PALEOINDIAN LAND USE
IN
GLACIER NATIONAL PARK

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It has generally been understood that Glacier National Park (GNP) has a 10,000 year culture history as implied by the archeological record of GNP, park brochures, numerous publications (Reeves 2003), and governmental, corporate, and private web sites (nps.gov, Wikipedia.com, fcvb.org). However, this presumption is based upon a very weak record of Paleoindian occupation within park boundaries represented by two isolated, surface discoveries, and three typologically non-diagnostic, non-stratified basalt knives. Of the three represented ‘sites’, only one potentially represents Alpine land use within GNP and may or may not be related to Paleoindian activities. This paper examines this lone Paleoindian alpine site in order to extract a logical explanation of its deposition and to offer up possible evidence of early human occupation in one of the more remote and inaccessible regions of GNP.

CHRONOLOGY

Time frames in relation to diagnostic artifacts within this paper follow University of Montana Professor (emeritus), Dr. Thomas Foor’s (personal communication) Early, Middle, and Late period prehistoric chronology (table 1). This coincides with the introduction or use of Spear, Atlatl, and Bow technologies in Western North America. Although this chronological sequence does not address the overlap between the presented technologies, it is completely adequate in addressing the individual artifacts, whether surface finds, or within a stratified context.

<table>
<thead>
<tr>
<th>Period</th>
<th>Technology</th>
<th>Chronology</th>
<th>Typological Indicators</th>
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<tr>
<td>Late</td>
<td>Bow</td>
<td>Circa 1500bp to Euro</td>
<td>Prairie/ Plains complex, Besant, Avonlea, etc.</td>
<td>Kooyman 2000</td>
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<td></td>
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<td>European contact</td>
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<tr>
<td>Middle</td>
<td>Atlatl</td>
<td>Circa 8ka to circa 1500bp</td>
<td>Bitterroot, Oxbow, McKean, Pelican Lake, etc.</td>
<td>Frison 1991, Husted, Kooyman 2000</td>
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Within GNP, evidence of human land and resource use increases with temporal succession. This is to be expected as human populations and climatic warming trends increased following the terminal Pleistocene. This increase in land use occurs not only in the more habitable valleys and lowlands, but in alpine regions as well. The earliest noticeable increase in the park appears around 5 to 6,000 years ago and is evident by numerous diagnostic finds of Bitterroot and Oxbow points (Reeves 2003). This may be the result of lowered bison populations available on the plains during this period (Frison 1998). The sudden ‘stress’ of the diminished bison resource likely forced human populations to switch to hunting territories that may have held higher game population densities than that seen today (Kelly and Todd 1988). The archeological record preceding these ‘dated’ sites is relatively non-existent within GNP boundaries.

Overall, this temporal framework of prehistoric land use is indicative of most of the Rocky Mountain region of the western United States, and appears to coincide with GNP’s ‘sister’ park, Waterton Lakes National Park, in Alberta (Reeves 2003) as well as that of Grand Teton National Park in Wyoming (Wright 1984). Both of these parks share certain similarities with GNP based upon extreme elevation changes and environmental conditions.

Further south, the archeological record in Rocky Mountain National Park, Colorado has produced larger assemblages of Paleoindian artifacts. These surface collections were composed primarily of Agate Basin and Eden points dating to around 10Ka (Benedict 1992). Although this appears to ‘break’ from the archeological record of the more northern latitudes, it should be remembered that this more southerly region of the Rocky Mountains was probably free from ice at an earlier date. Benedict (1992, p.345) states that the environment at 10ka in this region was
at least as warm as the present, and that the artifacts represent travel corridors rather than alpine occupations.

**PALEOINDIAN EVIDENCE IN GLACIER PARK**

The first Paleoindian indicator found in Glacier National Park was located by a park fire crew practicing the construction of a fire line. In 1983, over a period of two days, they located and removed at least three basalt bifacial ‘knives’ which were spread over several meters and lay upon an existing game trail, or slightly down slope of it. Reeves (2003) speculated they were of a Paleoindian style, but he offered no additional support for the claim in his study.

Jeff Kuhn, GNP seasonal ranger, in 1984 located the second of the park’s reported Paleoindian discoveries. Along the Belly River trail he found, lying within the trail, the basal portion of a Clovis point. Reeves (2003) conducted the first and only testing of the site area. The only additional material located in proximity was a ‘flake of red-brown chert’ 10cm below surface along with three pieces of calcined bone. In addition, his archeological field crew also noted ‘fire-cracked’ rock in a rodent’s back pile.

In 1985, backcountry ranger, Jerry DeSanto was riding between Boulder Pass and the Hole-in-the-Wall Cirque when he noticed a shiny object reflecting from a talus slope above the trail. Leaving his horse, he proceeded on foot up to the object where he located a large obsidian biface lying upon a large boulder. This biface was characteristic of an Alberta age projectile point with its large stem and abrupt shoulders (circa 9,500 to 8,200 years before present). Mr. DeSanto returned to West Glacier with the point and recorded the find’s location by hand on a map. Reeves (1995) later described the site at an elevation of 7730 feet above sea level in an area ‘hundreds of meters above any potential hunting area’ (p. 52) based off of his personal communications with DeSanto. However, this appears to contradict the statements made by
DeSanto in a letter sent to the park dated March 8, 1987 where he claims the discovery was even higher at 7840 feet above sea level, “on an ‘open, non-vegetated scree slope’” (personal letter to Ellen Seeley, GNP Archivist, March 8, 1987).

The exact location of this discovery is unknown, except by the ‘hand plotting’ of its location by DeSanto. No photographs of the site were available, and additional information from DeSanto is unknown. DeSanto’s ranger’s logs, which may have provided additional information from this period, were destroyed along with other documents in the 1988 Red Eagle Fire (Deirdre Shaw – personal communication).

ORIGINAl INTERPRETATIONS

Reeves’s 1995 analysis of the site appears to have been based upon personal conversations with Mr. DeSanto, and conflict with existing park records, including DeSanto’s own handwritten letter. Within the letter DeSanto also provided the UTM coordinates of the discovery site, and as seen in Figure 1 plots well below the ridge in which Reeves believed the site to have been. However, based on DeSanto’s hand plotted map and the written statement in where he located the find, as well as the site’s geologic topography (photos 2-5), it appears that the site’s location is well within the limits of animal travel.
Reeves’s analysis of this ‘find’ is that it is ‘clearly a ritual offering’ (1995, p. 53). However he offers little in the way of evidence other than the site’s location being above any hunting areas. (Here again based off of his personal communication with DeSanto.) Site 24FH874 is located in the remote alpine region of North Central Glacier National Park on the Southern side of Mount Custer. The area is dominated by glacial geomorphological characteristics that represent not only Pleistocene glaciation, but also the glacial advances and recession of numerous periods throughout the Holocene. In relation to the summit of Mount Custer, the site lies along the base of a scree slope, which originates along a narrow arête that runs westward from Mt. Custer’s summit. At an elevation of 7840 ft, this scree slope is above the existing treeline in the immediate area. Additionally, the site lies approximately 100 meters above a series of high terraced benches created by the area’s glacial past.

OTHER EVIDENCE

Evidence of prehistoric land use in the immediate area is found slightly south, and westward near and on Boulder Pass. Numerous lithic scatters, and some potential rock cairns have been located along and near the pass, and middle and late period projectile points have been located and analyzed. Currently five sites have been located that appear to hold significant area information in alpine land use during the middle period of human regional prehistory.

The second major area of human use is directly south of the Alberta point discovery within the confines of the Hole-in-the-Wall cirque. This extensive site has yielded numerous middle and late period lithic artifacts and testing by Reeves (2003) confirmed the site’s subsurface assemblage and continued use of the area consistent with the findings at or near Boulder Pass. This site is unique among alpine sites in that the ground deposition within the cirque is substantial and provides for the protection and stability of the artifact assemblage. This
site has the potential to provide a stratified culture history of area land use, yet this was not addressed in the subsurface examinations of 1993.

The most extensive regional site lies along the Bowman trail near and west of Brown’s Pass. This campground appears to have been a regular stop along the Bowman trail during the seasonal migrations of people from the Northfork of the Flathead Valley to the West, and the bison hunting grounds near Waterton, Alberta. Native Kootenai people refer to the region as the ‘Hand up in the Mountain’ (Reeves 2003). Although this trail system, and its extensive lithic assemblage provides a direct route to the Waterton Valley and the Great Plains region, it was likely a trail that was used on a less frequent basis than other area passes due to the difficulties in traversing its length (Reeves 1995).

The most common artifact at all of the before mentioned sites are reduction flakes which are made from Bowman Chert. The Bowman Quarry has been identified and located along the Bowman creek drainage along the west side of GNP and within the traditional lands of the Kootenai people. It is undoubted that other native groups may have used the source, and likely inhabited the North Fork area as well, but it appears the Kootenai had the longest continued use of the region and its resources, including the Bowman chert. This would suggest that the sites found in the ‘Hand up in the Mountain’ region were predominantly created by the activities of people related to the Kootenai.

Bowman chert occurs in all areas of GNP, with sites being dominated by its presence throughout the Kootenai’s traditional range, however the closer sites are located to traditional Blackfeet territories, its occurrence rapidly decreases. This would appear to suggest a higher use by the Kootenai of the Alpine and intermountain regions within GNP. Numerous documents and historical accounts support the seasonal migrations of the Kootenai people out onto the Northern
Plains in search of bison (Hungry Wolf 1989). However, an equal number of reports indicate that these people’s acquisition of mountain sheep and mountain goat were of greater importance within the park region. This could help to explain the number of sites that suddenly appear in alpine regions of GNP during the middle period. As more emphasis was placed on large alpine ungulates, and increases in regional populations occurred, more movement occurred between passes, and along known trail systems.

SEASONALITY

Since the high alpine passes were relatively inaccessible during the winter months, the sites are likely indicative of seasonal migrations or ‘rounds’ in which the local native people were traveling extensively up and over and throughout the alpine region during warmer months suggesting the seasonality of land use (Benedict 1992, Burtchard 2008, Flanagan 2005, Wright 1984) as seen in other regions of the Rocky Mountains and alpine areas of Western North America.

PHYSICAL EVIDENCE

As archeologists we tend to prefer to work from the known to the unknown in accessing site data and significance. So the following discussion will begin by addressing what data the individual artifact provides, and attempt to work towards a high probability hypothesis of understanding of the Alberta projectile find with a very limited data set. Before attempting to determine the possible means in which the artifact came to be placed in its location of discovery, an examination of the evidence provided by the artifact will be discussed.

From the artifact we can assign a temporal marker based upon previous research findings at stratified sites such as the Fletcher site in southern Alberta Canada where the diagnostic
artifacts were first formally analyzed, and from the Hudson-Meng site in Nebraska, which, though highly debated, appears to be the most extensive Alberta site found to date. As seen in the previous mentioned sites, this artifact is clearly a Plains manifestation meant for the acquisition of bison (Agenbroad 1978, Forbis 1968, Frison 1991, 1998). This does not rule out the presence of an Alberta point within GNP’s modern boundaries however. Bison remains have been located within numerous valley locations throughout the park (Reeves 1995, 2003), and Lee (et al 2007) notes that bison remains have been located eroding from cirque ice patches in Colorado but these were apparently deposited at a much later date in prehistory.

The Alberta point is the earliest of the shouldered and stemmed diagnostic points (Dixon 1999, Frison 2004). This stylistic design helped to direct the force of impact to the shoulder and base of the point (Frison 1991, 2004), which was a drastically different technological change from the Agate Basin and Hell Gap points that predated it. The stylistic differences between the Hell Gap and Agate Basin points to Alberta appear to address the problem of impact issues applied to the shaft. The shoulders of the Alberta projectile prevented the point from being driven back into the shaft and subsequently splitting it, as would be more likely to occur in Hell Gap points with an elongated and constricting base. As well, the thicker Alberta point also addressed the issue of easy breakage, as seen in numerous kill sites containing Agate Basin projectiles whose characteristics are stylistically much thinner (Frison 1991). It is unclear as to if these three projectiles were used as thrusting spears, or with the aid of a throwing stick (Atlatl), but the size and weight of the Alberta point makes it more likely that it was used as a spear point, since it would likely have a greater effect in the balance of a potential atlatl dart.

Alberta artifacts were, like most projectiles points, made from various materials available to the manufacturer. This included welded tuff, basalt, various silicates, and obsidian. As seen
at both the Fletcher site (Forbis 1968), and at Hudson-Meng (Agenbroad 1978), there does not appear to have been an overall preference in material type used. The artifact located and collected by Mr. DeSanto is obsidian, which was sourced to Bear Gulch near Idaho’s Centennial Mountains, west of Yellowstone National Park. X-ray Fluorescence (XRF) analysis was conducted in 1992 by Dr. Richard E Hughes utilizing a Spectrace 5000 energy dispersive XRF spectrometer. The Bear Gulch source is approximately 350 miles from the site of the artifact’s discovery.

At this time no other testing has been applied to the artifact, such as the antisera method, which would aid in determining if the point had indeed been utilized in hunting through successful contact with an intended target. Additionally, obsidian hydration testing has also not been applied to help determine at least the timeframe of manufacture of the point in which fresh surfaces on the point would have been exposed during the reduction sequence of its modification.

DEPOSITIONAL ENVIRONMENT

After analyzing the existing data on the individual artifact, the only remaining known evidence of the archeological find is the site’s geological characteristics as previously defined. Contrary to Reeves’s descriptions regarding its location of discovery and subsequent hypothesis of the site as an ‘offering’, DeSanto’s own written statement along with his plotted UTM positioning force the researcher to view the site as described by the discoverer. Based upon this information, hypothetical events are presented and analyzed in order to establish the probability of each depositional act.
THREE HYPOTHESIS

It appears that there are three possible explanations for the depositional environment in which the point was found. In addition to the proposed ‘offering’ hypothesis, these would include being dropped or discarded by a traveler, and falling from a wounded animal or representative of a ‘missed opportunity’, the latter two being hunting related events.

If we begin from Reeves’s understanding of the site location, there is good reason to assume the setting was one of ritual offering. According to his personal communications with DeSanto, the artifact was lying on an ‘unnamed’ peak with good views of the peaks along the continental divide, and ‘hundreds of meters above any potential hunting area’ (Reeves 1995, p. 52). If this were actually the depositional environment of the site, then Reeve’s interpretation of the site may indeed be highly probable and the most likely reason for its deposition at discovery. However, as before stated, we cannot dismiss DeSanto’s own written words and UTM coordinates.

Based upon acquired data provided by Jerry DeSanto in 1987, it appears that the site location is actually well away from the site area presented by Reeves. It is lower in elevation, out of site of the majority of the peaks along the continental divide, and well within the range of large ungulate game animals, whose trails through the scree slopes are easily seen in and around the area today. Additionally, it is unlikely that in this alpine environment an artifact such as the Alberta point would have survived 8 to 9 thousand years, let alone four or five thousand (Pitblado 1998). The heavy snows, high winds, and constant erosion of freeze/thaw events applied to the mountain creating the scree, and the numerous glacial advances and recessions on the landscape throughout the Holocene would have most assuredly removed the artifact and destroyed the more brittle obsidian.
The second hypothesis presented here is that of actual hunting activity in which a wounded animal carried the artifact to the area of deposition. This would seem probable based upon the location described by DeSanto as well as would address the apparent impact fracture two third of the length from its base. Again, however, there currently exists no established data in the form of antisera tests applied to the artifact, and no bone material was located in proximity of the site. In all probability, it is unlikely that any faunal remains, if this hypothesis were indeed true, would have survived thousands of years in this environment unless protected by snowpack (Benedict et al 2008, Dixon et al 2005, Pitblado 1998), which does not currently exist in the immediate site vicinity. In order to confirm or address this hypothesis, an antisera test would need to be conducted to determine if the point had made positive contact with a game animal. Negative results would not likely dismiss this hypothesis as the hunter may have missed his intended target.

A second thought on the issue of the projectile’s use in area hunting is the damage that would have undoubtedly occurred had the projectile ‘missed’ the intended target. Again the brittle nature of the obsidian would have caused a ‘missed’ opportunity to damage the point as it made contact with the rock outcroppings of the area.

The third and final hypothesis offered here is that of redistribution of the artifact by an individual much later in time than the manufacturer of it. This would entail the discovery of the artifact and its redeposition into the alpine setting. The variable in this hypothesis is who and when, and maybe even why. Who left the artifact at the point of discovery will likely never be understood. It could have happened at any period in history since the creation of the point some 9,000 years ago. It can be said with relative confidence that the point’s survivability in its discovery location would have increased as the time margin decreases.
As stated above, traces of human occupation and behavior at GNP increased dramatically during the middle period as represented by the artifact assemblages and sites found throughout the park. However, there does not appear to be a significant increase in the prehistoric record from the middle to the late period. This pattern appears to be consistent with other regional alpine site distribution patterns in the Northern Rocky Mountains (Burtchard 2008). This could be explained in two ways: either the same general population was utilizing the sites through the later two time periods, or there was a moderate shift from the alpine resources to more of a plains based subsistence pattern with regards to hunting. This last hypothesis is supported by historical references of increased bison procurement by the Kootenai (Hungry Wolf 1989, Reeves and Peacock 2001) during the late period and may be representative of an increase in bison populations on the plains after five thousand years ago.

Because the Alberta point site lies with the confines of a National Park, it cannot be dismissed that one of the hundreds of thousands of backcountry visitors may be responsible for the artifact’s location when DeSanto first viewed it. Examples of the redistribution of artifacts by modern people, and the placement of offerings in areas known to hold sacred significance to Native people, as well as a modern individual’s own spiritual outlook on the land is readily seen in such places as the Big Horn Medicine Wheel in Wyoming, or even upon Chief Mountain which lies partially within GNP borders. The Medicine Wheel site is regularly visited, not only by numerous Native groups, but also by an even larger population of non-native peoples. The site has been so heavily impacted by visitor use, that modern offerings are regularly placed upon the fence built to protect the site. Every imaginable sacred object from polished stones to bone, and modern ‘medicine bags’ can be seen ‘decorating’ the fence line. Chief Mountain itself, although a bit harder to access, has been documented numerous times with modern offerings.
Mostly in the form of bone and antler, flags and other offerings have been recent additions to its summit.

DISCUSSION

After viewing the probability of the three hypothesis presented here, it would appear that the highest probability would involve the redistribution of the artifact by a later individual for two reasons. The first case could simply be made by the fact that there were a greater subsequent number of people in the middle, late, and historic periods in and around the site area. Evidence includes the numerous archeological sites dated to the later periods, as well as increased human interaction with the landscape based on park visitor use in more modern times. As well, the geologic indicators of the alpine region of the site, and warming and cooling trends affecting snow and ice accumulations make it unlikely that the artifact would have survived in the environment in which it was located (DeSanto’s written description) for any great length of time. This would apply not only to the artifact’s discovery on the top of a boulder on a scree slope, but also to the material type in which the artifact is made. Thus its ‘survivability’ would be dependent upon a more reduced timeframe.

Reeves’s analysis appears to be made based upon conflicting evidence of the site placement and environment. The DeSanto description suggests an environment that would not likely be conducive to religious or spiritual activities, at least in regards to prehistoric people, and the archeological evidence in the park. This is not to say that Reeves’s assessment is wrong; however the conflict in the site’s actual location may affect the interpretation and reduce the probability of the site as a ritual or spiritual offering.

The final hypothesis offers no current evidence that the artifact was used in a hunting application. Although this evidence may exist in the form of trace analysis through antisera
tests, this has yet to be proven. As well, there were no associated faunal remains at or near the site, although this would be expected considering the antiquity of the artifact and the depositional environment. Game animals are known to frequent the area, and their traces can be seen through the numerous signs they leave behind such as scat and trail systems, as well as visual indicators. The available evidence of the site reduces the probability of a hunting event, but the presence of large game animals may slightly increase that level.

Based upon available data, and the probability of the hypothesis presented here, it appears that there is little doubt that the artifact is a redistribution that represents transportation of the artifact from another location. This could be verified or disproved with the use of antisera and obsidian hydration testing of the artifact. The seasonally constrained environment appears to rule out the 'seasonal round' outlined by Wright (1984) of the Grand Teton's prehistoric peoples because of the distance from alpine passes, and in particular Brown's Pass, which was likely used sparingly in prehistoric times (Reeves 2003). This redistribution may suggest, dependent on the temporal application that the artifact may become better fit to the ritual offering category, however without any additional supportive data this would be completely speculatory.

CONCLUSION

Without additional information, we’ll likely never really know how the artifact came to be deposited on Mount Custer. We know that the artifact in itself is Paleoindian; however, the probability that the artifact was redistributed appears to rule out the site as Paleoindian in nature. The research and probability model applied here could also be applied to the other diagnostic artifact located within park boundaries and would likely achieve the same results without additional information, although the probability between hypothesis may be more similar due to the environment in which it was located. The site at which the Clovis point was discovered has
failed to provide any additional data to support the claim that prehistoric man has utilized the area now known as Glacier National Park. Like the Alberta point, it could simply be the redistribution of the projectile by later human activity, yet unlike the Alberta site, the area in which this discovery was made was less subjected to the extreme environmental considerations of the Alpine environment thus raising the probability of its own depositional antiquity.

Based on probability, without further testing or evidence, it would appear that the popular belief of the Park’s archeological record extending back 10,000 years might be misleading or incorrect. It is more likely that the true archeological record of prehistoric use of Glacier National Park begins with the middle period as represented by Bitterroot and Oxbow diagnostic artifacts located in both surface and stratified sites. This would reduce park prehistory by four or five thousand years until further evidence is discovered.
NW view. Terracing SW of 24FH874

N view. Suspected 24FH874 Area
NE view. High Terrace and MT. Custer (background)

N view. Site area from below terraces
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