

# THE ZOO KEEPER PETROGLYPH SITE, 5LA5993

by

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## INTRODUCTION

During 1988 and 1989, archaeologists from the University of North Dakota initiated a rock art recording and evaluation project at the Pinon Canyon Maneuver Site (PCMS) in southeastern Colorado (Fig. 1) (Loendorf 1989; Loendorf and Kuehn 1991). Dozens of the more than 175 recorded rock art sites were revisited to evaluate them for the National Register of Historic Places, and in new survey efforts, additional sites were recorded. Through these studies there is a heightened interest in the rock art of the region, and other scientists, as well as United States Army personnel, in the PCMS are noting the location of sites. The Zoo Keeper site, 5LA5993, one of the most spectacular of all the rock art sites in the PCMS, was found by a biology student from the University of Wisconsin, Madison, while he was on a field trip to the PCMS. This student and others were hiking cross-country to the Purgatoire River Canyon to visit the dinosaur tracks; the rock art site was discovered at the point where the students entered the canyon. The following article on the site is an edited version of the site description (Loendorf and Kuehn 1991:232-249).

The site form for 5LA5993 was completed by Steve Chomko of the National

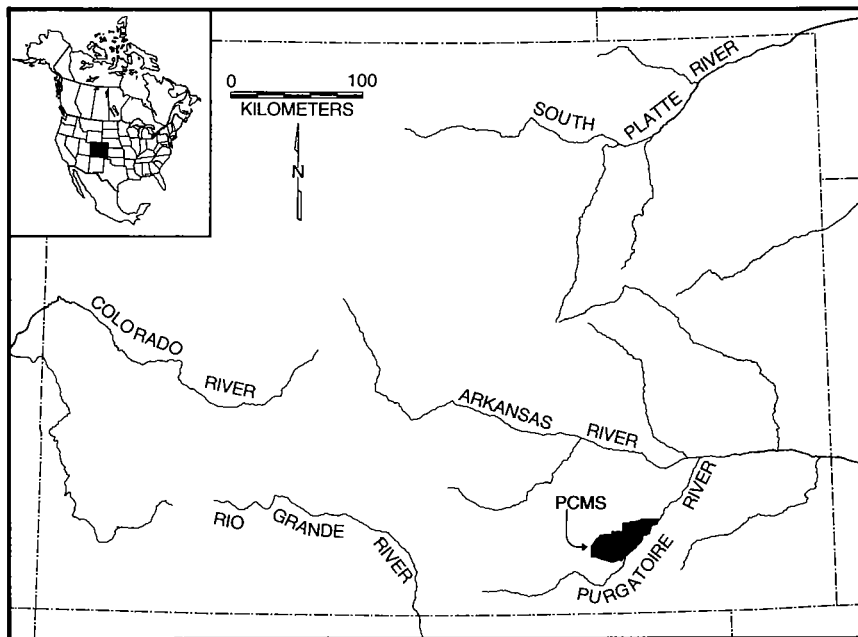


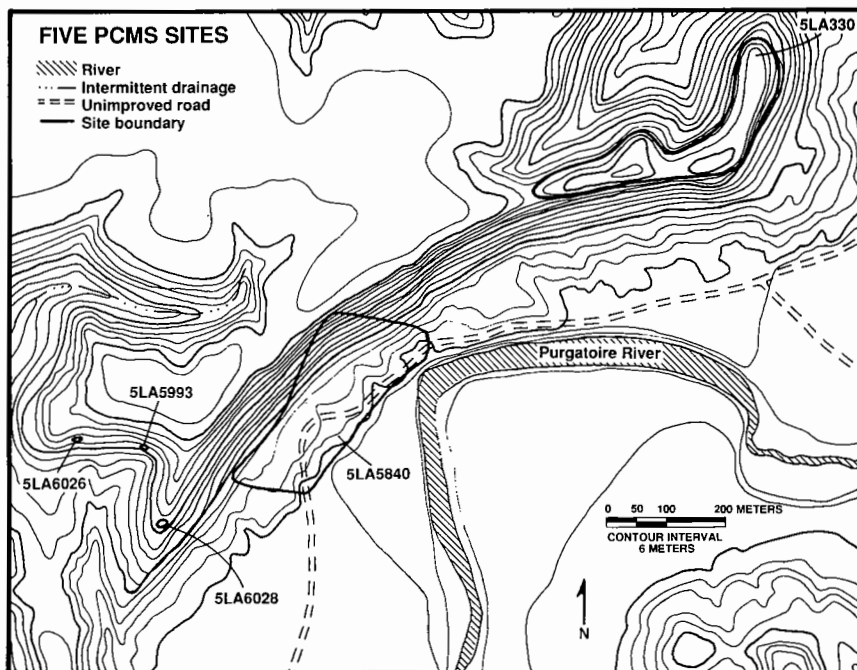
FIGURE 1. The location of the Pinon Canyon Maneuver Site (PCMS) in southeastern Colorado.

Park Service. It was originally named the Madison Zoo site but is now commonly referred to as the Zoo Keeper site. Its name is derived from a large panel of animals with a single human figure near their middle. The human figure, holding a wand or staff, is clearly the central figure in the "zoo."

The site is on the north side of a small unnamed tributary canyon to the Purgatoire River (Fig. 2); it is located below the highest part of the canyon side, on a large erosional remnant of sandstone that has broken off and remains isolated from the bedrock sandstone formation. This large block of sandstone is adjacent to the parent rock exposed in the canyon wall.

The main panel of petroglyphs at the site is in a small sheltered alcove (5.7 m wide x 3.0 m high x 1.0 m deep) that faces to the southwest. A second panel, with a single quadruped and an amoeba form, is found on a boulder located on the small terrace in front of the alcove. It faces to the south. Large juniper trees are growing on the terrace in front of the alcove, but they do not totally obstruct the view of the river bottom.

Flowing water is found in the Purgatoire River, about 0.6 km from the site and about 90 m below the site. During the recording of the site, we noted that deer use the small tributary canyon as a natural route to and from the river for water. One morning at dawn there were a dozen or more white-tailed deer within a few hundred meters of the site. Other animals, such as bighorn sheep and bison, may have used a similar route in the past. Antelope were probably never abundant in this setting because they are animals that like open terrain where they can depend upon their speed for escape.



**FIGURE 2.** The relative locations of five archaeological sites in the Pinon Canyon Maneuver Site.

## RESEARCH COMPLETED AT 5LA5993 BY UNIVERSITY OF NORTH DAKOTA

Panel 1 is large, with a width of 5.22 m. The entire panel was photographed in black and white and in color. In addition, the panel was photographed in sections. Infrared film was used to photograph some sections of the panel for comparison with the other films used in the recording process. A scale drawing, aided by a string grid, was made of the entire panel, and selected petroglyphs were recorded by tracing. Four varnish samples were removed from various petroglyphs in the panel for cation-ratio dates.

Panel 2 was photographed in black and white and in color. It was also recorded through a scale drawing. A varnish sample was removed from the quadruped in the panel for cation-ratio dating.

No test excavations were undertaken at the site, but there is good potential for the recovery of cultural remains in the area near the rock art panels. A site map was made.

## ROCK ART DESCRIPTION

All of the rock art at the site is petroglyphs that were completed by a solid pecking technique. Seventy-four elements were recorded in the main panel and two on the rock near the main panel. Depth measurements for the petroglyphs are about 1.5 mm, and line widths, for attachments such as legs to the solidly pecked bodies of quadrupeds, average about 2.5 mm. The angle of the surface on which individual elements are found in the main panel varies from 75 degrees to 128 degrees, with the majority at 123 degrees, indicating they are found on a surface that slopes in at its base.

Individual petroglyphs in both panels ranged in size from 6 cm<sup>2</sup> to 1302 cm<sup>2</sup>, with an average of 175 cm<sup>2</sup>. The largest petroglyph is a meandering line with a length of 68.5 cm and an intersecting line attached to it that gives it a maximum width of 19 cm. Because these dimensions were never filled in with other petroglyph components, it is misleading to offer its square area in the statistics. The second largest petroglyph is 21 cm by 30 cm, with an area of 630 cm<sup>2</sup>. Although this is slightly larger, it is more in keeping with the size of the other figures in the panel.

Observing the main petroglyph panel at the Zoo Keeper site (Figure 3), one might guess it is dominated by animals. Such an observation would be accurate, but the number of animals is not as dominating as might be predicted. Only 36 (47.4%) of the 76 elements recorded at the site are quadrupeds, while 26 (34.2%) are pecked amoeba forms or dots. In addition, there are lesser numbers of circular or curving forms (seven, or 9.2%), rectangular or square forms (two, or 2.6%), rows of dots (two, or 2.6%), a crossing line form (one, or 1.3%), and an anthropomorph (one, or 1.3%).

Although it is not possible to identify the representational objective in many of the petroglyphs, it is obvious that a significant number do not have an intended form. They are simply pecked amorphous areas or dots that are located near the quadrupeds. About half of the forms are animals, including a single human form, and the other half are abstract designs. Some of the latter are possible tools or objects used in the culture of those who made the petroglyphs, but the majority are dots, connecting lines, or pecked amorphous forms.

All of the quadrupeds are depicted in profile views that are made by totally pecking or abrading their bodies and legs. The majority have four appendages



**FIGURE 3. Rock art Panel 1 at 5LA5993. Four figures at the far right of the panel are not included in the photo. Photograph by Peter Halter.**

that appear to be legs, and most are rectangular-bodied figures with headgear but no digits at the ends of their legs.

The variation in the head attachments is worthy of discussion. A significant number have curving horns or antlers that turn away from the head and downward in their form; others have curving horns that turn forward, away from the head; others have straight lines for headgear that point forward, upward, and backward; and some have branching antlers.

As discussed below, the petroglyphs were probably made by the same cultural group. More importantly, the petroglyphs were most likely made at the same time or within a few years of each other. Thus, the formal variability in the head attachments is probably not a product of time or differences in the cultural background of the artists. Most likely, the artist intended representations of different animals. Some suggestions as to which animals are the intent of the artist are offered in the discussion.

Only a single quadruped displayed digits at the ends of its legs, and its digits are not distinct; one digit appears to have a hooked form attached to it, while another has a horizontal line at the terminus of the leg. Eight of the quadrupeds do not display headgear; these may represent juveniles or females of the species, which do not grow antlers.

In general, the quadrupeds are a group of pecked profile-view animals with four legs. They have bodies with ovoid or rectangular shapes and straight legs with no added attachments. Most have rounded shoulders and short necks; a variety of horns, ears, or antlers are connected to the heads. Many of the figures have tails or other connecting lines and dots near them. The figures are static and not depicted in action poses.



**FIGURE 4. The single human figure on Panel 1 at the Zoo Keeper site, 5LA5993. Photograph by Peter Halter.**

The single human figure is shown in full view (Fig. 4); it has an elongated ovoid body with an inverted u-shaped set of legs. Its arms are straight out, away from the body; the ends of the arms each have four splayed fingers that are clearly out of proportion with the remainder of the figure. Horns or horned headgear are attached to the top of its head.

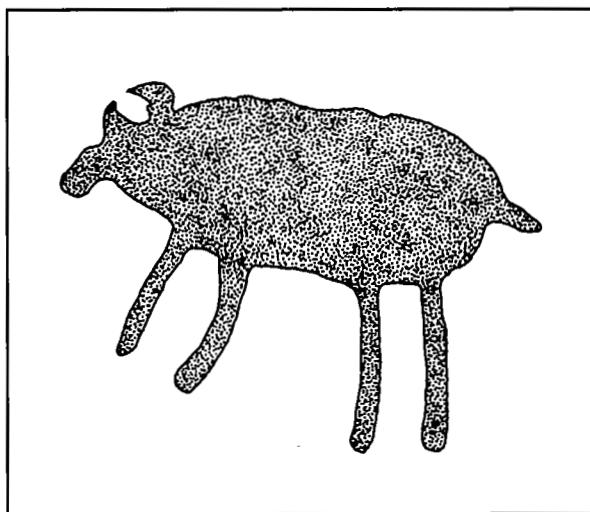
Assuming the figure is facing the viewer, it has a series of crossed lines attached to its right hand. This attached figure is larger than the hominid, and its representational intent is conjectural. The frayed ends of the attachment suggest some sort of wand or object of power. It is clearly neither an atlatl nor a bow and arrow.

Other inanimate objects in the panel include a long, wavy meandering line. This line is most evident at the left side of the panel, where it connects several of the animals to one another (Figure 5). A series of connected circles at the terminus of this line appears to have some part in its intent or function. One possibility is that this terminal form represents a net or trap for the animals in the panel. Equally plausible as an explanation is the possibility that it represents an entoptic form, and the animals are derivatives of an artist in trance. Most of the other inanimate forms are dots, curved lines, or curvilinear meanders. These forms are found throughout the panel, with no apparent pattern, but their presence underscores the possibility that the forms are related to trance.

The petroglyphs on Panel 2 include a quadruped (Fig. 6) and some indiscriminate pecking in an amoeba form. The fragment of sandstone on which the petroglyphs are found is 88 cm across by 52 cm high; the art is



**FIGURE 5.** The northwest end of Panel 1 at 5LA5993. Varnish samples for cation-ratio dating were taken from the connected circles at left center and from the quadruped at bottom right, in the dark area.



**FIGURE 6.** Drawing of the quadruped on rock art Panel 2 at 5LA5993. The figure is 20.5 cm from nose to tail.

on a face that slopes at 54 degrees. It is oriented toward the south at 195 degrees east of magnetic north.

The quadruped has straight, stiff legs with no added attachments at their ends. It has an ovoid body with a short pointed tail and an elongated snout on its head. The head is a continuation of the body, with no apparent neck. Two curved horns are attached to the top of the head. The figure is 20.5

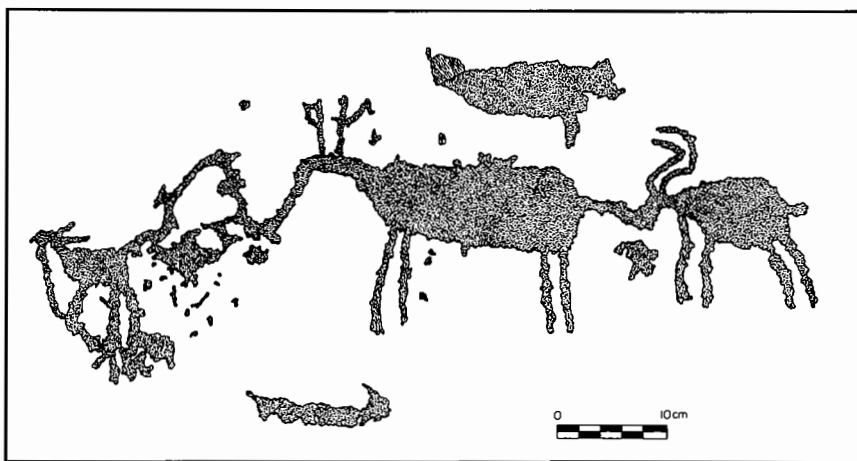
by 17.5 cm in size. The amoeba form is smaller (4 x 6.5 cm) and lighter in color. It may have been added to the panel at a later date.

Varnish samples were removed from five of the petroglyphs and submitted to cation-ratio dating. Four of these, in the main panel, were the zoo keeper, a large quadruped in the center of a connected group of three (Fig. 7), the maze-like group of connected circles at the left end of the panel, and a darker quadruped at the left end of the panel (Fig. 5), on a surface that receives more moisture. In addition, the quadruped on the smaller rock that constitutes Panel 2 was subjected to cation-ratio dating.

The results of this dating process are very instructive; the four figures in the main panel are dated between 900 and 1,000 years ago. The zoo keeper has a numerical age of  $900 \pm 150$  years ago (Loendorf and Kuehn 1991:242); the antlered quadruped in the middle of the group of three is dated at  $1,000 \pm 225$  years ago (Loendorf and Kuehn 1991:242); the connecting circles at the left terminus of the undulating line is dated at  $1,000 \pm 250$  years ago (Loendorf and Kuehn 1991:242); and the more darkly colored quadrupedal figure on the less upright surface below the maze of figures is dated at  $950 \pm 200$  years ago (Loendorf and Kuehn 1991:242).

The series of dates for the petroglyphs at the main panel of the Zoo Keeper is tightly grouped. Cation-ratio dates are based on radiocarbon dates that have been corrected according to tree ring calibrations; thus the average age of the rock art panel is dated at 962 years ago, or A.D. 988. Other methods can be used to compare the four dates, but all will offer an age between 900 and 1000 B.P., or A.D. 950 to 1050.

The quadruped on Panel 2 was dated at  $1200 \pm 150$  B.P. (Loendorf and Kuehn 1991:242), or A.D. 750; this age is within the standard deviation for the other dates, and the figure may be the same age. It may also be slightly older than the other figures and represent the first petroglyph at this location. It could have served as the catalyst for the artists who executed the main panel.



**FIGURE 7.** Drawing of a group of connected quadrupeds from Panel 1 at 5LA5993. The central figure was dated.

In sum, the numerical dates and the relative estimates suggest the figures were made between 900 and 1,000 years ago. This age estimate for the petroglyphs is in agreement with the sequence established for petroglyphs during prior research at Pinon Canyon (Loendorf 1989a:333-350).

## DISCUSSION

The Zoo Keeper site is an impressive rock art site; it is impressive in the variety of its content, its quality, its integrity, its setting, and its potential for understanding of rock art elsewhere in North America. Among other rock art sites in southeastern Colorado or on the Southern High Plains, the Zoo Keeper site is an extremely important addition to the information about petroglyphs.

One of the significant factors about the site is the contemporaneity of the figures in the main panel. All appear to have been made between 900 and 1,000 years ago by the same cultural group. They may represent the work of a single artist, but variation in the detail between various images in the panel suggests it is more likely they represent the efforts of several artists. These artists may have worked together at the same time or visited the site to make petroglyphs over a span of several years. In particular, some of the amorphous forms and dots may have been added to the panel by later visitors to the site.

If the petroglyphs are contemporary, then it is possible to obtain a glimpse into what the peoples living 900 to 1,000 years ago on the Purgatoire River believed was the correct composition and content for a petroglyph panel. The location of the panel in a small concave alcove may be an important characteristic in determining its form, size, and content. Other petroglyph panels on nearby sites are also located in shelf-like, concave alcoves where they are more than a meter above the surrounding ground surface. In particular, several of the panels on 5LA5840 (Fig. 2), in the canyon below the Zoo Keeper, are in similar settings. However, none of these is as elaborate or as large as the Zoo Keeper, and none are dated. They may represent something older or more recent in a tradition of using these shelf-like alcoves for rock art.

Other contemporary petroglyphs in the vicinity of the Zoo Keeper include an antlered quadruped with a radiating burst of lines attached to its tail (Fig. 8). This figure is about 20 m up the small tributary canyon from the Zoo Keeper. Together with four other panels of petroglyphs, it was assigned site number 5LA6026 (Fig. 2). The form of this quadruped is similar to those at the Zoo Keeper, and one might guess its numerical age of  $850 \pm 125$  B.P. (Loendorf and Kuehn 1991:244), at a time when the figures were popular. It is not found in a shelf-like alcove, but instead it is on a high, vertical canyon wall. The absence of the alcove, with its defined perimeter, may have influenced the artist to make only a single figure. This observation appears to be true with another panel of petroglyphs at 5LA6026 that is found on a shelf-like alcove above the surrounding ground surface. Although badly eroded, the panel still exhibits multiple quadrupedal figures and may have once had a number comparable to the Zoo Keeper.

The contemporaneity of the petroglyphs in the main panel is also important for understanding the formal variability among quadrupeds that was recognized by the cultural group who inhabited the area 900 to 1,000 years ago. Quadrupeds that are dated about a millennium earlier in the area do not show the same





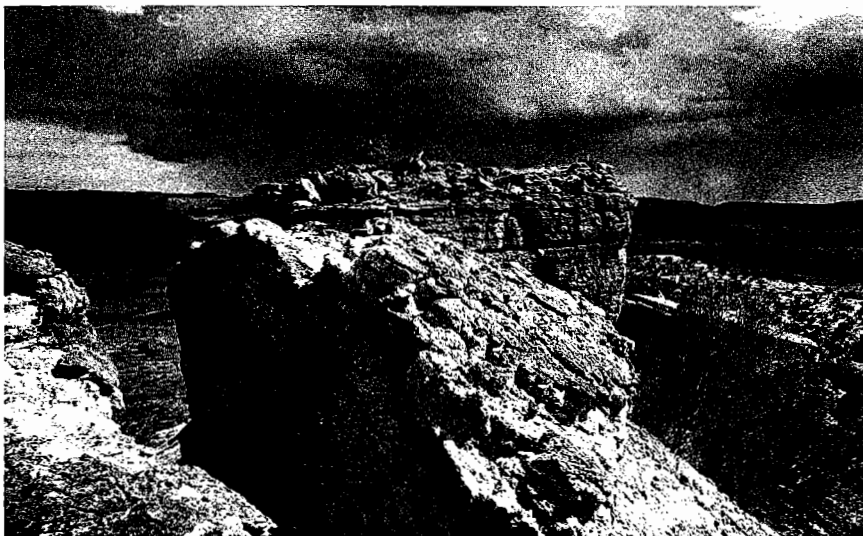
**FIGURE 8. A dated quadruped at site 5LA6026.**

variation in head attachments (Loendorf 1989a:309, 353), and quadrupeds that are dated more recently show more action and more humans associated with them (Loendorf 1989a:270). Thus, it would appear that the petroglyphs at the Zoo Keeper are part of a continuing tradition in southeastern Colorado of pecked petroglyphs where new attributes and motifs are being added to the scenes.

More importantly, the artists who made the Zoo Keeper panel recognized multiple animals in their artistic efforts. Variation in the figures makes it possible to offer some tentative identifications for some of the animals. The quadrupeds with branching antlers are almost certainly deer or elk. Because elk antlers are often depicted as sweeping back over the body of the animal, the upward or forward branching antlers more likely represent deer. Some of the vertical-snouted animals with curved horn appendages may represent bison. Almost always stockier than other quadrupeds, several of them display rounded or humped backs. The quadruped in Panel 2 at the site is a good example of this group.

The animals with horns that curve out and downward may represent bighorn sheep. These kind of horns are common on figures that are believed to be sheep elsewhere in North America (Wellmann 1979:56). Animals with crescentic horns or antlers and those with straight horns may be any of several possible animals including antelope, deer, or sheep. At least one or two of the smaller quadrupeds may be carnivores such as coyotes or dogs; the absence of long tails might preclude lions. One linear undulating figure may be a snake, but it could also be another example of the wavy lines found in the remainder of the main panel.

Establishing the age of the Zoo Keeper at 900 to 1,000 years ago is also important because it indicates a relationship between the Zoo Keeper site and the nearby Sorenson site, 5LA330, as well as the slab wall structures



**FIGURE 9. The Point site, 5LA6028.**

on the Point site, 5LA6028 (Fig. 2). Although very little is known of the peoples who occupied or used these sites, all of the existing information suggests they were utilized at the same time as the Zoo Keeper. Slab wall structures in villages or on isolated ridge points are part of a tradition in the area that begins in the Early Ceramic stage about A.D. 450 to 750 and continues into the Middle Ceramic stage. The structures are best represented at sites like Snake-Blakeslee and Cramer, on the Apishapa River to the north of the PCMS. These village sites are dated by radiocarbon and the identification of Southwestern potsherds at A.D. 1250 to 1350 (Gunnerson 1989:57). At these sites, many of the stone slabs in the structures are set on their edges to form the house walls. Several of these houses had vertically set posts in them, cut from slabs of sandstone, to support the roof beams; they are the ultimate representation of these house types in the Apishapa phase.

Artifacts found on the surface of the Sorenson site and the Point site include chipped stone debris, large corner-notched and stemmed projectile points, ground stone manos, slab metates, and bedrock metates. No ceramics have been found. In the summer of 1989 a mapping and test excavation program was undertaken at the Sorenson site by archaeologists from the Rocky Mountain Region of the National Park Service. A charcoal sample recovered in this testing program was dated at  $930 \pm 50$  B.P. (Chomko, DeVore, and Loendorf 1990). This date overlaps the four cation-ratio dates from the main rock art panel at the Zoo Keeper.

The Point site, 5LA6028 (Fig. 9), with its stone wall structures, is located about 200 m south of the Zoo Keeper (Fig. 2). This site exhibits the remains of seven possible houses or rooms, and although the site is by no means as extensive as the Sorenson site, it is clearly related. A charcoal sample, recovered by a shovel probe into one of the rooms, was dated at  $1030 \pm 90$  B.P. (Chomko, DeVore, and Loendorf 1990). As with the date from the Sorenson site, this overlaps all of the cation-ratio dates from the main panel at the Zoo Keeper.

In sum, the main panel of petroglyphs at the Zoo Keeper is dated at the same time as the Sorenson site and Point site. Unquestionably, the same peoples used these sites for various reasons. The proximity of the Zoo Keeper to sites that almost certainly served as living areas suggests it had a nondomestic function. Furthermore, its position at the base of the upper canyon wall, in the trees, suggests it was not the position of a lookout for hunters.

The fact that the Zoo Keeper is not concealed deep in a cave or within a crevice between two rocks suggests it was not intended to be hidden or secret. Nonetheless, the Zoo Keeper is not within the confines of the Sorenson site, and its function is most likely not part of the day-to-day activities in the large village.

The Zoo Keeper rock art is more likely associated, on a day-to-day basis, with the occupants of the Point site, 5LA6028. These rock wall enclosures are located on top of a point in the canyon rim that juts out from the remainder of the canyon wall (Fig. 9). The seven enclosures on the site are defined by interior walls within a larger perimeter wall; they are made of locally derived slabs of sandstone that are stacked on one another. Some of the slabs are placed vertically in the walls' construction, but others are stacked slabs. The greatest height of the walls today is about 50 cm, but they may have once been much higher.

The location of the structures is somewhat instructive when attempting to determine their function. Because they are situated on an erosional column of sandstone that is separated from the remainder of the ridge and more than 10 m above its surroundings, one might guess they represent a fortification or defensive work. However, the location of the site is lower than the main ridge, and anyone who wanted to attack it could easily do so from the canyon rim by lobbing projectiles down and into the site. Thus, it is not in a good defensible position.

The view of the Purgatoire River bottom and to both directions of the canyon side is excellent from the site. The Sorenson site is in complete view to the north, while other projecting rims of the canyon are in view to the south. One might suggest the site represents a part of a watch and warning system where communication by signal fires or some other means took place. This explanation may be partially correct, but the number of rooms in the total structure seems too great to simply label it a lookout point. A text excavation into the site in 1990 supports the belief that it was a habitation site with living activities similar to those on the Sorenson site (Chomko, DeVore, and Loendorf 1990). Its relationship to other stone slab house sites in the valley is not understood.

To summarize, the Point site is situated in an excellent position for vantage but a poor position for defense. The number of structures in the complex suggests it was built and used by a group that was larger than a lookout guard or a hunter who was watching for game. It may have been used by a smaller unit of the village inhabitants; these individuals could have been linked together by blood, common interests, or both.

The proximity of the Point site and the Zoo Keeper rock art panels, in both time and space, is important; the inhabitants of the Point site had to encounter the Zoo Keeper petroglyphs on a daily basis. If the petroglyphs played such an integral part in their lives, it is not so far out to suggest they may have been part of the socioreligious aspects of their culture.

In the least complex association between the two sites, the Zoo Keeper petroglyphs may have served as a hunting shrine for the peoples who lived at the Point site. In a more complex association, the Zoo Keeper petroglyphs may have been important to the ceremonial functions of a separate group of persons, perhaps shamans, who normally inhabited the main village. The functions of the site could have varied from magic for control of the animals to curing the sick by using the spiritual power of the animals.

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