



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

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Alberta's culture-historical model and the Southern Alberta Flood Investigation Program

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ABSTRACT

The Southern Alberta Flood Investigation Program resulted in the recovery of substantial amounts of archaeological material. Excavations were conducted at highly threatened sites. The artifact assemblages recovered from these excavations both support our current understanding of Alberta's past and challenge some long-held ideas. The new information supports recently conceived ideas of the Calderwood Complex, Bracken Phase, and Avonlea-Old Women's Transition. As well, long-held notions of the Old Women's Phase are supported. Still, the study provides substantial evidence that the protohistoric Old Women's Phase/Blackfoot is more complex than originally believed, with a possible intrusion by the Highwood Phase/Shoshone. Furthermore, there is evidence during the protohistoric Old Women's Phase/Blackfoot for a more rapid change than previously considered from traditional to European goods.

KEYWORDS

Flood Investigation Program, Protohistoric, Highwood Phase, Shoshone, Calderwood Complex, Bracken Phase, Old Women's Phase, Blackfoot

1. Introduction

The Southern Alberta Flood Investigation Program was initiated by Alberta Culture and Tourism in response to a large flood in 2013 that disturbed numerous landforms along the province's rivers and creeks (Unfreed and Macdonald 2017). The program resulted in the recovery of substantial amounts of archaeological material over a broad area (Figure 1). Much of the Flood Investigation Program focused on inventory; the Archaeological Survey of Alberta realized the need to establish what had been impacted, where the material was located, and how heavily it had been impacted. Based on that inventory and assessment of impacts, we selected several sites deemed to be highly threatened. Protective barriers and slope stabilization were considered to mitigate additional disturbances, but extraction of a sample of material from the sites was determined to be the most cost-effective approach to ensuring some knowledge of the ar-

chaeological resource was preserved. Excavations were conducted at this group of highly threatened sites, and a large amount of archaeological material and a substantial body of knowledge were produced that both support our current understanding of Alberta's past and challenge some long-held ideas.

2. Alberta's culture-historical models

The objectives of culture-historical models are to understand the archaeological record and how it changes through time and across space. This most fundamental part of archaeological interpretation has been a basic building block of archaeological theory since the early development of the discipline (Willey and Sabloff 1993). The culture-historical model in Alberta has been developed over several decades by numerous archaeologists.

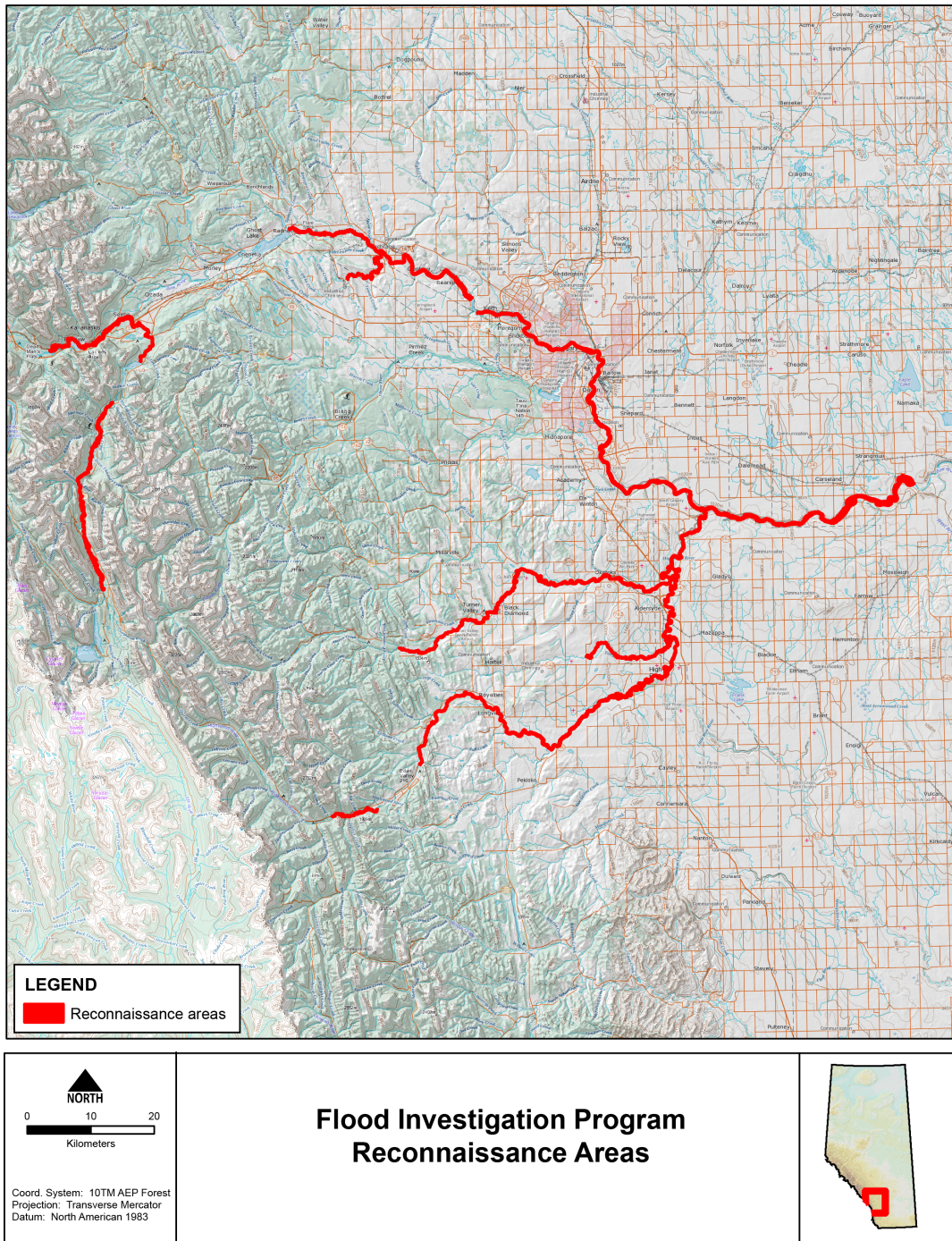


Figure 1. The study area (adapted from Unfreed and Macdonald 2017:189).

Mulloy (1958:204-223) provided the first organizational system for archaeological materials on the Northwestern Plains. Wormington and Forbis (1965), however, developed the first culture-historical model specifically for Alberta, largely accepting Mulloy’s work. Forbis (1970) produced a slightly revised model with different terminology for different time periods. In the late 1960s to early 1970s, Reeves (1969, 1970) accepted the Mulloy model with modifications and produced the essence of the current model used by ar-

chaeologists today. Since then, many tweaks and iterations have been presented (too many to list here) but this model has largely withstood the test of time. Recently, Peck (2011) suggested small changes to the culture-historical model based on the subsequent 40 years of research and cultural resource management recoveries (Figure 2). This revised model will be discussed below in reference to materials recovered during the Southern Alberta Flood Investigation Program.

PERIOD	PHASE/COMPLEX	TIME (BP)	PHASE/COMPLEX	PERIOD
Proto	>> One Gun	ca. 200	One Gun	Proto
	Old Women's	300-250	Old Women's	Proto
Late	>> Highwood	500-300		
	Old Women's	1100-500	Old Women's	Late
Transition	>> Avonlea	1350-1100	Avonlea	
	Sonota	1500-1350		
Middle	Besant	2100-1500	Besant	
	Bracken	2800-2100		
	>> Outlook/Sandy Creek	ca. 2500		
	>> Pelican Lake	3600-2800	Pelican Lake	
	>> McKean	4200-3500	McKean	Middle
	Oxbow	4500-4100	Oxbow	Middle
	>> Estevan	4900-4500		
	Calderwood	5200-4700		
	Maple Leaf	6300-5200		
	>> Mummy Cave	7300-6700	Mummy Cave	
Transition	Country Hills	7500-7300		
Early	Lusk	8300-7500		
	>> Plains/Mountain	8500-7700	Plains/Mountain	
	Cody	9000-8500	Cody	
	Alberta	9700-9000		
	Agate Basin	10200-9700	Agate Basin	Early
	Basally thinned	ca. 10500		
	Folsom	10900-10200	Folsom	
>> Clovis	11050-10800	Clovis		

Figure 2. The culture-historical model in Alberta adapted from Reeves (1970) at right and the proposed revised model after Peck (2011) at left. The '>>' indicates that the culture-historical unit represents a break from the previous cultural-historical unit and may represent an intrusion..

3. Archaeological materials recovered during the Flood Investigation Program

A total of ten sites were excavated due to concerns of potential loss of their interpretive value associated with flood impacts (Figure 3). These sites are EdPI-10, EdPI-13, EdPI-76, EdPm-7, EePj-103, EePk-253, EePI-261, EfPm-267, EfPk-1, and EgPp-26. Although note part of the Southern Alberta Flood Investigation Program, EfPm-37 is also included in this summary because mitigative flood-related excavations were undertaken by the Parks Division of the Ministry of Environment and Parks. EePI-261, EePj-103 and EgPp-26 produced stratigraphically separated occupations with diagnostic artifacts and radiocarbon dates, while the other sites produced single occupations with diagnostics and radiocarbon dates. Below is a discussion of these site assemblages presented from oldest to the most recent.

3.1 Metke site (EdPI-10), Calderwood Complex (ca. 5,200 to 4,700 BP)

The Metke site (EdPI-10) is located under a cultivated field on a 2 to 3-metre-high terrace on the north side of the

Highwood River (Porter et al. 2015; Vivian and Blakey 2017a, 2017b). The excavators suggested that the recovery of twentieth-century material, precontact ceramics, and diagnostic projectile points indicated at least three distinct cultural components (Vivian and Blakey 2017b). Twentieth century historic debris was restricted to the surface at the west end of the site while the precontract materials were recovered from every subsurface level. The excavators proposed that the presence of precontact ceramics and abundant fire-broken rock in the upper levels and plough zone pointed to a Late Prehistoric Period occupation, while a slight increase in the number of cultural materials recovered in levels 9 and 10 may represent an older occupation. This interpretation did not, however, rule out occupations occurring during the interval between these potential events (Vivian and Blakey 2017a, 2017b).

The main excavation block was 15 square metres and produced a single feature with reddened, fire-stained soil at 50-60 cm BS (below surface). The feature was oblong and measured 120 cm long by 60 cm wide by 10 cm deep with no associated fire-broken rock (Vivian and Blakey 2017a). Bison bone in direct association with this hearth produced

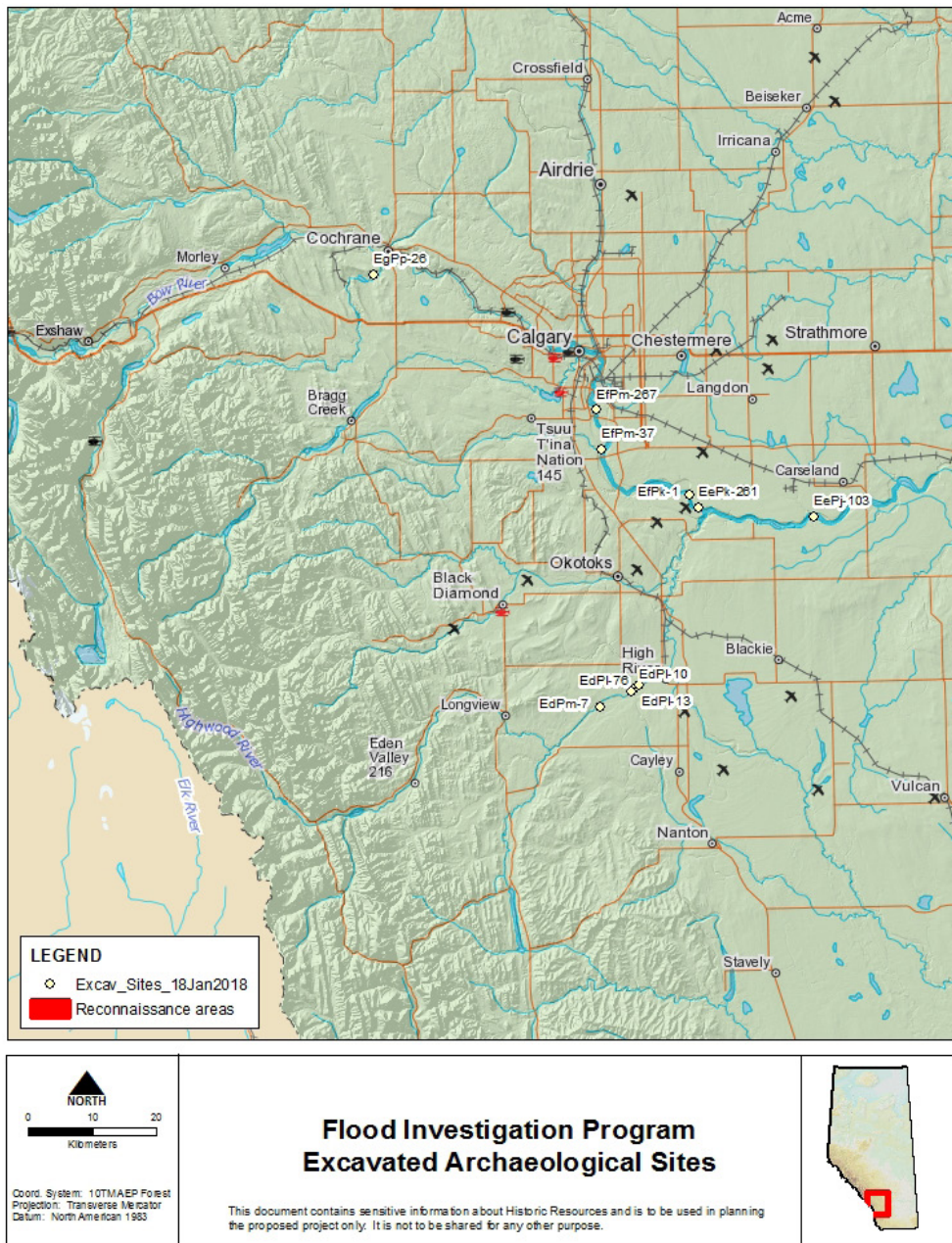


Figure 3. Location of sites in study area.

a radiocarbon date of ca. 5,950 BP and bison bone from a nearby unit at 30–40 cm BS produced a radiocarbon date of ca. 5,000 BP (Vivian and Blakey 2017a, 2017b; Peck 2017).

Four projectile points were found within a few metres of the hearth but at varying depths, which is not surprising given the distribution of artifacts (Figure 4). Based on projectile points and radiocarbon dates, Vivian and Blakey (2017b) assigned the material to the Calderwood Complex. Vivian and Blakey (2017a:20) initially interpreted the points as belonging to the Oxbow Complex but the sole Oxbow point was found hundreds of metres to the northeast at

much greater depth (80–90 cm BS). Figure 5 illustrates the Metke projectile points and their range of morphological variability in comparison to the range variation known for points of the Calderwood Complex (Peck 2011). There is substantial overlap in projectile point morphology, which is supported by the radiocarbon dates.

Other cultural materials associated with the hearth include worked cobbles, cores, and debitage. Lithic artifacts were almost entirely manufactured out of materials found locally in the foothills and Rocky Mountains of southern Alberta. Given the scattering of formed tools and debitage,

PERIOD	PHASE/COMPLEX	DIAGNOSTICS	SITE	DATE
Historic Period	ca 1870s		EdPI 13	145 +/- 15
			EePj 103, Occ B	
Protohistoric Period	Old Women's Phase (Blackfoot ?)		EePj 103, Occ C	80 +/- 30 110 +/- 30 160 +/- 30 170 +/- 30
			EgPp 26, CU 5a, 5b	
Late Prehistoric Period	Highwood Phase (Shoshone ?)		EgPp 26, CU6	258 +/- 22 196 +/- 22 181 +/- 22
			EgPp 26, CU7	
	Old Women's Phase (Blackfoot ?)		EgPp 26, CU9	189 +/- 22 160 +/- 30 190 +/- 30
			EePI 261	310 +/- 30 340 +/- 30 380 +/- 30 540 +/- 15
			EdPm 7	120 +/- 30 425 +/- 15 440 +/- 15
Old Women's/Avonlea Transition		EfPk 1	1259 +/- 22	
Middle Prehistoric Period	Sonota Besant			2100 +/- 30 2130 +/- 30
	Bracken Phase		EfPm 37	2180 +/- 30 2290 +/- 30 2365 +/- 15 2460 +/- 30
	Outlook Pelican Lake McKean Oxbow Estevan			
	Calderwood Complex		EdPI 10	5000 +/- 30 5950 +/- 30
	Maple Leaf Mummy Cave			



Figure 4. Chrono-stratigraphic schematic presentation of the sites that produced assemblages with diagnostics and radiocarbon dates.

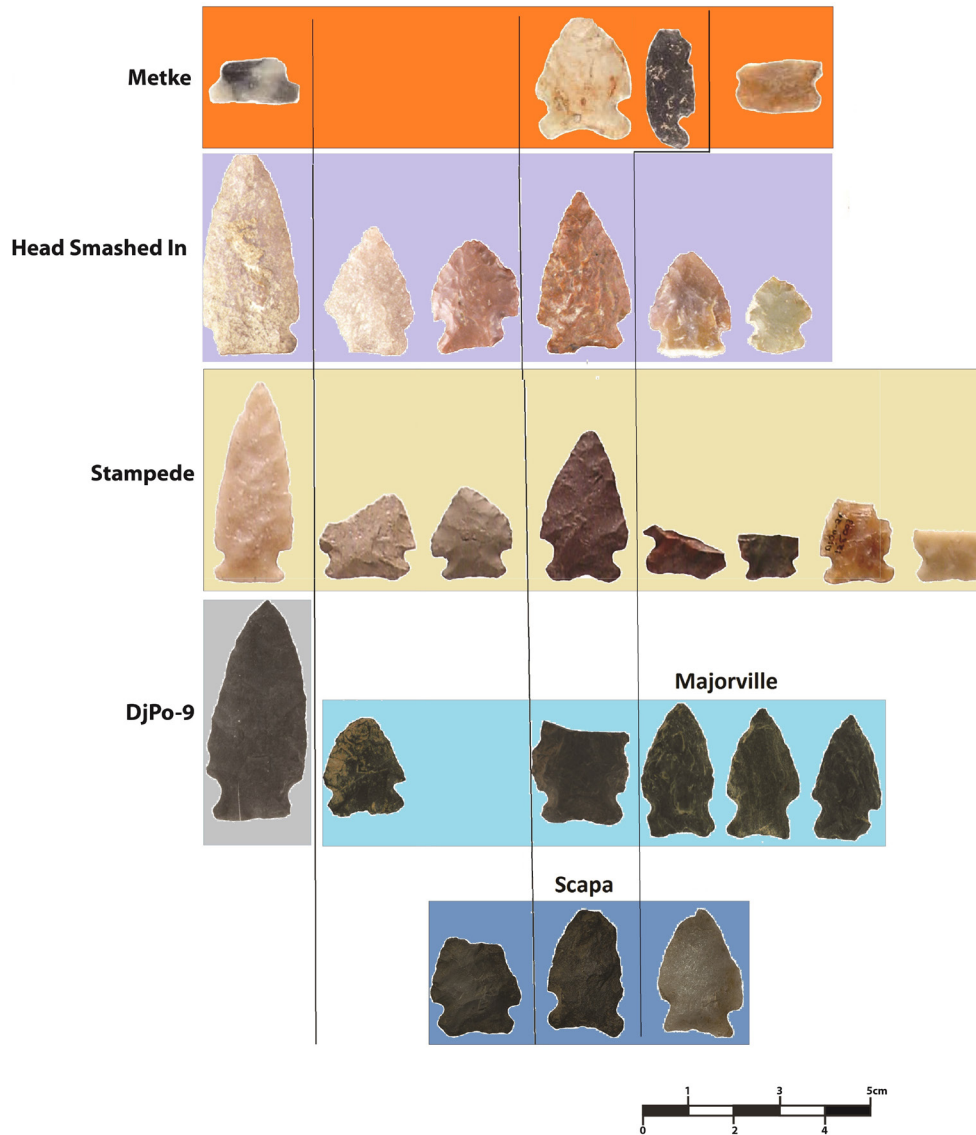


Figure 5. Illustration of the Metke site projectile points in comparison to points found in other Calderwood Complex assemblages.

small amounts of bone, and minimal fire-broken rock, the site is interpreted as a short-term campsite of the Calderwood Complex. Importantly, this assemblage represents the first newly recovered material of the Calderwood Complex since the concept was proposed (see Peck 2011), which supports the archaeological reality of this cultural unit.

3.2 Interlude (ca. 4,700 to 2,800 BP)

Culture-historical units that are known to exist archaeologically in Alberta between the Calderwood Complex and the next dated site excavated in the Southern Alberta Flood Investigation Program include the Estevan Phase (ca. 4,900 to 4,500), Oxbow Phase (ca. 4,500 to 4,100 BP), McKean Phase (ca. 4,200 to 3,500 BP), Pelican Lake Complex (ca. 3,600 to 2,800 BP), and Outlook Complex (ca. 2,500 BP)

(see Figure 4) (Peck 2011). Conclusive representatives of these culture-historical units are absent from sites excavated in the program.

3.3 EfPm-37, Bracken Phase (ca. 2,800 to 2,200 BP)

EfPm-37 is located on the west bank of the Bow River, just north of its confluence with Fish Creek (Meyer et al. 2016). The upper 30 cm BS were disturbed but contained Late Prehistoric Period materials while an intact palaeosol at 70 cm BS contained the primary occupation.

A block excavation of ca. 50 square metres exposed the intact occupation including a stone ring, hearth, and hearth/processing feature. The ring consisted of 25 stones with a diameter of 5 metres. A Pelican Lake/Bracken dart point

was recovered from the stone circle feature along with one hammerstone, one preform, three end scrapers, and two retouched flakes (Meyer et al. 2016:58). A 70-centimetre by 60-centimetre hearth was recorded directly west of the stone circle; it consisted of an ovate collection of cobbles with no observable soil stain (Meyer et al. 2016:59). The location of the hearth so close to the stone circle suggests it may relate to a different occupation of the landform (Meyer et al. 2016:59). A second hearth feature, first observed eroding out of the bank (Vivian 2014), consisted of a dense concentration of fire-broken rock, (125 centimetres by 7 centimetres) within dark soil matrix containing flecks of charcoal and bone fragments.

Three dates were obtained for this occupation, which sits immediately above Bridge River Ash (thought to have been deposited 2,350 BP). A charcoal sample from the hearth/processing feature produced a date of ca. 2,130 BP (Meyer et al. 2016; Peck 2017). A bison bone near the dart point in the stone circle produced a date of ca. 2,180 BP, and a second bone fragment from within the stone circle provided a date of ca. 2,100 (Meyer et al. 2016; Peck 2017). Bone recovered just above the Bridge River Ash but beneath the occupation layer produced a date of ca. 2,290 BP (Meyer et al. 2017; Peck et al. 2017).

The excavators consider the assemblage to represent a tipi ring campsite of the Paskapoo Slopes Sub-phase of the Pelican Lake Phase (Meyer et al. 2017). Peck (2011) distinguished between the Pelican Lake Complex (ca. 3,600 to 2,100 BP), which exhibits very triangular points with narrow neck widths and a lack of large bison kill sites, and the Bracken Phase (ca. 2,800 to 2,100 BP), which has larger, more crudely made points and a focus on bison kill sites; given the later date and relatively crude point, EfPm-37 supports the distinction between the Pelican Lake Complex and Bracken Phase. The site likely represents a Bracken tipi ring and camp.

3.4 Interlude (ca. 2,100 to 1,100 BP)

The next site from the Flood Investigation Program that fits into a culture-historical unit following the Bracken Phase is an Avonlea/Old Women's Transitional occupation. Cultural units older than this, but not conclusively represented by sites excavated in the program include the Besant Phase (ca. 2,100 to 1,500 BP), Sonota Phase (ca. 1500 to 1,350 BP), and Avonlea Phase (ca. 1,350 to 1,100 BP). An Avonlea point was recovered during the Flood Investigation Program at EdPI-262, above the Highwood River, but the site was not dated nor was subsequent excavation undertaken (Porter et al. 2015).

3.5 FM Ranch campsite (EfPk-1), Avonlea-Old Women's Transition (ca. 1,100 BP)

The FM Ranch campsite has multiple precontact activity areas on a large floodplain on the southwest side of the Bow River. The southeast portion of the site exhibited a deep and highly stratified series of Old Women's phase occupations (Forbis 1959; Rogers and Fromhold 1975; Vickers 1982). In contrast, the northwest corner of the landform at Locality One, Area C produced shallow sediments exhibiting a few palaeosols with an artifact rich occupation at about 60 centimetres BS. This occupation lays directly above basal gravel sediments. Two small hearths appear to be present in the small 12 square metres of excavation conducted under the current program at this locality.

A single diagnostic projectile point was recovered. The point, which has small side-notches low on the lateral margins with a straight to slightly convex base, was interpreted as transitional between Avonlea and Old Women's (Gilliland 2016:64-64). The excavations produced four other non-diagnostic point fragments and two retouched flakes (Gilliland 2016:63). The diagnostic point suggested an occupation at about 1,100 BP. Bone recovered at 57 cm BS produced a date of ca. 1,237 BP (Peck 2017). The projectile point and date fit relatively well with the interpretation of the site as Avonlea-Old Women's Transition. The Avonlea-Old Women's Transition is a relatively recent concept (see Peck 2011:366-374) and differentiating between 'true' Avonlea points and transitional specimens is difficult. Given the small sample, more substantial evidence is needed to confirm the affiliation of this site with the Avonlea-Old Women's Transition.

3.6 EdPm-7, Old Women's Phase (ca. 1,100 to 250 BP)

EdPm-7 is located on the first terrace on the south side of the Highwood River, southwest of High River townsite (Roe et al. 2016). The site is within the top 30 centimetres on a 6 to 8-metre-high terrace. Two palaeosols were recognised at about 10-15 and 15-20 centimetres BS. A total of 10 square metres were excavated at the site under the current program. A single feature was uncovered and consisted of a small hearth about 30 centimetres in diameter. A blade of a Late Side-notched point, likely an Old Women's/Cayley Series projectile point, was located immediately adjacent to it along with four fire-broken rocks and some bison bone (Roe et al. 2016). Two other hearth features had been recorded eroding out of the cutbank during initial reconnaissance (see Porter et al. 2015) but were not excavated as such work would further destabilize the bank (Roe et al.

2016:94). Two other Old Women's/Cayley Series projectile points were recovered within the upper 30 centimetres BS in nearby test excavations.

A piece of bone recovered adjacent to the hearth produced a date of ca. 120 BP (Roe et al. 2016:95). The authors recognised that the date is too recent, but acknowledged that the site represented an Old Women's Phase campsite on the basis of diagnostics and associated materials (Roe et al. 2016:95). Subsequently, two radiocarbon dates of ca. 425 BP and 440 BP were obtained from material at the site (Peck 2017). The dates are consistent with the recovered diagnostics and confirm that the site is likely an Old Women's Phase occupation conforming to expectations of the culture-historical model.

3.7 EePl-261, Old Women's Phase (ca. 1,100 to 250 BP)

EePl-261 is located on the north side of Highwood River on a 5-metre-high terrace, just east of Highway 2. The western portion of the site is much higher than the eastern portion due to a gravel and boulder layer that heaved towards the surface (Roe et al. 2016:41). A total of 28 square metres were excavated at the site under the current program; 18 square metres in the western portion and 10 square metres in the eastern portion (Roe et al. 2016:41). Four occupations were recorded with only Occupations 1, 3, and 4 being observed in the western portion of the site.

Occupation 1, the uppermost occupation, is characterized by several activity areas based on toolstone distribution (Roe et al. 2016:46). A single non-diagnostic point tip was recovered along with one biface fragment, one scraper, two wedges, and one retouched flake. Evidence of bone bead manufacturing was also noted (Roe et al. 2016:44).

In the western portion, Occupation 2 produced several features including a hearth, a sandstone slab, a flintknapping workstation, a bone and shell workstation, and an enigmatic ochre-sand feature (Roe et al. 2016:65-67). A bone sample in direct association with the hearth produced a date of ca. 340 BP (Roe et al. 2016:106, 2017:106). No diagnostic points were encountered, but a few Plains Triangular preforms were recovered along with an assortment of tools and more evidence of bone and shell bead manufacturing. The eastern portion of the site produced a roasting pit/hearth and two hearths associated with Occupation 2, but no diagnostic artifacts.

Occupation 3 was only recovered in the western portion of the site (ca. 70-80 centimetres BS). A single hearth fea-

ture was encountered. Bone from the hearth produced a date of ca. 380 BP (Roe et al. 2016:85). Three fragments of Late Side-notched projectile points were recovered and, based on the site assemblage, are likely associated with the Old Women's Phase (Roe et al. 2016:82). Two bifaces, two wedges, and two retouched flakes were also recovered.

Occupation 4, the earliest occupation, at 80-90 centimetres BS in the western portion of the site, did not produce any features nor did it produce any diagnostic artifacts or radiocarbon dates.

Despite a lack of diagnostic points, the dates, nature of the features, suite of lithics, and bone bead manufacturing support an affiliation of these occupations with the Old Women's Phase.

3.8 Wearmouth Buffalo Jump (EgPp-26), Protohistoric Period (ca. 250 BP)

The Wearmouth Buffalo Jump (EgPp2-6) is located on the west side of the lower Jumpingpound Creek, a short distance above its confluence with Bow River (Leyden and Landals 2017b). The site is a stratified Protohistoric Period bison kill site consisting of six discrete faunal horizons containing up to 14 distinct cultural units (Leyden and Landals 2017a:106-189; Leyden and Landals 2017b:62). A series of radiocarbon dates (all restricted to the Protohistoric Period) were obtained for several of the cultural units (CU5a, CU5c, CU6, CU8, CU10 and CU12) (Leyden and Landals 2017a, Leyden and Landals 2017b; Peck 2017) and are consistent with the metal point and glass bead recovered in CU5a and CU5b, respectively (Leyden and Landals 2017a:219-220).

Despite excavation of 12 square metres to 250 centimetres BS, only 13 projectile points, 18 pieces of lithic debitage, three retouched flakes, four choppers, one hammerstone, and one core were recovered. Importantly, CU1 and CU2 were interpreted as disturbed slope wash from the escarpment above the site. The preform/flake point and two Late Side-notched points from these layers are considered to be disturbed (Leyden and Landals 2017a:197-200).

Moving downward, the next cultural unit with diagnostics is CU5. A metal point was found in CU5a, as were a bison scapula with a possible bullet impact mark and a single horse bone. In CU5b, a glass bead and a stone point tip embedded in a bison rib were recovered. CU5b represents one of the most intensive periods of use of the kill site (Leyden and Landals 2017a:201). In addition, while metal cutmarks were noted in all cultural units, CU5 had the most frequent number of bones exhibiting metal cutmarks (Leyden and

Landals 2017a:247). Leyden and Landals (2017a:327) attributed this material to ca. AD 1800-1870 given the abundance of ‘contact’ influences and noted that the Blackfoot were likely resident in the area at the time.

CU6, C7, and C8 were discrete bone beds separated from CU5 by a sterile sediment horizon. The bone in these cultural units suggests a decrease in intensity of use relative to CU5 (Leyden and Landals 2017a:206). Two projectile points, including a partial base and a point missing an ear, were recovered from CU6 (Leyden and Landals 2017a:201-205) (see Figure 4). Leyden and Landals (2017a:204) indicated that the points are well manufactured and suggested the more complete point appeared to be ‘spurred.’ Three projectile points were in CU7. The points are well manufactured with two specimens exhibiting modest ‘spurs’ (Leyden and Landals 2017a:207). Importantly, cobble choppers occurred in these cultural units that were not present in the overlying layers with historic materials and bone exhibiting metal cutmarks. Leyden and Landals (2017a:329) assigned this material to the Protohistoric Period ca. AD 1740 to 1800 with possible affiliations with the Highwood Phase/Shoshone, but did not rule out the Old Women’s Phase. Although not stated by Leyden and Landals (2016, 2017a), the projectile points discussed above exhibit a striking resemblance to specimens recovered in central-Montana at the Morrow-Bateman site, among others, which have been attributed to the Highwood Phase/Shoshone (see Brumley and Peck 2016).

The lowest cultural unit containing diagnostic artifacts was CU9. This cultural unit was, again, visually discrete from overlying CUs 6, 7, and 8 (Leyden and Landals 2017a:207). A more selective butchering pattern was characterized by large intact portions of animal carcass represented in the faunal remains. Four projectile points were recovered from this cultural unit. The points exhibit ‘random’ flaking with irregular side-notching relatively low on the lateral margins (Figure 4). Leyden and Landals (2017a:331) attributed this material to the protohistoric Old Women’s Phase ca. AD 1700-1800.

In summary, the sequence at Wearmouth Buffalo Jump supports the long-held belief that the Old Women’s Phase/Blackfoot were present in Alberta at contact. Historical documents suggest the Shoshone were in southern Alberta near the cusp of contact with Europeans, but archaeological evidence for this intrusive group has been lacking. Despite this, Brumley and Dau (1988:48) proposed the Highwood Phase in southern Alberta to represent this intrusion, dating to 650 BP to the Protohistoric Period (see also, Brumley and Peck 2016; Peck 2011:408-416). The archaeological mate-

rial in CUs 6, 7, and 8 represent well-made, relatively high-based projectile points in a discrete bone bed at the cusp of European contact and may represent a Highwood Phase assemblage sandwiched between a protohistoric Old Women’s Phase occupation and overlying Protohistoric Period occupation. The Wearmouth bison kill site materials provide some of the best evidence yet of the Highwood Phase/Shoshone in southern Alberta. Micro-stylistic changes in projectile points and subtle differences in the utilization of bison, as expressed in the bone bed, may provide evidence for differentiating between the Old Women’s Phase/Blackfoot and Highwood Phase/Shoshone in southern Alberta.

3.9 Margaret’s Site (EePj -103), Protohistoric Period (ca. 200 BP)

Margaret’s Site is located on the south side of the Bow River, south of Dalemead (Meyer and Amundsen 2016, 2017). The excavation of 33.25 square metres exposed a stratified site with two historic occupations (Occupations A and B), an early Historic Period/Protohistoric Period occupation (Occupation C), a Protohistoric Period occupation (Occupation D), and an unknown occupation (Occupation E).

The uppermost occupation (A) was found scattered across the surface and consisted of at least four historic structures associated with early ranching. Occupation B, between 20-25 centimetres BS, consisted of what is likely the initial historic occupation that immediately precedes Occupation A (Meyer et al. 2016:47). A wind cap for a pipe bowl was recovered from this level. When considered with the few other Historic Period artifacts recovered near the surface, Occupation B was thought to date to the late 1800s or early 1900s (Meyer et al. 2016:51).

Occupation C (38-52 centimetres BS), is distinct in some areas but merges with Occupation D in other areas of the site. The occupation exhibits butchered bison bone, one stone wedge, and one piece of fire-broken rock. A glass trade bead, and possibly two others, from this occupation bear attributes suggestive of an age between the 1700s and early 1800s (Meyer et al. 2016:55-57).

Occupation C/D occurred over a large part of the site as Occupations C and D could not be differentiated. Perhaps due to the conflation of the two occupations, the highest artifact counts come from this occupation and include two pieces of lithic debitage, 39 fire-broken rocks, three pieces of shell, three manuports, 17 metal artifacts (including one iron point blade, one copper point, and one button), and 13 glass fragments. A hearth is associated with seven oxidized

metal fragments with an iron point blade and a complete copper point nearby (Meyer et al. 2016:62). A dearth of stone tools and presence of metal items strongly suggest a protohistoric age. A blown glass bead firmly tightened the age to the first half of 1800s or slightly earlier and an assessment of the metal points indicated occupation at the end 1700s to early 1800s (Meyer et al. 2016:67).

As noted above, Occupation D (48-74 centimetres BS) could be differentiated from C in only part of the site (Meyer et al. 2016:58). Present in this artifact assemblage were 22 precontact ceramic sherds, one piece of debitage, three pieces of fire-broken rock, one piece of worked shell, two hammerstones, and two manuports. Faunal remains indicate intensive butchering and processing (Meyer et al. 2016:58). Two unprepared hearths were also recorded. The occupation exhibited a general lack of fire-broken rock from processing food as well as stone tools and debitage, which suggested metal tools were being used. However, a precontact ceramic vessel ties the material to the Old Women's Phase (Meyer et al. 2016).

Occupation E occurred in a small portion of the site and produced a few fragmentary faunal elements with no observed cutmarks. It was not clear if Occupation E was cultural or natural in origin (Meyer et al. 2016:68).

Margaret's Site challenges a long-held notion that European goods did not significantly disrupt the use and relative importance of traditional items. Furthermore, the site exposes a problem relating to field identification of protohistoric sites; the dearth of stone tools, debris from making stone tools, and fire-broken rock in protohistoric sites leaves bone, a few features, and the odd European trade good as the remaining indicators of site affiliation. Archaeologists will have to refine testing techniques to ensure these types of sites are not being overlooked because of low visibility.

3.10 Spitzee Post (EdPI-13), Historic Period (ca. <100 BP, AD 1870)

The Spitzee Post is an historically known whiskey trade post on the north side of Highwood River, west of High River townsite (Vivian and Blakey 2017a, 2017b). The post dates to the early 1870s, just prior to arrival of the North-West Mounted Police. A previous inventory of whiskey posts indicated that Spitzee Post is one of the two most well-preserved whiskey posts remaining in Alberta (Kennedy and Reeves 1984; Vivian and Blakey 2017a:30). Test excavations of 45.75 square metres at the post encountered a riverbank camp, a rock mound/chimney, and fireplace.

The riverbank camp produced era-appropriate threaded screws, tin can fragments, several spent bullets (four shot-gun pellets and two cartridge casings), a boot eyelet, and remains of a variety of local fauna around a hearth. The camp was likely intentionally placed in direct proximity to the post but no direct association could be established between the two assemblages.

Limited excavations at the post location encountered a rock mound/chimney consisting of a pile of cobbles about 40 centimetres high (the size and orientation of the original structure could not be determined). A second fireplace was present and appeared to be adjacent to a fixed wall. Material recovered in the excavations include significant amounts of bone (n=4,134) from several animals including bison, grouse, badger, beaver, deer, rabbit, and fish. Also prominent are metal objects (n=965) relating to domestic activities (e.g., metal cans, food preparation vessels) and structural tasks (e.g., nails, scrap wire, screws). A total of six weapon/ammunition artifacts were recovered at the site and include two centrefire cartridges dating to post-1870, a large calibre lead shot bullet, two lead shot fragments, and a piece of lead buckshot (Figure 4) (Vivian and Blakey 2017a:42-45). A fair number of glass fragments (n=151) were also collected. A few glass bottle fragments were dated to ca. AD 1860-1875 (Vivian and Blakey 2017a:41).

Historical documentation of whiskey posts is poor and there is often conflicting anecdotes about known posts and their locations. At least three posts are known to have been built west of High River townsite. Despite conflicting local histories about post affiliation, Kennedy and Reeves (1984) provided a strong case that the Spitzee Post (EdPI-13) was the location of the Howell Harris and Asa Sample establishment from ca. AD 1871/1872 (see also Vivian and Blakey 2017a: 30-31). Despite conflicting accounts by local historians regarding High River's whiskey-trade era, archaeologists have shone light on a notorious part of Alberta's past that is usually only considered under written history.

4. Conclusion

Excavations were conducted at 11 highly threatened sites during the Southern Alberta Flood Investigation Program. The knowledge derived from these excavations has provided both support for some of our current perspectives of Alberta's past and has also challenged some long-held notions. While it may be reassuring that many ideas about Alberta's archaeological record are supported by this new information, the challenges to our understanding should not be perceived as failures. Valuable insights gained into Al-

berta's archaeological past, such as the increasingly complex nature of the Protohistoric Period, indicate that Alberta has a dynamic cultural resource sector keen on progress rather than stagnation. In time, many of the archaeological units in the culture-historical model presented in this paper will be challenged, changed, or forgotten. However, a legacy of the Southern Alberta Flood Investigation Program will have been the accumulation of large amounts of data for resourceful researchers to question interpretations of the past.

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