

# Early Prehistoric Occupation of South-Central British Columbia: A Review of the Evidence and Recommendations for Future Research

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## INTRODUCTION

The geographic focus of this study is the interior plateau of south-central British Columbia (figure 1), including the Chilcotin, Mid-Fraser River, Thompson River, North Thompson River, South Thompson–Shuswap Lakes, Nicola–Similkameen, and North and South Okanagan regions. The Early Period, as used here, covers the time span from final deglaciation, ca. 12,000/11,000 BP, to the end of the Hypsithermal climatic period, ca. 7000 BP (Hebda 1982). The initial peopling of south-central B.C. probably began sometime between 12,000 and 11,000 years BP, shortly after deglaciation and the establishment of flora and fauna. Dated archaeological remains are limited to three sites occupied in the latter half of this period (see below). Information for the initial part of this period is based entirely on surface finds.

We are well on our way to documenting and understanding the general character of human adaptations and culture historic record for the Middle and Late Prehistoric periods (ca. 7000 to 200 years BP) in this part of B.C. (Strydom and Rousseau n.d.; Richards and Rousseau 1987), but very little is known about the Early Prehistoric Period. Indeed, in published summaries of Early Period Pacific Northwest archaeology, south-central B.C. is often ignored and/or dismissed as an area of little importance or consequence. This is troublesome to me, because I believe that there are many Early Period sites of considerable significance in south-central B.C. that could answer many questions regarding the initial peopling of North America, and provide insights into early human adaptations in this part of the Pacific Northwest.

Current paleoenvironmental reconstructions for the southern Canadian Plateau suggest that conditions were favourable for human occupation by at least 12,000 years ago, but the earliest undisputed excavated archaeological evidence dates 3,500 years later. I argue that this situation is the result of past researcher biases, heritage resource management practices, and lack of appropriate research funding.



FIGURE 1  
The study area in southern B.C.

The objectives of this paper are: (1) to present a synthesis of current models of Early Period paleoenvironmental reconstruction for south-central B.C. and immediately adjacent regions; (2) to briefly outline some previous models for initial peopling and cultural traditions in southern interior B.C.; (3) to discuss the currently accepted evidence for early human occupation in the study area; (4) to speculate on the nature, location, condition, and visibility of Early Period sites in the study area; and (5) to offer some remarks and recommendations intended to enhance our ability to locate and study sites belonging to this poorly understood period.

### *Early Period Paleoenvironments*

A number of paleoenvironmental studies indicate that much of south-central B.C. was deglaciated and supporting pioneer grasslands by at least 11,500 BP (Clague 1981; Hebda 1982, 1983; Hebda *et al.* 1990; Mathewes 1985; Mathewes and Rouse 1975; Souch 1989). Between ca. 11,500 and 10,500 BP, vegetation communities of pine, alder, and poplar occupied valley sides and upland areas, indicating a cool and moist environment (Hebda 1982, 1983).

Around 10,500 BP, there was a notable decrease in pine and an increase in Douglas-fir, grasses, and sages, indicating the beginning of a major period of warmer and drier climate (Mathewes 1985) known as the Hypsithermal (Hebda 1982) or "early Holocene xerothermic interval" (Mathewes and Heusser 1981; Mathewes 1985; Mathewes and King 1989). This warm and dry episode persisted until ca. 7000/6500 BP, climaxing between ca. 10,000 and 8000 BP (Hebda 1982). The resulting expansive grasslands may have supported a mixture of late Pleistocene and early Holocene fauna suitable for human predation. Examples of such fauna (not from archaeological contexts), include the skull of an extinct bison (*Bison occidentalis*) from a late Pleistocene glacial lake delta in the North Okanagan region (Fulton 1971: 199), and a mixture of smashed moose and mountain sheep remains from Lochore Creek in the Mid Fraser region radiocarbon dated to  $11,285 \pm 1000$  BP (Ryder 1978: 63; Clague 1980: Table 4; Ryder pers. comm., 1992). While no archaeological remains were observed in association with these apparently natural situations, they indicate that big game were present on the southern Canadian Plateau 11,000 years ago. Given this, I believe it is reasonable to assume that people coexisted with them. By about 10,000 BP it is likely that any thriving late Pleistocene megafauna would have been replaced by modern fauna, such as elk, antelope, sheep, deer, and moose.

We are fortunate that there have been a few excellent studies conducted

in south-central B.C. pertaining to late Pleistocene and early Holocene geomorphology and geochronology. General summary accounts are provided in Church and Ryder (1972); Clague (1981, 1986); Fulton (1969, 1971), and Fulton and Smith (1978). Portions of the Mid-Fraser River, Thompson River, and South Thompson River regions have been investigated by Ryder (1976, 1982), and Ryder and Church (1986). The late glacial history of the Okanagan Valley has been reconstructed by Nasmith (1962); and Fulton (1975) presents a general overview for the Nicola region.

Some of these reconstructions suggest that glacial retreat first occurred along the southern, eastern, and western margins of the Cordilleran ice-sheet around 13,000 BP, but since the ice margin was still south of the international boundary by 12,750 BP (Clague 1981: 17). The oldest reliable post-glacial radiocarbon date north of the border on wood associated with a glacial outwash deposit is  $11,000 \pm 180$  BP (GSC 909) (Lowdon and Blake 1970: 71; Fulton 1984). Upland areas became deglaciated first, followed by valley bottoms which were ice-free by at least 11,000 BP (Ryder 1982: 67; Ryder and Church 1986). By at least 10,000 BP, the glaciers had retreated to their present position in high mountain ranges.

During, and shortly after deglaciation, a number of large meltwater lakes formed in major valleys (Church and Ryder 1972; Clague 1986; Fulton 1969; Fulton *et al.* 1989; Nasmith 1962; Ryder 1976). Most had drained and approximate present base levels were established before 10,000 BP (Alley 1976; Nasmith 1962; Ryder 1976). Rapid aggradation of outwash deposits resulting from "paraglacial" processes (i.e., non-glacial processes directly conditioned by glaciation), occurred within major river valleys in lowland areas (Church and Ryder 1972; Ryder 1976, 1972). The end of this paraglacial episode corresponds with the establishment of grasslands and forests between ca. 11,000 and 10,000 BP. Some inter-regional temporal differences exist for these events as a result of varying deglaciation conditions. Immediately following was a period of rapid fluvial degradation which caused the Fraser, Thompson, and South Thompson rivers to incise about 300 metres into their valley bottom deposits. In many areas, this downcutting has produced extensive river terraces of varying ages that are ideal settings for plant, animal and human occupation. Aeolian sediments began aggrading on those terraces during late and early postglacial times (Fulton 1975). Ryder (1982: 77) suggests that the greatest period of loess and sand deposition was the short interval between deglaciation and establishment of vegetation.

In considering the early Holocene geomorphological data, it is apparent



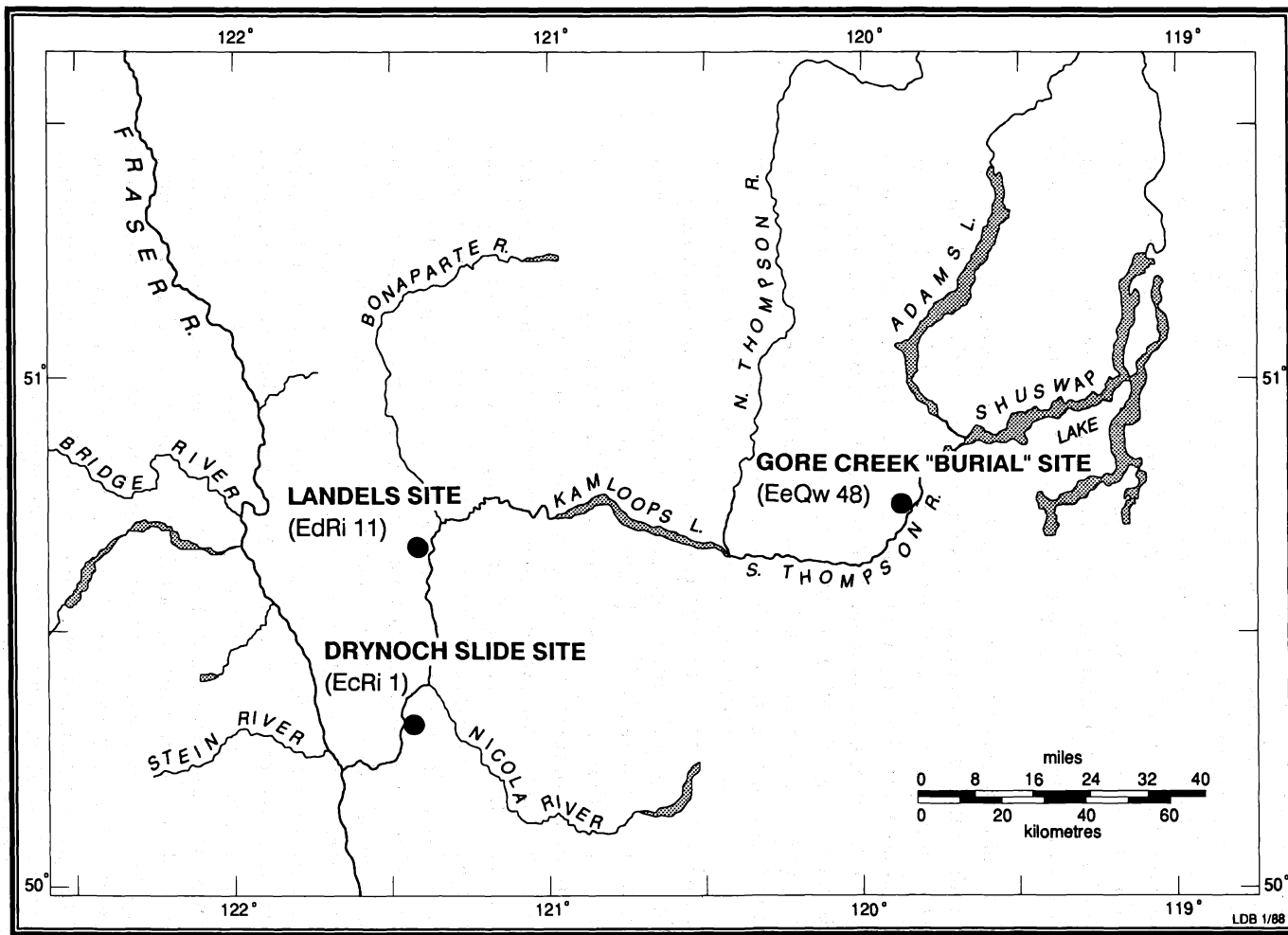


FIGURE 2

Investigated Early Prehistoric Period sites in south-central B.C.

that many depositional and erosional processes of high magnitude and short duration were common. In order to maximize the probability of finding Early Period sites, archaeologists should be prepared to undertake accurate geomorphic interpretations for each research locality, and consider deep sub-surface site-discovery and testing procedures.

### *Previous Early Period Research*

Very little research has been specifically directed towards identifying and investigating Early Period sites in south-central B.C. Indeed, two important and well known early sites, the Drynoch Slide site (EcRi 1) and the Gore Creek "Burial" (EeQw 48) were both fortuitously encountered during general site surveys (Anderton 1965; Cybulski *et al.* 1981).

In 1988 Fladmark led a two-week study to examine local museum and private artifact collections within the study area, and provisionally identified certain environmental contexts and locations where Early Period sites might exist in the Mid-Fraser, Thompson, South Thompson-Shuswap Lakes, Okanagan, and Similkameen regions (Fladmark *et al.* 1988). A number of "early-looking" projectile points were identified and photographed, and many areas and/or specific localities were singled out as having medium to high early site potential (see figures 3 to 5).

Between 1987 and 1989 a number of excavations and surveys were conducted in the Oregon Jack Creek Valley and adjacent Cornwall Hills upland areas near the town of Ashcroft in the Thompson River Valley with the specific purpose of identifying early sites (Rousseau *et al.* 1987, 1989, 1991; Rousseau and Gargett 1987; Rousseau 1991). During this study, the Landels Site (EdRi 11) was identified and investigated, and it contains the earliest excavated and dated component on the Canadian Plateau (see below).

### INITIAL PEOPLING MODELS AND EARLY TRADITIONS

Early Holocene cultural adaptations and initial peopling of coastal and interior B.C. have been the focus of theoretical speculation and debate over at least the last 20-25 years (e.g., Borden 1969, 1979; Carlson 1983a, 1983b; Fladmark 1982, 1983, 1986; Stryd and Rousseau n.d.). South-central B.C. is surrounded by a number of very different environmental regions with distinct Early Prehistoric cultural patterns. All these regions are easily accessed from south-central B.C. via major river valleys, and there were no major geographic features that would have seriously impeded relatively easy human migration or communication along these routes. As a result, we can assume that people first entered south-central B.C. some-

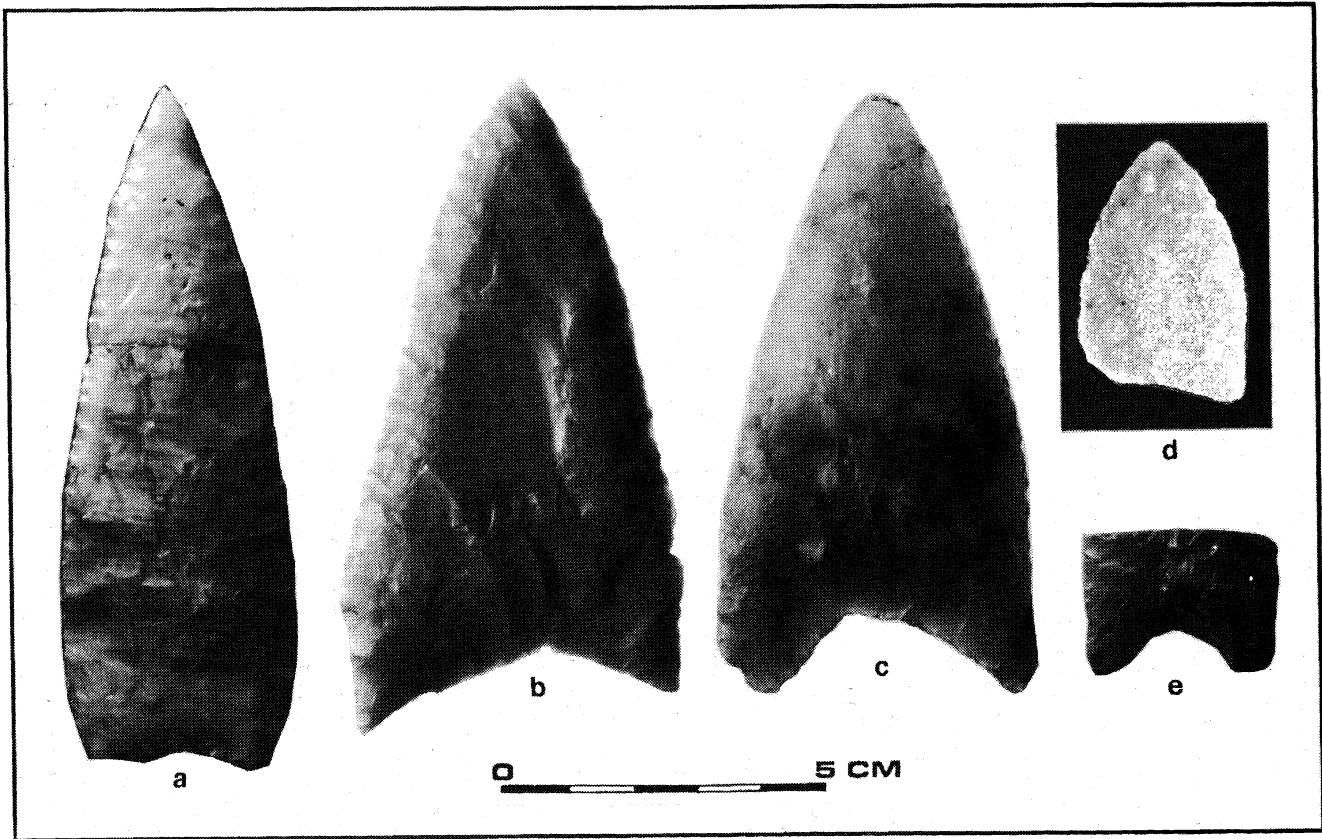


FIGURE 3

Selected bifaces that may belong to the western Fluted Point Tradition reportedly found within the study area. Item (a) was found somewhere in Shuswap Lake (RBCM collections); (b) and (c) are from the Kamloops area; (d) is from Elison (Duck Lake) near Kelowna (Kelowna Museum collection); and (e) was recovered from somewhere around Princeton (Princeton Museum collections).

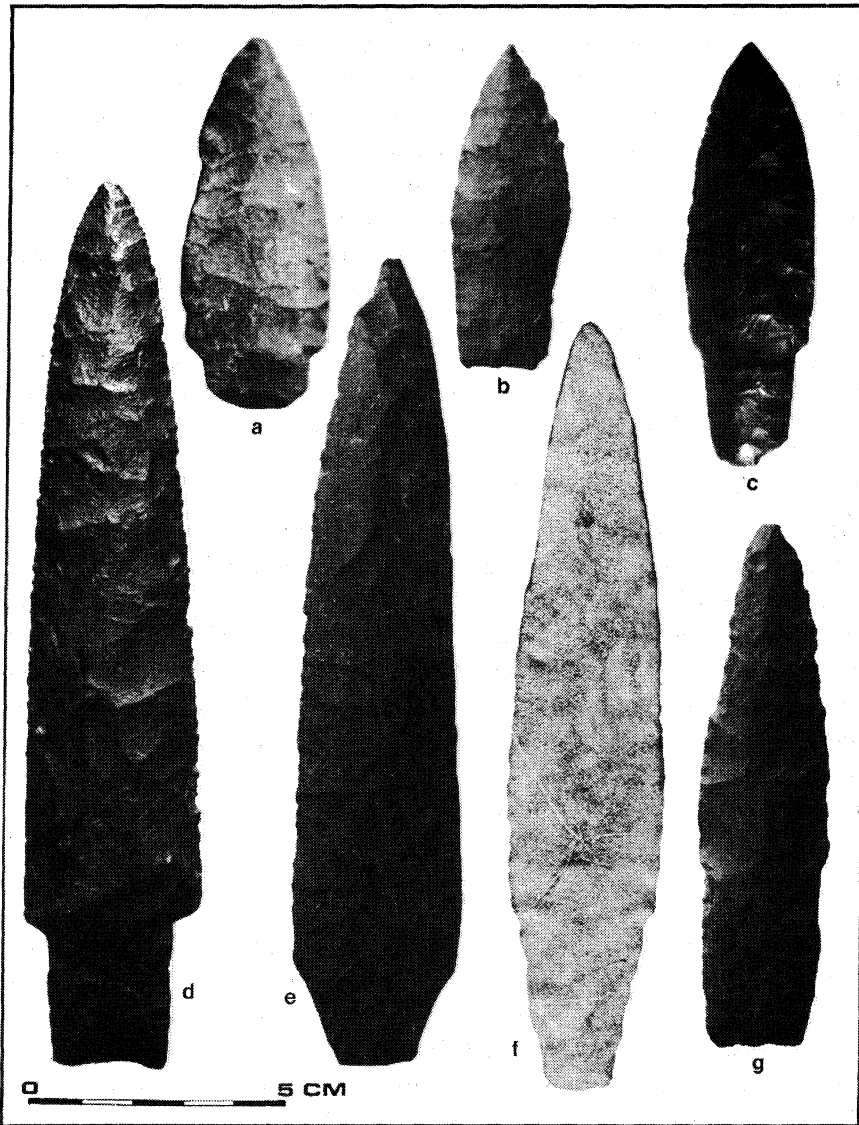


FIGURE 4

Selected bifaces provisionally assigned to the Early Stemmed Point Tradition recovered from the study area. Item (a) is from a mid-elevation site (EjSb 24) just west of Chilko Lake; (b) was found near Bridge Lake (private collection); (c) is from the Lytton-Lillooet area (private collection); (d) was found near Chase (Chase Museum collections); (e) comes from somewhere around Kamloops (Kamloops Museum collections); (f) is from Skaha Lake (private collection); and (g) was picked up somewhere near Lillooet (RBCM collections).

time between 11,500 and 11,000 years ago, but this remains to be shown.

Information for the initial part of the Early Period is based entirely on surface finds. Diagnostic artifact types in surface collections from the area display attributes which suggest affiliation with several widespread, early, technological traditions. Distinctive bifacial knives and/or projectile points closely resemble those recovered from investigated Plano Tradition, Early Coast Microblade Complex, Early Stemmed Point Tradition, Old Cordilleran Tradition, and Western Fluted Point Tradition components in adjacent culture areas. While there are no excavated occupations on the Canadian Plateau that can be firmly related to any of these technological traditions, there is little reason to doubt their presence. For presentation and reference purposes, the evidence is organized and summarized under the rubrics of early technological traditions defined in surrounding regions.

#### *Western Fluted Point Tradition*

Although components of the Western Fluted Point Tradition have been uncovered to the north and south of the study area at Charlie Lake Cave in northeastern British Columbia (Fladmark *et al.* 1988; Fladmark n.d.; Driver n.d.), and on the Columbia Plateau near the city of Wenatchee (Mehring 1988), no conclusive evidence for the presence of this tradition has yet been found in south-central interior B.C. The most convincing evidence for the presence of this tradition in the study area is a large biface from a surface collection reportedly from Shuswap Lake, and two large chalcedony bifaces reportedly from the Kamloops area (figures 3a-c) (see below).

#### *Early Stemmed Point Tradition*

Some researchers (e.g., Bryan 1980; Choquette 1987) have hypothesized that the Early Stemmed Point tradition may predate the Fluted Point Tradition, having originated in the Great Basin ca. 14,000 BP, and spread northward as the ice sheets decayed. If so, the Early Stemmed Point Tradition may be culturally related to the Early Ushki culture of eastern Russia (Dikov 1979, 1988), having entered North America ca. 15,000-13,500 BP (Carlson 1983a: 82). On the other hand, Musil (1988) and Carlson (1991: 86) have argued that stemming is a logical and probable technological derivative of fluted point technology. Radiocarbon dates from the Columbia Plateau and Great Basin indicate an age of between ca. 10,500 and 8,000 BP for the Early Stemmed Point Tradition, supporting the latter model.

Evidence for the Early Stemmed Point Tradition in British Columbia

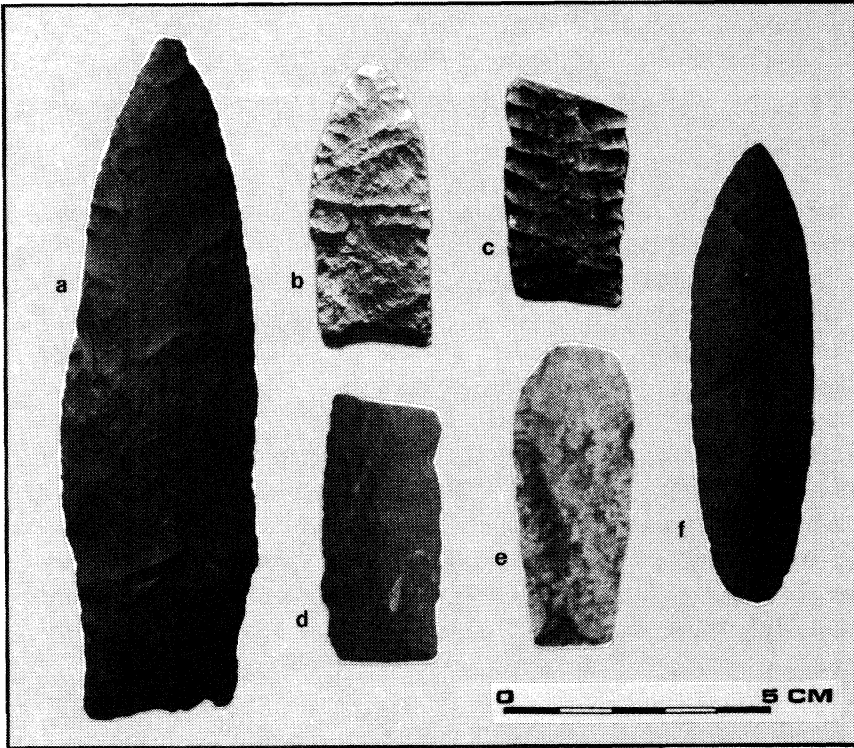


FIGURE 5

Selected bifaces provisionally assigned to the Plano Tradition found in the study area. Item (a) was found near Lytton (RBCM collections); (b) and (c) are from the Chase locality (present location unknown); (d) is from the Clinton area (Clinton Museum collections); (e) was found in Pavilion (Secwepemc Museum collections); and (f) is from the Kamloops area (Kamloops Museum collections).

is currently sparse. A number of bifaces resembling specimens from the Great Basin (Bryan 1980) and Columbia Plateau (Leonhardy and Rice 1970; Rice 1972; Moody 1978; Carlson 1983a) have been found in surface collections from the Mid Fraser-Thompson River area (figure 4), and the Kootenays (Choquette 1987; n.d.). The age of the local surface finds are not known, but the use of stemmed points in the study area may have been introduced from the Columbia Plateau ca. 10,500/10,000 BP.

### *Plano Tradition*

Numerous well-made lanceolate, stemmed and foliate projectile points seen in surface collections throughout the study area exhibit close stylistic and technological similarities to point forms of the Plano Tradition of the Northwest Plains (Wormington 1964; Wormington and Forbis 1965; Frison 1978, 1983), specifically, Alberta, Scottsbluff, Agate Basin, Eden, Lusk, and Hell Gap types (figure 5). Sanger (1970: 119) noted that the Clinton Museum has a "Scottsbluff-like" point in its collections, whereas Grabert (1974: 67) reported that Scottsbluff/Eden-like points have been found in low frequencies in the Shuswap Lakes area by local collectors. Grabert speculated that there was a northward extension of early populations across the Columbia Plateau shortly after the retreat of glacial ice, and that these people were probably partially influenced by Plains cultures, including, presumably, Plano biface technology (Grabert 1974).

### *Early Coast Microblade Complex*

Two Early Period sites have yielded small assemblages containing microblades, including the Pre-Mazama component at the Landels site near Ashcroft (Rousseau *et al.* 1991; Rousseau 1991), and the unexcavated Drynoch Slide site on the Thompson River near Spences Bridge (Sanger 1967). Radiocarbon dates place these assemblages at ca. 8400 and 7500 BP respectively (see below). In south-central B.C., microblade technology is well represented in several excavated Middle Prehistoric components (ca. 7000 to 3500 BP). Presumably there is continuity between microblade use in the Early and Middle Prehistoric periods.

Sanger (1968) placed all microblade assemblages from the southern interior into a technological tradition which he called the Plateau Microblade tradition. The age, archaeological affiliation, contexts, and culture-historical significance of microblade use in interior British Columbia have been the subject of considerable discussion since Sanger's pioneering work (e.g., Fladmark 1982: 128-129; Carlson 1983a, 1983b; Ludowicz 1983;

Richards and Rousseau 1987: 57-58; Campbell 1985; Lawhead *et al.* 1986: 153-156), but it is still only poorly known.

Early Period microblade technology probably derived from the northern interior or northern coast where microblades occur relatively early. Microblades have been reported for Alaska at ca. 11,000 BP (Carlson 1983b: 20) and the northern Northwest Coast at ca. 10,000/9000 BP (Ackerman *et al.* 1979; Fladmark 1979). To the south, on the Columbia Plateau, microblades occur at ca. 7000 BP (Campbell 1985: 299). Assemblages with early microblades on the Northwest Coast have been termed the "Early Coast Microblade Complex" (Fladmark 1982), the "Microblade Tradition" (Carlson 1983b), and the "Early Boreal Tradition" (Borden 1969).

As Carlson (1983b: 20) and others have noted, there is a north to south cline, from Alaska to the coast of British Columbia north of Vancouver Island, in the commencement date for microblade technology. This cline appears to continue inland through the southern interior of British Columbia into the Columbia Plateau. Fladmark (1982: 128) saw the Plateau Microblade tradition as being related to the Early Coast Microblade Complex, having been introduced from the northern (and possibly central) coastal regions rather than from the Yukon before ca. 7000 BP via the Skeena River and Chilcotin region.

### *Old Cordilleran Tradition*

The Old Cordilleran Tradition is an early cultural manifestation found in the Columbia Plateau and along the southern and central Northwest Coast (Carlson 1983b; Fladmark 1982). It has been called the Old Cordilleran Culture (Butler 1961, 1965) or Pattern (Matson 1976; Fladmark 1982), the Protowestern Tradition (Borden 1969, 1975), and the Pebble Tool Tradition (Carlson 1983a, 1983b). Its origins are unclear at present, and both southern and Asiatic origins are possible (Carlson 1983b). Several regional expressions of the Old Cordilleran have been defined, including the Cascade Phase of the Lower Snake River region (Leonhardy and Rice 1970; Bense 1972), the Milliken and Mazama Phases of the Lower Fraser Canyon (Borden 1975), and the provisional Indian Dan and Okanagan phases of the Okanagan Valley (Grabert 1974).

There is at present no conclusive evidence for an Early Period Old Cordilleran Tradition in south-central interior B.C. The main problem in identifying potential Early Period Old Cordilleran sites in this area is that the primary diagnostic indicators — large and medium-sized foliate bifaces and pebble choppers/cores — persist in small numbers throughout the



entire archaeological sequence. Some of the foliate bifaces and pebble choppers present in surface collections from throughout the study area *may* belong to an early Old Cordilleran Tradition, but no such dated sites have yet been identified.

#### EVIDENCE FOR EARLY PERIOD OCCUPATIONS

Certain formally defined and widely known "horizon marker" artifacts (i.e., distinctive tool types, biface styles, and/or technological traits) are referenced frequently in this paper. I must stress that they are to be regarded foremost as temporal horizon markers, and only secondarily as *potential* indicators for direct and/or ancestral cultural affiliation. It can be effectively argued that certain distinctive technological and behavioural traits could be shared by widely separated and differently-adapted cultural groups. Therefore, "horizon marker" artifacts may, or may not always provide reliable indices of direct cultural interaction or affiliation. Moreover, they do not necessarily imply the existence of any single specific adaptive pattern.

#### *Chilcotin Region*

The vast rolling Chilcotin region in the northwestern aspect of the study area has yet to yield any excavated components conclusively predating about 4000 BP. This area has great potential for Early Period sites because it would have supported large ungulate (moose, elk, deer, etc.) populations, and salmon would have been seasonally available in the Fraser River and its numerous tributaries. Most of the Chilcotin region remains largely unknown to archaeologists, and it represents a large void in our understanding of south-central B.C.'s prehistory.

At Dragon Lake near Quesnel, a lanceolate biface with a strong resemblance to "Hell Gap" forms was recovered from site FfRo 4 during detailed excavations (Thomas 1977). This site was associated with an extinct shoreline terrace feature of Dragon Lake, and it may have had some reasonable antiquity.

A possible early component may be represented at a small site (EjSb 24) situated beside a pond at an elevation of about 2000 m a.s.l. just west of Chilko Lake in the Potato Mountains (D. Alexander, pers. comm. 1987). A large, lanceolate basalt stemmed biface with moderate shoulders, moderately edge-ground parallel stem margins, and a slightly convex basal margin (figure 4a) was collected from the site. It has some similarity with Early Stemmed Point biface variants, and with some Plano biface forms.

*Mid-Fraser River Region*

Despite the great attention that this region has received over the last 30 years, no definite Early Period sites have been found there. This is largely because most of the research has focussed on Late Prehistoric pithouse village sites (ca. 3500 to 200 BP). Nevertheless, Sanger (1970: 119) noted that the Clinton Museum has a "Scottsbluff-like" point in its collections (figure 5d), and several bifaces found near Lytton and Lillooet by local collectors have formal and technological similarity with Early Stemmed Point Tradition and Plano biface forms (e.g., figures 4c, g). Several points resembling classic "Lusk" forms (Frison 1983) have also been observed in private collections, and at the Lillooet Museum.

I suggest that there is an enormous potential for the discovery of early sites along the Mid-Fraser, since it has been a major salmon fishery for at least 9000 years (Borden 1975), and probably as early as 10,500 years ago, and for the most part, it is an easily travelled major north-south communication route. However, most Early Period sites in this area will be deeply buried in silty aeolian sediments or alluvial and colluvial deposits lying atop glacial outwash on the uppermost terraces, particularly at the confluences of major rivers and streams. Some specific localities deemed to have high Early Period site potential include the confluence of the Thompson and Fraser rivers, and the mouths of the Nahatlatch, Stein, Bridge, and Chilcotin rivers. Mid-altitude tributaries and adjacent upland areas also undoubtedly contain Early Period sites. I suspect that Early Period site densities in the Mid-Fraser River region are high, due to its excellent salmon fisheries and significance as a major travel corridor by animals and people.

*Thompson River Region*

Unlike the Mid-Fraser River and South Thompson-Shuswap Lakes region, relatively few detailed archaeological investigations have been conducted in the Thompson River Valley between Lytton and Kamloops. This is largely because there has been slow residential and commercial developmental growth in this region, which reduces the need for, and frequency of, salvage or mitigation excavation projects. Nevertheless, this region boasts two of the three investigated and confirmed Early Period sites known at present: the Drynoch Slide Site and Landels Site.

*Drynoch Slide*

The Drynoch Slide site (EcRi 1) is located south of Spences Bridge in the Thompson River Valley (figure 2). A detailed account of the geological

slide is presented in Anderton (1965). The eastern portion of the site contains an artifact-bearing stratum of aeolian sand underneath a layer of Mazama ash, and overlain with massive slide deposits (figure 8). Slumping and gravel removal along the southern face of the site exposed cultural deposits and associated charcoal that produced a radiocarbon date of  $7530 \pm 270$  BP (Sanger 1967).

Cultural materials collected over the last two decades from the sand beneath the Mazama volcanic ash layer include a medium-sized, asymmetrical, resharpened, basalt point or knife (see Stryd and Rousseau n.d.); three microblades; unifacial and unretouched flake tools; and the remains of elk, deer, and fish. The fish may be salmon, but no definite identification has yet been made. The faunal remains indicate a reliance on large ungulates, and also attest that fishing, presumably for salmon, occurred on at least a small scale by 7500 BP along this part of the Thompson River. The archaeological finds from Drynoch Slide site are of unknown cultural affiliation. However, the presence of microblades and the use of relatively fine-grained basalt for tools may indicate that it belongs to the Early Neskép period (Stryd and Rousseau n.d.), but this remains to be demonstrated.

#### Landels Site

The Landels site (EdRi 11) is located southwest of Ashcroft in the Oregon Jack Creek Valley of the Thompson River region (figure 2). Excavations revealed the presence of an intact component beneath and intermixed with Mazama ash (figure 9) (Rousseau *et al.* 1991; Rousseau 1991). Seventeen tools were secured from this pre-Mazama component, including 13 nearly complete or fragmented microblades, two utilized flakes, an unformed uniface, and a core fragment. Fragmented deer bone was also recovered, as was a bone fragment from a muskrat-sized rodent.

The vertical distribution of cultural materials in the pre-Mazama component indicates two brief occupation episodes. The most recent is marked by a sparse scattering of lithic waste flakes, a few microblades, fragmented faunal remains, and a right distal deer humerus with cut marks found in the bottom of the volcanic ash layer. The deer humerus provided a radiocarbon date of ca. 7700 BP. Remains from an older occupation were encountered 10 to 25 cm below the tephra. These include most of the microblades in the Pre-Mazama component, as well as scattered deer bone fragments radiocarbon dated to ca. 8400 BP.

While the sample of cultural materials from the Pre-Mazama component is small, it is at present the earliest excavated and dated occupation on the Canadian Plateau. It also provides the earliest direct evidence for use



FIGURE 6

A view of the Fountain locality. It is one of many areas in the Mid-Fraser region where Early Period site potential is thought to be high.

of microblade technology in this area. Lithic and faunal remains reflect intensive deer hunting and processing, which is consistent with data from younger components at the site. The cultural affiliation of the Pre-Mazama component is unknown. It may relate to the Early Coast Microblade Tradition, or perhaps the beginning of the Nesikep Tradition (see Stryd and Rousseau n.d.).

#### *North Thompson River Region*

The North Thompson River region extends from about the town of Barriere north to Valemount, which is west of the Rocky Mountains. The potential for Early Period sites in this region is fairly good, and it may eventually produce sites whose artifact assemblages resemble those found in early Northern Plains assemblages. This is because the area provides a direct geographic link between the Plains and south-central B.C. However, very little archaeological research has yet occurred in this region, and all of the investigated sites date to the Late Prehistoric period (ca. 3500 to 200 BP).

At a site on Bridge Lake, which lies on the upland plateau between Little Fort and 100 Mile House, a landowner found a medium-large, stemmed/shouldered, grey brown siltstone point with basal edge grinding (figure 4b). It resembles points found in Early Stemmed Point Tradition components on the Columbia Plateau. Unfortunately the exact location of the site is unknown. In the late 1960s, David Sanger (1970: 120) identified several artifacts that clearly have an Early Nesikep period (ca. 7000 to 6000 BP) affiliation in a private collection from Dutch Lake near Clearwater. This leads me to believe that this locality, and many of the upper terraces in the general vicinity, have a good possibility for containing Early Period sites.

#### *South Thompson River–Shuswap Lakes Region*

The South Thompson–Shuswap Lakes Region has excellent Early Period site potential, and it contains one of three investigated Early Prehistoric period sites in south-central B.C.

##### **Gore Creek “Burial”**

A well-studied Early Period site in the area is the Gore Creek “burial” (EeQw 48) found near Pritchard in the South Thompson River Valley (figure 2) (Cybulski *et al.* 1981). It is currently the earliest dated evidence for human occupation in this specific region. The burial consists of the post-cranial remains of a young adult male accidentally killed in a mud slide. No artifacts or other cultural remains were associated with the



FIGURE 7

The locality at the confluence of the Bonaparte and Thompson Rivers near Ashcroft. The numerous terraces and adjacent uplands are considered to have fairly good Early Period site potential.

skeleton. Recovered from beneath Mazama tephra (figure 11), the skeleton yielded a radiocarbon date of  $8250 \pm 115$  BP (Cybulski *et al.* 1981).

The skeleton exhibits a tall, lineal body with strong lower limb development, a form typical of an inland hunting adaptation (Cybulski *et al.* 1981). Nevertheless, a larger sample of human remains from this period is necessary before it can be determined if this individual is typical of the local population at that time. A carbon isotope value of  $-19.4$  per mil was initially thought to indicate that this individual relied exclusively on protein derived from terrestrial sources (Chisholm and Nelson 1983); however, a recent re-evaluation of the data suggests that about  $8 \pm 10\%$  of his dietary protein may have come from marine fish (i.e., salmon and steelhead) (Chisholm 1986). If one assumes that the Gore Creek individual's marine protein intake was typical for adults prior to ca. 8000 BP, then human adaptation in the study area appears to have been supported by a primarily hunting subsistence pattern that was likely supplemented to some degree by floral resources. The Gore Creek individual indicates that salmon was of minor dietary importance to the early occupants of the Thompson River area.

#### *Other Evidence*

Putative evidence for the presence of the Western Fluted Point tradition in this region includes a large, complete, lanceolate, chalcedony biface exhibiting a "classic" Clovis point outline, and it bears multiple basal thinning flake scars on both faces (figure 3a). This specimen is in the R.B.C.M. collections, and is reportedly from the Shuswap Lakes area. It is similar to those observed on Western Fluted Point variants dated to ca. 10,500 (Carlson 1991; Stryd and Rousseau n.d.). Basal margin grinding, a typical Western Fluted Point tradition technological practice, is absent on this specimen.

Two other large triangular chalcedony bifaces with concave bases and slight basal edge grinding (figure 3b, c) are in the Clyde MacIntyre collection in the Kamloops Museum, that is reportedly exclusively from the Kamloops area. In size, overall form, and raw materials, these two specimens vaguely resemble "resharpened" versions of the "classic" Clovis points recovered from the Wenatchee Clovis site in Washington State (Merhringer 1988). Unfortunately the site(s) from which these specimens were recovered is/are not known. Fladmark (1982: 126) also reports the presence of the proximal portion of a basalt fluted point from the South Thompson River; however, upon closer examination, I argue that this



FIGURE 8

A view of the Drynoch Slide Site (EcRi 1) between Lytton and Spences Bridge. The arrow indicates the location of the Early Period component beneath Mazama volcanic ash. Tons of slide debris above this site make it impossible to investigate properly.



specimen probably dates to the Early Nesikep period (ca. 7000 to 6000 BP) (see Stryd and Rousseau n.d.).

Large lanceolate stemmed bifaces with basal edge grinding have been found in the region by local collectors (e.g., figure 4d, e). In addition, there are a few large, well-made lanceolate, stemmed and leaf-shaped bifaces that have been surface collected from this region in private and museum collections that have striking stylistic and technological similarity with various Plano tradition forms from the Plains and Peace River District (Fladmark 1981) (e.g., figure 5b, c, f).

Specific areas deemed to have high Early Period site potential in the South Thompson–Shuswap Lakes region include the uppermost river terraces and glacial lake strandlines along the valley sides near Tranquille Creek, the confluence of the North and South Thompson Rivers, Monte Creek Locality (figure 10), the mouth of the Adams River, Scotch Creek, Seymour River, Salmon River, and Eagle River on Shuswap Lake. Other high probability contexts include mid-altitude tributaries, and small extinct and/or extant streams, marshes, lakes and ponds on adjacent plateau uplands.

#### *Nicola–Similkameen Region*

Regrettably, there has been very little archaeological research conducted in the Nicola–Similkameen region, and most of that has been undertaken at Late Prehistoric period sites. Nevertheless, I consider this region to have excellent Early Period site potential. During a judgemental site survey of the Princeton area several years ago, a large (13 cm-long), lanceolate, contracting stemmed, “Windust-like” red chert stemmed point/knife with no basal edge grinding was observed in a collection from site DiRc 35 (Vivian 1989; Figure 11b). At the Princeton Museum, Fladmark *et al.* (1988) observed the proximal portion of a concave-based, obliquely-flaked, basally-thinned, edge ground obsidian biface (figure 3e), and a large Windust/Plano-like basalt biface that were reportedly found in the area. Unfortunately the site locations are unknown.

Promising localities that may contain Early Period sites in the Nicola sub-region include the well-defined glacial lake strandlines and uppermost terraces near Nicola Lake, Nicola River, and Coldwater River; mid-altitude tributary creek drainages; locations beside small lakes and streams in the large expanse of open rolling grasslands in the Douglas Lake Ranch area (figure 12); and some of the large unrecorded rockshelters situated in mid-altitude and upland contexts (e.g., figure 13).

The Similkameen Valley also has excellent early site potential. There



FIGURE 9

A post-excitation view of the southern wall profile at the southwestern end of the main excavation block at the Landels Site (EdRi 11). Early period occupations were found immediately beneath the Mazama volcanic ash layer. The majority of the early component remains to be excavated.

are numerous upper river terraces and mid altitude confluences of small tributary valleys along the Similkameen River that appear to have fairly good prospects. Of particular note are the Princeton locality at the confluence of the Similkameen and Tulameen Rivers, the upper terraces near the mouth of the Ashnola River, and the mouths of Susap, Robert, and Snehumpton Creeks. A site that I think has very high Early Period potential is the "Prisoner" or "Hedley" rockshelter near Hedley (figure 14), and there are numerous other mid- and high altitude rockshelters and small caves in the Similkameen River Valley which may also contain Early Period occupations.

### *Okanagan Regions*

The prehistoric culture-history of the North Okanagan and South Okanagan regions is still poorly known, and again, most research has been conducted at sites with Late Prehistoric period occupations. Despite its great potential for Early Period sites, none have been conclusively identified or confirmed.

Grabert remarks that one biface collected from site EbQr 1 near Vernon exhibits flaking similar to that of early Paleoindian complexes on the Plains. He also mentions a locally collected proximal point fragment stored at the Vernon Museum that has similarity with Scottsbluff/Eden types (Grabert 1974: 67).

A small triangular, concave-based point that is reportedly from Ellison (Duck) Lake north of Kelowna, was observed by Fladmark *et al.* (1988) (figure 3d). It is made of a brownish-grey microcrystalline quartzite that resembles lithic materials from the Bedier fluted-point site near Fort St. John in the Peace River District (Fladmark 1981: 133). Fladmark *et al.* (1988) also identified a large, lanceolate, basalt(?) "Windust-like" stemmed point (figure 4f) in a private collection that is reportedly from Skaha Lake south of Penticton. This latter specimen is very heavily patinated, which supports the assumption of a respectable antiquity.

Another potentially early site in the North Okanagan is the "Uppenborne" lithic quarry site located about 25 km east of Kelowna in Mission Creek Valley. This quarry and primary reduction station is situated immediately beside a small streambed that contains a localized abundance of float cobbles of a fairly high quality siliceous cherty lithic material tentatively identified as "opalite" (J. Baker, pers. comm. 1975). Construction activities and ploughing on the site have exposed thousands of large primary reduction flakes, and several large ovate and leaf-shaped bifaces have been collected by the landowners. This sort of quarry assemblage pattern-



FIGURE 10

Eroded lake and river terraces along the South Thompson River near Monte Creek. Many mid and upper terraces along the entire length of this relatively placid river system have high Early Period site potential.

ing is known to be represented in many Paleoindian quarry sites investigated elsewhere in North America. Also, despite this material's apparent high quality, abundance, and easy accessibility, it has yet to be identified in any Middle or Late Prehistoric Period sites or excavated assemblages in the North Okanagan region. It is tempting to speculate that this quarry was used exclusively during the Early Period, but this remains to be verified.

Potential for the discovery of Early Period sites in the Okanagan regions is considered to be excellent. Geographic contiguity of the Okanagan Valley with the Columbia Plateau — where early human presence and adaptations are reasonably well documented (e.g., Bense 1972; Rice 1972; Daugherty 1956; Ames 1987; Mehringer 1988) — would have allowed easy northward movement of people and game into south-central B.C. Prime high potential contexts for early sites include uppermost glacial lake strandlines and kame terraces along valley sides, particularly near Osoyoos, Oliver, Penticton, Peachland, Kelowna to Enderby, and around Westwold. Some of the numerous major mid-altitude tributary valleys such as the Marron, Penticton, Trout, Trepanier, Peachland, Mission, Whiteman, and Coldstream creek systems also have fairly good Early Period site potential. Rockshelters and caves overlooking the valley bottom or in mid-altitude or upland contexts, and locales near extinct and extant aquatic features on the “plateau” uplands on the vast Okanagan Highlands (figure 15), are also considered to have fair early site potential.

#### A SPECULATIVE MODEL FOR EARLY PERIOD ADAPTATION AND CHANGE

The following *hypothetical* model of Early Period adaptations and culture change for south-central B.C. is based on presently known data from the study area, information from the Early Period on the adjacent Northwest Coast, Central B.C., Northern Plains and Columbia Plateau, and “logical speculation.” Three hypothetical “Sub-Periods” are presented and discussed. The main purpose of this section of the article is to stimulate thought and discussion, and provide a “starting point” for future research.

##### *Sub-Period I: 12,000 to 10,000 BP*

The initial occupants of south-central B.C. may have been culturally affiliated with the highly mobile big game hunters of the Western Fluted Point Tradition, who could have entered the study area shortly after deglaciation (ca. 12,000 to 10,500 years BP) from either the Peace River District via the Fraser and North Thompson river valleys, from the Northern Plains via the Yellowhead, Sinclair, or Crowsnest passes, or from the Columbia Plateau via the Upper Columbia and Okanagan river valleys. Recently, a site

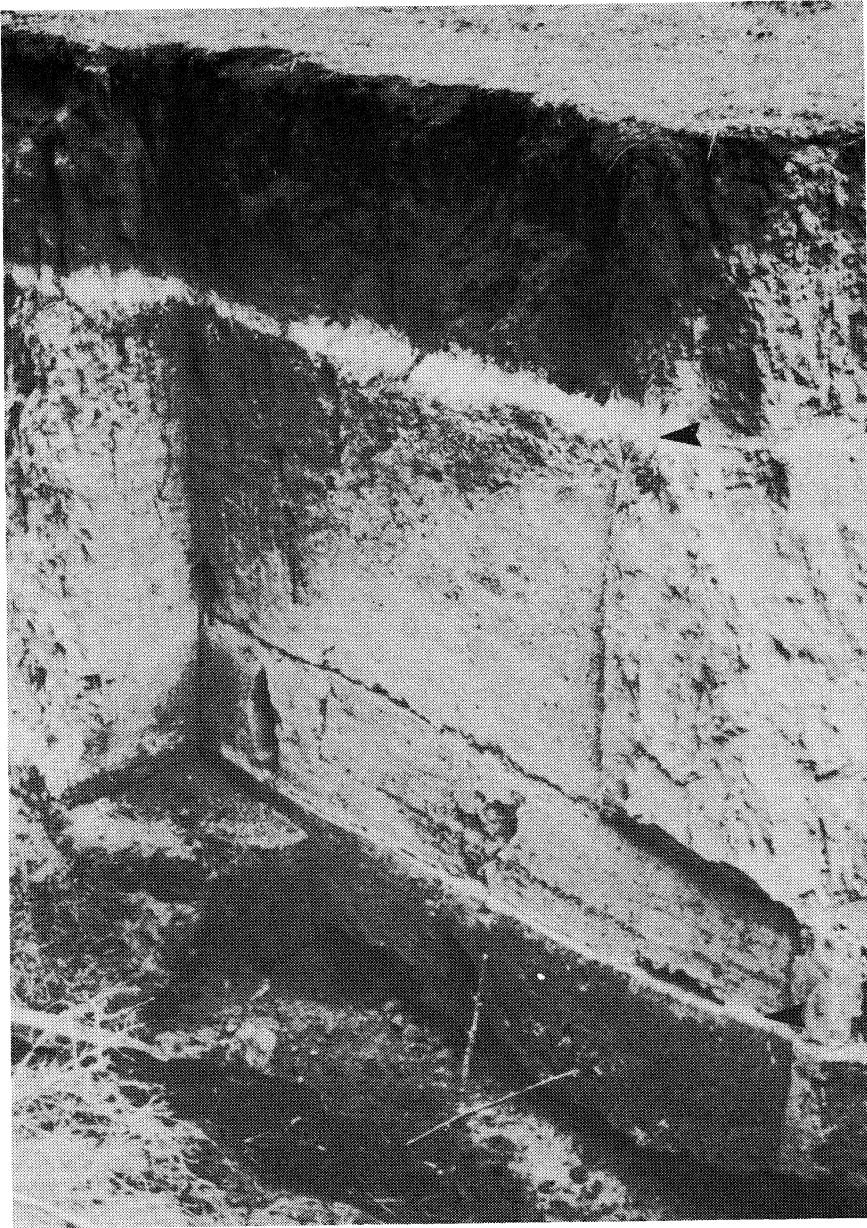


FIGURE 11

The Gore Creek "Burial" Site (EeQw 48) near Pritchard. The upper arrow indicates Mount St. Helen's "Y" volcanic ash dated to 3200 years BP; the lower arrow Mazama ash dated to about 6800 years BP. The skeleton was removed from the slide sediments beneath the Mazama ash.

containing several "classic" Clovis points was accidentally discovered near Wenatchee in Washington (Mehringer 1988) not far south of the Canadian Okanagan Valley. Given the present paleoenvironmental evidence, I see no reason why people participating in this cultural tradition could not have ventured into south-central B.C. at about the same time.

I posit that subsistence during this sub-period likely emphasized hunting of Late Pleistocene megafauna, including extinct bison species, *possibly* mammoth (which remain to be positively identified in any late Wisconsin or early Holocene deposits in south-central B.C.), and larger forms of modern animals such as sheep, moose and deer. Diet would have been supplemented by foraging for "patchy" and sparsely distributed plants and smaller faunal species (e.g., rabbits, birds, rodents). Plant resources probably only constituted a small portion of the diet, while fish may have been taken rarely along streams or lakeshores. Toward the end of this period, elk, moose, sheep, antelope, and perhaps bison may have taken on increasing importance as larger Pleistocene species became extinct.

I hypothesize that the material culture during this period consisted of: (1) large and medium-sized unifacially or bifacially basally thinned, lanceolate and triangular projectile points with concave bases; (2) large and medium sized lanceolate triangular and lanceolate bifaces; (3) large, broad, ovate and leaf-shaped bifaces; (4) simple unifacial scraping and cutting tools; and (5) large flake cores. A very rudimentary antler and bone technology may also be represented.

Group size would have been small, and probably rarely exceeded more than twenty individuals. I suspect that no more than two or three such "bands" would have occupied any single region. As a result, sites belonging to this period are probably very few and have very low archaeological visibility. Undoubtedly many sites have also been obliterated or deeply buried by post-glacial and early Holocene depositional and/or erosional processes. Nevertheless, some components relating to the Western Fluted Point Tradition may exist in mid-altitude or upland contexts beside extinct and/or extant streams, ponds, marshes, lakes and in rare large rockshelters.

The only presently known putative evidence for this period is a large point with several "classic" Clovis features noted in the R.B.C.M. collections that was reportedly found somewhere near Shuswap Lake (figure 3a). Notable exceptions to "classic" Clovis point characteristics are a somewhat "constricted" basal-lateral aspect, and multiple medium-sized basal thinning flake removals rather than large "channel flake" removals common to "typical" Clovis points. Two other triangular bifaces of unknown provenience that *may* belong to this sub-period exist in the Clyde





FIGURE 12

The open, rolling, expansive, mid-altitude grasslands of the Douglas Lake area would have supported large herds of ungulates during the Early Period, and for this reason, it is suspected that many Early Period sites may exist in this general area.



MacIntyre collection at the Kamloops Museum (figure 3b, c). In form and lithic material, they vaguely resemble the Clovis points found near Wenatchee, Washington (Mehringer 1988), but they appear to have been resharpened, and their basal concavities are somewhat triangular rather than the usual concave outline. These differences may be due to regional and/or slight temporal technological variations, but this remains to be determined.

The possibility that the initial occupants of south-central B.C. were primarily big game-adapted, highly mobile groups participating in the Western Fluted Point Tradition remains to be substantiated by an excavated and dated component. However, despite the skeptical opinions of some researchers, I remain optimistic that we will eventually locate an intact occupation belonging to this cultural manifestation.

#### *Sub-Period II: 10,500 to 9000 BP*

The beginning of this period of early southern interior prehistory may be associated with the final extinction of Pleistocene megafauna, which were replaced by modern ungulates such as deer, elk, sheep, antelope and possibly rare bison. This period corresponds with the maximum expansion of grasslands and the commencement and climax of the warm and dry Hypsithermal paleoclimatic period (Hebda 1982). This environment would have been conducive to supporting large ungulates, and human predation likely focussed primarily on this major food resource. During this sub-period, I speculate that people occupying south-central B.C. included those ancestral to groups participating in the Western Fluted Point Tradition, as well as those who entered the area from adjacent regions that participated in other known and well-documented early big game-adapted cultural traditions (i.e., the Plano Tradition and Early Stemmed Point Tradition). Extrapolation from investigations in adjacent regions leads me to suspect that their subsistence emphasized predation of large ungulates, and undoubtedly a variety of plants and small animals were also taken. A comparable subsistence economy is indicated in the Windust phase component at Marmes Rockshelter in the Lower Snake River region (Rice 1972). Seasonal resource scheduling may have become more important near the close of this period in order to optimize food resource availability. Exploitation of plants and small animals may have been enhanced by more effective and specialized extractive technologies (i.e., use of bark containers, nets, snares, traps, etc.).

Minor runs of seasonally available anadromous salmon were probably established in the Fraser and Thompson drainages shortly after 10,000 BP,



FIGURE 13

The Napier Lake Rockshelter south of Kamloops. Although it is small, it also has excellent floor deposits that may contain Early Period occupations. Its ideal upland setting includes a nearby lake and large spring.

but I doubt that they were of much importance to people during this sub-period. However, I think it reasonable to assume that small numbers of salmon were taken with spears or trapped in stone weirs in shallow streams and creeks.

I suspect that inter-regional differences may be expressed in lithic assemblage traits and cultural patterns, and in some regions — particularly in the Fraser, Thompson, and South Thompson River drainage systems — it is possible that there will be a melding, or discrete co-existence of, attributes diagnostic of the four early cultural traditions previously described for the Pacific Northwest. In the Nicola, Similkameen, and Okanagan valleys, assemblages from this period may express formal and contentual similarities with the Early Stemmed Point (i.e., Windust phase) occupations of the Columbia and Snake river areas. This is suggested because there is direct geographical contiguity between these areas, and a few “old-looking” stemmed points have been surface collected from the Canadian Plateau regions. That there was considerable inter-regional exchange of people and/or information between regions in the southern Canadian Plateau and Northern Columbia Plateau during the Middle and Late Prehistoric periods (ca. 6000 to 200 BP) can be directly implied by the striking stylistic and/or technological similarity in formed tools (notably projectile points, bifaces, and scrapers), and adaptive behavioural patterns that persist and co-occur in the archaeological record for the last 6000 years or so.

In addition, projectile points and bifaces belonging to this sub-period from the northern and eastern areas of south-central B.C. often exhibit some general stylistic and technological similarities with Agate Basin, Eden, Scottsbluff and Lusk forms from the Northern Plains (see figure 5). Other lithic items in that early tool repertoire likely include a variety of simple flake tools struck from multidirectional cores, cobble cores (“chopper/chopping tool”), scrapers, and possibly burins. Bone and antler artifacts may have included awls, needles, atlatl hooks, and possibly simple fishing gear. I do not wish to imply that early Plateau people were directly related to groups on the Northern Plains, but rather that they shared similar technological and adaptive traditions which emphasized fairly mobile, big-game hunting, with a minor emphasis on the gathering of floral resources.

Sub-Period II probably experienced a slight population increase compared to Sub-Period I. Base camps were probably small, and were located on upper terraces near major confluences of rivers and streams, and within large rockshelters in mid-altitude contexts. Site densities may be greatest where large game, and possibly salmon, were abundant and/or easily acces-

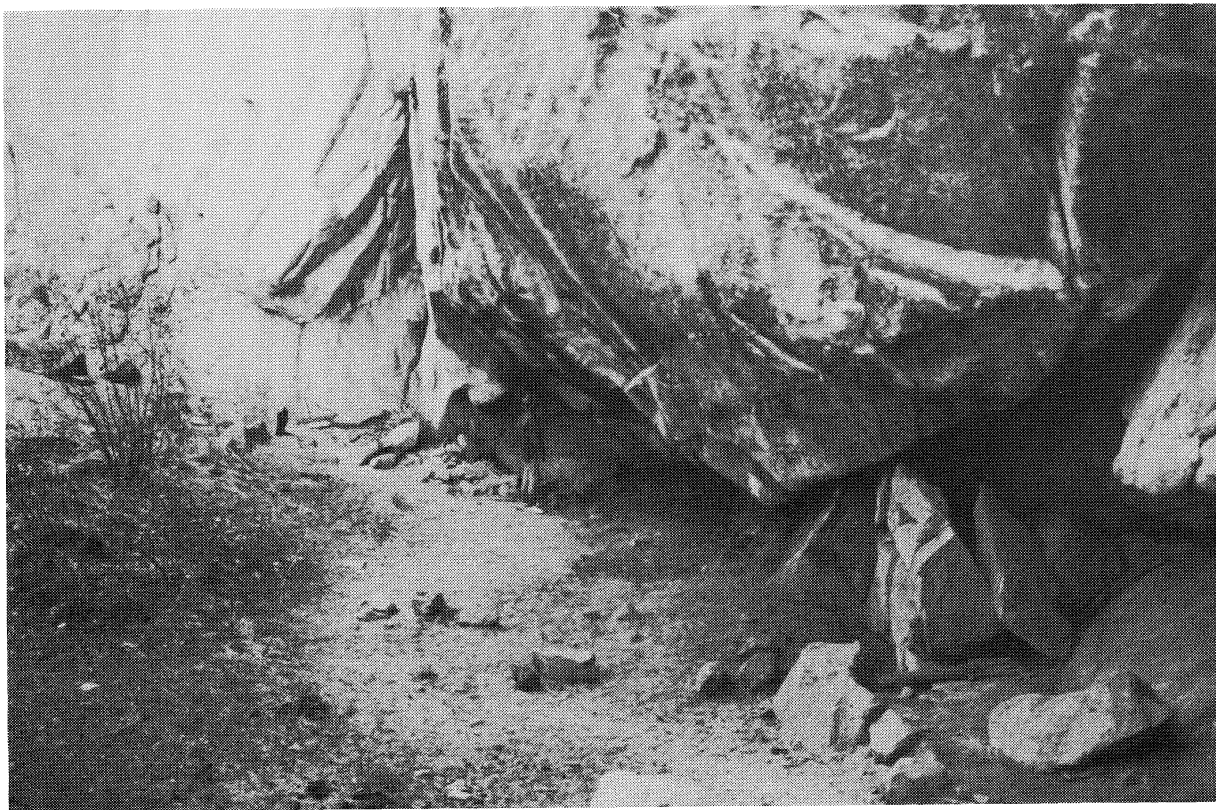


FIGURE 14

The “Prisoner” or “Hedley” rockshelter between Keremeos and Hedley. It has excellent Early Period site potential.

sible. Simple lean-to-like habitations may have been used during the colder months. Watercraft, such as rafts or dugout canoes, may have been used on many of the large post-glacial lakes (e.g., see Fladmark 1979).

*Sub-Period III: ca. 9000 to 7000 BP*

During this time, climatic conditions were slightly cooler and moister than in Sub-period II, and as a result, the biological carrying capacity of the environment was likely slightly enhanced. Subsistence patterns were probably similar to those suggested for Sub-Period II, although salmon exploitation may have taken on slightly greater importance, and reliance on large game hunting may have declined somewhat — although hunting was still an important subsistence activity. The scant and casually recovered material remains from the Drynoch Slide (EcRi 1) and Landels sites (EdRi 11) are suggestive of this general subsistence pattern. The regular scheduled seasonal exploitation of small animals and plant resources persisted, and predation and foraging spectrums continued to broaden as environmental conditions improved. At this time it is suggested that group mobility was still moderate, but annual movement was probably confined primarily to single river valley systems or regions. As a result, discrete regional resource exploitation and cultural patterns began to emerge.

Furthermore, I suspect that regional interassemblage variability was more pronounced during this sub-period than at earlier times. In the Fraser and Thompson river drainages, some lithic assemblages likely consist of large and medium-sized, broad, leaf-shaped bifaces associated with unifaces and cobble choppers/cores; a result of indigenous interior regional groups adopting an efficient salmon fishing technology from the more marine-oriented early inhabitants of the South Coast (see Borden 1979; Fladmark 1982). Microblade technology adopted from Coastal and/or Sub-Arctic groups also became important at this time, and blades and cores may be archaeologically common at resource procurement encampments and processing stations. Medium to large lanceolate points with slight shoulders, parallel or slightly contracting stems, and straight or slightly concave margins may be found at residential camps and kill sites. During the initial half of this period, projectile points found in the northern and eastern edges of the study area continue to resemble those found in late Windust and Cascade phase occupations in the Columbia and Snake river drainages (Leonhardy and Rice 1970), and possibly with the Cody (Alberta/Eden/Scottsbluff) and Lusk complex forms of the Plano Tradition (Frison 1983). After about 7500 BP, formed biface and projectile point styles may exhibit some formal and technological attributes completely



FIGURE 15

The kettle and basin mid-altitude topography of the Okanagan Highlands between Kelowna and Vernon would have provided an easy corridor for people participating in the Western Fluted Point Tradition and Early Stemmed Point Tradition who entered the study area from the Columbia Plateau to the south. This general area and the adjacent mid-altitude plateau uplands are considered to have fairly good Early Period site potential.

unique to the Canadian Plateau, although retaining a subtle hint of Plano-like technological influences. This pattern is readily apparent in the following Early Nesikep period components that date between about 7000 and 6000 BP (e.g., Stryd and Rousseau n.d.).

I postulate that components belonging to this period are more common and have greater visibility than Sub-Period I and Sub-Period II sites. This is probably due to slow but steady regional increases in human population at this time which resulted in more frequent land use, increased artifact drop rates, and greater site size; and the adoption of a regionalized and seasonally scheduled adaptive strategy that entailed the repeated re-occupation of certain locations with high resource availability and/or diversity. However, many components will still be buried in geological contexts associated with more recent and less intense sediment deposition processes. Sites on the sides or bottoms of major valleys will be buried under thick layers of aeolian veneer, or interstratified with alluvial and colluvial fan deposits (e.g., the Drynoch Slide and Landels sites).

Residential base camps were probably established on uppermost or intermediate-level valley-side terraces near major salmon fisheries, at the confluences of major rivers and streams, and on extinct or extant pond, marsh, or lake shorelines in mid-altitude or upland areas. Large rockshelters may also have been frequented by small hunting or plant gathering task groups.

### *Discussion*

I suggest that the occupants of south-central B.C. experienced several important adaptive, behavioural, technological, and ideological changes during the Early Period in South-Central B.C. First, I suspect that a gradual shift occurred from an earlier specialized reliance on big-game hunting to an ever-broadening foraging subsistence pattern involving greater and more efficient exploitation of small plants and animals. A second, but slightly later, major hypothetical adaptive trend was an increase in technological sophistication associated with resource extraction/processing. As familiarity with local plants and animals increased through time, technology enabling the more efficient exploitation of those resources may have been locally innovated, or perhaps borrowed from groups in adjacent areas. Such technological improvements might have included: (1) a greater variety of more specialized and efficient lithic tools (e.g., microblades, formed multi-purpose items, ground and pecked stone tools); (2) greater use of bone, antler, and wood tools; (3) use of dugout canoes or rafts; (4) construction of simple lean-to like dwellings; (5) simple fish

nets, traps, snares, the atlatl, bark containers; and (6) possibly very minimal and basic preservation and storage techniques (e.g., drying small quantities of meat or plant resources for periods of high group mobility).

A third trend during the Early Period is an hypothesized increase in population size and the emergence of several distinctly different regional adaptive patterns. From about 10,500 BP, greater familiarity with food resources and increasingly effective extractive technologies would have permitted groups to focus on much smaller catchment areas than had the earlier big-game hunters, who were dependent on highly mobile herds of large grazing ungulates. Population increments were possible because of enhanced nutrition and reduced infant mortality, and increases in food resource variety, availability, and abundance. This population increase was probably not very dramatic, rather, it was quite slow and gradual. Perhaps up to four or five multiple-family "bands" comprised of about 50 persons per band might have occupied each major region in South-Central B.C. between about 9000 and 7000 years BP.

A final trend may have been the increased habitual re-use and re-occupation of prime food resource extraction locations, and repeated occupation of base camps situated in those areas of maximum resource diversity and abundance. This behavioural pattern resulted in deposition of cultural remains with much greater archaeological visibility than those belonging to the initial part of the Early Prehistoric period.

#### RECOMMENDATIONS FOR FUTURE RESEARCH

In considering the available archaeological data, it is clear that significant further research must be undertaken before we will have an adequate account of the initial peopling and Early Period cultural adaptations of south-central B.C. Past archaeological resource management policies have not been conducive to the discovery and investigation of early sites. Most archaeological impact assessment and mitigation projects have been conducted in conjunction with land-altering development projects undertaken primarily in valley-bottom contexts where early site density is considered very low. This situation promises to change, however, as more development projects in mid-altitude and upland areas undertake impact assessment and mitigation studies. Also, because the density of material remains in Early Period occupations are typically low, the past management policy of engaging detailed excavations as a mitigative measure only at sites with medium and high artifact densities has biased our salvaged sample to components belonging to Middle and Late Prehistoric periods. In addition, another factor responsible for the present paucity of identified Early Period



components can be attributed to past survey methodologies. Most inventories have relied almost exclusively on simple ground surface reconnaissance as a site discovery technique, and as a result, the vast majority of recorded sites belong to Late and Middle Prehistoric periods. Although natural and artificial "subsurface" exposures are usually examined, deeply buried early occupation horizons almost always escape notice.

Ideally, what is required is a well-funded, large-scale, long-term, purely research-oriented project directed specifically at locating, excavating, and interpreting the cultural significance of a sample of Early Period sites. Such a project should include experienced archaeologists, geomorphologists, paleoenvironmental specialists, faunal analysts, and a radiometric dating specialist. If funding for such a project (or projects) was secured, the most important initial question would be, "Where do we look?" Geological and paleoenvironmental data seem to suggest that the most promising contexts probably lie in small mid-altitude valleys and on upland "plateau" flatlands. Although many of these areas are now covered with dense communities of pine and fir, they once carried grasslands that supported large grazing ungulates, and early groups relying heavily on a big-game hunting economy would have been attracted to these environments.

Uppermost and intermediate glacial lake, kame, and outwash terraces on main trunk valley sides are also considered prime locations for early components. Localities along glacial lake strandlines may be particularly productive, especially where extinct streams or rivers flowed in and out of the lakes. A major problem with locating and adequately investigating such sites lies in the fact that they are often deeply buried beneath alluvial fans and colluvial slide deposits. However, there are many valley-side terraces and alluvial fans that have been incised by fluvial activity, or have been intersected by highway and railroad right-of-ways which should permit effective inspection of buried deposits in many localities.

In some valley-side contexts — particularly where extinct stream or river channels adjoin main valley walls — discovery of early occupations could be significantly enhanced by the use of heavy earth-moving equipment such as backhoes, bulldozers, etc. These machines can also be used to rapidly remove extensive overburdens to permit easy access to any deeply buried occupation horizons. Such a procedure would be required to properly excavate the Drynoch Slide site. Undoubtedly, many Early Period sites have been missed during routine site inventories over the last 25 years because "deep" testing was not conducted. Of course, one obvious major drawback associated with the use of heavy equipment is cost and logistics of getting it to a suspected early site locality and/or development impact zone. Thus,

a researcher would have to be fairly confident that locations selected for such deep testing has at least "medium" Early Period occupation potential.

Environmental contexts that may have been specifically favoured for base camps or resource processing stations during the Early Period include raised knolls and flat areas beside or near extinct or extant aquatic features in natural basins created by glaciation (see also Drew 1979). Such sites would be reasonably easy to identify using conventional site discovery methods (i.e., ground surface inspection or shovel testing), as post-glacial sediment deposition has generally been slight (ca. 10 to 40 cm thick) compared to most lower altitude contexts. There is also a greater probability of locating single component sites in these upland situations, but some specific loci were probably repeatedly frequented in order to exploit important localized resources. Many Early Period sites existing in mid-altitude and upland contexts are probably small, containing a single occupation episode with low cultural material densities. This would be a direct result of highly mobile subsistence and settlement strategies, small group sizes, and the relatively low supportive capabilities of large upland plateau grasslands/kettle and basin environments.

Large caves or rockshelters on upper main trunk valley sides, mid-altitude and upland contexts near marshes, ponds, lakes and streams, and/or overlooking large areas of relatively flat relief are also considered to have high early component potential. Those that can be easily viewed from a distance, and are — or would have been — easily accessible are of particular potential importance. Because of the attractive nature of rockshelters, I expect that some large ones may contain stratified deposits spanning several millennia. A deliberate selection of rockshelter/cave contexts during initial attempts to locate early components might maximize success in site discovery and data recovery with respect to expenditures of energy, time and money.

Another urgently needed contribution is the establishment and/or further refinement of paleoenvironmental sequences for south-central B.C. There are currently only a few such sequences available, and most do not provide data prior to ca. 7000 BP. Such data are crucial to a proper understanding of early Holocene human adaptations and culture change, and they will also aid in reconstructing the nature and possible distribution of important floral and faunal resources.

In conclusion, it is unfortunate that very little time and effort has been devoted towards developing an understanding of Early Prehistoric period on the Canadian Plateau. Sporadic fortuitous discovery of early sites during casual field inspections or routine impact assessment studies will provide

only limited information, and will likely not permit us to accurately or confidently reconstruct early prehistoric lifeways in south-central B.C. Archaeologists need to purposefully initiate a large scale project aimed specifically at identifying and intensively investigating early occupations in this area.

## REFERENCES CITED

- Ackerman, R. E., T. D. Hamilton, and R. Stuckenrath  
1979 Early Cultural Complexes on the Northern Northwest Coast. *Canadian Journal of Archaeology* 3: 195-209.
- Alley, N. F.  
1976 The Palynology and Paleoclimatic Significance of a dated core of Holocene peat, Okanagan Valley, Southern British Columbia. *Canadian Journal of Earth Sciences* 13(8): 1131-1144.
- Ames, Kenneth M.  
1987 Early Holocene Adaptations on the Southern Columbia Plateau. Paper presented at the 20th annual meeting of the Canadian Archaeological Association, April 1987. Calgary.
- Anderton, Leslie J.  
1965 Quarternary Stratigraphy and Geomorphology of the Lower Thompson Valley, British Columbia. Unpublished M.A. thesis, University of British Columbia, Vancouver.
- Bense, J. A.  
1972 The Cascade phase: A Study in the Effect of the Altithermal on a Cultural System. Unpublished Ph.D. dissertation, Washington State University.
- Borden, Charles E.  
1969 Early Population Movements from Asia into Western North America. *Syesis* 2: 1-13.  
1975 Origins and Development of Early Northwest Coast Culture to about 3,000 B.C. *National Museum of Man Mercury Series, Archaeological Survey of Canada, Paper No. 45*, Ottawa  
1979 Peopling and Early Cultures of the Pacific Northwest: A View from British Columbia, Canada. *Science* 203:4384:963-971.
- Bryan, Alan L.  
1980 The Stemmed Point Tradition: An Early Technological Tradition in Western North America. In *Anthropological Papers in Memory of Earl H. Swanson Jr.*, edited by L. B. Harten, C. N. Warren, and D. R. Tuohy, pp. 77-107. Special Publication of the Idaho Museum of Natural History, Pocatello, Idaho.
- Butler, B. R.  
1961 The Old Cordilleran Culture in the Pacific Northwest. *Occasional Papers of the Idaho State College Museum* 5. Pocatello.  
1965 The Structure and Function of the Old Cordilleran Culture Concept. *American Anthropologist* 67:5:1120-1131.
- Campbell, Sarah K.  
1985 Sedimentary Sequence at Excavated Sites and Regional Paleoenvironmental Reconstruction. In *Summary of Results, Chief Joseph Dam Cultural Resources Project, Washington*, edited by S. K. Campbell. Office of Public Archaeology, University of Washington.
- Carlson, Roy L.  
1983a The Far West. In *Early Man in the New World*, edited by Richard Shutler Jr. Sage Publications, Beverly Hills, pp. 73-96.

- 1983b Prehistory of the Northwest Coast. In *Indian Art Traditions of the Northwest Coast*, edited by Roy L. Carlson. Archaeology Press, Simon Fraser University, Burnaby, pp. 13-32.
- 1991 Clovis from the Perspective of the Ice-Free Corridor. In *Clovis: Origins and Adaptations*, edited by Robson Bonnichsen and Karen L. Turnmire. Center for the Study of the First Americans, Oregon State University, Corvallis.
- Chisholm, Brian S.  
1986 Reconstruction of Prehistoric Diet in British Columbia Using Stable-carbon Isotope Analysis. Unpublished Ph.D. dissertation, Simon Fraser University.
- Chisholm, Brian S. and D. Earle Nelson  
1983 An Early Human Skeleton from South Central British Columbia: Dietary Inference from Carbon Isotopic Evidence. *Canadian Journal of Archaeology* 7:1: 396-398.
- Choquette, Wayne  
1987 Typological Visibility and the Stemmed Point Tradition. Paper presented at the 20th annual meeting of the Canadian Archaeological Association, Calgary, Alberta.
- n.d. Early post-glacial habitation of the upper Columbia region. In *Early Human Occupation in British Columbia*, edited by Roy C. Carlson (in preparation), pp. 47-56.
- Church, M. and J. M. Ryder  
1972 Paraglacial Sedimentation: A Consideration of Fluvial Processes Conditioned by Glaciation. *Geological Society of America Bulletin*, 83: 3059-3072.
- Clague, John J.  
1980 Late Quarternary Geology and Geochronology of British Columbia Part 1: Radiocarbon Dates. *Geological Survey of Canada Paper* 80-13.  
1981 Late Quarternary Geology and Geochronology of British Columbia Part 2: Summary and Discussion of Radiocarbon Dated Quarternary History. *Geological Survey of Canada Paper* 80-35.  
1986 The Quarternary Stratigraphic Record of British Columbia — Evidence for Episodic Sedimentation and Erosion Controlled by Glaciation. *Canadian Journal of Earth Sciences*, 23: 885-894.
- Cybulski, J. S., D. E. Howes, J. C. Haggerty, and M. Eldridge  
1981 An Early Human Skeleton from South-central British Columbia: Dating and Bioarchaeological inference. *Canadian Journal of Archaeology* 5: 49-60.
- Daugherty, Richard D.  
1956 Archaeology of the Lind Coulee Site, Washington. *Proceedings of the American Philosophical Society* 100: 233-278.  
1962 The Intermontane Western Tradition. *American Antiquity* 28:2: 144-150.
- Dikov, Nikolai N.  
1979 Ancient Cultures of Northeastern Asia. *Nauka*. Moscow.  
1988 On the Road to America. *Natural History* 1: 10-14.
- Drew, D. L.  
1979 Early Man in North America and Where to Look for Him: Geomorphic Contexts. *Plains Anthropologist*, 24(86): 269-281.
- Driver, Jonathan  
n.d. The Significance of the Fauna from Charlie Lake Cave. In *Early Human Occupation in British Columbia*, edited by Roy C. Carlson (in preparation).

- Fladmark, Knut R.  
 1979 Routes: Alternate Migration Corridors for Early Man in North America. *American Antiquity* 44: 55-69.  
 1981 Paleoindian Artifacts from the Peace River District. In *Fragments of the Past: British Columbia Archaeology in the 1970s*, edited by K. R. Fladmark. *BC Studies, Special Issue* 48: 124-135.  
 1982 An Introduction to the Prehistory of British Columbia. *Canadian Journal of Archaeology* 6: 95-156.  
 1983 Times and Places: Environmental Correlates of Mid-to-Late Wisconsinian Human Population Expansion in North America. In *Early Man in the New World*, edited by Richard Shutler Jr. Sage Publications, Beverly Hills, pp. 13-41.  
 1986 *British Columbia Prehistory*. Canadian Prehistory Series, Archaeological Survey of Canada, National Museum of Man, Ottawa.  
 n.d. The Early Component at Charlie Lake Cave. In *Early Human Occupation in British Columbia*, edited by Roy. C. Carlson (in preparation).
- Fladmark, Knut R., Jon Driver, and Diana Alexander  
 1988 The Paleoindian Component at Charlie Lake Cave, British Columbia. *American Antiquity* 53: 2: 371-384.
- Fladmark, Knut, Mike K. Rousseau and John Breffitt  
 1988 A Preliminary Survey for Evidence of Early Human Occupations in the Southwestern Interior of British Columbia. SFU President's Research Grant Report on file, Archaeology Branch, Victoria.
- Frison, George C.  
 1978 *Prehistoric Hunters of the High Plains*. Academic Press, New York.  
 1983 The Western Plains and Mountain Region. In *Early Man in the New World*, edited by Richard Shutler Jr. Sage Publications, Beverly Hills, pp. 109-124.
- Fulton, Robert J.  
 1969 Glacial Lake History, Southern Interior Plateau, British Columbia. *Geological Survey of Canada Paper* 69-37.  
 1971 Radiocarbon geochronology of Southern British Columbia. *Geological Survey of Canada, Paper* 71-37.  
 1975 Quarternary Geology and Geomorphology, Nicola-Vernon Area, British Columbia. *Geological Survey of Canada Memoir* 380.  
 1984 Quarternary Glaciation, Canadian Cordillera. In *Quarternary Stratigraphy of Canada — A Canadian Contribution to the IGCP Project 24*, edited by R. J. Fulton. *Geological Survey of Canada Paper* 84-10: 39-47.
- Fulton, Robert J. and G. W. Smith  
 1978 Late Pleistocene Stratigraphy of South-Central British Columbia. *Canadian Journal of Earth Sciences*, 15(6): 971-980.
- Fulton, Robert J., B. G. Warner, H. J. Kubiw, and R. A. Achard  
 1989 Geology and Paleocology of early Holocene Lacustrine Deposits in the Columbia River Valley near Fauquier, Southern British Columbia. *Canadian Journal of Earth Sciences*, 26: 257-265.
- Grabert, Garland F.  
 1974 Okanagan Archaeology. *Syesis* 7, Supp. 2.
- Gryba, Eugene  
 1985 Evidence of the Fluted Point Tradition in Alberta. In *Contributions to Plains Prehistory: The 1984 Victoria Symposium*, edited by D. Burley, *Archaeological Survey of Alberta Occasional Paper No. 26*, pp. 22-38.
- Hebda, Richard J.  
 1982 Postglacial History of Grasslands of Southern British Columbia and adjacent Regions. In *Grassland Ecology and Classification, Symposium Proceedings, June 1982*, edited by A. C. Nicholson, A. McLean, and T. E. Baker, pp. 157-194. *B.C. Ministry of Forests publication*, Victoria.

- 1983 Postglacial Environmental History, Highland Valley and Surrounding Areas. In Bethlehem Copper Lake Zone Development Heritage Mitigation Study, by Arnoud H. Stryd and S. Lawhead (Arcas Associates), Appendix II. Consultants' report on file, Ministry Library, Ministry of Tourism and Ministry Responsible for Culture, Victoria.
- Hebda, Richard J., B. G. Warner and R. A. Cannings  
1990 Pollen, Plant Macrofossils and Insects from Fossil Woodrat (*Neotoma cinerea*) middens in British Columbia. *Géographie physique et Quaternaire*, 1990(44): 227-234.
- Lawhead, Stephen, Arnoud H. Stryd and Joanne Curtin  
1986 Archaeological Excavations at Valley Mine, Highland Valley, B.C. Report on file, Archaeology Branch, Victoria.
- Leonhardy, Frank C. and David G. Rice  
1970 A proposed culture typology for the Lower Snake River region, south-eastern Washington. *Northwest Anthropological Research Notes* 4:1: 1-29.
- Lowdon, J. A. and W. Blake Jr.  
1970 Geological Survey of Canada Radiocarbon Dates IX. *Radiocarbon* 12(1): 46-86.
- Ludowicz, D.  
1983 Assemblage Variation Associated with Southwestern Interior Plateau Microblade technology. Unpublished M.A. thesis, Department of Anthropology and Sociology, University of British Columbia.
- Mathewes, Rolf W.  
1985 Paleobotanical Evidence for Climatic Change in Southern British Columbia During Late-glacial and Holocene Time. In *Climatic Change in Canada 5*, edited by C. R. Harrington, *Syllogeus* 55: 397-422.
- Mathewes, Rolf W. and Linda Heusser  
1981 A 12000-Year Palynological Record of Temperature and Precipitation Trends in Southwestern British Columbia. *Canadian Journal of Botany* 59: 707-710.
- Mathewes, Rolf W. and Miriam King  
1989 Holocene Vegetation, Climate, and Lake-level Changes in the Interior Douglas-fir Biogeoclimatic Zone, British Columbia. *Canadian Journal of Earth Sciences* 26: 1811-1825.
- Mathewes, Rolf W. and C. E. Rouse  
1975 Palynology and Paleoecology of Postglacial Sediments from the Lower Fraser River Canyon of British Columbia. *Canadian Journal of Earth Sciences* 12: 745-756.
- Matson, R. G.  
1976 The Glenrose Cannery Site. *National Museum of Man Mercury Series, Archaeological Survey of Canada Paper* 52. Ottawa.
- Mehringer, P. J., Jr.  
1988 Weapons Cache of Ancient Americans. *National Geographic* 174: 500-503.
- Moody, U.  
1978 Microstratigraphy, Paleoecology, and Tephrochronology of the Lind Coulee Site, Central Washington. Ph.D. dissertation, Washington State University.
- Musil, R. R.  
1988 Functional Efficiency and Technological Change: A Hafting Tradition Model for Prehistoric North America. In *Early Human Occupation in Far Western North America: the Clovis-Archaic Interface*, edited by J. A. Willig, G. M. Aikens, and J. L. Fagan, pp. 373-88. Nevada Site Museum Anthropological Papers 21, Carson City, Nevada.

- Nasmith, H.  
1962 Late Glacial History and Surficial Deposits of the Okanagan Valley, British Columbia. *British Columbia Department of Mines and Petroleum Resources, Bulletin No. 46.*
- Rice, David G.  
1972 The Windust Phase in Lower Snake River region prehistory. *Washington State University Laboratory of Anthropology, Report of Investigations 50, Pullman.*
- Richards, Thomas H. and Mike K. Rousseau  
1987 Late Prehistoric Cultural Horizons on the Canadian Plateau. *Simon Fraser University Department of Archaeology Publication Number 16, Burnaby.*
- Rousseau, Mike K.  
1991 Landels: An 8500 Year-Old Deer Hunting Camp. *The Midden 23(4): 6-9.*
- Rousseau, Mike K., J. Breffitt, G. Guthrie, and G. Howe  
1989 The 1988 Results of Archaeological Investigations in Upper Oregon Jack Creek Valley and on Cornwall Hills Summit near Ashcroft, B.C. Report on file, Ministry Library, Minister Responsible for Tourism and Minister responsible for Culture, Victoria.
- Rousseau, Mike K. and R. Gargett  
1987 Prehistoric resource Use on Cornwall Hills Summit. *The Midden 19:5: 6-9.*
- Rousseau, Mike K., R. H. Gargett and P. Friele  
1987 Cornwall Hills Summit Heritage Project: Site Inventory and Test Excavation Results. Report on file, Ministry Library, Minister Responsible for Tourism and Minister responsible for Culture, Victoria.
- Rousseau, M. K., R. Muir, D. Alexander, J. Breffitt, S. Woods, K. Berry and T. VanGaaalen  
1991 Results of the 1989 Archaeological Investigations conducted in the Oregon Jack Creek Locality, Thompson River Region, South-Central British Columbia. Report on file, Ministry Library, Ministry of Tourism and Ministry Responsible for Culture, Victoria.
- Ryder, June  
1976 Terrain Inventory and Quarternary Geology, Ashcroft, British Columbia. *Geological Survey of Canada Paper 74-49. Ottawa.*
- 1978 Geomorphology and Late Quarternary History of the Lillooet Area. In Reports of the Lillooet Archaeological project, Number 1. Introduction and Setting, edited by Arnoud H. Stryd and Stephen Lawhead. *National Museum of Man Mercury Series, Archaeological Survey of Canada, Paper No. 73, pp. 56-67.*
- 1982 Surficial Geology of the Grassland Areas of British Columbia and Adjacent Regions. In, Grassland Ecology and Classification, Symposium Proceedings, June 1982. Edited by A. C. Nicholson, A. McLean and T. E. Baker, pp. 63-87. *B.C. Ministry of Forests Publication, Victoria.*
- Ryder, J. M. and M. Church  
1986 The Lillooet Terraces of the Fraser River: A Paleoenvironmental Enquiry. *Canadian Journal of Earth Sciences, 23: 869-884.*
- 1967 Prehistory of the Pacific Northwest Plateau as Seen from the Interior of British Columbia. *American Antiquity 32:2:186-197.*
- 1968 Prepared Core and Blade Traditions in the Pacific Northwest. *Arctic Anthropology 5:1:92-120.*
- 1970 The Archaeology of the Lochnore-Nesikep Locality, British Columbia. *Syesis 3, Supp. 1.*

Sanger, David

- 1967 Prehistory of the Pacific Northwest Plateau as Seen from the Interior of British Columbia. *American Antiquity* 32:2:186-197.
- 1968 Prepared Core and Blade Traditions in the Pacific Northwest. *Arctic Anthropology* 5:1:92-120.
- 1970 The Archaeology of the Lochore-Nesikep Locality, British Columbia. *Syesis* 3, Supp. 1.

Souch, Catherine

- 1989 New Radiocarbon Dates for Early Deglaciation from the Southeastern Coast Mountains of British Columbia. *Canadian Journal of Earth Sciences*, 26: 2169-2171.

Stryd, Arnoud H. and Mike K. Rousseau

- n.d. The Early Prehistory of the Fraser-Thompson Drainage area of British Columbia. In *Early Human Occupation in British Columbia*, edited by Roy C. Carlson (in preparation).

Thomas, Lorie

- 1977 Archaeological salvage investigations at Dragon Lake (FfRo 4). Report on file, Ministry Library, Ministry of Tourism and Minister Responsible for Culture, Victoria.

Vivian, Brian

- 1989 A Survey and Assessment of the Prehistoric Cultural Resources in the Princeton Basin, Upper Similkameen Valley, British Columbia, unpublished report on file, Archaeology Branch, Victoria.

Wormington, Hanna Marie

- 1964 *Ancient Man in North America*. Denver Museum of Natural History Popular Series No. 4. Denver.

Wormington, Hanna Marie, and Richard Forbis

- 1965 An Introduction to the Archaeology of Alberta, Canada. Denver Museum of Natural History Proceedings No. 11. Denver.