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Mark Talbot Vallier

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RESULTS OF AN ARCHAEOLOGICAL SURVEY ALONG THE MONTANA-IDAHO STATELINE IN THE NORTHERN BITTERROOT RANGE: LOLO PASS TO LOOKOUT PASS

By

Mark Talbot Vallier

B. A., University of California, Santa Cruz, 1977

Presented in partial fulfillment of the requirements for the degree of

Master of Arts

The University of Montana

December 2003

Approved by:

[Signature]
Chairman, Board of Examiners

[Signature]
Dean, Graduate School

12-19-03

Date
This thesis reports the results of an effort to determine prehistoric cultural chronology and aboriginal resource utilization along the ridge-crest of the Northern Bitterroot Range between Lolo Pass and Lookout Pass. Interpretations of cultural chronology and resource utilization in the study area are based upon analysis of the following problems:

1) The relative dating of observed cultural materials on the basis of artifact type or features of known assignable age; and
2) The definition of areas where particular behaviors took place by establishing intersite relationships from analysis of the distribution of specific types of features and materials.

Analysis of the problems indicates that most sites were associated with seasonal aboriginal big game procurement from 7500 B.P to 1500 B.P. Conclusions suggest hunting was the predominate activity carried out in the Northern Bitterroot Range during the Middle Period.
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Last, but certainly not least, special thanks go to Ed, Carol and Jim Vallier for their support and assistance throughout my graduate career.
The Problem

The purpose of my thesis project was to determine prehistoric cultural chronology and aboriginal resource utilization of alpine and sub-alpine zones of the Northern Bitterroot Mountains along the Montana-Idaho stateline. Specifically, my research problems were to:

1. Relatively date cultural materials on the basis of artifact type and/or features of known assignable age; and
2. Define areas where particular behaviors took place, and to establish intersite relationships from analysis of the distribution of specific types of features and materials, including rock piles, hunting blinds, and lithic debris.

Results of my research suggest that sites were associated with seasonal aboriginal big game procurement. Projectile point types ranged from forms used from Early Prehistoric to Late Prehistoric time periods (7500-200 B.P.), but were mainly from the Middle Period (7500-1500 B.P.). The talus slope pit features seem to have functioned as hunting blinds. Identical pit features are located in mountainous areas of Montana, Idaho, Nevada and California (Muir 1894, Grant 1965, Butler 1976; Epperson 1977; Hogan 1974). Although I could not date the pit features, ethnographic and archaeological data suggest considerable time depth and an affiliation with the Mountain Shoshone and possibly the Salish and Kutenai (Muir 1894; Grant 1965, Butler 1976; Epperson 1977).
Study Area Description

The specific area investigated was the Montana-Idaho stateline from Lolo Pass northwest to Lookout Pass. The stateline in this area consists of the spine of a long continuous ridge system with finger ridges extending into both Montana and Idaho. From Missoula Lake northwest to Binocular Peak, the area can generally be described as alpine and sub-alpine, which presently lacks a heavy forest canopy. From Binocular Peak northwest to Flattop Mountain, forest canopy is common, and is broken only in spots by concentrations of exposed bedrock and talus. The only exception to this is near Eagle Peak and above Cliff Lake, which are more alpine in character.

Vegetation patterning in the area varies, dependent upon aspect, elevation and a complex interplay of various environmental factors. Soils are predominately decomposing bedrock and forest podzols. Temperatures range from eighty degrees Fahrenheit during the summer months to twenty degrees below zero and colder in the winter. Elevation in the survey area ranges from roughly 6000 feet to over 7500 feet above sea level.

On the Montana side of the stateline, streams and lakes eventually drain into the Clark Fork River. On the Idaho side, they drain into the St. Joe River and the North Fork of the Clearwater. Permanent water supplies are contained in cirque lakes and streams below the stateline ridge-crest. Some water is obtainable on the ridge-crest during summer months from snowmelt of semi-permanent snowbanks and fields. A variety of birds, mammals and rodents inhabit the area.
along with various big game animals. Several moose, a small elk herd and various hawks and eagles were observed during the field survey.

Major forest fires occurred in the area in 1910 and in 1917. These fires burned off the over-mature forest and initiated ecological regeneration and succession. Other portions of the survey area burned in subsequent fires. The area as a whole catches fire approximately every fifty years (McLeod n.d.).

Other recent environmental change in the survey area occurred from domestic sheep grazing. This practice was halted by the Forest Service in the 1930s because of substantial soil erosion. Mining exploration in the survey area occurred following the Cedar Creek gold rush in November of 1869.
Archival Research

A check of background reports on cultural resources in the immediate project vicinity indicated that there were no known published reports on the area, but that several unpublished manuscripts and reports had been completed.

Hogan (1974) reported on the Dalton site, located just south of Missoula Lake, as part of her Masters Thesis. This site contained five pit structures located in a talus slope, a rock pile and an area of lithic concentration. Hogan interpreted the site as an aboriginal game trap utilized from approximately 3400 B.C. to 1700 A.D. to trap deer (Hogan 1974:124-126).

Bryan (n.d.) reported on the stateline trail and other intersecting trails from Hoodoo Pass south to Kid Lake. He noted that he visited the Dalton site and other recorded archaeological sites in the area, but provided no additional descriptive data on these sites. He did note, however, the remains of a possible old “Indian” dugout canoe at the east end of Fish Lake. McLeod (personal communication) believes that this was determined to be an old Forest Service boat dating from 1915 or 1921.

McLeod (n.d.) summarized current knowledge of archaeological sites in the proposed Great Burn Wilderness area located just south of the project area. He noted that surveys of the Montana-Idaho stateline were completed by the Lolo National Forest in 1975, 1976 and 1977. McLeod also reported that Lolo National Forest personnel recorded high elevation sites in the vicinity of Schley Mountain, and performed test excavations at Granite Pass.
All of the above-mentioned reports cite Fredlund and LaCombe (1971) as a basic data source. Fredlund and LaCombe walked the stateline from Cliff Lake near Illinois Peak to Fish Lake located near Lolo Pass. They found forty-eight sites. The majority of sites were game drives which yielded McKean-like projectile points. Oral interviews I conducted with Fredlund and LaCombe clarified information in their short reports.

Field Research

United States Forest Service personnel suggested an archaeological survey of the portion of the stateline from Missoula Lake to Flattop Mountain, since prior survey of that area had not been completed.

My field survey of the Montana-Idaho stateline from Missoula Lake northwest to Flattop Mountain was conducted during the month of August, 1983 under a Special Use Permit issued by the United States Forest Service, Lolo National Forest. Personnel who assisted in the field survey were Dave and Diana Schwab, Doug Melton and Alan Carmichael. All are, or were, students in Anthropology at the University of Montana.

Survey was conducted by walking transects in a zig-zag fashion with personnel spaced five to ten meters apart. The stateline over the top of Binocular Peak was not surveyed due to difficult terrain that presented safety hazards, and the low probability of finding sites on such steep slopes. All visible ground surfaces were inspected for evidence of prehistoric cultural remains.
Base camps were established at Frog Lake, Missoula Lake, Diamond Lake and near Black Peak at various times during the field survey.

When I encountered archeological sites, the following procedures were followed: I recorded the sites in a field notebook, prepared a brief sketch map of the site, photographed and sketched any artifacts found and photographed an overall view of the site. As my Special Use Permit allowed no artifact collecting on the sites, I did not disturb a thing.

Ground surface visibility in the area from Missoula Lake to Eagle Peak was approximately seventy percent. North of Eagle Peak, ground surface visibility deteriorated to approximately ten percent due to heavy forest understory which totally obscured the ground surface. The heavy vegetative cover prevented my identification of any small surface sites which may, or may not exist in this area. I extensively searched occasional portions of this area that contained talus deposits and/or where the ground was visible, but I located cultural remains in only three areas (sites 24MN169, 24MN166/10SE299 and 24MN168/10SE284).

During the survey, I paid particular attention to localities described by Fredlund and LaCombe as containing cultural material. Two secondary ridges branching off the main stateline ridge were examined for evidence of prehistoric aboriginal occupation.

Based on the results of the field survey, verbal information provided by Fredlund and LaCombe and the information gleaned from the literature search, I was able to reconstruct the prehistory of the area.
NATURAL HISTORY

Geology/Physiography

The Bitterroot Mountains were created during the Cretaceous Period by the Idaho Batholith. At this time, large volumes of granitic quartz monzonite materials were thrust upward into overlying metamorphosed Precambrian sediments.

Along the crest of the range from Lolo Pass northwest to Lookout Pass, the Idaho Batholith had less effect on the Precambrian sediments. In this alpine zone, the sediments were primarily derived from the effects of glacial activity which occurred during the Pleistocene Period. The severe effects of freezing resulted in the creation of large amounts of talus and residual boulder fields. Cirque lakes are present along either side of the crest of the range. In the early portion of August, I observed small alpine snowfields and snowbanks in this area.

Intermountain glaciers along the eastern slopes of the mountains penetrated down to an elevation of 4060 feet, leaving terminal moraines along the western shores of Glacial Lake Missoula during the Pleistocene Period. (Weber 1972:9; Alden 1953:102). Strand lines from the lake are visible from 3260 feet to 4240 feet along portions of the eastern slope of the Bitterroots (Alden 1953).

Vitrophyre or green obsidian stone outcrops may occur in the area (Fredlund 1977). Quartz outcrops are present in scattered areas along the ridge-crest.
Climate

Paleo-Holocene climatic conditions in sub-alpine and alpine areas of the Bitterroot Range are similar to other mountain ranges in Western Montana. An understanding of paleo-climates in the project area is based on palynological research carried out by Mack (1978, 1982) and Mehringer, et al. (1977) at Lost Trail Pass Bog in the Bitterroot Mountains, McKillop Creek Pond and Teepee Lake in the Kootenai Canyon vicinity, and Hagar Pond in Northern Idaho. Pollen cores taken from these different areas reflect expected intra-regional variation, but are essentially similar.

In general, from prior to 11000 B.P to 7000 B.P., the climate was cooler and moister than today. Sometime around 700 B.P., up until about 4000 B.P., the climate became warmer and possibly drier. Subsequent climatic reversal occurred between 4000 B.P and 2500 B.P when again, conditions became cooler and moister. After 2500 B.P, the climate evolved to essentially modern conditions. What effect this climatic change had upon human populations, if any, is currently a hotly debated subject among archaeologists.

Present day climate in the Bitterroot Mountains may be characterized as having warm, short summers and long, cold winters. Average annual precipitation ranges from twenty-five inches to sixty inches at the higher elevations (Benson, et al. 1979). Most of the precipitation is in the form of snow falling in the winter months, and is the result of frequent cyclonic storms traveling in an easterly direction (McLeod and Melton 1986).
The crest of the Bitterroot Range along the stateline frequently blocks moist and/or warm air masses, thereby resulting in moister and/or warmer conditions on the Idaho side of the stateline than on the Montana side. Fredlund (1979) noted, however, that wide ranges of temperature and precipitation can occur within relatively restricted areas of the Bitterroot Range because of influences of aspect and elevation. This can result in the presence of microclimates within fairly small geographic areas.

Flora

Paleo-Holocene changes in the composition of alpine and sub-alpine flora in the Bitterroot Range have been documented by Mehringer and others (1977) from palynological studies carried out at a bog near Lost Trail Pass. The bog is located approximately one hundred miles south of the research area at an elevation of 7020 feet. I would expect that floral changes in the bog area would not be appreciably different from the research area.

Mehringer and others’ (1977) data indicates that, beginning at approximately 9050 B.C., glacial ice in the Lost Trail area had receded, and air temperatures began to get gradually warmer. Sagebrush steppe vegetation followed the disappearance of the glacial ice. During the period from approximately 8050 B.C. to 5550 B.C., the sagebrush steppe vegetation was gradually replaced by generalized forest community dominated primarily by Whitebark Pine. Beginning around 5500 B.C., Lodgepole Pine, Larch and Douglas Fir began to appear in
the area, and persisted until about 2050 B.C. After about 2050 B.C., the
vegetation evolved into the modern flora that is present in the area today.

The vegetation present in the area today is, and has been in the recent past,
subject to the effects of large forest fires and the subsequent effects of fire
ecology (McLeod n.d.). A large number of standing dead and downed timber is
currently present in various portions of the area. When I surveyed the area in
July and August, much of the area was blanketed in Wildflowers. Some of the
more common plants that I observed in the area included Beargrass, Moss
Campion, Mountain Heath, Shooting Star, Mountain Penstemon, Alpine Forget-
Me-NotS, Kinnikinnick, Dwarf Huckleberry, Elk Sedge and Elephant Head. A list
of native wild plants is contained in the table below (Blankinship 1905; Davis
Stubbs 1966). Aboriginal peoples knew and used many of these plants (c.f.
Malouf 1956).
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
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<tr>
<td><strong>Roots, Tubers, Corms</strong></td>
<td></td>
</tr>
<tr>
<td><em>Allium cernuum</em></td>
<td>Wild onion</td>
</tr>
<tr>
<td><em>Astragalus canadensis</em></td>
<td>Canada milkvetch</td>
</tr>
<tr>
<td><em>Balsamorhiza incana</em></td>
<td>Hoary balsamroot</td>
</tr>
<tr>
<td><em>B. sspittata</em></td>
<td>Arrowleaf balsamroot</td>
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<tr>
<td><em>Brodiaea douglasii</em></td>
<td>Wild hyacinth</td>
</tr>
<tr>
<td><em>Calochortus apiculatus</em></td>
<td>Mariposa lily</td>
</tr>
<tr>
<td><em>Cannassia quamash</em></td>
<td>Camas (common)</td>
</tr>
<tr>
<td><em>Cirsium</em></td>
<td>Thistle</td>
</tr>
<tr>
<td><em>Claytonia lanceolata</em></td>
<td>Western springbeauty</td>
</tr>
<tr>
<td><em>Erythronium grandiflorum</em></td>
<td>Dogtooth lily</td>
</tr>
<tr>
<td><em>Fritillaria pudica</em></td>
<td>Yellow bells</td>
</tr>
<tr>
<td><em>Glycyrrhiza lepidota</em></td>
<td>Wild licorice</td>
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<tr>
<td><em>Helianthus maximillian</em></td>
<td>Maximilian sunflower</td>
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<tr>
<td><em>Leucocrinum montanum</em></td>
<td>Mountain star lily</td>
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<tr>
<td><em>Lewisia pygmaea</em></td>
<td>Pigmy bitterroot</td>
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<tr>
<td><em>L. rediviva</em></td>
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<tr>
<td><em>Liatris punctata</em></td>
<td>Dotted blazingstar</td>
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<tr>
<td><em>Lomatium ambiguus</em></td>
<td>Wyeth biscuirtroot</td>
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<tr>
<td><em>L. cous</em></td>
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<td><em>L. triternatum</em></td>
<td>Nineleaf lomatium</td>
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<tr>
<td><em>Microseris nutans</em></td>
<td>Nodding microseris</td>
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<tr>
<td><em>Musineon divaricatum</em></td>
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<td><em>Nuphar</em></td>
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<tr>
<td><em>Perideridia gairdneri</em></td>
<td>Yampa, wild caraway</td>
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<td><em>Polygonum bistortoides</em></td>
<td>Western bistort</td>
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<tr>
<td><em>Potamogeton</em></td>
<td>Pondweed</td>
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<tr>
<td><em>Potentilla anserina</em></td>
<td>Silverweed, cinquefoil</td>
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<td><em>Pseoralea esculenta</em></td>
<td>Bredroot</td>
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<td><em>Pteris aquilina</em></td>
<td>Bracken fern</td>
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<td><em>Sagittaria cuneata</em></td>
<td>Arum-leaved arrowleaf</td>
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<td><em>S. latifolia</em></td>
<td>Arrowhead, swamp</td>
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<td><em>Wyethia amplexicaulis</em></td>
<td>Mule-ear wyethia</td>
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<td><em>W. helianthoides</em></td>
<td>Sunflower wyethia</td>
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<td><strong>Berries, Fruits</strong></td>
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<tr>
<td><em>Crataegus douglassi</em></td>
<td>Black hawthorn</td>
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<tr>
<td>Botanical Name</td>
<td>Common Name</td>
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<td>------------------------------------------</td>
</tr>
<tr>
<td>Disporum trachycarpum</td>
<td>Fairy bell</td>
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<tr>
<td>Elaegnum commutata</td>
<td>Silverberry</td>
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<tr>
<td>Fragaria virginiana</td>
<td>Strawberry</td>
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<tr>
<td>Gaultheria humifusa</td>
<td>Western wintergreen</td>
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<tr>
<td>Juniperus scopolorum</td>
<td>Rocky mountain juniper</td>
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<tr>
<td>Lonicera involucrate</td>
<td>Twinberry, honeysuckle</td>
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<tr>
<td>Prunus virginiana</td>
<td>Chokecherry</td>
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<tr>
<td>Rambucus melanocarpa</td>
<td>Black elderberry</td>
</tr>
<tr>
<td>Rhus trilobata</td>
<td>Skunkbush sumac</td>
</tr>
<tr>
<td>Ribes aureum</td>
<td>Golden currant</td>
</tr>
<tr>
<td>R. cereum</td>
<td>Squaw currant</td>
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<tr>
<td>R. lacustre</td>
<td>Swamp currant</td>
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<td>R. setosum</td>
<td>Redshoot gooseberry</td>
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<tr>
<td>Rosa sp.</td>
<td>Wild rose</td>
</tr>
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<td>Rubus idaeus</td>
<td>Red raspberry</td>
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<tr>
<td>R. spectabilis</td>
<td>Salmonberry</td>
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<td>S. canadensis</td>
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<td>V. membranaceum</td>
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<td>Seeds</td>
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<td>Amaranthus graecizans</td>
<td>Tumbleweed, pigweed</td>
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<tr>
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<td>Chenopodium album</td>
<td>Lamb's quarter</td>
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<td>Elymus canadensis</td>
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<td>Galium boreale</td>
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<td>P. flexilis</td>
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<td>Polygonum douglasii</td>
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<td>Triglochin maritima</td>
<td>Shore arrowgrass</td>
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<td></td>
<td></td>
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<tr>
<td>Leaves, Stems, Flowers</td>
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<tr>
<td>Alectoria fremontii</td>
<td>Black tree lichen</td>
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<tr>
<td>Asclepias species</td>
<td>Showy milkweed</td>
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<td>Carex sp.</td>
<td>Sedge</td>
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<td>Cirsium foliosum</td>
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<td>Cleome serrulata</td>
<td>Rocky Mountain beeplant</td>
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<tr>
<td>Oxyria digyna</td>
<td>Mountain sorrel</td>
</tr>
</tbody>
</table>
Rorippa sp. Water cress
Rumex crispus Curly dock
R. occidentalis Western dock
R. saliciflorus Mexican dock
Tragopogon pratensis Meadow salsify
Typha latifolia Cattail (common)
Urtica dioica Stinging nettle
Vicia americana American vetch

Inner Bark, Sap
Acer negundo Boxelder
Larix occidentalis Western larch, tamarack
Pinus albicaulis Whitebark pine
P. contorta Lodgepole pine
P. ponderosa Ponderosa pine
Populus deltoides Cottonwood
P. tremuloides Quaking aspen
P. trichocarpa Black cottonwood
Thuja plicata Giant cedar, western red cedar
Tsuga heterophylla Western hemlock

Fauna

A variety of birds, mammals and rodents inhabit the area, along with such big
game animals as mule deer, Rocky Mountain goat, elk, moose and black bear
Several moose, a small elk herd, various hawks and eagles, and grouse were
observed during the field survey. Other mammals that ranged in the area during
the Prehistoric Period, but are not found now, include the grizzly bear, wolverine,
wolf, bighorn sheep, and perhaps caribou (Fredlund 1979).

Andromous fish (salmon and steelhead) are native to the Lochsa, Clearwater
and Selway Rivers, but do not occur in the Clark Fork or Bitterroot Rivers.
Cutthroat and rainbow trout have been stocked in the cirque lakes, but it is
doubtful that they existed in these lakes during the Prehistoric Period.
A list of Mammalian taxa native to the Northern Rocky Mountains follows (Burt and Grossenheider 1976). Aboriginal peoples knew and used many of these mammals.
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
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<tbody>
<tr>
<td><strong>Insectivora (Shrews)</strong></td>
<td></td>
</tr>
<tr>
<td>Microsorex hoyi</td>
<td>Pygmy shrew</td>
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<tr>
<td>Sorex merriami</td>
<td>Merriam shrew</td>
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<tr>
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<td>Northern water shrew</td>
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<td>Sorex cinereus</td>
<td>Masked shrew</td>
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<tr>
<td>Sorex vagrans</td>
<td>Vagrant shrew</td>
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<tr>
<td>Sorex obscurus</td>
<td>Dusky shrew</td>
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<tr>
<td><strong>Chiroptera (Bats)</strong></td>
<td></td>
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<tr>
<td>Lasiurus cinerus</td>
<td>Hoary bat</td>
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<tr>
<td>Euderma maculata</td>
<td>Spotted bat</td>
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<tr>
<td>Plecotus townsendii</td>
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<tr>
<td>Eptesicus fuscus</td>
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<tr>
<td>Myotis evotis</td>
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<td>Myotis thysanodes</td>
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<td>Myotis volans</td>
<td>Long-legged bat</td>
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<tr>
<td>Myotis californicus</td>
<td>California bat</td>
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<tr>
<td>Myotis leibii</td>
<td>Least bat</td>
</tr>
<tr>
<td>Myotis lucifugus</td>
<td>Little brown bat</td>
</tr>
<tr>
<td><strong>Lagomorpha (Rabbits, Pikas)</strong></td>
<td></td>
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<tr>
<td>Ochotona princeps</td>
<td>Pika</td>
</tr>
<tr>
<td>Lepus townsendii</td>
<td>Whitetail jackrabbit</td>
</tr>
<tr>
<td>Lepus americanus</td>
<td>Snowshoe hare</td>
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<tr>
<td>Sylvilagus idahoensis</td>
<td>Pygmy rabbit</td>
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<tr>
<td>Sylvilagus nuttallii</td>
<td>Mountain cottontail</td>
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<td><strong>Rodentia (Rodents)</strong></td>
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<tr>
<td>Erethizon dorsatum</td>
<td>Porcupine</td>
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<tr>
<td>Castor canadensis</td>
<td>Beaver</td>
</tr>
<tr>
<td>Thomomys talpoides</td>
<td>Northern pocket gopher</td>
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<td>Marmota momax</td>
<td>Woodchuck</td>
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<tr>
<td>Marmota flaviventris</td>
<td>Yellow-bellied marmot</td>
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<td>Marmota caligata</td>
<td>Hoary marmot</td>
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<td>Eutamias minimus</td>
<td>Least chipmunk</td>
</tr>
<tr>
<td>Eutamia amoena</td>
<td>Yellow pine chipmunk</td>
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<tr>
<td>Eutamias ruficaudus</td>
<td>Redtail chipmunk</td>
</tr>
<tr>
<td>Citelus lateralis</td>
<td>Golden-mantled squirrel</td>
</tr>
</tbody>
</table>
Columbian ground squirrel
Uinta ground squirrel
Red squirrel
Northern flying squirrel
Western jumping mouse
Western harvest mouse
Deer mouse
Bushy-tailed woodrat
Muskrat
Northern bog lemming
Redback vole
Mountain vole
Water vole
Longtail vole
Meadow vole
Mountain vole

Mountain lion
Lynx
Bobcat
Grizzly bear
Black bear
Red fox
Swift fox
Coyote
Wolf
Marten
Fisher
Wolverine
River otter
Badger
Striped skunk
Western spotted skunk
Mink
Black-footed ferret
Short-tailed weasel
Long-tailed weasel
Least weasel

Wapiti
Caribou
White-tailed deer
Mule deer
Alces alces  Moose
Bison bison  Bison
Oreamnos americanus  Mountain goat
Ovis canadensis  Bighorn sheep
SITE DESCRIPTIONS

This section describes the prehistoric archaeological sites located on the Montana-Idaho stateline between Lolo Pass and Lookout Pass. The specific area I surveyed was from Missoula Lake northwest to Flattop Mountain. Prior surveys were conducted by United States Forest Service personnel, among others, both north and south of the area which I surveyed. Milo McLeod, Lolo and Bitterroot National Forest Zone Archaeologist, suggested the survey between Missoula Lake and Flattop Mountain, noting that prior survey in this area had not been completed by United States Forest Service personnel (personal communication, 1983). Table #3 lists the various site recorders and state site numbers.

I have taken the descriptions for sites recorded by others off of their site forms. Photographs are included for those sites which I recorded.

24MN110

This site is a sparse, lithic scatter which lay in a large saddle on the stateline ridge above Missoula Lake. The site area is small, and lithics were concentrated in the bottom of the saddle where road #320 crosses the stateline. Of the relatively few basalt flakes that were observed, seven were collected. Three chert flakes were also observed, one of which was collected. All collected artifacts were small flakes from tool retouching. No tools were found, although Fredlund (personal communication).
### TABLE #3  Site Recorders

<table>
<thead>
<tr>
<th>RECORDED BY</th>
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<th>IDAHO</th>
</tr>
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<tbody>
<tr>
<td>Bill LaCombe as reported to Mark Vallier</td>
<td>24MN1004 10SE286</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24MN1003 10SE289</td>
<td></td>
</tr>
<tr>
<td></td>
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</tr>
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<td>Bonnie Hogan</td>
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<td>10SE279</td>
</tr>
<tr>
<td>Milo McLeod</td>
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<tr>
<td></td>
<td>24MN49</td>
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</tr>
<tr>
<td>Milo McLeod, Kirby Mathew</td>
<td>24MN110</td>
<td></td>
</tr>
<tr>
<td>Larry Ford</td>
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<tr>
<td></td>
<td>24MN26</td>
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</tr>
<tr>
<td>Mark Vallier</td>
<td>24MN168 10SE284</td>
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<td>24MN169 10SE285</td>
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<tr>
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<td>24MN167 10SE300</td>
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<td>Mark Vallier, Doug Melton</td>
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<td>Larry Ford</td>
<td>24MN27</td>
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<tr>
<td>Ryan Willett</td>
<td>24MN21</td>
<td></td>
</tr>
<tr>
<td>Sara Scott</td>
<td>24MN20</td>
<td></td>
</tr>
</tbody>
</table>
Reported that, during a previous survey, three points, one scraper and one knife, were collected from the site. Point types were not mentioned, only that points dated from (5000-2500 B.C.). Common on-site vegetation consisted of Alpine Fir, Spruce, Lodgepole Pine, Beargrass, Yarrow and a variety of grasses. Solar exposure was open at all points.

24MN48

This site is located on the stateline in a saddle above Wolverine Gulch, and consisted of a sparse lithic scatter. Very small basalt pressure flakes from tool retouching were scattered over the entire site area. Tools collected from the site included one chert point tip, one basalt point base and one basalt retouched flake. On-site vegetation consisted of various grasses and Alpine Fir. Water was located on the site in the form of semi-permanent snowbanks.

24MN49

This site lay in a saddle at the base of a gentle hill directly west of Oregon Lake. Many small pressure flakes of red, yellow and gray chert, green and black obsidian and basalt were located on-site. Basalt was the most common. Two chert thumbnail scrapers and one retouched basalt flake were collected from the site. Most debitage appeared in small eroding drainages. Brush covered much of the area and various grasses and Alpine Fir were also present.

The site also contained a historic component consisting of an existing cabin, three burned cabin foundations, outhouse, corrals and storage shed located two hundred feet south of the lithic scatter. Cans, purple glass fragments, cartridge
cases (calibers 25-35, 32-30, 32 long and 38-40) and other historic debris was also present.

Historical records indicate that this site was once the Cedar Creek Crossing Ranger Station as shown on a 1912 hand drawn map of Lolo National Forest. It may also have been utilized by sheepherders who were present on the stateline during the 1920s and 1930s (McLeod 1972).

24MN47

This site is located in the first large, deep saddle south of Graves Peak on the stateline. Lithic material was located in the bottom of the saddle. Debitage consisted of small pressure flakes from tool retouching, and was concentrated in localized areas across the site. Several tools were collected from a small area in the lowest portion of the saddle. These included one complete chert point, one retouched chert flake and one blade fragment. Basalt and chert were the most numerous material types. No quartz or obsidian were observed. Water was located on-site in the form of semi-permanent snowbanks. On-site vegetation was dense, with Beargrass and Alpine Fir predominate.

24MN46

This site is located approximately two-thirds of a mile west of Trapper Creek in a saddle on the stateline. The site was situated at the base of the hill just before it became steep. Vegetation consisted of various grasses interspersed with Alpine Fir. Water was located on the site in the form of semi-permanent snowbanks.
Lithic debitage was very sparse and derived from a variety of materials. Observed cultural material included one clear quartz flake (left on site), five flakes of Pine Creek shale, one basalt flake and several small flakes of clear quartz, chert and chalcedony. A representative sample of material types was collected.

Two historic hunting camps were also located on the site. One spent cartridge case was found which was collected. No head stamp was present. The case appears old, and from measurements was found to be a .44 caliber Smith & Wesson American. This cartridge was manufactured from 1869-1940.

This site is a lithic scatter located in a saddle on the stateline approximately one-half mile west of Hoodoo Creek. There was a good view of Hoodoo Meadows from here. On-site vegetation was predominately Beargrass. Lithic debitage was concentrated in a small area in the bottom of the saddle. Tools were located outside the debitage area. Cultural material collected included one broken basalt blade, two point bases (one brown chert and one quartz crystal) and two retouched flakes (one brown chert and one green obsidian). Debitage consisted primarily of green basalt with lesser amounts of jasper, chert and obsidian also present. This site had not been previously recorded.
24MN27

This site is located in a saddle on the stateline one-quarter mile southeast of Summit Springs. Most of the site had been destroyed by existing roads. Heavy concentrations of basalt and chert debitage were located in the road on top of the saddle and in the adjacent parking area. On-site vegetation included Alpine Fir, Lodgepole and Huckleberry. Ground cover was dense adjacent to the site. Cultural material previously collected from this site included a small broken point of brown chert and two chert flakes.

24MN26

This site is located on the stateline in a saddle above Trio Lakes. Vegetation consisted of Alpine Fir, Beargrass, Whortleberry and Mountain Heather. Lithic debitage was very sparse. Cultural material previously collected from this site included three points, one biface fragment and lithic debitage. Water in the form of semi-permanent snowbanks was located on-site.

    This site is located on the stateline in a small saddle above Trio Lakes. Green obsidian, basalt and chert debitage was sparsely scattered in the saddle. Vegetation consisted of several small Alpine Firs. Semi-permanent snowbanks occurred under the cliffs near the saddle. Previously collected cultural material included a brown chert blade, one utilized basalt flake, one yellow agate flake and one red chert flake.

24MN24

This site is located in two small saddles on the stateline above Trio Lakes.
Green obsidian and basalt debitage occurred in both saddles. A large amount of green obsidian flakes were concentrated in a small area in one portion of the site. Several flakes and one core of basalt were collected from the site. The stateline ridge in this area was very open, with a few small Alpine Firs present along with some Whortleberry and Mountain Heather. There were semi-permanent snow-banks present beneath both saddles.

24MN23

This site is located on the stateline in a flat broad saddle above Dalton Lakes. A small amount of chert and basalt lithic debitage was scattered across the saddle. The site area is very open, with scattered shrub and Alpine Fir present. One black basalt and one red chert flake were collected from this site.

24MN22

This site is lithic scatter located on the stateline in a small saddle above Pearl and Dalton Lakes. Collected artifacts included three point fragments, one biface fragment and one snub-nosed scraper. On-site vegetation consisted of a few Alpine Fir and Heather. Semi-permanent snowbanks were also present.

24MN21

This site is located on a ridge that runs south from Schley Mountain. There were a succession of small hills and saddles along this ridge with a large flat section immediately south of Schley Mountain which stretched for almost half a mile. Scattered all along this ridge were various concentrations of lithic debitage.
Material types included brown-gray to green glossy chert, a black opaque obsidian-like material and a clear quartz glass. A large lanceolate quartzite blade was previously collected from this site, along with lithic debitage. On-site vegetation consisted of Beargrass and sparse pine trees.

24MN20

This site consisted of a lithic scatter immediately south of 24MN21. Lithic debitage included green obsidian, chert and basalt. Four projectile points were collected from the saddle which occurs on the site. There were also many flakes of basalt and chert in this locality. On-site vegetation consisted mainly of Beargrass, Heather and a few Alpine Fir and Spruce.

24MN11

This site is located on the west shoulder of Schley Mountain in a saddle above the small lakes located at the headwaters of Montana Creek. Some of the sites had been destroyed by existing roads. Previously collected cultural materials included one chert biface fragment and one basalt point which were found in the road cut. Additional lithic debitage consisting of basalt, chert and green obsidian was also noted. Hematite (ochre) was common in the area. On-site vegetation consisted of various grasses and shrubs.

10SE288

This site is located one-quarter mile southwest of 10SE292 on a ridgeline that runs west from the stateline. The site consisted of a pit feature located in talus
on the edge of a saddle. No lithic debitage or other cultural material was located in association with the site. This was probably due to dense vegetation and talus boulders which obscured the ground surface. On-site vegetation consists of Alpine Fir, Whitebark Pine and various other typical alpine shrubs and plants.

10SE290

This site consisted of a pit feature located in talus. The site is situated in a relatively flat area on the edge of a small saddle between Frog Lake and Binocular Peak. No cultural material was observed. This was probably due to the dense growth of Beargrass and other shrubs, which totally obscured the ground surface in the vicinity of the site.

24MN166 10SE299

This site is located approximately five hundred meters south of Milepost 169 on the Montana-Idaho stateline on a small talus knoll, roughly halfway between Berge and Black Peak. The site consisted of a large rock pile and a pit feature located in talus. On-site vegetation was predominately Beargrass. A number of game trails were located around the base of the slide area to the south and west of the two features. No lithic debitage was located in association with the site. Dense vegetation which obscured the ground surface may have accounted for the lack of cultural material observed.
FIGURE #2 Location and Site Map for 10SE288
FIGURE #3 Location and Site Map for 10SE290
24MN1068 10SE284

This site is located on the stateline east of Crooked Ridge. The site consisted of a small rock pile situated on a knoll. There were approximately fifteen rocks, well-sodded in with extensive lichen growth. The rock pile was surrounded by Beargrass and other typical small sub-alpine shrubs and grasses. No cultural material was found in association.

24MN1069 10SE285

This site is located on the stateline between Crooked Ridge and Cliff Lake. The site consisted of a pit feature situation in a talus slope. A large Whitebark Pine was located adjacent to the pit. Other vegetation on-site is Beargrass. No lithic debitage could be located in association with the pit feature.

FIGURE #4 24MN1004 10SE286
View looking north at site in foreground
24MN1004 10SE286

This site is located on the stateline immediately south of Eagle Cliff. Previously collected artifacts from this site included a large biface and one projectile point. The type of projectile point is unknown. On-site vegetation consists of very dense, low shrubs which totally obscured the ground surface. Semi-permanent snowbanks were present.

24MN1003 10SE289

This site is located on the stateline about two-thirds of a mile south of Eagle Cliff. Previously recorded information indicated that rock piles used to be present in this area, and that two projectile points had been collected from this locality. On-site vegetation consisted of a few Whitebark Pine and Dwarfed Alpine Fir, with a dense understory of sub-alpine shrubs. Semi-permanent snowbanks were also present.

10SE292

This site is located on a secondary ridge extending into Idaho from the stateline above a small, unnamed lake at the headwaters of a tributary of Washout Creek. The small lake was located just north of the site, and was lower in elevation. Previously collected cultural material from this site included a side-notched projectile point and one pestle. On-site vegetation consisted of Alpine Fir, Whitebark Pine and a wide variety of shrubs and grasses.
FIGURE #5 Location and Site Map for 24MN166 10SE299
FIGURE #6 Location and Site Map for 24MN168 10SE284
FIGURE #7 Location and Site Map for 24MN169 10SE285
FIGURE #8 Location and Site Map for 24MN1004 10SE286
FIGURE #9 Location and Site Map for 10SE292
small corner-notched projectile points and one Duncan point had previously been collected from this site. Vegetation in this area consisted of dense pine, fir and shrubs which totally obscured the ground surface.

24MN1006  10SE294

This site is located on the stateline in the first saddle east of Binocular Peak. Observed cultural materials included 17 basalt flakes and one jasper flake. Previously collected cultural material included two scrapers, two corner-notched points and one side-notched point. On-site vegetation was predominately Whitebark Pine, Alpine Fir, Beargrass and Dwarf Huckleberry. Semi-permanent snowbanks were present.

24MN1001

This site is located a short distance north of 10SE295 on the ridgeline which ascends to Lost Peak. Observed cultural material included one broken, reworked side-notched point. Previously collected cultural material included 11 projectile points. A deep pit, probably dating from the Historic Period, was also located on-site. Vegetation consisted of Dwarf Alpine Fir and Whitebark Pine, various low alpine shrubs and a large amount of downed and dead timber.
FIGURE #11 View from site 24MN1008 10SE296
looking north. Site is in foreground.

FIGURE #12 24MN1006 10SE294
View looking north at site. Site is in foreground.
FIGURE #13 Location and Site Map for 24MN1001
FIGURE #14 Location and Site Map for 24MN1006 10SE294
FIGURE #15 Location and Site Map for 24MN1005 10SE293
FIGURE #16
View looking east at site 24MN1001 located in foreground.

10SE295

This site is located in a flat area on the stateline just above the headwaters of Sherlock Creek. Previously collected cultural material included six varieties of corner-notched points, one stemmed point and one Duncan point. Vegetation consisted of Whitebark Pine, fir and various shrubs. Semi-permanent snowbanks were present.

24MN1007 10SE306

This site is located on the stateline along a broad sloping ridge above Lost
Lake. Observed cultural material included one small stemmed basalt point and ten basalt flakes. Previously collected material included one large corner-notched point and three scrapers. Most of the material occurred near a small peak close to the top of the ridge. A large amount of dead and downed timber was located on the site. Semi-permanent snowbanks were present.

10SE296 24MN1008

This site was located in a flat spot on the stateline northwest of Bonanza Lakes. Observed cultural materials included approximately fifty basalt flakes, several gray and red chert flakes, one point base of red chert and a reworked
FIGURE #18 Location and Site Map for 10SE295
FIGURE #19 Location and Site Map for 24MN1008 10SE296
side-notched point of brown chalcedony. Three stemmed points and one point with serrated edges had previously been collected from the site. On-site vegetation consisted of Whitebark Pine, Beargrass, Dwarf Huckleberry and other small alpine shrubs and grasses. A large amount of downed timber was located on the northern end of the site. Semi-permanent snowbanks were present.

24MN1022  10SE301

This site is located on the stateline on a long, broad ridge above Bonanza Lakes. Observed cultural material included one side-end scraper of basalt and one quartzite flake. Previously recorded information indicated that rock piles used to be present in this area, and that one stemmed point, a small side-notched point, a long lanceolate point and several bifaces and scrapers had been collected from this locality. Vegetation consisted primarily of Whitebark Pine,
FIGURE #21 Location and Site Map for 24MN1022 10SE301
Alpine Fir and Beargrass. Water was located on-site in the form of semi-permanent snowbanks.

24MN1023 10SE297

This site is located on the stateline in a saddle immediately south of Milepost 182. The site consisted of three pits located in talus deposits and one large rock pile. Two of the pit features were in close proximity on the northern end of the site. The other pit feature occurred on the southern end of the site. A saddle was located between the pit features. Previously recorded information indicated that a large amount of lithic debitage and two projectile points had been collected from this locality. On-site vegetation was predominately Whitebark Pine, Alpine Fir and Beargrass.

FIGURE #22
View from on-site 24MN1023 10 SE297 looking south. Note talus pits in foreground.
FIGURE #23 Location and Site Map for 24MN1023 10SE297
This site is located on the stateline in a saddle above Cataract Basin and northwest of Milepost 183. Previously recorded information indicated that talus slope pit features and rock piles used to be present in this locality. When I surveyed the area, I found no artifacts or features. Previously collected artifacts included eight projectile points. On-site vegetation was sparse, and consisted predominately of Beargrass, with a small amount of Whitebark Pine and Alpine Fir. Water in the form of semi-permanent snowbanks was also located on the site.

This site was located on the stateline northwest of Missoula Lake in the saddle immediately southeast of Milepost 182. The site consisted of a rock pile approximately two meters high with a United States Geological Survey cap at the base. One pit located in talus deposits adjacent to the rock pile, four small shallow pits located on a rock outcrop and one obsidian flake. In portions of the site, dense concentrations of Beargrass obscured the ground surface. Water was located on-site in the form of semi-permanent snowbanks.

This site is located on a one-mile long stretch of the stateline above St. Joe Lake. Sparse scattered lithic debitage was noted here. Previously collected cultural material included two side-notched projectile points and one Duncan point. The elevation in this area ranged between 7100 and 7200 feet.
Mile Post 183, large rock pile and large pit

Cirque Basin

4 pit features

Obsidian Flake

Beargrass

rock outcrop

State Line Trail

Beargrass

(not to scale)
FIGURE #25
View looking south
at site 24MN167 10SE399.

24MN1019

This site is located on the stateline where it parallels Straight Creek and between Steep and Goose Lake. Lithic debitage occurred along the full-length of this section of the stateline. Previously collected cultural material included one very well-made lanceolate McKean point manufactured from white quartzite.

Elevation in this area was approximately 7000 feet.

24MN1015

This site is located in Hoodoo Meadows. Lithic debitage was scattered across
the site. Previously collected cultural material included one large corner-notched point.

10SE279

This site is located on the stateline above Dalton Lake. It was a large game drive previously reported on by Hogan (1974).
POINT DESCRIPTIONS

Several introductory statements need to be made in regard to this section of my thesis. I would like to note that the majority of projectile points illustrated in this section were not available to me for "hands on" examination or analysis (with the exception of points collected by the United States Forest Service). In almost every instance, the typological analysis reported herein consisted of comparisons of drawings of points from the stateline, withdrawals of points of known specific types illustrated in published archaeological literature.

Since I had only drawings to work with, it severely limited some observations I could make, and totally prevented others. Fortunately, however, the point drawings with which I have been provided are accurate in size, shape and outline.

Keeping these constraints in mind, all I was able to do was measure notch width, maximum length and maximum width (abbreviated in the tables below as NW, ML and MW), and type the points based on outline, shape and size. My numbering system for the points used the county site number portion of the Smithsonian trinomial site designation for the point number prefix, and an arbitrarily assigned point number for the suffix. Thus, point #14 from site 10SE279, in my point numbering nomenclature, would be referred to as #27914. The reader should also note that the points, as such, are not described, but rather the type is described into which the points seem to fit.
Oxbow

Oxbow points are best identified from levels seven and eight of the Long Creek site (Wettlaufer and Mayer-Oakes 1960).

Five of the points found in the stateline area appear to fit the type definition for Oxbow. Descriptive data and illustrations are presented in Table #4 and Figure #26.

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE#</th>
<th>Projectile Point #</th>
<th>Max Length</th>
<th>Max Width</th>
<th>Notch Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>OXBOW</td>
<td>10SE279</td>
<td>14</td>
<td>31mm</td>
<td>21mm</td>
<td>16mm</td>
</tr>
<tr>
<td></td>
<td>10SE279</td>
<td>22</td>
<td>29mm</td>
<td>21mm</td>
<td>15mm</td>
</tr>
<tr>
<td></td>
<td>24MN27</td>
<td>01</td>
<td>23mm</td>
<td>13mm</td>
<td>10mm</td>
</tr>
<tr>
<td></td>
<td>24MN45</td>
<td>02</td>
<td>20mm</td>
<td>18mm</td>
<td>13mm</td>
</tr>
<tr>
<td></td>
<td>10SE279</td>
<td>15</td>
<td>29mm</td>
<td>20mm</td>
<td>14mm</td>
</tr>
</tbody>
</table>

FIGURE #26

#27914  #27922  #2701   #4502   #27915
The Oxbow point is described by Nero and McCorquodale (1958) as being a small to medium-size dart point with a distinctive concave base and side notches. Flaking on the points is typically random on both faces. Blade edges are convex with some secondary retouch. Point tangs are squared to rounded in shape, and flare outward. Stems are short and expanded, with a medium deep concavity in the basal edge. The depth of the notches typically ranges from as deep to half as deep as they are wide. Basal thinning is common, with slight notch grinding present on some points.

Oxbow points are found in the Canadian provinces of Saskatchewan and Alberta, with a distribution southward into Montana, the Dakotas and Wyoming. In Canada, the points have been found at the Long Creek site (Wettlaufer and Mayer-Oakes 1960) and Castor site (Wormington and Forbis 1965). In Montana, the points have been found in the Clark Fork Valley, Northwestern Montana, the Blackfoot River Valley, the Avon site and the Flint Creek Valley and along the Sun River (Melton 1983).

Oxbow points are typically thought to date between 5000 and 4000 B.P. Original radiocarbon dates from Saskatchewan, Canada are 5193 B.P. +/- 130 at the Oxbow Dam site (Nero and McCorquodale 1958), and 4643 B.P. +/- 150 and 4613 B.P. +/- 150 at the Long Creek site (Wettlaufer and Mayer-Oakes 1960). In Alberta, Wormington and Forbis (1965) have estimated a date of 5000 to 4000 B.P. for the Castor site. In Montana, Oxbow points have been dated at 5200 B.P. at the Sun River site, 24CA74 (HRA 1984).
McKean

The McKean lanceolate point was identified and described by Wheeler (1952) on the basis of samples recovered from sites in Northeastern Wyoming.

Three of the points found in the stateline area appear to fit the type definition of McKean. Descriptive data and illustrations are presented in Table #5 and Figure #27

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE#</th>
<th>PP#</th>
<th>ML</th>
<th>MW</th>
<th>NW</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCKEAN</td>
<td>10SE279</td>
<td>01</td>
<td>44</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>24MN1019</td>
<td>01</td>
<td>50</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>24MN1023</td>
<td>01</td>
<td>46</td>
<td>19</td>
<td>14</td>
</tr>
</tbody>
</table>

The McKean point is lanceolate in shape with a concave base. Wheeler (1952) noted three different generalized shapes. The first is common, the second is less common, and the third is rare. The first shape has blade sides which are incurved toward the tip, and tapered toward the base about midway between the tip and the base. The second shape has blade sides which are parallel, and are tapered toward the tip and incurved near the base, and the third shape has blade sides which are incurved toward the tip and toward the base.
parallel, and are tapered toward the tip and incurved near the base, and the third shape has blade sides which are incurved toward the tip and toward the base. The point, typically, has moderately well-controlled pressure flaking. Usually both faces of the blade are fully flaked, but in some cases, one face of the blade is fully flaked and the opposite face is retouched only along the edges. No evidence of edge-smoothing or grinding is present.

The base has a symmetrical notch that is usually deep and less commonly shallow. Lateral projections are typically thinned bifacially, have rounded, pointed or irregular outlines, and are rarely of the same length and breadth. The notch-edge is thin and sharp.

McKean points are found over a large area which includes most of the western United States. They also frequently occur with Duncan and Hanna-type points. Collectively, these three point-types are typically referred to as McKean Complex. Archaeologists have long speculated over the origin of this complex, which has led to the formulation of two different hypotheses regarding its beginnings.

Husted, et al. (n.d.) and Benedict and Olson (1973) suggested that the complex originated in the central and Northern Rocky Mountains, where it evolved from Plano hunting cultures forced from the Plains by Altithermal aridity. Jennings (1964:153) and Wedel (1961:254) hypothesized that the McKean Complex was a regional variant of the desert culture, which entered the mountains from the Great Basin either during or immediately following the Altithermal Period. Excavations carried out by Benedict at the Fourth of July
Valley site, high in the mountains of the Colorado Front Range, tend to support the former hypothesis rather than the latter (Benedict 1981). It should also be noted, however, that archaeologists are, by no means, in agreement on this matter.

Radiocarbon dates for the McKean component at the Kolterman site in the Angostura Reservoir area of South Dakota are 3630 +/- 350 and 4230 +/- 350 years B.P. (Crane 1956; Wheeler n.d.). Husted (1969) believes a date of 4900 B.P. from the Sorenson site in southern Montana is correct for a McKean date. A date of 4700 B.P. was reported for Granite Creek Rock Shelter, which is located near the Sorenson site (Frison and Wilson 1975). Frison (1978:53) notes that "the material used in dating...was recovered from a context in good association with lanceolate McKean projectile points". At the Myers-Hindman site, radiocarbon dates of over 3500 and 3100 B.P. have been assigned to McKean cultural materials (Lahren 1976). Mummy Cave produced a date of 4400 B.P. on McKean materials (Wedel, et al. 1968). Reeves (1969) gives a Plains date for McKean as occurring between approximately 4500 and 3500 B.P. On the basis of radiocarbon dates from the lower levels at Signal Butte, Nebraska, Wheeler (1952) suggests an antiquity of 3500 to 4000 years B.P. for the McKean point.

Duncan

The Duncan-type was named and described by Wheeler (1954:7) for points found in Wyoming. Six of the points found in the stateline area appear to fit the
type definition of Duncan. Descriptive data and illustrations are presented in Table #6 and Figure #28.

TABLE #6

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE#</th>
<th>Projectile Point #</th>
<th>Max Length</th>
<th>Max Width</th>
<th>Notch Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUNCAN</td>
<td>10SE279</td>
<td>17</td>
<td>27mm</td>
<td>18mm</td>
<td>13mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02</td>
<td>42mm</td>
<td>18mm</td>
<td>13mm</td>
</tr>
<tr>
<td></td>
<td>10SE295</td>
<td>01</td>
<td>42mm</td>
<td>15mm</td>
<td>11mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02</td>
<td>41mm</td>
<td>18mm</td>
<td>11mm</td>
</tr>
<tr>
<td></td>
<td>24MN1005</td>
<td>01</td>
<td>41mm</td>
<td>13mm</td>
<td>11mm</td>
</tr>
<tr>
<td></td>
<td>24MN1008</td>
<td>01</td>
<td>55mm</td>
<td>22mm</td>
<td>17mm</td>
</tr>
</tbody>
</table>

FIGURE #28

Wheeler (1954) describes the Duncan point as follows:

"The Duncan point is a small to medium-size dart point characterized by a straight converging or bilaterally convex blade; insloping, non-barbed shoulders; and a straight parallel-sided or slightly expanding stem with shallowly notched base. It is 31.5 millimeters or more in total length, and the stem represents about one-fourth of the total. The blade is 15.5 millimeters or more in maximum thickness."
The blade and stem are fully chipped by pressure on both faces from the edges in random fashion. The blade is lenticular in cross-section. The base is notched by pressure chipping on both faces from the base towards the tip. The edges of the blade are generally thin, straight, even, and sharp. The sides of the stems are usually smoothed by retouching or grinding. 

Duncan points have virtually the same areal distribution as McKean points. In Wyoming, they have been found at Birdshead Cave (Bliss 1950), Wedding of the Waters Cave (Frison 1962), the McKean site (Mulloy 1954) and in Yellowstone National Park (Taylor 1964). In Montana, Duncan points have been recovered from Pictograph Cave (Mulloy 1958), the Upper Yellowstone River (Arthur 1966), Mission Mountains (Barnier 1971), Pryor Mountains (Loendorf 1969), Flathead Lake (Malouf 1956), the Kootenai Canyon locality (Roll 1982), the Dalton site (Hogan 1974) and along the Clark Fork (Ryan 1977) and Bitterroot Rivers (Ward 1973).

Both Duncan and Hanna points are thought to date somewhat later in time than McKean. These points are typically dated at about 3500 to 3000 B.P. (Reeves 1969).

Hanna

The Hanna point has been named and described by Wheeler (1954:7) for a type found in Wyoming. Seven of the points found in the stateline area appear to fit the type definition for Hanna. Descriptive data and illustrations are presented in Table #7 and Figure #29.
TABLE #7

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE#</th>
<th>Projectile Point #</th>
<th>Max Length</th>
<th>Max Width</th>
<th>Notch Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANNA</td>
<td>10SE279</td>
<td>04</td>
<td>38mm</td>
<td>20mm</td>
<td>12mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>03</td>
<td>43mm</td>
<td>24mm</td>
<td>12mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
<td>31mm</td>
<td>23mm</td>
<td>14mm</td>
</tr>
<tr>
<td>10SE3</td>
<td>01</td>
<td>43mm</td>
<td>23mm</td>
<td>12mm</td>
<td></td>
</tr>
<tr>
<td>24MN1010</td>
<td>01</td>
<td>33mm</td>
<td>19mm</td>
<td>11mm</td>
<td></td>
</tr>
<tr>
<td>24MN26</td>
<td>02</td>
<td>35mm</td>
<td>17mm</td>
<td>12mm</td>
<td></td>
</tr>
<tr>
<td>24MN48</td>
<td>01</td>
<td>53mm</td>
<td>22mm</td>
<td>11mm</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE #29

Wheeler (1954:7) describes the Hanna point as:

"... a small to medium-size point characterized by a straight, converging, and incurving blade; straight or insloping and slightly barbed shoulders; and an expanded thinned base. It is 25 millimeters or more in
total length, and the stem represents from one-fourth to one-half of the total length. The blade is 13.5 millimeters or more in maximum breadth and 3.5 millimeters or more in maximum thickness. The blade and stem are either fully chipped by pressure on both faces in a random fashion, or fully chipped by pressure on one face and retouched along the edges of the other face, or retouched along the edges of both faces. The blade is lenticular or plano-convex in cross-section. The base is notched, or thinned, by pressure chipping on both faces from the base towards the tip. The edges of the blade are generally thin, straight, even, and sharp. The sides of the stems are usually smoothed by retouching or grinding.”

In general, the areal distribution and radiocarbon dates for both Duncan and Hanna are essentially the same.

**Bitterroot/ Northern Side-Notch**

Large side-notch point forms from the Northern Rocky Mountains are variously termed Northern Side-Notch or Bitterroot. Swanson, et al. (1964) named the large side-notched points found in the Birch Creek Valley of Eastern Idaho Bitterroot Side-Notch and recognized four varieties (Swanson 1966:26). Gruhn (1961 129) used the term Northern Side-notched for similar points from Wilson Butte Cave in Southern Idaho.

Five of the points found in the stateline area appeared to fit the type definition for Bitterroot and/or Northern Side-Notch. Descriptives data and illustrations are presented in Table #8 and Figure #30.
<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE #</th>
<th>Projectile Point #</th>
<th>Max Length</th>
<th>Max Width</th>
<th>Notch Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>BITTERROOT</td>
<td>10SE279</td>
<td>19</td>
<td>51mm</td>
<td>26mm</td>
<td>12mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>33mm</td>
<td>18mm</td>
<td>11mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>09</td>
<td>34mm</td>
<td>19mm</td>
<td>12mm</td>
</tr>
<tr>
<td>BITTERROOT</td>
<td>10SE295</td>
<td>03</td>
<td>33mm</td>
<td>20mm</td>
<td>13mm</td>
</tr>
<tr>
<td>24MN1008</td>
<td>02</td>
<td>41mm</td>
<td>22mm</td>
<td>13mm</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE #30

Bitterroot points are roughly triangular in outline and lenticular in cross-section with straight edges. Flaking is fairly uniform flat bifacial pressure flaking. Notches vary from perpendicular to the edges and parallel to the base, to a form in which the lower edge of the notch slopes toward the base, but does not reach the corner of the point. Notches typically appear relatively high up from the base. Off 77 Bitterroot phase points recovered from Birch Creek in Idaho, 68 points had notches placed between 1.5 and 2.4 centimeters above the base at the corner (Swanson 1972:109). Basal varieties may be flat, concave, inset or convex. Bitterroot points recovered from Birch Creek ranged from 1.4 to 8.8 centimeters in length, and 1.4 to 3.5 centimeters in width (Swanson 1972:112).
Bitterroot points in Western Montana are typically assigned to the Early Middle Period (5500-2500 B.C. (McLeod and Melton 1986:V-20). At the Myers-Hindman site near Livingston, two carbon 14 dates for Bitterroot points were 4680 +/- 220 B.P. and 5590 +/- 150 B.P. (Frison 1978:26).

Pelican Lake

Pelican Lake points were originally named by Wettlaufer (1956:106) for a type found at the Mortlach site in the Besant Valley of central Saskatchewan. Twelve of the points found in the stateline area appear to fit the type definition for Pelican Lake. Descriptive data and illustrations are presented in Table #9 and Figure #31

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE #</th>
<th>Projectile Point #</th>
<th>Max Length</th>
<th>Max Width</th>
<th>Notch Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>PELICAN</td>
<td>10SE279</td>
<td>05</td>
<td>38mm</td>
<td>18mm</td>
<td>12mm</td>
</tr>
<tr>
<td>LAKE</td>
<td></td>
<td>06</td>
<td>33mm</td>
<td>19mm</td>
<td>09mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25</td>
<td>39mm</td>
<td>28mm</td>
<td>12mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
<td>36mm</td>
<td>19mm</td>
<td>14mm</td>
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<tr>
<td></td>
<td></td>
<td>24MN1001</td>
<td>02</td>
<td>48mm</td>
<td>24mm</td>
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<td>01</td>
<td>66mm</td>
<td>21mm</td>
<td>13mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24MN1006</td>
<td>01</td>
<td>33mm</td>
<td>23mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24MN1007</td>
<td>02</td>
<td>54mm</td>
<td>26mm</td>
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<td></td>
<td></td>
<td>24MN1015</td>
<td>01</td>
<td>55mm</td>
<td>28mm</td>
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<tr>
<td></td>
<td></td>
<td>24MN1023</td>
<td>02</td>
<td>47mm</td>
<td>24mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24MN22</td>
<td>01</td>
<td>35mm</td>
<td>24mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24MN26</td>
<td>03</td>
<td>40mm</td>
<td>20mm</td>
</tr>
</tbody>
</table>
FIGURE #31

#101501

#27905

#100601

#27921

#100101

#102302

#100702

#2603

#2201

#100102

#27925

#27906
This is a medium-size point with diagonal or corner notches. Lateral body edges may be convex, straight or, rarely, concave. Tips are usually sharp.

Shoulders are barbed, acute or, rarely, right-angled. Barbs are generally sharp, and may vary considerably in length. Blunted barbs are extremely rare.

Bases are narrower than the body, although occasionally they may equal the shoulder width. Bases vary from convex to straight or, rarely, concave. Basal thinning and grinding may be present. The hafting segment of the point may be asymmetric to the body.

Notch depths and widths are variable. Distal-medial and proximal-medial junctures are rounded, obtuse or concave. The medial segment is concave, although rarely it may be straight. Notches may be ground.

Primary flaking is usually present over both surfaces. Unifacially flaked points are very rare, and the quality of the flaking is variable.

Reeves (1970) completed a major study on Pelican Lake wherein he hypothesized that Pelican Lake "may be divided into eight regional subphases which correspond in varying degrees to distinctive environmental areas of the Northern Plains" (Reeves 1970:76). The names of these subphases and their corresponding areal distributions are identified in Table #10.

<table>
<thead>
<tr>
<th>Subphase</th>
<th>General Areal Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glendo</td>
<td>Glendo Reservoir, Wyoming Badger</td>
</tr>
<tr>
<td>Middle Missouri</td>
<td></td>
</tr>
<tr>
<td>Upper Miles</td>
<td>NE Wyoming, SE Montana</td>
</tr>
</tbody>
</table>

67
The Montana-Idaho stateline area falls within the geographical area of Blue Slate Canyon subphase as identified by Reeves. He noted that Blue Slate Canyon materials were present in surface collections from the Flathead Valley, and absent from the reported Birch Creek materials. He concluded that the western boundary for the subphase distribution is northwest of Birch Creek.

Excavations carried out at Big Creek Lake, located immediately south of the project area, were inconclusive regarding the presence of Blue Slate Canyon materials (Fredlund 1979:110). Fredlund believed “effective interpretation and evaluation of Reeves’ hypothetical Pelican Lake model is not possible without better data” (Fredlund 1979:111).

In general, Pelican Lake dates from 3000 B.P to 1800 B.P (Fredlund 1979:19). Reeves noted that:

“...complete phase transition from Hanna to Pelican Lake occurred during the period from 1300 to 750 B.C. with the Pelican Lake phase emerging by at least 1000 B.C., when Pelican Lake points become more frequent than Hanna. Termination of the phase occurs earliest in the middle Missouri area. In certain areas, particularly mountains, it persists until A.D. 500-600” (Reeves 1983:80).
Besant

Besant points were first identified by Westtlauffer (1956:98) as the characteristic point-type found in a specific level at the Mortlatch site in Saskatchewan.

Three of the points found in the stateline area appear to fit the type definition for Besant. Descriptive data and illustrations of the three points are presented below in Table #11 and Figure #32.

TABLE #11

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE #</th>
<th>Projectile Point #</th>
<th>Max Length</th>
<th>Max Width</th>
<th>Notch Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>BESANT</td>
<td>24MN11</td>
<td>01</td>
<td>26mm</td>
<td>22mm</td>
<td>14mm</td>
</tr>
<tr>
<td></td>
<td>24MN20</td>
<td>02</td>
<td>32mm</td>
<td>21mm</td>
<td>12mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01</td>
<td>33mm</td>
<td>19mm</td>
<td>11mm</td>
</tr>
</tbody>
</table>

FIGURE #32

The Besant point is described as being a medium to large dart point having side notches and a short stem. The edges of the body range from straight to
convex, with a number of the points exhibiting contracting ovate edges. The point of maximum width tends to be at the shoulder and/or the base. The maximum width is rarely located distally of the shoulder. Tips are primarily either sharp or slightly blunted. In cross-section, the points are biconvex or plano convex.

The shoulders are sharp to rounded, and rarely do they approach a ninety degree angle. Often one shoulder will be sharp and the other rounded.

Notch shape tends to be broad, fairly shallow and U or V-shaped. In some Montana collections, points are alternately notched. Occasionally, one notch will be unidirectional, and the other bidirectional.

Stems are characteristically short and expanded. The point-tangs are rounded and seldom sharp. Basal thinning and grinding is characteristic of the type. Bases may be convex, straight or concave. It is apparent that concave bases are largely due to basal thinning and grinding. Bases may be wider than or narrower than the shoulders. Most commonly, base width is equal to shoulder width.

The distribution of Besant points is spatially discontinuous with the points predominately occurring in the Plains areas of Alberta, Saskatchewan, Manitoba, North Dakota and Northern South Dakota. In Eastern Montana, the points are found in the Missouri, Milk and Musselshell drainage areas. In Western Montana, the point-type appears infrequently (Foor 1982). It has been identified in portions of the mountains surrounding the Avon quarry (Reeves 1983), at the Graybeal site (Flint and Sappington 1980), in the Kootenai River area (Roll
1982; Taylor 1973) and possibly on the middle portion of the Clark Fork River (Ryan 1977).

Reeves (1983) noted that the beginning of the Besant Phase had different radiocarbon dates from east to west in the Northern Plains. In the Missouri River area of North Dakota, "radiocarbon dates place its beginning at about A.D. 100-200 in the Belle Fouche and Northern Montana area, and at A.D. 150-250 in the Saskatchewan Basin" (Reeves 1983:93). In Northern Montana, radiocarbon dates placed the end of the phase as occurring about 750 A.D. (Reeves 1983). Frison (1978) indicated radiocarbon dates of 150 A.D. and 280 A.D. for the Ruby site, and 230 A.D. for the Muddy Creek site, both of which were complex Besant bison kill sites located in Wyoming.

Kehoe (1966) suggested that Besant was affiliated with Woodland Algonkian people who were displaced by an influx of Northern Canada Athabaskans. He inferred that the Athabaskans brought with them sophisticated game-driving techniques and bow and arrow technology represented by Avonlea points, which were the first arrow points utilized on the Northern Plains.

Reeves believes that Besant:

"...represents an intrusive population from the Northeastern Plains and adjacent woodlands, which as a consequence of participation in the Hopewell Interaction Sphere, expanded onto the Northern Plains, partially displacing the resident populations of the Pelican Lake Phase.. Their dominance over the resident population was incomplete, with the result that the TUNAXA (Pelican Lake) cultural tradition persisted into the Avonlea Phase, which exists coevally with Besant.." (Reeves 1983:iii. (parentheses added)).
**Small Side-Notch**

Three small side-notch arrow points have been recovered from sites 24MN26, 10SE279 and 10SE292. Descriptive data and illustrations of the three points are presented below in Table #12 and Figure #33.

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE #</th>
<th>Projectile Point #</th>
<th>Max Length</th>
<th>Max Width</th>
<th>Notch Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>10SE279</td>
<td>24</td>
<td>15mm</td>
<td>14mm</td>
<td>10mm</td>
</tr>
<tr>
<td>Side</td>
<td>10SE292</td>
<td>01</td>
<td>20mm</td>
<td>15mm</td>
<td>9mm</td>
</tr>
<tr>
<td>Notch</td>
<td>24MN26</td>
<td>01</td>
<td>26mm</td>
<td>15mm</td>
<td>7mm</td>
</tr>
</tbody>
</table>

**FIGURE #33**

This point-type is common throughout the Great Basin, Plains and Columbia Plateau, and is considered to be a temporal marker for late occupations dating after 1200 A.D.

The points are small, triangularly shaped with excurvate blade edges, well-defined side-notches and a concave base.
FEATURES

During the course of pre-field research for this project, it became clear that predominately two types of prehistoric features, rock cairns and “talus slope pits”, could be expected to occur in the stateline area. Subsequent field survey revealed that most of the aboriginal rock cairns had been destroyed, but that most of the pit features were intact.

Pit Features

Based on Ethnographic analogy, these pits appear to be hunting blinds (Muir 1894; Steward 1938; Spears 1892), and are associated with hunting methods of the Shoshone and Paiute. These pit features were constructed in talus areas by removing rocks from a small area (about 1.0 to 3.0 meters in diameter), and placing them around the perimeter of the area to form a small pit. All the pits I found in my research area were in talus, except for the pit at 24MN1001. This pit resembles a “glory hole” or prospectors’ pit. Table #13 indicates dimensions of the pit features in the area I surveyed.

All of the pit features I observed were constructed near game trails, watering areas or game crossings located in saddles. The features always occurred near the bottom edge of the talus, with the exception of the pit at 24MN166/10SE299, which was at the top of the talus slope. The use and construction of these features has been well-documented for the Great Basin portions of the Plateau area, and along the Salmon River (Muir 1894, Steward 1938; Spears 1892;
Butler 1978). However, it seems that the feature type is not well-known from the Montana area.

### TABLE #13

<table>
<thead>
<tr>
<th>SITE #</th>
<th>PIT #</th>
<th>Dimensions (meters)</th>
<th>Depth</th>
<th>Talus assoc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MT      ID      N/S</td>
<td></td>
<td>E/W</td>
</tr>
<tr>
<td>24MN167</td>
<td>1GSE300</td>
<td>1        1.00 1.12</td>
<td>.28</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.95     1.00</td>
<td>.32</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.80     .85</td>
<td>.26</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.80     .80</td>
<td>.25</td>
<td>Yes</td>
</tr>
<tr>
<td>24MN1023</td>
<td>1GSE297</td>
<td>1        2.95 3.20</td>
<td>1.20</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.50    2.75</td>
<td>.95</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2.25    2.00</td>
<td>1.00</td>
<td>Yes</td>
</tr>
<tr>
<td>24MN1001</td>
<td>1GSE288</td>
<td>1        3.00 2.50</td>
<td>1.50</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2.00    2.10</td>
<td>.75</td>
<td>Yes</td>
</tr>
<tr>
<td>24MN169</td>
<td>1GSE285</td>
<td>1        1.50 1.00</td>
<td>.70</td>
<td>Yes</td>
</tr>
<tr>
<td>24MN166</td>
<td>1GSE299</td>
<td>1        2.00 2.00</td>
<td>.40</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>1GSE290</td>
<td>1        2.50 2.25</td>
<td>.80</td>
<td>Yes</td>
</tr>
<tr>
<td>24MN1009</td>
<td>1GSE298</td>
<td>---</td>
<td>Features no longer present</td>
<td></td>
</tr>
</tbody>
</table>

**Ethnographic References**

Steward (1938:37), in his monograph on Basin and Plateau Aboriginal Sociopolitical Groups, noted a method used by the Paiutes during the rutting season when rams were dueling. This involved knocking two logs together in limitation of the impact of the rams' horns during the duel. Concealed hunters were then able to kill individuals attracted by the noise. Steward (1938) states concealment was often within circular roofless enclosures.

Spears (1892:73), a New York Sun Reporter, reported on a method of hunting involving blinds:
“These sheep find their feed on the benches and gulches of the mountain side, and while eating, it is said they never look upward. But when they are alarmed, they fly to the top, and if there is a ridge there, follow it to the highest peak. Having observed this peculiarity, the Paiutes (sic) build blinds on the ridge-top runways. They started in the fall of 1891 to build a number of such blinds on crests overlooking several Death Valley trails. The blinds were in all cases low semi-circular walls of stone... When all preparations were complete (the Indians) posted their best marksmen in the blinds while the others chased the sheep up to the slaughter”

Muir provides a description of bighorn hunting blinds in the mountains of Nevada. He notes that:

“On the tops of nearly every one of the Nevada mountains that I have visited, I found small, nest-like enclosures built of stones in which, as I afterward learned, one or more Indians would be in wait while their companions scoured the ridges below, knowing that the alarmed sheep would surely run to the summit, and when they could be made to approach with the wind, they were shot at short range” (1894:244-245).

Muir also describes a communal method of bighorn hunting that required a large group effort for success.

“Still larger bands of Indians used to make extensive hunts upon some dominant mountain much frequented by the sheep, such as Mount Grant on the Wassuck Range to the west of Walker Lake. On some particular spot, favorably situated with reference to the well-known trails of the sheep, they built a high-walled corral, with long guiding wings diverging from the gateway; and into this enclosure they sometimes succeeded in driving the noble game. Great numbers of Indians were, of course, required, more, indeed,
than they could usually muster, counting in squaws, children, and all; they were compelled, therefore, to build rows of dummy hunters out of stones, along the ridge-tops which they wished to prevent the sheep from crossing. And without discrediting the sagacity of the game, these dummies were found effective; for, with a few live Indians moving about excitedly among them, they could hardly be distinguished at a little distance from men, by anyone not in the secret. The whole ridge-top then seemed to be alive with hunters” (Muir 1894:244-245).

Archaeological References

Grant (1965) has identified “great numbers” of stone hunting blinds in the Coso Mountain Range of Inyo County, California. He noted that simple petroglyphs were often found in association with these blinds, and the blinds were generally constructed about six meters above the floor of narrow basaltic gorges common to this locality (1965:8-9). In conjunction with the blind features, Grant has observed rock piles “on the edges of walled canyons and near spots where the cliffs broke down and the bighorn might escape” (Grant 1965:9). These rock piles were located on the “north-facing or shady side of the gorges where they would show up in silhouette from below” (Grant 1965:9). Moratto (1984:418) dates the Coso Range petroglyphs “as probably beginning during the Gysum Period (4000-1500 B.P.), and terminating in the following Saratoga Springs Period (1500 – 700 B.P ) or later”.

Grant, et al. (1968) have also noted an association between hunting blinds and Coso Range petroglyphs and projectile points, which they believe indicate
that the petroglyphs reflect a change in style through time that also illustrate the change from the atlatl to the bow and arrow. In the local phase sequence (Hillebrand 1972), this would date the rock art between the Ray and Chapman Phase (approximately 4500 B.P. to 1000 B.P.). The Ray Phase lithic assemblage is characterized by Pinto points, Elko-Eared and Elko Corner-notched points and large concave-base points. The Chapman Phase lithic assemblage is marked by an increase in both quantity and quality of obsidian tools, the disappearance of Elko point forms and the introduction of Rose Spring series points, and the later appearance of Desert Side-notch and Cottonwood Triangular points.

Grant, et al. (1968:114) believed that the Coso Mountain Range was the center of a hunting ritual that diffused east into Utah and Arizona and northward to the Columbia Plateau. They also correlated it, in part, with the spread of Numic language groups into the Great Basin.

Moratto (1984:418) suggested that the Coso Mountains data compiled by Grant may be most important for presenting evidence that the Coso materials represent “a cultural tradition that persists through several archaeological phases, suggesting that there is considerably more cultural continuity than recognized in the archaeological assemblage” In Death Valley, located east of the Coso Range, Wallace (n.d.) and Hunt (1960) noted the same type of hunting blind features with rock piles in association that Grant found.
A number of authors have reported the presence of hunting blind features in various areas of Idaho. Butler (1978) noted that, in the upper Snake and Salmon River country:

"Hunting blinds are probably the most common rock structures encountered. These exhibit patterns of location and distribution that appear to be related to the hunting of a specific species of animal" (1978:56).

Butler has observed stone hunting blinds:

"High up on talus slopes within mountain sheep winter ranges along the Salmon River; they were rarely at the tops of ridges however. In the basin and range province south of the Snake River, similar blinds are located on ridge-tops, which may simply reflect local topographic conditions. Slopes along the Salmon River are generally More precipitous than those in the Basin and Range province" (1978:57).

Epperson (1977) recorded the presence of hunting blinds while conducting a Survey in the Challis, Idaho area. He estimated approximately seventy percent of the stone structures recorded were located on talus slopes toward the lower edge of the slope, and over fifty percent were within five meters of the bottom edge of the talus. Of the ninety-six talus depressions recorded, twenty-one were associated with lithic scatters, and the remaining talus depressions occurred at twenty sites, in groups of from two to eleven features per site (1977:28).

Kingsbury (1977) has noted the presence of talus slope hunting blinds in the Little Lost River-Birch Creek Bureau of Land Management Planning Unit in Idaho (located in the Challis and Targhee National Forest area). He noted five distinct features that characterized the talus pit depressions:
1) Talus pits were usually found with ten meters up
the slope from the terminus of the talus deposit;

2) A water source in the form of a spring or stream
was associated with the majority of the talus
depressions;

3) Present-day big game trails were associated with
all talus depressions;

4) Presence of a single talus pit frequently indicated
the presence of others in the surrounding area; and

5) Size of the talus pits was fairly consistent in regard
to dimensions.

Kingsbury believed it might be possible to construct a predictive model based
on his findings (Larry Kingsbury, personal communication: 1984).

Butler (1978) reported one of the most interesting hunting blind sites was the
East Fork Lookout:

"The East Fork Lookout is located within a known
mountain sheep wintering range on a high, extensive
ryolite talus slope overlooking the east fork of the
Salmon. Between this slope and the river are steep,
sagebrush covered hills. On the slope and above
it are scattered Douglas Fir (pseudotsuga menziesii)
At the foot of the slope is a spring hidden by a dense
growth of willows and marsh plants. Just above the
spring are several hunting blinds; more occur further
up the slope and on the ridges above the site. All
over the lower part of the rhyolite slope there is
abundant and clear evidence of prehistoric tool
manufacturing, but no diagnostic artifacts are to be
found. There is also a structure here best described
as a house. It was built by prying rocks up from the
surface of the rhyolite slope and piling them up around the pit thus created. The final shape of the structure is like that of an old-fashioned beehive with an open top, except that there is a definite rampway on the west side of the structure and indications that there was a covered roof. The structure is approximately 9.5 feet deep. The indications of a covered roof are in the form of thick tree limb sections incorporated in the inner walls of the house and also lying on the ground and immediately outside the house. The limb sections are all of Douglas Fir. One of those incorporated in the house itself yielded a radiocarbon date of A.D. 1340 +/- seventy years (WSU-1587); another lying on the ground outside the house yielded a date of A.D. 1510 +/- seventy years (WSU-1705). Wood from another set of hunting blinds only a few miles away in a similar setting yielded a date of A.D. 1290 +/- seventy years (WSU-1740). Thus, there appears to be a fairly strong indication that these large hunting blind complexes in mountain sheep wintering ranges were well-established at the beginning of the Late Archaic Period” (Butler 1978:73).

Based upon the previous documentation, stone hunting blinds seem to be well-documented features, both ethnographically and archaeologically.

Rock Cairns

Several rock cairns were present within the research area (see Site Descriptions). Apparently, many more were once present, but have been destroyed (LaCombe n.d.). LaCombe (personal communication) noted that many cairns, apparently prehistoric, were once located in the vicinity of sites 24MN1003 10SE289, 24MN1004 10SE286, 24MN1022 10SE301 and
24MN1009 10SE298. Most of the cairns that I observed during my field survey can be attributed to the Historic Period. The one exception to this would be the cairn at site 24MN168 10SE284. This cairn was well-sodded in, and the rocks had extensive lichen growth.

Other cairns in the area appeared to be historic, and are associated with historic milepost markers, probably placed by United States Geological Survey and United States Forest Service personnel. These cairns were large (+/- 10 meter in height), the rocks did not have any lichen growth present, and the brass survey caps were located in association.
INTERPRETATIONS

I would like to now return to the research problems that I presented in Chapter One. Problem Number One: What are the relative dates of observed cultural materials, as based on artifact type and features of known assignable age?

No definitive chronologies have yet been devised for cultural materials from the Northern Bitterroot Range or West Central Montana. Most of the schemes archaeologists have used for this area derived from other regions. Figure #38 illustrates these various prehistoric chronological classification systems. All of these chronologies use projectile points as time diagnostic indicators of various phases or periods. This is due to the fact that point-styles seem to change more frequently in the Northern Rockies than do other artifact types. This approach has been criticized for its many abuses, and also because archaeologists have tended to equate point types with cultures, which may be erroneous (Deaver 1982; Chance and Chance 1982; Lahren 1976; McCollough and Wilson 1982). Prior to discussing the chronological scheme that I used for this report, a brief review of other researchers' approaches to temporal classification seems necessary.

One of the first chronologies developed for Montana was proposed by Mulloy (1958). Most of Mulloy's scheme was based on excavations carried out at Pictograph Cave, and a comparison of this material with other cultural material from Cultural Chronological Schemes used in the Northern Rocky Mountains McLeod and Melton 1986:V-3) and elsewhere in the Northern Plains.
FIGURE #34
Cultural Chronological Schemes used in the Northern Rocky Mountains (McLeod and Melton 1986:V-3)

<table>
<thead>
<tr>
<th>PREHISTORIC CHRONOLOGICAL SEQUENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATE</strong></td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>10000</td>
</tr>
<tr>
<td>9000</td>
</tr>
<tr>
<td>8000</td>
</tr>
<tr>
<td>7000</td>
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<td>3000</td>
</tr>
<tr>
<td>1000</td>
</tr>
<tr>
<td>0000</td>
</tr>
</tbody>
</table>
Mulloy's work still influences the way most archaeologists view prehistoric materials from the Plains. Malouf (1956) proposed a chronology for western Montana materials based on changing terrace heights and projectile points found at Flathead Lake near Dayton, Montana. Malouf believed this approach to be inadequate, but the best that could be done at the time. Leonardy and Rice (1970) proposed a chronology for the lower Snake River in Idaho. This scheme was extended into the Clearwater River area by Ames (1980) and Benson, et al. (1979). Leonardy and Rice (1970) identified the Cascade Phase, characterized, in part, by the presence of bipointed Cascade points. Although Cascade points have not been found in the project area, they have been found nearby at Weitas Creek (Keller 1973).

Roll (1982) proposed a chronological sequence based on his work in the Libby area, which encompassed the project area, and identified it as the “Barrier Falls Sub-Area.” Roll’s Calx Phase corresponds to McKean Complex, and Kavalla Phase corresponds to Pelican Lake, or the Harder Phase of Leonardy and Rice. Roll dated his Calx Phase as occurring between 4500 B.P. to 1800 B.P. Roll (1982) saw his phases as a tentative construct because he had few cultural materials from which to define the phase.

Reeves' (1972:1975) sequence for the Northern Rockies identified six integrated subphases and complexes. His conclusions were based on a large survey and excavation in Waterton Lakes National Park located in Alberta,
Canada. Cultural materials from the stateline area seem similar to Reeves' Bellevue Hill Subphase. Diagnostic points from this subphase include Oxbow, McKean, Besant, Pelican Lake corner-notch and locally named variants (1972:102-104). Reeves dates the subphase as between 7500 B.P. and 2500 B.P. (1972:104). Reeves' (1970; 1972; 1980) Blue Slate Canyon Subphase, dating between 3000 B.P. and 1600 B.P., may also be applicable to Montana. Reeves' criteria for defining this subphase have been criticized, however, since he has not published his data from the Blue Slate Canyon Kill site, which is the type site for the phase (Fredlund 1979:18).

Reeves (1969) also proposed a chronology for the Southern Alberta Plains, which is very commonly used for the Plains (Roll 1982), and has also been used west of the Continental Divide (Choquette 1971). Various other authors including Swanson (1972), Taylor (1973), Frison (1978) and Flint and Sappington (1982) have also suggested chronological sequences for the Northern Rockies (see Figure #38).

The chronological scheme I have chosen for interpretation of projectile points from the Northern Bitterroot Range is one devised by McLeod and Melton (1986) for their prehistoric overview of the Lolo and Bitterroot National Forests. McLeod and Melton (1986:V-16) note that their scheme is a modified version of ones presented by Reeves (1969) and Frison (1978). Their scheme includes three major periods: Early (10000 B.C. to 5500 B.C.); Middle 5500 B.C. to A.D. 500); and Late (A.D. 500 to A.D. 1700). This chronological scheme is presented in Figure #35.
**FIGURE #35**

**PREHISTORIC CHRONOLOGICAL SEQUENCE**

<table>
<thead>
<tr>
<th>PREHISTORIC PERIOD</th>
<th>YEARS B.C.</th>
<th>YEARS B.P</th>
<th>CHARACTERISTIC POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LATE PREHISTORIC</td>
<td>500 to 1700 AD</td>
<td>1500 to 200 BP</td>
<td>Avonlea. Various small side and corner-notch forms. Columbia Valley cn.</td>
</tr>
<tr>
<td>LATE MIDDLE</td>
<td>1500 BC to AD 500</td>
<td>3500 to 1500 BP</td>
<td>Pelican Lake and variants. Besant.</td>
</tr>
<tr>
<td>MIDDLE MIDDLE</td>
<td>2500 to 1500 BC</td>
<td>4500 to 3500 BP</td>
<td>Duncan, Hanna and McKean, Mallory side-notch and Yonkee(?)</td>
</tr>
<tr>
<td>EARLY MIDDLE</td>
<td>5500 to 2500 BC</td>
<td>7500 to 4500 BP</td>
<td>Mummy Cave, Salmon River and Bitterroot Side-notch. Oxbow Mt. Albion(?)</td>
</tr>
<tr>
<td>EARLY PREHISTORIC</td>
<td>10000 to 5500 BC</td>
<td>12000 to 7500 BP</td>
<td>Clovis, Folsom, Windust, Agate Basin, Cascade Alberta, Lusk</td>
</tr>
</tbody>
</table>

I have chosen this chronological framework because it uses readily identifiable terminology and facilitates my comparison of artifacts with artifacts from elsewhere on the Lolo and Bitterroot National Forests.

In the "Projectile Points" section of this thesis, I typed points based on outline, shape and size. Since I only had drawings of artifacts to work with, I would prefer that the typology presented be viewed as a "working model", rather than a definitive statement. (A bar graph frequency distribution of these points is illustrated in Figure #36).
I believe that the projectile points reported on represented the range of variation of point-types common to the area. My basis for making this assumption is illustrated in Figure #37. This bar graph shows the relationship between point-
types from the Dalton site (10SE279), and point-types from all other sites in the research area. As the graph shows (Figure #37), there is a close correspondence between point-types recovered from the Dalton site and a sample of point-types from the rest of the research area.

If we assume that the former statements are valid, it becomes possible to construct a graph which shows relative percentages of various point-types for the research area as a whole (see Figure #38). As this graph illustrates, the majority of recovered points are from the McKean Complex. My data also tends to support Fredlund's and LaCombe's research, which also indicated that the majority of sites in this area dated from the Middle Period (Fredlund, et al. 1971).

Placement of diagnostic points within my chronological framework indicates that over ninety-three percent of the diagnostic points may date from the Middle Period. If the McLeod and Melton point sequence for the Bitterroot and Lolo Forests is accurate, my research suggests a temporal range of 7500 B.P. to 1500 B.P. for the area as a whole (Figure #39).
The next question I wish to examine is: How do the dates, based on point chronology, correspond to known dates of features examined in the study area? Unfortunately, no dates exists for specific blind features in the research area. Grant's dates (1968) from California indicate considerable time depth, while Swanson, et al.'s dates (1964), located much closer to the Bitterroots, indicate relatively recent occupations. It should be noted, however, that Swanson's dates are only based on radiocarbon dates of one feature. Until more radiocarbon dates are available for blind features contiguous to the research area, no firm dates can be assigned to them.

Problem Number 2. Define areas where particular behaviors took place, and establish intersite relationships from analysis of the distribution of specific types of features and materials including rock piles, hunting blinds and artifacts.
In my survey of the area between Missoula Lake and Flattop Mountain, I located seventeen sites. All of these sites, except for 10SE292 and 24MN168 10SE284 are related to game drives. Based on topography and specific site components, certain groups of these sites seem to be related. The purpose of this section is to explain these intersite relationships.

In the features section of this thesis, I presented ethnographic data which showed how pit features and rock piles were used in conjunction with hunting large ungulates. There is also another feature, environmental in nature, which was used to facilitate hunting. This topographic feature is the ridgeline saddle.

Turney-High (1937) described the technique for using these saddles. The hunter was stationed in the saddle while other members of the hunting party dropped below and slowly moved up the basin forcing the game uphill. When game is driven in this way, they ascend the slope, cross the ridgeline in the saddle and descend into the next basin. A hunter stationed in the saddle comes into close contact with his prey, thereby greatly increasing his chances of a kill.

There appears to be four distinct groupings of sites which may form four separate game drives. Each of these groupings is characterized by similar featured artifacts and topographic characteristics. All four game drives have a collecting basin where large ungulates naturally congregate. Members of the hunting party would drift the animals up toward the hunters concealed in talus slope pit blinds and waiting in ambush in the saddles. Rock piles were
constructed in areas where the animals could possibly escape. The rock piles simulated people, thereby frightening the animals back toward the saddles or talus slope pits. In other areas, animals could be driven past the hunters who waited in the pits, which had been dug into large areas of talus deposit. In these instances, the animals were forced to pick their way slowly through the rocks, thus slowing them down and making a kill easier.

The specific components of each of these drives are explained below. I have included a map for each of these same drives which shows, by dots, where the game was most likely driven. Arrows indicate the direction from where animals were drifted.

**Game Driven Number One:**

The collecting basin for Game Driven Number One is bound by Frog Lake, Bonanza Lake and Binocular Peak. Members of the hunting party would work up

*FIGURE #40 Game Drive #1 Intersite Analysis Map*
the north branch of Sherlock Creek, slowly driving the game toward the ambush sites located in the saddles and along the cliff edge. The specific sites that make up this game drive include 10SE290, 24MN1006, 10SE294, 10SE295, 24MN1001, 24MN1007 10SE306, 24MN1008, 10SE296 and 10SE301 24MN1022

At site 10SE290, one talus slope pit overlooks the saddle due northwest of Frog Lake. Although no artifacts were found in this saddle due to poor ground surface visibility, there is a high probability that chipping debris and artifacts are located in the saddle. Projectile points dating to the Middle Period were found at the rest of the sites that make up this game drive. At site 24MN1022 10SE301, scrapers, bifaces and flakes have been found. Their presence suggests this area may have been a processing station for the entire drive area. Numerous basalt flakes were found at site 24MN1008 10SE296. Basalt was the most common material used for artifact manufacture during the Middle Period. The most important portion of this drive was in the vicinity of 10SE295. As game was driven up the north fork of Sherlock Creek to its spring-fed headwaters, their most natural crossing area would be at the location of 10SE295. At 10SE295, 24MN1006 10SE294 and 24MN1001, a large number of Middle Period points have been found.

At site 24MN1007 10SE306, basalt flakes also predominated. A large corner-notch point and three scrapers have also been recovered from this site. Based
on the presence of the scrapers, I suggest this area may also have served as a processing area for animals killed in the vicinity of site 10SE295.

At site 24MN1001, eleven points had previously been collected, thus supporting my contention that a large number of ungulates were killed in the immediate vicinity.

**Game Drive Number Two:**

Game Drive Number Two is very similar to Game Drive Number One. The collecting basin is located on the Idaho side of the stateline at the headwaters of Heller Creek. In this area, animals were driven northeast toward the cliffs above Heart Lake. The specific sites that make up this drive include 10SE288, possibly 10SE292, 24MN1005 10SE293 and 10SE290. At sites 10SE288 and 10SE290, talus slope pits were located on the edge of saddles. These two sites form the

**FIGURE #41 Game Drive #2 Interstate Analysis Map**
wings of the drive area. As animals were driven toward the cliff, any animals crossing at either of these saddles could be easily ambushed. At both these sites, no artifacts were found in the saddle. This is maybe due to the extremely poor ground surface visibility. At site 24MN1005 10SE293, a Duncan point was collected, along with two small corner-notch points. At site 10SE292, one side-notch point has been found. A pestle was also found. The presence of the pestle suggests food processing activities normally associated with family groups and/or later time periods. It also suggests that the area may have functioned as a campsite.

Game Drive Number Three:

Game Drive Number Three consists of sites 10SE288, 10SE292, 24MN1003 10SE286 and an unrecorded site located due west one-half mile from 24MN1003 10SE289 (William LaCombe, personal communication). The collecting basin for this game drive area is located near the headwaters of Simmons Creek at a small lake.

FIGURE #42 Game Drive #3 Intersite Analysis Map
Animals were driven northeast from this lake toward the cliffs along the state line. The unrecorded site and site 10SE288 both have talus slope pits in areas where the animals could be expected to escape if they were not driven toward the cliffs. At both sites 24MN1004 10SE286 and 24MN1003 10SE289, a large number of rock piles used to be present (Williams LaCombe, personal communication). The rock piles frightened the game, keeping them from escaping in a northerly direction, and they continued heading east toward the cliffs above Hidden Lake. Three projectile points of unknown type were previously collected from these sites. Since the point-types are unknown, no temporal range can be assigned to this drive. The unrecorded site due west of 24MN1003 10SE289 consists of a talus slope pit feature with rock piles in association (William LaCombe, personal communication).

Game Drive Number Four:

Game Drive Number Four is the same game drive that Dale Fredlund explained in his manuscript report “Alpine Archaeology in the Bitterroot Mountains of Montana” (1971). Fredlund (1971) described the drive as consisting of a cirque headwall which crests at the saddle of a long ridge. Pit features were located in the saddles. Game animals were driven past the pits onto a large talus slope, which covers the slope south of the ridge. Projectile points, presumably from missed shots, were found among the talus boulders (Fredlund 1971). The specific sites that make up this drive include 24MN1022
10SE301, 24MN1023 10SE297 and 24MN1009 10SE298. The collecting basin for these drives is located on the Montana side of the stateline in Cataract Basin.

FIGURE #43 Game Drive #4 Intersite Analysis Map

and Bonanza Gulch. Large mammals were driven out of this basin just south of Bonanza Lake up toward the stateline near site 24MN1023 10SE297. This is evidenced by the presence of a large amount of lithic debitage. Three of the pit features that Fredlund discussed are located on-site. This is also the area where the concentrations of talus begin, and continue toward the south. 24MN1009 10SE298 is located at the southern end of this drive. Eight large corner-notch points and one lanceolate McKean have been recovered from the talus here. Two talus slope pits and two rock piles previously existed on-site 24MN1009 10SE298, but have since been destroyed. There is a good possibility that more pits and rock piles were located in this area (24MN1009 10SE298). Based on
the presence of the two McKean points, one Pelican Lake point and eight large corner-notch points, this game drive can firmly be placed within the Middle Period temporal range.

The case for Game Drive Number Four and Game Drive Number One is good. Game Drive Numbers Two and Three are somewhat conjectural. However, Game Drive Two and Three have essentially similar topographic characteristics and feature components as Game Drives One and Four. Game Drives Two and Three could be more thoroughly investigated by subsurface testing at sites 24MN1005 10SE298, 24MN1003 10SE289 and 24MN1004 10SE286. Projectile points should be found in these localities if my interpretations are correct.

The prehistoric hunting techniques used by these archaic people living during the Middle Period are still used effectively today by modern hunters. I have used similar techniques of ambushing game in saddles while hiding in blinds. Larry Kingsbury of the Butte Bureau of Land Management office reports he has also used these similar techniques successfully.
CONCLUSION

My research indicates that ninety-three percent of time diagnostic artifacts date to the Middle Prehistoric Period, and that archaeological sites along the state line were integrated into specific groups that formed game drives. During the Middle Period, the climate was different from today, and hunting techniques were also different. The types of animals hunted from these drives could have been deer, caribou, mountain sheep and elk during the Late Prehistoric Period. It is impossible to say specifically which species were hunted since no faunal remains have been found at any of the sites.

Although most of the sites and artifacts date to the Middle Period, several small side-notch points date to Late Prehistoric time periods. Small side-notch points were used by a variety of distinct cultural groups which traversed the Bitterroot Range. The Flathead Indians came to the area during the summer and fall months from lower elevations to hunt and gather. The Nex Perce came to the southern portion of this area in Late Prehistoric times. In the northern portion of the area, the Coeur d'Alene occasionally hunted. That the Coeur d'Alene occupied this area was brought out in testimony in an Indian land claims case during the 1950s (Carling Malouf, personal communication). The Pend d'Oreille also visited this area by traveling west from the Clark Fork Drainage. The Agaiduka and Tukaduke Shoshone also occupied the Bitterroot Mountains (Trenholm and Carley 1964:22). They were the Native Americans presently living in the area when the first white explorers arrived.
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