Late Prehistoric Period

CA. 1,350 TO 250 BP

Infrequent drought between ca. 2,000 and 1,000 BP likely produced a period of unprecedented abundance and dependability of plant and animal resources (Vance 1991:155). Roughly 1,060 BP demarks the onset of increased drought associated with the Medieval Warm period. Periods of high moisture interspersed with periods of low moisture created some uncertainty in the productivity of the environment. About 700 BP the period of increased drought ended, followed by a relatively modern regime. An exception to the modern regime was a wetter, cooler period from ca. 500 to 100 BP called the Little Ice Age.

Avonlea Phase (ca. 1,350 to 1,100 BP)

In Alberta, the Avonlea phase ushers in the Late Prehistoric period, traditionally beginning around 1,700–1,400 BP and continuing until approximately 1,100–900 BP (Reeves 1983a). For Saskatchewan, Dyck (1983:113) placed the Besant phase as the first cultural unit of the Late Prehistoric period, on the inference that it was associated with ceramics. The Avonlea phase is widely distributed across Alberta, with most archaeological materials recovered from the Plains, but Avonlea materials have been found beyond the plains region in the parkland, foothills, and mountain front of Alberta (Reeves 1983a; Vickers 1986:92; Peck and Hudecek-Cuffe 2003). Similarly, Avonlea has been recovered on the plains of Saskatchewan and
to a lesser extent in the parklands (Smith and Walker 1988) and forest edge (Meyer et al. 1988). As well, Avonlea points have been found in eastern Montana (Fraley 1988), South Dakota (Hannus and Nowak 1988), south of the Missouri (Brumley and Dau 1988:41), and in Manitoba (Joyes 1988) although they are scarce in these areas.

Forbis (1960) and Wettlaufer and Mayer-Oakes (1960) almost simultaneously began interpreting Avonlea material. Forbis (1960) described the Avonlea point based on excavations at the Upper Kill site in southern Alberta. Although he recognized the uniqueness of these points, Forbis (1960:123, 130) labelled them the “Upper Kill type.” Wettlaufer and Mayer-Oakes (1960: 37–41, 107) coined the term Avonlea to describe the small, triangular, thin, side-notched projectile point observed at the Avonlea site. The term Avonlea was derived from a mid-1950s excavation of a single-component site near the town of Avonlea. The town had received its name from the most popular novel of the day, Anne of Avonlea (Morlan 1988:291). The first published reference to the Avonlea phase, however, is in the Long Creek report (Wettlaufer and Mayer-Oakes 1960:37–41, 107). Kehoe and McCorquodale (1961) described the point type as readily distinguishable and a horizon marker for archaeologists on the Plains. Basing his interpretations on his work at the Gull Lake site and the Boarding School Bison Drive site, Kehoe (1966:830) provided a synthesis of the Avonlea point and its place in the Small Side-notched point system of the Northern Plains. His review suggested the co-occurrence of three varieties of Avonlea points: Gull Lake Classic variety, Carmichael wide-eared variety, and the Timber Ridge sharp-eared variety.

In 1970, Reeves (1983a:161–162) produced an assessment of the characteristics of the Avonlea phase. The most striking artifacts of Avonlea assemblages are finely made, extremely thin, triangular points with side notches and slightly concave bases. All Avonlea points are believed to be arrow tips, as the Avonlea phase is regarded as the first phase on the Northwestern Plains that exclusively used bow technology (Vickers 1994:14). Based on his excavations at Head-Smashed-In Buffalo Jump, Reeves (1983a:61) distinguished two types of Avonlea points: Head-Smashed-In corner-notched and Timber Ridge side-notched. He differentiated the points by shoulder shapes. Head-Smashed-In corner-notched points are earlier and have acute or barbed shoulders, while Timber Ridge side-notched points are later and characterized by obtuse shoulders. Reeves’ (1983a) use of the Timber Ridge side-notched point encompasses Kehoe’s (1966) three varieties while the
term Head-Smashed-In Corner-notched (Reeves 1983a) is recognized as an earlier variant of the Avonlea side-notched points (e.g., at Head-Smashed-In Buffalo Jump). Small, unnotched, triangular points commonly found in association with Avonlea assemblages are often interpreted as preforms, possibly manufactured for trade (Dawe 1987).

While the Avonlea side-notched point type is very similar throughout its entire distributional range, pottery associated with the Avonlea assemblage may exhibit regional variation (Walde et al. 1995:21). Kehoe (1966) originally described the Avonlea phase as being aceramic, but there is now overwhelming evidence that Avonlea assemblages are associated with pottery. Byrne (1973) provided evidence of this for Alberta with his definition of Saskatchewan Basin complex: Early Variant. Byrne (1973) characterized Avonlea pottery as exhibiting a plain-fabric/net-impressed exterior. The morphology was a simple globular or coconut form. The lips were flat or ridged with little or no trace of thickening. Decoration was largely restricted to one or more bands of punctates below the lip. Byrne (1973) suggested Alberta’s pottery was related to Avonlea pottery in south-central Saskatchewan, with its ultimate origins in Laurel pottery from Manitoba.

As discussed in Peck and Hudecek-Cuffe (2003:80), differences in surface treatment and the distribution of parallel-grooved and net-impressed pottery possibly suggest separate origins, influences, interactions, and contact (Johnson 1988:141). Parallel-grooved pottery was identified in Avonlea components at the Morkin site (Byrne 1973) in Alberta (Walde et al. 1995:22), the Avonlea (Klimko and Hanna 1988) and Sjovold sites (Dyck 1983) in Saskatchewan, and at the Henry Smith (Quigg 1988a) and the Fantasy sites (Tratebas and Johnson 1988) in Montana. Johnson (1988:141) noted that the parallel-grooved type of Avonlea pottery was less common on the Canadian Plains than the net-impressed pottery. She suggested that parallel-grooved pottery may have an antecedent in previous pottery in the Northern Plains but possibly it derived from outside influences or a novelty within Avonlea populations (Johnson 1988:140). Quigg (1988a:148) supported this interpretation of pottery distribution by noting that net-impressed pottery is the predominant type recovered south of the Parkland during the Avonlea phase. Some sites have yielded both net-impressed and parallel-grooved ceramics (e.g., the Garratt site in Saskatchewan; Morgan 1979), indicating geographical overlap in the two kinds of pottery (Walde et al. 1995:22).
Quigg (1988b) identified a third Avonlea pottery type from northern Montana and the extreme southern portion of Alberta. This pottery is characterized by shouldered vessels with slightly constricted necks that have out-curving rims. Quigg (1988b) recovered it at the Corey Ranch site in Montana and noted its occurrence at the Morkin (Byrne 1973) and Upper Kill sites (Wormington and Forbis 1965) in southern Alberta (see also Walde et al. 1995:22). Walde, Meyer, and Unfreed (1995:22-23) have argued that the frequent occurrence of similar pottery to this Avonlea type in subsequent Old Women's assemblages suggests continuity between Avonlea and Old Women's in northern Montana and southern Alberta. This seems reasonable, as Quigg (1988b:151) demonstrated that shouldered vessels date up to the time of the Old Women's phase while parallel-grooved pottery does not appear to date this late.

Many other artifact types are associated with Avonlea assemblages, however, that are not regarded as diagnostic (Vickers 1994:15). Following Peck and Hudecek-Cuffe (2003), many Avonlea assemblages exhibit strong reliance on locally available lithics such as cherts, quartzites, and chalcedonies. Exotic lithics such as Madison Formation cherts from central and southern Montana, Knife River flint from North Dakota quarries, obsidian from the Yellowstone Park area in northwestern Wyoming, and porcellanite from various quarries in Montana and Wyoming are relatively rare in Avonlea assemblages (Brumley and Dau 1988:42). As Vickers (1994:15) points out, however, some Avonlea assemblages have relatively high percentages of exotic lithics, such as the components at the Garratt site (Morgan 1979) and the Gull Lake site (Kehoe 1966b) in Saskatchewan, and the Lost Terrace site (Greiser 1988) in Montana. The possible influence of the Sonota phase at such sites is discussed above.

A variety of Avonlea site types have been identified in Alberta. These include bison jump sites such as Head-Smashed-In Buffalo Jump (Reeves 1978; Brink et al. 1986; Brink and Dawe 1989) and bison pounds such as Ramillies (Brumley 1976). Other sites types included campsites such as Morkin (Byrne 1973), Manyfingers (Quigg 1988a), and H.M.S. Balzac (Head 1985, 1986), as well as processing sites such as Larson (Milne 1988), and tipi ring sites such as Empress (Hudecek 1989). Ceremonial sites include sites such as the Majorville Medicine Wheel and Cairn (Calder 1977) and the Manyberries Medicine Wheel (Brumley 1988:7-24).

The initial evidence suggested Avonlea people were semi-nomadic hunters using the bow and arrow at jumps and pounds to focus almost
exclusively on the hunting of bison. Additional archaeological evidence has indicated that Avonlea peoples practiced diverse subsistence strategies. “These strategies included the exploitation of fish, waterfowl, and small mammals in the Saskatchewan parklands (Smith and Walker 1988); the use of elk, moose, bison, and beaver along the Saskatchewan forest edge (Meyer et al. 1988); and the hunting of pronghorn in Montana (Davis and Fisher 1988)” (Peck and Hudecek-Cuffe 2003). This range of procurement strategies were in addition and/or complementary to the exploitation of bison on the plains (Kehoe et al. 1988; Klimko and Hanna 1988; Milne 1988; Quigg 1988; Ruebelmann 1988). Avonlea settlement patterns are not well understood. Avonlea sites are located in areas that suggest they moved in anticipation of where the bison would be next (Peck 2004). The Avonlea assemblages at the Ramillies site indicate spring to summer hunting on the open plains, whereas Avonlea assemblages at sites such as Head-Smashed-In Buffalo Jump likely reflect fall to winter harvesting of herds that were moving or had moved to their wintering grounds.

The origin of the Avonlea phase is a much-discussed issue. Kehoe (1966:839, Kehoe and Kehoe 1968:28–30) originally proposed that Athapaskans skilled in caribou driving moved from the northern forest onto the Plains, displacing the people of the Besant phase. Little data has been brought forth to support this hypothesis. First, there is substantial evidence to suggest that large communal bison kills predate Avonlea on the Plains (e.g., excavations at Head-Smashed-In Buffalo Jump indicate that human groups on the Plains were repeatedly driving bison since ca. 2,800 BP). As well, a technological precursor for Avonlea material in the boreal forest has not been found (Vickers 1994:17).

According to Reeves (1983a:166), the Avonlea phase developed out of the Pelican Lake phase as a result of diffusion of the bow and arrow from interior British Columbia and ceramics from the east. He based his proposal on evidence that arrowheads appeared first in the mountain areas of British Columbia while pottery technology arrived from the east (Reeves 1983a:163). Byrne (1973:456), based on data from the Morkin site, suggested there was little support for Kehoe’s northern migration theory. Instead, he favoured Reeves’ hypothesis of in situ development of the Avonlea phase from the Pelican Lake phase. The in situ model of Avonlea development has also been supported by other researchers (e.g., Adams 1977:139–140).

Focusing on pottery recovered from the Garratt site in Saskatchewan,
Morgan (1979:220) suggested the Avonlea phase represented displaced people that moved from the Upper Mississippi Valley into the Canadian Plains during 1,800 BP to 1,750 BP. Klimko (1985:70) also indicated that the distribution of Avonlea sites through time and across space suggested a northward and westward movement from the east or southeastern as hypothesized by Morgan (1979).

Brumley and Dau (1988:44) felt Reeves' model disregarded the evidence in the lithic utilization patterns. They argued that Avon chert, Madison Formation cherts, Fort Union Formation porcellanite, and obsidian were used extensively in sites with convex-based Pelican Lake points within southern Alberta, southern Saskatchewan, and northern Montana. During the Avonlea phase, however, these lithics were absent. The technological shift from dart to arrow suggested by Reeves would predict continuity in lithic utilization patterns. To explain the difference, Brumley and Dau (1988) suggested that convex-based and straight-based Pelican Lake points reflect significant cultural differences. In this model, straight-based Pelican Lake points developed into Avonlea points in a core area of southeastern Alberta, south-central Saskatchewan, and northern Montana around 2,000 BP–1,800 BP. Convex-based Pelican Lake points were located to the south and west of this area. According to Brumley and Dau (1988:44–45), they were displaced by the Avonlea phase to the south as far as the Missouri.

Brumley and Dau (1988:46) further extended their model by suggesting that the lower frequency of Avonlea sites, observed by Dyck (1983) and Vickers (1986), indicated a different social structure within the Avonlea phase, which was reflected in their subsistence and settlement pattern. They argued that Avonlea populations may have been of similar size to other cultural groups, but with different settlement patterns. Such a settlement system would have been characterized by less extensive and less frequent movement, resulting in larger but less numerous sites (Brumley and Dau 1988:46).

In addition, Brumley and Dau (1988:47–48) suggested that Avonlea peoples attempted to hide their bow and arrow technology from neighbours, delaying its acquisition by other groups and allowing Avonlea to maintain a technological, competitive advantage. Brumley and Dau (1988) suggested that the bow and arrow was integrated into Avonlea spiritual and shamanistic practices and, thus, it was socially regulated. By mid to late Avonlea times, neighbouring groups began to acquire bow and arrow technology resulting in the social regulation surrounding the technology,
becoming less necessary. The lower quality of craftmanship and variation in styles seen within later or “degenerate” Avonlea assemblages perhaps reflects this change (Brumley and Dau 1988:48). Although difficult to prove archaeologically, Vickers (1994:19) noted that before dismissing the hypothesis, the complexity involved in producing sinew-backed bow and arrows with good flight characteristics should be considered. He argued that it might be possible to limit or slow the diffusion of technology, especially if the knowledge was in the hands of craft specialists (Vickers 1994:19).

The Sites
In order to assess the various lines of thinking presented above, Avonlea assemblages from Alberta with reliable radiocarbon dates are outlined below. These sites are used to critically evaluate the current view of the Avonlea phase (see Plate 24 and Figure 25).

**EfOw 27.** EfOw 27 is a multicomponent campsite/processing site located along Deadfish Creek just upstream from its confluence with the Berry Creek (Goldsmith 2005:4–5). The site is described above in the section on the Besant phase. A single Avonlea point was recovered in the eastern block, in association with an utilized flake and twenty pieces of debitage. The small assemblage consisted of chert (n = 7), quartzite (n = 17), chalcedony (n = 1), and petrified wood (n = 1). The faunal assemblage (n = 5,416) consisted of bison (MNI = 6), a dog, a rabbit, and a fox (Goldsmith 2005:248). The lack of heavy elements such as the vertebral column and sacrum, with few scapulae and pelvis suggested that the site was some distance from the primary kill. Long bones were relatively well represented, with fewer carpal, tarsals, and phalanges, suggesting limbs were brought in as articulated units after trimming. Long bones were clearly fragmented during marrow extraction (Goldsmith 2005:254). A single radiocarbon date of ca. 1,550 BP was acquired for the site (see Table 23). This is a relatively early date for Avonlea in the province.

**Head-Smashed-In Buffalo Jump (DkPj 1).** Head-Smashed-In Buffalo Jump has been described above. In terms of the Avonlea phase, numerous Timber Ridge side-notched points, some Head-Smashed-In corner-notched points, and Avonlea triangular points were recovered in the thick bone beds between 3 and 4.5 m below surface in the South Kill and 0.5–1 m
Plates 24
Avonlea points. Illustrated are projectile points from Head-Smashed-In Buffalo Jump (DkPj 3) (a–f); the Ramillies site (EcOr 35) (g–l); EhPc 108 (m–r); EfOw 27 (s–t); and the Wells site (FdOt 9) (u–w). Photo credit: Royal Alberta Museum (a–f, r–w); Alberta Culture and Community Spirit (g–q, x–bb).
below surface in the North Kill. A number of radiocarbon dates were obtained from the Avonlea bone bed. In the South Kill, two dates were obtained for the initiation of Avonlea: 1,860 ±120 BP (GAK-1475) and 1,335 ±96 BP (GX-1399). In the North Kill, two dates were obtained for the initiation of Avonlea: 1,645 ±130 BP (GX-1252) and 1,840 ±90 BP (RL-330). Three dates were obtained for terminal Avonlea in the South Kill: 1,010 ±140 BP (GSC-983); 1,000 ±110 BP (RL-256); and 1,330 ±85 BP (GX-1251). The early date in the South Kill from the Gakushuin lab can be rejected (see Blakeslee 1994). In the North Kill, the Sonota material underlies the Avonlea material, and have been repeatedly dated in Alberta between 1,500–1,350 BP. The dates on the Sonota levels at the North Kill at Head-Smashed-In Buffalo Jump are between ca. 1,450 and 1,350 BP. Since Sonota underlies Avonlea, the earlier dates for Avonlea are questionable. In fact, compared to the rest of Avonlea dates in the province, an initial date prior to ca. 1,500–1,350 BP would require substantial explanation. The initiation date of ca. 1,645 BP has a great standard deviation that would place it with other Avonlea dates, even at one sigma. However, the ca. 1,840 BP date stands out as anomalous and it’s likely in error. The terminal Avonlea dates are less problematic. All three dates overlap at two sigma. Thus, Head-Smashed-In Buffalo Jump exhibits Avonlea material dating to ca. 1,350–1,000 BP.

Tools recovered included well-formed bifaces (asymmetrical ovate and diamond ovate), end scrapers, pièces esquillées, retouched flakes, cobble choppers, anvils, and hammerstones. The lithic raw materials were dominated by cherts from Montana and the Canadian Rockies (Reeves 1978:165). Importantly, Reeves (1978:172) noted that the Women’s Buffalo Jump, excavated in the late 1950s by Forbis (1962), contained few, if any, Avonlea points in its sequence (i.e., Pelican Lake, Besant, Old Women’s).

**Head-Smashed-In Buffalo Jump, Area 2b (DkPj 1).** Area 2b at Head-Smashed-In Buffalo Jump consisted of level ground between the two parking lots on the flats below the kill site (Damkjar 1995). The focus of excavations in this area was a large pit feature excavated with a 9-m² block excavation. The pit was roughly oval in plan shape (70 x 100 cm long), narrowing as it descended to a depth of 120 cm below the surface.

Two Avonlea points and two point fragments displaying Avonlea qualities were recovered within the pit feature (Damkjar 1995:63). Lithic debitage (n = 284) was within the pit. The inclusion of this material was seen
as incidental fill (Damkjar 1995:67). Similarly, FBR (n = 536) was recovered within the pit but seen as incidentally included. A number of pottery sherds (n = 19), largely representing one vessel (n = 15), were recovered. The remaining sherds appeared to be from other vessels (Damkjar 1995:64). Reconstruction of the vessel produced a conical vessel. The surface treatment was truncated fabric-impressed. The rim exhibited four rows of small finger pinches with a row of widely spaced punctuates below (Damkjar 1995:65). The pot was classified as Avonlea pottery (Damkjar 1995:65).

A number of unusual artifacts were recovered within the pit feature. Two bison bones (a proximal phalanx and a tibia shaft) exhibited stripes and patches of red ochre. In each of two right mandibles, the ramus was worked into a rounded spatulate at one end while the other end had the incisors removed to create a sharp point (Damkjar 1995:66). These artifacts were interpreted as digging tools. Other faunal material (n = 1,021) within the pit included portions of fifteen bison skulls and seventeen articulated limbs sections. Nine dog bones were also recovered. Twelve radiocarbon dates were obtained for the pit feature (Table 23). The author rejected two old dates and noted the remaining ten dates fell within an estimate of 1,250 +/- 50 BP. The points, pottery, and dates all suggest an unusual Avonlea pit feature (Damkjar 1995:80–83).

H.M.S. Balzac (EhPm 34). The H.M.S. Balzac site is a multicomponent campsite on an oxbow of Nose Creek just north of Calgary. The site was discovered in 1978. Five areas of occupation, labelled A–E, were outlined. In 1981, two blocks totalling 64 m² (Block 1, 24 m²; Block 2, 40 m²) were excavated. This excavation revealed a highly stratified Late Prehistoric site with up to six Old Women’s occupations overlying up to six Avonlea occupations (Head 1985, 1986).

Avonlea points were recovered from sediment Levels 9 through 12 in Block 1, and Levels 8 through 13 in Block 2. The stratigraphic relationships between the two blocks were never established (Head 1986:13). Radiocarbon dates from the site are problematic. While the charcoal dates provide a sequence corroborated by the stratigraphy, the bone dates do not. Given that the site is a floodplain and that bone dates can be affected by groundwater (Head 1986:13–14), the latter are rejected as contaminated. Thus, for Block 2, Level 11 was radiocarbon dated to ca. 1,300 BP and Level 13 was dated to ca. 1,500 BP. The latter is one of the earliest Avonlea dates in the province.
<table>
<thead>
<tr>
<th>Site [LAB NO.]</th>
<th>Conventional ¹⁴C Age</th>
<th>¹⁴C/¹²C Ratio</th>
<th>Material</th>
<th>Calibration</th>
<th>Reference</th>
</tr>
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<td>DkPj 1 [RL-256]</td>
<td>1000+/-110</td>
<td>-20.0‰ collagen</td>
<td>A.D. 680–1170 (p = 0.954)</td>
<td>Reeves 1978; Morlan n.d.</td>
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<td>DkPj 1 [GSC-981]</td>
<td>1010+/-140</td>
<td>-22.9‰ collagen</td>
<td>A.D. 650–1300 (p = 0.954)</td>
<td>Reeves 1978; Morlan n.d.</td>
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<td>DkPj 1 [GX-1231]</td>
<td>1330+/-85</td>
<td>-20.0‰ collagen</td>
<td>A.D. 420–780 (p = 0.954)</td>
<td>Reeves 1978; Morlan n.d.</td>
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<td>DkPj 1 [GX-1599]</td>
<td>1335 +/- 95</td>
<td>-20.0‰ collagen</td>
<td>A.D. 410–810 (p = 0.954)</td>
<td>Reeves 1978; Morlan n.d.</td>
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<td>DkPj 1 [GAK-1475]</td>
<td>1860 +/- 120</td>
<td>-20.0‰ collagen</td>
<td>rejected</td>
<td>Reeves 1978; Morlan n.d.</td>
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<td>1645 +/- 130</td>
<td>-20.0‰ collagen</td>
<td>A.D. 1–600 (p = 0.954)</td>
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<tr>
<td>DkPj 1 [RL-330]</td>
<td>1840 +/- 90</td>
<td>-20.0‰ collagen</td>
<td>170–130 B.C. (p = 0.018); 120 B.C.–A.D. 270 (p = 0.907); A.D. 280–330 (p = 0.029)</td>
<td>Reeves 1978; Morlan n.d.</td>
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<td>DkPj 1, 2b [AECV-1765C]</td>
<td>1290 +/- 80</td>
<td>-19.5‰ bone</td>
<td>A.D. 600–900 (p = 0.938); A.D. 920–950 (p = 0.016)</td>
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<td>DkPj 1, 2b [AECV-1766C]</td>
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<td>A.D. 570–890 (p = 0.954)</td>
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<td>DkPj 1, 2b [AECV-1767C]</td>
<td>1190 +/- 70</td>
<td>-19.2‰ bone</td>
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<td>-19.6‰ bone</td>
<td>A.D. 670–980 (p = 0.954)</td>
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<td>-19.5‰ bone</td>
<td>A.D. 600–900 (p = 0.938); A.D. 920–950 (p = 0.016)</td>
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<td>charcoal</td>
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<td>charcoal</td>
<td>A.D. 410–620 (p = 0.954)</td>
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<td>1110 +/- 60</td>
<td>collagen</td>
<td>A.D. 770–1030 (p = 0.954)</td>
<td>Head 1985:12</td>
</tr>
<tr>
<td>EhPm</td>
<td>34, 25</td>
<td>1010 +/- 50</td>
<td>collagen</td>
<td>A.D. 890–920 (p = 0.045); A.D. 940–1360 (p = 0.909)</td>
<td>Head 1985:12</td>
</tr>
<tr>
<td>DhPj</td>
<td>31</td>
<td>1180 +/- 85</td>
<td>-20.0‰ collagen</td>
<td>A.D. 690–750 (p = 0.186); A.D. 760–980 (p = 0.848)</td>
<td>Quigg 1988a</td>
</tr>
<tr>
<td>DhPj</td>
<td>31</td>
<td>1155 +/- 90</td>
<td>-20.0‰ collagen</td>
<td>A.D. 670–1030 (p = 0.954)</td>
<td>Quigg 1988a</td>
</tr>
<tr>
<td>DlOn</td>
<td>3</td>
<td>1140 +/- 90</td>
<td>charcoal</td>
<td>A.D. 670–1040 (p = 0.954)</td>
<td>Milne 1988</td>
</tr>
<tr>
<td>DlOn</td>
<td>3</td>
<td>1165 +/- 125</td>
<td>-18.5‰ collagen</td>
<td>A.D. 600–1200 (p = 0.954)</td>
<td>Milne 1988</td>
</tr>
<tr>
<td>DlOn</td>
<td>3</td>
<td>1210 +/- 80</td>
<td>charcoal</td>
<td>A.D. 660–980 (p = 0.954)</td>
<td>Milne 1988</td>
</tr>
<tr>
<td>DlOn</td>
<td>3</td>
<td>1190 +/- 80</td>
<td>-18.5‰ bone</td>
<td>A.D. 670–990 (p = 0.954)</td>
<td>Milne 1988</td>
</tr>
<tr>
<td>DlOn</td>
<td>3</td>
<td>1420 +/- 150</td>
<td>-9.1‰ bone apatite</td>
<td>A.D. 250–1000 (p = 0.954)</td>
<td>Milne 1988</td>
</tr>
<tr>
<td>DlOn</td>
<td>2</td>
<td>1180 +/- 140</td>
<td>-23.3‰ charcoal</td>
<td>A.D. 600–1200 (p = 0.954)</td>
<td>Milne 1988</td>
</tr>
<tr>
<td>FdOt</td>
<td>9</td>
<td>1220 +/- 80</td>
<td>-20.0‰ collagen</td>
<td>A.D. 660–980 (p = 0.954)</td>
<td>Stuart 1988</td>
</tr>
<tr>
<td>FdOt</td>
<td>9</td>
<td>1030 +/- 150</td>
<td>-20.6‰ collagen</td>
<td>A.D. 650–1300 (p = 0.954)</td>
<td>Stuart 1988</td>
</tr>
<tr>
<td>EcOs</td>
<td>41</td>
<td>1020 +/- 110</td>
<td>-20.0‰ collagen</td>
<td>A.D. 770–1260 (p = 0.954)</td>
<td>Brumley and Dau 1988:43</td>
</tr>
<tr>
<td>EcOs</td>
<td>41</td>
<td>610 +/- 100</td>
<td>-20.0‰ collagen</td>
<td>A.D. 1210–1480 (p = 0.954)</td>
<td>Brumley and Dau 1988:43</td>
</tr>
<tr>
<td>EdOn</td>
<td>7</td>
<td>1470 +/- 90</td>
<td>-20.0‰ collagen</td>
<td>A.D. 390–710 (p = 0.942); A.D. 740–770 (p = 0.032)</td>
<td>Brumley and Willis 1977</td>
</tr>
<tr>
<td>EFow</td>
<td>27</td>
<td>1560 +/- 60</td>
<td>-18.4‰ collagen</td>
<td>A.D. 380–640 (p = 0.954)</td>
<td>Goldsmith 2005</td>
</tr>
</tbody>
</table>
The site does not exhibit evidence of a level with both Avonlea and Old Women’s material (Head 1986:16). A cursory review of the artifacts recovered from the site indicates bifaces, wedges, retouched flakes, end scrapers, side scrapers, drills, spokeshaves, cores, choppers, and pottery were associated with most levels of the site (Head 1986:16). Head’s (1986:31, 36) thorough faunal analysis noted fetal elements within most levels of the site, indicating late winter/early spring occupations. Some degree of continuity between Avonlea and Old Women’s was noted (Head 1986).

Shaw (EdOn 7). The Shaw site is a burial of a single individual in the sand hills west of Hilda, southeastern Alberta (Milne 1988:65). Excavated in 1974, the burial was a secondary interment, apparently situated about 45 cm bs beneath a small stone cairn. Most of the skeleton was present, and there were three stone tools and a few bison bone fragments. No culturally diagnostic material was recovered. A single radiocarbon date of ca. 1,500 BP was obtained (Table 23). The site was excavated prior to a pipeline development. Besides the indicative dates, it is not known if this site represents an Avonlea burial.

Larson (DlOn 3). The Larson site is a processing site and/or campsite located on a terrace along the Ross Creek Valley, approximately 3 km south of Irvine (Milne 1988). During an inspection near the Irvine Kill site (DlOn 2), butchered bone, FBR, and numerous flakes were observed eroding from a cutbank along an extinct oxbow channel of Ross Creek. Two cultural levels were recorded; the upper level represented a series of closely deposited Avonlea occupations while the lower level consisted of redeposited bone (Milne 1988:48–49). The site was named after the landowner, the Larson Cattle Company (Milne 1988). It was excavated by the Medicine Hat College in the summers of 1982 and 1986. Auger testing suggested that the site is at least as extensive as the terrace on which it is located (Milne 1988:48). In 1982, 6 m² were excavated; an additional 12 m² were excavated in 1986.

The 1982 excavations produced six Avonlea points, eleven Avonlea triangular preforms, and five indeterminate point fragments. The points were found in association with a stone-boiling pit adjacent to an unprepared hearth, a possible second boiling pit, two roasting pits, and assorted FBR, faunal material, and lithic debitage. Other tools included end scrapers ("n = 5"), biface fragments ("n = 3"), perforators ("n = 4"), pièces esquillées ("n = 10"), and...
retouched flakes \((n = 30)\), cobble choppers \((n = 2)\), a graver, a core, and a scraping plane \(\text{Milne 1988}\). The lithic assemblage emphasized local raw materials, although Knife River flint and Hand Hills agate were present in small amounts. Production methods appeared to be material specific: direct percussion for quartzites, bipolar flaking for pebble cherts, and pressure flaking for siliceous materials \(\text{Milne 1988:63}\). Craftsmanship was poor by Avonlea standards, possibly reflecting the available raw materials \(\text{Milne 1988:63}\). Evidence of two ceramic vessels recovered from spatially separated features exhibited smoothed interior and exterior surfaces \(\text{Milne 1988:61}\).

The faunal assemblage was weathered but the fragmentation still supported the interpretation of food processing. A minimum of five bison and one fetal bison were represented in the assemblage, which was too fragmentary to address sex. Other species present in the sample were fox, mink, antelope, and duck. The presence of fetal bison and the duck suggest a late winter/early spring occupation. A few dog elements were also present. Two canid articulating lumbar vertebrae exhibit ankylosing spondylitis, which indicated the use of the dog for transport of travois \(\text{Milne 1988:56}\). A dog metapodial was fashioned into an awl. Other bone tools recovered included a second awl, a punch, and a flaked bone artifact \(\text{Milne 1988:61–62}\). A large amount of FBR \((57,703.78 \text{ grams})\) was recovered at the site. Both heat-spall and water-fracture patterns were noted, supporting the interpretation of the features \(\text{Milne 1988:54}\).

Five radiocarbon dates were obtained \(\text{Table 23}\). The dates support the researcher’s suggestion that the site represents a series of reoccupations between 1,300 BP and 900 BP \(\text{Milne 1988:63}\). One date \((\text{ex-9395 A})\) was rejected; the split nature of the sample may have contributed to contamination. The single date from the Irvine Kill site \(\text{DlOn 2}\) corresponds with the Larson site dates, reinforcing the possibility that the kill was contemporaneous with the campsite.

Irvine/Ross Creek Kill site \(\text{DlOn 2}\). The Irvine Kill site is a bone bed with an associated feature eroding out of the east bank of the Ross Creek. Alan Bryan originally reported the site in 1965 \(\text{Milne 1988}\). Avonlea points have been found in association with the eroding bone bed. A radiocarbon date of ca. 1,200 BP \(\text{Table 23}\) from an eroding hearth suggested a contemporaneous date with the nearby Larson site \(\text{Milne 1988}\). Vandalism and erosion from the creek threaten the site \(\text{Milne 1988:43}\).
Manyfingers (DhPj 31). The Manyfingers site is a processing site on the east side of the Belly River. It lies on the western border of the Blood Indian Reserve, about 30 km southeast of Pincher Creek (Quigg 1974a, 1974b). The site was excavated during the summers of 1972 and 1973 in response to erosion resulting from water management activities (Quigg 1988a:67). Material from stratified sediments came from three terraces; excavations focused on the second terrace, where 73 m² were excavated. Two levels containing Old Women’s material overlaid the level with the Avonlea material; the researcher indicated there was little possibility of mixing (Quigg 1988a:67).

Five Avonlea points were associated with two features, bone, fbr, lithic debitage, and ceramics (Quigg 1988a). Other tools included cobble choppers (n = 22), bifaces (n = 3), end scrapers (n = 2), a side scraper, a uniface, and retouched flakes (n = 9). The debitage reflected the use of local lithics, especially argillite, quartzite, local cherts, and local chalcedonies, with little obsidian, Knife River flint, or Avon chert (Quigg 1988a:70–71). The pottery assemblage consisted of thirteen sherds from a single vessel (Quigg 1988a:74). The surface treatment was deep-knotted cord impressions that had been smoothed. Vessel form could not be determined although two sherds exhibited tapering exterior punctuates. Quigg (1988a:77) attributed the vessel to Byrne’s (1973:77) Early Variant of the South Saskatchewan Basin complex.

The faunal assemblage was consistent with a processing site. A minimum of thirty-three heavily butchered bison were present. Fourteen bone tools were also recovered, including retouched bone, intentionally smoothed bone, bone exhibiting use wear, and a scraper handle (Quigg 1988a:73, 75). Sexing of the bison specimens was not conducted. Although two fetal bones were identified, they may be intrusive from overlying deposits. The researcher suggested that the paucity of fetal bone indicated a summer or fall occupation (Quigg 1988a:70, 78). The two features were a bone concentration (42 cm in diameter and 10 cm thick), which may have resulted from site cleanup by the occupants, and a bone-lined depression in gravel (70 cm in diameter, and excavated 20 cm deep), possibly used as a cooking pit (Quigg 1988a:70). The fbr assemblage was quite large and evenly scattered over the site; the stones’ hackled edges suggested use in stone boiling (Quigg 1988a:70). Two radiocarbon dates were obtained, of ca. 1,150 BP and 1,200 BP (Table 23). A single occupation was suggested (Quigg 1988a).
Wells (FdOt 9), Component 2. The Wells site is discussed in the section on the Besant phase. In the Avonlea component, a single point was recovered. Originally, it was classified as a Late Plains side-notched point (Stuart 1988:21). Its short base height, slightly concave base, and very shallow notches, however, indicate that it is an Avonlea point. Other tools included cobble choppers (n = 22), bifaces (n = 3), end scrapers (n = 2), a side scraper, a uniface, and retouched flakes (n = 9). Raw materials focused on quartzite and pebble cherts. Six non-diagnostic pottery sherds were also recovered. A possible bone tool was identified in use wear on one end of a large ungulate long bone (Stuart 1988:71). The faunal assemblage (n = 1,442) was highly fragmented and only a few pieces were identifiable as bison (Stuart 1988:74). No features were noted although FBR (n = 1,480) was common and highly fragmented (Stuart 1988:70). Two radiocarbon dates were obtained from this material, of ca. 1,150 BP and 1,000 BP (Table 23). The dates and materials indicate a single occupation towards the end of the Avonlea phase.

EcOs 41. EcOs 41 is a buried processing site and/or campsite on Canadian Forces Base Suffield in southeastern Alberta. It is located on the edge of a coulee in an area of strongly rolling, hummocky moraine with a spring-fed pond that flows into the coulee below. The site was found during excavations for mud pits associated with a well site. Salvage excavations were undertaken in the summer of 1978. A total of 18 m² was excavated. The vast majority of the material was recovered from 5–15 cm BS, suggesting a single occupation (Brumley et al. 1983:6).

A single Avonlea point was recovered in addition to six point fragments. They were found in the same sediments as numerous stone tools, faunal remains, ceramics, and a large hearth (Brumley et al. 1983:2–24). Other tools recovered included retouched flakes (n = 15), end scrapers (n = 2), unifaces (n = 2), and small cores (n = 3). The assemblage was dominated by local cherts, quartzite, and petrified wood, with tools made on more siliceous raw materials such as Swan River chert, Montana chert, Avon chert, and Knife River flint (Brumley et al. 1983).

A number of small, badly fragmented pottery sherds (n = 310) were recovered. The sample was recovered from two separate areas and considered to represent at least two vessels. The majority of the sherds have smooth interior and exterior surfaces, although largely obliterated cord or fabric impressions appear on a few exterior ceramics and on two rim
sherds. Despite the small sample, the assemblage was considered to exhibit similarities to the Saskatchewan Basin pottery (Brumley et al. 1983:22; Byrne 1973).

The site has a fairly large saucer-shaped excavated pit (110 cm wide and 12–18 cm deep) that contained considerable quantities of burned bone, unburned bone, and ash (Brumley et al. 1983:6). Although most of the faunal assemblage was burned hearth fill, the researchers determined that at least two adult bison were represented (Brumley et al. 1983:7). No clear concentrations of FBR were observed but a fairly substantial quantity (3,830.3 grams) was recovered. The authors suggested it was a hearth or backfilled boiling pit (Brumley et al. 1983:6). Two radiocarbon dates were obtained. One sample from the hearth feature yielded a date of ca. 1,000 BP (Table 23), which is late for an Avonlea date (Brumley and Dau 1988:43). The second sample consisted of burned and unburned bone from several pits and produced a date of ca. 600 BP; this date is considerably late for Avonlea and was rejected (Brumley and Dau 1988:43).

**EhPc 108.** EhPc 108 is a campsite on a terrace above the Red Deer River in the Wintering Hills, south-central Alberta (Loveseth 1983). The site was excavated in the summer of 1981 and consisted of shallow deposits in a small depression. A total of 57 m² was excavated (Loveseth 1983:23). The site was mitigated prior to a pipeline construction (Loveseth 1983:69, 94).

Four Avonlea points, two Avonlea preforms, and a tip were recovered in association with two hearths and an FBR concentration (Loveseth 1983). Other tools recovered included end scrapers (n = 5), biface fragments (n = 6), gravers (n = 4), retouched flakes (n = 79), utilized flakes (n = 7), choppers (n = 8), cores (n = 107), a side scraper, and a uniface (Loveseth 1983:84). The debitage emphasized petrified wood and quartzite. Most of the petrified wood artifacts exhibited a greasy lustre and were associated with a rock-covered hearth. The researcher suggested that the material was being heat treated to improve its knapping qualities. This would explain the high incidence of petrified wood in an area usually dominated by quartzite. Many delicate tools at the site were made on petrified wood while tools requiring strength were made on quartzite (Loveseth 1983:84). A single pottery body sherd was recovered (Loveseth 1983:63).

The faunal assemblage was small (n = 66) and suggested processing activities with lower limbs being brought to the site. Other elements were poorly represented, suggesting that they were left at an indeterminate kill
site (Loveseth 1983:64). Most of the bone was found outside the features. The features include a rock-covered hearth (55 cm wide by 16 cm deep), an FBR concentration (75 cm wide), and a basin hearth (75 cm wide by 19 cm deep). A single radiocarbon date of ca. 900 BP was obtained for the site (Table 23). This is a very late date for Avonlea.

Ramillies (EcOr 35). The Ramillies site is a bison kill site and campsite located north of Medicine Hat, in the central part of the Canadian Forces Base Suffield, southeastern Alberta (Brumley 1976:1–2). The site's name comes from the term used by the military in referring to the portion of the base that the site is on within the reserve (Brumley 1976:2). The site was excavated during the summers of 1972 through 1974. A total of 133 m² was excavated (Brumley 1976:8–14).

Thirty-two Avonlea points and numerous Cayley Series points were recovered from the site. Brumley (1976:1–2) divided the site into three parts: Areas A, B, and C. Area C (88 m²) consisted of stone cairn alignments that led to an enhanced oval depression with a rock-capped wall approximately 20 m long by 12 m wide by 2 m deep. These features were interpreted as drive lanes and a pound (Brumley 1976:1–2, 11–14). Three basic stratigraphic units were recorded for the oval depression with rock-capped walls (Brumley 1976:12). The bottom consisted of basal gravels, the layer above consisted of evidence of wall construction, and the top layer consisted of bison bones, projectile points, bone tools, and debitage. Area B is a midden along the coulee wall, directly adjacent to the pound that exhibited bison bone. The midden is attributed to the dumping of bison remains from the pound down the adjacent slope, to prepare the pound for subsequent pounding events (Brumley 1976:1–2, 9–11). For Area B, no stratigraphy was discernible (Brumley 1976:10). In Areas B and C, the cleaning process within the pound made it impossible to differentiate periods of use. Area A is a relatively flat area a few hundred metres north of the other Areas. At this location, the unearthing of hearths, pits, FBR, butchered faunal remains, lithic debitage, and ceramics was interpreted as indicative of campsite/processing activities (Brumley 1976:1–2, 9). In Area A, Brumley (1976:8) defined three cultural units in the stratigraphy, i, ii, and iii. Level i was the Avonlea phase, Level ii was mixed, and Level iii was the Old Women’s phase. Still, the shallow deposition was not conducive to stratigraphic separation.

Based on fetal remains and bison tooth eruption and wear analysis, the
site was considered to have been used in the spring, summer, and fall (Brumley 1976:20, 23). More recently, dental cementum increment analysis has refined this to suggest that kill events occurred between late March and late October (Peck 2004).

An Avonlea occupation is known from the campsite area, Level 1, but radiocarbon dates are not available for this occupation. Level II, however, where mixed materials suggest a possible transitional assemblage, a radiocarbon date of ca. 1,050 BP (Table 23) was obtained. The overlying Old Women’s occupation, Level III, produced a radiocarbon date of ca. 750 BP (Table 23). The site is unique in its construction on the Northern Plains. When the structure was operating it was quite small and could likely only contain a few animals. Still, it appears to have been used repeatedly during the Avonlea and the Old Women’s phases, and possibly during a transitional phase between the two. Unfortunately, the poor stratigraphic separation at the site has made it difficult to assign the cultural material to any one time period.

Other sites. There are a number of other Avonlea sites in Alberta that lack reliable radiometric dating or context. For example, EfPi 17 is a campsite located on two long slump blocks on the north side of the Bow River, about 20 km southeast of Calgary. An Avonlea occupation predates the rotational slump and, thus, the site has been interpreted as a single occupation of a high bluff-edge camp (Hanna 2002:50). Four projectile points (two Avonlea, one body fragment, one basal fragment) were recovered in association with a hearth and a scatter of lithics, with a few bones and non-diagnostic pottery. Hanna (2002:37) noted that, based on the distribution of artifacts around the hearth, a buried tipi floor was possible although a stone circle was not found. The exposed location suggests a summer occupation but the author noted that the assemblage is not inconsistent with a winter occupation (Hanna 2002:50).

EbPi 93 is a campsite with Avonlea material underlying Old Women’s material. The site is located on an intermediate terrace on the west side of the Little Bow River. A total of 36 m² was excavated. A radiocarbon date of 1,270 +/- 110 BP supports the Avonlea designation (Charles Ramsay, personal communication 2005). The Hartell Creek (EgPi 1) site west of Strathmore produced a number of Avonlea points in what appears to be mixed context although the Avonlea material may be associated with Sonota material (Murray et al. 1976).
In the Majorville Medicine Wheel, Calder (1977:87) identified twenty-two Avonlea points from the cairn. Only eight of twenty-eight pottery sherds were classifiable as Saskatchewan Basin complex: Early Variant pottery (Byrne 1973). DjOu 81 is a campsite that produced an Avonlea point and a radiocarbon date of 1,450 ± 90 BP (Beta-19807) (Brumley and Dau 1988:245). An association between the point and dated material was fairly firmly established. EcOq 81 is a tipi ring site on a bench overlooking a slough north of the Canadian Forces Base Suffield but south of the town of Buffalo. A shovel test in one of the two rings recovered an Avonlea point. The site was avoided so further excavations were not required (Himour 2002). Likewise, EaOt 20 is a single tipi ring site on a small knoll, just above the floodplain of the South Saskatchewan River north of Bow Island. Shovel tests in the ring recovered a single Avonlea point, a retouched flake and some FBR. The pipeline development avoided the site making further work unnecessary (Brady 2004).

Evidence of Avonlea sites is not limited to the Plains. In Waterton Lakes National Park, Reeves (1972) noted Avonlea points from a number of sites (DgPl 42, 47, 68, 76, 85, 86, and 148). A discrete Avonlea component was found at DgPl 68, which is a site on a terrace above Pass Creek in the Pass Creek Valley. The Avonlea material is a campsite, underlying Old Women’s material, in a well-defined level beneath the Ah horizon. Three Avonlea points and two Avonlea preforms were recovered along with an asymmetrical ovate biface, biface fragments (n = 2), triangular end scrapers (n = 4), oval end scrapers (n = 2), utilized flakes (n = 23), cobble choppers (n = 4), and core fragments (n = 4) (Reeves 1972:77, table 6). The material was recovered in association with a concentration (60 cm wide) of FBR and calcine bone that was interpreted as a hearth. Eight 4-m² units were excavated (Reeves 1972:75, 391). A number of sites with Avonlea points are known from the Crowsnest Pass: both DjPq 1 and DjPq 2 have produced Avonlea points.

Avonlea: Migrant Archers from the East

The Avonlea phase is very distinctive on the Alberta plains. It may start as early as 1,550 BP in Alberta although the vast majority of dates are considerably later. An initial occurrence of the Avonlea phase in Alberta likely occurs as late as 1,350 BP, given the proposed revision of dates at Head-Smashed-In Buffalo Jump, the numerous dates on the Head-Smashed-In Buffalo Jump pit (Area 2b), and the dates at the H.M.S. Balzac site.
The diagnostic projectile points of the Avonlea phase are the Avonlea side-notched point and the Head-Smashed-In corner-notched point. The Avonlea side-notched point is a thin, delicate, side-notched point that exhibits notches low on the margins and a straight to slightly concave basal edge. The neck width tends to be about 1.2 to 1.0 cm, which indicates an arrow point. The craftsmanship in the manufacture of these points is exquisite. Similarly, the Head-Smashed-In corner-notched point is, more or less, a corner-notched version of the point described above, but with more rounded shoulders and basal edges, given the relationship between Sonota and Avonlea, and the recovery of Head-Smashed-In corner-notched points in only the earliest “Avonlea” deposits, it seems possible that it represents a Sonota arrow point. This would be based on the premise that the people of the Sonota phase and Avonlea phase merged populations and/or ideas.

The non-projectile part of the Avonlea lithic assemblage is not particularly diagnostic. Reeves (1983a:103) suggested that a diamond-shaped biface occurs in early Avonlea assemblages, but this has not been confirmed. Frequently, asymmetrical lanceolate knives or blades are attributed to late Avonlea assemblages (e.g. Reeves 1983a:346–7, fig. 20, nos. 8–10). These “finger” bifaces are about the length and width of a finger and rounded at both ends.

The lithic raw material used at various Avonlea sites tends to come from local sources. In fact, Reeves (1983a:104) indicated that Knife River flint was absent from the Avonlea phase. As pointed out above, however, there are sites to the south and east, such as Garratt, Gull Lake, and Lost Terrace (discussed below), that do yield some exotic raw materials. Sites that demonstrate Avonlea cohabiting with Sonota exhibit substantial amounts of Knife River flint (see Sonota phase above).

Pottery was recovered from a number of the Avonlea sites. The pottery was initially identified as the Saskatchewan Basin complex: Early Variant pottery. Parallel-grooved, fabric/net-impressed, and plain surface finishes are known within the province. One or more rows of punctates below the rim have been found as decorative motifs. The lips tend to be flat or ridged, and are usually not thickened. The form was difficult to determine in many instances, but there is no reason to doubt the vessels are simple globular or coconut form (Byrne 1973).

Subsistence during the Avonlea phase in Alberta was focused on bison. All of the sites discussed above were related to bison jumping or pounding and/or processing, with the exception of the possible burial. It can be
argued that bison procurement reached a pinnacle during the Avonlea phase. Most Avonlea sites show repeated use. This may, in part, provide a reason for the apparent limited number of Avonlea sites on the Plains (Brumley and Dau 1988:46; Dyck 1983); these people may have relied on a highly repetitive use of the landscape compared to earlier peoples, such as Besant phase. As well, the redating of the Avonlea phase to 1,350–1,100 BP dramatically shortens the potential time over which Avonlea sites could have been created, which would also have an affect on the number of sites that can be considered Avonlea.

There are a range of features that have been observed in Alberta’s Avonlea sites including basin hearths, surface hearths, rock-lined hearths, roasting pits, and stone circles. A ceremonial pit feature from Head-Smashed-In Buffalo Jump defies obvious functional interpretation. Also, a possible burial may be indicated in a secondary interment under a cairn.

Avonlea sites are well known from across the Northern Plains. Southern Saskatchewan, southwestern Manitoba, eastern Montana, and northwestern North Dakota have yielded Avonlea sites. Areas on the periphery of this core, however, often attribute sites to the Avonlea phase when, in fact, they exhibit Avonlea-like traits and do not comply with the phase as described above. A review of some of the sites in these aforementioned geographic areas is appropriate to provide some clarity.

In Saskatchewan, the Avonlea site (EaNg 1) is a single-component bison drive and kill site located near the town of Avonlea in southeastern Saskatchewan. A radiocarbon date of 1,500 +/- 100 BP (S-45) was submitted from McCorquodale and Swanson’s 1956 excavation (Kehoe 1988:7). Subsequently, Klimko and Hanna (1988) submitted two samples to be dated. Bone associated with Avonlea points produced a date of 1,565 +/- 205 BP (S2623) (Morlan et al. 2002) while bone from a hearth produced a date of 3,605 +/- 305 BP (S-2777) (Morlan et al. 2002:25). The dates on materials associated with Avonlea artifacts suggest a date ca. 1,500 BP.

The Sjovold site (EiNs 4) on the South Saskatchewan River produced parallel-grooved pottery and a single Avonlea point (Dyck and Morlan 1995:253–284). A radiocarbon date of 1,380 +/- 200 BP (S-1762) was obtained (Dyck and Morlan 1995:280, Morlan n.d.).

The Gull Lake site (EaOd 1) is a highly stratified bison kill southwest of Gull Lake. The site consists of Avonlea material underlying Old Women’s material (Kehoe 1973; Peck 1996). Two radiocarbon dates were derived from the Avonlea layers at the site. The earliest Avonlea layer produced a
date of 1,740 +/- 60 BP (S-255). The most recent Avonlea layer produced a date of 1,290 +/- 60 BP (S-254) (Kehoe 1973:43, Morlan n.d.).

The Garratt site (EcNj 7) is a multicomponent campsite along Moose Jaw Creek (Morgan 1979:74). The Avonlea level, Level 6, produced nineteen Avonlea points, twenty-nine Avonlea preforms, and a Sonata point. The lithic raw material contained high frequencies of Knife River flint compared to typical Avonlea assemblages. Pottery recovered in the level included net-pressed, plain, incised, and punctate surface treatments (Morgan 1979:348–350). Three dates were obtained for Level 6: 1,450 +/- 70 BP (S-406); 1,280 +/- 60 BP (S-408); and rejected date 6,100 +/- 100 BP (S-407) (Morgan 1979:246).

The Newo Asiniak site (FbNp 16) is a multicomponent site in Wanuskewin Heritage Park. It produced an Avonlea point and five Avonlea preforms (Kelly 1986:124). A grooved maul was also excavated from this level (Kelly 1986:131). Net-pressed and fabric finger-woven (sprang) impressed pottery was recovered. Kelly (1986:133–134) noted that the former is commonly recovered with Avonlea points while the latter is often associated with early Old Women's phase (i.e., Prairie side-notched) materials. A radiocarbon date of 915 +/- 70 BP (S-2533) was obtained (Kelly 1986:139; Morlan n.d.). The researcher interpreted the assemblage as transitional between Avonlea and Old Women's rather than considering the component mixed (Kelly 1986:134).

The Bethune site (EeNg 6) is an Avonlea burial located on a knoll north-east of the town of Bethune, south-central Saskatchewan (Dawson and Walker 1988). A cairn may have once covered the site although cultivation left only scattered cobbles. At least seven individuals, ranging from children to adult, were buried in flexed/semi-flexed/bundle interments (Dawson and Walker 1988:4–11). The associated material culture consisted of five chipped stone items, including an Avonlea point, a collection of turtle carapace fragments, a deer metapodial stained with red ochre, and an assortment of bison bone fragments (Dawson and Walker 1988:11–12). A radiocarbon date of 1,390 +/- 40 BP (S-1575) was obtained for the material (Dawson and Walker 1988:4). The Carroll site (EkNv 2) near Swanson on the west side of the South Saskatchewan River in south-central Saskatchewan is another possible Avonlea burial (Walker 1984b). A single burial of an adult female, approximately fifty years old, was placed in an elliptical pit in rolling sand dunes along the South Saskatchewan River (Walker 1984b). Associated with the burial was a fetal bison metacarpal. Nodules
of red ochre were mixed within the sand matrix (Walker 1984b:37). A radiocarbon date of 1,570 +/- 100 BP (S-2226) was obtained for the site (Walker 1984b:37).

The Roussel site (FbNs 2) was found during testing in the Dunfermline Sand Hills, west of Saskatoon. In Test Pit 4, two Avonlea points were recovered with bone that was dated to 1,265 +/- 75 BP (S-670) (Morlan et al. 2002:50). Similarly, Goosen Pasture (FbNs 15) is located in the Dunfermline Sand Hills and produced a ceramic Avonlea component with an associated date of 1,095 +/- 100 BP (S-2690) (Morlan et al. 2002:50).

The Peg site (DiMv 61) is a stratified multicomponent campsite located on the north bank of the Souris River, about 56 km upstream from Estevan (Morlan et al. 2002:18). A number of levels produced Avonlea materials. Level 18 produced a radiocarbon date of 1,225 +/- 85 BP (S-2968) (Morlan et al. 2002:18).

The Yellowsky site (FjOd 2) is located in the east side of Turtle Lake in west-central Saskatchewan (Wilson-Meyer and Carlson 1985). Substantial amounts of Avonlea pottery were recovered (n = 1,339) with evidence of coiling manufacture, net-impressed surface finish, and rows of punctuates below the lip. The fauna included mammals and fish (Wilson-Meyer and Carlson 1985:30). Two radiocarbon dates were obtained for the site: 720 +/- 135 (S-2299) and 340 +/- 140 (S-2300) (Wilson-Meyer and Carlson 1985:28, Morlan n.d.). These are very late dates for an Avonlea occupation.

The Lebret site (EeMw 26) is a stratified multicomponent habitation site in the Qu’Appelle Valley in southeastern Saskatchewan (Smith and Walker 1988). Seven Avonlea points were recovered. The pottery assemblage included at least two vessels, one net-impressed and the other parallel-grooved. The faunal assemblage was mainly bison, but also included deer, beaver, river otter, hare, waterfowl, and fish (especially pike, white sucker, white fish, and possibly perch) (Smith and Walker 1988:85–86). In terms of radiocarbon dates, Area A, Level 3, produced Avonlea points and a date of 1,260 +/- 115 BP (S-2691). Area B, Level 3, produced three Avonlea triangular points and a date of 1,635 +/- 105 BP (S-2797). Area S, Level 4, produced net-impressed pottery and a date of 1,520 +/- 105 BP (S-2799).

In Manitoba, Avonlea finds are not especially common. Surface finds are much more numerous than excavated sites and both are almost invariably west of the Red River, apparently focused on more open grassland areas (Joyes 1988). The Avery site (DhLs 1) is a stratified multicomponent campsite in south-central Manitoba that produced numerous Avonlea points and
Avonlea preforms, as well as asymmetrical lanceolate bifaces often manufactured on Knife River flint. The pottery includes parallel-grooved and fabric-impressed sherds (Joyes 1988:230).

The Stott site (DlMa 1) is a large campsite and processing site along the north slope of the Assiniboine River Valley (Joyes 1988:230). The site has produced mainly Blackduck material, although Avonlea material has been recovered from Zones G and F but not in any particular context (Joyes 1988:231). The site may indicate Avonlea-Blackduck contact.

The Pas Reserve site (FlMh 2) is located on the north bank of the Saskatchewan River at the Pas (Joyes 1988:231). This site has an Avonlea component and is located fairly far north in the boreal forest. The Avonlea level produced two dates: 1,330 +/- 100 BP (A-1294) and 980 +/- 150 BP (A-1349) (Joyes 1988:232, Morlan n.d.). Joyes (1988:232) expressed concern that this material was not Avonlea but more likely related to Blackduck.

The Broadview site (EbMp 6) is a multicomponent occupation located at the south end of Ekapo Lake in southeastern Saskatchewan. The upper level was disturbed, while the lower level produced Avonlea points, net-impressed pottery with punctuates, and smooth pottery vessels (Landals 1995). A date was not obtained for this occupation.

The Miniota site (EaMg 12) is a single-component Avonlea residential occupation in the Assiniboine River Valley, near Miniota in southwestern Manitoba (Landals et al. 2004). In addition to trenching and test units, three blocks were opened: a main block (46 m²), a north block (4 m²), and a south block (6 m²) (Landals et al. 2004:43–63). Fifty-six Avonlea points, thirty-eight unnotched points/preforms, and a single possible Sonota point were recovered (Landals et al. 2004:78–86). The lithic raw materials were dominated by Knife River flint (Landals et al. 2004:102). The Miniota pottery assemblage represented a minimum of four vessels. The most thoroughly reconstructed vessel exhibited net impression with square-headed punctuates while the others have round hollow punctates, keyhole punctates, or round pointed punctates (Landals et al. 2004:107–110). Most of the fauna was bison, including fetal bison, although a few deer, canid, beaver, fox, rabbit, muskrat, and bird were also recovered. As well, a fair number of fish bones were recovered (Landals et al. 2004:137). Several dates were obtained, including a date on charcoal from the hearth that produced a date of 1,340 +/- 90 BP (Beta-58908), and a date on midden bone that was 870 +/- 90 BP (Beta-58907). The two dates do not overlap at two standard deviations despite the archaeological evidence for a single occupation (Landals et al.
Intuitively, the older date seems more acceptable but this was difficult to justify. Thus, more dates were ultimately obtained. The new dates were $1,540 \pm 70$ BP (BGS 1791) and $1,560 \pm 70$ BP (BGS 1792); these dates supported each other but do not overlap with the previous dates, so the latter are rejected (Landals et al. 2004:58).

In Montana, Timber Ridge (24BL101) is a classic Avonlea bison pound site that is located between Bearspaw and the Little Rocky Mountains (Davis 1966). A radiocarbon date of $980 \pm 110$ BP (GX-1195) was obtained for the material.

The Fantasy site (24PH1324) is a bison pound just south of the Milk River in northeastern Montana (Tratebas and Johnson 1988). Avonlea points and parallel-grooved pottery were recovered from the site (Tratebas and Johnson 1988:90–96). A radiocarbon date was obtained from a hearth in an adjacent processing area: $1,040 \pm 100$ BP (RL-1717) (Tratebas and Johnson 1988:91, Morlan n.d.). Similar sites nearby include Beaver Bend (24PH1206) and TRJ (24PH569) (Tratebas and Johnson 1988:91–94).

The Lost Terrace site (24CH68) is an intensive pronghorn utilization locale on the north side of the Missouri River between Bearspaw and Highwood Mountains (Davis and Fischer 1988). Numerous Avonlea points were recovered and the material of the lithic assemblage in general suggested use of exotic raw materials from the east, southeast, and southwest of the site (Greiser 1988). Numerous radiocarbon dates were obtained for the site (Morlan n.d.). Subsequently, Davis et al. (2000:55–56) argued that the most recent date was processed poorly and the three oldest dates were well outside the known Avonlea age range, leaving the remaining seven dates to produce a mean age of ca. $1,200 \pm 25$ BP.

The Goheen site (24WX30) is a single-component Avonlea campsite in a sheltered swale, about 150 m north of a spring that drains to Hodges Creek (Frayley and Johnson 1981). A partial Avonlea point and a preform were recovered with parallel-grooved pottery (Frayley and Johnson 1981:7–15; Johnson 1988). Four radiocarbon dates were obtained: $1,080 \pm 80$ BP (WSU-2382); $1,240 \pm 60$ BP (Beta-8971); $1,270 \pm 60$ BP (WSU-2381 B); and $1,510 \pm 90$ BP (WSU-2381) (Frayley and Johnson 1981:7; Morlan n.d.). The youngest date was suspect because of a high alpha count and was rejected (Frayley and Johnson 1981:7).

The Corey Ranch site (24TT83) is a stone circle camp on the north side of the Teton River (Quigg 1988b). Thirteen of more than twenty stone circles were tested and produced an Avonlea point and some pottery sherds.
The pottery is plain with a cord-wrapped impression on the lip (Quigg 1988b:146). Three radiocarbon dates were obtained on associated bison bone: 890 +/- 120 BP (Beta-14803); 1,110 +/- 80 BP (Beta-14805); and 1,080 +/- 80 BP (Beta-14804) (Quigg 1988b:145; Morlan n.d.).

The Herdegen’s Birdtail Butte site (24BL1152) is a highly stratified, multicomponent bison kill site and campsite located on the southeast margin of the Bears Paw Mountains in north-central Montana. Levels 1 to 11 produced diagnostic Avonlea points, with Level 12 being indeterminate (Brumley 1990:36–41). Level 2 produced a radiocarbon date of 980 +/- 60 BP (Beta-31791) (Brumley 1990:36). Level 12 produced a radiocarbon date of 1,260 +/- 80 BP (Beta-31792) (Brumley 1990:41).

The Vestal site (24FR760) is a multicomponent processing site located near Denton, central Montana (Payette et al. 2006). Five block excavations comprising 473 m² were excavated (Payette et al. 2006:8). At least six occupations were represented. Many Avonlea points were recovered but they are somewhat irregular compared to classic examples of Avonlea points. As well, despite the processing nature of the site, pottery was not recovered (Payette et al. 2006:16). Seventeen radiocarbon dates were obtained, eleven from cultural features. Two were rejected (Payette et al. 2006:14–15). The dates range between ca. 1,130 to 1,260 BP, with outlying dates at ca. 1,400 and 1,680 BP (Payette et al. 2006:15).

In North Dakota, the Evans site (32MN301) is a multicomponent campsite located north of New Town in the northwest part of the state. Component 1 may be mixed but produced Avonlea points (Schneider and Kinney 1978, fig. 5f–g, l–m), Avonlea preforms (Schneider and Kinney 1978, fig. 5i), and an intrusive Pelican Lake or potentially contemporaneous Sonota point (Schneider and Kinney 1978, fig. 5e), along with smooth, unthickened, flattened lip pottery (Schneider and Kinney 1978:6–10). The lithics were mainly manufactured on Knife River flint. The fauna was largely bison although deer, bird, moose, swift fox, and dog or coyote were also recovered. Two radiocarbon dates were obtained for the component: 1,360 +/- 85 BP (1-7566) and 1,200 +/- 85 BP (1-7565) (Schneider and Kinney 1978:6; Morlan n.d.).

In summary, there is cohesiveness within the Avonlea phase. The Avonlea point is quite distinctive, although temporal variation is exhibited in a slow degradation from exquisite forms to less finely worked forms through time. Avonlea pottery is also distinctive whether it is parallel grooved.
impressed, or shouldered plain ware. The morphology and distribution of these diagnostic materials exhibit consistency through southern Alberta, southern Saskatchewan, southwestern Manitoba, northwestern Montana, and northwestern North Dakota.

The origin of Avonlea has been discussed repeatedly by Kehoe and Kehoe (1968) who advocated that Avonlea represented the migration of Athapascan speaking people moving to the south (see also Wilcox 1988; Frison 1988; Greiser 1994; and Schlesier 1994). Others have suggested different ethnic affiliations for Avonlea (e.g., Reeves 1983a; Morgan 1979). Landals (1995, Landals et al. 2004) provided a review of this issue and its intricacies. Based on excavations at the Miniota site, Landals, Kulle, and Cockle (2004:11–28) suggested that Avonlea pottery is related to Brainerd Ware in northern Minnesota. Morgan (1979; see also Landals et al. 2004:13) originally proposed this argument based on pottery from the Garratt site. The Garratt site and Brainerd Ware both exhibit net-impressed pottery with roughly the same vessel shape. A problem for the hypothesis was the lack of sites with Brainerd Ware in dated components. The dating of residue on Brainerd Ware demonstrates that it is as old as 2,800–2,700 BP, which shows it could be a potential Avonlea ancestor (Landals et al. 2004:14).

The excavation of the Miniota site provided a very early Avonlea site just west of the Brainerd Ware heartland (Landals et al. 2004). Avonlea sites are increasingly younger as they are found further west. This led Landals (1995, Landals et al. 2004:15–17) to review a variety of theoretical issues regarding migration.

Key for any migration is push and pull factors. Push factors include population increase, resource stress, increased information about a destination, or technological innovation (Landals et al. 2004:17). Of these, population increase and resources stress seem like possible push factors, given the proximity to the Hopewell Interaction Sphere and its associated dynamics. With regards to pull factors, the strong association between Sonota and Avonlea might have played a role. A Sonota point was found at the Miniota site. The site also produced an unusual amount of Knife River flint. As mentioned earlier, this is not the only site at which this occurs. The Walter Felt site produced Sonota and Avonlea points manufactured on Knife River flint. The Garratt site contained many Avonlea points and a Sonota point along with an unusual amount of Knife River flint, as did EdNh 35 and EeOm 51. Avonlea’s relationship with Sonota may have drawn it out onto the plains.
The Sonota phase was already present in southeastern Saskatchewan by ca. 1,800 BP. Avonlea may have entered the province by skirting the Plains/parkland periphery, north of Sonota, expanding west behind Sonota. This advancement was in the shadow of Sonota’s success. In fact, the elimination of Besant at ca. 1,500 BP on the southwestern Saskatchewan and Alberta plains made way for Avonlea. Ultimately, by ca. 1,350 BP Sonota disappears and Avonlea is the only phase present on the southern Alberta and southwestern Saskatchewan Plains. The repeated co-occurrence of Sonota and Avonlea in sites, and the increased amounts of Knife River flint in the assemblages of those sites, suggests a sharing relationship in which Avonlea obviously benefited by gaining access to superior stone, but it is unclear what Sonota would have received in exchange. In Manitoba and Saskatchewan, Avonlea appears as early as ca. 1,550 BP. By ca. 1,350 BP it spreads to the plains of Alberta, although by ca. 1,300 BP it appears to be absent from Manitoba and southeastern Saskatchewan. This distribution illustrates the continued migration west as some force, possibly population pressure, drives Avonlea from its homeland.

At the periphery of this area are Avonlea-like materials. In Montana, there is a dramatic drop in the number of Avonlea sites south across the Missouri River (Fraley 1988). In fact, the Goheen site in east-central Montana is one of the few excavated Avonlea sites recorded that far south (Fraley and Johnson 1981). South of this is the Benson’s Butte-Beehive complex (ca. 1,550–800 BP) (Fredlund 1988). The points are Avonlea-like, but they are not morphologically Avonlea. They are associated with rockshelters and circular rock wall dwellings (Fredlund 1988). Avonlea is more than a point style, rather it is a complex of technological (points and pottery), social (high redundancy in land use), and ceremonial (interment of individuals in pit burials under cairns) traits. Similarly, in Wyoming, sites from this period are often considered Avonlea sites (Frison 1988:155). Sites such as the Wardell site, Wortham Shelter, the Visborg site, the Leath Burial, and the Billy Creek Burial are not Avonlea sites. The resemblance in form between the points in the aforementioned sites and Avonlea points is considerable, but associated lifeways and features suggest substantially different cultural patterns. While social interaction may ultimately explain the similarity, the morphology of the points alone is well outside that required to be considered Avonlea. The transmontane west of southern British Columbia and northern Montana has also produced Avonlea-like points (Roll 1988, fig. 6a–k) but the vast majority do...
not fit the mould. The recovery of material associated with the montane Avonlea points should provide important information in assessing the relationship of these points to those on the plains.

The nature of Avonlea pottery has also produced lively debate. Three surface treatments have been recognized: net-impressed, parallel-grooved, and plain (Byrne 1973, Johnson 1988, Quigg 1988b). Net-impressed pottery appears most widespread, having been recovered in Alberta at EcOs 41 (Brumley et al. 1983), Morkin (Byrne 1973), Trout Creek (Byrne 1973), H.M.S. Balzac (Walde 2006a), Manyfingers (Quigg 1988a), and the Empress site (Clarke 2000:127–128), in Saskatchewan at Long Creek (Wetlaufer and Mayer-Oakes 1960), Garratt (Morgan 1979), Broadview (Landals 1995), Lebret (Smith and Walker 1988), Gravel Pit (Klimko 1985; Meyer et al. 1988; Walde 2006a), Wallington Flat (Meyer et al. 1988; Walde 2006a), Mineral Creek (Meyer et al. 1988; Walde 2006a), Yellowsky (Wilson-Meyer and Carlson 1985), Birch Hills (Walde 2006a), Harris Sand Hills (Walde 2006a), and Sjovold (Dyck and Morlan 1995), and in Manitoba at Miniota (Landals et al. 2004).

Parallel-grooved or spiral-channelled pottery has been noted in Montana at the Goheen site (Fraley and Johnson 1981), the Fantasy site (Tratchas and Johnson 1988), and the Henry Smith site (Quigg 1988b); in Alberta at the Morkin site (Byrne 1973) and the Empress site (Clarke 2000:127–128); in Saskatchewan at the Garratt site (Morgan 1979), the Sjovold site (Dyck and Morlan 1995), the Avonlea site (Klimko and Hanna 1988; Hanna 1986), and the Kerrobert surface find (Walde et al. 1995); and in Manitoba at the DILg 33 (Speidel 1996).

Plain surface finish has been noted in Alberta at Morkin (Byrne 1973), Larson (Milne 1988), and EfPi 17 (Hanna 2002:49), and in Saskatchewan at Garratt (Morgan 1979), and in Montana at Henry Smith (Ruebelmann 1988) and Corey Ranch (Quigg 1988b).

Johnson (1988) was among the first to suggest that the variety of surface treatments in Avonlea pottery may have some bearing on interactions within the Avonlea culture. More recently, Walde (2006a) has taken this view a step further. He proposed a series of phases that exhibit Avonlea points in association with one of the three types of pottery. Small differences in decoration to the net-impressed pottery and subtle shifts in lithic resources are said to account for the Morkin phase (i.e., Avonlea points and net-impressed pottery in southern Alberta) and the Lebret phase (i.e., Avonlea points and net-impressed pottery in central and southeastern
Similarly, the Sjovold phase consists of parallel-grooved pottery and Avonlea points in southwestern Saskatchewan. The Upper Kill phase contains Avonlea points and relatively plain pottery in southern Alberta and northern Montana. Ultimately, the Upper Kill phase is considered ancestral to the Old Women’s phase. As Landals (1995, Landals et al. 2004:23) has observed, approaches to Avonlea focusing on regional variation (especially in pottery) downplay the co-occurrence of different surface finishes in a single site. As well, the time-transgressive nature of Avonlea, with its occurrence across the plains almost instantaneously and then the disappearance of sites from Manitoba and then eastern Saskatchewan, has not been taken into account by regional models. Ceramics do not appear to exhibit patterning. Avonlea is a cohesive phase.

Ceremonial aspects of the Avonlea phase are poorly known. Avonlea offerings of points and pottery are known at the Majorville Medicine Wheel and Cairn and at Manyberries Medicine Wheel. The large pit at Head-Smashed-In Buffalo Jump clearly speaks to ceremonial practice. The interment of people during the Avonlea phase is also poorly understood. The Bethune site is an unequivocal burial of at least seven people of the Avonlea phase in a pit, possibly beneath a cairn. The Carroll site, dating roughly to the Avonlea phase, is an interment of an individual in a pit, although the presence or absence of a cairn could not be confirmed. The Shaw burial is another pit interment beneath a cairn that roughly dates to the Avonlea phase. Diagnostic materials were not found to confirm the archaeological cultural affiliation of the last two burials. The practice of pit interments beneath cairns seems reasonable to propose as the funerary practice used during the Avonlea phase.

Regarding the fate of the Avonlea phase, at roughly 1,100 BP it disappears from southern Alberta, southwestern Saskatchewan, and northern Montana. Most scholars would agree that the fate of Avonlea is deeply related to the rise of the Old Women’s phase.

**Avonlea—Old Women’s Transition (ca. 1,100 BP)**

Forbis (1960:130) was the first to allude to a possible transitional period between the two main phases of the Late Prehistoric period. While excavating the Upper Kill site, he designated the vast majority of the points as the “Upper Kill type” with the remainder classified under a scheme designed for a later time period. Currently, the Upper Kill type is called the Avonlea point of the Avonlea phase and the “later” points found in
association with them in the Upper Kill site are called Cayley Series points of the Old Women's phase.

Reeves (1983a) suggested that Besant gave rise to the Old Women's phase, based on similarities between Samantha points (Besant arrowheads) and Prairie side-notched (early Cayley Series) points. At the time, a problem with this scenario was that both Besant and Avonlea dates overlapped with those of the Old Women's phase (Brumley and Rushworth 1983; Morlan 1988; Vickers 1986, 1994a).

Byrne (1973:468–469) inferred continuity in both pottery and projectile points between the Avonlea phase and the Old Women's phase. Hence, he placed the pottery associated with these phases under a single ceramic tradition: the Saskatchewan Basin complex. Still, he acknowledged the possibility that Avonlea and Besant may have merged to produce the Old Women's phase (Byrne 1973:470). He considered the Besant phase, however, to be aceramic.

By the 1980s, Reeves (1983a:19–20) concurred that an amalgamation of Avonlea and Besant might explain the origin of Old Women’s. In a model very much like Reeves’ (1983a:19–20), Duke (1988:99–100) also proposed an amalgamation of Avonlea and Besant to explain the origins of the Old Women’s phase. He considered the earliest points associated with Old Women’s to be most comparable to Besant points, while he viewed the pottery and later lithics as most comparable to Avonlea material (Duke 1988:99).

Based on excavations at the Estuary site (EfOk 16), Adams (1977:141–146) argued that the Avonlea phase outlasted or assimilated Besant people, giving rise to the Old Women’s phase. Level 11, the lower level, produced Avonlea and Old Women’s material dated to ca. 1,190 ± 170 BP (S-641). The overlying Level 1, the upper level, consisted solely of Old Women’s material and dated to 1,070 ± 70 BP (S-640) (Adams 1977:142; Morlan n.d.). Adams (1977:143) suggested the term Leader subphase to capture this transitional component. He also listed numerous other sites, including Level 24 of the Gull Lake site, as further examples of co-occupations with Avonlea and Old Women’s materials (Adams 1977:143).

Brumley and Dau (1988:51) saw the Old Women’s phase as developing out of a regional variant of Avonlea in southern Alberta. Elsewhere, other regional variants of Avonlea and Besant developed into as-yet undefined complexes. Interestingly enough, this scenario takes on new meaning with

Hudecek-Cuffe (1989:216; 1992:327–329) provided evidence for continuity in lithic use and technology, ceramics, lithic tool types, and radiocarbon dates to support a model indicating connections between the Avonlea and the Old Women's phases. This work was based on excavations at the Empress (EfOo 130) site near Empress, Alberta, which represents a possible cohabitation of Avonlea and Old Women's peoples.

Clarke (1995) confidently identified the Hartley site (FaNp 19) as an Avonlea–Old Women's transitional site. His faunal assessment identified a single long-term winter occupation consisting of bone elements from twenty-two species of vertebrates, with bison being the most numerous. Fetal bison bone exhibited a wide developmental range, indicating that the animals were being taken repeatedly in small numbers. At the Empress (EfOo 130) site, Clarke (2000) re-examined the stone circle camp that provided the basis of Hudecek-Cuffe's (1989, 1992) model of continuity between Avonlea and Old Women's. His excavations reaffirmed Hudecek-Cuffe's (1989:216; 1992:327–329) findings that the Empress site contained both Avonlea and Old Women's material in association with one another (Clarke 2000:160).

The Sites

In order to assess the various lines of thinking presented above, sites with apparent co-occupations of the Avonlea phase and the Old Women's phase from Alberta that have been reliably dated are outlined below. These sites are used to critically evaluate the current view of the Avonlea–Old Women's transition (see Plate 25 and Figure 26).

Upper Kill (DlPd 1). The Upper Kill site is a bison kill site at the head of a draw on the Oldman River's south bank, 5 km above its confluence with the Little Bow River. Based on testing, an associated campsite may also be present on the prairie level (Forbis 1960:121). The Upper Kill received its name by being the uppermost of two kill sites in the draw. The other kill site 70 m down the draw is called the Lower Kill site, and consisted entirely of Old Women's material (Forbis 1960:121). Forbis excavated the site in 1957. The site was not interpreted as a jump, but was identified as rather an ambush in a draw, which may have had a corral (Forbis 1960:121; Wormington and Forbis 1965:142).
A total of 170 projectile points and point fragments were recovered from the Upper Kill site (see Nance [1972] for a statistical analysis of this point assemblage). Of the classifiable points, the majority of the points (90%, \(n = 86\)) were labelled Upper Kill types (Forbis 1960:138–139), and are now referred to as Avonlea points (Wormington and Forbis 1965:142). An Avonlea triangular specimen was also recognised (Forbis 1960:40, plate 1). The remaining 10 percent of the points conformed to Cayley Series points of the Old Women's phase. Forbis (1960:130) firmly stated that these latter points were found “scattered throughout the cultural deposit of the Upper Kill.” Forbis (1960:140) referred to a point knife in the assemblage “identical in outline to the majority of the points,” which is likely a large version of the Avonlea specimen. Other tools recovered include biface fragments (\(n = 7\)), retouched flakes (\(n = 13\)), a push-plane, and an elongate cobble.

Flakes were noted but not described (Wormington and Forbis 1965:142).
FIGURE 26
Avonlea–Old Women's transition sites within Alberta
The site also produced three fragments of pottery (Wormington and Forbis 1965:142). The fragments included portions of the neck and shoulder of a vessel. Walde and Meyer (2003:142) identify this pottery as Ethridge Ware. The recovery of two antler flakers from the bone bed was also reported (Forbis 1960:156). A single radiocarbon date of ca. 935 BP was obtained for the site (see Table 24). This is a late date for Avonlea, but might reflect the possible co-occupation of the site with Old Women’s people (Morlan 1988:302).

<table>
<thead>
<tr>
<th>Site [LAB NO.]</th>
<th>Conventional ¹⁴C Age</th>
<th>¹³C/¹²C Ratio</th>
<th>Material</th>
<th>Calibration</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcOr 35 [S-1015]</td>
<td>1045 +/- 70</td>
<td>-20.0‰</td>
<td>S-1015</td>
<td>AD 810–1160 (p = 0.954)</td>
<td>Brumley 1976; Morlan n.d.</td>
</tr>
<tr>
<td>Dipd 1 [GX-2295]</td>
<td>935 +/- 90</td>
<td>-20.0‰</td>
<td>charred bone</td>
<td>AD 890–920 (p = 0.015); AD 960–1270 (p = 0.939)</td>
<td>Byrne 1973:630</td>
</tr>
<tr>
<td>EfOo 130 [BETA-141284]</td>
<td>1190 +/- 40</td>
<td>-26.6‰</td>
<td>charred</td>
<td>AD 690–750 (p = 0.078); AD 760–970 (p = 0.876)</td>
<td>Clarke 2000</td>
</tr>
<tr>
<td>EfOo 130 [BETA-141285]</td>
<td>1160 +/- 40</td>
<td>-25.4‰</td>
<td>charred</td>
<td>AD 770–980 (p = 0.954)</td>
<td>Clarke 2000</td>
</tr>
<tr>
<td>EfOo 130 [BETA-141286]</td>
<td>1350 +/- 120</td>
<td>-24.6‰</td>
<td>charred</td>
<td>AD 400–1000 (p = 0.954)</td>
<td>Clarke 2000</td>
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<tr>
<td>EfOo 130 [BETA-141287]</td>
<td>1040 +/- 70</td>
<td>-19.2‰</td>
<td>collagen</td>
<td>AD 810–1170 (p = 0.954)</td>
<td>Clarke 2000</td>
</tr>
</tbody>
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**Empress (EfOo 130).** The Empress site is a tipi ring camp on a small terrace on the south side of the Red Deer River, west of Empress. In 1976, mitigative excavations were undertaken at seven stone circles prior to the construction of a pipeline (Reeves 1977b, Hudecek 1989, Hudecek-Cuffe 1992). A total of 146 m² was excavated. No radiocarbon dates were obtained. In 1999, the site was threatened by another pipeline, and the mitigative excavation of two stone circles, examined in the previous excavations, was conducted (Clarke 2000:80). A total of 75 m² was excavated (Clarke 2000:80).

The original excavations recovered both Avonlea and Old Women’s points and the researchers contended they were contemporaneous (Reeves 1977b, Hudecek 1989, Hudecek-Cuffe 1992). The subsequent mitigative excavations were designed to determine if co-occupation was indeed the case.
(Clarke 2000). Twenty-seven points were recovered including Avonlea \((n=6)\), Cayley Series \((n=3)\), and unclassifiable fragments \((n=18)\). In addition, fifteen preforms were recovered. Other tools included bifaces \((n=12)\), end scrapers \((n=21)\), retouched flakes \((n=17)\), side scrapers \((n=5)\), unifaces \((n=2)\), pièces esquillées \((n=9)\), and a hammerstone. Miscellaneous chert and Swan River chert were the main raw materials used in tool manufacture. Information on the raw materials within the debitage was not available (Clarke 2000:108).

The pottery assemblage consisted of twenty-five sherds. Three different surface treatments were delineated. Most sherds exhibited fabric impression although a sherd exhibiting cord-wrapped paddle impression and a sherd with horizontal fluting (parallel grooving) were present (Clarke 2000:127–128). The two former surface treatments are common within Old Women’s material while the latter is an Avonlea ceramic trait.

The faunal assemblage was varied, consisting of three adult bison, a coyote/small dog, a wolf/dog, a rabbit, fish, and a bird. The presence of three fetal bison bones suggested a late winter/early spring occupation. The seasonality is not in conflict with the presence of fish and bird bones, or freshwater molluscs from the nearby river, as these would have been available in spring (Clarke 2000:122–123). Seeds were recovered from seven features, using fine screens.

Four radiocarbon dates were obtained for the site (Table 24). The researcher suggested the dates indicated a single occupation around A.D. 760–810. Clarke (2000:160) was confident the Empress site was a further example of a growing number of sites with co-occurrence of Avonlea phase and Old Women’s phase materials. Further, Clarke (2000:160) recognized that a number of late Avonlea sites exhibited Old Women’s material traits, such as Corey Ranch and its Old Women’s-like pottery.

**Head-Smashed-In Buffalo Jump.** Head-Smashed-In Buffalo Jump is described above. Reeves (1978:166) documented the recovery of Avonlea points (Timber Ridge side-notched) along with early Cayley Series points (Prairie side-notched) in the lower Old Women’s levels. A clear transition between the two was not noted: the points were mixed in the kill deposits.

**Ramillies.** The Ramillies kill site and associated campsite is described in the section on the Avonlea phase. The kill site deposits contained both Avonlea and Cayley Series projectile points although the stratigraphic relationships have been destroyed by “prehistoric housekeeping” in the pound.
In the related campsite, however, three stratigraphic levels were recorded. In the lowest occupation, Occupation III, an Avonlea occupation was recognized but not radiocarbon dated. Occupation II produced both Avonlea and Old Women’s phases materials together, suggesting a possible transitional assemblage. The radiocarbon date from this level was ca. 1,050 BP (Table 24). Occupation I, the overlying Old Women’s occupation, produced a radiocarbon date of 740 +/- 115 BP (S-1016) (Brumley 1976; Morlan n.d.).

Avonlea–Old Women’s Transition: End of Avonlea Within the Beginnings of Old Women’s

The Avonlea–Old Women’s transitional phase in Alberta received attention only at the end of the twentieth century (Clarke 2000; Hudecek 1989; Hudecek-Cuffe 1992). Previously, many theories concerning terminal Avonlea and/or Old Women’s origins did not consider continuity between the two phases. Substantial data now exists to acknowledge the co-occurrence of Avonlea and Old Women’s phase materials as part of a transition from the former to the latter. Adams (1977:143) suggested the term Leader to label this transition, based on the proximity of the Estuary site to the town of Leader, Saskatchewan. For this text it is considered inappropriate to label a transitional phase between two known phases by a totally different term, so a combination of the two phase names has been used.

The Avonlea–Old Women’s transition consists of sites that exhibit Avonlea material culture such as Avonlea points and/or Avonlea pottery (net-impressed, parallel-grooved, plain) in direct association with Old Women’s material culture such as Cayley Series points and Saskatchewan Basin complex: Late Variant pottery (Byrne 1973) or Ethridge Ware (Walde at al. 1995). The lithic raw material suite recovered at these sites tends to reflect local sources. There is strong continuity between subsistence strategies. Interestingly, evidence of fish occurs at EfOo 130. This is a rarity in later Old Women’s sites but common in earlier Avonlea sites. In terms of the age of this putative transition, the sites date to about 1,100 BP.

Only a handful of sites outside Alberta exhibit characteristics of an Avonlea and Old Women’s co-occupation. In Saskatchewan, the Estuary site (EfOk 16) is a bison kill site at the head of a coulee that produced numerous Avonlea and Cayley Series (Prairie side-notched) points in a single occupation. Associated with this level were two small sherds of pottery that were not particularly diagnostic (Adams 1977:84). This level was overlaid by an Old Women’s component containing Cayley Series (Prairie
side-notched) points. The lower level was radiocarbon dated to 1,190 +/- 170 BP (S-641) while the upper level was dated to 1,070 +/- 70 BP (S-640) (Adams 1977:142; Morlan n.d.).

The Hartley site (FaNp 19) is a multicomponent habitation site located southeast of Saskatoon (Clarke 1995). The site’s stratigraphy, faunal assemblage, and distribution of diagnostics confirm that the Avonlea and Old Women’s materials recovered are concurrent (Clarke 1995:205). The occupation was radiocarbon dated to 1,120 +/- 60 BP (S-3382).

The Newo Asiniak site (FbNp 16) is a multicomponent site in the Wanuskewin Heritage Park. It produced an Avonlea point and five Avonlea preforms (Kelly 1986:124). Net-impressed and fabric-impressed pottery was recovered. Kelly (1986:133–134) noted that the former is commonly recovered with Avonlea points, while the latter is often associated with early Old Women’s (Prairie side-notched) materials. A radiocarbon date of 915 +/- 70 BP (S-2533) was obtained (Kelly 1986:139; Morlan n.d.). The researcher preferred to interpret the assemblage as transitional between Avonlea and Old Women’s rather than mixed (Kelly 1986:134).

In Montana, the Henry Smith site (24 PH 794) is a multicomponent bison kill site on the Milk River in north-central Montana (Ruebelmann 1988). Six discrete bone layers were encountered in a 2-x-4-m unit block in the south part of the site. Every bone layer yielded both Avonlea and Prairie side-notched points, with a relative increase in Prairie side-notched points moving up through the levels. Layer 6, the oldest level, produced a radiocarbon date of 1,200 +/- 100 BP (RL-1597). Bone Layer 4 produced a date of 1,070 +/- 100 BP (RL-1513). Bone Layer 3 produced a radiocarbon date of 1,040 +/- 100 BP (RL-1514). Layer 1 produced a radiocarbon date of 940 +/- 90 BP (RL-1596) (Ruebelmann 1988:197–198). Excavations in another nearby block, 2 x 2 m, produced a similar sequence. Ruebelmann (1988:199) cautioned against considering the assemblage as a transitional Avonlea/Old Women’s site. By way of explanation, however, he simply questioned the homogeneity of Avonlea sites and questioned the reality of a pure Avonlea site. This text suggests the site provides numerous excavated levels documenting the co-occurrence of Avonlea and Old Women’s material.

The Meissner Ranch site (24 HL 188) consists of fifty-six stone circles and two cairns on the north side of the Marias River in north-central Montana (Brumley 1991). Cairn 2 (4 m in diameter) was on a bedrock knob forming part of the river valley wall well above the stone circles. An interment was found in the center of the cairn at the base of the stones (Brumley 1991:48).
Associated with the burial were four *Olivella* shell beads, an antler tool, a large canid molar, yellow iron oxide presumably used for pigment, and a projectile point pendant (Brumley 1991:49). A radiocarbon date of $1,100 \pm 70$ BP (Beta-25343) was obtained for the interment. The point exhibits attributes of both late Avonlea and early Cayley Series points. The cairn-style burial is similar to Avonlea burials, but in this case it exhibits copious grave goods.

Clarke (2000:148–158) suggested that the Gull Lake (EaOd 1) site’s Level 24, the Sheep Camp site (EcOc 3), the Bakken-Wright site (DiOa 1), and the Long Creek site (DgMr 1) in Saskatchewan, and the Morkin site (DlPk 2) in Alberta may represent transitional Avonlea–Old Women’s sites as well.

In short, the transition from the Avonlea material culture to that of the Old Women’s phase took place at about $1,100$ BP. Avonlea artifacts have been repeatedly found in direct association with Old Women’s artifacts. Furthermore, some late Avonlea sites such as Corey Ranch or Amisk show signs of changes in their material culture that foreshadow this transition. Hudecek-Cuffe’s (1989, 1992) studies in continuity provide evidence of a connection between the two phases in terms of lithic use and technology, pottery, and lithic tool types. In fact, Byrne (1973) provided strong evidence for continuity and overlap between the pottery traditions of these two phases years ago. Geographically, the sites that exhibit transitional Avonlea/ Old Women’s components are limited to southern Alberta, southwestern Saskatchewan, and north-central Montana. Besant played little role in this transition, as it disappeared from the archaeological record approximately five hundred years earlier.

**OLD WOMEN’S PHASE (CA. 1,100 TO 250 BP)**

Traditionally, the Old Women’s phase commences as early as $1,400$ BP (Reeves 1978; Morlan 1988) with its earliest radiocarbon dates thought to overlap with both terminal Avonlea and Besant dates (Brumley and Rushworth 1983; Morlan 1988; Vickers 1986). The Old Women’s phase was first recognized in the 1960s when Forbis (1962) developed a classification system for projectile points he excavated at the (Old) Women’s Buffalo Jump near Cayley, Alberta. Reeves (1970) conceived of Old Women’s as an archaeological phase shortly after this. In terms of the phase, Reeves (1970) did not elaborate on the specifics of the phase, but noted that it contained characteristic projectile points and pottery. Byrne (1973:356) refined the definition of the Old Women’s phase by describing the pottery technology associated with it (i.e., Saskatchewan Basin complex: Late Variant pottery).
It was not until the early 1980s that Reeves (1983a:19) provided a relatively concise description of the Old Women's phase, stating, “Old Woman's [sic] phase is characterized by ceramics, emphasizes local Plains or Montana lithics to large measure, and has a technology characterized by the extensive use of split pebble techniques to produce blanks for end scrapers, points, pièce esquillées and burin-like spalls. There is also extensive use of petrified wood. Projectile point styles are microstylisitically discrete [sic], particularly those representative of the close of Prehistoric time” (Reeves 1983a:19).

In a summary of the archaeological knowledge for the Alberta plains, Vickers (1986:95) acknowledged Byrne's (1973) inclusion of Saskatchewan Basin complex: Late Variant pottery within the Old Women's phase. Further, he noted that projectile points recovered from Old Women's sites were generally being classified as Prairie (ca. 1,100 BP-600 BP) and Plains (ca. 600 BP to the Protohistoric period) side-notched, using Kehoe's (1966b) classification rather than Forbis' (1962) seminal classification (Vickers 1986:95). It was in this vein that Brumley and Dau (1988:50–51) defined the Old Women's phase as containing Prairie and Plains side-notched projectile points (as defined by Kehoe 1966b:830–834) in association with Saskatchewan Basin complex: Late Variant pottery (as defined by Byrne 1973:331–356). Additionally, they considered aceramic finds of Plains and Prairie side-notched points to constitute a different phase, which they named the Saddle Butte phase (Brumley and Dau 1988:56).

In terms of geographic distribution, Meyer (1988) argued that the Old Women's phase reached beyond southern Alberta. He recognized Saskatchewan Basin complex: Late Variant pottery from sites in southern Saskatchewan and suggested that the Old Women's phase occurred on both the Saskatchewan and Alberta plains between 1,100 and 600 BP (Meyer 1988). After 600 BP, however, the Old Women's phase was replaced on the Saskatchewan plains by the Mortlach phase but continued on the Alberta plains (Meyer 1988).

Peck (1996; Peck and Ives 2001), argued that classification of Prairie and Plains side-notched point typology (Kehoe 1966b) masked the continuity in projectile points through time, and suggested that some of these points be reclassified as Cayley Series projectile points to more properly reflect the gradual change in projectile point form through time and across space. Cayley Series projectile points are side-notched, although corner notches are sometimes present, especially in specimens from the early part of the series. Basal edge shapes are usually straight but can be convex or concave, notch
forms are largely rounded or v-shaped, and overall base outline shapes are largely fishtail, flattened hexagonal, or rectangular. The term Cayley was used since the first thorough attempt to classify these projectile points was by Forbis (1962) at the (Old) Women’s Buffalo Jump near Cayley, Alberta. In contrast to the fluid form of the Cayley Series were the Mortlach Group points of the Mortlach phase in southern Saskatchewan, which consistently have deep, narrow notches, straight basal edges, and rectangular bases (Peck 1996; Peck and Ives 2001).

Cayley Series projectile points (Peck 1996; Peck and Ives 2001) are consistently recovered with Saskatchewan Basin complex: Late Variant pottery (as defined by Byrne 1973). This combination is considered to define the Old Women’s phase (Peck 1996; Peck and Ives 2001). As Meyer’s (1988) delimited, the geographic distribution of the Old Women’s phase has an early expression (ca. 1,100 – 600 BP) across south-central and southwestern Saskatchewan, southern Alberta, and possibly northern Montana, and a later expression (ca. 600 BP to the Protohistoric period) in southwestern Saskatchewan, southern Alberta, and north-central Montana (Peck 1996; Peck and Ives 2001).

Saskatchewan Basin complex: Late Variant pottery vessels have relatively thick walls and are generally coconut or globular in shape but occasionally exhibit flattened bases (Meyer 1988:56). “Shoulders are quite common and pronounced frequently reflecting internal or external thickening in the vicinity of the ridge, and necks, when present, are generally shallow and short” (Byrne 1973:334). Most vessels exhibit some form of surface treatment (e.g., vertical cord impression or fabric impression, often smoothed) while the minority of the vessels exhibit completely smooth or plain surfaces. Similarly, most vessels exhibit some form of decoration. Meyer (1988:56) noted that surface treatments are produced by impressions from coarse, cord-wrapped tools while common decorations such as punctates and incisions were produced with pointed tools. Decorative elements are often incorporated into a variety of motifs and placed on the lip, just below the lip exterior, on the neck or along the shoulder (Byrne 1973:334–335).

The manufacturing process of Saskatchewan Basin Complex: Late Variant pottery is not clear. Based on ethnographic accounts and experimental archaeology, Simon (1979:39–57) suggested pottery was manufactured using in-ground moulds. She noted the occurrence of decorative motifs only on or above the shoulder of vessels (i.e., the part exposed when in a ground mould) and the occurrence of u-shaped pits at pottery-bearing sites to
support this notion (Simon 1979), which has been looked upon with scepticism (e.g., Byrne 1973:509–510). Coiling and hand building are usually recognised as the likely modes of manufacture.

In terms of lithics, Old Women’s assemblages exhibit an emphasis on locally available material such as cherts, pebble cherts, quartzites, petrified wood, and chalcedonies. Lithic materials from Montana (e.g., Madison Formation and Avon cherts) are fairly common (Brumley and Dau 1988:52) while more exotic materials such as Knife River flint from North Dakota and obsidian from Yellowstone Park in northwestern Wyoming and British Columbia are less common but far from absent.

Regarding subsistence, the single most commonly recovered animal species in archaeological sites of the Old Women’s phase is bison. Owing to their reliance on bison, the people of the Old Women’s phase were likely inclined to anticipate the movements of herds, in order to sustain themselves (Peck 2004). Thus, archaeologists have studied bison migration behaviour for its possible influence on human settlement strategies (e.g., Chisholm et al. 1986; Epp 1988; Morgan 1980; Peck 2004). To complement this indirect measurement of settlement strategy, Peck (2004) conducted research involving thin sections of archaeological bison teeth from Old Women’s sites, to determine the season of death. The dental cementum increments from archaeological bison jaws suggested a tendency for winter sites to be found around the periphery of the plains and in large river valleys, while summer sites were much less common and located on the open plains.

Evidence of spiritual life during the Old Women’s phase is limited. A number of medicine wheels have been excavated, including the Majorville Medicine Wheel (Calder 1977), British Block Cairn (Wormington and Forbis 1965), Manyberries Medicine Wheel (Brumley 1988), and the Grassy Lake Cairn (Forbis 1960). While some medicine wheels are known to have considerable antiquity, all of the aforementioned medicine wheels contain Cayley Series projectile points and/or Saskatchewan Basin Complex: Late Variant pottery.

The actual use of medicine wheels is poorly understood and the term itself likely represents a misnomer of sorts. There is strong evidence that these boulder arrangements represent a highly variable group of structures that have been lumped under the title “medicine wheel.” In fact, some of these structures are known to be functionally unrelated phenomena. For example, one type of “medicine wheel,” consisting of a tipi ring with cobble spokes, is analogous to “burial” wheels constructed by the Blood people.
in this century (Brumley 1985; Dempsey 1956; Peck and Hudecek-Cuffe 2003:89). One such medicine wheel is the Ellis Medicine Wheel. Excavation of the Ellis Medicine Wheel (EcOp 4) uncovered a partial human skeleton, some butchered bison bone, four points, numerous stone tools, and a painted wooden stake radiocarbon dated to about A.D. 1200–1500 (Brumley 1985). Taken with the historic evidence concerning Blackfoot medicine wheels, these cultural remains, which were assignable to the Old Women’s phase, suggested that the Ellis Medicine Wheel was a burial lodge and memorial for a prominent person.

Small ammonite fossils exhibiting a bison-like appearance have been found at Old Women’s sites, including the Majorville Medicine Wheel, the Ross site, the Grassy Lake Cairn, the Col Darse Cave site, the Saamis site, and EaOq 8 in southern Alberta, and the Wahkpa Chu’gn site in north-central Montana (Peck 2002). These fossils are called Iniskim by the Blackfoot. They are used as powerful objects for enticing bison to jumps and pounds, as personal charms, in curing bundles, and in ceremonial bundles (Peck 2002; Reeves 1993). Most recently, an ammonite has been recognized at the Bridgewater (EfPl 34) site (Karen Geiring, personal communication 2008); as expected, the site appears to be an Old Women’s site.

Rock art provides another element of the spiritual life of the people of the Old Women’s phase. Rock art in the form of petroglyphs and pictographs is fairly common in Alberta (see Klassen 2003). Magne and Klassen (1991) argued that a large number of these images, such as shield-bearing warriors, classic v-necked figures, and hourglass figures, date to the Late Prehistoric period and continue to be represented into the Protohistoric period. With regards to these images, Klassen (1995) argued that the rock art transmits iconic information for contacting the spiritual world and narrative information describing actual events as they took place. Barry (1991), using a perspective from religious studies, provided insights from outside traditional archaeological interpretation.

The Sites

In order to assess the various lines of thinking presented above, Old Women’s sites with reliable radiocarbon dates are outlined below. These sites are used to critically evaluate the current view of the Old Women’s phase. Because of their lateness in time, there are substantially more reliably dated Old Women’s sites than can be discussed here, nor can the topic be thoroughly assessed in this space (see Plate 26 and Figure 27).
EgPn 440. EgPn 440 is a bison pound located on the western edge of Calgary in a flat-bottomed coulee on the south side of the Bow River. The site consists of five components. The lowest component, 5, was a bone bed associated with Cayley Series projectile points. Components 2 through 4 yielded small bone scatters with no diagnostics, while Component 1 was mixed prehistoric and historic material (Tischer 2000:15–18). In 1997, a total of 71 m² was excavated in a block. The site was mitigated prior to the construction of a wastewater pipeline.
Figure 27
Old Women's sites within Alberta
Seventy-seven projectile points and point fragments were found in association with a large bone bed, a possible hearth feature, and a few post-hole features that may represent corral posts (Tischer 2000:15–16). Other tools included bifaces \( (n = 12) \), end scrapers \( (n = 21) \), retouched flakes \( (n = 17) \), side scrapers \( (n = 5) \), unifaces \( (n = 2) \), pièces esquillées \( (n = 9) \), and a hammerstone. An analysis of the points suggested they were most similar to early Cayley Series points. The lithic tool assemblage was dominated by Montana chert \((38.1\%)\), black chert \((16.7\%)\), and petrified wood \((15.5\%)\) with low representation of Knife River flint, obsidian, Top-of-the-World Chert, Swan River Chert, and basalt, among others. Twenty-six possible bone tools were interpreted as scraping or chopping implements, based on polish and rounded ends (Tischer 2000:97).

The faunal assemblage \((n = 68,478)\) was mainly bison \((\text{MNI} = 67)\) but also included wolf, fox, elk, mule deer, snowshoe hare, Canada goose, red-tail hawk, and fish (Tischer 2000:48). The analysis suggested that the processing of the bison focused on back, chest, and upper limbs (Tischer 2000:94). Based on the analysis of cut marks, the hump meat, ribs, upper limbs, and tongue were selectively processed. Less emphasis was on the hind limb (Tischer 2000:95). Evidence of marrow extraction was not common. Sexing of the sample indicated a large number of males. Females and young are usually the focus of communal hunts. Two radiocarbon dates of roughly 1,250 BP were obtained for the site (see Table 25). These dates are very early dates for an Old Women’s component.

**DhPh 13.** DhPh 13 is a campsite on the east side of the St. Mary River, in southwestern Alberta (Quigg 1975a:53). A single component was recovered within a buried Ah soil horizon. In 1973, blocks of four \( 4 \times 4 \) units were excavated at the site. The site was found as part of a salvage program conducted along the St. Mary River valley. A crude Cayley Series point was found in association with a single piece of pottery, an FBR pile, and a circular rock-ringed hearth (Quigg 1975a:54). Other tools recovered included cores, a scraper, bifaces, an anvil, and a chopper. The lithic debitage did not suggest tool production was a major activity. The pottery fragment was not described other than assigning it to the Old Women’s phase. The fauna was highly fragmented but included bison, dog, kit fox, and deer (Quigg 1975a:66). An anvil and a chopper were associated with bone splinters, suggesting marrow extraction. A single date of ca. 1,150 BP was obtained for the component. It is among the earliest dates for an Old Women’s component (Quigg 1975a:61).
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<td>EAP 4, L2</td>
<td>AEC V-155C</td>
<td>1020 +/- 160</td>
<td>-20.0‰ collagen</td>
<td>A.D. 650–1300</td>
<td>(p = 0.954)</td>
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<td>EAP 4, L2</td>
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<td>A.D. 1280–1500</td>
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<td>EAP 4, L2</td>
<td>AEC V-154C</td>
<td>320 +/- 50</td>
<td>charcoal</td>
<td>A.D. 1450–1660</td>
<td>(p = 0.954)</td>
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<td>EAP 4, L2</td>
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<td>DJP 100</td>
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<td>-25.3‰ charcoal</td>
<td>A.D. 750–1300</td>
<td>(p = 0.954)</td>
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<tr>
<td>EAP 78 L3</td>
<td>BSG-1011</td>
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<td>A.D. 1030–1330</td>
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<td>BSG-1015</td>
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<td>DGP 126</td>
<td>AEC V-859C</td>
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<td>-12.5‰ collagen</td>
<td>A.D. 1300–1360</td>
<td>(p = 0.095)</td>
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<td>DGP 126</td>
<td>AEC V-1239C</td>
<td>710 +/- 130</td>
<td>-19.4‰ collagen</td>
<td>A.D. 1030–1440</td>
<td>(p = 0.954)</td>
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<tr>
<td>DGP 31</td>
<td>S-946</td>
<td>720 +/- 105</td>
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<td>A.D. 1040–1100</td>
<td>(p = 0.046)</td>
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<td>DGP 31</td>
<td>S-947</td>
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<td>A.D. 1300–1360</td>
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<td>-25.0‰ charcoal</td>
<td>A.D. 1210–1660 (p = 0.954)</td>
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<td>-25.0‰ charcoal</td>
<td>n/a</td>
<td>Morlan n.d.</td>
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<td>DjPm 84</td>
<td>[AECV-796C]</td>
<td>530 +/- 80</td>
<td>-19.4‰ collagen</td>
<td>A.D. 1280–1660 (p = 0.940), A.D. 1600–1620 (p = 0.014)</td>
<td>Van Dyke 1994:224</td>
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<td>DjPm 13, C-5</td>
<td>[AECV-747C]</td>
<td>500 +/- 110</td>
<td>-21.8‰ collagen</td>
<td>A.D. 1280–1640 (p = 0.954)</td>
<td>Van Dyke 1994:92</td>
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<td>DjPm 13, C-5</td>
<td>[AECV-748C]</td>
<td>470 +/- 80</td>
<td>-19.6‰ collagen</td>
<td>A.D. 1330–1370 (p = 0.134), A.D. 1380–1640 (p = 0.820)</td>
<td>Van Dyke 1994:92</td>
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<td>DjPl 68</td>
<td>[GX-2051]</td>
<td>330 +/- 95</td>
<td>-20.0‰ bone</td>
<td>A.D. 1400–1850 (p = 0.925), A.D. 1900–2000 (p = 0.029)</td>
<td>Reeves 1972; Morlan n.d.</td>
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<td>DjPl 1</td>
<td>[S-270]</td>
<td>355 +/- 60</td>
<td>-25.0‰ charcoal</td>
<td>A.D. 1440–1650 (p = 0.954)</td>
<td>Reeves 1983b:24; Morlan n.d.</td>
</tr>
<tr>
<td>EFOw 26</td>
<td>[BETA-188553]</td>
<td>260 +/- 60</td>
<td>-19.0‰ collagen</td>
<td>A.D. 1460–1700 (p = 0.70), A.D. 1720–1820 (p = 0.19), A.D. 1910–1960 (p = 0.063)</td>
<td>Goldsmith 2005:390</td>
</tr>
<tr>
<td>EgPn 230</td>
<td>[BETA-109225]</td>
<td>440 +/- 50</td>
<td>? collagen</td>
<td>A.D. 1400–1530 (p = 0.791), A.D. 1550–1640 (p = 0.163)</td>
<td>Vivian et al. 1998:52</td>
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<tr>
<td>EhPn 56</td>
<td>[BETA-176505]</td>
<td>310 +/- 70</td>
<td>-21.0‰ collagen</td>
<td>A.D. 1400–1850 (p = 0.939), A.D. 1900–2000 (p = 0.015)</td>
<td>Murphy 2003:85</td>
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<td>EgPt 28</td>
<td>[BETA-90062]</td>
<td>140 +/- 130</td>
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<td>A.D. 1490–1960 (p = 0.954)</td>
<td>Clarke et al. 1998:265</td>
</tr>
<tr>
<td>EgPt 28</td>
<td>[BETA-90061]</td>
<td>modern</td>
<td>?</td>
<td>n/a</td>
<td>Clarke et al. 1998:265</td>
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**Note:** Radiocarbon dates for the past two hundred years are not reliable.
Head-Smashed-In Buffalo Jump (DkPj 1). In the South Kill of Head-Smashed-In Buffalo Jump, Cayley Series points primarily occurred in Levels 1 to 7B while Avonlea points underlay these, primarily in Levels 8 to 10. Trade items and metal points were recovered in the most recent component. Two radiocarbon dates are available from the South Kill excavations. Level 7B, the oldest Old Women's level, produced a date of 1,270 +/- 90 BP (RL-257). Level 5 produced a date of 700 +/- 170 BP (GSC-992).

(Old) Women’s Buffalo Jump (EcPl 1). The Women’s Buffalo Jump is described in the section on the Besant phase. Forbis’ (1962) work has been the only systematic investigation of the site. The excavation consisted of an Upper Pit excavation block in the “heart of the bone bed,” and a Lower Pit excavation block about 10 m downhill from the Upper Pit (Forbis 1962:71–74). Forbis (1962:74) divided the deposits in the Upper Pit into an Upper Member and a Lower Member. The Upper Member consisted of deposits from the surface down to Level 14. These deposits contained the vast majority of the small projectile points that he inferred to be arrow points (Forbis 1962:76). The Lower Member consisted of Levels 15 to 30. The projectile points were “comparatively large and heavy” and were inferred to be dart points (Forbis 1962:76). The continuous morphological change through time in the Upper Member of the Upper Pit point sequence was crucial in defining the Cayley Series projectile points (Peck 1996; Peck and Ives 2001). Pottery was recovered from Level 5 of the Upper Member of the Upper Pit. Byrne (1973:365) classified the pottery as Saskatchewan Basin Complex: Late Variant.

Seven radiocarbon dates were obtained from Layers 13 and above. For Layer 13, Forbis (1962:81) obtained two dates of ca. 1,100 BP. More recently, using Forbis’ excavated material, two more dates were provided for Layer 13, ca. 1,120 BP and 910 BP; a date for Layer 7 of ca. 320 BP was provided; and two dates for Layer 3 were established, of ca. 270 BP and 180 BP (Table 25). The Upper Member of the Upper Pit (Layers 1 to 14) produced radiocarbon dates, Cayley Series points, and Saskatchewan Basin Complex: Late Variant pottery, indicating an Old Women’s phase assignment.

Amber (EePi 1). The Amber site is located on the south floodplain of Arrowwood Creek, southwest of Mossleigh (Kirby and Justen 1974). In 1970, an initial excavation removed an eroding burial from the stream bank. In 1974, 54 m² of excavation recovered over two thousand artifacts from
two components (Kirby and Justen 1974:11). The Upper Component contained Late Side-notched (Plains) points and pottery ($n=370$ sherds). Separation between the Upper and Lower Components was problematic, but a single point attributed to the Lower Component was a Late Side-notched (Prairie) point. The Amber Burial was associated with the Lower Component (Kirby and Justen 1974:12). A single radiocarbon date of ca. $1,100 \text{ BP}$ was produced for the Amber site (Table 25) (Brumley and Rushworth 1983:154; Morlan n.d.). The date was on bone although the context of the bone was not disclosed. The site appears to be an Old Women’s campsite with an associated interment.

**EgPm 82.** EgPm 82 is located on the upper part of Beddington Creek along a seasonal drainage on the north side of Nose Hill in Calgary (Peach 2006). The site is a single-component Old Women’s processing site with a diffuse historic component intermixed in the upper levels. It was mitigated as part of a transportation utility corridor expansion.

Sixteen Cayley Series projectile points and fragments were recovered in association with a hearth. Other tools included bifaces ($n=14$), end scrapers ($n=24$), retouched flakes ($n=22$), cores ($n=5$), and hammerstones ($n=2$). The lithic debitage ($n=848$) suggested that late-stage tool manufacturing occurred to some extent at the site (Peach 2006:62–63). The most common raw materials included coarse quartzite (31.3%), medium-fine quartzite (18.3%), and petrified wood (17.4%), although small amounts of Knife River flint, Avon chert, porcellanite, and obsidian were also present (Peach 2006:64). A single tibia shaft fragment with polish on its edge was interpreted as a skinning tool (Peach 2006:99). Pottery ($n=66$) was rare at the site; most of the sherds were indeterminate vessel portions ($n=34$) or vessel finish ($n=37$) (Peach 2006:92). Textile-pressed and smoothed textile-pressed patterns were evident on fourteen of the sherds. Decorations included cord-wrapped object ($n=1$), dentate ($n=2$), and punctate ($n=2$) impressions. Coarse grit, thick walls, and laminated paste suggest that this pottery is Saskatchewan Basin Complex: Late Variant pottery (Peach 2006:121–122).

The faunal assemblage ($n=21,081$) consisted largely of unidentifiable large ungulate fragments ($n=19,189$) and bison ($n=1,811$) (Peach 2006:95). A minimum number of six bison were represented (Peach 2006:107). Sexing analysis suggested at least four females, one male, and one indeterminate adult animal were present in the assemblage. As well, a single ungulate
fetal element was recovered (Peach 2006:112). The faunal assemblage was highly fragmented but, of the identifiable bone, most was low utility (73%). Two concentrations of low-utility bison bone occur within the southwest and northeast parts of the site. Seven cut marks on bone were observed. Two cut marks made with metal appear on bison bone while all others were made by stone or were indeterminate (Peach 2006:105). Some bird bone (n = 57) was also recovered but considered historic/intrusive or natural. Charred bone (n = 1,887) and calcine bone (n = 208) suggested burning of bone at the site. FBR (n = 2,445) was fairly common at the site; it was largely water fractured (98.9%). Two radiocarbon dates were obtained for the assemblage: ca. 890 BP and 970 BP (Table 25) (Peach 2006:114). The site is an Old Women’s secondary processing site with activity areas indicating bone processing and hide working around a hearth.

**Little Bow Site (EaPh 4)**. The Little Bow site is a campsite/processing site situated on the edge of a high bluff on the bank of the Little Bow River, east of Carmangay (Heitzmann 1985; Fedirchuk 1986:91–92). In 1985, a total of 78 m² was excavated in a block. Two components were observed in the upper 20 cm (Heitzmann 1985; Fedirchuk 1986:91). The distinctions between these two components were not always clear (Fedirchuk 1986:91–92). Both levels were Old Women’s components. The site was mitigated prior to realignment of a roadway.

The Upper Component produced eight Cayley Series projectile points. A triangular piece of iron, probably reflecting a metal point blade, was also recovered at 4 cm bs and may be associated with this component. Other tools included bifaces (n = 14), end scrapers (n = 24), retouched flakes (n = 22), cores (n = 5), and hammerstones (n = 2). Lithic raw materials were mainly quartzite (45.4%), miscellaneous cherts (32.9%), and petrified wood (13.9%), with trace amounts of obsidian (1.5%) and Knife River Flint (0.6%) (Heitzmann 1985). Three ceramic vessels were found exclusively in this component (Vessels 2, 4, and 5), while three other vessels were found in both upper and lower components (Fedirchuk 1986:107). The fauna from this component was mainly bison (MNI = 2). Large lower-leg elements were represented, along with many unidentifiable pieces. An associated rock feature consisting of FBR and fire-reddened rock defied interpretation. A single radiocarbon date of roughly 700 BP was obtained for the component (Table 25).

The Lower Component produced seven Cayley Series points in association with a basin hearth and a number of bone pegs (Heitzmann 1985:89;
Other lithic tools included a biface, a uniface, scrapers (n = 6), a spokeshave, edge-retouched cobble spalls (n = 2), edge-retouched flakes (n = 9), a wedge, a split pebble, a hammerstone, an abrader, and cores (n = 13). The lithic raw materials tended to be quartzite (55.7%), miscellaneous chert (23.7%), and petrified wood (12.9%), with some obsidian (1.9%), Montana chert (1.0%), and Knife River flint (0.8%) (Heitzmann 1985:91). Like the Upper Component, the emphasis on sharpening flakes indicated that maintenance of tools was a main activity at the site. Ceramic vessels 7 and 8 were associated with this component (Fedirchuk 1986:108).

The fauna from this component was bison (MNI = 3). Fetal bone was recovered after a post-grading inspection of the site (Fedirchuk 1986:124). Other bone clustered around a basin-shaped hearth. Another feature included a line of four bone pegs about 50 cm apart; two more similar pegs were noted about 1 m apart, about 2 m north (Fedirchuk 1986:109–110).

A single radiocarbon date of ca. 530 BP was obtained from this level (Table 25). Bone from directly beneath this level (20–30 cm BS) produced a date of ca. 1,000 BP (Table 25).

**H.M.S. Balzac (EhPm 34).** The H.M.S. Balzac site is discussed in the section on the Avonlea phase. In Block 2, Old Women’s material occurred within Regisols 3 to 8 while Avonlea material occurred in Regisols 10–11 and 14 (and 12 by inference) (Head 1985). For Block 2, radiocarbon dates from Old Women’s occupations were available for Regisols 4 and 6. Regisol 4 produced a modern date and Regisol 6 produced a date of ca. 320 BP (Table 25). These dates fall within the range expected for Old Women’s occupations.

**DjPm 100.** DjPm 100 is a terrace tipi ring site in Warriner’s Coulee on the Crowsnest River (Van Dyke 1994:232). Excavations totalling 63 m² were undertaken in four blocks at stone circles A–D, although the Old Women’s component was recovered between 10 and 20 cm BS under both Stone Circles A and D (Van Dyke 1994:243). This excavation was part of the mitigation associated with the Oldman River Dam project.

Six projectile points and fragments were recovered. A Cayley Series point, a stem fragment, two triangular preforms, and two tips were associated with the two stone circles. In addition, rock-lined hearths and FBR concentrations were also associated. Other tools included bifaces (n = 7), end scrapers (n = 4), a uniface, a core, and retouched flakes (n = 10). A single
metal buckle was recovered but not considered to be associated with the occupation (Van Dyke 1994:243). The raw materials were diverse but emphasized the use of quartzite, chalcedony, petrified wood, and Swan River chert, with small amounts of argillite, siltstone, black chert, Top-of-the-World chert, miscellaneous cherts, and obsidian (Van Dyke 1994:243). No pottery was recorded.

The faunal assemblage (n = 1,829) was highly fragmented, and included bison (MN1 = 3), large canid, elk, and deer (Van Dyke 1994:245). A fetal bison specimen suggested a late winter/early spring occupation. A single radiocarbon date of roughly 930 BP was obtained for the compressed material (Table 25). This date correlates well with the morphology of the complete point. This material may correlate with kill deposits underlying Rings B and C, although this was not established.

**Junction (DkPi 2).** The Junction site is a bison kill and processing site located on the Oldman River, about 5 km upstream from Fort Macleod (Unfreed and Van Dyke 2005). The site consisted of two distinct topographic zones, an upper prairie and lower river terrace. Excavations focused on the lower terrace, as it contained bison kill and butchering/processing deposits. The sediments were divided into three components: Component i11 contained historic material while Component i1 and i contained Old Women’s material. Component i1 was separated from Component i by fluvial sands. Based on thirty-four radiocarbon dates, an average age of about 800 BP was suggested for Component i and 500 BP for Component i1 (Unfreed and Van Dyke 2005). Artifacts recovered from the site include Cayley Series points (n = 394), bifaces, scrapers, choppers, wedges, cores, flakes, and numerous expedient tools. Bone and antler tools, shell ornaments, and ceramics were also recovered from the site. The ceramics were classified as Late Variant pottery of the Saskatchewan Basin complex.

**Echo Creek (EhPv 78; 515R).** The Echo Creek site is described in the section on the Sonota phase. The Old Women’s material was recovered from Component 3 (Fedje 1986:54–55). Thirty-eight small side-notched projectile points and preforms were recovered. The points appeared to be very similar to the Cayley Series projectile points and were recovered in association with lithic heat treating/reduction areas, animal processing features, hearths, and FBR concentrations. The faunal assemblage included bison, elk, moose, mule deer, sheep, beaver, porcupine, canid, rabbit, coot,
sucker, and trout/char (Fedje 1986:55–57). Four radiocarbon dates were associated with this material. Four dates suggested a rough age of ca. 700 BP (Table 25).

Many Snakes (DgOv 12). The Many Snakes site is located in Writing-on-Stone Provincial Park in the valley of the Milk River, east of the Milk River townsite (Getty 1971:1). The term Many Snakes was given to the site owing to three rattlesnakes the crew encountered during the excavation (Getty 1971:3). In 1968, parts of a human skeleton were noticed at the base of the sandstone cliffs by a Parks employee. The site was a primary human inhumation in a saucer-shaped, wind-eroded depression at the base of a 9-metre-high cliff. The body was in a flexed position, lying on its right side, with the head towards the east (Getty 1971:4). The skeleton was a male between 40 and 55 years of age and stood about 5'7". The distal fifth digit phalanx of both hands was missing.

Twenty-four grave offerings were associated with the burial, including five early Cayley Series points and two preforms. Also included were bone flakers (n = 4), an antler hammer, bifaces (n = 3), a worked flake, a utilized flake, unmodified flakes (n = 5) and a shell bead. The initial discovery of the skeleton disturbed some artifacts, but the researchers involved indicated that the items came from the thoracic area. Artifacts from undisturbed context were all recovered from this area of the body, except for a single bone flake recovered beside the right ankle (Getty 1971:24). A date of ca. 780 BP was obtained for the site (Table 25).

Castle Forks Buffalo Jump (DjPm 126), Component 3. The Castle Forks Buffalo Jump is located on the south side of the Oldman River just upstream from its confluence with the Castle River (Landals 1993:226). The site location is known locally as the Castle Forks, hence the site name. The uppermost component is a Protohistoric period Old Women's bison jump (Landals 1993:226). This is underlain by Component 2, which is a sparse occupation lacking diagnostics. Component 3, of interest here, is an Old Women's campsite. The lowest component, 4, is another culturally sparse, non-diagnostic occupation. This site was mitigated as part of the Oldman Dam project.

A total of ten points or point fragments were recovered in association with two hearths, butchered bone, lithic debitage, red ochre fragments, and ceramic sherds (Landals 1993:254). Other tools recovered included
bifaces (n = 2), an end scraper, a wedge, and flake tools (n = 13). The ceramic assemblage (n = 181) represented several vessels assigned to the Saskatchewan Basin Complex: Late Variant pottery. An antler tool found in association may have been used in pottery production or may be more of a marrow-scooping implement. The faunal assemblage was dominated by bison (MN1 = 7). Most bone showed signs of butchering such as green fracture and spiral fracture. Two small pieces of fetal bone were recovered, suggesting a late winter/early spring occupation (Landals 1993:258). A high representation of limb elements and their consistent breakage was interpreted as marrow extraction supplementing a fat-reduced winter diet.

The two hearths are separated by 7 m but exhibited similar characteristics. One hearth was a surface hearth that yielded FBR, red ochre, bone fragments, ceramic sherds, and a Late Side-notched point (Landals 1993). The second feature is a well-constructed, rock-encircled basin hearth exhibiting long-term use. In the immediate vicinity were points, many retouch/resharpening flakes, retouched flakes, a biface fragment, an end scraper, red ochre, and numerous pottery sherds (Landals 1993:255). Neither hearth appeared to represent intensive food processing; instead they were likely hearths for roasting/boiling fresh meat, warmth, and/or light (Landals 1993:255). Two radiocarbon dates of ca. 460 BP and 710 BP were obtained from this component of the site (Table 25). The former is considered too late, given the dates from other levels, but the two dates do overlap at two standard deviations (Landals 1993:236).

Manyfingers (DhPj 31). The Manyfingers site is described in the section on the Avonlea phase. The site covers three terraces, with the second terrace containing two Old Women's components (Level B and C) overlying an Avonlea component (Level A). Component 2 (Level B) is a thin living floor about 3–7 cm thick and 50 cm bs. Component 3 (Level C) is a living floor scattered somewhat by rodent activity, at approximately 40 cm bs. Quigg (1974b:27) combined his discussion of these levels. Five late Cayley Series points and pottery sherds indicate these are Old Women's occupations (Quigg 1974b:27). The pottery was very fragmentary but some exhibited check-stamping, and was attributed to the Saskatchewan Basin Complex: Late Variant pottery (Byrne 1973:331; Quigg 1975a:57). FBR was not common although lithic debitage was present on both living floors. The debitage suggested that tools were both manufactured and re-sharpened at the site. The fauna consisted mainly of small bone fragments.
although bison, coyote, dog, and kit fox were identified (Quigg 1974b:47). Component 2 contained only bison while Component 3 contained all the species mentioned as well as fetal bison bone, suggesting a late winter/early spring occupation (Quigg 1974b:28). Two oval ash lenses were also noted but were not considered actual hearths (Quigg 1975a:57). Two radiocarbon dates of roughly 720 BP and 460 BP were obtained from Component 2 (Table 25). These dates both corroborate a late Old Women’s occupation.

Ross (DLpd 3). The Ross site was excavated by the Glenbow Foundation in 1957 (Forbis 1960:119). The site is located in south-central Alberta on the south bank of the Oldman River, about 4 km upstream from its confluence with the Little Bow River (Forbis 1960:119). It exhibits three cultural levels: i, ii, and iii, from bottom to top. All levels produced Cayley Series projectile points and Saskatchewan Basin Complex: Late Variant pottery. Each level also yielded radiocarbon dates: Level iii a date of ca. 615 BP, Level ii a date of ca. 540 BP, and Level i a modern date. Importantly, an ammonite septum was recovered from Level iii (Forbis 1960).

DjPm 84. DjPm 84 is a small campsite/processing site on the east bank of Todd Creek, just upstream from its confluence with the Crowsnest River (Van Dyke 1994:219). More than one Late Prehistoric component was differentiated but a single Old Women’s component was presented as relatively discrete (Van Dyke 1994:222–223). A total of 18 m² was excavated.

Three late Cayley Series projectile points were recovered in association with a feature consisting of an anvil stone with fragmented bone and FB. A single metal point was recovered, but was considered intrusive from the surface possibly from ploughing. Other tools recovered included a biface, a scraper, cores (n = 2), and retouched flakes (n = 5). The lithic debitage assemblage (n = 36) was small but reflected a reliance on miscellaneous cherts (Van Dyke 1994:223). The faunal assemblage indicated utilization of mainly bison (MNI = 3), although large canid, wolverine, freshwater shell, and a small ungulate (likely deer) were recovered. A single radiocarbon date of 530 BP was obtained (Table 25).

DjPl 13, Component C-5. DjPl 13 is a campsite/processing site on the north bank of the Oldman River (Van Dyke 1994:38). Block C (50 m²) contained five components: two Bracken phase followed by two Besant phase and one Old Women’s phase. Twelve points or point fragments
were recovered from the Old Women's Component. Three specimens were classified as Plains or Prairie side-notched, one stem fragment was classified as possibly Besant, six other fragments were unclassified, and two triangular specimens were considered preforms (Van Dyke 1994:96). The Besant fragment may relate to underlying material, while the rest of the point assemblage fits within the Cayley Series points. Other tools included bifaces (n = 7), cores (n = 14), an end scraper, retouched flakes (n = 20), a drill, unifaces (n = 2), elongate pebbles (n = 4), and a side scraper (n = 4). Debitage and tools showed no patterned distribution. Raw materials showed a clear preference for chalcedony, black cherts, and Etherington chert, although a wide range of materials was present.

The faunal assemblage (n = 1,850) was mainly bison (MNI = 2) but also included nine freshwater shell fragments (Van Dyke 1994:96). Bison fetal bone was present. Bone was scattered throughout the site with burned bone concentrated south of the features. The features included a pit with FBR and bone, and an FBR concentration with cobbles adjacent to the pit (Van Dyke 1994:94–95). The pits and FBR suggested that processing of bone for marrow and grease occurred at the site. Two radiocarbon dates of ca. 500 BP and 470 BP were obtained for this component (Table 25). These dates fit well with the associated Cayley Series points. As well, this component yielded no diagnostic material but it was dated to 480 +/- 90 BP (AECV-1358C), and so stratigraphically correlates with DjPl 13, Component B-5.

Ellis (EcOp 4) Medicine Wheel. The Ellis site is a death lodge medicine wheel site overlooking the South Saskatchewan River on the Canadian Forces Base Suffield (Brumley 1985:180). The site is an interment of an individual during the Old Women’s phase. In 1974, seven 2 x 2-m units (28 m²) were excavated at the site. This was followed by mapping in 1980. The site consists of a boulder structure with a central stone circle from the edge of which eleven lines or spokes radiate, towards thirteen stone circles and two cairns (Brumley 1985:180). The apparent use of some of the stones from the surrounding stone circles in the spokes suggests that the former were created earlier than the latter (Brumley 1985:198, 192). Similarly, a gap in a spoke near a cairn suggests rock-robbing for the cairn construction at the later date.

Excavations within the central part of the medicine wheel recovered fragments of human skeletal material (n = 66), some small bone fragments of a large animal (likely bison), a Cayley Series projectile point, a marginally
retouched stone tool, a piece of fbr, pieces of debitage (n = 54), and decomposing wooden pegs (n = 2). The better-preserved peg was determined to be white oak with a dye-like pigment on it containing barium sulphate. A radiocarbon date of ca. 450 bp was obtained from this item (Table 25).

Brumley (1985:204–205) provided a good argument for the contemporaneity of the medicine wheel, the human remains, the Cayley Series point, and the radiocarbon date. Brumley (1985) placed this research in context by noting that historic Blackfoot often interred prominent people in death lodges. Stone lines were often added to a death lodge as a sign of respect. While medicine wheels come in many forms, the Ellis format is found in a handful of medicine wheels, many of which are known in the historic Blackfoot’s traditional territory (Brumley 1985:225; Peck 2007).

DgPl 68. DgPl 68 is a campsite/kill site near the valley entrance on the north side of Pass Creek in Waterton Lakes National Park (Reeves 1972:42). Three components were differentiated, with the lowest apparently containing one Scottsbluff and one Maple Leaf point (Reeves 1972, plate 18, nos. 9 and 24), the second component yielding Avonlea material, and the uppermost containing Old Women’s material (Reeves 1972:77–78). In 1969, a total of seven 2 × 2-m units (28 m²) was excavated. The upper component of the site was substantially disturbed but considered discrete enough to separate from the lower two components.

Two Plains side-notched, a preform, and two broken points were recovered (Reeves 1972:332). The high basal edges on the points suggested a late Old Women’s affiliation for this material. Other tools recovered included a biface fragment, end scrapers (n = 2), perforators (n = 8), utilized flakes (n = 10), a cobble chopper, and spall choppers (n = 3) (Reeves 1972:332). Only small amounts of debitage (n = 13) were recovered. Bone tools recovered included a leg bone side scraper, a side scraper, a splinter awl, and flakers (n = 2). The faunal assemblage represented mainly bison (MNI = 2). Bone was largely burned on its upper surface, indicating that the charring resulted from a forest fire (Reeves 1972:77). FBR was also present across the floor. A single radiocarbon date of ca. 330 BP was obtained for the component (Table 25).

Kenney (DjPk 1), Layer 4. The Kenney site is a multicomponent campsite on a low terrace of Pincher Creek, just west of Brocket, in southwest Alberta (Reeves 1983b:3). It appears to have been named after the geological terrace in which it is located (the second major terrace of the Oldman
River, the Kenney Terrace) (Reeves 1983b:10). Three major occupations were identified. The lower two occupations contained Besant material, while the upper occupation is represented by Old Women's material. In the summers of 1963 and 1964, a total of 187 m² was excavated (Reeves 1983b:23).

Seventeen late Cayley Series points, four preforms and four unclassifiable points were recovered from Layer 4. Other tools included gravers (n = 2), awls (n = 2), end scrapers (n = 12), side scrapers (n = 15), choppers (n = 7), polishing stones (n = 5), and a pipe fragment. The lithic assemblage emphasized miscellaneous chert and chalcedonies in the tools, and black chert, quartzite, and miscellaneous cherts and chalcedonies in its lithic debitage (Reeves 1983b:50). Bone tools included punches (n = 3), a notched bone, and a cut bone (Reeves 1983b:119–121). Eight rim sherds and 292 body sherds were recovered from Layer 4. Most of these (all but eight body sherds) were attributed to a single vessel. Reeves (1983b:123) considered the sherds to be Manitoba Corded Ware, although Byrne (1973:365) placed the sherds amongst local artisans of the Saskatchewan Basin Complex: Late Variant pottery.

The faunal assemblage included bison (MN1 = 6), canids, mule deer, and beaver (Reeves 1983b:38). Mature, immature, and fetal bison were found in every level of the site, suggesting late winter/early spring occupations (Reeves 1983b:39). Heavy non-meaty bones are not common in the faunal assemblage while the elements are from meaty parts of the animal, suggesting that butchering units were being brought into the camp at some distance and low-utility bones were left behind. Elements that did make it to camp were highly processed, based on the degree of fragmentation for marrow and grease extraction (Reeves 1983b:49). Large fibr concentrations, five surface hearths, and two basin hearths attest to this interpretation of the fauna. A single radiocarbon date of roughly 350 BP was obtained for this occupation (Table 25).

Bodo Bison Skulls (FAOm 1). The Bodo Bison Skulls and FAOm 22 (immediately to the west) are two very large sites comprising numerous localities (Mann 2007). The sites are located just south of Eyehill Creek in Sounding Basin, within an area of stabilized sand dunes (Gibson 2001:2). The sites are bison kill, butchering, and processing areas (Mann 2007). The reason for the massive nature of the bison kill sites in this area is due to the topography and the environment. Bodo represents an oasis of tree cover that creates a “peninsula” in the Plains. In fall, as the bison were moving into their wintering grounds, the Bodo area was used as an intercept locale to
pound the animals in large numbers. The trees provided wood for pounds and fuel to keep the people warm. The rolling hills provide the blinds for luring the animals to the pounds (Peck 2004).

Many Cayley Series points have been recovered in association with Saskatchewan Basin Complex: Late Variant pottery at Bodo. Material from Locality Pad 10-32 produced such an assemblage (Blaikie 2005). At Locality Pl 1, however, Cayley Series points, apparently in association with Mortlach Group points, were recovered with unusual pottery possibly classifiable as Mortlach (Mann 2007). Mann (2007, 2009) suggested that the Bodo sites are located in a common area between three Late Prehistoric archaeological cultures. The Old Women's phase appears to be most strongly represented at Bodo and distributed to the southwest. The Mortlach phase appears to be represented by points and perhaps pottery at the Bodo sites. Mortlach material is known to be distributed to the southeast into Saskatchewan. A possible third archaeological culture in the Bodo area is the Selkirk Composite, adding complexity to sites’ assemblages from the north (Mann 2007, 2009).

EfOw 26, Component 3. EfOw 26 is described in the sections on the Besant phase. The Old Women’s component consisted of three late Cayley Series points recovered in association with three hearths and two micro-debitage clusters (Goldsmith 2005:76–78, 175). Other tools recovered included a biface, wedges (n = 2), bifacially and unifacially retouched tools (n = 4), marginally modified flakes (n = 8), utilized flakes (n = 3), bipolar cores (n = 2), and multidirectional cores (n = 4). The assemblage emphasized miscellaneous cherts, chalcedony, petrified wood, and quartzite (Goldsmith 2005:81). Small amounts of obsidian were recovered and sourced to Obsidian Cliff, Wyoming (Goldsmith 2005:172).

A number of pottery sherds (n = 323) were found associated with this component. Most of the sherds came from Component 3 but other components did contain some pottery. Most of the pottery conformed to Old Women’s phase Ethridge Ware. One sherd exhibited wrapped-object-impressed chevron pattern, indicating a late Old Women’s design (Goldsmith 2005:155).

The faunal assemblage (n = 2,130) included mainly bison (n = 3), with a deer bone and a small amount of shell (Goldsmith 2005:133). Evidence of impacts, cutting, and burning was observed (Goldsmith 2005). Many limb bone fragments were identified, indicating that meat sections were brought.
to the camp for consumption, with the bones being reduced for marrow extraction and grease production (Goldsmith 2005:136). Three hearth features were encountered at the site: two basin hearths and a surface hearth (Goldsmith 2005:193). Many small pieces of FBR showed signs of water fracturing. Shell was recovered in the form of three shell beads in Hearth Feature 4. Associated with this feature were two micro-debitage clusters, possibly suggesting a single workshop event (Goldsmith 2005:193). A single radiocarbon date of ca. 260 BP was obtained for this component (Table 25).

EgPn 230, Component 1. EgPn 230 is discussed in the section on the Country Hills phase. Component 1, the Old Women’s component, consists of twenty projectile points or point fragments. Those complete enough to classify were considered Late Side-notched points (Vivian et al. 1998:27–33). All the specimens fit within the Cayley Series (Peck 1996; Peck and Ives 2001). Other tools included bifaces (n = 15), scrapers (n = 15), drills (n = 2), a wedge, choppers (n = 2), a maul, and retouched flakes (n = 17) (Vivian et al. 1998:27–47). Three bones exhibiting polish were also recovered (Vivian et al. 1998:47–48). A fragment of fossilized cretaceous clam shell was recovered and inferred to be ornamental (Vivian et al. 1998:48). The lithic raw materials emphasized locally available lithics including quartzite, siltstone, petrified wood, and miscellaneous cherts. Exotics such as obsidian, porcellanite, Knife River flint, and Top-of-the-World chert were also represented (Vivian et al. 1998:49). The range of debitage suggested that all stages of knapping (from decortication to sharpening) were being conducted, although emphasis was on the production of finished tools (Vivian et al. 1998:49).

The faunal assemblage (n = 12,283) was largely bison (MNI = 12) with a wolf-sized canid, a coyote-sized canid, and a deer-sized ungulate (Vivian et al. 1998:49). Bison fetal bone was recovered; based on the development of the bone, the researcher suggested a mid-February kill (Vivian et al. 1998:50). Three features were present at the site: a large hearth and associated bone feature, a small hearth, and a large pile of bone and FBR. The large hearth was about 80 cm in diameter with large concentrations of mainly unburned bone piled on a bed of FBR in a basin scooped out 10–15 cm into the ground. The small hearth consisted of a soil stain only 5 cm thick and a cluster of FBR and calcine bone. The large pile of bone (n = 1,400+) and FBR exhibited little evidence of burning and was interpreted as a refuse pile (Vivian et al. 1998:51). A single radiocarbon date of 440 BP was obtained for the site (Table 25).
**EhPn 56.** EhPn 56 is a small campsite, southwest of Calgary, in a steep bowl-shaped depression on the west side of a large coulee. In 2002, a total of 40 m$^2$ was excavated at the site to mitigate a subdivision development (Murphy 2003). Thirty-two of the units were in a contiguous block, with eight satellite units. Two components were recognized: a Lower Component lacking diagnostics and an Upper Component producing Old Women’s material.

Three points or point fragments were recovered. The complete point is considered a Cayley Series side-notched point while the other two points consist of only the blades (Murphy 2003:61). Other tools recovered included a scraper, modified flakes ($n = 3$), unifacially retouched stone tools ($n = 4$), and cores ($n = 3$). Petrified wood (43.1%), quartzite (25.5%) and miscellaneous cherts (17.6%) were the most common raw materials in the assemblage; obsidian was sourced to Obsidian Cliff, Wyoming (Murphy 2003:86).

The faunal assemblage ($n = 1,066$) appeared to be almost entirely bison (MN1 = 3). Heavier elements were not present at the site, suggesting that the main kill and processing activities may have occurred elsewhere (Murphy 2003:57–58). FBR ($n = 365$) was mainly small fragments (i.e., < 10 cm) of water-fractured rock. A stone-ringed, oval-shaped hearth surrounded by FBR, lithics, and bone was identified (Murphy 2003:66). A second feature consisted of a bone concentration and an alignment of stones and FBR. The points were close to this feature but the only interpretation presented was a possible disturbed hearth (Murphy 2003:68). A single radiocarbon date of roughly 310 BP was available for the component (Table 25).

**DgPl 55.** DgPl 55 is a campsite on a 3-metre-high terrace at the valley entrance on the north side of Pass Creek (Reeves 1972:40). In 1967, the site was excavated, focusing on two areas. A total of 52 m$^2$ was excavated in Area A along the edge of the creek while 30 m$^2$ was excavated in Area B, about 33 m to the north away from the creek (Reeves 1972:74). Historic artifacts were found intermixed with prehistoric materials although researchers felt confident they could be separated. The earliest occupation was an Old Women’s campsite while the more recent historic occupation postdated to A.D. 1900.

Nine Plains side-notched points, one Prairie side-notched point, eight side-notched fragments, and five preforms were recovered (Reeves 1972:332). Other tools included asymmetrical triangular bifaces ($n = 5$), end scrapers ($n = 2$), side scrapers ($n = 2$), perforators ($n = 10$), retouched flakes ($n = 5$), utilized
flakes \( (n = 10) \), cobble choppers \( (n = 3) \), and a core. Bone tools included a leg bone side scraper, a rib side scraper, bone knives \( (n = 6) \), cut bone \( (n = 2) \), a leg bone splinter awl, rib spatulas \( (n = 2) \), and flakers \( (n = 3) \). A shell pendant blank was also recovered (Reeves 1972:332). Sherds from what appeared to be a single Saskatchewan Basin complex: Late Variant pottery vessel were also recovered (Reeves 2003:108). The vessel was globular in form with a surface finish that was truncated cord-marked (Byrne 1973:129). The rim exhibited the same surface finish and sloped inward at a considerable angle, except for the last 1 cm, which rises vertically and is unthickened (Byrne 1973:134).

The occupation floor was littered with butchered bone and some small fire. At least one bison and one deer were represented in the faunal material. Three small (40-cm diameter) surface hearths were recorded. An obsidian working area produced thirty-five obsidian flakes (Reeves 2003:108). A single radiocarbon date was available for the prehistoric component; it was modern. The recent date fits well with the late Cayley Series points and the pottery. Importantly, all of the historic material recovered at the site would postdate items expected in a Protohistoric period site. If the Old Women’s material was Protohistoric in nature it would have been more appropriate to recover glass beads, metal points, tinkle cones, and such. The site appears to be an example of a very late Late Prehistoric period Old Women’s campsite.

DgPl 1. DgPl 1 is a kill site/campsite on a terrace on the valley floor on the north side of the entrance to Pass Creek valley. The site consists of two areas: a kill site/campsite, and a kill site to the west on the hillside (Reeves 1972:41). During 1968–1969, a total of 104 m² was excavated at the kill site/campsite (Reeves 1972:53–54, 373). Five cultural levels were recognized. The lowest level, 1A, produced two Lusk points, with possible Early Middle Prehistoric period material found in Level 1B, McKean material in Level 1C, Hanna and Pelican Lake material in Level 2A, and Old Women’s material in Level 2B.

Three Plains side-notched points, two flake points, and a preform were recovered from Level 2B (Reeves 1972:332). Other tools recovered included asymmetrical triangular bifaces \( (n = 7) \), biface fragments \( (n = 2) \), end scrapers \( (n = 5) \), a split pebble scraper, cores \( (n = 3) \), pièce esquillées \( (n = 2) \), a retouched flake, utilized flakes \( (n = 31) \), choppers \( (n = 4) \), and flake choppers \( (n = 3) \). Bone tools included a bone knife, a piece of cut bone, a rib biface
handle, a rib splint awl, a neural spine awl, rib spatulates (n = 3), and bone flakers (n = 3).

The living floor had a small, circular surface hearth (30 × 30 cm) with 1.5 cm of ash and burned bone associated with an arc of sandstone slabs and FB. A second feature was a rock-filled surface hearth (90 × 70 cm and 5–10 cm thick). In addition, the floor exhibited a scatter of small FB, bone fragments, and artifacts that tended to cluster around the hearths. An obsidian flake concentration, suggesting a chipping station, was observed near the hearths. The faunal assemblage consisted mainly of bison (MN1 = 4) (Reeves 1972:338). A single radiocarbon date of ca. 220 BP was obtained for this level (Table 25).

**Pigeon Mountain (EgPt 28), Upper Component.** The Pigeon Mountain site is described with regards to the Sonota phase. The overlying Old Women’s material was represented by eight points or point fragments: three were classified as Plains side-notched, one as Prairie side-notched, and one as similar to Avonlea side-notched or Head-Smashed-In corner-notched, with the remaining specimens too fragmentary to classify. All the points are well within the range of variability exhibited in the Cayley Series. Other tools recovered included bifaces (n = 7), a large biface or chthos, end scrapers (n = 5), a side scraper, marginally retouched flakes (n = 8), and a uniface (Clarke et al. 1998:89). The debitage was largely secondary flakes, retouch flakes, and shatter, indicating that tool production and maintenance took place (Clarke et al. 1998:99). Most of the lithic raw materials used at the site were local shales, miscellaneous cherts, and Swan River chert, along with small amounts of quartzite, basalt, porcellanite, siltstone, chalcedony, petrified wood, Top-of-the-World chert, and obsidian. Analysis of four obsidian samples indicated that they came from Bear Gulch, Idaho, and Obsidian Cliffs, Wyoming (Clarke et al. 1998:119–120). A single culturally modified elk antler tine exhibited use wear on its tip (Clarke et al. 1998:125).

The faunal assemblage (n = 6,621) was mainly bison. A minimum number of four bison were estimated from the sample, although elk, moose, deer, large canid, medium canid, fox, bear, beaver, muskrat, and hare/rabbit were also recovered (Clarke et al. 1998:129–134). Fetal bone was recovered, suggesting an early spring occupation (Clarke et al. 1998:155–160). Bones that bear substantial amounts of meat occur frequently at the site while lower-utility bones are rarer, suggesting that the former were transported to the site. The range of species recovered and the highly fragmented
marrow bones also indicate a campsite where people returned with meat to process (Clarke et al. 1998:263). Bone tends to be associated with FBR features. FBR occurred in four small concentrations and one large concentration, and while associated with bone, it was not associated with pit features or substantial amounts of charcoal or ash. A small surface hearth about 30 cm in diameter and 3 cm thick was evidenced by some ash, charcoal, and an orange stain in the soil (Clarke et al. 1998:70–74).

Two radiocarbon dates were obtained from this component of the site: ca. 140 BP (Table 25) and a modern date (Beta-90061). The researchers noted that earlier flood deposits may have contaminated the bone proteins with bacteria, which might result in a later-than-actual date (Clark et al. 1998:264). While the recent dates corroborate the age estimate based on the point classification, it is noteworthy that no Euro-Canadian items were recovered within the same deposits.

Other sites. There are so many other Old Women’s sites that have radiocarbon dates from good contexts that could be reviewed, they cannot all be addressed in this text. A few more Old Women’s sites with unusual contents are briefly outlined below.

Two other subsurface interments that exhibit Old Women’s material culture and date to the appropriate age are the Belly Burial (DhPj 69) and the Folkins Lake Burial (FeOm 1). The Belly Burial is located on the Belly River west of Cardston (Ball 1986a:207–210), and the Folkins Lake Burial is located on the northwest shore of Folkins Lake east of Chauvin (Ball and Beattie 1987).

The Blakiston site (DjPm 115) is a multicomponent stone circle site and buried campsite located on a terrace of the Crowsnest River valley (Dau 1993, 2005). Nine stone circles were identified and twelve block excavations, A–L, were undertaken. All the diagnostic lithic projectile points were considered assignable to the Old Women’s phase (Dau 1993:117). Historic artifacts were recovered in association with some of the Old Women’s occupations. The recovery of fetal bone supported the interpretation of the site as a winter campsite (Dau 1993).

EbPk 15 is a bison processing area near the north end of the Pine Coulee Reservoir (Hjermstad 1998). In the campsite/processing area three large block excavations contained a number of Old Women’s occupations. In the second most recent occupation in the center block, a maul was recovered in situ with Cayley Series (i.e., Prairie and Plains side-notched) points.
Old Women's: Archaeological Evidence for the Prehistoric Blackfoot (Nitsitapii)

The Old Women's phase in Alberta first occurs on the Plains and in the parkland starting at approximately 1,100 BP. The Old Women's phase has two main diagnostics: the Cayley Series projectile points (Peck 1996; Peck and Ives 2001) and the Saskatchewan Basin Complex: Late Variant pottery (Byrne 1973). The Cayley Series points are morphologically varied side-notched points that exhibit time-transgressive changes. Similarly, the Saskatchewan Basin Complex: Late Variant pottery appears to have developed from Avonlea pottery (Byrne 1973; Quigg 1988b). Thick-walled, globular, coconut, and shouldered vessel forms dominate. Surface treatments include vertical cord impression, fabric impression, and smoothed, while decorative techniques made by a variety of tools are usually located on the lip, neck, or shoulder.

Lithic utilization focuses on local materials and is dominated by relatively large amounts of Montana cherts. Knife River flint and obsidian are much less common but are not absent. The main source of food for the Old Women's people was bison. Jumps (e.g., Head-Smashed-In), natural traps (e.g., Lower Kill), and pounds (e.g., Ramillies) were all used by the people of the Old Women's phase.

Other signatures of the Old Women's phase include the use of ammonites as Iniskim (buffalo charms) (Peck 2002; Reeves 1993). Based on ethno-graphic sources, the Iniskim is a Blackfoot item used in bundle ceremonies, in tobacco ceremonies, in sacred tipis, for personal power, for healing, and for calling buffalo to a jump. The recovery of ammonites not only provides some evidence for peoples' ceremonial practices in the past, but also suggests ethnic affiliation between the Old Women's phase and the Blackfoot
Similarly, some medicine wheels exhibiting tipi rings with spokes (e.g., Ellis) or cairns with spokes that have been examined contain human bone and Old Women’s material. Ethnographically, the Blackfoot are known to have buried important people in such structures (Brumley 1985). Through a series of papers, Peck (1996, 2002, 2007; Peck and Hudecek-Cuffe 2003) has drawn connections between the Old Women’s phase and the historic Blackfoot, suggesting that the foundation has been laid for an “archaeology of the prehistoric Blackfoot (Nitsitapii).” Peck (2007) framed this foundation on four main lines of evidence: (1) the coincident distribution of the Old Women’s phase (Cayley Series points and Saskatchewan Basin pottery) with historically known Blackfoot (Magne et al. 1987; Peck 1996; Peck and Ives 2001); (2) the direct link between archaeologically recovered ammonites at Old Women’s sites and Blackfoot Iniskim (Peck 2002); (3) the recovery of Old Women’s artifacts associated with human remains at medicine wheels of form similar to those documented as burials of the historic Blackfoot (Brumley 1988; Peck and Hudecek-Cuffe 2003); and (4) the distribution and identification of human boulder effigies on the plains and their likely ties to the Blackfoot trickster, Napi (Vickers 2008).

As the distribution of the aforementioned artifacts and features indicates, the Old Women’s phase is not restricted to southern Alberta; there are numerous other Old Women’s sites in southern Saskatchewan and northern Montana. In Saskatchewan most of the sites represent only the early part of the Old Women’s phase (ca. 1,100–650 BP); however, a few sites along the western side of Saskatchewan occur during the late part of the Old Women’s phase (ca. 650–250 BP).

The Lucky Strike site (FdNm 16) is a habitation locale just east of the South Saskatchewan River, near Rosthern (Wilson 1984). Two excavation blocks produced Prairie side-notched points (early Cayley Series) and Saskatchewan River Basin: Late Variant pottery (Wilson 1984:11–12, 21–23). The south block was dated to 1,020 +/- 90 BP (S-2281) while the north block was dated to 875 +/- 95 BP (S-8820) (Wilson 1984:24; Morlan n.d.). The two blocks appear to be functionally and temporally independent of each other, indicating successive occupations that represent different activities.

The Tschetter site (FbNr 1) is a bison pound and processing site in the Dunfermline Sand Hills, west of Saskatoon (Prentice 1983; Linnamae 1988). Prairie side-notched points (early Cayley Series) and Saskatchewan Basin Complex: Late Variant pottery were recovered in this single-component site. Radiocarbon dates supported the interpretation: 1,005 +/- 75 BP (S-669);
The Garratt site (EcNj 7) is a multicomponent campsite along Moose Jaw Creek (Morgan 1979:74). The Old Women’s material was recovered from Levels 1–2, although a single Prairie side-notched point was recovered in Level 4 (Morgan 1979:317). Pottery (n = 254) conforming to the Saskatchewan Basin Complex: Late Variant was also recovered (Morgan 1979:294–317). Similarly, two Plains side-notched and nineteen Prairie side-notched points (early Cayley Series) were also recovered from Levels 1–2 (Morgan 1979:263). The lithic suite emphasized the use of Knife River flint, Sard chalcedony, and miscellaneous cherts (Morgan 1979:281). A date for the level was not obtained.

The Estuary site (EfOk 16) is a bison kill site at the head of a large coulee near Leader, southwestern Saskatchewan. Above an Avonlea–Old Women’s transitional component was a component of Old Women’s material. It consisted of Cayley Series (Prairie side-notched) points and was dated to 1,070 +/- 70 BP (S-640) (Adams 1977:142; Morlan n.d.).

The Gull Lake site (EaOd 1) is a bison kill site in southwestern Saskatchewan (Kehoe 1973). A long sequence of Prairie and Plains side-notched points (i.e., Cayley Series) was recovered, overlying a sequence of Avonlea material. Old Women’s material was recovered from Layers 24 through 2. Layer 24 produced a radiocarbon date of 1,220 +/- 80 BP (S-149) and Layer 21 produced a radiocarbon date of 1,165 +/- 80 BP (S-150) (Kehoe 1973:43; Morlan n.d.). The morphology of the most recent points suggested that the occupation persisted well into the late Old Women’s phase.

In Montana, the vast majority of the Old Women’s sites tend to fall within the late Old Women’s phase (ca. 650–250 BP). The Boarding School Bison Drive site (24 gl 302) is located on the valley margin of Cut Bank Creek, north of Browning in northwestern Montana (Kehoe 1967). Many Plains and Prairie side-notched points were recovered, almost all above a layer dating to ca. 360 +/- 75 BP (M-1066) (Kehoe 1967:42; Morlan n.d.). Of the 180 Plains side-notched specimens, thirty-eight were Paskapoo, sixty-four were Pekisko, ten were Buffalo Gap single-spur, three were Cut Bank jaw-notched, and sixty-five were Washita. At Gull Lake the numbers were very different for Plains side-notched points (n = 102): Paskapoo (n = 57), Pekisko (n = 34), and Washita (n = 11). Furthermore, there were no Cut Bank jaw-notched or Buffalo Gap single-spur varieties. Chalcedony (32%), obsidian (19%), and miscellaneous cherts (16%) comprised the main
lithic materials in point manufacture at the Boarding School site. The numbers were similar for the Prairie side-notched points: 27 percent, 27 percent, and 13 percent, respectively (Kehoe 1967:43, 45). This unusual lithic utilization pattern might merely reflect the Old Women’s phase’s proximity to important lithic resources. The late date and the increased use of southern lithic raw materials, combined with the unusually high frequency of Washita, Buffalo Gap single-spur, and Cut Bank jaw-notched point varieties, however, possibly suggests a Highwood phase influence at the bison kill (see following section).

Bootlegger Trail (24TL1237) is a multicomponent spring bison kill on the Marias River in northwestern Montana (Roll and Deaver 1980). The researchers interpreted the site as containing two components while the radiocarbon dates suggest three components are present. In Area B, the stratigraphy clearly had a lower and upper component. In the lower component, cultural Level II, four radiocarbon dates were obtained: 760 +/- 80 BP (I-9204), 680 +/- 80 BP (I-9205), 580 +/- 115 BP (GX-4711), and 565 +/- 115 BP (GX-4713). These dates suggest a single occupation. The associated points exhibit high, flaring bases with angular corners (Roll and Deaver 1980:112, fig. 23b). Some pottery that exhibits unusual s-shaped rims and possible check-stamping was also recovered. This pottery is quite unlike the Saskatchewan Basin complex (Roll and Deaver 1980:138, fig. 45c).

In the upper component, four radiocarbon dates suggested that two components, rather than one, are present. The earlier two dates are 645 +/- 80 BP (I-9202) and 640 +/- 135 BP (GX-4710), suggesting an age very close in time to cultural Level I. The other two dates are 260 +/- 75 BP (I-9203) and 185 +/- 120 BP (GX-4712), suggesting an age near the beginning of Protohistoric period. The point assemblage is mixed, showing straight basal edges, high bases, sharp-angled points, and more open-notched points with irregular basal edges that are more readily attributable to the Cayley Series. Most of the pottery in the site came from this level, and was concentrated in the southeast corner of the excavation. The vessels appear to have slightly constricted necks, as the profile is a very gentle s-curve, and the surface treatment is grooved paddle impressed or smooth. The researchers classified it as Saskatchewan Basin pottery (Roll and Deaver 1980:141, fig. 45a, b). The obsidian hydration measurements indicate that obsidian from Levels I and II is the same age, suggesting a single component.

This site might represent an initial occupation by Highwood peoples at ca. 650 BP (see next section). The flared-car, sharp-based points, the unusual
pottery, and the use of obsidian all support this inference. The uppermost occupation, in cultural Level 1, is represented by the early dates of ca. 640 BP from this level. The recovered assemblage has some points with deep notches high on the lateral margins and amounts of obsidian dated to the same age as obsidian in cultural Level 11. Steatite pipe fragments from cultural Levels 1 and 11 suggest a southern origin and support a Highwood phase cultural assignment (Roll and Deaver 1980:147), making the component a reoccupation by the Highwood phase. In addition, cultural Level 1 also produced dates relating to ca. 250 BP. These dates might be associated with the open-notched and irregular-based points (such as the Cayley Series) in possible association with the Saskatchewan Basin pottery. A piece of copper found in association with bone splinters supports a Protohistoric date for the component (Roll and Deaver 1980:148). Thus, part of cultural Level 1 may represent a late Old Women's campsite.

The Taft Hill site is a buffalo jump located west of Great Falls in northwestern Montana (Shumate 1967). A systematic excavation has not occurred at the site, however, numerous flared-base or basally notched points have been recovered. Many of the points exhibiting narrow notches high on the lateral margins were manufactured on obsidian while those with wide notches low on the lateral margins were rarely manufactured from obsidian (Shumate 1967:20–21). Steatite pipe fragments have been found at the kill, leading the researcher to speculate that the pipes were ceremonially fractured in some form of ritual (Shumate 1967:19, 22). As well, most of the pottery is attributable to Ethridge Ware (Saskatchewan Basin Complex: Late Variant pottery) with the exception of a small amount of flared-base, flat-bottomed potsherds from a single hearth (Shumate 1967:24–25). No historic material was found in the kill deposits or the campsite, while Washita points are found in the later kill deposits (Shumate 1967:30). As with the Bootlegger Trail site, this site might exhibit both an Old Women’s component and a Highwood component. In this case, the Old Women’s phase is replaced in the deposits by the Highwood phase presumably around 300–400 BP (see Shumate 1967:30).

The Risley Bison Kill site (241C1003) is a kill and butchering site located on the Sun River near Augusta, west-central Montana (Keyser and Knight 1976). Four stratigraphic levels were observed. The projectile points recovered from the site resemble Cayley Series (see Keyser and Knight 1976, fig. 8a–g). Five of these came from the second lowest level. The site likely dates to the last few hundred years before the Protohistoric period.
In summary, despite a few early dates at EgPn 440 and possibly the initial Old Women’s level at the Gull Lake Bison Drive, the Old Women’s phase appears to begin at ca. 1,100 BP. The early distribution of the phase occurs on the plains of central Saskatchewan and across Alberta, with little or no infiltration into Montana. The late distribution, ca. 650 to the Protohistoric period, shifts the Old Women’s phase to the western edge of the Saskatchewan plains, across southern Alberta, and well into north-central Montana.

HIGHWOOD PHASE (CA. 500 TO 300 BP)
The Highwood phase is a poorly understood phenomenon that is focused in central Montana (Brumley and Dau 1988:48; Brumley and Rennie 2005). The most recent definition of the phase was mainly based on materials recovered from the Highwood bison kill (for which the phase is named), the Morrow-Bateman bison kill (24CH234), and the Square Butte campsite (24CH395). These sites are located in the southern part of Choteau County to the south of the Missouri River (Brumley and Dau 1988:57; Brumley and Rennie 2005; Shumate 1950).

The diagnostic artifacts of the phase include Plains side-notched projectile points, commonly made on obsidian, porcellanite, and Madison Formation chert (Brumley and Rennie 1995:44). These points exhibit superior craftsmanship, often displaying spurs and basal notching (Brumley and Rennie 1995:57, 2005). As well, Intermountain tradition pottery (Mulloy 1958:196) has been used to characterise the Highwood phase (Brumley and Rennie 1995:43). These vessels are distinct from vessels common to the Alberta plains. They tend to be vase-like in shape with flat circular bases, no handles, and a general lack of decoration (Mulloy 1958:197). In addition, based on their recovery at the Morrow-Bateman kill site, heavy unifacial quartzite cobble cores that exhibit crushed and dulled platform edges, indicating heavy use, are also considered diagnostic of the phase (Brumley and Rennie 2005).

Brumley and Dau (1988:58) initially included the upper levels of the Boarding School Bison drive site (24GL302), the Beaver Creek Park site (24HL411), and the Buffalo Gap bison kill site (Brumley and Dau 1988:58) as Highwood sites north of the Missouri River. More recently, Brumley and Rennie (2005) have not acknowledged any Highwood sites north of the Missouri River, restricting their definition to materials recovered south of the Missouri River.
Originally, Brumley and Dau (1988:58) dated the Highwood phase between ca. 650–400 BP. Subsequently, Brumley and Rennie (1995:44) revised the dating of the phase by suggesting it begins at ca. 650 BP and possibly persists into the Protohistoric period. This is based on excavations at the Morrow-Bateman kill site, which produced ten bone layers yielding Buffalo Gap single-spur and Emigrant basal-notched points dating to ca. 650 BP (Brumley and Rennie 2005). Brumley and Rennie (1995:43, n.d.) equated the Highwood phase with historic Shoshonean groups, based on suggested relationships between basal-notched projectile points and/or Intermountain pottery with a historically known ethnic group (Mulloy 1958; Frison 1991a).

The Sites
In order to assess the various lines of thinking presented above, possible Highwood assemblages from Alberta are outlined below. These sites are used to critically evaluate the current view of the Highwood phase in terms of its presence in the province (see Plate 27 and Figure 28).
Figure 28
Highwood sites within Alberta
(Old) Women’s Buffalo Jump (EcPl 1). The (Old) Women’s Buffalo Jump is the sine qua non of Old Women’s sites. The Upper Member (Layers 1–14) of the Upper Pit produced a sequence of points that provided the backbone of the Cayley Series projectile point classification system. Still, the large amount of micro-variation within lithic assemblages is difficult to encapsulate into appropriate cultural patterns. Peck (1996; Peck and Ives 2001) has repeatedly suggested that more decipherable variation may be hidden within the Cayley Series assemblages. Projectile points of the Highwood phase may, in fact, be hidden among Late Prehistoric projectile point assemblages of southern Alberta.

In the four uppermost layers of the jump deposits, which date to the last 450 years, 216 points were recovered. Of these, fifteen were classified as Washita points with flaring basal edges, high base heights, and narrow-deep notches. They were manufactured on a wide range of lithic raw materials (Forbis 1962:96, fig. 12a–c). They exhibit features found in Highwood phase points. It is possible that Highwood material is represented as a discrete, inter-mixed, or contemporaneous assemblage within the Old Women’s assemblages at the (Old) Women’s Buffalo Jump.

Head-Smashed-In Buffalo Jump (DkPj 1). The possibility of Highwood assemblages being imbedded in the Late Prehistoric levels of the (Old) Women’s Buffalo Jump site suggests that other sites may exhibit similar traits. At Head-Smashed-In Buffalo Jump, Old Women’s material was recovered in Levels 1–7B (Reeves 1978). In Levels 1 and 2, Peck (1996) noted aberrantly high mean values for base height, shoulder height, and weight for all points, compared to earlier levels at other sites of the same age. This aberration in metric values might be detecting Highwood points. Reeves (1978, fig. 17.25) illustrated some projectile points recovered from Head-Smashed-In Buffalo Jump, although he did not depict them by level, and a few exhibit features attributable to Highwood points. For example, Specimen 20 (Reeves 1978, fig. 17.25) appears to have a spur and high base height although the raw material type cannot be discerned.

Crowsnest Valley Campsite (DjPp 8). DjPp 8 also exhibits the trend towards well-formed points that are recovered in the uppermost levels of the Late Side-notched point sequence. Type 10 points display well-defined, deep notches placed relatively high on the lateral margins (Driver 1983:14, fig. 10, nos. 26–29). The nature of the excavation made it impossible to
determine whether the material represented a discrete occupation, a mixed occupation or a concurrent occupation.

**DjPm 114.** DjPm 114 is a multicomponent site on an isolated 10-metre-high bench on the south side of the Crowsnest River, upstream from its confluence with the Oldman River. Two areas, east and west, were examined at the site (Landals 1993:20). In the West Area, two buried Old Women’s components were observed overlying a Bracken component. A total of 12 m² was excavated in the West Area to mitigate the development of the Oldman River Dam project.

A single triangular side-notched point was recovered that exhibited a right basal edge projecting as a sharp spur (Landals 1993:20). The point was associated with a diffuse scatter of lithics, FBR, and butchered bone. The lithics (n = 40) exhibited a range of material types including obsidian (n = 1), porcellanite (n = 2), Avon chert (n = 3), and Etherington chert (n = 8). The fauna was mainly bison (MN1 = 5) but also included elk, deer, fox, and a medium-sized canid (Landals 1993:20). Fetal bone was recovered. The fetal bone and the site’s open location suggested a spring occupation. A single radiocarbon date of 430 +/- 80 BP (ABCv-696C) correlated well with the late-style side-notched point (Landals 1993:20). The spurred point with the diverse lithic suite showing ties to the south and the widely varied faunal assemblage are a deviation from typical Old Women’s sites. This material may reflect a Highwood occupation.

**Mosquito Creek (EbPi 73).** The Mosquito Creek site is located on the Little Bow River. In the second-lowest level, Landals (2007) recovered grinding stones, parts of ground stone bowls with flat bases, and very plain, thin-walled pottery sherds with highly burnished black surfaces. Landals (2007) indicated that plain pottery and ground stone bowls with flat bottoms are often associated with the ancestors of the Shoshone. Lithic raw materials showed a marked increase in the amount and relative recovery of porcellanite and obsidian. Similarly, point morphology was noted to shift subtly to include spurred points (Landals 2007).

**Gilchrist (DgOu 29).** The Gilchrist site is a cache of exotic lithic artifacts found east of Writing-on-Stone Provincial Park. The cache of large obsidian flakes (n = 17), pieces of obsidian shatter (n = 3), chert flakes (n = 10), chert bifaces (n = 2), and one piece of chert shatter was found scattered down
slope from a badger burrow (Brumley 1982). The obsidian was inferred to originate from Yellowstone National Park about 480 km to the south, and the chert was inferred to be Avon chert from quarries 280 km to the southwest. Hydration dates on four obsidian specimens produced a mean age of ca. 500 BP with all four dates falling within both the Highwood phase and the Old Women’s phase established time spans (Brumley 1982:140).

It is unclear to which, if either, of the two cultural entities the material is related. The answer would likely have bearing on whether the exotic materials were traded in or procured by travelling to the source quarries.

Other sites. Brumley and Dau (1988:58) originally indicated that evidence of Highwood sites in Alberta was illusive and consisted mainly of isolated recovery of projectile points manufactured with craftsmanship superior to that of the coeval Cayley Series points and made on key raw material types such as Madison Formation cherts, porcellanite, or obsidian. More recently, they have limited the Highwood phase’s distribution to central Montana. Despite the redefinition of the phase, new opportunities to test for the presence of Highwood material in Alberta have occurred. For example, Wyman (2006) recovered a “Washita” point at EdPn 53. Washita points typically have high, flaring bases and deep-narrow notches not unlike points from the Highwood phase. Sites such as EdPn 53 will provide testing grounds for determining the existence of the Highwood phase in Alberta. As well, Brian Vivian (personal communication 2008) noted that EgPn 624, on the Paskapoo Slopes in Calgary, contained an obsidian tri-notched point from mixed context. Obsidian source analysis traced it to Timber Butte, Idaho, a source rarely found in Alberta obsidian recoveries.

Highwood: Shoshonean (Snake) Invaders in Southern Alberta

Very little is known about the Highwood phase. The trend in diagnostic projectile points towards higher bases, deep-narrow notches, and spurs might simply be an extension of trends that exist within the Cayley Series points. Similarly, an increase in obsidian and porcellanite in the lithic raw materials might be reflecting changes in trade patterns within the Old Women’s phase. Whether a northern expression of the Highwood phase is observed in Alberta or whether the notion can be rejected will likely depend on a rigorous review of numerous well-stratified sites with a focus
on the nature of micro-stylistic variability within projectile point and ceramic assemblages.

As well, the uncertain nature of the Highwood phase in Alberta is due, in part, to the paucity of materials recovered from Montana. Of the three sites that define the Highwood phase, the Square Butte site (24CO395) is the only site with published data available for review and evaluation (Johnson and Armstrong 1990; Brumley and Rennie 2005). The Square Butte site is a multicomponent site located in the Highwood Mountains east of Great Falls in west-central Montana (Johnson and Armstrong 1990). Intermountain Ware was recovered, including smooth, flat-bottom specimens. As well, substantial amounts of obsidian were recovered. A single projectile point was sourced to Yellowstone National Park (Johnson and Armstrong 1990:6). While Brumley and Rennie (2005) affiliated this material with the Highwood phase and the Shoshone, Johnson and Armstrong (1990:5) acknowledged the general tendency to associate Intermountain pottery with the Crow.

A few other sites in Montana exhibit the types of projectile points and pottery that make them possible contenders for the Highwood phase. As mentioned in the section on the Old Women’s phase, the Boarding School Bison Drive site (24GL302) has produced many Plains and Prairie side-notched points, mainly postdating ca. 360 BP (Kehoe 1967:42; Morlan n.d.). Many of the specimens have been classified as Washita, Buffalo Gap single-spur, and Cut Bank jaw-notched points, while during the same period of time at the Gull Lake site they are almost absent. Furthermore, chalcedony (32%), obsidian (19%), and miscellaneous cherts (16%) comprise the main lithic materials utilized in point manufacture at the Boarding School site. To reiterate, the unusual morphological change in points and the change in lithic utilization may simply be reflecting continued change in the Old Women’s phase. On the other hand, the unusual spurred points and increase in the use of southern lithic raw materials may indicate a Highwood phase influence.

The Taft Buffalo Jump provides a similar record to the Boarding School Bison Drive (Shumate 1967). A possible interpretation of the deposits at the Taft Buffalo Jump have the Old Women’s occupants as the original people who ultimately co-occupy or are replaced at the site by the people of the Highwood phase, presumably around 300–400 BP (see Shumate 1967:30).

The significance of a possible late presence of the Highwood phase in southern Alberta relates to an historical account transcribed by David
Thompson and a story in Blackfoot oral tradition, which both tell of a time in the recent past when the “Snake” peoples pushed the Blackfoot north across the Bow River. For some time the Blackfoot were restricted to this area. About the time that European trade goods reached the Blackfoot and the horse reached the Snake, the Blackfoot were able to regain the lands to the south.

Based on the recollections of Blackfoot elders, Dempsey (1994) recounted the story of Scabby Round Robe. About A.D. 1690, the Blackfoot were at peace with the Cree to the east, Kootenays to the west, and the Beaver to the north. In the south, however, war arose because of Shoshone people drifting north into the mountain valleys. The Bow River was the acknowledged border between the two groups, with the Blackfoot going south of the Bow only when accompanied by the Shoshone. Blackfoot territory was north of the Bow River to the North Saskatchewan and east to the Eagle Hills. An incident during a child’s game at a camp of the Shoshone and Blackfoot led to deaths and, ultimately, war. Time passed as the feud continued. On one of the many war parties, a scout reported finding the Shoshone camp at Ridge Under Water, a major crossing of the Bow River. The two forces lined up across the river from one another, knowing that the spring waters made it possible to cross along the narrow ridge only in single file. The Shoshone leader issued a challenge to face any man in single combat. Scabby Round Robe had sought a vision and attained great power from the beavers in the form of a short stick. Thus, Scabby Round Robe engaged the Chief of the Snake (i.e., Shoshone), with only his powerful stick, and defeated him. This marked the beginning of the return of the Shoshone to the mountains.

David Thompson’s (1916) account of Saukamappee took place a few decades later. Saukamappee was a Cree (Nahathaways). About A.D. 1720–1730, some Peigan came to the camp of Saukamappee’s father, asking for help against Snake (Shoshone) attacks. The Cree were armed mainly with iron-tipped lances and arrow quivers that had one in ten arrows tipped with iron, the rest being tipped with stone. The Snake were encamped on the plains of the Eagle Hill. About 350 warriors crossed the river (presumably the Red Deer or South Saskatchewan). Upon finding their foe, singing and dancing ensued before all the warriors took cover behind full body shields. The battle was a draw with only a few people being injured. A few years later, Peigan scouts again came to the Cree for support against the Snake. By this time the Cree had more guns and more iron arrow heads.
The Snake, however, had acquired horses. The encounter with the Snake was one-sided. They had not brought their horses, for at that time these were still rare, and the Cree guns were accurate enough to inflict substantial damage. A charge of the Snake battle line ensued, and a decisive victory was won. Because the Snake had no European traders amongst them, the Peigan (Blackfoot) were able to continue to advance through the plains of the Red Deer River.

It is tempting to link the Highwood materials with the Shoshone and Old Women's material with the Blackfoot. As such, the historically known late seventeenth-century presence of the Shoshone in southern Alberta and the temporary displacement of Blackfoot peoples to the north might be documented in the archaeological record.