After the flood: Investigations of impacts to archaeological resources from the 2013 flood in southern Alberta

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Excavations at EePj-103 (Margaret's Site) on the Bow River: A stratified protohistoric and historic site in southern Alberta

Dan Meyer[a]* and Lindsay Amundsen-Meyer[a]

[a] Lifeways of Canada Limited, #105-809 Manning Road NE, Calgary, Alberta, Canada, T2E 7M9
*corresponding author: meyer@lifewaysofcanada.com

ABSTRACT

Excavations in 2015 at EePj-103, Margaret's Site, sponsored by Alberta Culture and Tourism, revealed a stratified Protohistoric and Historic Period site. A unique feature of this site is that it has two stratigraphically separate protohistoric occupations, neither of which are mixed with earlier Precontact Period materials nor later Historic Period materials. Artifacts associated with the protohistoric occupations include one iron projectile point, one copper projectile point, a brass button, and three glass trade beads. EePj-103 also has later Historic Period occupations, at least one of which is associated with the Domburg Ranch, established in 1889, and represented today by the remnants of sandstone building foundations. EePj-103 is uniquely positioned to help answer important research questions about the Protohistoric Period in southern Alberta, particularly those related to changing technology with the introduction of European trade goods. The historic ranch remains also represent a very early period in the settlement of Alberta after the building of the Canadian Pacific Railway.

KEYWORDS

Southern Alberta, Protohistoric, Historic, glass trade bead, metal projectile point, pottery, stratified, sandstone foundation, Sprenger

1. Introduction

Following the devastating floods in southern Alberta in 2013, Alberta Culture and Tourism commissioned several studies of major rivers to assess impacts that the flooding had on known and previously unrecorded archaeological sites. Site EePj-103, Margaret's Site, was first recorded in 2014 during the second year of flood impact assessment of historic resources along the Bow River (Vivian and Amundsen-Meyer 2015). The site was originally characterized as a large, dense precontact artifact scatter eroding from a low, T2 terrace (Figure 1). In this location, comparison of aerial photographs indicated that the 2013 flood had removed about 5 metres of deposits from the terrace edge to the southwest, but upwards of 30 metres at the northeastern end (Figure 2). Interestingly, this event also deposited a great deal of silty sand across the landform, which after levelling by the landowners is on average about 10 centimetres thick.

Along a new 200 metre long erosion exposure, Vivian and Amundsen-Meyer (2015) observed primarily faunal remains, including butchered bone, at and below 20 centimetres below surface (bs). They also observed a bison skull, vertebra, ulna, and rib, all at approximately 100 centimetres bs. The "upper component" was associated with a red-stained, ash-filled hearth feature, and at the northeastern end, two dark soil stains, also possible hearths, were noted. Neither of these was directly associated with fire-cracked rock (FCR), and Vivian and Amundsen-Meyer noted that surprisingly little FCR was observed along the cutbank. Also associated with the "upper component" was a musket ball recovered *in*

Figure 1. EePj-103 site area, view north.

Figure 2. View northeast across the EePj-103 terrace showing the degree of erosion.

situ at approximately 20 centimetres bs. This was a clear indication of a Protohistoric or very early Historic Period occupation at EePj-103.

The possible protohistoric occupation was one reason they believed the site to be of potentially high scientific and interpretive value. Intact protohistoric components are relatively uncommon, and represent an important period of drastic changes for First Nations peoples on the northern Plains. Because of the persistent and immediate threat to the site through erosion, they recommended that additional investigations be undertaken at EePj-103 as soon as possible, and that these investigations should include a metal detector and shovel testing survey in conjunction with limited test excavations. The purpose of this work would be to assess and collect samples from the hearth features in the riverbank and identify any additional features, as well as to elucidate the stratigraphic associations of cultural materials at the site and determine the extent of the site beyond the riverbank.

Subsequently, Drs. Trevor Peck and Caroline Hudecek-Cuffe of Alberta Culture and Tourism visited EePj-103 in September 2015 with landowner, Flores Groeneveld and his son Glenn. Peck and Hudecek-Cuffe observed similar materials to that mentioned above along the cutbank at EePj-103. The landowners also drew attention to two sandstone foundations (Figure 3) and a well (or some other type of pit) farther back from the terrace edge, closer to the toe of the slope. This indicated that EePj-103 also had an Historic Period component. The landowners believed that these foundations could have been associated with a stagecoach stopping house along the Blackfoot Trail dating to the early 1900s. To the west of these, the Groenevelds indicated the locations of two cobble foundations, believed to represent barns, that were visible until the 2013 floods.

In October 2015, Alberta Culture and Tourism commissioned Lifeways of Canada Limited to undertake a flood impact mitigation program to shovel test, metal detect, profile, and text excavate EePj-103 (see Meyer et al. 2016). The primary focus of the program was an area north of a fence the Groenevelds had erected parallel to and approximately 15 metres back from the new post-flood cutbank, in order to capture that portion of the site most in danger from continued erosion. However, after discussion, the landowners indicated that in the interests of meeting the site extent and management goals, they were amenable to both shovel testing and possibly excavation further back from the fence. Fieldwork was completed in October.

The 2015 mitigation program at Margaret's Site, named for the landowner's wife who had a keen interest in history, revealed it to be a unique historic resource in southern Al-

Figure 3. L-Shaped sandstone foundation, view south.

berta. EePj-103 turned out to a be a multicomponent, stratified site, with two protohistoric/very early historic occupations separated from the later Historic Period occupations at the site.

2. Field Program

We selected four locations along the cutbank for stratigraphic profiles based on review of the 2014 finds and the extent of exposures and artifact locations during our fieldwork. The cutbank was inspected intensively and cultural materials that were not mapped in 2014 were recorded as points with a sub-metre accuracy GPS. The locations or reported locations of the historic features were also mapped, although these are not threatened by imminent erosion. The locations chosen for profiling included the previously observed soil stains and hearth, as well as two others selected to show the variety of stratigraphic configurations present along the site's 250-metre length.

The metal detecting program produced mixed results and proved to be of limited utility. The intent was to indicate locations of important Protohistoric Period artifacts, such as metal projectile points or musket balls. In every location that exhibited a "hit", and where probing or even excavation was able to find and identify the possible artifacts, all items were either definitely or likely contemporary items, such as bottle caps, nails, wire, and cans. There are three reasons why the metal detecting had limited effectiveness. First, the 2013 floods deposited a lot of silt on the landform, resulting in typically at least 10 centimetres of new, "sterile" sediment overlying what could really be considered the modern/late historic surface. Second, the depth of other buried horizons associated with historic or protohistoric materials is considerable. Finally, the density of metal objects associated with the archaeological horizons is clearly low.

A total of 46 screened shovel tests, were excavated to try to get a handle on site extent and artifact distribution. The shovel tests were concentrated towards the front of the landform, albeit not exclusively so, due to ongoing erosion concerns. Of these, 38 produced cultural materials, only one of which produced materials of likely contemporary/very late historic association. The large majority of material recovered was fragmentary faunal remains, although identifiable elements were also collected, as were small amounts of fire-cracked rock, and a limited amount of clearly historic/protohistoric glass and metal. Surprisingly, only a few possible pieces of debitage (rejected in the laboratory) were recovered from these tests. These results alone strongly suggested that the primary occupations of the site were protohistoric in nature. Of significant interest was that 39 of the shovel tests showed evidence of at least one, and up to three buried "A" soil horizons (this does not include the pre-2013 flood surface which is also technically now a buried "A" horizon).

Following standard procedures, a total of 33.25 square metres of test excavations were undertaken at EePj-103 in the form of dispersed test units and small excavation blocks (Figure 4). Ultimately, 4 square metres occurred as isolated test units, and 29.25 square metres as small excavation blocks ranging from 4 to 8 square metres. The excavations revealed that above the underlying basal deposits, consisting of post-glacial alluvial gravels, the thickness of the overlying silts varies from 100 centimetres in the northeast to over 200 centimetres thick in the southwest. More importantly, above these basal deposits lie a series of up to seven buried "A" soil horizons (Figures 5 and 6). Although the depths of sediments vary and some buried "A" horizons are not present across the full extent of the site, the stratigraphy of sediments in disparate excavation blocks and shovel tests can generally be correlated. During the course of the ex-

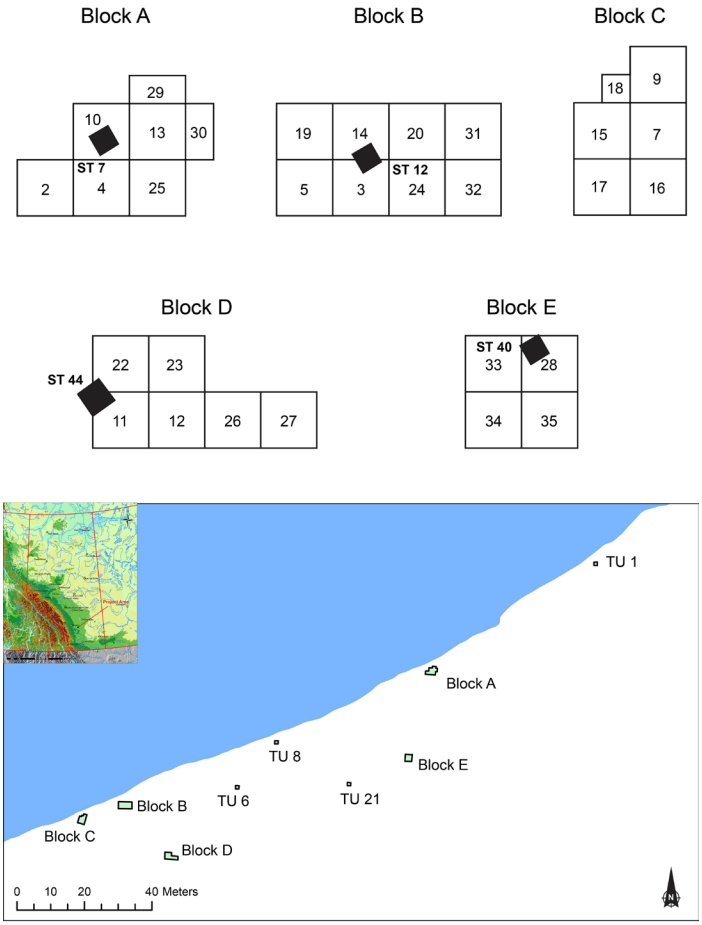

Figure 4. Map showing general location and configuration of excavation blocks at EePj-103.

Figure 5. Block C north wall profile. Note stratigraphically distinct Horizon 4 and Horizon 5 representing Occupations C and D.

Figure 6. Block B north wall profile. Note stratigraphically distinct Horizon 4 and Horizon 5 representing Occupations C and D.

cavations, a total of 5,857 faunal elements (primarily fragments; see Table 1) of bison, with much smaller amounts of deer, dog, and other animals (including 4 shell fragments), 74 historic artifacts (primarily glass and metal fragments), 56 pieces of fire-cracked rock, 22 Precontact-style pottery sherds, 8 manuports (unmodified cobbles), 3 hammerstones, 2 pieces of lithic debitage, 1 stone tool, and 1 fossil shell bead blank were recovered.

The buried "A" soil horizons were associated with at least four stratified cultural components; two representing Protohistoric Period occupations, and two representing Historic Period occupations. One of the richest levels encountered was a mixed occupation level of the two protohistoric occupations. The protohistoric occupations represent camping activities where large amounts of primarily bison bone were processed. Distinctive artifacts associated with these occupations include metal projectile points, glass trade beads, a brass button (Figure 7), probable blown glass, and some

Table 1. Summary of faunal remains recovered from EePj-103 (Margaret's Site).

	Identifiable Bone Elements		Unidentifiable Bone Fragments		Shell	
Occupation	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**
Occupation A	2	30.8	40	44.1	1	6.6
Occupation B	5	807.2	104	119.9	1	0.2
Occupation C	40	3,996.4	183	330.1	0	0.0
Occupation C/D	94	2,862.4	3,860	3,293.8	1	0.6
Occupation D	45	1,809.7	965	1,043.0	1	3.8
Occupation E	2	697.0	9	4.1	0	0.0
Unknown Occupation Association	4	139.9	172	162.3	0	0.0
Shovel Tests	20	511.0	308	518.0	0	0.0
Total Faunal Assemblage	**212**	**10,854.5**	**5,641**	**5,515.2**	**4**	**11.2**

precontact-style pottery. Interestingly, these occupations are almost devoid of traditional stone working technology. Several features, primarily hearths, were identified associated with the protohistoric occupations, as well as one area suspected to be a lodge floor.

3. Results and interpretations

The oldest and most deeply buried cultural component, Occupation D, dates sometime to the late eighteenth or early nineteenth centuries. From this, it is not unreasonable to assume that the occupation is associated with Blackfoot-speaking peoples known to have used this area historically. Based on the presence of Precontact-style pottery (Table 2), this earliest component likely dates towards the earlier part of this range. Even by this time, however, the influence of European trade and European trade goods (assumed based on their presence in mixed Occupation C/D and other factors) is seen at the site. At a similarly situated precontact campsite, stone tools and lithic debitage would be relatively abundant, as would more copious amounts of fire-cracked rock, the result of processing food through practices such as hot-rock boiling of bones. Although the remains of bison and a smaller assortment of other animals were recovered in substantial amounts associated with this occupation, across the site there are virtually no stone tools nor debitage, suggesting that goods such as metal knives had supplanted the traditional stone scrapers, knives, and other tools probably used until not long before. It should be noted that no bone tools were observed either, artifacts that also usually occur on precontact sites of this nature. The relatively low frequency of fire-cracked rock in this occupation (Figure 8) suggests that, although direct evidence is scarce, metal trade vessels such as copper kettles may have mostly, but not entirely, supplanted more traditional tech-

Figure 7. Protohistoric/Early Historic Period artifacts recovered from EePj-103.

Table 2. Cultural materials associated with Occupation D at EePj-103 (Margaret's Site).

	Identifiable Bone Elements		Unidentifiable Bone Fragments		Ceramic Artifacts		Stone Artifacts		Pieces of Debitage		Pieces of Shell		Pieces FCR	
Block	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**
B	14 (20 fragments)	223.9	371	355.8	1	0.3	3	2,023.5	1	62.5	1	3.8	2	12.6
C	30 (36 fragments)	1,558.6	549	532.7	21	12.8	1	451.1	–	–	–	–	–	–
TU6	–	–	29	140.1	–	–	–	–	–	–	–	–	1	284.4
TU8	1	27.2	12	6.5	–	–	–	–	–	–	–	–	–	–
P3	–	–	4	7.9	–	–	–	–	–	–	–	–	–	–
Totals	**45**	**1,809.7**	**965**	**1,043.0**	**22**	**13.1**	**4**	**2,474.6**	**1**	**62.5**	**1**	**3.8**	**3**	**297.0**

Figure 8. Block B plan view, Occupation D. Note the two hearth-like features, yet only two pieces of fire-cracked rock were recovered in Occupation D in this block.

nologies used to process some foods. Overall, the cultural materials recovered suggest a large campsite, probably occupied during the winter and/or early spring.

The subsequent Protohistoric Occupation C is somewhat later in time based upon stratigraphic position, but also likely from the late eighteenth and early nineteenth centuries. Overall, Occupation C appears to be very similar to Occupation D, with the exception that no Precontact-style pottery was recovered in association with it (Table 3). The association of European trade goods is stronger with Occupation C than with D, with three glass trade beads almost certainly associated with the former. In addition to the glass trade beads (found at the top of the C/D deposits leading to the assumption of association with C), these mixed protohistoric deposits produced one copper and one iron projectile point, fragments of iron (possibly associated with cooking vessels or knives), bottle glass shards (that appear to be from a blown bottle), and a brass button (Table 4). Furthermore, several cooking features were excavated, which may be associated with a lodge floor centered on one of the excavation blocks (Figure 9).

Table 3. Cultural materials associated with Occupation C at EePj-103 (Margaret's Site).

	Identifiable Bone Elements		Unidentifiable Bone Fragments		Stone Artifacts		Pieces FCR	
Block	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**
B	38 (44 fragments)	3,981.2	89	164.8	1	2	–	–
C	2	15.2	29	50.0	–	–	–	–
TU6	–	–	41	75.2	–	–	1	9.5
TU8	–	–	23	31.7	–	–	–	–
P4	–	–	1	8.4	–	–	–	–
Totals	**40**	**3,996.4**	**183**	**330.1**	**1**	**2**	**1**	**9.5**

The faunal assemblage at EePj-103 suggests interesting patterns and behaviors at the site. Although some larger, minimally modified faunal elements were recovered at the western end of the site, overall, the entire assemblage was subjected to intensive processing. This is evident both by the thorough reduction of elements into very small fragments, as well as by the observation that elements traditionally discarded as processing waste (such as crania and foot limbs), were further reduced to dietary refuse. Similarly, while butchering waste is likely present in the form of intact phalanges, at least a portion of these were processed as well. The overall pattern is one of exhaustive exploitation of entire animal carcasses, including even the lowest yielding portions of the skeleton.

Although a similar pattern is characteristic of some precontact sites, very thorough processing here may belie the fact that in the Protohistoric and Early Historic Periods on the prairies, populations of buffalo were being exhausted. The remains at EePj-103 still speak of a certain abundance of buffalo, but the site may illustrate signs of overhunting to supply the fur trade, and the ensuing heavy impact to the Plains way of life. Comparisons of larger samples from these two protohistoric occupations, particularly in relationship to absolute and relative abundances of "traditional" technologies such as pottery, flintknapping, and hot-rock boiling, and European trade goods could be particularly illuminating in this regard. Should lodge floors and other fea-

Table 4. Cultural materials associated with Occupation C/D at EePj-103 (Margaret's Site).

	Identifiable Bone Elements		Unidentifiable Bone Fragments		Metal Artifacts		Glass Artifacts		Stone Artifacts		Pieces of Debitage		Pieces of Shell		Pieces FCR	
Block	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**	**n**	**Wt (g)**
A	29 (42 fragments)	1,178.5	1,977	1,697.9	–	–	–	–	1	1,977.3	1	0.1	–	–	–	–
D	20 (23 fragments)	263.7	1,130	640.7	15	21	–	–	3	460.5	–	–	–	–	32	1,680.4
E	45 (48 fragments)	1420.2	677	813.8	2	4	13	16.1	–	–	–	–	3	0.7	7	1,098.9
TU1	–	–	28	66.4	–	–	–	–	–	–	–	–	–	–	–	–
TU21	–	–	46	75.0	–	–	–	–	–	–	–	–	–	–	–	–
Totals	**94**	**2,862.4**	**3,858**	**3,293.7**	**17**	**25**	**13**	**16.1**	**5**	**2,437.8**	**1**	**0.1**	**3**	**0.7**	**39**	**2,779.3**

Figure 9. Block D, mixed Occupation C/D, view of excavated pit Features 4 and 5.

tures be positively identified and studied, changing patterns within them, between the two occupations, might be used to track the changing social conditions manifest as a result of the epic changes occurring to traditional lifeways, technology, and seasonal patterns of occupancy and land use in southern Alberta at this time.

Sometime following Protohistoric Occupation C, another flood event or events buried these remnants. In 1877 the local First Nations signed Treaty 7, leading to their eventual confinement to reserves. In 1882–1883, the CPR was built across Alberta, bringing with it some of the early homesteaders in southern Alberta. Unbeknownst to Vivian and Amundsen-Meyer (2015), in addition to the protohistoric component they had identified in the cutbank at EePj-103, Margaret's Site is also home to one of these early occupations of southern Alberta.

In 1889, the first title to this land was granted to Meinard Sprenger, who, along with partner Herbert Muntz, started the Domburg Ranch. Meinard Jacob Iman Sprenger was the son of the mayor of Domburg in the Netherlands. After living and working in Somerset, England as an estate manager, he immigrated to Canada in 1881 (aged 21) and lived for a time in Ontario as a farmhand. He and Herbert Muntz (Figure 10) travelled west to Calgary in 1885 on the CPR. They were in search of a parcel of land along the Bow River and settled in an area near the Siksika Reserve. They raised horses and Hereford cattle at their Domburg Ranch operation (Figure 11). Sprenger and Muntz built a cabin on the property, living in a tent for nine months while it was being constructed. Local histories mention the "Munsell Brothers" being the first to import and raise Herefords (Gladys-Dinton History Book Committee 1991:8). We believe the local histories' Munsell Brothers refers to Herbert Muntz and Meinard Sprenger.

Sprenger was very interested in Blackfoot artifacts and built up a sizable collection. A letter sent in 1891 to the Ethnographic Museum in Leiden (Netherlands) described his earlier purchase of a medicine bag for roughly 50 cents where the same purchase made a few years later cost between 2 and 4 dollars due to an increase in European tourism.

Sprenger sold the 62-acre ranch parcel to William Wyndham Channell in 1894 for 2,000 dollars. He stayed in Canada for a few years but moved back to the Netherlands around 1901 where he kept his collection on display in his home. After his death, the collection was donated to the Zeeuws Museum in Middelburg.

Although present investigations have not revealed if the Domburg Ranch was built initially during Historic Occupation B or A, the ranch buildings clearly survived and were in use into the early twentieth century. The visible sandstone foundations and reported cobble foundations comprise the most obvious evidence of the ranch today. We suspect that Sprenger and Muntz opted to build their ranch buildings on the EePj-103 landform for the same reasons that the protohistoric occupants chose to camp here. Access to water was important, but so too was shelter from the cold and wind during the winter months down in the river valley.

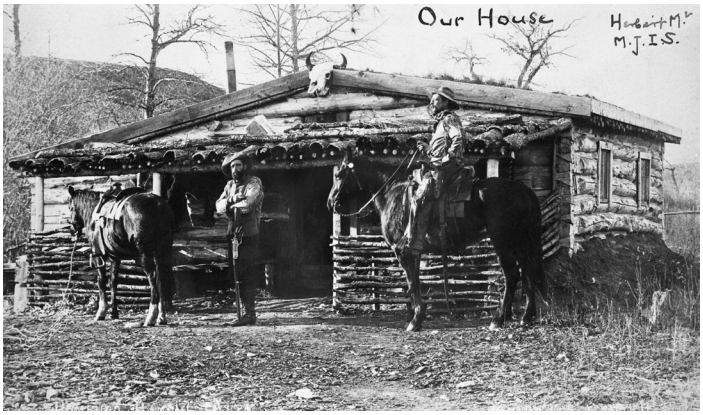

Figure 10. Domburg Ranch House, ca. 1890s (Glenbow Archives NA-1940-90). Herbert Muntz on left, Meinard Sprenger on right. This early cabin may have been replaced by later buildings, or may lie in an unknown location on the terrace.

Figure 11. Horses in corrals on the Domburg Ranch, ca. 1902-1903 (Glenbow Archives NA-170-2). Comparison with available modern photographs of the EePj-103 terrace suggest that it is the same landform, with these buildings near the sandstone foundation location.

Furthermore, this location is obviously a good ford of the Bow River, with access to the valley easily afforded on both north and south sides. The Groeneveld family, who ranch this section today, indicate that they sometimes must "rescue" cattle that ford the river to the other side. Some have apparently referred to this place as "Chandler's Crossing," apparently a reference to the fordability (and perhaps this is meant to be Channell's Crossing, after another landowner in the early 1900s). If not strictly speaking a good ford, it would be a good location for a boat crossing.

4. The Importance of EePj-103

Pyszczyk (1997:59) provides a compendium of 183 post-contact Aboriginal archaeological assemblages (as of 1997) in Alberta, approximately 40 of which are in central and southern Alberta. A number of others have been recorded since, particularly in the Calgary area (Vivian 2005; Peck 2011). Despite this, there are still very few protohistoric sites known in southern Alberta. Although sample size is a problem, in his review of what is known of this period, Peck (2011:433) has identified the true issue in our archaeological understanding of this time period when he states that, "Still, a recurring problem in interpreting protohistoric sites rests in the ability to demonstrate a single unmixed occupation." There are actually many sites in southern Alberta with the occasional protohistoric artifact, but there are almost none with discreet protohistoric occupations. Put concisely, sites with protohistoric occupations are uncommon, sites with protohistoric occupations not mixed with Late Precontact Period materials are rare, and sites with more than one stratified protohistoric occupation are practically unheard of.

EePj-103 is unique in that it has two stratigraphically distinct protohistoric/very early historic occupations, at least in portions of the site, neither of which are mixed with earlier Late Precontact Period materials, nor with later Historic Period occupations. This alone places the site in a unique position to elucidate a number of research questions, most specifically, the impact of European trade goods on Aboriginal peoples' toolkits, and changes to Aboriginal lifeways and attendant social systems at the time.

The results to date from EePj-103 seem to directly contradict the findings of Pyszczyk's (1997) study of the use and importance of European trade goods in southern Alberta in this period based on both documentary and archaeological evidence. He concluded that the introduction of European goods did not significantly alter the use and importance of traditional forms of material culture, and that traditional technologies were not replaced, as the European goods may have in part been performing non-utilitarian functions in First Nations societies (Pyszczyk 1997:77). This view is supported by other researchers, and in some cases even backed up by additional information, as at The Flicka Site, where in a kill site suggested to date from the mid-to-late nineteenth century, a small assemblage of stone tools, projectile points, and debitage are associated with three iron points, one copper point, and the remains of a horse (Vivian and Dow 2006).

However, EePj-103 results suggest that our understanding of protohistoric artifact assemblages may suffer from a problem of mixing of Protohistoric with Late Precontact Period occupations on most sites. EePj-103 is a campsite, and as such, one would expect to see significant quantities of stone tools and debitage, possibly bone tools such as

fleshers and awls, and larger amounts of fire-cracked rock and even boiling pits. The evidence for the use of traditional stone tool technology at EePj-103 is effectively zero. There are several hammerstones and manuports, that likely served as anvils for crushing bone, but the anvils may have provided solid backing for the use of hatchets to crush bone rather than hammerstones. It is also possible that both the hammerstones and manuports found at EePj-103 were used to work metal.

The lack of stone tools and debitage in both protohistoric occupations at EePj-103 suggests that European goods, like metal knives, had almost completely replaced traditional technologies used for a myriad of purposes, from butchering and food processing through hide preparation. A lack of bone tools similarly suggests that traditional tools had been replaced in activities, such as hide preparation and clothing manufacture, by European tools such as metal needles. The overall dearth of FCR at EePj-103 suggests that trade goods, such as metal kettles, had in fact replaced traditional methods of food processing and preparation. Unlike the interpretation that European goods were complementary to traditional technologies, even in the Historic Period, EePj-103 results suggest that, in fact, for certain categories of technology, primarily utilitarian in nature, there was a replacement, and it may not have been that gradual.

Data supplied by Pyszczyk (1997:Table 1) show that for every gun (of purported real-world utility for hunting and warfare) traded to Plains groups, the numbers show that 11 knives and four hatchets were traded. Pyszczyk (1997:72) also notes that archaeological sites with very low numbers of European trade goods also have low numbers of traditional artifacts, which he attributes most likely to small sample sizes, short site occupations, or low intensity of use. Despite the excavation and screening of the equivalent of approximately 43.5 square metres of deposits (units plus shovel tests), we recovered few European trade goods and few traditional artifacts. We suggest that this could well be a factor of the heavy curation of the European goods, particularly the knives, hatchets, and other metal tools. Something was used to butcher and process animals at EePj-103, suggesting that these metal items simply must have been in use at the site even if we did not recover direct evidence of them. The same could be said of stone tools and debitage, but the fact of the matter is that the pattern of low rates of stone tool curation or the use of many more expedient stone tools is well-established on the Plains. That the trend to lower stone artifact frequencies over time in sites with European goods is observable, but not quantitatively demonstrable, in the archaeological data across southern Alberta (Pyszczyk (1997:74) is most likely due in part to the Late Precontact/ protohistoric mixture problem. The suggestion that the recovery of traditional stone tools with European trade goods is not always due to this mixing, while technically true, does not change the fact that most of what we know about protohistoric occupations in Alberta comes from mixed assemblages. Sites such as EePj-103 may be crucial to resolving this issue.

Interestingly, DjPm-126, The Castle Forks Buffalo Jump on the Oldman River (Landals 2009), also with one of the only other known stratigraphically separated protohistoric components, has an artifact profile similar to EePj-103. In the level dated to 260±90 radiocarbon years BP (before present), 55 square metres were excavated producing an iron projectile point, along with nine stone projectile points, but with only three pieces of debitage, three cores, one cobble chopper, and 10 manuports. Over 16,500 pieces of faunal material weighing 296 kilograms were recovered (Landals 2009). The presence of stone projectile points is likely due to the fact that the bow and arrow persevered for hunting purposes, as previously discussed by others (Bohr 2014). However, parallels in the total lack of other stone tools and debitage, and the presence of pounders and manuports, is consistent with the EePj-103 collections. This pattern was also observed to a degree by Vivian and Dow (2006) at the Flicka Site (EhPn-45), another isolated protohistoric killsite in the Calgary area. At this site, suspected to date from the early- to mid-nineteenth century, 60 square metres was excavated producing three iron points, one copper point, one stone point, 12 pieces of debitage, and two retouched flakes along with horse remains. While at least 28 bison were killed and butchered here, there were almost no stone tools. Although Vivian and Dow (2006:13) find the presence of any stone artifacts at all at the site noteworthy, and suggest that it shows the durability of traditional stone tool technologies even after the introduction of iron tools, the fact of the matter is that it shows the major diminishment of stone tool technology following the introduction of iron tools. Truly isolated protohistoric occupations seen at EePj-103, DjPm-126, and EhPn-45, appear to show a different picture than the mixed occupations seen at other sites in southern Alberta.

This is not to suggest that Pyszczyk (1997) is largely wrong about the overall impact of European trade goods on Aboriginal technology, because there is evidence to support this position. We are suggesting that this view, that there was, at best, modest and gradual influence of European trade goods on Aboriginal lifeways, is heavily biased by the understanding produced by sites with mixed Protohistoric/ Late Precontact Period occupations. The patterns are likely more complicated, with the technological (and social) tran-

sitions occurring differently in different areas and with different groups; various technologies may have been impacted more rapidly or more slowly than others. It was probably never a question of wholesale transition, with different technologies and peoples likely staggered. Knives and hatchets may have effectively replaced stone tools rapidly and almost wholesale, as suggested at EePj-103, whereas European cloth and clothing may have replaced traditional clothing much more slowly. It is also quite conceivable that different groups, based on both linguistics and geography, may have taken up different types of technology at differential rates and with varying impact to traditional technologies.

EePj-103, with two protohistoric occupations, provides additional capacity to study these processes at work. One other item of significance related to the above discussion concerns the lesson that this site offers in terms of protohistoric site visibility. If other protohistoric sites/occupations in southern Alberta are characterized by the same dearth of FCR and flintknapping technology, they may have been, or will be, mis- or unidentified. In the absence of clearly culturally-derived artifacts such as stone tools and debitage, or FCR, archaeologists are often left to make a judgment call when sites are characterized by only faunal remains. These, particularly in riverine settings, can be the result of natural processes. Subsurface testing at sites similar to EePj-103, with protohistoric occupations featuring few European trade goods and few artifacts of traditional technology, could result in an interpretation of natural deposition of faunal remains (particularly on smaller sites), should testing not intercept those few lithic or European items. It is quite possible, in light of this, that many isolated protohistoric occupations in southern Alberta have, in fact, been missed.

5. Conclusions

Unique sites such as Margaret's Site, with its stratified protohistoric occupations, not mixed with earlier Late Precontact occupations or later Historic Period occupations, have the capacity to dramatically change our understanding of protohistoric lifeways in southern Alberta. Further study of the Historic Period components related to the early Domburg ranch may also expand our understanding of the early settlement of the Province.

As a result of the 2015 flood impact mitigation program, we have recommended that Margaret's Site be given an increased rating of significance and management concern. Margaret's Site should witness continued monitoring of erosion, and if necessary, steps should be taken to help prevent further data loss. EePj-103 should also be subjected to further archaeological studies with goals of learning more about the full extent of the site and determining whether or not it is eligible for designation as a Provincial Historic Resource.

The EePj-103 site area continues to be ranched to this day. This land use has contributed to its preservation. Continued management of this valuable resource in concert with the landowners will help preserve the information in Margaret's Site, which is valuable to all Albertans.

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7. References

Bohr, R. 2014. *Gifts from the Thunder Beings: Indigenous Archery and European Firearms in the Northern Plains and Central Subarctic, 1670-1870*. University of Nebraska Press, Lincoln, Nebraska.

Gladys-Dinton History Book Committee. 1991. *Gladys and Dinton Through the Years: A History of the Gladys and Dinton Districts and the Biographies of the Men and Women Who Pioneered the Area*. Reprinted. Gladys-Dinton History Book Committee, Dinton, Alberta. Originally published 1965, Dinton Women's Institute, Dinton, Alberta.

Landals, A.J. 2009. *Oldman River Dam Prehistoric Archaeology Mitigation Program, Killsites Study*. Occasional Papers of the Archaeological Society of Alberta No. 10. Archaeological Society of Alberta, Calgary, Alberta.

Meyer, D., L. Amundsen-Meyer, K. Kolomyja, and E. Johannesson. 2016. Flood Impact Assessment Program 2015, Historical Resources Impact Mitigation at EePj-103 (Margaret's Site) on the Bow River, Final Report. Permit 2015-167. Consultant's report on file, Archaeological Survey of Alberta, Edmonton, Alberta.

Peck, T.R. 2011. *Light from Ancient Campfires: Archaeological Evidence for Native Lifeways on the Northern Plains*. Athabasca University Press, Edmonton, Alberta.

Pyszczyk, H. 1997. The use of fur trade goods by the Plains Indians, central and southern Alberta, Canada. *Canadian Journal of Archaeology* 21:45–84.

Vivian, B. 2005. Historical Resources Mitigative Excavations at Genesis Lane Development Corp.'s North Calgary Commercial Campus at Balzac, Final Report. Permit 2004-153. Consultant's report on file, Archaeological Survey of Alberta, Edmonton, Alberta.

Vivian, B., and L. Amundsen-Meyer. 2015. Flood Impact Assessment Program 2014: Historical Resources Impact Assessment of the Bow River. Permit 14-198. Consultant's report on file, Archaeological Survey of Alberta, Edmonton, Alberta.

Vivian, B.C., and A. Dow. 2006. Historical Resource Conservation Excavations at EhPn-44 and EhPn-45, Final Report. Permit 2002-046. Consultant's report on file, Archaeological Survey of Alberta, Edmonton, Alberta.