

archaeology along canada's rocky mountain eastern slopes



Excavations at the Upper Lovett Campsite, Alberta

BY DANIEL A. MEYER & JASON ROE

CANADA'S ROCKY MOUNTAINS and the foothills of the Eastern Slopes are, archaeologically speaking, among the least-known areas in North America. While many tourists are familiar with Banff, Jasper, and Waterton Lakes National Parks, few know about this region's past human occupation. Despite its natural beauty, most find it difficult to imagine that Canada's First Nations peoples successfully lived in this region of relatively dense conifer forests and forbidding winters for thousands of years. Even archaeologists have only relatively recently begun to understand the full extent and intensity of the region's archaeological past. This information is coming to light in part from our survey work in west-central Alberta. In particular, our excavations at the Upper Lovett Campsite are helping to demonstrate that Canada's native peoples not only lived along the Rockies' Eastern Slopes for thousands of years, but did so quite far to the north with heavy occupations in some areas of the foothills extending well back over 5,000 years.



Dan Meyer

ARCHAEOLOGY AND THE EASTERN SLOPES

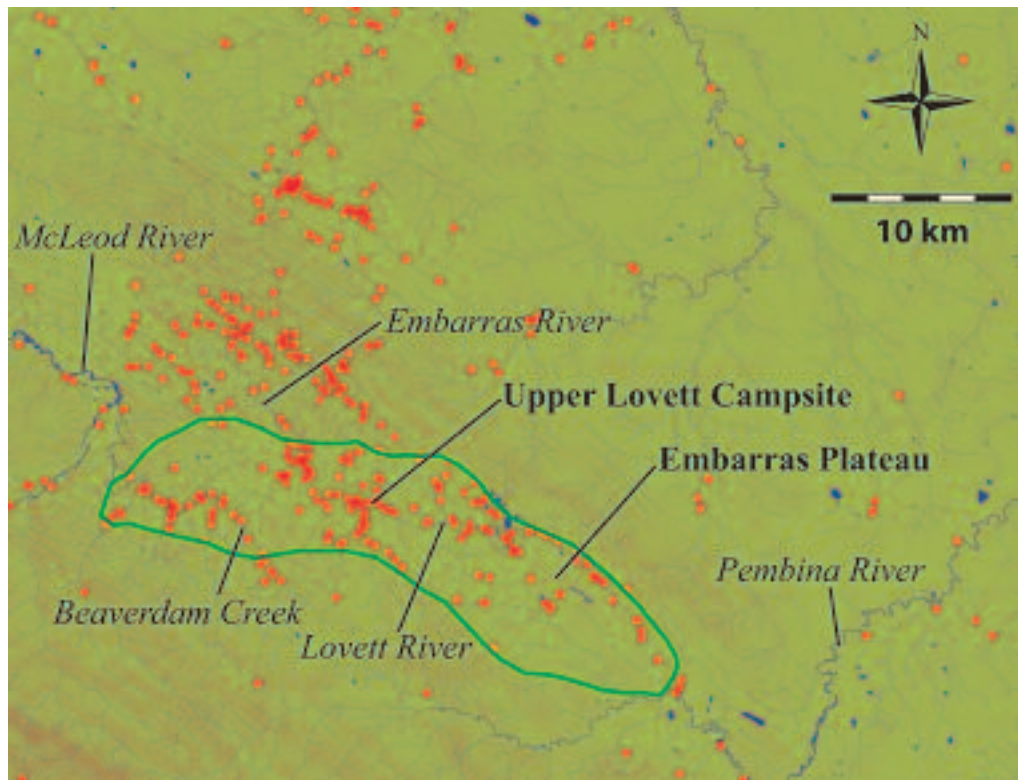
There are many important Precontact sites along North America's Rocky Mountain Eastern Slopes, which include the front ranges and foothills found in both Canada and the United States. In particular, excavations in Wyoming and Colorado have shed light especially on the very early Paleoindian peoples.

In Canada most of our knowledge comes from previous studies, for example, in Waterton Lakes National Park and the Crowsnest Pass of southwestern Alberta. Since 2001, however, the Province of Alberta has required forestry companies to undertake CRM work (cultural resource management studies—also known as contract, or salvage, archaeology) to ensure that they minimize the disturbance of archaeological sites during their harvesting activities.

Lifeways of Canada, for which we work, is one of the CRM firms doing this work. Collaborating closely with a forward-looking forestry company, Hinton Wood Products (a division of West Fraser Mills Ltd.), we have undertaken archaeological surveys of large areas along the Eastern Slopes to ensure the future protection of historical resources in the foothills. Focusing on areas slated for current and future harvesting, our sampling strategy has identified over 620 previously unknown archaeological sites in a 125 x 100 km area centered on Hinton, Alberta. This was no mean feat. Sites are difficult to find due to a thick layer of moss covering the surface in most forested areas, and, because most Precontact structures were made exclusively of such perishable materials as skins, wood, and bark, the preservation of architectural features is rare. We located most sites through a time-consuming process of shovel testing, digging a series of small test pits in search of artifacts that would indicate the presence of an archaeological site.

SETTLEMENT PATTERNS ON THE EMBARRAS PLATEAU

One of the areas we have learned the most about is a formerly nameless geographical feature of the inner foothills to the east of Jasper National Park that we call the Embarras Plateau.



Known archaeological sites (red dots) tend to cluster along the major rivers, both on the Embarras Plateau (outlined in green) and elsewhere.

This relatively flat, high elevation area averages about 1,450 m above sea level (4,800 feet) and is about 35 km long and up to 8 km wide. To the southwest and west it is bound by a series of rugged, higher elevation ridges marking the front ranges of the Rockies. To the northeast and east it is bound by another series of ridges, lower in elevation, that give way to flat wetlands that were once covered by glacial lakes. Today the plateau is dominated by lodgepole pine forest, but its center includes large, open, grassy, and shrubby areas where the poorly drained terrain forms fens or string bogs. This central wet area is the origin of three important waterways—the Embarras and Lovett Rivers and Beaverdam Creek.

Our reconnaissance over the past five years has expanded the number of known Precontact sites on the plateau from fewer than 20 to over 150, and we have also recorded hundreds of sites in nearby areas. Several interesting patterns concerning the locations of different types of sites have emerged. Many sites are concentrated near the headwaters of the Lovett and Embarras Rivers at the plateau's center. Work along these rivers has shown that they were important travel corridors, with sites often clustering at locations roughly a day's travel along these routes. Prehistoric peoples probably used these major river valleys to approach and leave the plateau from the southwest, northeast, and southeast. They may have been drawn to the area by plentiful game available on the relatively open plateau.

a brief culture history of the eastern slopes

During the last Ice Age the glaciers in west-central Alberta reached their maximum extent about 20,000 years ago, forming a barrier along the Eastern Slopes of the Rocky Mountain foothills south into Montana. After the glaciers retreated, plants re-colonized the valley floors and alpine areas 11,000–10,000 years ago, creating a generally hospitable environment for human occupation.

The Early Precontact Period (10,500–7,750 years ago) is characterized by archaeological complexes containing stone projectile points of triangular, fluted, lanceolate, or stemmed forms, presumably used with throwing and stabbing spears. At least five cultural complexes occur in Alberta, including Clovis and its derivatives, Windust, Cascade, Cody, and Plains-Mountain. These groups appear to have been primarily big-game hunters who often moved over vast areas during their annual rounds while visiting preferred resources. Their stone tools can be found great distances from the sources of their raw material.

The Middle Precontact Period (7,750–1,600 years ago) began with the appearance of side- and corner-notched dart points used to tip spears launched by an atlatl, or throwing stick. This period encompasses both the warm, dry mid-Holocene climatic interval and the initial return to cool-wet conditions during the late Holocene. The transition between these climates resulted in the expansion and closing of forests, the development of extensive tracts of muskeg (bogs) on former meadowland, and the lowering of the tree lines on the alpine slopes. A number of archaeological complexes and phases are present, including the Mummy Cave Complex, its derivative Oxbow, and the McKean Complex. These groups made more intensive use of local resources than their predecessors, and their toolkits indicate a greater focus on medium-sized mammals, plants, and the processing/cooking of these food supplies using stone boiling and hot-rock roasting techniques, particularly toward the end of the period. During the later part of the Middle Precontact Period, the cultural sequence diverges between the north and south, correlating with the appearance of boreal forests in the north. New complexes include the Pelican Lake Phase, Besant Phase, Shuswap Horizon, and the Taltheilei Tradition.

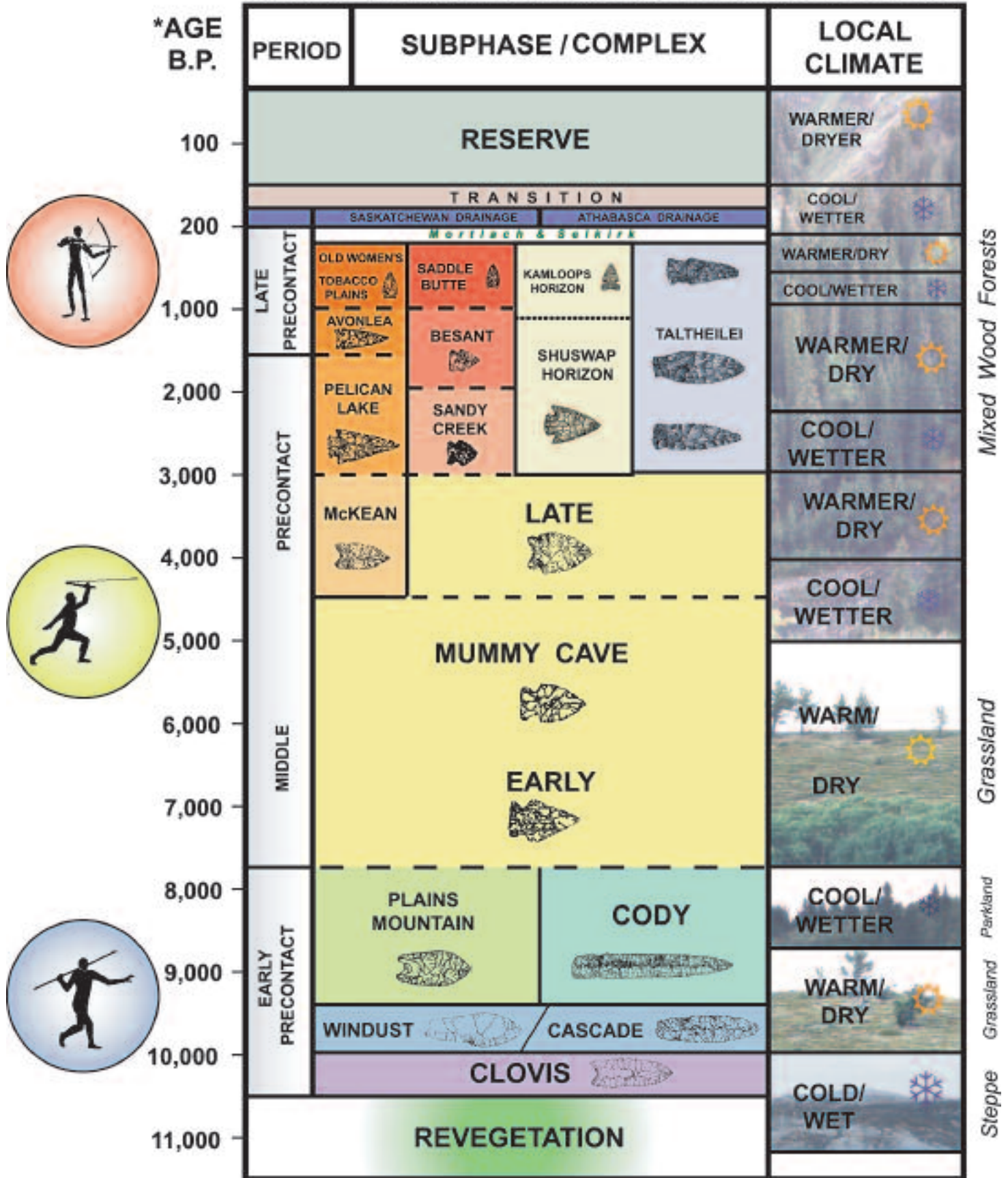
The Late Precontact Period (1,600–200 years ago) is characterized by the appearance of the bow and arrow, represented in the archaeological record by small notched arrow points. Pottery also appears in some of the later archaeological complexes. Archaeological phases include the Avonlea, Old Women's, Tobacco Plains, Mortlach, Kamloops, and Taltheilei, apparently representing Blackfoot, K'tunaxa, Assiniboine, Cree, Salish, and Dene speaking peoples. These groups demonstrate diversity in settlement patterns and resource use. In the south, many groups summered on the plains and spent the winter along the foothills, whereas to the north, areas with good fishing lakes became increasingly important.

About 300 years ago we begin to see the impact of the Fur Trade, which resulted in major changes to resource harvesting and occupancy. Eventually, many native peoples were forcibly confined to their reserves after signing treaties, and game populations became depleted through disease and over-hunting. The later removal of lands and reserves and the massive depopulation caused by such diseases as tuberculosis and influenza forced the abandonment of traditional patterns of seasonal resource harvesting and occupancy along Alberta's Eastern Slopes.

Chronology

Right, the culture history of the Eastern Slopes of west-central Alberta is divided into three periods based on technological changes in projectile points.

CENTRAL ALBERTA EASTERN SLOPES CULTURE HISTORY



* NOT TO SCALE

Mixed Wood Forests

Grassland

Parkland

Grassland

Steppe

The headwaters of the rivers are slightly down cut in the local topography, with terraces about 10 m above the level of the river on either side. This provides excellent camping locations with easy access to flowing water and other resources, such as plentiful, good-quality quartzite for making stone tools. Large sites found on the plateau indicate that large groups used good campsites along the major rivers and nearby landforms as central places for launching short-term hunting and gathering forays by smaller groups. Some of these short-term resource gathering trips ventured into the more rugged terrain surrounding the plateau, where a different suite of resources could be exploited. This is evident from the numerous small campsites, stone tool-making workshops, and other short-term resource procurement sites found in surrounding areas.

Because few sites have been dated by radiocarbon techniques or diagnostic projectile points like arrowheads, it is difficult to associate the settlement pattern(s) identified with a specific time period or culture. Similarly, given the limited excavations undertaken, we have yet to determine in which seasons of the year sites were occupied. We suspect that the settlement pattern observed on the Embarras Plateau does not represent a complete year-round occupation. This contrasts with other regions of the Eastern Slopes where sheltered areas experience *chinooks* (warm, dry, winter winds that raise temperatures dramatically) that open up grazing areas for the game on which people depended. The Embarras Plateau offers no such sheltered areas, and personal observations indicate that it is typically one of the coldest and snowiest areas in the region.

We initially thought that the plateau most likely hosted people from the late spring to the early fall, with groups wintering farther to the east. Alternatively, the plateau may have been part of a settlement system that used the mountainous areas to the west for part of the year. Or, it is even possible that the plateau *was* habitable during the winter thousands of years ago when the environment was quite different from today.

Top to bottom: From the river bottom on the southwest one can see the Upper Lovett Campsite extending along the terrace seen on the left. Fortunately, its underlying bedrock has protected it from the sort of erosion visible on the far left. Looking south up the Lovett River Valley from the Upper Lovett Campsite one sees the dense conifer forests that cover the area today. Volunteers Aman Rai, Chantelle Hug, and Daniela Brehm hunker down under the tarp covering the excavation block at the beginning of the 2005 excavation season. The relatively shallow deposits were excavated in 1 m x 1 m squares marked with white string. Brian Ronaghan and Jason Roe finish work in the main excavation block after all of the 1 m squares have been excavated. The lighter brown soil discovered at about 40 cm below the surface marks the base of the excavations. All of the cultural deposits were found above this layer.



Dan Meyer

EXCAVATIONS AT THE UPPER LOVETT CAMPSITE

Given the regional data we were collecting during our CRM survey work, it became apparent that excavations could make a substantial contribution to understanding the Precontact peoples in this part of North America. In particular, by selecting a potentially important site, we might be able to fill some significant gaps in our knowledge. For example, which seasons of the year saw occupation on the Embarras Plateau? Which periods in the past witnessed the most heavy use of this area? And what cultural affiliations did these groups have? To answer these questions, we embarked on a research excavation with a small volunteer crew in 2005.

The Upper Lovett Campsite was first recorded in 1981 during reconnaissance for a proposed coal mine development. Covering 200 m of river terrace in the center of the Embarras Plateau, it is the largest campsite known in the region, revealing the remains of extended stays by large groups of people. When excavated, such sites typically produce stone tools, the waste flakes from their production (debitage), and small stone features preserved in the ground, such as hearths, which sometimes contain the faunal remains of the animals eaten there. While preliminary testing at the Upper Lovett Campsite found no preserved faunal remains, the density of lithic (stone) materials, including a potentially diagnostic tool we have called the Embarras Bipoint, indicated that this was one of the richest sites in the region.

Our excavations uncovered a 30 m² area that produced artifacts primarily between 5 and 25 cm below the surface. The vast majority of finds were lithics, including almost 12,000 pieces ofdebitage, 97 percent of which were quartzite, with some silicified siltstone, some local cherts, and one flake of a volcanic stone that probably came across the mountains from British Columbia. Although sites in Alberta often contain large amounts of fire-cracked rock—which results from heating stones to boil water—we recovered only 160 fragments, most of them from a single hearth.

Dan Meyer (left), Amanda Dow (right)



The most interesting artifacts recovered were the 100 stone tools. These included four projectile points (all atlatl dart points), many large quartzite bifaces and unifaces (used as cutting tools), and a few scrapers for working hides. Although this is a large number of tools from one site, we were surprised by the small number of projectile points, especially compared to what one would expect to find at a similarly large site on the Plains to the east. The four points were diagnostic, closely resembling types first defined at Mummy Cave in Wyoming. Elsewhere, these types date from 7,000 to 5,000 years ago, suggesting that the Upper Lovett Campsite saw occupation during this period.

The hearth also produced 65 animal bone fragments. Most of these were burned, which helps explain their preservation in the acid-rich soils of this part of the world. Unfortunately, none were identifiable as to species, but we can tell that there were at least two species represented—a medium-sized or large mammal and a smaller, rabbit-sized mammal. What animals might these have been?

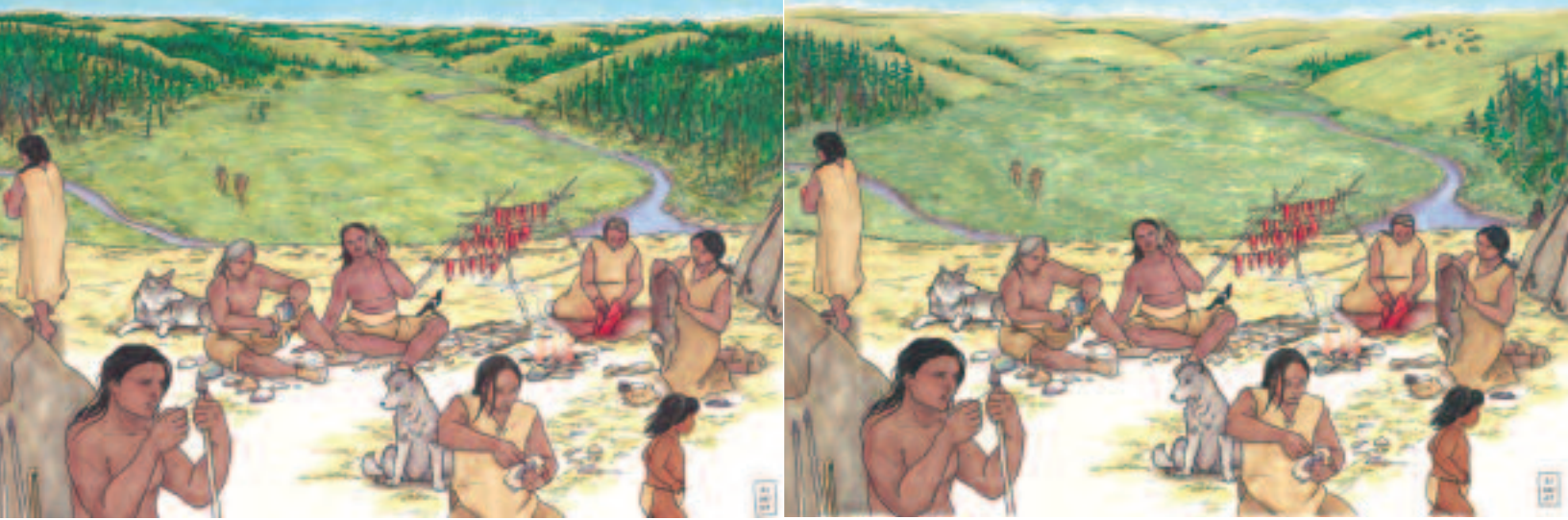
To answer this question we turned to the stone tools and submitted 22 of them for protein residue analysis, hoping to find evidence of blood residue on their edges from one or more species. Based on earlier testing in the region, we expected to get positive readings for such forest-dwelling cervids as deer, elk, moose, and caribou. We even thought we might get a positive for the plains-dwelling bison if the site's former environment had been more open when the site was occupied.

The results were surprising. Of the 22 tools, eight produced positive results, but none were cervid. Three tested positive for rabbit antisera, with some probably coming from rabbit sinew that would have been used in hafting the tools. One was positive for chicken antisera, most likely indicating a species of



A few of the tools recovered from the site. We have called the largest an Embarras Bipoint, likely a type of knife or similar tool. An example excavated from another nearby site tested positive for caribou blood. The four tools at top are atlatl dart points (small spears used with a spear-thrower or atlatl) recovered in 2005; the four at the bottom were recovered in 2006.

This concentration of reddened stones marks the hearth identified during excavation. A bit disturbed by tree roots over the millennia, some of the visible black charcoal staining is actually the result of periodic forest fires that burn through the area.



These reconstruction drawings depict the sort of daily activities that occurred at the site. The only difference is the background environment: either a pine parkland environment (left) or a grasslands environment (right). Compare these reconstructions with the modern vegetation as shown on page 32.

grouse, and four tested positive for bovine antisera, indicating that the tools were probably used on a species of bison. Of these species, bison is the only large, economically important one, and given its primary habitat on open plains, this may suggest that the site's previous environment was less wooded than it is today.

Despite the poor preservation conditions, we also managed to collect two samples for radiocarbon dating—the burned bone fragments (dating to 1,580–1,410 years ago) and a large concentration of charcoal (dating to 1,530–1,340 years ago). Interestingly, these dates suggest a second, later period of occupation, albeit one that is not corroborated by any diagnostic artifacts.

While we are still working on analyzing our data, we feel confident that the Upper Lovett Campsite witnessed at least two periods of occupation—the first around 6,000–5,000 years ago and the second around 1,500 years ago. The earlier occupation was associated with the Mummy Cave Complex peoples of the foothills, who hunted bison, relied heavily on local stone for making their tools, and produced large biface cutting tools, including some formal types like the Embarras Bipoint.

The cultural affiliation of the later occupation is less clear, and will require more work in the future. They were more likely to use siltstones or non-local stones to make their tools, and their tool types included more smaller scraping and gouging tools than the earlier Mummy Cave Complex people. Instead of relying on bison, these peoples subsisted on cervids, suggesting that our ongoing interpretation of the site and its occupants will probably revolve around gaining a better understanding of the long-term environmental changes in the area, and vice versa.

ENVIRONMENTAL CHANGE

The proposed sequence of environmental change for this part of North America has been in place for some time. This

sequence sees a post-glacial, tundra-like environment being replaced first by open grasslands, then parklands (a mosaic of grasslands and patches of trees), and finally the modern coniferous forests we see today. The key question that remains is the timing of these transitions. While many scholars think that the modern forests appeared as early as 9,000–8,000 years ago, others point to a transition around 5,000–3,000 years ago.

The difference between these dates is significant for understanding the past, because highly mobile hunter-gatherer groups would have experienced and used these environments differently. For example, if the Embarras Plateau were forested 6,000–5,000 years ago, during its Mummy Cave Complex occupation, these peoples adapted their seasonal round of migration and resource preferences to include forested areas, probably during the late fall to early spring—a pattern we do not see in other Mummy Cave Complex groups. Alternatively, if the plateau was not yet forested, and consisted of more open grasslands or parklands, then the Mummy Cave Complex peoples would have been operating in their typical environment and may have spent the summers or even the entire year on the plateau.

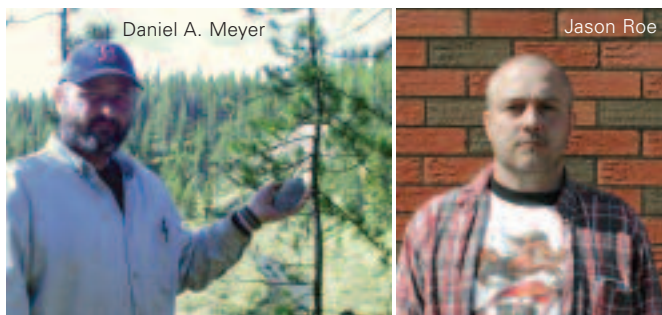
Reversing this perspective and using the archaeological evidence to help understand the environmental situation, we are inclined to believe that the existence of Mummy Cave Complex peoples on the Embarras Plateau and the continuation of high site densities in the west-central Alberta foothills indicate that the forests did not close until after 5,000 years ago. Before this date, the foothills were either grasslands or open parklands that allowed direct access to resources in more varied terrain. This is supported by the results of our blood residue analysis, which suggests that bison was an important part of the diet during this time and that the Upper Lovett Campsite was located in a more open environment. If this proves to be the case, the Embarras Plateau will not only be culturally tied to the adjacent Plains—as evidenced by the

density of sites which we believe exhibit Mummy Cave characteristics—but also environmentally linked.

Before proposing additional conclusions further research is needed, particularly on bison behavior. For example, on the adjacent northwest Plains, Trevor Peck has concluded that bison rut on the edge of the parklands in the fall, spend their winter in the parklands, calve once again at the edge of the parklands in the spring, and then spend the summer out on the grasslands of the Plains. Although there are no bison on the Embarras Plateau today, a 19th century explorer of the region, David Thompson, reported seeing bison along the Athabasca River near Hinton and in Jasper National Park. Archaeological excavations, however, have turned up only a little bison bone, and Charles Kay and Clifford White argue that any historic bison found in the foothills and mountains were only seasonal occupants during the winter. To remain viable, given the inherently small herd sizes and heavy loss to predators such as wolves, they had to be tied to the much larger Plains bison populations during the rest of the year. A clearer understanding of bison behavior should help us identify both the environment at the Upper Lovett Campsite around 7,000–5,000 years ago and the seasonality of its occupation.

In 2006 we undertook a second short field season of excavations at the Upper Lovett Campsite. Our results thus far support the above ideas. In the near future, Liz Robertson at the University of Saskatchewan will help us execute some paleoenvironmental studies in the region to pin down some specifics about the regional environmental change suggested by our archaeological evidence. As our analysis continues and new information is added our picture of Precontact times along the Canadian Rockies' Eastern Slopes will develop, providing valuable information about this region's rich history. 🏠

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