

# Settlement Patterns in Southcentral Montana: A Speculative Approach

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## Introduction

Much of southcentral Montana can be characterized as country interrupted by sandstone outcrops, hills covered with ponderosa pine, and expanses of short grass prairie broken by intermittent creeks and dry washes. It is an area of transition between the plains and the mountains and yet is not really part of either. This type of topography covers substantial areas of Montana, Wyoming, the Pine Hills of North and South Dakota, parts of Colorado, and Alberta. In some cases they represent scarp hills or remnant woodlands (Wells 1970) isolated from surrounding pine forests. Several archaeological surveys have been done south of the Yellowstone River and between the Bighorn and the Tongue Rivers, yet the actual area covered by these surveys represents a very small sample of the entire region (See Fig. 19).<sup>1</sup> Funded by several coal companies as part of their reclamation programs, these surveys were confined to specific acreage and they received intensive coverage. Although numerous sites were recorded, few were much more than campsites for a small band or family group, a rock structure, or a small shipping station. Due to the slow rate of soil deposition common to the region, even the larger sites have little or no depth to them. Very few (12 of the 85) prehistoric sites recorded appeared to have been multi-component and the three sites excavated indicate little more than locations occupied occasionally during the past 5000 years by small groups for short periods of time.

The problem which haunts these surveys as it has many other surveys in the northern plains is that although many sites were located, few of them contain diagnostic artifacts or any datable remains to tie them into a chronology. Thus in an attempt to clothe the chipping debris and to infer past community life it is necessary

to look at the overall non-human ecology and at the human settlement patterns. By plotting the distribution of sites within definable environmental zones it is possible to infer or at least hypothesize 1) the general patterns of utilization of the land and resources, 2) the community life within the immediate area for each time period, and 3) the macro-settlement pattern or total annual movement for the various populations through time.

Settlement patterns in southcentral Montana are primarily what Spaulding (1971:9) has called:

extra-community archaeological sites – satellites sites – produced by extra-community activities of work groups: examples are the kill and butchering sites which are such an important component of our evidence for the early American Indians or the seasonally occupied small fishing camps of the Indians of western Canada. In some simple societies, the entire community is a set of specialized and spatially differentiated work team on a seasonal basis as it moves through its accustomed yearly round of subsistence activities; here, rather than speaking of the site of a community with its satellite sites, we must think in terms of a set of sites, each of which represents the total activity of a community at a given time in a repetitive sequence.

The simple societies to which Spaulding refers certainly applies to the pre-horse hunters and gatherers in southcentral Montana.

The "extra-community model" is used in this paper as if one looked at the entire survey area as being a single site and each area of human activity within the area is considered a unit of daily activity. Thus to make up the daily

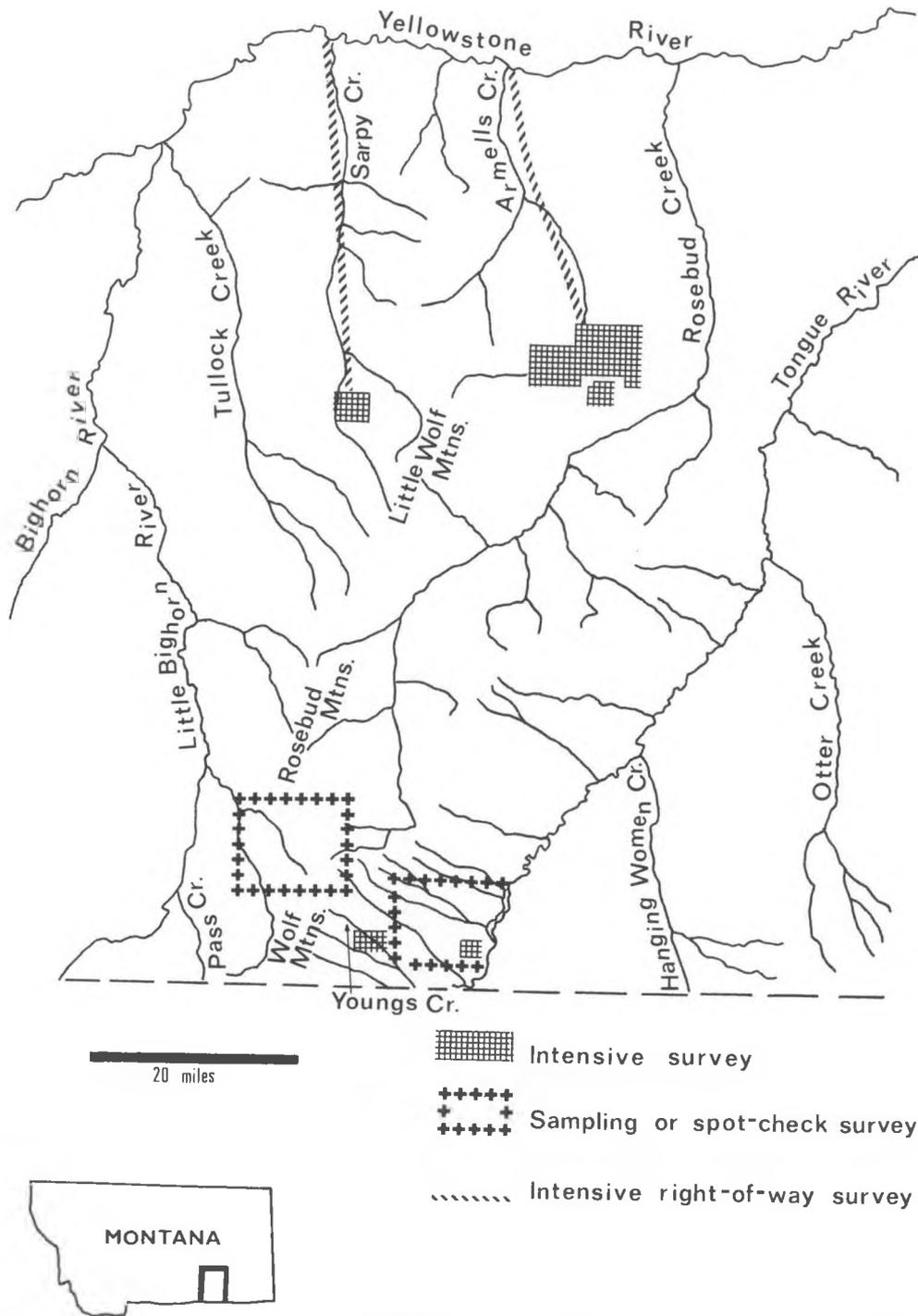


Fig. 19.

Survey area in south central Montana. The data in this paper are from the blocks of intensively surveyed areas only.

routine or activities of the various populations inhabiting the region it is necessary to look at a set of daily activity sites and not just one particular site as representing the entire activities of that population at a particular point in time. Thomas (1973a:167) emphasizes this when he says that

. . . the scope *must* be extended beyond cave sites, since kill sites, gathering stations and the like are of crucial importance in the seasonal round. Surface scatters are vital since they may be the only remnants of some prehistoric task activities.

In southcentral Montana this means that Pictograph Cave and, to a lesser extent, the small shelters in the Bighorn Canyon, are not indicative of the entire range of activities of the prehistoric populations. Although they have provided a typological and datable chronology they show only a small part of the overall activities of the inhabitants.

This extra-community approach does not exactly deal with the macro-settlement or total area covered by the annual movements of a population. Neither is it the micro-settlement pattern or spatially defined activity areas within a single site (see Trigger 1968:9). It is neither a macro- nor a micro- view but an extra-community outlook which falls somewhere between the two extremes. Similarly the focus in this paper is on a set of sites as they lie within four environmental zones that are felt to represent a portion of the annual movements of any one community, but reflect the pattern of living for the area.

According to Trigger (1968) there are two ways of approaching a study of settlement patterns; an ecological approach and a community patterning approach. The former "is primarily an investigation of how the settlement pattern reflects the adaptation of a society and its technology to its environment", whereas the second is "where settlement pattern data are used as a basis for making inferences about the social, political, and religious organization of prehistoric cultures" (Trigger 1968:54). Although Trigger sees the ecological and the community patterning approach as two separate positions from which to view settlement pattern studies, I see the first as a necessary step for the second, at least in the patterns of occupation of southcentral Montana. Consequently, this paper is first an ecologically orientated approach but will also attempt to take the second step and infer social and political changes.

After establishing 1) a pattern of site distribution within the four environmental zones, and 2) the assumed primary function(s) of each site, we must look at the times of year the area could have been occupied. So far, no hard data from faunal remains or other sources have been found archaeologically to infer occupation during a particular season. However, we are assuming that the region is part of a group's annual movement (macrosettlement) accomplished without question each year. This will be the assumption used throughout this paper but we must also realize that "scheduled", as opposed to seasonal, forays into this region could have been important.

"Seasonality" was imposed on man by the nature of the wild resources themselves; "scheduling" was a cultural activity . . . . (Flannery 1972:227)

Flannery views these "scheduled" activities as oriented toward the harvest of resources which perhaps were ready at the same time. The division of labor according to age or sex is, generally, unquestioned in explaining how decisions of scheduling are made: when the chokecherries are ready for harvest and a herd of bison is close enough to be hunted, both resources are exploited, for the women and children would pick chokecherries while the men and older boys would hunt buffalo. In the Great Basin, Flannery (1972) notes that when travelling relatives reported an abundance of a particular plant or animal in a certain area, the band would schedule a special trip to exploit this resource. During pre-horse times in southcentral Montana, mass bison killing, for instance was probably both a scheduled and a seasonal occurrence. Similarly, vision quest sites and eagle catching pits certainly reflect scheduled use of an area. Activities such as eagle catching and bison driving are generally viewed as specific seasonal activities which were based on actually finding a herd strategically located for a successful drive or upon actually spending a few days each fall catching eagles. However, these seasonal activities must also, of necessity have depended on the balance of other resources, particularly availability of food. Thus if there was leisure time and enough food, eagles would be hunted. Comparably, if food was scarce, would there have been the luxury of gathering a large enough group of people together, spending the time to locate the herd, and then following through with the bison drive? Consequently, although the seasonal use of the region will be stressed in this paper, the pos-

sibilities and probabilities of scheduled use will be suggested.

For many of the problems posed it is necessary to draw from ethnographic and ethno-historic sources, however, there are some dangers in this method for the northern plains because many of the inhabitants who were

known historically, like the Crow, were recent immigrants into the area and had the new technology of the horse. For the earlier populations in southcentral Montana, analogies are better drawn from non-horse hunters and gatherers such as the Great Basin Shoshone, as they *might* have existed in this environment.

## Geographic Setting

Today this region is quite arid and receives anywhere from 9–17" of precipitation per year. The summers are dry and hot with frequent storms that usually consist only of menacing clouds accompanied by high winds, thunder and lightning, and little if any rain. Winters, on the other hand, are cold with relatively little snow that generally blows off the grasslands and collects in the draws and lee sides of the low hills. Frequent chinook winds give the land and its inhabitants a break from the cold. Because of these factors the grasslands clear of snow and winter range is generally quite accessible to grazing animals. Even when the grasslands are dry the accumulation of snow in the draws and on the lee of hills remains until late spring, which is the time of most precipitation. Often disastrous storms bringing heavy wet snow come during the spring months.

What the climate for the past 5000 years has been is an all important factor but somewhat of an unknown. Our study that is applicable to southcentral Montana is from studies of macrobotanical remains of trees and debris from the Laramie Basin in southern Wyoming. While the Laramie Basin is slightly drier than southcentral Montana today, the climatic data from Wells' study (1970) is preferable to studies from Iowa and Wisconsin or from high mountain bogs in Yellowstone Park. Wells reports that

large juniper trees were found that could by no means be supported by present amounts of precipitation, and that macroflora from several dry caves also support this assumption. This information, plus work from other areas on the plains, led Wells to conclude that the last few hundred years have been drier than the previous 5000 years. He also postulates that the scarp hills regions were very much similar to today but more precipitation would have extended the timber (ponderosa pine zone) if it were not checked by fire. Thus the following changes could have occurred through climatic change in southcentral Montana:

- 1) The ponderosa pine and sandstone zones could have been similar in distribution but the pine larger in size.
- 2) More springs could have been evident at times and consequently the creek-side zone could have been larger in area than today and could have included some draws which are filled now only during the spring runoff.
- 3) The grassland zone could have had different and possibly more lush grasses.

All of these factors would have bolstered the carrying capacity of the land, at least by degrees. However, the present land surface, vegetation, and soils are apparently normal with only minor variation in the past 5000 years.

## Topographic-Ecologic Zones

The geography of any region can usually be broken into zones (ecologic-topographic units) or microenvironments. These zones (see Fig. 20) are looked upon as a composite of a total ecological unit which realizes the association of the flora, soils, and topography, and are not based on just one factor such as vegetation.

Each of these zones is a subsystem within

the overall model of the regional ecosystem. Within the southcentral Montana region, four major zones are easily distinguished and it becomes a simple matter to plot the distribution of archaeological sites throughout these zones. Through this distribution man becomes part of the complex system of intra- and interaction of the total ecological system. One

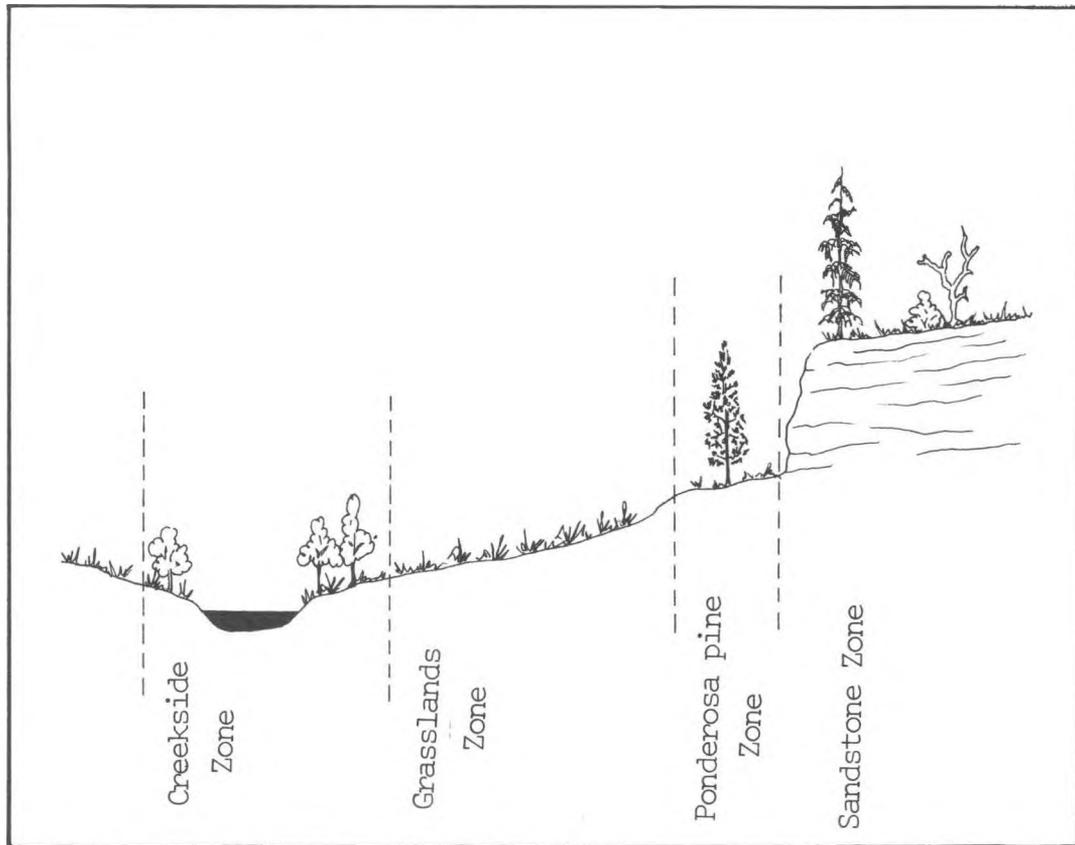


Fig. 20. A model of the environmental zones in southcentral Montana. The creek-side zone shows deciduous trees and shrubs, the grassland has short grass prairie species for cover, the sandstone zone has practically no vegetative cover, and the ponderosa pine zone has ponderosa pine and juniper mixed with short grass prairie species in meadows.

warning must be made; the researcher makes the choice and classifies the sites as to zone. Whenever a site was on a zone border, our criterion of choice was to place it in the zone which it was *mostly* within. Another factor is that the inhabitants might have chosen to be on zone borders and it is almost impossible to establish the location of a zone border even 100 years ago, much less several thousand.

### Sandstone Zone

Sandstone outcrops dominate the topography of this zone. Since they are often capped with a hardened weather resistant shale or clinker (a result of coal seams burning underground), many have survived the years of erosion. These sandstone outcrops are erosional remnants of the Fort Union Formation composed of alternating layers of sandstone, shales, and

coal. The shallow, sandy soil does not encourage thick vegetation and as a result a few scraggly ponderosa pine or juniper plus sparse grasses, sage, and cactus manage to grow.

The fauna of this zone are interesting as they are for the most part predators who use the sandstone zone for denning areas. Coyote, fox, bobcat, wolves, mountain lion, as well as the predatory birds such as eagles, hawks, and owls spend most of their lives in the sandstone zone. Certainly there is a resident population of packrats, mice, and other small rodents submissively co-existing with the primary inhabitants — the predators.

In the sandstone zone water is scarce except in the winter in the form of snow, and in the spring in the dry washes that collect and hold the snow and channel the run-off. Also, during and shortly after rains there are occasional natural catch basins in the sandstone that hold

limited amounts of water. Consequently the major attraction for the predators in the sandstone zone appears to be the protection and shelter which it offers and not for a water supply.

For man the sandstone offers protection and shelter, easy access to wood, an excellent view from the high sandstone remnants, stone for building structures, and flat walls for engraving or painting (petroglyphs and pictographs). The functions of sites within this zone are varied and include rock structures built for vision quests for eagle catching pits and for unknown purposes. There are also a number of rock shelters which were inhabited; some several times. Lookout sites are usually identified by a significant amount of chipping debris on the high cliff edges. Also, bison jumps are associated with, or at least directly related to this type of topography. On many of the sandstone outcrops, generally at the summit is found porcelanite, or as it has often been called in the literature, metamorphosed siltstone. Porcelanite was the main material utilized by the inhabitants who quarried it from within this sandstone zone. Because the wind and the sun tend to denude the high slopes of snow the material would have been easily obtainable during all seasons of the year.

Thus man has employed the sandstone areas over and above the concept of protection and lookout capacities as sought by co-existing predators by using the zone for bison jumping, eagle catching, inspiration, and communication. Basically it is a zone that is difficult to move, but is protected from wind and rain, and is an area where one can see and not be seen. Water is only seasonally available and thus the use of this zone, even by the predatory animals, must be seasonal or scheduled.

### **Ponderosa Pine Zone**

This zone is sometimes difficult to distinguish from the sandstone zone and for this reason many of the attributes of the latter are equally applicable to this zone. It is an area that offers some protection and shelter and provides excellent concealment to the occupants. It shares, with the sandstone zone, a similar seasonal availability of water, without of course, the added possible convenience of the catch basins for intermittent rainfall, and it shares the attributes of available wood and available material for stone tools. Topographically it is not as broken and rugged as the sandstone zone but since the pine forest often

grows on long north, west and southwest facing slopes it is easy to traverse and offers shelter along the way.

The predominant flora is ponderosa pine, some juniper and rhus with small grass meadows breaking up the open forest continuum. The fauna are mostly small game birds like the grouse that live in the pine and utilize the protected grasslands. Rabbits, squirrels, and many small birds live in this zone. Today the major ungulate is the mule deer and often their beds are found in the sandy soil under the pine and juniper.

The archaeological sites located within this zone are usually on relatively flat grassy areas surrounded by pine. Most of them also indicate more intensive use other than just a lookout site or a chipping station as in the sandstone zone. Yet, even here the area of chipping debris is usually not very extensive and would average about 900 square meters. Most of these sites are not adjacent to water sources or even a draw which might seasonally hold water so the primary drawing card for the prehistoric populations within the ponderosa pine zone must be shelter, wood, and concealment and a place to hunt larger ungulates. In the summer trees provide shade and a place to escape the hot sun.

### **Grassland Zone**

The grasslands of the region are flat or slightly rolling with the flora being short grass prairie species characterized by blue grama, western and bluestem wheatgrass, and needle-and-thread grass. Sage is common and quite thick in some areas. The grasslands receive little precipitation since as mentioned above the snow is blown off generally by the winds during the winter and spring. Only a few species of plants on the grasslands were probably harvested by the prehistoric population; wild rye and ground cherry could have been two of them.

Today the grasslands are mostly used for cattle grazing but in some places large tracts have been plowed and planted in wheat or barley. In this area the ideal number of cattle is five or six head per acre; which gives some idea of the carrying capacity of the grasslands today. Historically these grasslands have supported horses, cattle and sheep.

Wild fauna living on the grasslands in the past were bison, antelope, mountain sheep, and probably elk (who actually probably spent more time in the creek-side zone). Only ante-

lope are left on the grasslands today feeding primarily off silver sage and consequently not competing with cattle for food. Bighorn sheep were observed in great numbers by Lewis and Clark and other early explorers along the Yellowstone and Bighorn Rivers. Sheep were not necessarily confined to the high mountain country where they are found today; "its feeding grounds were the grassy foothills and bluffs not far from the crags" (Seton 1953:531).

Bison, the major ungulate species on the grasslands and the adjacent plains is generally thought of as being the most important animal to the prehistoric populations, an assumption based on the ethnographic plains inhabitants and generalizing from the many bison jumps excavated. Bison were important in varying degrees through time to the human population but to the general ecology of the area bison probably had a tremendous effect. Certain plants moved into buffalo wallows, and grasses were trampled but the soil was also churned up and fertilized (Allen 1967). As well, bison aided the grasslands to maintain themselves from encroaching ponderosa pine by chewing on the young pine and rubbing on trees adjacent to the grasslands. Bison kill sites are found throughout the region and occasionally lone bison skeletons are found eroding out of cut banks. Various authors have discussed bison habits but there is disagreement as to whether bison move east and west, or north and south in their migrations. In the mountainous areas the most sensible solution seems to be that they move in a circle as suggested by Seton (1953). His map (see Fig. 21) shows one cyclical movement as going directly north of the survey region. Although the movement of bison through southcentral Montana is of importance in assessing the resources available to humans at certain times of the year, we have no direct evidence of what this movement was.

Another animal living on the grasslands was the elk, and its prevalence is attested by the ranchers' stories of the many elk antlers which they used to find scattered over the land. Today, the elk like the mountain sheep, have taken refuge in mountainous regions. Elk, however, were ethnographically not as important as a source of food as deer and bison or antelope because the meat could not be dried nor did it keep as well (Coues 1965:1170).

Other grassland fauna include the prairie dog, mice, ground squirrel, etc. and several species of game birds such as the sage grouse and sharp tail grouse. The communal gatherings



Fig. 21. Survey area relative to historic buffalo migrations (adapted from Seton 1953:652). Arrows indicate direction of movement of the Saskatchewan and Red River herds.

of these birds in the spring for the "drumming" and dancing preliminary to mating were in the same place year after year and could easily have been exploited by the inhabitants.

Evidence for man's use of the grassland zone is significant because of its absence from the archaeological record. Small chipping stations or miscellaneous artifacts are found occasionally which means nothing more than that someone walked across the grasslands sometime in the prehistoric past. Only one site of any significance was located in the grassland zone and that was a small bison kill site where the hunters had made use of a small (approximately 30 meters in diameter) swale into which bison had been driven, killed, and butchered (Ekland 1974). Only two other small prehistoric sites were recorded in this zone. This seems to indicate an avoidance of the grasslands as a living area by prehistoric and historic people.

#### Creek-side Zone

Composed of deciduous or broad leaf trees and numerous shrubs this zone is the most lush of the four zones. In the creek bottoms and even in the small draws leading to the creeks cottonwoods, box elder, wild rose, choke-

cherry, wild currants, wild plum, buffalo berry, and other plants grow. Moisture is constant in the creeks but in the draws is generally seasonal but sufficient enough to support many of the small shrubs.

The fauna living there are mainly small song birds and mammals such as the beaver, muskrat, mink, etc. White-tailed deer spend most of their time within the thick zone of trees and shrubs. Today, few beaver, muskrats, or fish are evident but numerous deer continue to inhabit this zone. In creeks that are barely muddy in the bottom today, local people remember catching fish or trapping muskrat in the Twenties. The clearing of the creeks of the large cotton-

wood and box elder for buildings and firewood by the homesteaders, the diversion of water for irrigation, combined with diseases which almost eliminated the beaver for instance plus the general trend toward slightly drier conditions has altered this zone and made it difficult to visualize as it was two hundred years ago. As the major source of water in the area we expected to find numerous human habitation sites along the creeks and were surprised to discover that most of the prehistoric sites were in the sandstone and ponderosa pine zones and not near the creek bottoms. Only the historic sites were consistently located near the creeks.

### A Sketch of Human Life within the Four Zones

From the types of sites and their distribution within the four zones, the knowledge of the animals and plants that inhabit the zones and the assumed seasonal use we can describe 1) the general living pattern for man, as well as 2) a sketch of the community life which he might have had at each point in time. A cautionary word on the term "exploitation" which has often been used to describe man's interactions with his surrounding environment is as Flannery (1972:222) has stated "man was not simply extracting energy from his environment, but participating in it; and his use of each genus was part of a system which allowed the latter to survive, even flourish, in spite of heavy utilization." Thus rather than looking at means of procuring bison, deer, sheep, etc. we must first look at the various zones and movement within and between these zones and how man fits into the overall system.

Man seems to have moved within the ponderosa pine zone and watched the grasslands for game from lookout sites on high sandstone outcrops. In doing so he was using the topography so as to remove himself from the open grasslands (D. Fredlund 1973). This gained him a reasonable view over the adjacent areas. When game was spotted he could then plan his hunt by himself or in company with his immediate friends or family with which he was living and travelling. He also, from these high vantage points could watch several drainages at once. Once game was located, the hunt could be planned, and carried out in a manner as to disturb the animals as little as possible. This would be advantageous at all times of the year because when the herd is disturbed they would presumably flee to

other areas thus alarming any other prey which might be nearby. When this occurred man would also be forced to move and this would utilize the groups' energies in a manner which would essentially be non-productive. Time would be spent in walking, and setting up another camp, rather than hunting or even making necessary tools.

When a band was forced to move, the question comes as to what type of shelter was constructed or carried and how was the labor divided. Dogs were presumably the major beast of burden along with humans. At most times of the year the dog travois could be used which would allow the animal to carry more than if he were carrying just a pack. Deep snow and mud would be the main hindrance for this type of movement.

When a group arrived at a small shelter or shallow overhang, it is presumed that dead timbers would have been laid against the shelter wall and skins and/or brush placed around these to ensure more warmth. In the Pryor Mountains (Loendorf 1969) there are several rock overhangs in which the remains of these types of shelter are evident. Wickiups or timbered lodges are another structure easily built in the ponderosa pine zone. These structures use logs and sometimes incorporate nearby rocks. Most of these were constructed previous to the 18th century and would presumably have weathered away but similar types of structures could have been built by the pre-horse populations. We have reported none of these structures on the survey areas but they are common in the general area and because of the zones in which they are found it seems feasible to suggest earlier use

Table 1. Number of site types by zone.\*

	Sand Stone	Ponderosa Pine	Grasslands	Creek side	Total
Habitation Sites					
Open camp	4	22	1	14	41
Rock shelter	8	1			9
Tipi rings	1				1
Homesteads			2	9	11
Lookout Sites	8	3	1		12
Rock art	9				9
Rock structures	3	1	1		5
Kill sites	1		1		2
Quarries	1				1
Total	35	27	6	23	91

\*The sites listed are from the units of intensive survey only, and multi-component sites are counted as one site for each occupation.

of similar structures.

During the fall of the year the creek-size zone would probably have been quite important because that is when the berries, plums, chokecherries, etc. would be ripe, and rose hips for instance would be ready for harvesting along the creeks. Women presumably would be the primary gatherers of these foods.

The focus of hunting does not seem to have been on bison totally. Yet, during late prehistoric times (600-1500 A.D.) as evident at the Kobold Jump, the BLM Bison kill, Glenrock and many others of this time period, bison hunting was developed into a successful activity. More manpower was needed than could be gathered from a small band without horses and considerable planning would have been necessary to carry out a mass bison kill. Ethnographically, the plains tribes who fanned the river bottoms of the Missouri River like the Mandan and Hidatsa,

would move out in the fall to hunt bison. The Cheyenne and Crow who did not farm, hunted bison all year but emphasized the fall hunt and had the use of horses. Through scheduled hunting a small band without horses could often locate several other small bands of people to hunt bison at any season but the animals would have to be located and moved to a cliff, snow drift, or a surround built for the occasion. The amount of energy needed for this type of endeavor was more than could generally be mustered by the small pre-horse groups indicated by the archaeological evidence.

From the excavated sites we have faunal remains of bison, deer, antelope, one bone from a mountain sheep, but no elk. The percentage of bison bones from two shelters (4 different levels of occupation) does not indicate any heavy reliance on bison. There is more evidence that bison, deer, and antelope were brought

back equally as often. Thus, it seems that the few bison kills do not by any means indicate that those numbers of animals supported all of the inhabitants of the region! Because of the nature of bison kill sites, it is entirely probable that a good percentage of these have already been found and reported even if not fully recorded by professional archaeologists. This is not

true of other sites. Thus in southcentral Montana bison hunting was probably scheduled and bison was one of several food resources for the pre-horse inhabitants living in the area. It was however certainly the most dramatic acquisition of food which can be reconstructed from the archaeological record.

### Changes in Settlement Patterns Through Time

Other than the four zones discussed above the inhabitants of this region had access to the various zones of the mountains and plains, plus the major river valleys. The Shoshone are reported to have lived in the mountains but also to have moved across the plains and into the Black Hills. The Crow certainly frequented the mountains surrounding their lands and there is abundant evidence of sites in the high mountain meadows in the Bighorn and Pryor Mountains of large groups living there. The sites along the Missouri River bottoms of farming communities who would seasonally move out onto the plains for bison are well-known. Figure 22 gives a very brief and simplified sketch of the various regions and zones available to inhabitants within these regions.

Although the prehistory of southcentral Montana begins at least as early as 11,000 years ago our surveys have recovered little evidence of life from this time period. Only a few isolated finds and very limited published data accounts for any activity before 5000 years ago.

Several sites from our surveys fit into the McKean complex or Early Middle Prehistoric Period (Mulloy 1958) based on typological comparisons of projectile points. This period roughly spans the time of 3000 B.C. to A.D. 1. Several sites excavated or located yielded points relating to this period but none produced any complete assemblages or datable material. However, the few middle period sites known are at favored locations and seem to have been selected for their closeness to creeks or springs rather than within the ponderosa pine or the sandstone zone as was the norm in later time periods. Sites from higher elevations in the Wolf Mountains from this time period are also adjacent to good springs. It seems that the early Middle Period people were utilizing the region seasonally different from those in the area later; perhaps during the summer since water seemed to be a major factor in the choice of site locations. It

is also possible that enemies were not as great a problem as in later times and that it was not as necessary to live in areas which were more concealed. Thirdly, there were fewer people and there may have been no need to choose any but prime locations.

There are two hypotheses concerning the origins of the cultures during this time period proposed by Husted (1969) and Reeves (1969). According to Husted, people spread out from the mountains and into the plains during these 3000 years. Reeves believes the McKean complex arose and moved in from the eastern archaic. Unfortunately our evidence neither supports nor denies these speculations. During Late Middle Prehistoric Times, (A.D. 1-600) Husted sees a mountain adapted people similar to or ancestral to the modern day Shoshone who had remained in the area through early prehistoric times and continued to live in the Bighorn Canyon of southcentral Montana. Interestingly enough the point types from the shelters excavated in southcentral Montana are quite similar to the material from the Bighorn Canyon; and are more similar than to projectile point styles from the plains to the east and north.

For the late Middle Period Husted sees hunters who use the Avonlea style points moving into the area from the northern plains around A.D. 500 and influencing the mountain dwellers. Reeves, on the other hand, sees the Besant people moving in from the east with another style of corner-notched point and pottery and coexisting with the Avonlea or Tunaxa cultural tradition which he feels was an outgrowth of the McKean complex. Perhaps, if Reeves is correct the influx of Besant peoples forced some of the Avonlea hunters south and into the mountain areas. From the survey regions we have few samples of either the Avonlea or the Besant style point.

The corner-notched tradition is however quite apparent throughout the survey area and generally from sites in the pine and sandstone

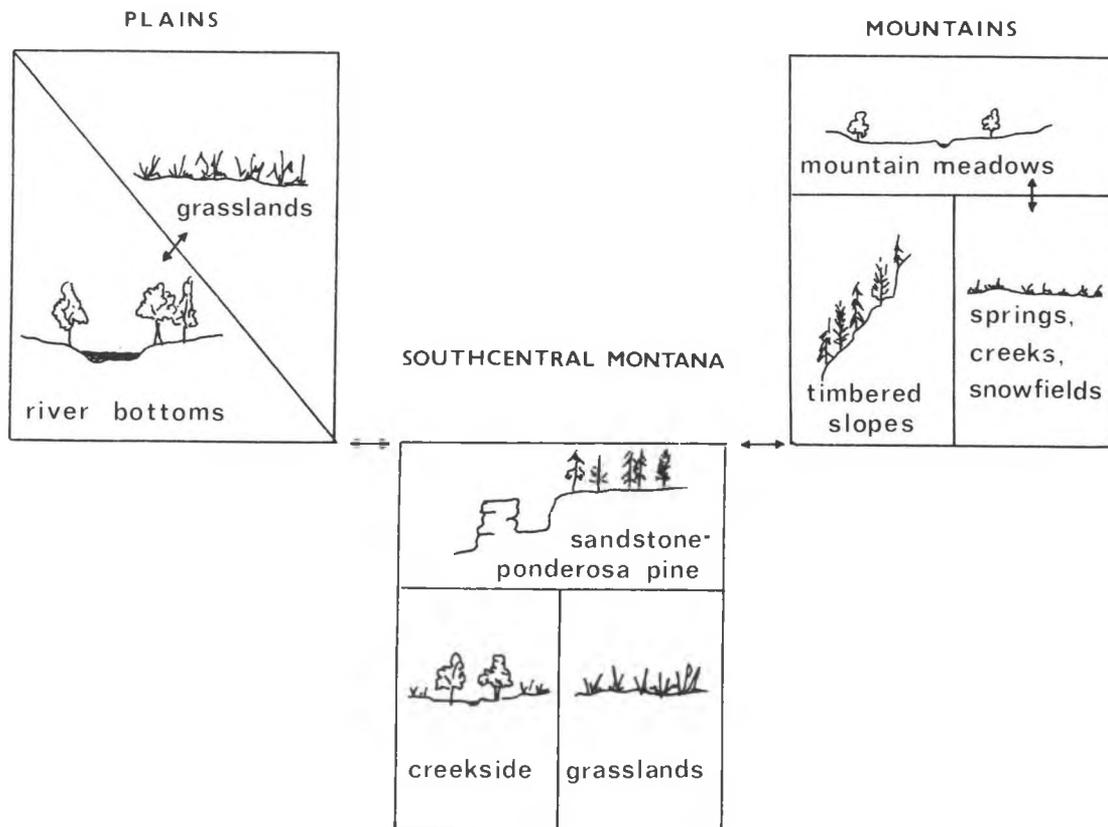


Fig. 22. Idealized model of environmental zones accessible to the populations of south central Montana.

zones. These sites are generally in similar locations with the Late Period small side-notched, or triangular points. Based on analogies of the use of the pinyon pine-juniper zones in the Great Basin (Steward 1938 and Thomas 1973a) and assuming that ponderosa pine-juniper zones have similar assets we can strongly suggest that the sites were occupied in the winter and spring. Two bison kill sites from the Colstrip area appear to be the results of driving the animals into snowdrifts, thus supporting a winter-spring season of inhabiting the area. In addition the rugged topography provides ideal winter refuge to which bison and other large ungulates would have concentrated.

Actually there are numerous bison kills from these later time periods but the sites themselves yield relatively few bison bones. Perhaps the mass kill sites are the result of peoples encroaching into the area at a certain season (fall?) and leaving immediately after the kill.

The majority of sites in the region then would be the remains from people living there at other seasons of the year. There is no doubt that in Late Prehistoric Period times (600–1500 A.D.) the populations were larger and communal hunting of bison reached a peak (a factor which may also be the result of the increased number of bison). There is also evidence suggesting that there was a stabilization of climate which would enable this to occur. Yet, the community life, although undoubtedly more complex due to increased population, does not reflect any basic changes in the archaeological record for any time but the early middle period. Thus the sketch of life in the area, outlined above, holds true from late middle period times until the introduction of the horse.

With the introduction of the horse the mountain-plains adapted people (the Shoshone, Kiowa, and others) were displaced by the eastern tribes who were moving into the plains. The

Table 2. Number of prehistoric sites per zone per time period. \*

	Sand stone	Ponderosa Pine	Grassland	Creek side	Total
Late prehistoric A.D. 600-1700 (Side notched and triangular points)	3	2		3	8
Late middle prehistoric A.D. 1-600 (Corner-notched points)	3	4	1	3	11
Early Middle Prehistoric 3000-B.C.-1 A.D. (McKean Complex points)	1			3	4
Total	7	6	1	9	23

Table 3. Number of types of sites per time period.

	Early Middle	Late Middle	Late	Total
Open camp	4	5	3	12
Kill site		1	1	2
Lookout site		1	2	3
Rock shelter		2	3	5
Tipi ring			1	1
Total	4	9	10	23

\*The chronology of sites is based on point typology and radio carbon dates were possible. However, because of the small samples point typology is not completely reliable but it is the only data on which to base a chronology.

surveys indicated only one site which would clearly be part of this historic period. Thus, with a new technology and way of life based on the horse another type of settlement pattern should appear. From ethnographic sources we know that the Crow, Cheyenne, and Sioux spent winters in this rough broken sandstone country, especially when being harassed by the cavalry. If we can assume that some of the tipi ring sites were associated with the post-horse period then we seem to be seeing a greater use of the grassland zone and closer ties to the creeks where more grass and constant water were available.

The next major change in settlement distribution came with the influx of homesteaders with their farming technology and domesticated

animals. They settled primarily next to water sources and built their log cabins of either cottonwood or ponderosa pine. Some remains of cabins are to be found away from water but these were usually just constructed to legitimize the claim, i.e. to "prove up", and were not meant to live in, only to satisfy the law in order to gain another 160 acres of land. To the homesteaders, the sandstone zone was a problem and had no real value since it sheltered the animals which often preyed upon their stock, it was difficult to cross, and it could not be used economically. The pine zone was a source of wood and a place of shelter for animals in the hot summers and probably during storms but the creeks and rivers were the key areas to life in the region.

### Summary

This paper has attempted to examine the settlement patterns represented by the intensive archaeological surveys done in southcentral Montana through the summer of 1973. Four zones are singled out to be the focus of the distribution of living sites and the resulting pattern indicates some of the processes which may have been involved in changing living patterns throughout the last 5000 years.

During the early middle period times man is seen as living in choice locations near springs and creeks, thus emphasizing the water sources. In late middle period and late prehistoric times (A.D. 1-1700) man seems to have lived in the winter and spring seasons and moved - possibly into the higher altitudes - for the summers. It is also possible that peoples living on the plains most of the year used the southcentral Montana region for seasonal hunting trips or scheduled events rather than living in the area all the time, thus making use of the topography and the other resources. In general the daily pattern of land use based on the distribution of sites is that the grassland zone was watched and crossed only for purposes of hunting; the

creek-side was for water, for gathering berries, and perhaps hunting white-tailed deer or trapping beaver or muskrat; the sandstone zone for vision quests, eagle catching, rock art, and shelter; and the ponderosa pine zone for living and moving within.

With the coming of the horse and new peoples a new, or altered settlement pattern is suggested. From ethnohistoric information these historic bison hunters located in this broken country in the winter where they had access to grass for grazing and creeks for water.

The next influx and change in living pattern was the homesteader. With a totally new culture and totally different technology and economy they attached themselves to the water sources and brought resources from other zones to their living areas rather than moving to the resource as others had done before.

Thus by using a zonal model of the environment and viewing the distribution of sites through an extra-community approach a greater perspective has been gained from the archaeological surveys of southcentral Montana.

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