Complex Hunter-Gatherers

Evolution and Organization of Prehistoric Communities on the Plateau of Northwestern North America

Edited by William C. Prentiss and Ian Kuijt

3

CULTURAL COMPLEXITY

A NEW CHRONOLOGY OF THE UPPER COLUMBIA DRAINAGE AREA

NATHAN B. GOODALE, WILLIAM C. PRENTISS, AND IAN KUIJT

The Upper Columbia drainage contrasts significantly with that of the Middle and Lower Columbia. For the purposes of this chapter, the area includes the Columbia River drainage extending from Kettle Falls in the south through Upper Arrow Lake. It also includes the Lower Kootenai and Slocan river drainages (Figure 3.1). First, from an environmental standpoint, this landscape features substantially forested contexts including a significant interior rain forest. Second, human adaptations in this place were often quite different from those in nearby regions of the Plateau. Ethnographic research documents a complex hunter-gatherer society (Lakes Salish or Sinixt) whose principal subsistence resources included not just salmon and roots but also a very significant investment in larger game including mountain goat, bighorn sheep, and elk. No other Eastern Plateau society exhibited the same degree of cultural complexity as that of the Sinixt. As this study demonstrates, densely aggregated communities appear to have emerged in this area more than once, implying cycles of aggregation and possible socioeconomic complexity. The following analysis seeks to review current cultural chronologies developed for the Kettle Falls, Arrow Lakes, and Slocan areas and then to develop a comprehensive chronology for the region based on archaeological data primarily reflecting settlement and subsistence behavior but also considering limited indicators of variability in social organization. Implications for archaeological explanation are considered at the end.

KETTLE FALLS CHRONOLOGY

The cultural chronology of the Kettle Falls area derives primarily from the extensive cultural resource management investigations of Chance and Chance (1977, 1979, 1982, 1985). Their research has been particularly important for defining variability in settlement and subsistence during the past 4,000 years. The first evidence for human occupation of the Kettle Falls area is the Pre-Takumakst period and dates from 3500 to 2700 B.P. This time period in the Kettle Falls region is not well understood at this time. There is evidence for low densities of human populations at the Fishery, Ksunku, and Kwilkin sites. Currently, no pithouses have been discovered in this region that date to this time. However, two hearths from the Fishery site have been excavated that date to the Pre-Takumakst period (Chance and Chance 1982). Lithic assemblages of this time period contain high frequencies of cryptocrystalline artifacts, featuring contracting and square stemmed projectile points and a few cobble cutting tools. Based on limited aquatic faunal remains, the Kettle Falls area seems to have been used for limited fishing activities during this early time period (Chance and Chance 1982).

The Takumakst period dates from 2700 to 1600 B.P. and is characterized by a quartzite technology that is "clumsy" when compared with that of the later periods of occupation in the Kettle Falls. However, this raw material can be expediently flaked along the dominant cleavage planes. The most diagnostic element of this assemblage is the "Takumakst chopper," which functionally may actually have been a core. Flakes removed from this core would probably have been intended for fish butchering or to aid in the construction of fish traps. Chance and Chance (1982) argue that the first extensive period of occupation at the Fishery site seems to have been during the Takumakst period by Salish peoples. The China Bend site is a possible residential context, containing lithic artifacts, but, as yet, no pithouses firmly dated to this time frame.

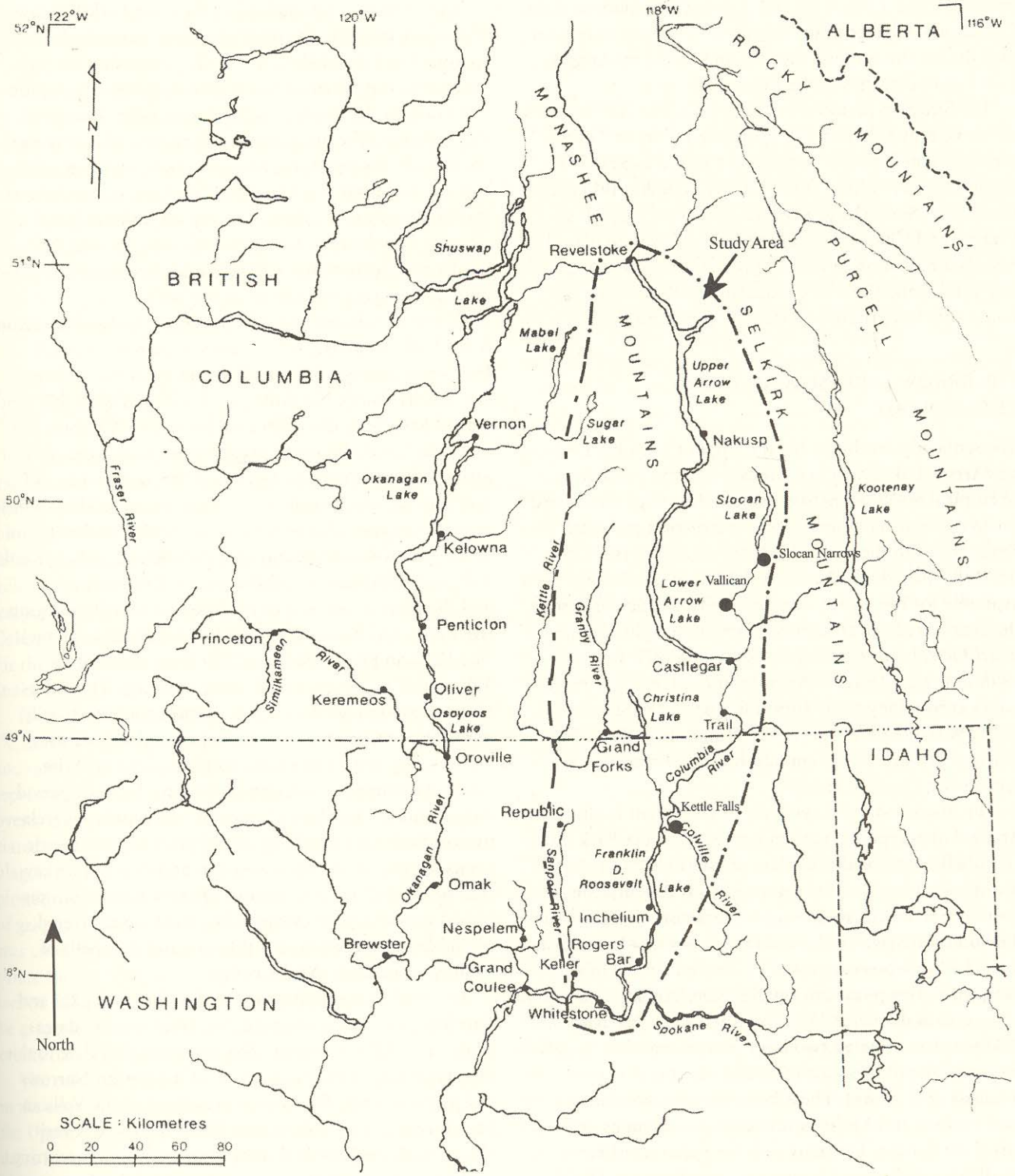

Figure 3.1. Map of the Upper Columbia.

The Sinaikst period dates from 1600 to 600 B.P. and shows wide variation in projectile point style. Chance and Chance (1982) suggest that the variation in the assemblage at the Fishery site is a consequence of many different groups of people using the site. Exotic lithics entered the Kettle Falls area in substantial quantities during this time frame, peaking at 1150 B.P. Chance and Chance suggest that this peak in exotics corresponds to peak trade in the area. During the Sinaikst period, deep pithouses were occupied at the Ilthkoyape and Chaudiere sites. A medium-sized house (10–14 m in diameter) at the Ilthkoyape site is dated with multiple occupations at

770 ± 90 and 1190 ± 70 B.P. Relying on botanical data, Chance and Chance argue that these pithouses were occupied during the summer months and reflect the largest population densities in the Kettle Falls area.

The Shwayip period dates circa 600–200 B.P. and was dominated by side-notched projectile points and miniature quartzite knifes (Chance and Chance 1982). These assemblages are found at the Fishery, Ksunku, Ilthkoyape, Chaudiere, Shonitkwu, Kwilkin, and Nancy Creek sites. Chance and Chance (1982) argue that this time period reflects a reduction in human populations in the area. The Ilthkoyape site also produced a medium-sized pithouse that has produced a date of 370 ± 70 B.P.

THE ARROW LAKES/SLOCAN VALLEY CHRONOLOGY

The sequence developed for the Upper Columbia Drainage/Arrow Lakes area is primarily also the consequence of cultural resource management archaeology conducted for hydrologic dam- and road-construction projects. Excavations in the 1970s by Turnbull and in the 1980s by Mohs provide the basis for the literature that has been available for the area. Cultural historic frameworks for the area have been constructed based on stylistic changes in artifacts, housepit morphologies, and their arrangement in the landscape. This section presents the Arrow Lakes chronology from Turnbull (1977), the Slocan Valley variants of Mohs (1982), Rousseau (1982), and Eldridge (1984) and recent additions by Prentiss et al. (2001) and Goodale (2001).

The first substantial evidence of settlement in the Arrow Lakes region has been termed the Deer Park phase (Turnbull 1977) or the Winlaw phase (Eldridge 1984; Mohs 1982) and dates to 3500–2450 B.P. The pithouses contained in this phase follow a distinct distribution along the immediate riverbanks and lakeshores in a linear fashion. The housepits excavated by Turnbull and Mohs assigned to this phase are small in size, ranging from 7 to 10 m in diameter. However, the Slocan Narrows site (DkQi 1) has revealed two large houses that date to this time period and measure 16 m and 22 m in diameter (Prentiss et al. 2001). These housepits are circular to oval in plan, and Mohs (1982) describes them as lacking raised earth rims. This may only be a characteristic of the small-sized pithouses because the large house in DkQi 1 has an obvious raised rim. Mohs (1982) also notes that this cultural phase is not well represented at the Vallican site. This early occupation at the Slocan Narrows site provides the best example of pithouse architecture from this early phase. The Slocan Narrows site contains over 60 housepits, featuring two clusters of exceptionally large houses, many of which could date to this early time frame.

The lithic tool assemblage of the Deer Park/Winlaw phase is marked by the presence of medium-sized stemmed and shouldered projectile points that are similar to Shuswap horizon points of the Fraser–Thompson Plateau area (Richards and Rousseau 1987; Rousseau, this volume). The most frequently recovered raw materials include Kootenay argillaceous chert, siltstone, schistose mica quartzite, and basalt. The lithic assemblage at the Slocan Narrows site associated with this cultural phase is very limited. Faunal remains are limited to unidentifiable mammal with fish and shell completely absent, primarily because of acidic soils.

The next cultural phase in the Upper Columbia region is the Vallican phase, which dates to 2450–1250 B.P. Housepits average 11 m in diameter from the Vallican site (Mohs 1982). No pithouses associated with this time period have been discovered at the Slocan Narrows site or in the Turnbull (1977) excavations. Diagnostic lithic artifacts include corner- and basal-notched points and crescent- or key-shaped scrapers/perforators. This stylistic variation in the lithic technology is similar to that found in the later Takumakst and early Sinaikst periods at Kettle Falls, the Okanagan Chiliwist phase (Grabert 1974), and the Plateau horizon of the Fraser–Thompson region (Richards and Rousseau 1987; Rousseau, this volume). The Vallican phase artifacts differ from those of the Takumakst in the quality of stone working. The Takumakst period in the Kettle Falls region contains hastily made lithic tools, whereas the Vallican phase features high-quality tools and exotic goods such as nephrite adzes. Although no housepits dating to this time period were found at the Slocan Narrows site, numerous (relative to the lithic assemblage size) Plateau horizon-style projectile points were recovered in addition to one key-shaped scraper. Faunal remains are rare for reasons discussed previously. However, when they are recovered, assemblages include mammal bones and the shells of freshwater mussels (Mohs 1982).

The final cultural phase defined by Mohs (1982) and Turnbull (1977) is termed the Slocan phase and dates from 1250 B.P. to contact. The housepits that date to this time period have been excavated at the Slocan Narrows and Vallican sites. The houses excavated at the Vallican site average 8.7 m in diameter. However, there is variability, with medium and small-sized pithouses occurring together. This average was determined by the data set provided by Mohs (1982) and only includes those cultural depressions with a diameter greater than 5 m. The second occupational phase of Housepit 1 at the Slocan Narrows site (DkQi 1) dates to this time period, suggesting that very large houses (e.g., 16 m in diameter) do date to the phase. This phase employs a wide variety of housepit styles, including circular, oval, and rectangular out-

lines with top and side entrances. Cache pits were also used during this time and are external to the housepits, along with extramural hearths and activity areas.

Lithic artifacts of the Slocan phase include small side-notched points, occasional Columbia corner-notched points, and frequent ground-stone items (Eldridge 1984; Mohs 1982; Rousseau 1982). These points are characteristic of the Kamloops horizon in the Canadian Plateau (Rousseau, this volume). However, the Kamloops multi-notched variety has remained undiscovered in the Slocan Valley and Upper Columbia region. The material culture from during this time also closely resembles materials recovered in the Kettle Falls area.

DEVELOPING A COMPREHENSIVE CHRONOLOGY BASED ON ADAPTIVE PATTERNS

The preceding chronologies have provided important frameworks for the collection and organization of Upper Columbia Plateau archaeological data. However, they are not based on a formal assessment of data designed to provide indicators of variability in adaptive behavior. The following analysis provides a first step toward defining temporal variability in human adaptations in the Upper Columbia, similar to that undertaken by Chatters (1995a) for the middle and lower portions of the Columbia and Snake river basins.

The data set used in this analysis is derived from 116 ^{14}C dates compiled by Goodale (2001) from the published and unpublished literature for the area. These dates are representative of housepit occupations, root-processing ovens, cultural earthworks, storage features, hearths associated with nonresidential sites, and dated faunal assemblages. Each date was calibrated via CALIB 4.3 and then plotted with respect to the date's mean in age by a series of graphs presented below. A strict review of provenience was conducted in order to assess which dates are appropriate for this data set. Dates that were not used either lacked adequate provenience data or were considered to be associated with other unrelated cultural or noncultural events (i.e., rim dates from pithouses).

The calibrated dates were then used to examine changes in the settlement systems of the prehistoric inhabitants of the Upper Columbia. By looking at the distribution of ^{14}C dates from multiple sites and feature contexts, we were able to provide preliminary proxy measurements of settlement and subsistence behavior and population densities. Differences in time periods were then subdivided into six distinct phases based on cultural material. Characteristics were then grouped together under a date range, adaptive pattern, and cultural phase name for the Upper Columbia, distinguishing differences in settlement pattern and socioeconomic organization.

DATA PATTERNS

Housepits

In the Upper Columbia region the first pithouses appear circa 3400–3200 B.P. (Figure 3.2). The early houses, dating between 3400 and 1800 B.P., range in size from small to large. The Slocan Narrows site contains houses that are 16 m and 22 m in diameter, dating prior to 2700 B.P., which are the largest pithouses recorded on the Plateau at this early date. Between 1200 and 200 B.P. the greatest concentration of occupations occurred as small, medium, and large pithouses. In this region, small pithouses occurred between 3400 and 600 B.P., medium pithouses occurred between 3400 and 200 B.P., and large pithouses occurred between 2800 and 600 B.P.

Root Processing

In the Upper Columbia region the root-processing record begins at circa 6200 B.P. (Figure 3.3). The dated root-processing ovens were obtained entirely from sites in the southern part of the study area at Kettle Falls and in the Calispell Valley. The interval from 6200 to 3800 B.P. is characterized by limited use of root-processing ovens. Two periods of intense root processing appear to correlate with increasing use of pithouses after circa 3800 B.P. The first peak in oven frequencies occurred at circa 3800 B.P. and continued until 2400 B.P., and the second occurred between 1200 and 600 B.P.

Storage Pits

The calibrated data for the use of storage pits in the Upper Columbia (Figure 3.4) are very limited ($n = 5$). The storage pit features that have been dated for this region may have been used for storing edible plants such as camas, but much further research is needed to fully understand variability in storage technologies in this area. All dates come from sites in the Kettle Falls and Calispell Valley areas. Storage pit features occur during the same intervals as the most frequent indicators of root processing. Pit features contain a variety of stone tool artifacts, mammal bone, and some camas root remains (Andrefsky et al. 2000).

Cultural Earthworks

Cultural earthworks have been identified at the Slocan Narrows and Vallican sites in southeastern British Columbia ($n = 4$). Cultural earthworks appeared in the late prehistoric during 800–0 B.P. (Figure 3.5). These dates bracket the earliest and latest times for the possible con-

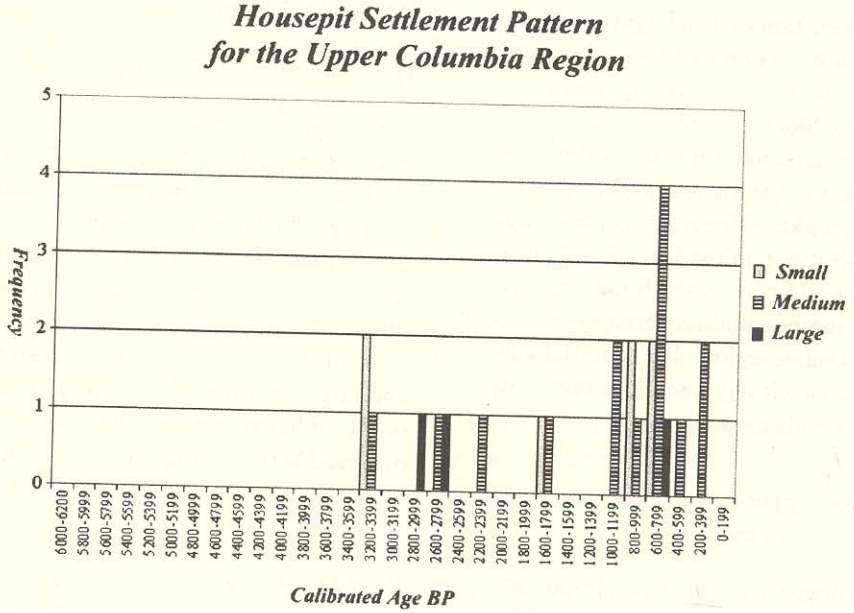

Figure 3.2. Housepit occupation by mean of calibrated date.

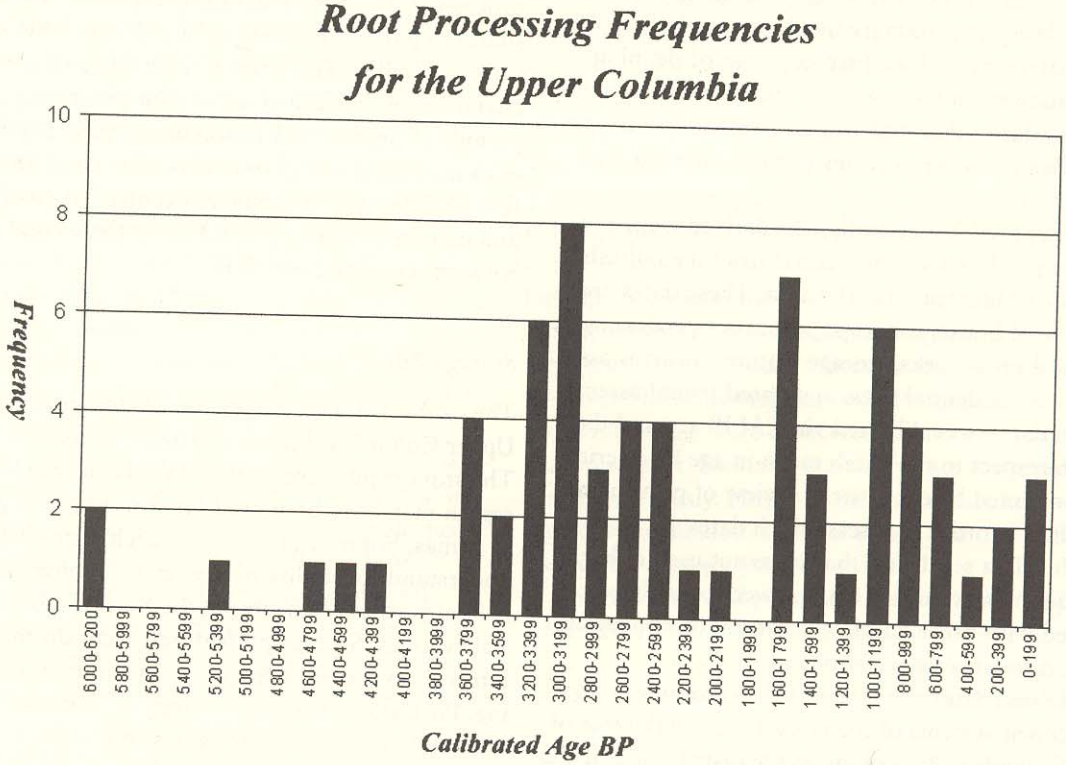

Figure 3.3. Root processing use by mean of calibrated radiocarbon date.

struction of these features. Earthwork functions are not well understood. A 60 m earthwork at the Slocan Narrows site (Prentiss et al. 2001) may have been used for defensive purposes. Platforms at the Vallican site may have had defensive functions as well, though other functions, such as housing, are also possible. It should be noted that the appearance of these features corresponds with changes in aspects of the environment and behavior corresponding to the onset of the "Little Ice Age" and a decline in root-processing activity.

Nonresidential Sites

The dates of hearths from contexts inferred to be nonresidential (not from housepit sites) in nature ($n = 17$) show a bimodal distribution (Figure 3.6). The first peak

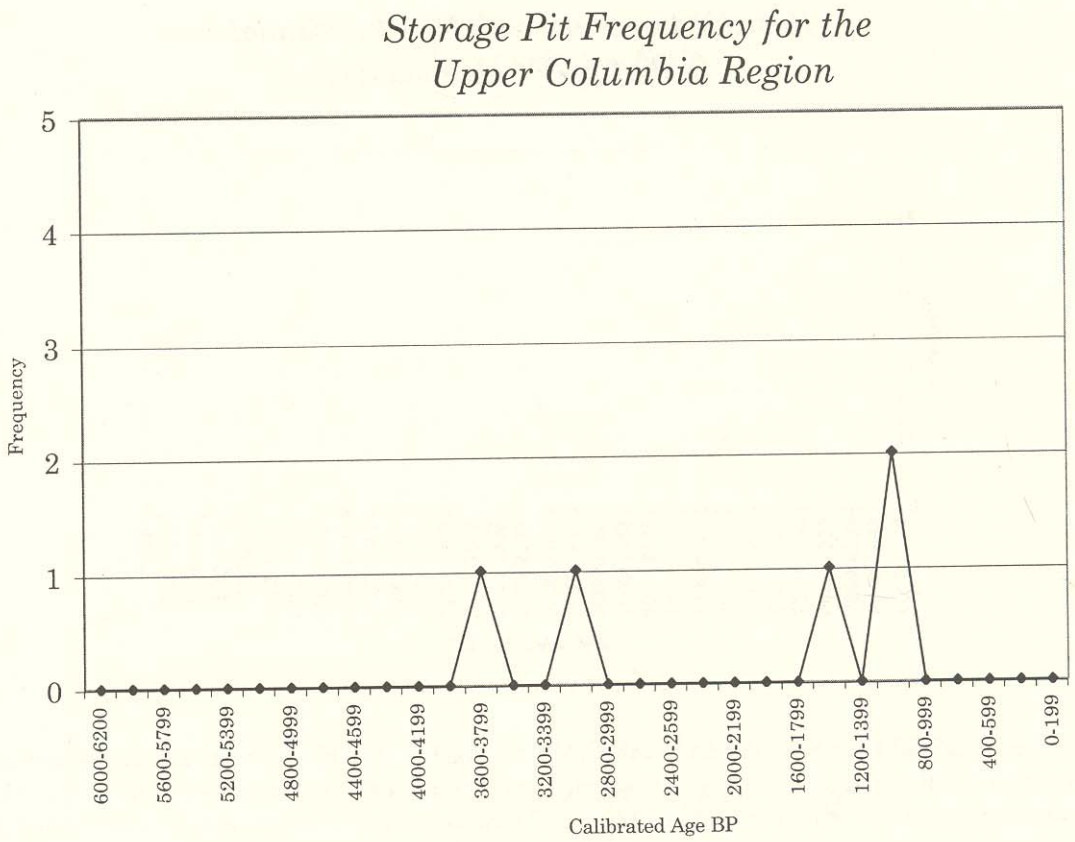

Figure 3.4. Storage pit use by mean of calibrated radiocarbon date.

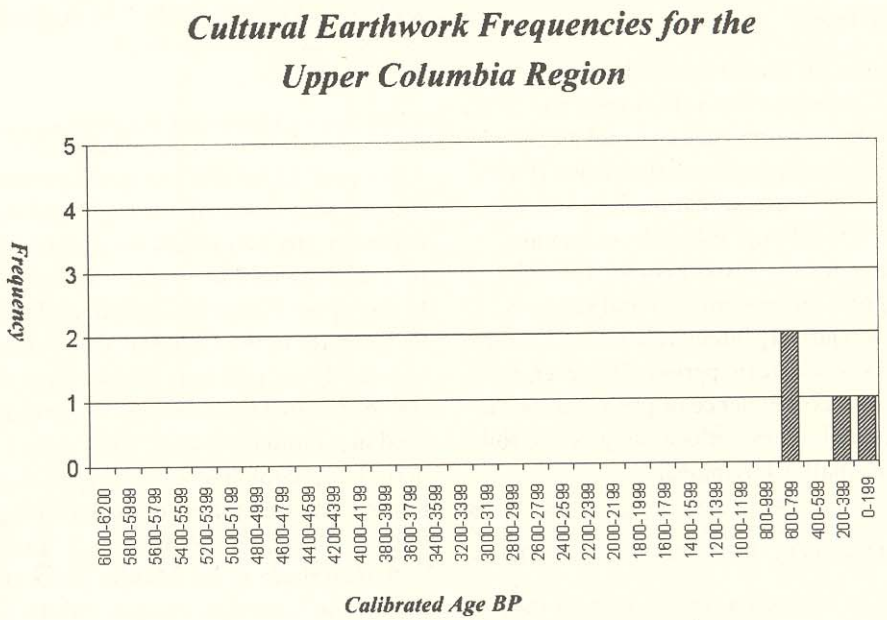

Figure 3.5. Cultural earthwork use by mean of calibrated radiocarbon date.

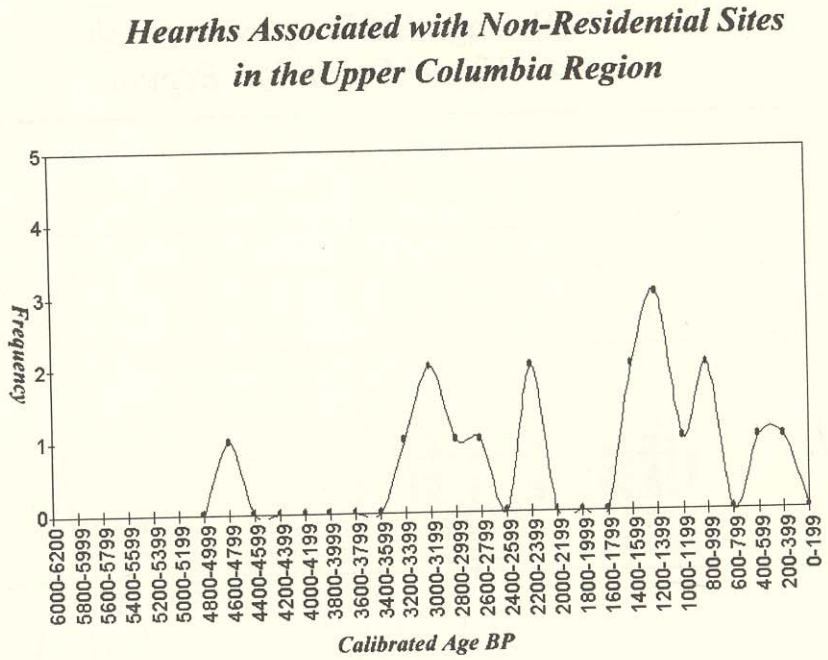

Figure 3.6. Nonresidential site use by mean of calibrated radiocarbon date.

occurred between 3600 and 2200 B.P., and the second occurred between 1600 B.P. and the present (A.D. 1950). These intervals correspond to a temporal peak in house-pits, storage pits, and root-processing ovens.

Dated Faunal Assemblage

Highly acidic soils have left faunal assemblages very scarce in the Upper Columbia. Site 45PO137 in the Calispell Valley contains the only dated faunal assemblage with substantial numbers of faunal remains (Figure 3.7). This site reveals stable use of mammalian and fish resources after 1600 B.P. Ethnographically, mammals were a critical resource for the Sinixt people. The calibrated evidence supports this assumption and suggests that mammals were a relatively intensively utilized food staple during the latest prehistoric period. However, this difference may also be a consequence of preservation factors, with larger mammal bones withstanding acidic soils more frequently than small fish remains.

A NEW CHRONOLOGY FOR THE UPPER COLUMBIA

The calibrated evidence suggests a revised view of the evolution of hunter-gatherers in the Upper Columbia region. Six intervals appear to be evident during the past 6,200 years of occupation (Figures 3.8–3.9, Table 3.1). Most obvious are the two periods of heightened pithouse construction and root intensification (see also Thoms 1989), followed in each case by indicators of population dispersal and possible subsistence diversification. We use Binford's (1980) terminology *(collectors* and *foragers)* throughout this discussion as a means of conveying our understanding of the most likely and frequent mobility and subsistence strategies employed by hunter-gatherers of each phase. Our inferences are not intended to reflect the definition of essentialist cultural entities. Rather, we view these patterns as starting points for further analysis of organizational variability.

The Upper Columbia Forager (6200–4200 B.P.)

The Upper Columbia Forager represents a high-mobility forager adaptation that is suggested by the lack of evidence for any permanent residential structures. This period contains dates for the first uses of root processing in the Upper Columbia region, and these are represented by six dates in the Calispell Valley: five from 45PO139 and one from 45PO141. Roots seem to have been a fairly stable resource base during this time and were probably used in a limited manner. The Upper Columbia Forager period also contains one date from the Fishery site in the Kettle Falls area that is in association with a nonresidential site. This period represents a "forager" adaptation similar to those in the Middle Holocene Nesikep tradition of the Canadian Plateau and the Cascade phase in the Columbia Plateau (Chatters 1995a; Prentiss and Chatters 2002; Stryd and Rousseau 1996).

"Hiatus" (4199–3800 B.P.)

Currently, this interval lacks calibrated radiocarbon evidence and represents a brief archaeological gap that separates the forager and collector adaptations. This hiatus

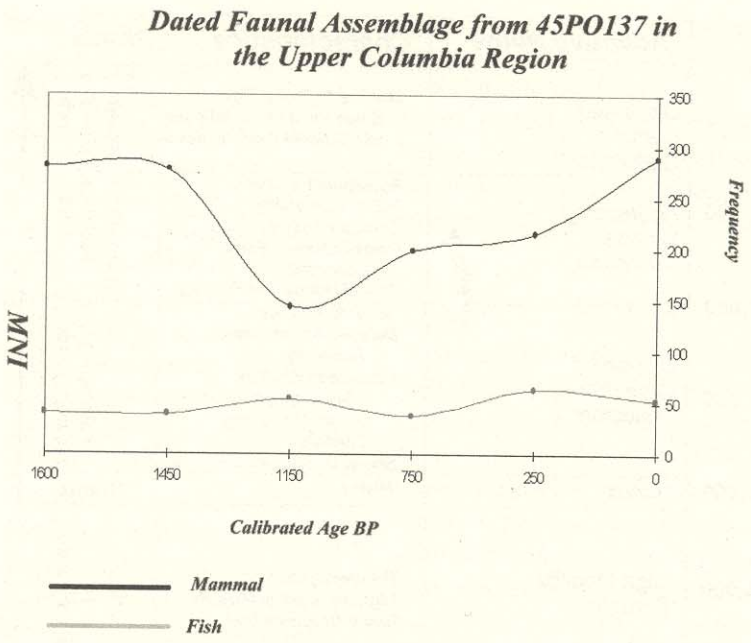

Figure 3.7. Faunal assemblage data by frequency.

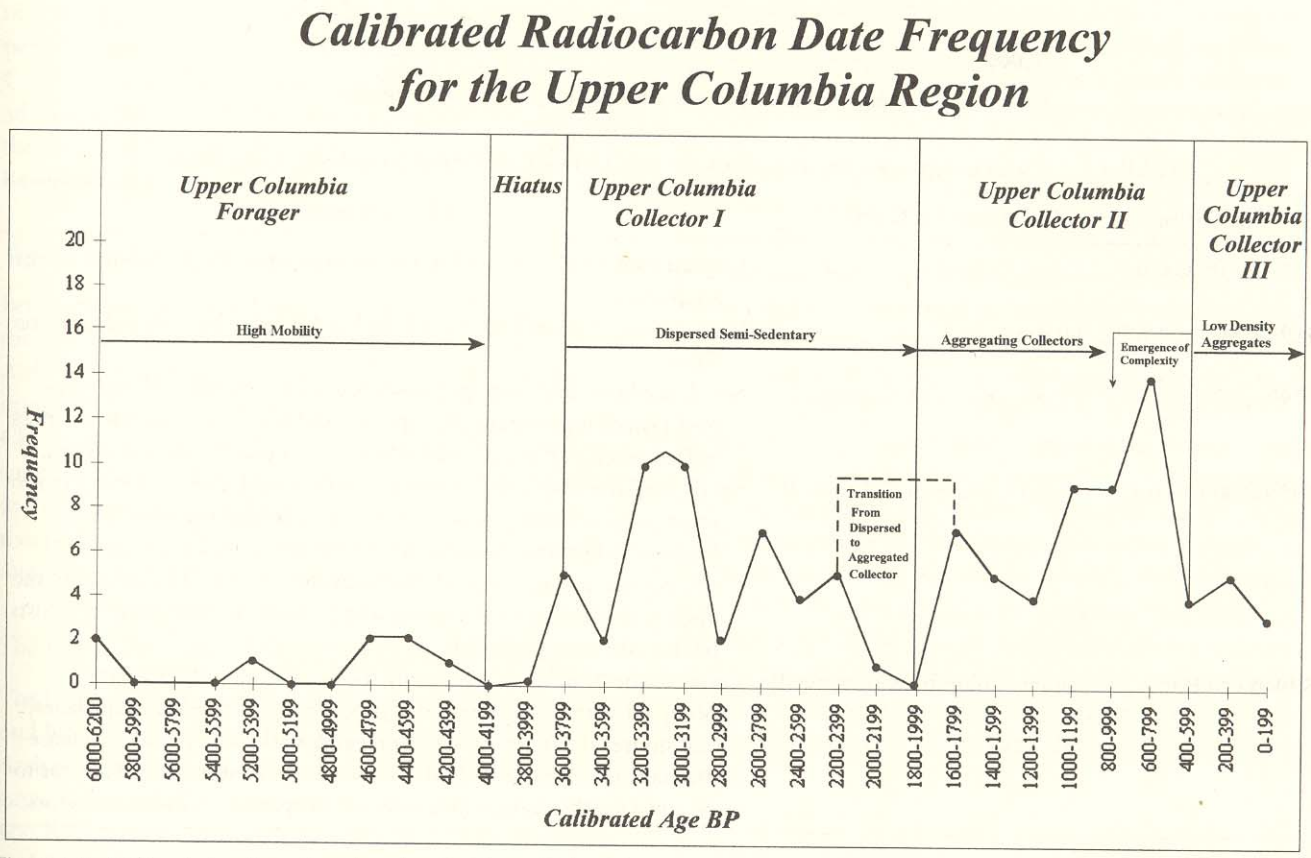

Figure 3.8. Calibrated radiocarbon data for the Upper Columbia region.

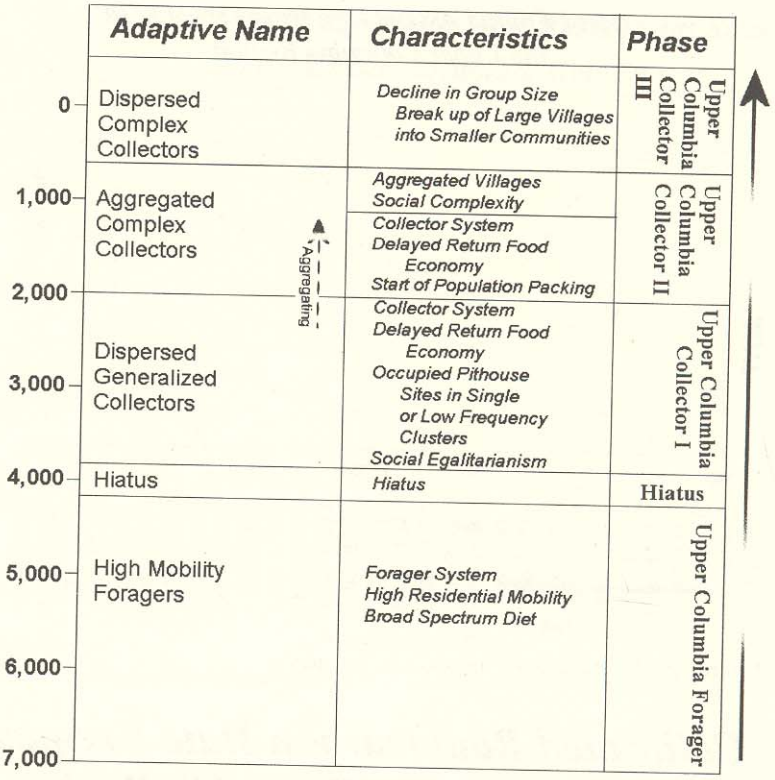

Figure 3.9. Adaptive Interval Summary for the Upper Columbia region.

TABLE 3.1. Time Period Characteristics of the Upper Columbia Regional Chronology.

Time Period	Adaptive Name	Characteristics
6200–4200 Cal B.P.	Upper Columbia Forager	Limited root-processing and nonresidential sites. High-mobility forager adaptation.
4199–3800 Cal B.P.	Hiatus	Hiatus in the archaeology record with a 400-year lapse in radiocarbon dates.
3799–2000 Cal B.P.	Upper Columbia Collector I	Small, medium, and large pithouses are occupied; there is extensive root processing; storage pits appear; and nonresidential site use rises in frequency. Advent of semisedentary dispersed collector system.
1999–600 Cal B.P.	Upper Columbia Collector II	Small, medium and large pithouses are occupied; there is extensive root processing; storage pits are used; nonresidential site use rises in frequency; fish and mammal resources appear to be consistent subsistence contributions throughout the interval. The advent of the aggregated collector adaptation and complex hunter-gatherers exists from 1200 to 600 cal. B.P.
599–0 Cal B.P.	Upper Columbia Collector III	Onset of the "Little Ice Age," only medium-sized pithouses are occupied with a decline in root processing, storage pit frequencies, and nonresidential sites. Cultural earthworks as a possible defense mechanism appear during this interval. Fish and mammal appear to be constant throughout this interval. Dispersed complex collectors.

temporally corresponds to a similar pattern throughout the Canadian and Columbia Plateaus (Chatters 1995a; Prentiss and Kuijt, this volume). Although the pattern, as recognized in the Upper Columbia area, can be partially explained by the presence of a "flat place" on the radiocarbon curve at 3950–4050 B.P. (Stuiver et al. 1998), it is not adequate as an explanation when examining the larger Plateau region. As noted by Chatters (1995a) and Prentiss and Kuijt (this volume), the evidence for near to complete abandonment is much longer than 100 years and generally occurs after this time. Thus, it still remains possible that a short occupational hiatus occurred after 4000 B.P.

The Upper Columbia Collector I (3799–2000 B.P.)

The Upper Columbia Collector I represents the first of two peak occupational horizons and the advent of the collector-type system in the Upper Columbia. The first semisubterranean pithouses were established and occupied during this interval and vary in size from small to large. Pithouses dating to this time are found in single or low-density clusters in the Upper Columbia landscape and are generally representative of a dispersed collector adaptation. The Slocan Narrows site may provide an exception to this pattern, for it contains two clusters of extremely large houses, two of which now date to this time frame (Prentiss et al. 2001). Further research could demonstrate an early aggregated community in this context. The first indicators of intensified camas root processing occur in conjunction with an expansion in the frequency of storage pits. Faunal and floral data are still lacking at this point, but given the present indications of dispersed and possibly occasional aggregated pithouse communities in optimal fishing locations, evidence for camas intensification, and data on the use of storage tactics, this period likely marks the beginning of the dispersed generalized collector adaptation in the Upper Columbia and is concurrent to similar behaviors at the advent of Pithouse II (Chatters 1995a, this volume) and the Shuswap horizon (Richards and Rousseau 1987; Rousseau, this volume).

Transition

Between the Collector I and Collector II adaptations there is a decline in the frequencies of radiocarbon dates. Although this could be explained, at least in part, by sampling bias, a similar pattern has been recognized by Chatters (1995a) for the entire Columbia Plateau. This suggests the possibility of short-term population decline in the region prior to the advent of the next broad adaptive period. Clearly, further research is required into this important but little understood period.

The Upper Columbia Collector II (1999–600 B.P.)

The Upper Columbia Collector II corresponds to a second high-density occupation of the Upper Columbia. Archaeological evidence supports the emergence of aggregated pithouse villages by late in this period (ca. 1200–600 B.P.). Large sites, such as Vallican, Slocan Narrows, and Ilthkoyape, feature the highest-density clusters of houses in all size ranges. This period also corresponds to the late peak in root processing and storage pits. Hearths associated with nonresidential sites also peaked at this time. Some of these could be the consequence of logistical or task group mobility strategies. Specialized sites such as the Fishery at Kettle Falls (45ST94) clearly reflect specialized resource-harvesting strategies, typical of collectors (Chance and Chance 1977). Intensified harvesting of shellfish is also known from the Vallican site (Mohs 1982). Faunal remains from 45PO137 in the Calispell Valley demonstrate the continuous use of both fish and mammalian resources during this time, with a relatively more intensive use of mammals over fish.

The Upper Columbia Collector III (599–100 B.P.)

The beginning of this interval corresponds to the start of the Little Ice Age (Pielou 1991) and marks the expansion of glaciers in the high-altitude contexts of the Rocky Mountains and Cascade Range. This interval is indicated by a decline in the frequency of radiocarbon dates; however, pithouse occupations are still present, and medium-sized structures dominate the record. The use of root-processing ovens appears to have declined and may have been consequent to the onset of the Little Ice Age and the associated effects on the availability of resources in some areas. During this time, cultural earthworks appear in the archaeological record. If these features do reflect heightened attention to territorial defense, then they could be linked to an increasingly patchy environment brought on by cooler conditions. Interestingly, warfare increased in many other areas of western North American during the final several hundred years of the prehistoric period and into historic times (Chatters, this volume). Simultaneously, burials from the Vallican site provide indicators of the distinct presence of complex social organization. Burial 2, for example, included an infant and a fetus, wrapped in animal skins, interred with 2,102 glass trade beads, 138 rolled copper-tube beads, 595 dentalia shell beads and pendants, 59 drilled elk-tooth pendants, 16 perforated copper-slate pendants, nine copper-alloy buttons, three copper-alloy rings, one iron pendant, one coiled copper-tube bead, and various other small items (Mohs 1982). Clearly, this reflects a high degree of material investment in the status of children, typical behavior for complex hunter-gatherers, whom Hayden (1995) calls entrepreneurs. Overall, these data suggest generally reduced or at least more dispersed populations, yet increased attention to the marking of territory and social status, particularly during the early historic period.

TESTING THE ADAPTIVE MODEL

The data discussed above appear to reflect some important past dynamics. First, populations appear to have strongly increased and declined twice in the past 4,000 years. This pattern appears to correlate with the emergence and decline of aggregated pithouse communities and various markers of socioeconomic complexity. Our

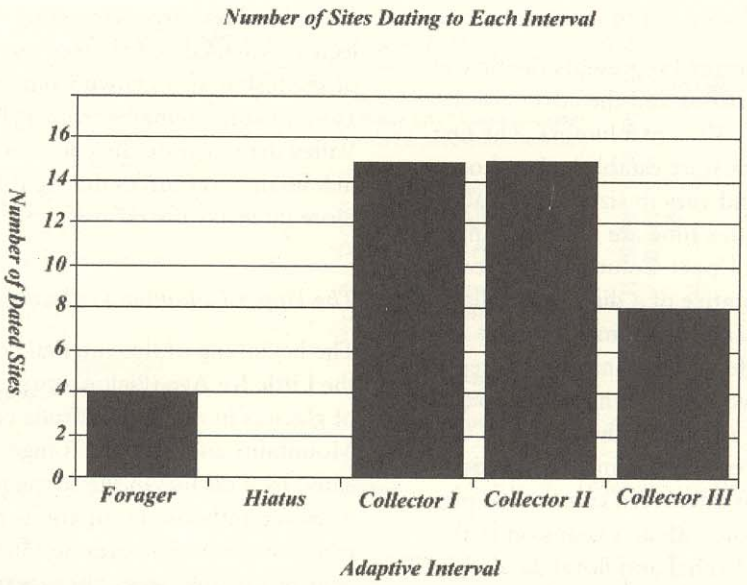

Figure 3.10. Sites per interval.

question is, Does the radiocarbon record reflect actual population dynamics, or is this merely a mirage created by a record biased toward more frequent dates at the largest sites? If the data do reflect population dynamics, then this will have implications for our explanations of cultural variability. The second problem concerns abandonments. Chatters (1995a), Prentiss and Chatters (2003), and Prentiss and Kuijt (this volume) assert that near to total abandonment of many parts of the Plateau occurred at circa 4000 B.P. These researchers argue that abandonment was associated with climate change and cultural maladaptation and may have opened the region to an influx of populations from the Northwest Coast and possibly elsewhere, bringing new adaptations (namely, the collector system). Data presented in this study so far point to this period and one other (ca. 1800–2000 B.P.) as possible periods of low population or even abandonment. However, a more rigorous evaluation of the error distributions around the calibrated dates must be undertaken to justify this conclusion.

Population Dynamics

First, to support the data expressed in Figure 3.8 as a proxy for population, the calibrated evidence should indicate that the percentage of radiocarbon dated sites is roughly equal to the percentage of sites occupied for each given adaptive interval. In this model, higher site frequency should represent higher population densities. Therefore, the highest density of occupied sites should correspond to the Upper Columbia Collector I and II, with relatively lower densities during the Collector III adaptation and even lower ones during the Forager adaptation. Site frequency data (Figure 3.10) do indeed provide a similar pattern to that of Figure 3.8, tentatively supporting its use as a population proxy. Interestingly, Figure 3.10 also shows that the site densities for Collector I and II are roughly the same. However, merely counting the frequency of sites in each interval is an insufficient test. A more accurate approach is to consider the relationship between total time span in each interval and the frequency of sites. The data from this analysis (Table 3.2) suggest generally low populations during the Forager and Collector I periods, followed by a substantial increase during Collector II and III. Further, despite seemingly reduced frequencies of aggregated pithouse villages and root-roasting and storage pits, these data suggest that Collector III may not have featured significant population reduction but, rather, a more even pattern of dispersal on the landscape.

Abandonment and Change in the Upper Columbia

Another way to test the conclusions illustrated in Figure 3.8 is to assess patterning in calibrated dates at two-sigma (95 percent confidence interval) error ranges. Points where major adaptive changes occurred that were accompanied by breaks in occupation sequences should be recognizable as significant disjunctions in the radiocarbon record. Figure 3.11 illustrates the full range of calibrated dates (n = 116), plotted and coded by cultural interval. This picture reveals a fairly continuous distribution spanning ~7200–0 B.P. This is especially evident during the Collector I, II, and III intervals where the centroids (means) overlap in many instances. A couple of exceptions occur. First, between the Forager and Collector I adaptations, the high two-sigma range of the youngest Forager date and the oldest Collector I date explains the overlap.

TABLE 3.2. ADAPTIVE INTERVAL AND SITE DENSITY IN THE UPPER COLUMBIA.

Adaptation	Total Time/Years	Number of Sites	Percent of Sites	Site : Year
Forager	2,000	4	9.5	1 : 500
Hiatus	400	0	0.0	0 : 0
Collector I	2,000	15	35.7	1 : 133.3
Collector II	1,200	15	35.7	1 : 93.3
Collector III	500	8	19.0	1 : 62.5
Total	6,100	42	100.0	42 : 6,100

Although this may be partially explained by variability in the calibrated radiocarbon curve, comparisons with data from other areas of the Plateau (Chatters 1995a; Prentiss and Kuijt, this volume) still support the possibility that a significant population reduction or even full abandonment occurred during the period 4200–3800 B.P.

Second, Figure 3.11 reveals that there is another break during the transition from Collector I to Collector II. This would be a major disjunction if not for the presence of a single date from a root-roasting pit considered for the purposes of this study to be the final event in the Collector I sequence. The time period from 2200 to 1800 B.P. appears to represent some form of cultural transition, perhaps associated with a brief population dispersal. The radiocarbon record does not appear to reflect abandonment, however. Chatters (1995a) recognizes a similar pattern on the Middle Columbia and Lower Snake.

Finally, Figure 3.11 presents a continuous overlap of dates associated with the transition from Collector II to Collector III. This supports the argument that no major population disjunction occurred between Collector II and III. It appears likely that there was little cultural change between these intervals other than in the scale and frequency of large group aggregation in pithouse communities.

DISCUSSION

The results of this research present a number of implications for understanding the evolution of complex hunter-gatherer societies. First, this research provides another indicator of dramatic cultural change at circa 4200–3800 B.P. A small-scale mobile society appears to have existed in the Upper Columbia prior to the onset of the full Neoglacial climatic period. Rapid cooling at 4200 B.P. may

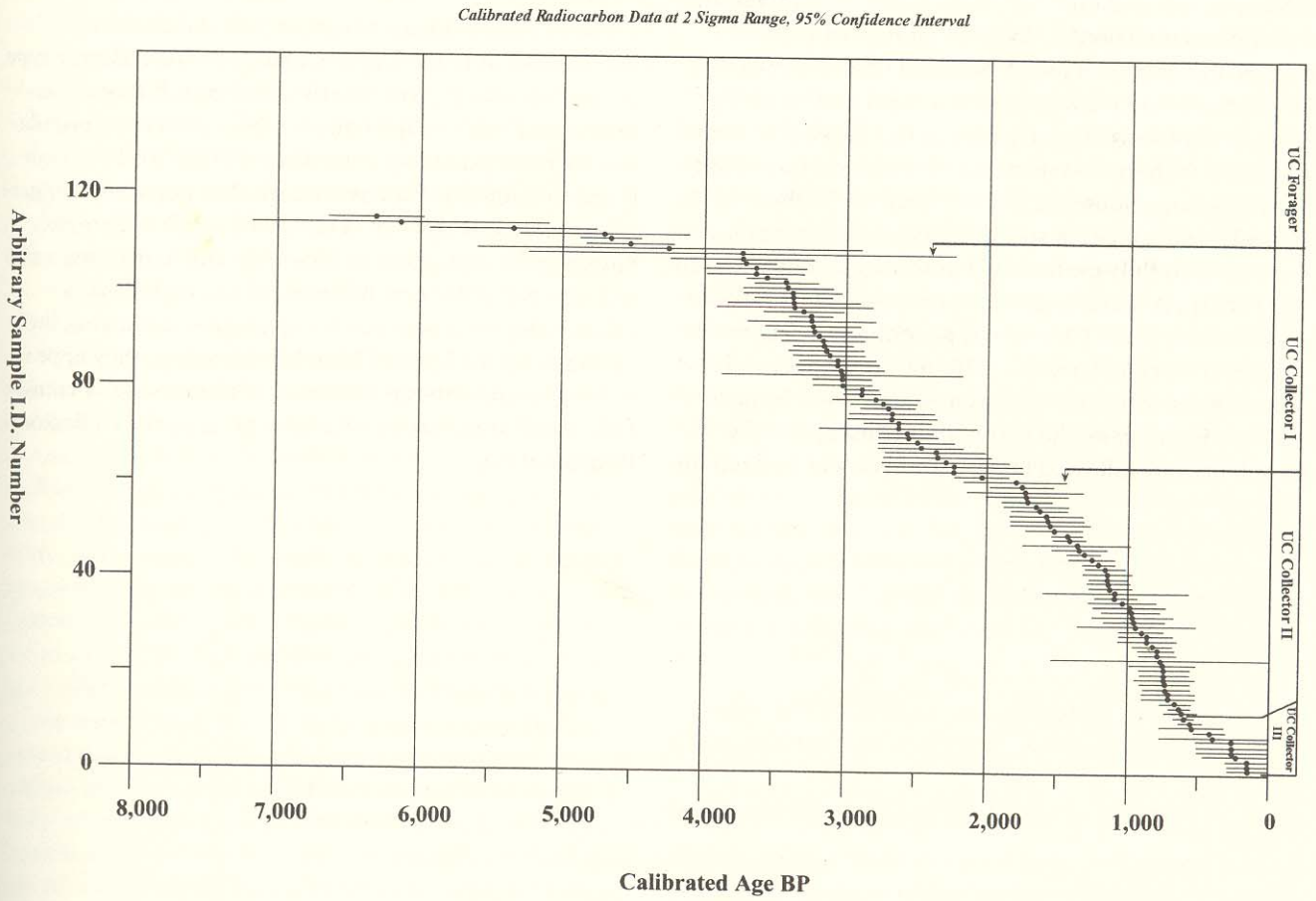

Figure 3.11. Two-sigma range of calibrated radiocarbon dates.

have caused population reduction until at least 3800 B.P., after which populations bringing a collector-like adaptation emerged in the area. We argue that this process was not one of simple social change but, rather, a wholesale transformation of the basic socioeconomy. Prentiss and Chatters (2003) propose that the interior Plateau collector system emerged on the Northwest Coast at a much earlier date, spreading into the former region after the climate change had largely emptied the area. This will be an important problem to test with future research in the Upper Columbia.

Second, it would appear that, at least as represented by the Slocan data, aggregated pithouse communities emerged and declined twice in the Upper Columbia. The village at Slocan Narrows featured the largest early pithouses on the entire Plateau (Prentiss et al. 2001). Although only two of the large houses have been radiocarbon dated, it is likely that the two clusters of these houses will reveal numerous other early dates. These houses are equivalent in size to the largest houses found at sites such as Keatley Creek in the Mid-Fraser Canyon (Hayden 1997). They are large enough to have housed groups potentially as large as 30–40 people per house (cf. Hayden et al. 1996c). The management of groups this large may have necessitated at least some form of achievement-based ranking (Ames 1985; Binford 2001). Researchers now need to look for additional data to explore this issue and to ask how and why this occurred. Our radiocarbon record suggests a rapid and relatively short-lived process of aggregation in this locale that started elsewhere with small houses but very quickly favored the unusually large houses at Slocan Narrows. Without better control over changes in subsistence and technology it is impossible to fully evaluate the processes that gave rise to this pattern. A much larger scale process of aggregation occurred late in the Collector II period, producing major villages at Slocan Narrows, Vallican, Ilthkoyape, and probably many other locations now destroyed by development. In this case, the occupation of exceptionally large housepits followed hundreds of years of buildup in small to medium houses. This pattern provides some tentative support for Binford's (2001) ideas linking social complexity to population packing and territorial behavior in patchy environments.

The final issue most prominently raised by this project is that of community decline and abandonment on the Plateau. Debate between Hayden and Ryder (1991) and Kuijt (2001) highlights the importance of identifying the processes leading to the collapse and reorganization of large-scale interior Plateau communities. Archaeologists must consider local factors such as landslides and temporary dams as well as larger-scale processes such as those associated with climatic change and regionally altered resource conditions. The decline of the Slocan Narrows and Vallican site villages coincided with similar processes in the Fraser–Thompson drainages (Hayden and Ryder 1991; Kuijt 2001) and to the south on the Middle Columbia and Lower Snake rivers (Chatters, this volume). This provides some tentative indicators that this process was regionwide, as suggested by Kuijt (2001). Attention to the construction of earthworks suggests that abandonment may have been preceded by territorial defense (see also Chatters, this volume).

CONCLUSION

The calibrated evidence reveals a bimodal distribution for occupation in the Upper Columbia. The collector-type adaptation was present shortly after 3799 B.P. and continued until ethnographic times with a pattern of population increase extending from during Collector I through II and possibly III. We have argued that population aggregation started to appear as early as 3000 B.P. Complex hunter-gatherers appear to be widely visible between 1200 and 600 B.P. After 600 B.P. most of the high-density villages dispersed into smaller aggregates occupying the drainages of the Upper Columbia. However, they appear to have retained the settlement characteristics and complex social organization of earlier times as the Collector III adaptation.