

Desolation Canyon Baseline Site Condition and Vandalism Assessments: May 2007 Survey



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Abstract

In May 2007, the Colorado Plateau Archaeological Alliance accompanied Bureau of Land Management river rangers on a one-week reconnaissance to document sites and assess current conditions of sites within the Green River corridor that were known to river rangers. In addition, Jack Canyon, a western tributary of the Green River, was investigated to a distance of about 5 kilometers from the confluence to better understand the spatial distribution of sites in the side canyons. Four previously recorded sites were re-documented, as were nine unrecorded sites. These sites reflect utilization of the canyon corridor during Formative and Protohistoric times, as well as historic ranching operations in the Desolation Canyon region. All sites were found to be in relatively good condition, although recent vandalism in Jack Canyon and ongoing graffiti problems throughout the Desolation Canyon corridor have impacted the integrity of sites within the Desolation Canyon National Historic Landmark, as well as sites eligible for listing on the National Register of Historic Places.

CPAA gratefully acknowledges the participation and support of the Price Field Office of the Bureau of Land Management. Its contributions of river rafts, equipment and support personnel were invaluable. In particular, CPAA wishes to thank BLM river recreation manager Dennis Willis, and river rangers Jim Wright and Mick Krussow. CPAA would also like to thank Dr. Jack Schmidt of Utah State University for his knowledgeable insights into the geomorphology of Desolation Canyon and its tributaries.

Table of Contents

Introduction	1
Methods and Results	2
Jack Canyon Investigations	2
Previous Research	3
Geomorphology	6
Survey Methods	8
42Cb2642	8
42Cb133	8
42Cb132	10
Summary	11
River Ranger Sites	11
42Cb2640	12
42Cb2641	14
42Cb231	14
42Cb2643	16
42Cb2644	17
42Cb2645	17
42Em3849	18
42Em3850	20
42Em3851	20
42Gr402	21
Summary	22
Site Condition and Recommendations	23
42Cb2640	24
Recommendations	25
42Cb2641	25
Recommendations	26
42Cb2642	26
Recommendations	28
42Cb133	29
Recommendations	29
42Cb132	30
Recommendations	32
42Cb231	32
Recommendations	33
42Cb2643	34
Recommendations	34
42Cb2644	35
Recommendations	35
42Cb2645	36
Recommendations	36
42Em3849	37
Recommendations	38

42Em3850	39
Recommendations	39
42Em3851	39
Recommendations	40
42Gr402	40
Recommendations	40
Discussion	42
Eligibility Discussion	43
References Cited	45

List of Figures

Figure 1:	Bowers 1931 sketch, rock art in Jack Canyon	3
Figure 2:	Feature sketch for 42Cb241	4
Figure 3:	Dennison 1931 sketch for 42Cb241	4
Figure 4:	View of Jack Creek	7
Figure 5:	Site overview of 42Cb2642	9
Figure 6:	View of Panel 2 at 42Cb133	9
Figure 7:	View of single-room structure at 42Cb132	10
Figure 8:	View of rock art panel at 42Cb132	11
Figure 9:	View of Cowboy Cache at 42Cb2640	13
Figure 10:	Overview of prehistoric features at 42Cb2640	13
Figure 11:	View of rock art at 42Cb2641	14
Figure 12:	View of possible rubble mound at 42Cb2641	14
Figure 13:	Dennison 1931 sketch of 42Cb231	15
Figure 14:	View of main rock art panel at 42Cb231	15
Figure 15:	View of drylaid stone wall at 42Cb231	16
Figure 16:	View of entry to structure at 42Cb2643	17
Figure 17:	View of historic inscriptions and rock art at 42Cb2644	18
Figure 18:	View of single-room structure at 42Cb2645	18
Figure 19:	View of D-shaped structure at 42Em3849	19
Figure 20:	View of Ute brownware potsherds at 42Em3849	19
Figure 21:	View of structure at 42Em3850	20
Figure 22:	View of possible granary at 42Em3851	21
Figure 23:	View of historic inscriptions at 42Em3851	21
Figure 24:	View of rock art at 42Gr402	22
Figure 25:	View of restacked stone wall at 42Cb2640	25
Figure 26:	View of looters screens at 42Cb2642	27
Figure 27:	View of looters hole at 42Cb2642	27
Figure 28:	View of modified rock art image at 42Cb133	29
Figure 29:	View of illegal ORV route below 42Cb133	30
Figure 30:	View of ORV route leading to 42Cb132	31
Figure 31:	View of looters pit and restacked wall at 42Cb132	32
Figure 32:	View of Flying X brand at 42Cb231	33
Figure 33:	View of inscriptions at 42Cb231	34
Figure 34:	View of inscriptions at 42Cb2644	35

Figure 35:	View of recent inscriptions at 42Cb2645	37
Figure 36:	View of discarded charcoal briquettes at 42Em3849	38
Figure 37:	View of revegetated looters pit at 42Em3849	38
Figure 38:	View of looters pit at 42Gr402	41
Figure 39:	View of bullet holes in rock art at 42Gr402	41

List of Tables

Table 1:	Summary of May 2007 sites	11
Table 2:	Summary of site visibility and access	24
Table 3:	Summary of adverse impacts	42

Introduction

The Desolation Canyon Site Condition Assessment and Vandalism Analysis is a multi-phased, two-year research project initiated by the Colorado Plateau Archaeological Alliance (CPAA), in collaboration with various partners. This project has two broad objectives: Document the nature of cultural resources in the Desolation Canyon and Gray Canyon corridors to better understand the spatial and temporal nature of prehistoric adaptations in this region, and (2) to determine baseline site conditions to measure the nature and extent of adverse impacts precipitated by human activities. The intent of both objectives is to provide federal land managers with data on the nature, distribution and current condition of cultural resources, thereby facilitating proactive management of those resources in a region subjected to significant recreational visitation.

The first phase of the study (Spangler et al. 2007) was conducted in September 2006 and consisted of intuitive surveys conducted primarily near the confluences of Rock House Canyon, Flat Canyon and Steer Ridge Canyon. This research, conducted in partnership with the Utah Division of State History, identified an unexpected spatial pattern consisting of masonry storage structures and rock art sites located near the confluences of these side drainages, but without convincing evidence of nearby residential occupations. The spatial distribution of these sites implied that prehistoric farmers occupied the Green River corridor only seasonally, perhaps during spring planting and fall harvests, and that they were never there in significant numbers or for any significant length of time. Two radiocarbon dates suggested this occupation occurred at about A.D. 1000 to 1050. There was also minimal evidence of recent adverse impacts from human activities.

CPAA revisited Desolation Canyon and Gray Canyon in May 2007 in partnership with the Bureau of Land Management (BLM) and with the same objectives as those in September 2006. However, the project had two additional, more specific goals: (1) Investigate the Jack Canyon, a western tributary of the Green River with a consistent water source, to determine if the spatial pattern of archaeological sites was similar to that observed in Flat Canyon, also a western tributary with consistent water much of the year. And (2) document sites the BLM knows receive significant public visitation, or were at risk of future visitation, to establish a baseline through which future management decisions could better protect those sites. These investigations revealed that the spatial distribution of archaeological sites in Jack Canyon is inconsistent with that observed in Flat Canyon. Through the Green River corridor, the prevalence of adverse impacts – primarily vandalism and graffiti – is much greater than those observed in 2006, and that damage has occurred intermittently from about 1900 to 2006.

CPAA and BLM crews documented 13 sites during field research conducted from May 10 to 15, 2007. The following descriptions constitute an interim report of findings relevant to the May 2007 investigations, and this report is not intended to be comprehensive or inclusive of previous research conducted by CPAA or others in the region. A more comprehensive report will be submitted upon completion of additional

field research scheduled for October 2007. For descriptions of previous research and local environment, see Spangler et al. (2007).

Methods and Results

Field research was conducted over a six-day period by a team of six experienced archaeologists, along with a geomorphology scientist and three BLM river rangers with a significant knowledge of the location of cultural resources along the Green River. [REDACTED]

[REDACTED]

Jack Canyon Investigations

Jack Canyon was selected for an intuitive survey due to its similarity to Flat Canyon. Both are long western tributaries of the Green River, both feature areas with floodplains flanked by steep escarpments, both feature consistent flowing water through most of the year that could have been exploited for horticultural purposes, both feature debris flows of boulders eroding from the canyon walls and tributaries, and broad Green River floodplains are located at the confluences of both canyons. The 2006 investigations [REDACTED] revealed a dense concentration of small masonry storage structures and rock art sites on both sides of the mouth and inside the side canyon to a distance of at least 2 kilometers where the intuitive survey concluded. In most cases, there was no attempt to conceal the structures, and access was considered easy. There was no evidence of permanent or semi-permanent residential occupations.

Given the environmental similarity of the two canyons, it was assumed that the same spatial distribution of sites would be located in Jack Canyon, in particular, that there would be a cluster of small storage structures and rock art sites located around the mouth of the canyon and extending inside the canyon a considerable distance. Based on previous research, several rock art sites and rockshelter occupation sites were known to be present

in the middle portion of the canyon beginning about 4.6 kilometers west of the confluence, suggesting the possibility that archaeological sites would be distributed through the entire canyon drainage. No sites had previously been recorded in the lower 4.8 kilometers of the canyon.

Previous Research. Previous research in the Jack Canyon drainage has been limited, most of it occurring in connection with the development of oil and gas leases in the middle portion of the canyon at about 5 kilometers west of the confluence. At least 12 sites have been formally recorded in middle Jack Canyon, either in the canyon corridor or in unnamed tributary canyons. Additional lithic scatters have been recorded on the canyon rims above. None of the 12 *previously* recorded sites considered in this discussion are located within the boundaries of the National Historic Landmark.

The first references to cultural resources in Jack Canyon were those offered by members of the Claflin-Emerson Expedition from the Peabody Museum at Harvard University. On August 13, 1931, the expedition descended into Jack Canyon from the upper plateau. William Bowers' unedited journal mentions: "Pictographs Jack Canyon. Upper forks, 4-5 miles up. Pecked figures. One slightly isolated figure in addition. Also one small blob red ... Also white figure of ... horse, probably not Indian" (1931:53). A crude sketch was offered (Figure 1) but no site number was assigned.



Figure 1: Sketch from Bower's journal of unnumbered rock art site in Jack Canyon.

Based on the site location, this could be 42Cb241. The 2002 site report mentions a red oval and a horse figure at this site. However, the feature sketch in the 1976 site form is not similar to that in Bowers' journal. Rather, the 1976 sketch (Figure 2) is identical to a sketch in Dennison's journal that he ascribed to PR8-4 (Figure 3). Dennison's notes for PR8-4 indicate "pictographs on north wall of canyon 2 or 3 miles from mouth, 20 feet above creek bed, pecked on brown sandstone. At fork in the canyon. Numerous other pecked circles, some only line pecked, others filled in. Photo U-31-253" (1931:40-41).

According to the field notes edited by the Peabody Museum, PR8-4 is located:

On the north side of Jack Canyon c. 100 yards below the Upper Forks is a good sized overhang almost on the canyon floor. Excavation down several inches showed only earth and animal refuse, possibly some sign of a wall and several scattered rocks under the overhang. On the back wall of the cave were a group of pictographs; 6 circles in red all overlaid with white, several goats in white and one anchor figure, all pecked. Four hands in red paint, 1 man and a goat, pecked. All were rather low down on the wall

ranging from 45 cm to 50 meters (sic) above the present floor level (Scott 1931).

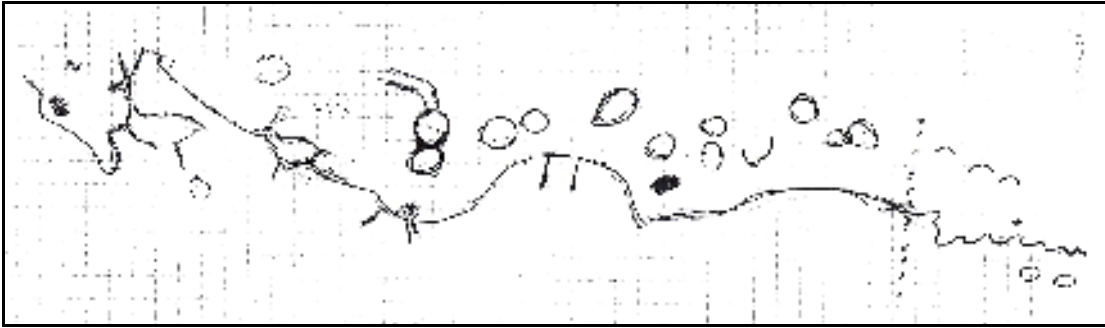


Figure 2: Feature sketch (1976) for 42Cb241 by Sargent and Lindsay.

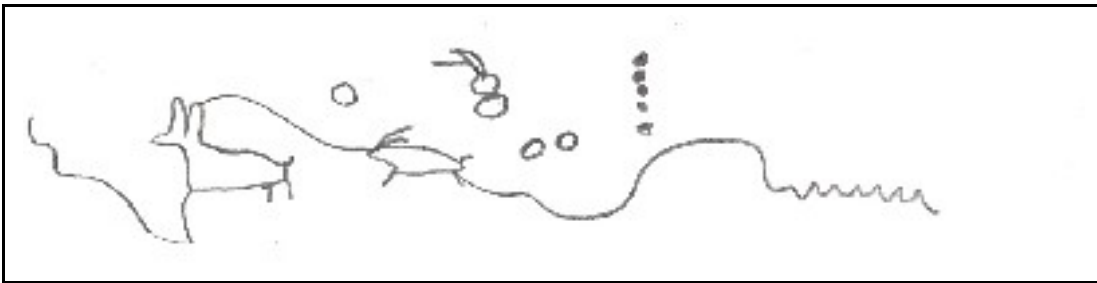


Figure 3: RP8-4 Jack Canyon rock art sketch (Dennison journal), compared to 1976 sketch.

Bowers' original notes for PR8-4 seem to describe a pictograph site quite different from Dennison's petroglyph site. Apparently they are describing two different localities, albeit in close proximity to one another. This appears to be supported by the fact different photo numbers are listed in the two journals for PR8-4. Bowers notes indicate PR8-4 is located:

100 yards below forks, north side, under good overhang. Almost in ... floor. Disc circles in wall covered with white. Several goats (3-4-5) one anchor figure. All pecked. Four hands in red paint. One man, goat. All these rather low down, ranging 1 ½- 5 feet ... floor. Photo 343 and 166. Two corncobs from surface. Excavation to several inches showed only dirt and horse and cow dung. Possibly some signs of wall in several scattered rocks (Bowers 1931:54).

Based on these descriptions, PR8-4 could be 42Cb89, which is located about 100 yards down stream from 42Cb241. However, there is also inconsistency between the 1931 descriptions for PR8-4 and the 1977 descriptions for 42Cb89. The 1977 report describes hand prints and the presence of corncobs, as did the 1931 journal entries, but the site forms do not mention the red and white circles described in 1931, and they are not depicted in the site photographs. No sketch was offered in the various versions of the site forms for 42Cb89. The 1977 report also describes drylaid stone walls up to five courses high and an abundance of artifacts, which are not mentioned in the 1931 notes. It is possible that artifacts were exposed by episodic looting since 1931.

The 1931 expedition proceeded down canyon, mentioning another rock art site in a location that corresponds closely with a rock art panel documented at 42Cb132. Bowers entry indicates that 2.5 miles “up” they found pecked pictographs on the south wall. They planned to return here, but delays in reaching the mouth of the canyon prevented their return (1931:54). It is probable that this is a reference to 42Cb132, but this remains speculative. The 1931 expedition made no further references to archaeological sites in lower Jack Canyon.

Modern archaeological research was initiated in the Jack Canyon region in the mid 1970s in anticipation of oil and gas development in the region. This development precipitated the construction of a road into the bottom of Jack Canyon, which appears to have resulted in access to the middle canyon that subsequently resulted in vandalism of several sites. Previous documented sites within the Jack Canyon corridor include:

- 42Cb89, a rock art and rockshelter occupation site, recorded in 1976 and 1977, again in 2003 in connection with the Stone Cabin 3-D Seismic Project (Reust 2003), and again in 2004 by Baseline Data (Allison 2004).
- 42Cb132, a rock art and single-room structure within a rockshelter, recorded in 1979 by AERC, again in 1981 as part of Getty Oil's Peter's Point #5-14 Project and yet again in 2004 in connection with Bill Barrett Corporation's Jack Canyon and Rims Survey (Patterson 2004).
- 42Cb133, a rock art site, recorded in 1979 by AERC and again in 2004 in connection with Bill Barrett Corporation's Jack Canyon and Rims Survey (Patterson 2004).
- 42Cb237, two large masonry structures near the head of a Jack Canyon tributary, recorded in 1976 by the Utah Division of State History, and revisited in 2004 in connection with Bill Barrett Corporation's Jack Canyon and Rims Survey (Patterson 2004).
- 42Cb241, a sheltered rock art and possible habitation site, recorded in 1977 by AERC and again in 2002 by TRC Mariah in connection with the Stone Cabin 3-D Seismic Project (Reust 2003).
- 42Cb2086, a large masonry room, slab-lined features and petroglyphs on a pinnacle in an unnamed tributary canyon, recorded in 2004 by Baseline Data in connection with an independent survey on behalf of environmental organizations (Allison 2004). This may be the same site as 42Cb237.
- 42Cb2087, a single-room structure within an overhang created by a large boulder, recorded in 2004 by Baseline Data in connection with an independent survey on behalf of environmental organizations (Allison 2004).
- 42Cb2088, a small rock art site, recorded in 2004 by Baseline Data in connection with an independent survey on behalf of environmental organizations (Allison 2004).

- 42Cb2158, a series of five granaries and two petroglyph panels, recorded in 2004 in connection with Bill Barrett Corporation's Jack Canyon and Rims Survey (Patterson 2004).
- 42Cb2160, a rock art panel with 27 figures, recorded in 2004 in connection with Bill Barrett Corporation's Jack Canyon and Rims Survey (Patterson 2004).
- 42Cb2161, a concentration of fire-cracked rock and burned logs within a rockshelter, recorded in 2004 in connection with Bill Barrett Corporation's Jack Canyon and Rims Survey (Patterson 2004).
- 42Cb2162, a deflated hearth within a rockshelter, recorded in 2004 in connection with Bill Barrett Corporation's Jack Canyon and Rims Survey (Patterson 2004).

Based on the spatial distribution of the previously recorded sites discussed above, it could be assumed that (1) Jack Canyon has an entire suite of archaeological site types, including residential masonry structures, storage structures, rockshelter occupations, rock art and special-use localities; (2) the identification of a dense cluster of sites in the center portion of the canyon drainage is probably a function of clearance surveys conducted in connection with oil and gas development projects, and these data may not accurately reflect the actual density, nature or complexity of cultural sites found throughout the entire Jack Canyon drainage, and (3) archaeological sites should be located along the entire canyon drainage where environmental variables are identical.

Geomorphology. Jack Canyon crosses a low-grade alluvial fan at its mouth where it enters the Green River. This fan has been constructed by debris flows and flood flows derived from the Jack Creek watershed. These flows have also delivered boulders and cobbles to the Green River, forming Jack Creek rapids. The modern bed of Jack Creek is dominated by fine and medium gravel that is delivered from a large northern tributary, but stream bank deposits throughout the watershed include large boulders indicative of debris flows entering the Jack Creek valley from some smaller tributary basins. The modern creek flows around the boulder fans at the mouths of some of these tributary basins. The modern channel bed is about 2 to 3 meters below the average valley elevation. The modern topography of the valley floor suggests that recent debris flows that travel significant lengths of Jack Creek itself are rare (John C. Schmidt, personal communication 2007).

Some areas along the creek feature low gradient deposits with finely sorted sands. Others feature lower alluvial deposits related to natural changes in the course of the stream due to log jams or occasional boulders that eroded from vertical banks above. The exposed profiles of the stream bank reveal several sand beds 15 to 30 centimeters thick, although no more than 2 percent of the exposed stratigraphy is fine-grained alluvium. Some sandy deposits are located at the upper edge of the valley floor that would have been suitable for cultivating a few plants, although this would have been difficult given the small spatial extent of the sandy deposits and the necessity to carry water from the creek to sandy areas at the upper edges of the valley floor. The predominance of debris

flows on the relatively narrow valley floor would have prohibited any larger-scale horticulture (John C. Schmidt, personal communication 2007).

Today, Jack Creek is intermittent, but it is not known what the hydrology of Jack Creek was at earlier times. In May 2007, lower Jack Creek featured a consistent flow of moderately fast-moving water 5 to 15 centimeters deep and averaging 2 to 3 meters wide (Figure 4). Flowing water reportedly does not reach the Green River in late summer and fall. At a distance of about 4 kilometers west from the mouth, Jack Canyon features a major split, with one dry fork extending to the north and one with flowing water to the west. The west fork with water narrows significantly at this point, but otherwise features the same debris flows evident lower in the canyon. The dry north fork features copious gravel and cobbles and there was no surface flow. The probable source of the gravel and cobbles is located at or near the head of the dry fork (John C. Schmidt, personal communication 2007).



Figure 4: View to the west of Jack Creek (note the gravel sediments).

All previously recorded archaeological sites have been identified in the west fork above this canyon fork. This is probably an indication that prehistoric water flow patterns were similar or identical to the present, and that sites will be primarily located in the west fork that has a greater water flow. There is no evidence that the hydrology of Jack Creek operated any different in the past than it does presently, and the canyon floodplain

probably appeared to prehistoric human populations much as it is today (John C. Schmidt, personal communication 2007).

Survey Methods. On May 11, CPAA crews examined Jack Canyon, with one crew of four examining the south side and another crew of four investigating the north side. The intuitive survey involved crew members spaced at irregular intervals, walking along the base of the first cliff level and along ledges and bench areas up to 30 meters above the valley floor. When possible the floodplain was examined by walking non-systematic transects. The mouth of Jack Canyon was initially explored to a distance of about 100 meters on each side. However, no sites were identified, despite an abundance of ledges and sheltered areas suitable for storage structures and cliff surfaces ideal for rock art panels. Crews then began moving west into Jack Canyon where they discovered an abundance of rockshelters and larger alcoves with relatively flat floor areas suitable for human occupation. All alcoves and shelters, many with copious layers of herbivore dung, were examined in considerable detail, but no artifacts were observed on the shelter floors. The one exception was 42Cb2142, where looters had exposed subsurface charcoal and burned bone. No other sites were observed in the lower part of the canyon [REDACTED]

42Cb2642. This site, [REDACTED] consists of a very large, prominent alcove on the south side of Jack Canyon and abutting the valley floor (Figure 5). Recent looting has exposed sparse cultural materials, including chunks of charcoal, finely sorted ash, burned bone and burned stones that had been removed and discarded from the looters pits. There are about 10 looters pits on the north and middle areas inside the alcove. Artifacts were only observed in the looters' back dirt piles on the north side of the shelter. Two looters screens were found cached in a crevice below a large boulder. It is noteworthy that all artifacts appear to have been from subsurface deposits, and there was no obvious evidence on the site surface of buried deposits. This suggests that similar large alcoves without surface evidence of human occupation could contain subsurface cultural deposits.

42Cb133. This site, [REDACTED] consists of three panels of petroglyphs located on a southeastern-facing cliff above a steep talus slope on the north side of Jack Canyon [REDACTED]. No artifacts or features were observed in association with the rock art panels. Panel 1, the most southwestern of the three, measures about 1 meter by 50 centimeters and consists of one bighorn sheep, one other zoomorph and one circular geomorphic figure that is not solidly pecked. Panel 2, the most visible concentration of images located in the center of the site, measures 1.4 meters by 55 centimeters and consists of five bighorn sheep, three unknown animal figures, and one anthropomorphic figure with a circular figure in its hand (Figure 6). Panel 3, the northern most of the three panels, consists of one bighorn sheep and one anthropomorphic figure. Most of the figures are solidly pecked, although some are pecked in outline. All are located along the same cliff face.



Figure 5: General overview of alcove at 42Cb2642, looking west. Jack Creek is center right.



Figure 6: Panel 2 (center) visible from the canyon bottom, looking west, at 42Cb133.

42Cb132. This site consists of a north-facing D-shaped masonry structure at the base of the cliff on the south side of Jack Canyon (Feature A) and an adjacent petroglyph panel (Feature B) with a western aspect. The single-room north-facing structure (Feature A) is located within a natural overhang at the south edge of the floodplain. The east and west walls are well defined and consist of two to three courses of unmodified sandstone slabs loosely stacked upon one another. The front wall is poorly defined by a single course of unmodified stone, probably remnants of a wall that has been dismantled. Suspected wall stones have collapsed outward to a distance of about 1 meter on the north. The wall has a maximum remaining height of about 30 centimeters, although this is poorly defined due to illegal excavation of the interior and restacking of wall stones. Fire scarring was observed along the back wall of the shelter. The interior of the structure has been largely emptied of cultural deposits, and the remaining deposits are largely obscured by animal dung. The structure measures 3.4 meters east-west on the interior by 2 meters north-south (Figure 7). A single biface was observed on the interior, but residential detritus was otherwise extremely rare, consisting of burned bone and a single flake. No artifacts were observed in 1979, 1980 or 2004. The sheltered area measures about 10 meters east-west by 2.5 meters north-south.

The rock art panel (Feature B) is located around the corner to the southwest of Feature A and features a western aspect. The panel features seven solid and stipple pecked figures located 3 meters above present ground surface and concentrated in an area about 3 meters by 2 meters square (Figure 8). The upper figure is pecked in outline with a circular head and a rainbow-shaped line emitting from the head. There appears to be a neck and a circular-shaped body below. This figure is poorly pecked in comparison to the others. Below the top figure is a wavy line with 15 undulations. The line measures about 3 meters long, fading in intensity to the right. Below the line are three solidly pecked figures. On the left is a U shaped line with four appendages. Below those figures is an outline of an oval with the right side merging into an amorphous shape. Just below that figure is a small horizontal V image that is solidly pecked.



Figure 7: Single-room structure at 42Cb132, looking northwest.



Figure 8: Rock art images at 42Cb132, looking east.

Summary. The paucity of archaeological sites in the lower ca. 4 kilometers of Jack Canyon, and the comparative abundance of sites above that point, was unexpected and inconsistent with findings in nearby Flat Canyon. No evidence of storage structures or rock art panels was observed in the lower portion, despite an abundance of localities suitable for such activities. The failure to identify such sites may be attributed to the non-systematic nature of the survey in which crew members failed to select those areas where sites are located, or that they simply failed to recognize sites. Both possibilities are considered unlikely, although it is considered probable that such sites will be located in the lower portion of the canyon through additional surveys. Given the limited research conducted, no hypotheses are offered at this time as to why prehistoric sites are apparently abundant above the lower “forks” but are extremely rare below that point.

River Ranger Sites

Prehistoric and historic sites in the Desolation and Gray Canyon corridors are well known to veteran river visitors, and many of these sites receive significant visitation, as evidenced by well worn pedestrian trails to the sites from nearby camping areas. These sites, and others unknown to most river visitors, are also well known to BLM river rangers, who periodically monitor these sites for ongoing impacts. Over a four-day period, 10 such sites were documented by CPAA crews, eight of them known to rangers and two others discovered during the course of documenting the other eight sites. Three of the sites had both historic and prehistoric components, and the remaining seven were prehistoric rock art and/or structural sites. Artifacts were much more common compared to the 2007 reconnaissance, although the quantities were indicative of temporary or seasonal occupations. These sites are summarized in Table 1.

Table 1: Summary of sites documented in May 2007

Site No.	Site Type	Culture Affiliation	Ceramics	Lithics	Ground stone	Other	Historic Features	Features	Register
42Cb2640	Cache Structures Rock Art	Fremont	Corrugated	Debitage	Mano	Bone Charcoal	Cache	AP, AQ	NHL
42Cb2641	Rock Art	Fremont	No	No	Slab Metate	No	No	RM, PE	NHL
42Cb2642	Rockshelter	Unknown	No	No	No	Bone Charcoal	No	No	NHL
42Cb133	Rock Art	Ute	No	No	No	No	No	PE	Eligible
42Cb132	Structure Rock Art	Unknown	No	Biface	No	Bone	No	AP, PE	Eligible
42Cb231	Rock Art Stone Wall	Unknown	No	No	No	No	No	PE, BG	NHL
42Cb2643	Structure	Fremont	Grayware	No	No	No	No	AP	NHL
42Cb2644	Rock Art	Unknown	No	No	No	No	IN	PE	NHL
42Cb2645	Structure Rock Art	Fremont	Grayware Corrugated	Debitage Rosegate	Mano	Bone	No	AP, PE	NHL
42Em3849	Structure	Fremont Ute	Grayware Brownware	Debitage	No	No	No	AF	Eligible
42Em3850	Structure	Unknown	No	Debitage	No	No	No	AP	Eligible
42Em3851	Storage Inscriptions	Fremont	No	No	No	No	IN	AD	Eligible
42Gr402	Rock Art	Fremont Ute	No	No	No	Bone	No	PE	Eligible

Note: Abbreviations follow IMACS Codes. AP is single-room structure, AQ is multi-room structure, RM is rubble mound, PE is petroglyph, BG is wall, AF is pithouse, AD is granary.

The documentation of sites along the river corridor involved no surveys of any kind. Time constraints precluded the identification and documentation of several previously recorded sites located near the ones that were actually recorded in 2007. These will be revisited during the course of future field expeditions. Sites identified by BLM river rangers and documented by CPAA are herein discussed from north to south in the order they were visited:

42Cb2640. This site, popularly referred to as “The Cowboy Cache,” consists of a historic cache of artifacts, and a nearby prehistoric rock art panel and two prehistoric architectural features,

[REDACTED]. The historic component consists of a cache of tools and household items in two tin-covered wooden chests that have been hidden in a cavity below a large boulder on the talus slope below the first cliff level (Figure 9). Items observed in the cache include hammers, an ax, rubber boots, cloth, rope, tobacco tins, frying pans and other kitchen goods believed to date to 1940 to 1941. The prehistoric components include one D-shaped single-room structure, one D-shaped two-room structure with associated residential detritus (ceramics, lithic debitage, bone and fire-cracked rock), and one rock art panel with Fremont-like characteristics. The structures feature loosely stacked drylaid masonry construction with no evidence of mud mortar or a roof superstructure (Figure 10). Interior deposits appear to be shallow, and artifacts were rare, suggesting expedient or temporary use. The corrugated ceramics observed at this site suggests a Fremont culture occupation sometime after A.D. 1100.



Figure 9: Cowboy Cache at 42Cb2640.



Figure 10: View of ledge with drylaid structures. Pin flags denote artifact locations.

42Cb2641. This site

It consists of eroded petroglyphs and a small rubble mound, perhaps a collapsed granary at the base of an outcrop within a V-shaped opening. The petroglyphs are concentrated in three distinct clusters with three different aspects. One horned anthropomorph is similar to images ascribed to the Fremont (Figure 11). Below this figure is a cluster of 35 to 40 unmodified sandstone slabs articulated in a semicircle (Figure 12). This could be remains of a small structure at the base of the outcrop, perhaps a granary, although no artifacts or adobe were observed. The articulation of the stones indicates the walls could have been four to five courses high and enclosed an L-shaped area 2 meters east-west by 1.5 meters north-south. About 6 meters down slope is a heavily patinated slab metate.



Figure 11: Anthropomorph at 42Cb2641.



Figure 12: Possible rubble mound at 42Cb2641

42Cb231. Site consists of a large petroglyph panel along the eastern base of a prominent mushroom-shaped pinnacle and a nearby drylaid rock wall that encloses a small sheltered area. The site was initially identified in 1931 by James Dennison of the Claflin Emerson Expedition as located on a "75 foot pinnacle of rock sticking up in middle of flat ¼ mile above the Green River from mouth of Jack Canyon. Pictures 15 feet from floor, base of sandstone wall forming bottom of pinnacle. Southeast exposure. Mostly irregular pecked lines scrawling about 1- 1.5 (?) thick. Several circles. Two or three dogs or sheep. Photo U-31-254." No site number was assigned by the 1931 crew members. Dennison's sketch in his field notes (Figure 13) corresponds precisely with images observed at 42Cb231, although the written notes to location are misleading. It The site was subsequently recorded in 1975 by LaMar Lindsay and William Lipe.

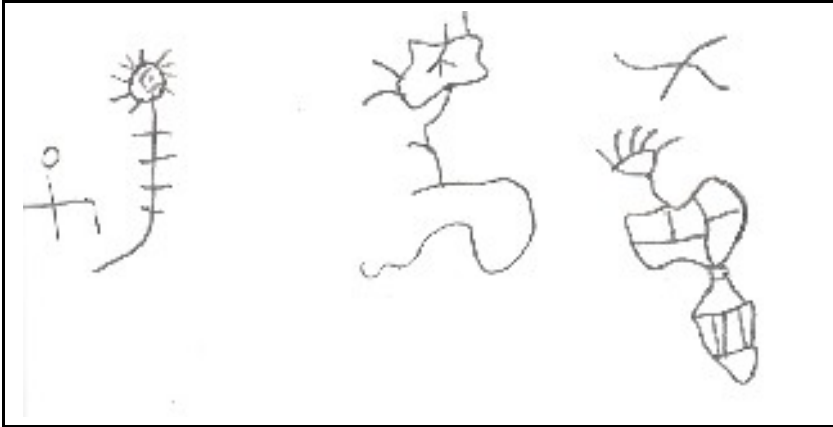


Figure 13: Rock art sketch from Dennison's 1931 journal.

CPAA revisited the site on May 12, 2007, and found the rock art component to consist of 15 to 18 figures consisting of various abstract shapes, circles and zoomorphs concentrated on the east-facing portion of the pinnacle (Figure 14). Graffiti, historic signatures and livestock brand symbols are found in abundance on the south, west and north sides of the pinnacle, and to a lesser extent on and around the east-facing prehistoric panel. The rock wall (Feature B) is located on the southeastern periphery of the site and is adjacent to a pedestrian trail leading to the rock art. The wall partially encloses a natural sheltered area about 1 meter above the trail. It is crudely built with no evidence of mud mortar. The wall extends across the front of the shelter and about halfway to the ceiling of the shelter with five courses of stone at the highest point (Figure 15). The wall measures 70 centimeters high and is about 2 meters wide. The charcoal, ash and burned bone noted in an earlier description were not observed in 2007.



Figure 14: Prehistoric rock art panel at 42Cb231, mouth of Lunts Horse Pasture.



Figure 15: Drylaid rock wall at 42Cb231, mouth of Lunts Horse Pasture.

42Cb2643. This site consists of a large, single-room structure, probably a residential structure, located within a sheltered overhang about 100 meters above the Green River floodplain [REDACTED]

[REDACTED] The structure is situated on a ledge about 10 meters above a sheer cliff face, although access to the structure is possible to the north of the site (Figure 16). The structure was constructed of drylaid, unmodified sandstone slabs 10 to 12 courses high that have been pieced together to create a well constructed wall that extends from the floor of the shelter to the ceiling. At the top of the wall is a long, narrow opening with a view to the east toward the river floodplain. The structure measures 1.2 meters high and 3.24 meters wide by 2.03 meters front to back. Artifacts are extremely rare, consisting of a single grayware potsherd located on the steep talus slope below the site. The large size of the structure implies that it was a residence that could accommodate several individuals. However, no fire-scarring or smoke staining are evident on the shelter walls, and there is an overall paucity of residential artifacts.



Figure 16: View of large drylaid structure from north entry point at 42Cb2643.

42Cb2644. This site consists of an east-facing prehistoric petroglyph panel and historic graffiti located on a cliff face abutting the Green River floodplain [REDACTED] (Figure 17). The 11 to 13 stipple pecked prehistoric images range from simple geometric shapes such as circles and lines to two precisely defined animal figures and three amorphous-shaped figures. Historic and modern graffiti is located across the entire panel with names and dates ranging from 1894 to 1996. The earliest inscriptions are names associated with the Range Valley Cattle Company. These inscriptions are superimposed over at least three prehistoric images. The rock art and inscriptions span four separate patinated surfaces, including three vertical surfaces and one horizontal surface. None of the prehistoric images are diagnostic of a particular culture or period of time.

42Cb2645. This site consists of the remains of a small petroglyph panel and a large D-shaped structure abutting the cliff face within a shallow overhang at the top of a talus slope [REDACTED]. The back wall of the sheltered area is the back wall of the structure. The interior of the structure measures 3 by 1.6 meters, and the walls are defined by one to two courses of unmodified stone slabs (Figure 18). A petroglyph panel with three figures (an anthropomorph, a quadruped and unknown figure) is located above and to the right of the living area. A packrat midden extends along the back wall of the sheltered area from the living area toward the northeast through a narrow natural passage between a large boulder and the cliff wall. Artifacts were observed in the packrat midden and also extending down slope in front of

the structure at least 25 meters. The presence of corrugated potsherds suggests a Fremont occupation of this site sometime after A.D. 1100.



Figure 17: Historic graffiti overlying prehistoric images at 42Cb2644.



Figure 18: D-shaped single-room structure at 42Cb2645.

42Em3849. This site [REDACTED]. It consists of a D-shaped structure, probably a semi-subterranean pithouse, at the base of a large, square-shaped boulder, and an associated lithic and ceramic scatter (Figure 19). The structure is defined by a semicircle of unmodified stone slabs one to two courses



Figure 19: D-shaped structure abutting large boulder at 42Em3849.

high, with higher walls where it abuts to the boulder and a single course along the front wall. The boulder measures 4 meters long where the structure is built, whereas the structure measures 3.5 meters by 2 meters. The boulder face is charcoal stained. Lithic flakes and four Fremont grayware potsherds were located along the north edge of the structure and down slope from the structure. Six very thick brownware potsherds, possibly Ute brownware, and three lithic flakes were observed up slope from the structure and may represent a subsequent occupation (Figure 20).



Figure 20: Coarse Ute-Paiute brownware potsherds at 42Em3849 (assembled for photo).

42Em3850. This site

. It consists of a D-shaped surface structure located within a shallow overhang in the first cliff level on the west side of the Green River. The back wall of the shelter constitutes the back wall of the structure, which was constructed of unmodified sandstone slabs that may have been in an adobe matrix that is now badly decayed and eroded. The south wall has collapsed inward. The front (east) wall has collapsed outward down slope and half of the north wall has collapsed inward. The other half of the north wall is intact (Figure 21) and is currently standing 11 to 12 courses high (82 centimeters). The interior of the structure measures 4 meters side to side and 3 meters front to back. The interior fill has eroded out the front and its current depth is unknown. Given the large size of the structure, it was likely used as a residential locality, although there is a paucity of material culture evidence to support that. The area on the slope below the structure is covered with thick cheat grass that obscures the ground surface. The only artifact observed was a single biface thinning flake.



Figure 21: View to the south of 42Em3850 with drylaid masonry north wall in foreground.

42Em3851. This site

. It consists of a small single-room architectural structure within a sheltered area at the base of the cliff, perhaps remnants of a prehistoric granary (Figure 22), and an abundance of historic inscriptions and dates (Figure 23). The structure is constructed of unmodified stone and adobe in a manner consistent with prehistoric granaries in the Tavaputs Plateau region, although no artifacts were observed to corroborate this assessment. The floor of the structure consists of alluvial deposits. The

structure measures 75 centimeters high by 2 meters wide and 1 meter front to back. The outer wall extends from the floor to the ceiling of the shelter. Three walls are evident, with the back wall of the shelter constituting the back wall of the structure. The walls are comprised of small to medium stone slabs set in an adobe matrix. The historic inscriptions, which bear dates from 1905 to 1910, are located on the cliff face above this structure and along the cliff face for about 40 meters to the north.



Figure 22: View to the north of suspected granary feature at 42Em3851.



Figure 23: View of one cluster of historic signatures at 42Em3851.

42Gr402. This site [REDACTED]. It consists of an elaborate petroglyph panel of 40 to 50 solid and stipple-pecked images ranging from animals and humans to

geometric shapes. All of the figures are pecked into a heavily patinated surface and are easily visible from a considerable distance. The panel is dominated by four large deer or elk figures, two of which are solidly pecked and two are stipple pecked (Figure 24). The solid pecking may be Ute or Fremont, whereas two of the images are executed in a gradient style commonly attributed to the Utes. None of the figures are clearly diagnostic of a particular culture or period of time.



Figure 24: View to the east of main portion of panel at 42Gr402.

Summary. Seven of the 13 sites identified and documented in May 2007 are located within the political boundaries of the Desolation Canyon National Historic Landmark, and the remaining six contain features or characteristics that make those sites eligible for the National Register under one or more criteria. All thirteen sites have prehistoric components, and two of those sites have historic inscriptions reflecting the names of individuals important to the early ranching history of the Tavaputs Plateau (e.g., Joe Wing and Jim McPherson). Although culturally and temporally diagnostic artifacts were sparse, at least four sites yielded evidence of grayware and/or corrugated ceramics that are traditionally assigned to the Formative in this region. One of those sites also contained thick coarse brownware potsherds typically attributed to post-Formative occupations by Protohistoric or Historic Numic-speaking populations.

A fully developed grayware ceramic technology appeared among Fremont populations on the northern Colorado Plateau about A.D. 600, disseminating northward from Ancestral Puebloan populations in Northern Arizona and the San Juan River Basin. In the Southwest, this technology is generally viewed as a response to a need for more

durable container that could accommodate extended boiling of foods, in particular beans. Corrugated ceramics appear north of the Colorado River after about A.D. 1100 and continued to be used by semi-sedentary populations until the demise of agricultural lifeways in the mid-A.D. 1200s (see Spangler 2001, 2002 for a discussion on ceramics on the northern Colorado Plateau). Consequently, the Fremont presence in Desolation Canyon may be consistent with the temporal ranges for these two broad ceramic traditions (A.D. 600 to 1300).

Collectively, the prehistoric components are consistent with ephemeral, perhaps seasonal occupations by semi-sedentary populations that constructed temporary residences at the base of cliffs within sheltered overhangs. At least seven sites had evidence of residential activities, although the paucity of middens suggested these occupations were of extremely short duration. Substantial investment in architecture was evident only at 42Cb2643, a site that otherwise exhibited a paucity of residential detritus indicative of longer-term occupations. Only one suspected pithouse (42Em3849) was identified, and this site also yielded few artifacts.

At least five sites were attributed to Fremont occupations based on ceramics, rock art styles and/or architectural styles, and two additional sites had both Fremont and Ute components, based on rock art styles and/or ceramics. One additional rock art site was attributed to a historic Ute occupation based on the possible depiction of a horse, a technology acquired by the Utes in the late 1700s or early 1800s (see Spangler 2002 for a more comprehensive discussion of horses among the Utes).

Site Condition and Recommendations

As stated above, a primary objective of the May 2007 reconnaissance was to assess current site conditions to determine the nature and extent of adverse impacts to sites located along the 90-mile-long river corridor, including areas outside the boundaries of the National Historic Landmark. All 13 sites were examined for evidence of human-caused impacts, including illegal excavations, graffiti and figure modifications, restacked or modified architecture, litter, pedestrian and vehicle impacts, and damage resulting from associated industrial development, road construction and ranching operations. Sites were also examined for livestock impacts. These impacts were examined within the context of site visibility, proximity to and access from trails and river camps, and difficulty of access (See Table 2).

Site conditions ranged from fair to good, although individual components at some sites are in poor condition. All but two sites exhibited evidence of impacts caused by human activities. Site conditions are herein discussed from north to south in the order the sites were documented:

Table 2: Site visibility and access

Site No.	Site Visible From Camp or Canyon Trail	Location Visible	Trail to Site	Foot prints On Site	Meters To River Camp	Meters To Trail	Meters Above Trail	Slope	Access
42Cb2640	Yes	Yes	Major	Yes	N/A	1	1	20	Easy
42Cb2641	No	Yes	Minor	No	N/A	1	1	20	Easy
42Cb2642	No	No	Minor	No	1500	50	1	1	Easy
42Cb133	Yes	Yes	No	No	3200	100	20	15	Moderate
42Cb132	Yes	Yes	Major	No	2600	3	1	1	Easy
42Cb231	Yes	Yes	Major	Yes	400	1	3	7	Easy
42Cb2643	Yes	Yes	No	No	N/A	300	50	35	Difficult
42Cb2644	No	Yes	Major	Yes	100	1	1	5	Easy
42Cb2645	No	Yes	Major	Yes	100	1	40	18	Easy
42Em3849	No	Yes	No	No	200	200	1	15	Easy
42Em3850	Yes	Yes	No	No	100	100	50	30	Moderate
42Em3851	No	No	No	No	300	300	1	1	Difficult
42Gr402	Yes	Yes	Yes	Yes	50	15	6	15	Easy

42Cb2640

The historic component at this site is well known to river runners as "The Cowboy Cache," and a major pedestrian trail leads from the river's edge to the cache about 80 meters up slope. The prehistoric components are not as well known and appear to be rarely visited, although ephemeral pedestrian trails lead from the cache to the prehistoric structures above and to the east. Site features are not visible from the river access point, but the site location is visible. Access up the 20-degree slope is easy. The presence of the cache suggests this locale was used during the early 1940s by cowboys in the area, perhaps as a camp although there is no remaining evidence of fire rings, charcoal or other camping evidence. There is no evidence of litter, modern inscriptions, vehicular or ORV impacts on or near the site. Desiccated dung from large herbivores was observed along the ledge between Structure 1 and 2, suggesting that livestock could have damaged or have the potential to impact the architectural features. A wild horse was observed on the edge of the site at the time it was recorded.

The historic component has suffered from improper collecting over the years. BLM rangers indicate that items have disappeared from the cache with some regularity. No inventory of items was made in 2007, but the BLM has conducted at least two inventories of the items in the past. The prehistoric components have suffered from vandalism at some point in the past. Two possible eroded looters pits inside Structure 2 are shallow and have largely refilled with aeolian sands and spall. These may not be looters pits but rather areas where animals have repeatedly bedded down. Structure 2 also appears to have walls that have been restacked in modern times, with about six courses of poorly articulated stone slabs defining the walls. The walls currently feature loosely laid stones from the slope below (Figure 25). Lithic artifacts have been stacked on the walls (thinning flakes and one mano fragment). BLM informant Dennis Willis indicates that metates once present on the site near Structure 2 have disappeared in recent years. The rock art panel has not suffered any adverse effects from human activities.



Figure 25: Crude stone wall at 42Cb2640 suspected to have been restacked in modern times.

Recommendations. Given the popularity of this site to river visitors, it is recommended the BLM initiate strongly worded advisories to river visitors about prohibitions against the collection of prehistoric *and* historic artifacts. The inventories conducted in the past provide a good baseline to determine the extent of artifact theft that has occurred since those inventories were conducted. Another complete inventory should be initiated, and periodic inventories should be conducted in subsequent years to determine the extent of artifact thefts. If the problem persists, the BLM may consider banning pedestrian activities within one-half mile on either side [REDACTED] confluence, or removing the remaining items to an appropriate curatorial facility. The prehistoric components contain significant artifacts that are vulnerable to illegal surface collection due to their high visibility. The location of these components should not be disclosed to the public. The artifact piles should be dispersed and consistent monitoring of these components conducted to ascertain the nature and extent of ongoing damage due to recreational visitation and livestock.

42Cb2641

This site appears to have suffered extensively from natural erosion, but there is no evidence of impacts due to recreation visitation or other human activities, and there is minimal evidence this site receives significant visitation. [REDACTED]

[REDACTED] no footprints were observed at the site. There is no evidence of graffiti or modern signatures, no trash and no evidence of human impacts due to

vehicular traffic, development, camping or other activities. There is no nearby river camp that would prompt extended visitation to this site, and it is deemed to be of low risk to future damage. Desiccated livestock dung indicates the site may have been impacted in the past by ranching activities. A wild horse was observed directly below this site, indicating that future impacts from large herbivores rubbing against the rock art panels remain a possibility.

Recommendations. Given the eroding and fragile nature of the remaining images at this site, visitation to this site should not be encouraged. It is likely that it will be inadvertently discovered during the course of repeated visits to the Cowboy Cache [REDACTED] but these visits are anticipated to be infrequent. Periodic monitoring of this site (in conjunction with the Cowboy Cache) is recommended to ascertain the nature and extent of future adverse impacts due to river recreation. Monitors should avoid creating a pedestrian trail that leads to the site.

42Cb2642

This alcove has been vandalized in recent times (since 2001), exposing cultural materials that were otherwise not visible on the site surface. The alcove is one of several in Jack Canyon without surface evidence of prehistoric human occupation, but which likely contain considerable subsurface evidence below layers of ceiling spall and livestock dung. The deep alcove is readily visible from a considerable distance, and a pedestrian trail leads to within 50 meters of the site. There is no formal vehicle access to this portion of the canyon, although BLM rangers reported that ORVs forged a trail through Jack Canyon (and adjacent to the site) to its confluence in about 2004. There is no discernible ORV trail presently. The presence of two looters' screens (Figure 26) suggests the vandals arrived at this location using vehicles or horses to carry the equipment. There is also evidence that individuals, probably the looters, camped at the site location, leaving behind concentrations of charcoal and burned beams that appear to be recent. No litter was observed on site except for a penny left behind in a back dirt pile which bears the date of 2001. The penny may be indicative of a looter's "signature."

The site has also been impacted by livestock in the recent past. The skeletal remains of a juvenile cow that died within the past two years (+/-) were observed on the site surface, as was moderate amounts of desiccated dung. The primary adverse impact at this site consists of eight to 10 looters holes on the north periphery of the shelter and two additional holes in the center part of the shelter. The pits include deflated depressions and holes with vertical sides that appear quite recent. The largest hole measures 70 by 50 centimeters and is 35 centimeters deep with vertical walls extending to a hardpan subsurface (Figure 27). Other pits range from 20 to 60 centimeters in diameter with depths of 10 to 20 centimeters that have largely deflated. The back dirt piles, which have been screened for artifacts, feature coarse gravel, ash, charcoal and burned bone. The sifted sediments are stained black with ash and charcoal.



Figure 26: Large looter's screen overlying smaller screen at 42Cb2642.



Figure 27: Looters pit at 42Cb2642. A 2001 penny was discovered in sifted back dirt.

Two quarter-inch excavation screens were located within a cluster of boulders on the southeast side of the alcove. The screens were cached below a small cavity and were not readily visible unless walking to the south through the shelter and then southeast in between two large boulders with a smaller slab in between. The screens were cached between the northern boulder and the rock slab. The first of the two screens (Screen A) is the larger of the two, measuring 80 by 68 centimeters with a depth of 8.5 centimeters. The screen frame is comprised of wood held together by four nails at each corner. The screen has legs to prop it up and keep it horizontal during screening. The legs are attached to the screen with bolts. There is a (ca.) 1 meter piece of rope tied around the left leg of the screen. There is also a repair to the right leg using duct tape and a piece of wood (a broken tree limb). This repair was made where the cross beam holds the two legs of the screen together. The right leg also has a piece of wire about 30 centimeters long wrapped around the section where the leg bolts to the screen. The frame around the screen has one side (the front side) which has pulled away from the rest of the screen, exposing nail ends. Screen B is smaller, measuring 50 by 35.5 centimeters and with a depth of 10 centimeters. This screen has no legs to prop it up and is instead a simple hand-held screen. The screen is comprised of four pieces of wood held together by two nails on each corner. Screen A had been placed over Screen B, with the legs of Screen A flipped up and over the top of the larger screen. Both screens were photographed *in situ* and then removed by BLM rangers and disassembled.

Evidence at this site suggests that vandalism of sites in Jack Canyon is recent and may be ongoing (sometime since 2001), and that individuals with prior looting experience have engaged in systematic looting of locations likely to contain cultural deposits. These individuals apparently came in to Jack Canyon with the express purpose of looting. It remains possible that individuals constructed the screens and carried them into the site from a river access point (Jack Canyon camp) but this is considered unlikely given the distance involved. Rather, it is more probable that individuals used ORVs or horses to carry the equipment, and that access was from the Jack Canyon Road, which ends about 3.2 kilometers west of the site. An ORV trail continues past the end of the road a considerable distance, and continued ORV access to the site would not be difficult.

Recommendations. The importance of this site and other large rockshelters in the drainage cannot be overstated. The looting activities have exposed subsurface cultural materials that demonstrate considerable potential that these large alcoves contain evidence of human occupation that may predate the Fremont occupation of the region. As such, it is strongly recommended the BLM consistently monitor all Jack Canyon alcoves for evidence of future vandalism. Given that the vandalism was precipitated by individuals with looting experience and equipment needed for systematic excavations, it is also recommended that future episodes of vandalism be investigated by an ARPA-trained ranger, and that evidence of these illegal activities not be disturbed or removed until such investigations can be completed. Disclosure of this particular site location to the public should be strongly discouraged.

42Cb133

This site appears to be in essentially the same condition as was observed in 2004 when it was re-documented. Despite its relative proximity to a natural gas well head, there are no obvious signs of vandalism or graffiti, although there are light scratches that may have been intentional defacement of the images at Panel 2 and possibly at Panel 3. Panel 2 features one deep scratch that appears to have been cut with a metal knife blade, as well as lighter indistinct marks and a horizontal V shape. At Panel 3, the horns on a sheep figure appear to have been extended, also with a metal knife blade (Figure 28).



Figure 28: The horns on this figure at Panel 3 at 42Cb133 appear to have been intentionally extended by a metal knife.

The site is easily visible from the bottom of the canyon about 75 meters below where there is a well-worn illegal ORV trail that leads from the well head about 0.4 kilometers further up stream (Figure 29). There is no evidence that vehicles have attempted to gain direct access to the site. Several pieces of blue flagging tape were observed, probably remnants of the 2004 site documentation. All fragments were removed. There is no evidence of impacts due to livestock, industrial development, camping or other recreation activities. There are no pedestrian trails leading to the site, and no footprints were observed. The scratches observed on the two panels are relatively minor and have not impacted the integrity of the site.

Recommendations. This site is likely well beyond the spatial range of pedestrian visitation by river visitors, and it probably receives little visitation. However, the site remains vulnerable to improper ORV travel beyond the end of the established road to the well head. The heavily worn ORV trail beyond that point to the canyon bottom below the site suggests that individuals on ORV travel extends down canyon a considerable distance, and individuals have likely used vehicles to gain access to sites lower in the canyon. Consistent monitoring of this site for future impacts is encouraged. It is also recommended that the BLM's closure of the ORV spur route at the well head be enforced to deter future damage to 42Cb133 and other sites further down canyon.



Figure 29: Illegal ORV spur route below 42Cb133.

42Cb132

The architectural component at this site has been seriously vandalized, whereas the adjacent rock art component has not been obviously impacted by human activities. No mention of vandalism was observed at the time this site was initially documented in 1979 and 1980, and there is nothing in the original site forms to indicate adverse effects at that time beyond natural erosion and livestock. Subsequent re-documentation of the site in 2004 revealed substantial vandalism of the shelter deposits. The CPAA re-examination in 2007 did not identify vandalism that appears to have occurred since 2004. The site is easily visible from an existing ORV route at the well head about 100 meters to the southwest. In addition, an ephemeral ORV route extends beyond the well head to within 5 meters of the site (Figure 30), suggesting that vehicles may have directly impacted cultural deposits at this site. BLM documentation of damage to this site indicates that individuals associated with gas drilling were responsible for the vandalism, and that inscribed names correspond to oil and gas workers (BLM 2004).



Figure 30: Illegal ORV route leading directly to 42Cb132 (cliff face center frame).

The interior deposits have been extensively looted as evidenced by two deflated looters pits, one measuring 1.2 by 1.2 meters and the other 1.1 by 1.4 meters. Each is about 30 centimeters deep. One is located on the east side of the structure interior (Figure 31) and the other on the west side. Back dirt piles have largely obscured the front north wall. The east wall appears to have been restacked, probably by looters removing stones from the interior, which is now largely devoid of interior deposits. Additionally, the inscription "Dillen 99" and a swastika have been scratched on the shelter wall. The vandalism appears to have been episodic over a period of about 25 years, based on differences in the appearance of back dirt. It is probable that the original episodes of vandalism occurred in conjunction with the development of the gas well, and that road access created for that development subsequently facilitated later access by individuals who also engaged in illegal excavations. BLM rangers indicated that in 2003 a group of ORV riders forged a route from the well head to the Green River. Evidence of this trail can be seen to a distance of about 0.4 kilometers downstream from 42Cb132 after which it becomes obscured by vegetation and flooding. It is unlikely that many river visitors have ever ventured this far up Jack Canyon, and damage to this site probably cannot be attributed to river recreation activities.



Figure 31: Looters' pit and restacked stones on east edge of architectural feature.

Recommendations. This site is likely beyond the spatial range of pedestrians venturing into Jack Canyon, and the risk of adverse impacts from river recreation is probably minimal. However, this site remains vulnerable to ORV access and individuals who could use vehicles to transport shovels and other equipment for illegal excavations. Given that this site has the potential to contain intact cultural deposits, it is recommended the BLM consistently monitor this site for future episodes of vandalism, and that site location not be disclosed to the public. Data recovery may be appropriate at this site. It is also recommended that the BLM's closure of the ORV spur route at the well head be enforced to deter future damage to 42Cb133 and other sites further down canyon.

42Cb231

This site receives considerable recreation visitation as evidenced by a well-worn pedestrian trail with fresh footprints leading about 400 meters [REDACTED] directly to the site. The mushroom-shaped pinnacle on which the site is located is visible from the camp to the east. No artifacts were observed along the trail, and there is little reason to suspect buried cultural deposits in the floodplain where the trail is located. All evidence indicates visitors are using a single trail to access the site, and that pedestrian impacts to the integrity of the site are minimal. There is no evidence of litter or vehicle, livestock or industrial impacts. However, the site has been impacted by recreational visitation and ranching activities in the area, as evidenced by at least two Flying X brand symbols attributed to the Wilcox Ranch and to

various inscriptions. In 1975, archaeologists observed evidence of charcoal and ash they suspected may have been the result of modern camping activities. No such evidence was observed in 2007.

The primary impacts to this site have been and continue to be graffiti and possible defacement of prehistoric images. The east-facing portion of the panel exhibits light scratching above and to the right of the prehistoric images, as well as a deeply incised Flying X brand symbol (Figure 32). Many of the prehistoric images exhibit a white color that upon initial investigation was thought to be chalk. A closer inspection of the images revealed no evidence of a foreign substance. Rather, it appears as if the images have been traced, rubbed or abraded to remove accumulated patina, presumably to make the images contrast better and thereby result in better photographs. River rangers indicated this abrasion has likely occurred sometime over the past 5 years.



Figure 32: Flying X above prehistoric images at 42Cb231

The other three sides of the pinnacle do not feature unequivocal prehistoric images, but all have signatures, initials and other images that appear to have been added in historic or modern times (Figure 33). Based on the dates of the inscriptions, these were added to the site between 1953 and 1980, with one '05 date that could be 1905 or 2005. Another Flying X symbol is located on the south-facing wall of the pinnacle. The inscriptions are primarily etched into the sandstone surfaces.

Recommendations. This site is well known to river visitors, [REDACTED] remains a popular overnight destination that probably facilitates extended visits to the site. It is unrealistic to expect that site visitation will diminish in the future. Given the popularity of this site and the minimal evidence that pedestrian visitation is adversely affecting the integrity of the site, designation of this site as suitable for public visitation may be appropriate. However, the prevalence and persistence of graffiti at this site is a significant problem that warrants aggressive management in light of the probability that existing graffiti creates an impression among some visitors that it is acceptable to add their own names. This potential could be ameliorated through the dissemination of advisories to all river visitors not to add their names, initials and dates to those already present at various sites throughout the canyon, and to report such destructive activities to the BLM. Given that most of the graffiti is located on the south,

north and west faces of the pinnacle and are not associated with prehistoric images, these remnants could be removed without damaging the integrity of the prehistoric rock art on the east face. Such removal could reduce the perception that adding new names and dates is acceptable. Removal of the graffiti from areas around the prehistoric images is more problematic and would probably require the assistance of a professional rock art conservator to ensure the prehistoric images are not damaged. Consistent monitoring of this site for future adverse effects is highly recommended.



Figure 33: Modern inscriptions, north side of mushroom rock at 42Cb231.

42Cb2643

Despite the fact the structure can be seen from the floodplain 100 meters below, there is minimal evidence this site receives significant visitation, probably because river visitors are diverted by [REDACTED]. There are no trails leading to the site and no footprints were observed at the site. There is no evidence of vehicular traffic in the area, no industrial development and no livestock impacts. There is also no evidence of looting or vandalism, although the extremely shallow deposits would not be conducive to excavations. The only adverse impact was an inscription of the Bar Y brand on a rock face just outside the structure. This brand is attributed to Don Wilcox, who ranched in the area from the 1950s to about 2000.

Recommendations. This site constitutes one of the best preserved architectural structures documented thus far in Desolation Canyon, and it may be indicative of as-yet poorly documented residential occupations in the canyon. As such, this site has tremendous significance to an understanding of prehistoric land use patterns. This site remains largely unknown to river visitors, and future visitation is anticipated to be infrequent. The paucity of artifacts that could be surface collected militates against

significant adverse impacts from casual visitation. However, it is recommended that this site not be disclosed to the public, and that the BLM consistently monitor this site for future impacts to its architectural integrity.

42Cb2644

This site is located on a cliff face adjacent to a popular river camp at the south edge of [REDACTED]. The panel itself is not visible from the camp, but the cliff face is visible and there is a well worn pedestrian trail leading from the camp to the site about 100 meters west of the camp. The trail continues past the panel [REDACTED]. The prehistoric components are in poor condition due to prevalent historic and modern graffiti. However, the historic inscriptions are themselves important and are in good condition, although some are marred by modern inscriptions (Figure 34). There is no evidence of litter, vehicular or industrial development impacts or illegal excavations. This site has suffered extensively from graffiti, which has continued through recent times (the most recent date is 1996). Other dates include 1894, 1901, Nov. 18 '95, '87, 1969, 1970 and 1971. Recognizable names and initials include Marc Bingham, Gary D, Ira, IS, GS, Lyman Marble, Joe W., P. Stale, Ralph B, R. Goldsbrough, TJLT, JM, H. Wilcox, Joe Chss Wing and Rat.



Figure 34: Historic inscriptions with more recent scratches and initials at 42Cb2644.

Recommendations. Management of this site is problematic. Many of the inscriptions appear to be historic and attributable to early ranchers on the West Tavaputs Plateau, thereby constituting important historic resources. However, the presence of these

early inscriptions has prompted individuals in modern/recent times to add their names and dates. The range of modern dates from 1969 to 1996 suggests this problem is ongoing, and it is having a direct impact on the integrity of the prehistoric and historic images. Given that this site is already well known to river visitors, disclosure of the site location is not likely to significantly change visitation patterns. Consequently, this site may be appropriate for public outreach and educational efforts wherein the BLM could aggressively manage visitation by informing visitors of the permanent and destructive nature of graffiti. The BLM may want to consider removing the graffiti dated more recently than 50 years ago to discourage future graffiti by individuals who do not realize or acknowledge the unacceptability of this practice. Consistent monitoring of this site for future episodes of graffiti is strongly encouraged, as is aggressive investigation and prosecution of future incidents. This site holds considerable potential for public education and outreach efforts.

42Cb2645

This architectural site, although poorly articulated, appears to receive extensive visitation, [REDACTED]. The site itself is not visible from the camp 100 meters to the east, but the site location is visible and is easily accessible. A major pedestrian trail leads from the camp to the site location, where evidence of visitation consists of modern inscriptions and artifacts set on rock shelves in plain view. There is no evidence of impacts due to vehicular access or industrial development, and no litter was observed. Fire-reddened and cracked stones are located around the site, indicating camping activities at some point, but these may be prehistoric. Livestock dung was observed near the base of the slope below the site.

Other adverse impacts include eight small stone slabs with incising on them of images, names and dates to 2005 and 2006. The slabs bear the names of Bobby, Buckskinner, Halkopelli '05, Maggie, HJ 2006 with a Fremont figure holding a paddle, Mr. Pe-mes and indecipherable images (Figure 35). All of the stones were located on a natural stone shelf adjacent to the D-shaped structure and associated with two potsherds left on the same shelf. At the request of the BLM rangers, all of the stones were thrown into the Green River, and the potsherds were cached. There is no obvious evidence that cultural deposits have been looted, and the rock art component on the cliff face above features no graffiti. Overall, visitor impacts at this site appear to be minimal.

Recommendations. This site receives considerable visitation and the major pedestrian trail is likely to direct future visitors to the site. This site features a comparatively dense concentration of diagnostic artifacts that remains vulnerable to surface collecting. Although visitation is likely inevitable, disclosure of this site location is strongly discouraged. It is also recommended that the BLM conduct consistent monitoring of this site to ascertain the nature and extent of future damage. Given the potential for substantial subsurface cultural deposits, this monitoring should include the caching of any artifacts that become visible through natural erosion.



Figure 35: Inscribed names on stone slabs at 42Cb2645.

42Em3849

This site is located about 40 meters above and 200 meters west of a popular river camp [REDACTED]. It is easily accessible up a short steep slope. There are no pedestrian trails or footprints leading to the site, and there is no evidence of camping on site, no evidence of vehicular activities, industrial development or agricultural impacts. The site has been impacted in the past by livestock, as evidenced by desiccated cattle dung. Cattle last grazed in this area in 2002 when Waldo Wilcox held grazing leases here. On the northern edge of the site, river visitors had scattered charcoal briquettes along the slope in a continuous east-west direction for about 35 meters (Figure 36). These were removed by river rangers. The D-shaped structure has been looted, although looted areas now have grass and globe mallow growing in the back dirt piles and looters holes (Figure 37), suggesting the vandalism is not recent. The looters' hole appears to have impacted most of the interior of the structure. The looters' pit measures about 2 meters by 1 meter, although it has largely deflated and is poorly defined. The eastern portion of the structure interior appears to be intact and is currently covered by wall stones and fire-cracked rocks. A significant berm of soil is located along the front eastern wall that may be back dirt piles. The eastern wall also appears to have been deconstructed, probably during looting activities. The site has likely been surface collected at some point.



Figure 36: Charcoal briquettes discarded at 42Em3849.



Figure 37: Looted interior of 42Em3849 with vegetation now growing on interior and in back dirt.

Recommendations. Given the proximity of this site to [REDACTED] river camp it will likely be discovered – probably inadvertently – by visitors in the future, and there remains a potential that visitors would collect surface artifacts or engage in additional ground-disturbing activities. The co-occurrence of Fremont and Numic artifacts at this site offer significant potential for scientific study of adaptations in this portion of Gray Canyon, which has never undergone significant archaeological examination. Consequently, these artifacts constitute important resources critical to future

research. To maintain the integrity of the site, disclosure of this site to the public is strongly discouraged, and consistent monitoring by BLM rangers of future impacts is warranted. This monitoring should include a determination as to whether surface artifacts are being removed by visitors. If it is subsequently determined that artifacts are being removed, a formal collection of the remaining artifacts by qualified archaeologists is recommended.

42Em3850

This site is located about 80 meters from the river and 200 meters from the popular Rabbit Valley river camp. The structure is visible from the camp up a 30-degree slope, and consequently it has probably been observed and received some visitation in the past. However, there is no evidence of pedestrian trails to the site or footprints on or around the site, suggesting visitation is infrequent. There is no evidence of litter, camping on or around the site, nor are there modern inscriptions. There is no evidence in this area of any vehicular access, impacts due to industrial development or agricultural activities. There is no unequivocal evidence of vandalism or disturbance of surface deposits.

Recommendations. This site is currently in a severe state of natural erosion, with most of the walls having collapsed inward or down slope. Visitation to this site could accelerate the collapse of the remaining walls. Consequently, visitation to this site should be strongly discouraged, and site location not disclosed. Given that the site is visible from the camp below and it will likely receive infrequent visitation, consistent monitoring of site condition is warranted to determine future adverse impacts from visitation.

42Em3851

This site near [REDACTED] appears to have been the focus of extended camping activities during the first part of the 20th century, and there is copious graffiti indicating repeated occupations over several years. The dates associated with these camping activities are clustered between 1905 and 1910, but there is little evidence of modern camping or modern inscriptions at the site. Further evidence of modern/historic camping is found on the west side of the structure where a concentration of charcoal is located at the base of the cliff. There are no pedestrian trails to the site, and access from the river involves considerable bushwhacking through greasewood. Evidence of litter is limited, probably due to the dense cheat grass. Broken brown bottle glass was observed about 75 meters to the south. There is no recent evidence of any impacts due to vehicles, livestock, agriculture or development of natural resources. The site is not visible from the river landing point, nor is the outcrop visible behind the dense vegetation. There is little evidence this site receives significant visitation. There is no obvious evidence the granary structure has been vandalized, although there is a high probability that interior deposits have been disturbed at some point in the past given its proximity to historic camping activities. The absence of surface artifacts may be attributed to surface collecting associated with camping a century ago.

Recommendations. This site has considerable potential to contribute important historical insights through an investigation of the names and dates found on the cliff face. These names and dates could assist in the temporal context of historically relevant individuals who were among the first ranchers in the region. As such, future degradation of the inscriptions through the addition of modern names and dates remains a possibility. The fact this site is not visible from the river or from camping areas enhances the possibility that individuals could engage in destructive activities without being seen. With that caveat, this site may be appropriate for public visitation in that it could enhance the public's appreciation of the early ranching history of the region. However, any future direction of visitors to this site must be accompanied by aggressive BLM strategies to inform visitors as to the inappropriateness of adding their own names and dates. Pending such a strategy, the site location should not be disclosed to the public. Consistent BLM monitoring of the site for future episodes of graffiti and/or vandalism of the interior structure deposits is recommended.

42Gr402

This site is readily visible [REDACTED]

[REDACTED] Site condition remains good despite several impacts. A number of modern inscriptions have been added, although most are lightly scratched and are illegible. The inscriptions include: KN 1988, RS, RT, REF, KB, CH, MW, FMCP, BS, MAMCP, SV and Loo. One Pepsi can, one plastic spoon and several cigarette butts were observed on the site. Despite vehicular access, there is no evidence of direct vehicle access to the associated deposits. There is no evidence of impacts due to livestock, agriculture or development activities, although road construction undoubtedly facilitated public access that resulted in damage to the site.

There is evidence of looting of potential cultural deposits at some point in the past. An eroded looter's pit was observed at the base of the cliff with a pile of back dirt discarded in front of the panel (Figure 38). This pile has become compacted due to years of pedestrian activity around the site. No artifacts were observed in the back dirt piles, indicating the possibility they were collected or were never there in significant quantities. The most serious impact to the rock art images has been repeated episodes of gunfire directed at the panel. At least 40 bullet holes were identified, including some directed at the bodies of the quadrupeds (Figure 39).

Recommendations. This site already receives considerable visitation due to its proximity to and visibility [REDACTED]. Consequently, public visitation to this site is deemed inevitable. Furthermore, this site would be particularly appropriate for aggressive public outreach initiatives, including signage informing the public as to the importance of rock art to indigenous peoples, encouraging public awareness and stewardship of the images, and educational information. The proximity of this site to an existing BLM campground affords many opportunities for preservation and educational initiatives not

appropriate in more wilderness settings further up stream in Desolation Canyon. It is recommended that periodic monitoring of this site be initiated to determine future damage, and that aggressive investigations occur if such damage occurs. This site may be appropriate for the BLM's site stewardship program.



Figure 38: Looters' pit below rock art at 42Gr402.



Figure 39: Example of bullet holes impacting interior of various quadrupeds at 42Gr402.

Discussion

The small sample size identified and documented in the May 2007 reconnaissance precludes any definitive statements about impacts to archaeological sites in the Green River corridor. There is also a distinct possibility that sites known to BLM rangers are also known to river visitors, and that the higher prevalence of adverse impacts observed in May 2007 is a function of documenting sites that receive a higher level of visitation. These impacts will be discussed in greater detail in the year-end 2007 report, when a database of 50 to 60 sites will have been documented, and in the year-end 2008 report, when the database is expected to include 100 to 150 sites. Adverse impacts to sites documented in May 2007 are summarized in Table 3.

Initial observations from the May 2007 reconnaissance are that sites located in close proximity to established river camps feature well-established pedestrian trails leading to the sites, and that there is evidence of adverse effects occurring over the past decade. This consists primarily of graffiti observed at 42Cb231 and 42Cb2645. Evidence of graffiti dating from the early 1900s through the present was observed at eight of 13 sites documented in May 2007. In most cases, the graffiti is minor and does not significantly impact the National Register qualities of the site. In the cases of 42Cb2644 [REDACTED] and 42Em3851 [REDACTED], the early 20th Century graffiti itself now has historic significance, although it is acknowledged the inscriptions [REDACTED] have significantly impacted the integrity of the prehistoric images.

Table 3: Summary of adverse impacts

Site No.	Site Type	Site Condition	Looting	Graffiti	Site Modification	Litter or Debris	Livestock	Other
42Cb2640	Historic cache Structures Rock Art	Good	Possible	No	Restacked Walls, Artifact Piles	No	Yes	Theft
42Cb2641	Rock Art	Fair	No	No	No	No	Yes	No
42Cb2642	Rockshelter	Good	Yes	No	No	Yes	Yes	ORV Access Camping
42Cb133	Rock Art	Good	No	Yes	Image Modifications	Yes	No	Datum Stake ORV Access O/G Nearby
42Cb132	Structure Rock Art	Fair	Yes	Yes	Restacked Walls	No	Yes	ORV Access O/G Nearby
42Cb231	Rock Art Stone Wall	Good	No	Yes	No	No	No	Ranch Brands
42Cb2643	Structure	Good	No	Yes	No	No	No	Ranch Brand
42Cb2644	Rock Art	Fair	No	Yes	No	No	No	No
42Cb2645	Structure Rock Art	Fair	No	Yes	Artifact Piles	No	Yes	No
42Em3849	Structure	Fair	Yes	No	No	Yes	Yes	No
42Em3850	Structure	Fair	No	No	No	No	No	No
42Em3851	Storage Inscriptions	Good	Possible	Yes	No	Nearby	No	Camping
42Gr402	Rock Art	Good	Yes	Yes	No	Yes	No	Bullet Holes

There is also evidence that individuals have engaged in malicious vandalism (e.g., illegal excavation of cultural deposits) within the past six years in middle-lower Jack Canyon. Although ORVs are prohibited, the canyon bottom is mechanically accessible to ORVs, and some individuals may have used these vehicles to facilitate damage to

archaeological deposits. Malicious vandalism was observed at 42Cb2642 and possibly 42Cb132. Evidence of illegal excavations occurring in the distant past was also observed at 42Em3849 [REDACTED], which is located adjacent to a historic cattle trail, and 42Gr402, which is adjacent to [REDACTED]
[REDACTED]

Theft of artifacts appears to be ongoing at 42Cb2640 (The Cowboy Cache), which also features stacking of prehistoric artifacts and modifications to prehistoric architecture. Artifacts were also stacked at 42Cb2645 [REDACTED]. Litter appears to be a consistent albeit minor problem, consisting of blue flagging tape at 42Cb133, a signature penny left by looters at 42Cb2642, waste charcoal briquettes at 42Em3849, broken beer bottle glass near 42Em3851 and miscellaneous trash at 42Gr402. Only 42Cb2642 is located within the boundaries of the National Historic Landmark.

Eligibility Discussion

The sites identified and documented during the course of the May 2007 reconnaissance consist of a variety of prehistoric rockshelters, architecture, storage and rock art sites that collectively contribute to a better understanding of prehistoric adaptations along the Green River corridor during Fremont and subsequent ancestral Ute times. In addition, historically significant sites include a cache of tools and historic inscriptions, some dating more than a century old. These could contribute important insights into early ranching activities throughout the region. The significance of these sites to regional prehistory and history will be discussed in subsequent year-end reports for 2007 and 2008.

Seven of the 13 sites are located within the political boundaries of the Desolation Canyon National Historic Landmark, and are therefore listed on the National Register. These are not discussed further. The remaining six sites are recommended eligible for listing on the National Register either under Criteria A, B, C and/or D. All six eligible sites are eligible under Criterion A inasmuch as they collectively contribute to a broad understanding of prehistoric lifeways during Archaic and ancestral Ute times on the northern Colorado Plateau. These adaptations were characterized by small groups of hunter-gatherers who utilized plant and animal resources concentrated along a river corridor in an otherwise arid environment. During Formative times, some foragers also engaged in the cultivation of maize on the Green River floodplain where they appear to have been part of a larger Fremont Complex of farmer-foragers. Most sites reflect occupations by small nuclear or extended family units living in close proximity to permanent water.

Three non-landmark sites with rock art are recommended as eligible under Criterion C inasmuch as they are remarkable examples of prehistoric aboriginal rock art that embodies distinctive characteristics of different styles, periods of time and methods of construction. These rock art sites possess high artistic values attributed to Fremont and Ute peoples who occupied the northern Colorado Plateau from ca. A.D. 600 through historic times. Other rock art images represent a significant and distinguishable catalog of

images whose components may lack individual distinction but collectively contribute to a broader perspective of land use patterns through time. In addition to the aesthetic qualities, these images offer clues as to spatial and temporal relationships between prehistoric populations as well as insights into prehistoric communication and ceremonialism.

Furthermore, site 42Em3851 [REDACTED] may be eligible under Criterion B in that it could be associated with individuals important to the region's history. In particular, the inscription "J.McP" is likely that of Jim McPherson, one of the most influential ranchers in the Tavaputs Plateau region and who remains among the most colorful individuals in the history of eastern Utah. Historic research into the earliest ranchers of the region is ongoing (cf. Aton 2008) and will be the subject of more detailed discussions in future reports.

Most importantly, all six sites outside the landmark boundaries are recommended as eligible under Criterion D inasmuch as they have significant potential to yield information important in prehistory, including land-use patterns, environmental constraints, ceremonialism and subsistence. Extremely little research has been conducted into prehistoric manifestations in the Green River drainage and its tributaries, and little is known about how prehistoric foragers and agriculturalists adapted to this especially arid environment. Although surface deposits have been disturbed at many sites, it is highly probable that intact deposits are located below the disturbed areas and below back dirt piles, and that these deposits will yield new insights into prehistoric groups who occupied the canyon during Archaic, Formative and Protohistoric times.

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