

In this paper we want to provide some brief information on kinds of cave sites in Montana and Wyoming, and settings for archeological materials in those sites. This small sample, from our personal experience, is intended as a general overview.

Caves are measured from front to back, from mouth to most distant extent of the back wall. Rockshelters are wider than they are long (or deep), and caves are longer (or deeper) than they are wide. This is an old definition and works well to distinguish cliff faces from deep caverns.



Caves generally have some degree of light restriction —some sort of enclosed room, extended passageway, or complex underground system. The entrance may be large (and allow passage of considerable light) or it may be small and difficult to negotiate. Large open entrance areas are essentially daylight settings although they may change quickly in character and lead almost immediately into total darkness.



The class of *caves* includes categories that range from glorified rockshelters to horizontal tubes, enlarged joints and cracks, large enclosed rooms, multiple rooms, multiple levels, larger complex systems, and even expedition quality underground caverns.

Caves may be strictly horizontal, a combination of horizontal and vertical, or vertically oriented pits, and systems hundreds of feet deep and necessitating a plethora of technical equipment. Some caves are very large; others barely hold one person.



## Natural Lighting

Archeological materials in caves occur in various settings relative to available natural light.

- The **Daylight Zone** includes the immediate entrance where direct sunlight penetrates and lights up the area on a daily basis for essentially constant use. This is universally the most common setting for archeological materials, and remains include houses, hearths, bones, lithics, occupational debris, and of course rock art.



- The **Twilight Zone**, **Shadow Zone**, or **penumbra** is further inside the cave, in permanent shadow past direct sunlight, but with visibility during most daylight hours. There is light, but no direct sunlight, and artificial light may be necessary to view paintings on the walls and ceiling. Structures and other features occur in Montana and Wyoming, but their occurrence is unusual and probably associated with processing, storage, mineral extraction, or ritual, more than standard habitation in the eternal shadows.





- The third area is the **Transitional Dark Zone**.

It is located further from the entrance and is in total darkness, with absolutely no natural light, but it is an area where natural entrance glow can be seen from a distance, either directly or with very little movement from the specific location. The cultural consideration is a beacon to guide one out of the cave, at

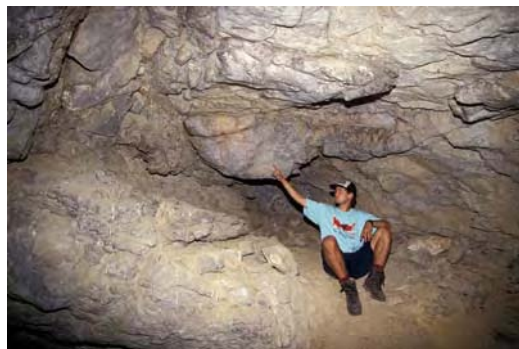


least during the day, with little or no orientation problem and no fear of becoming lost. Traversing the route from a particular point toward the entrance may be a problem, depending on obstacles, but the distance and direction of exit are discernible.

- Finally there is the **Interior Dark Zone**, that area of total darkness far from the entrance and with no visible light orientation markers. Artificial light is necessary, and familiarity in maneuvering through such an environment in total darkness would be helpful. Exploration of deep pits would necessitate special equipment, although rawhide ropes, or special climbing tools such as those used by honey



climbers in Mexico, might suffice in some cases. So far evidence here of Interior Dark Zone exploration is limited, and there is no indication of prehistoric entry into vertical pits or vertical systems. This is an area where more research needs to be done.



So, to recap —light settings include the *Daylight Zone*, *Twilight Zone*, *Transitional Dark Zone*, and *Interior Dark Zone*. Archeological materials and evidence of use in this area have been found in all categories, although the Interior Dark Zone so far is poorly represented.



### Rock Art

We may look at kinds of caves and cultural materials — beginning of course with rock art.



Painted figures, especially, naturally occur in the lighter areas around the entrance but also extend back into dark zone interior passages and rooms. Several sites in central and parts of southeastern Montana and northern Wyoming have paintings (and in some rare cases, petroglyphs) in areas where artificial light is necessary to see the art.

One cave high on the Rocky Mountain Front has a steep climb-down entrance into total darkness. This long interior dark room has red figures painted on the ceiling. Reaching this elusive entrance, however, is somewhat difficult.



Long horizontal tubes occur mostly in limestone and extend far back into complete darkness. In one cave the wall from front to rear is covered with extensive paintings relating to shamanism.

Horizontal extended cracks and tubes in sandstone, though relatively rare, similarly extend back into near darkness. Two elongated systems in the North Cave Hills and the Black Hills have walls intensively covered from front to back with carved petroglyphs.



Horizontal caves also occur in a number of other forms. Single large rooms may be open, with large entrances — or nearly closed, with small constricted openings. Paintings occur not only in Daylight entrance areas but also back into the totally dark interior on walls and low ceilings. In one small cave, it is necessary to slither backwards into the low entrance and use artificial light to view painted figures in a raised, ceiling cavity. Two other sites contain ceiling domes and indentations with painted figures viewable only with portable lights. Many of these appear to be associated with shaman activity more than simple beliefs, myths, history, or other narrative.





Some caves are composed of multiple rooms and multiple levels.



In one interesting example northeast of Lewistown, an enclosed room is accessible, with some difficulty, from the large adjacent rockshelter. Sunlight enters the room through a small hole and lights up a small patch on the opposite wall, and it is in this area that a stylized red bison is painted. Most other figures lining the room are in total darkness.

Large complex horizontal systems also contain rock art mostly in entrance and twilight areas. One large complex has pictographs of different ages and traditions in two large twilight rooms. There is also other evidence of use in dark passages, and cultural deposits in dark interior rooms in this same complex.



Another cavern questionably had a few dim pictographs in the small climb-down entrance (with newer figures added for tourism), but also of interest are artifacts and possible evidence of ritual deep within the associated cavern, and a suggestion of earlier use during Goshen times.

At deep sinkhole sites, pictographs are mostly at the extreme entrance in full or restricted daylight and not in underground settings. One cavern in central Montana had modern polychrome psychedelic art down in the dark



zone below the entrance. This is the only cave on the northern Plains known to contain this early-1960s complex style, and especially in a dark zone cave setting. It is therefore uniquely representative of an important period of social change in American history. The Forest Service removed the panel, as graffiti.

### Objects Removed from Caves

Cave visitation or use can be evidenced — besides artifacts and features actually in the cave — by objects or materials taken from caves or made from cave formations.



**Mining**, for instance, is evidenced by remains of mineral extraction. At this deep sinkhole (with hand stencils at the entrance) a large ochre deposit appears to have been mined from an interior passage. A historic reference to Flathead Indians mining red ochre as paint from a cave in these mountains may refer to this or a similar site.



**Crystals and formations** in other regions were taken from caves, and it is surprising that evidence of prehistoric crystal extraction has not been reported from Montana. The nearest thing so far reported is a small stalactite in eastern Montana that has been polished and then finely incised into what appears to be a snake or salamander.



### Constructions in Caves

Evidence of feature construction is rare.

- Logs and fragments from a possible structure are in a large dark zone passage in southern Montana.
- Another cave in the same area has remains of stone-rimmed house floors inside the entrance.



- Another nearby cave contains several cleared, stone-lined house floors in the entrance area. One of these contains bison bones.

- A very large, deep shelter in the same area has several small enclosed natural rooms, two of which are sealed from the inside with juniper logs to form an effective wall and seal the dark room interiors.



### Human remains

It appears that human remains have not been reported in Montana or Wyoming from contexts within true caves. In other areas there are intentional interments (essentially ritual burial) in Daylight and Twilight zones and back into darkness. Outside the Montana-Wyoming area remains from accidental death — presumably people lost in meandering passages during the distant prehistoric past — have been found deep within long cavern systems.

### Habitation



Other kinds of habitation debris occur mostly in entrance areas. In the lower entrance room of one large cavern are intensive ashy deposits with burned rock, chipped stone tools, debitage, and large amounts of butchered bone that indicate repeated use of the interior entrance area for habitation.

### Final Statement

We should mention that twilight interior areas and settings in many cave entrance rooms, especially enclosed rooms, at night are completely dark and isolated from external influences of light and sound. Rituals and other activities carried out in these dark rooms and passages would have much the same characteristics as those done in completely dark, remote, underground locations.



For such activities, the stress could be on darkness — access to and interaction with darkness, placement of oneself in a kind of isolation, partial sensory deprivation, absolute visual effect, and perceived auditory

effect — all characteristics of the darkness experience.

In many cases, human psychology, and certainly beliefs relating to caves and supernatural association with the underground, designate caves as important and special locations with varying degrees and kinds of cultural meaning and personal effect, or translate those settings as culturally important places.

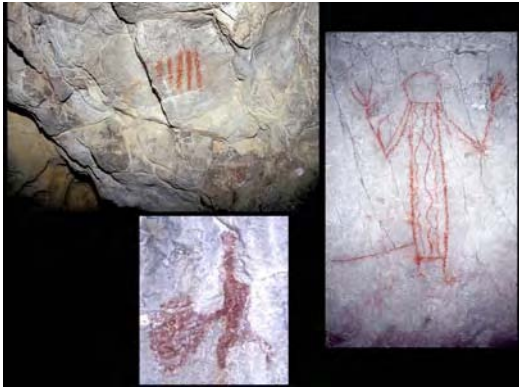


The characteristics of total darkness within a constricted space surrounded by solid rock, with the auditory effects of imagined supernatural noises and pounding trance-inducing reverberations, would be similar between enclosed entrance rooms and deep cavern passages.

The degree and intensity of interaction with the earth— and whatever it represents — would presumably change with the depth into which one goes into the cavern, and the degree of isolation one would experience.







Although activities could take place in enclosed entrance rooms, one would expect that those activities, conducted far within the Interior Dark Zone of a deep cavern, would have different psychological — and presumably cultural — effects and meaning. And the search continues for evidence of those activities and those locations.

**END**

