	Ferron	Good	Erosion; rock fall
ML-3335	42SV2341	Columbine Rock Shelter	Ferron	Good	Erosion
ML-3439	42SV2423	Refugia Rock Shelter	Ferron	Fair	Looting; erosion
ML-3737	42SV2584	Twin Rock Shelters	Ferron	Fair	Erosion; illegal artifact collection
ML-3754	42SV2598	Valley Rock Shelter	Ferron	Fair	Erosion
ML-3769	42EM3137	Rock Canyon Shelters	Ferron	Fair	Looting, erosion
ML-4752	42EM4089	Anderson Coal Mine	Ferron	Fair	Building removal, erosion
ML-2200	42EM722	Sherman Shelter	Price	Fair	Looting, erosion
ML-3215	42EM2331	Stuart Guard Station	Price	Excellent	Weathering
ML-3142	42GR383	Polar Mesa Cave	Moab	Fair	Looting
ML-3210		Pinhook Battleground	Moab	Good	Wildfire; erosion
ML-4645	42GR4035	Porcupine Summer Camp	Moab	Good	Erosion; vandalism; recreation trail; livestock trampling
		Andy's Garden	Moab	Fair	Erosion; ilegal artifact collection
ML-122	42SA11800	The Pillars	Monticello	Good	Bulldozed stock pond road construction; erosion; vandalism; deflation and rock spalling after wildfire
ML-153	42SA11831	Twin Kivas	Monticello	Good	Erosion
ML-363	42SA12041	Lizard House	Monticello	Good	Erosion
ML-381	42SA12059	Milk Ranch Village	Monticello	Good	Erosion; elk trampling
ML-531	42SA12209	Cottonwood Road Site	Monticello	Fair	Road construction; looting
ML-603	42SA12281	Cottonwood Condo	Monticello	Good	Bulldozed mining road construction; looting; erosion
ML-815	42SA13180	Dry Wash Caves – Upper/Lower	Monticello	Good	Looting, graffiti
ML-816	42SA13181	Dry Wash Caves – East	Monticello	Good	Weathering; structure collapse
ML-956	42SA12603	Cream Pots Road Pithouse	Monticello	Good	Road construction and maintenance
ML-968	42SA12615	Raven House	Monticello	Good	Rodent damage; erosion
ML-988	42SA12631	Dave's World	Monticello	Good	Erosion; vandalism; livestock grazing
ML-1052	42SA12869	Slab Quarry Kiva	Monticello	Good	Erosion; rock fall
ML-1055	42SA12692	Duck Wall Site	Monticello	Good	Erosion
ML-1132	42SA12768	Laura Pueblo	Monticello	Good	Bulldozed minig road construction
ML-1146	42SA256	Lewis Lodge	Monticello	Good	Erosion; rodent damage; structural decay

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ML-1162	42SA2186	Bayles Point Cave	Monticello	Poor	Extensive livestock trampling; vandalism
ML-1163	2SA2187	Cowboy Cave	Monticello	Poor	Prehistoric component damaged by historic use; historic structure damaged by weathering
ML-1942	42SA12890	Little Doll House	Monticello	Good	Rodent damage; structural decay
ML-1984	42SA3864	Doll House	Monticello	Good	Rodent damage; trampling by many visitors
ML-1993	42SA12941	Shaky Town	Monticello	Good	Structural decay; erosion; trampling by visitors
ML-1994	42SA18016	Sheep House	Monticello	Good	Structural decay; vandalism; trampling by visitors
ML-2017	42Sa12964	BB Ruin	Monticello	Fair	Structural decay; visitors walking on structure; erosion
ML-2022	42SA703	Three Fingers Ruin	Monticello	Good	Structural decay; erosion; trampling by visitors
ML-2516	42SA23634	Laura Hogan	Monticello	Fair	Structural collapse; erosion
ML-3018	42SA12974	Snake House	Monticello	Good	Erosion; vandalism
ML-3098	42SA0710	Drip House	Monticello	Fair	Structural decay; erosion
ML-3113	42SA22505	Scorup-Somerville Cabin	Monticello	Good	Weathering; gully erosion; visitation
ML-3119	2SA23120	North Cottonwood Guard Station	Monticello	Fair	Structural decay; weathering; erosion
ML-3122	42SA23616	Hammond Canyon Goodhouse	Monticello	Good	Erosion; livestock grazing; illegal artifact collection
ML-3378	42SA23118	Harry Hopkins Grave	Monticello	Good	Visitation
ML-3379	42SA23611	Indian Creek Alcove	Monticello	Good	Vandalism; livestock trampling

All heritage collections are managed as Priority Heritage Assets. These include archaeological, NAGPRA, archival, Heritage Program, and Forest Service history collections. The Forest has considerable responsibilities for such materials. It has extensive museum collections located at Edge of the Cedars Museum in Blanding, Utah and smaller collections at USU Eastern Prehistoric Museum in Price Utah and the Utah Museum of Natural History in Salt Lake City, Utah. There are additional artifact and historic document collections housed at Forest offices. In total, the Manti-La Sal has over 658 square feet of artifacts, photos, and documents in 64 Priority Heritage Asset collections. Most of these collections are cataloged and in good condition. However, others need to be stabilized in archival storage containers and/or cataloged.

Forest collections housed in museums have been summarized in accordance with the Native American Graves and Repatriation Act (NAGPRA). All known human remains in existing collections have already been repatriated to modern Puebloan Tribes and reburied. No materials in the Forest's historic photo or document collections are subject to NAGPRA.

Table 7 also notes the condition and impacting agents of the PHAs. All sites are impacted to a small degree by natural weathering, but some sites are subject to more damaging erosion, and these cases are noted. Other impact agents have or continue to damage sites to an alarming degree. This includes past road construction, looting, concentrated livestock activity, and concentrated visitation. Sites can remain in “good” condition even after significant damage because important parts of the site remains in good enough condition to have archaeological, interpretive, or social value. A number of Ancestral Puebloan sites on the Monticello District have issues with structural integrity but are in locations such as alcoves with shallow, sandy soil that make physical stabilization difficult.

Trends

The reference period for this analysis is the period of time for which we have some site condition data for most of the Forest. This begins in the 1970’s, with the start of formal site documentation. We have limited data that pre-dates that time for selected areas of the Forest. This site condition data includes data from site forms, old photographs, site monitoring reports, and observations by professional Forest heritage staff.

Implementation of NHPA regulations starting in the 1970’s was a turning point in the condition of forest sites. Prior to that time, sites were intermittently damaged or destroyed at the landscape level, through chaining, disking, erosion control terracing, and other management activities. Permitted activities also impacted large numbers of sites in particular areas, such as the uranium mining landscape in South Cottonwood Canyon on the Monticello Ranger District. Compared to that era, NHPA compliance has created a positive trend toward site protection.

Other positive trends have occurred in cultural resource management since the first Forest Plan was completed in 1986. These include technological changes that aid in facilitating management such as GIS, GPS, digital cameras, LIDAR, photogrammetry, and other tools allowing for improvements in the way we document current and changing site conditions. The Internet is providing means of reaching a greater public audience. Increased public education programs on the Forest have increased general knowledge of appropriate site visitation behaviors and may result in larger number of site stewards and volunteers participating in survey and documentation projects.

Some types of stressors have decreased generally since creation of the National Forest. These include impacts from the erosion and trampling from overgrazing by domestic livestock, since significant reductions in the numbers of livestock have occurred intermittently since the early 1900’s. There has not been an increase in ungulate grazing impacts that begins to equal those early grazing numbers, including the increase in the number of elk that has occurred in the last 70 years or so.

Other stressors increased after creation of the National Forest, including road and trail construction and recreation demand. Transportation Analysis risk analysis indicates a co-occurrence of roads/trails with archeological sites in many areas of the Forest (Manti-La Sal National Forest 2015). Several other categories of stressors continue to increase current or potential impacts to cultural resource sites, including motorized recreation. There are both direct and indirect effects from this form of recreation. Illegal cross-country travel by OHV’s damages site. The trails also allow people to get closer to sites in a relatively easy way, opening the door to increased illegal artifact collection and to looting.

Sites have been the subject of illegal vandalism, artifact theft and looting since before creation of the National Forest. However, these impacts increased dramatically in the 1960’s with increased motorized access. Damage from looting was probably the greatest during the 1980’s when rampant looting affected much of the American Southwest (Wylie 1989). Although this type of activity has decreased, it remains a

steady and devastating problem. We identify a looted site every couple of years, and we know that we are not able to find all of the looting that is probably occurring on the Forest.

Damage from collapsing walls and defacing rock art are increasing as increasing numbers of visitors who do not know or who willfully disregard site visitation rules. Similarly, another site visitation trend continues to degrade sites, and this is theft of surface artifacts. Although many visitors are respectful and leave surface artifacts, the sheer increase in site visitors means that the cumulative effect is for more site artifacts to be removed illegally. A large percentage of Forest sites have already been impacted by this activity in the last 100 years.

Existing and illegal motorized routes across sites are generally increasing in number, despite the fact that new trail construction projects avoid direct impacts to sites. Past studies of site vandalism (e.g., Wylie 1989), combined with current observation, indicate that there is a strong correlation between artifact collection and other damage to sites and roads and motorized trails. Recent surveys of roads on the Moab District indicated a high correlation between roads and the presence of collector's piles and paucity of diagnostic artifacts at sites adjacent to the surveyed roads. The findings of a 1980s Inter-agency vandalism studies indicated that, in particular, open air sites with architecture and sheltered sites (alcove/cliff sites) have been most attractive for looting and these activities are correlated with access, particularly backcountry or "jeep roads" rather than paved or well-travelled roads (Wylie 1989: 9-11). While this kind of disturbance occurs in non-motorized trail settings, it occurs at a much smaller scale than the damage that occurs in association with motorized routes.

Finally, there is an increasing trend in the availability of site location information on web sites. This has led to an increase in visitation to the most sensitive and vulnerable of Forest sites, including Ancestral Puebloan sites with standing architecture and extensive middens. Recent monitoring observations of alcove sites on the Monticello District have indicated that recent erosion resulting from foot and vehicle traffic is exposing a variety of cultural materials including sandals and other perishable materials. New firewood and hearths are beginning to be found at some these sites, possibly indicating an expansion of visitation into the colder months as winter conditions change on the Moab/Monticello District.

Ancient American Indian sites have considerable traditional value as sources of connection for the modern descendants of ancestral Puebloan, Navajo and Ute) peoples. There has been a trend in the last 20 years toward more tribal involvement in identifying and resolving project effects and in evaluating the value of sites (either using NRHP criteria or traditional value). This is largely the result of the Forest increasing its efforts to comply with various laws and executive orders. Nonetheless, no traditional cultural properties or sacred sites have been formally identified on the Forest.

Stressors

The primary drivers affecting cultural resources are climate change, wildfire and landslides / geologic hazards. These are all drivers because of the potential way that they can affect the condition of sites. Natural vegetation succession has little potential to directly affect the condition of cultural resources.

Stressors affecting cultural resources can be divided into two groups, called ecological stressors and social/multiple use stressors. All of these stressors have the potential to affect the condition of sites due to destruction of features or artifacts (for example, wildfire, illegal road/trail use, and looting), damage to site features or artifacts (for example, livestock and big game over-grazing and illegal artifact collection), or increases in indirect threats to site condition (for example, increased homes in WUI, increased motorized access to sites, and increased mineral exploration/development).

Ecological Stressors

Ecological stressors that can directly affect sites include climate change and wildfire. Insects and disease in timber stands, invasive species and tree encroachment can indirectly affect cultural resources through increases in management actions designed to reduce the ecological impacts of these stressors (Table 8).

Thus far, changes in precipitation and temperature patterns are causing some changes in site condition. Site monitoring has documented structural decay related to changes in the climate. Perhaps most dangerous is the widening of the window for visitation that is leading to increased site visitation and damage related to dispersed camping in sites during shoulder seasons that were previously inaccessible during previous conditions.

The trend toward increased size and intensity of wildfire is a threat to cultural resources. Combustible elements, damage to rock art panels, damage to surface artifacts, and loss of vegetation and ensuing erosion of deposits may cause serious damage to these resources. While impacts to sites have occurred from wildfire, management strategies have successfully protected sites on the Forest and catastrophic loss has been avoided.

Table 8. Summary of Ecological Stressors and their Potential Effect on Cultural Resources

Ecosystem DRIVER	STRESSOR	Potential Effect on cultural resources	Trend
Climate Change	Changes in precipitation	<ul style="list-style-type: none"> • Changes in precipitation patterns, particularly the frequency of high intensity storms results in increased erosion at open air sites that damages or destroys cultural features and deposits, exposing artifacts and potentially leading to increased collection or loss. • At alcove sites changes in precipitation patterns and intensity may cause increase in expansion and contraction of mortar leading to structural decay and changes in driplines that lead to destruction of walls and other features 	<ul style="list-style-type: none"> • High intensity monsoon storms have increased in frequency and damaged some sites. • Site monitoring efforts indicate general stability at sites. • Changes in some alcove sites have been noted, such as changes in drip lines, moisture seeping through alcove walls, wall collapse and increased erosion. • There has been an increase in the use of post-fire erosion treatments to protect sites from erosion caused from high intensity storms

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	Temperature variability and change	<ul style="list-style-type: none"> Increased freeze/thaw processes may directly affect the integrity of structures and other features, greater bioturbation, Allows for a wider window for site visitation. 	<ul style="list-style-type: none"> At this juncture, it is difficult to evaluate these stresses Monitoring information does indicate an increase in cool season visitation in some sites, as evidenced by accumulations of firewood and modern hearth construction
Wildfire	Changes in soil stability	<ul style="list-style-type: none"> Removal of vegetative cover increased erosion of cultural deposits 	<ul style="list-style-type: none"> Trend is toward greater size and intensity of wildfires involving greater numbers of archaeological sites. The need for post-fire erosion treatment and monitoring of sites has increased
	Damage or destruction of archaeological features and sites	<ul style="list-style-type: none"> Spalling of rock art combustion of fire vulnerable elements 	<ul style="list-style-type: none"> Trend is toward greater size and intensity of wildfires and there has been some damage to sites and features as a result. Implementation of fuel reduction planning and strategies during wildfires has protected fire vulnerable sites.
Natural Vegetation Succession	Beetle kill etc	<ul style="list-style-type: none"> Phenomena itself not threatening, but human response is potentially damaging to sites and features. Loss of aspen glyphs and other culturally modified trees Increased mechanical and RX vegetation treatments have increased access to sites 	<ul style="list-style-type: none"> Trend is toward larger, landscape scale vegetation treatment projects to promote forest health. In some instances, these treatments have opened archaeologically sensitive areas to increased visibility, unconstrained motorized use,

		<ul style="list-style-type: none"> • May cause indirect effects to sites, such as unauthorized motorized vehicle damage, artifact collection, and vandalism 	visitation, and site vandalism
Landslides/Geological Hazards		<ul style="list-style-type: none"> • Subsidence-Collapse of shelters • burying of sites in landslides 	Nothing here-what you got

Social Stressors

Social/multiple use stressors that can directly affect sites include many subsumed under increased human population/use of the Forest (demands for recreation, homes in WUI, vandalism, increased motorized uses, multiple use, and road systems). Table 9 summarizes the potential effects of these stressors and trends observed on the Forest. In general, there is a downward trend in impacts to sites on the Forest. Impacts from multiple use of the Forest have to a large extent been ameliorated through following the Section 106 process and had a high degree of effectiveness in preventing impacts to sites during project implementation. Looting and vandalism continue, but levels of looting have dropped significantly since the 1980s. Interestingly, there is a notable decrease in looting observed at high visibility “cliff” sites while the last decade of looting has focused on open air Ancestral Puebloan sites. This may indicate a demographic shift in from professional to more amateur looters. Observations on the District also suggest casual collecting of artifacts is on the increase, particularly where transportation networks and sites intersect. These data suggest that at the margins of our primary transportation system where secondary road and trail systems depart and the probability of human encounters decrease, there is a growing probability for vandalism to occur.

The trend toward increased demand for recreation is putting increased pressure on cultural resources on the Forest, particularly on the Monticello District. The highly visible, well-preserved Ancestral Puebloan sites found on the District are of growing interest. This trend is likely to continue to increase. Although difficult to measure presently, there is a noticeable increase in the numbers of sites being visited. The recent proliferation of guide books and internet sites are broadening public interest, access, and visitation to sensitive sites that were previously unknown to the public. Dispersed recreation is increasing and focusing on a wider spectrum of areas bringing corresponding interest in cultural resources by the public. Recent public lands discussions have broadened the audience interested in cultural resources and inquiries about the locations of sites are on the increase.

Table 8. Summary of Ecological Stressors and their Potential Effect on Cultural Resources

STRESSOR	Effect on Cultural Resources	Trend
Demand for recreation	<ul style="list-style-type: none"> • Modern technology, including internet and GPS providing ever increasing amounts of locational access to sites and reaches a broader and larger audience • Changes in values resulting in changes in the kinds of sites visited and how they are accessed 	<ul style="list-style-type: none"> • Recent looting and vandalism concentrated largely in accessible by motorized transportation systems. In remote areas, the proliferation of locational data and changing societal values is leading to increased visitation to backcountry sites.

	<ul style="list-style-type: none"> Expansion of road and trail networks, including system/non-system routes, results in increased visitation to sites, lead increased erosion, and facilitate vandalism and looting of sites. . 	<ul style="list-style-type: none"> Results in erosion of cultural deposits exposing sensitive artifacts, construction of modern hearths, and other damage
Vandalism	<ul style="list-style-type: none"> Results in impacts to sites from looting, collectors piles, loss of artifacts, destruction of features and deposits, graffiti 	<ul style="list-style-type: none"> Looting appears to be relatively continuous, but at lower levels than in the past. Artifact collection is on the increase.
Increased motorized uses	<ul style="list-style-type: none"> Greater numbers of roads and trails, along with changes in motorized technology, has resulted in increased access to broader areas of Forest, the proliferation of unauthorized routes; and greater diversity recreationists using Forest. This has increased visitation to some sites, but has also facilitated access to backcountry areas and sites where vandalism has occurred 	<ul style="list-style-type: none"> Artifact collecting is increasing where motorized access is improved. Looting appears to be largely occurring in backcountry settings near secondary road and trail access. Off-road enthusiasts are creating user-created routes to sites, driving on features, and creating erosion problems
Road System	<ul style="list-style-type: none"> Road and trail systems, along with increased number of user created routes, provide motorized access to greater numbers of sites. Increased access and visitation has resulted in damage such as looting, artifact collection, and erosion. Direct impacts to sites from use and maintenance 	<ul style="list-style-type: none"> Trend has been toward a reduction of road density and closure of unauthorized routes. This has aided in concentrating use onto system roads reducing impacts to sites in some areas.
Multiple use	<ul style="list-style-type: none"> Mining, range, vegetation management, other non-recreation uses may directly impact sites and fragment cultural landscape. May result in Increased erosion; destruction of archaeological features and deposits 	<ul style="list-style-type: none"> There is a decrease in impacts from grazing and related range management activities, mining, and vegetation management activities through NHPA and NEPA process. Increased access to archaeologically sensitive areas after project implementation has resulted in increased visibility, collection, and looting in some areas
Homes in WUI	<ul style="list-style-type: none"> Increased need for vegetation management in WUI may directly damage features and sites Allows increased access to archaeologically sensitive areas 	<ul style="list-style-type: none"> Trend toward concentrating vegetation management efforts in WUI has moved these activities away from archaeologically sensitive areas on some districts into less sensitive areas. Conversely, this may lead to an increase in catastrophic wildfire in areas where resources are more sensitive.

Contribution of Cultural Resources to Sustainability

Sustainability, when considering cultural resources, means finding balance between the preservation of non-renewable cultural resources of exceptional value and growing interest by the public, maintaining

access to forest lands and resources, and promoting benefits to the public. Cultural and historic resources may make an important contribution to the social, economic, and ecological sustainability of the local communities intimately connected to the Manti-La Sal National Forest.

Cultural and historical resources found on the Forest provide excellent opportunities for contributing benefits to the public including expanded knowledge and understanding of history, cultural, spiritual connections to heritage, scientific data about past cultures or historical conditions, human adaptation to past climatic events, and tourism that benefit rural economies. Cultural and historical resources provide opportunities to foster connection between people and cultural/historic resources and landscapes locally and beyond plan area. Public participation in the current program is high and provides public programs to youth and adults enhancing public knowledge, opportunities for volunteerism and partnerships, and promoting stewardship for cultural resources. The opportunities for expanding public programs are many.

Opportunities for developing heritage tourism can provide significant contributions to the local economy. Currently, millions of people visit the region to experience the amazing natural and cultural wonders. Heritage tourism reaches national and international audiences and brings a significant number of people to the Four Corners area currently. Heritage resources found on the Forest, particularly the Ancestral Puebloan resources found on the Monticello District, offer great potential for expanding heritage tourism.

Data Gaps

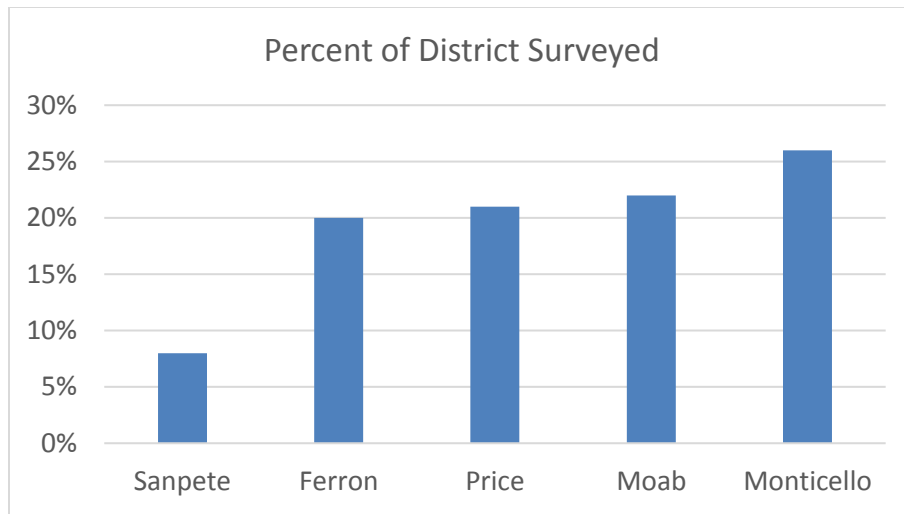
Data gaps on site condition exist for sites recorded prior to IMACS (Intermountain Antiquities Computer System) site forms, which came into common use in the mid-1980s. In addition, basic site condition data for the majority of MLS sites is subjective and weak. This is due to the fact that much of this information comes from archaeological site forms created by a large number of individuals who inconsistently applied rather vaguely defined site condition categories for much of the past 40 years. In addition, our INFRA database is missing site condition data for hundreds of sites and entering that data would be very time consuming (and probably not worthwhile, given the subjective nature of that data). However, we have better site condition data on sites documented in the last 15 years or so, for sites we have re-recorded in the last 15 years, and for sites that we regularly monitor. This more recent data can be used as a reliable source of information on site condition trends across the Forest.

Only a portion of the archaeological sites have been documented on the Forest, so the archaeological landscape consists of both the documented sites and the undocumented, but suspected, sites. The total number of sites on the Forest as a whole is probably at least three times what has been documented so far. The documented sites adequately represent the general range of site types and conditions for the entire site assemblage on the Forest.

Table 9. Percent of each District that has been surveyed for cultural resources.

Survey Area	Sanpete	Ferron	Price	Moab	Monticello
Acres Surveyed	18,582	65,074	47,582	37,098	94,990
Percent Surveyed	8 percent	20 percent	21 percent	22 percent	26 percent

Figure 12. Percent of each District that has been surveyed for cultural resources.



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