

Prehistory of the Southern Plateau

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The Southern Plateau, as defined here, encompasses a vast region. Its northern boundary is the rugged Okanagon Highlands at the international border. On the east, the region is bounded by the Bitterroot mountain range. The crest of the Cascade Mountains in Washington and Oregon (to Crater Lake in the Oregon Cascades) forms the western boundary. In Oregon, the southern boundary runs along the uplands at the southern edge of the drainages of the Deschutes and John Day rivers. This boundary crosses the Snake River above Weiser, Idaho, at the southern end of Hells Canyon and follows the rugged mountains that form the southern rim of the Salmon River drainage east to the Bitterroot Range.

In terms of physiographic regions, the Southern Plateau corresponds to the Walla Walla Plateau, Blue Mountains section, and the northern quarter or so of the Payette section of the Columbia-Snake River Plateau (C.B. Hunt 1974). It also includes portions of the Northern Rocky Mountains in central and northern Idaho, and north-central and northeastern Washington. For the purposes of this chapter, the Southern Plateau is divided into three subregions—Southeast, South-central, and Southwest (fig. 1). This sub-division reflects the research history of the Southern Plateau as well as local and regional differences in its culture history.

Culture History

Period I, 11,500 years ago to 5000–4400 B.C.

• PERIOD IA (PALEO-INDIAN), 11,500–11,000 YEARS AGO
The Richey-Roberts Clovis Cache is the only known site containing intact deposits of this age (Mehring 1989). Other supporting evidence of these earliest occupations consists entirely of surface finds of Clovis points. Formed bone objects (spear shaft spacers and foreshafts), large bifaces and bifacial blades, fluted points, unifacial implements, and debitage are all part of the artifact assemblage recovered at Richey-Roberts. Richey-Roberts attests to the evolved ceremonial practices and socioreligious systems of these people. The context, size, and styles of artifacts recovered here are strongly suggestive of intentional burial associated with ceremonial activity, possibly a human interment.

Rare surface finds of Clovis points occur throughout the region (Galm et al. 1981; Hollenbeck 1987). The similarity of these finds to dated sites in other regions implies an early link to areas south and possibly east of the Plateau. Less evi-

dent is the nature of relationships between Clovis and succeeding phases of prehistory. There is little evidence of a cultural continuum from Clovis to later-dating cultural manifestations in this area, though Aikens (1984) describes what may be transitional artifact forms in Oregon. Thus, while a Clovis presence is documented, it is unknown whether this culture had any bearing on subsequent cultural development in the Plateau region.

• PERIOD IB, 11,000 YEARS AGO TO 5000/4400 B.C. Post-Clovis cultures of the region are characterized by: a “broad-spectrum” hunter-gatherer subsistence economy; high seasonal and annual mobility; low population densities; and a technology geared to maximum flexibility. In a broad-spectrum subsistence economy, a wide array of food resources is exploited during a year, though people may tend to focus on a narrow range of resources under particular circumstances. People appear to have moved frequently; there is no evidence of dwellings or structures of any kind during this period, as there is also no evidence of food storage. Hunter-gatherers under these conditions can be expected to have quite low population densities (Ames 1988).

Chronological placement of sites during this period depends primarily upon radiocarbon dates and temporally diagnostic artifacts. The presence of volcanic ash from Mount Mazama in the southern Oregon Cascade Mountains, whose eruption has been radiocarbon dated to 5682 B.C. (Bacon 1983), provides a major means of dating sites excavated before the development and widespread use of radiocarbon dating, or sites where datable carbon is not present.

Artifact assemblages typically contain projectile points, cobble tools, bifaces (some of which may be knives), utilized flakes, scrapers, graters and burins, grooved stones interpreted as bolas, and cores. Assemblages sometimes also will include hafted bone points (sometimes with barbs); large and small eyed-needles; bone awls (pointed bone tools with no evidence of hafting); ocher; beads; edge-ground cobbles; hammerstones; and antler wedges. Occasionally assemblages will contain fishing tackle (harpoon parts and net weights), abraders, small milling stones and anvils; antler flakers (probably used to pressure flake stone tools) (Ames 1988); and some flakes and blades removed from cores prepared using the Levallois technique (Muto 1972).

These assemblages are characterized by a variety of projectile point forms; variation is both spatial and temporal. Assemblages before 7000 B.C. typically contain shouldered and stemmed, and unstemmed lanceolate points (some with

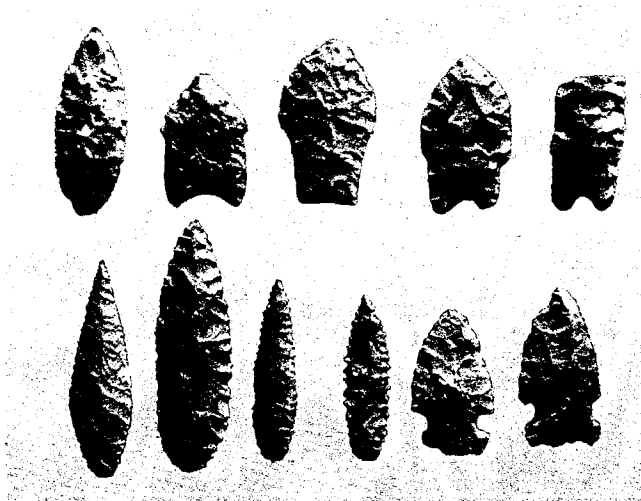


Fig. 1. Southern Plateau archeological sites and regions.

indented bases or with rather weakly differentiated stems, many of which may have an indented base) (fig. 2 top) (Rice 1972). While some of the formal variability displayed by these points can be attributed to resharpening and reworking during the useful life of the point, not all of it can be. After 7000 B.C. projectile point variability is more limited. Between 7000 and 5800 B.C. projectile points are commonly, though not exclusively, the laurel-leaf shaped form known regionally as Cascade points (fig. 2 bottom). These points are stemless, either bipointed or having one pointed end and one rounded end. This rounded end is thinner than the rest of the tool, often has ground edges, and probably was the haft. This description actually obscures a great deal of poorly understood (or described) variation. Most of these Period IB points are probably armed darts thrown from a throwing board or atlatl. After 5800 B.C., large side- and corner-notched (Northern Side Notched, Bitterroot) points are added to the repertoire.

Sites with faunal remains dating to this period are rare, and include Marmes Rockshelter, Lind Coulee, Bernard Creek Rockshelter, Kirkwood Bar, Deep Gully, and Granite Point in

the southeast Plateau, sites in the Wells Reservoir area in the south-central plateau, and the Fivemile Rapids (or Roadcut), Bobs Point, and Umatilla sites in the southwest plateau. Marmes Rockshelter and Lind Coulee are dominated by large terrestrial herbivores, including bison (*Bison bison*), elk or wapiti (*Cervus elaphus*), deer (*Odocoileus* spp.) and pronghorn (*Antilocapra americana*). Seals were taken at Fivemile Rapids. Birds and smaller mammals such as rabbits and large rodents occur at many sites (Atwell 1989). Fish remains are common. At Wells Reservoir sites and Bobs Point, salmon dominate, but minnows, sturgeon, and suckers are present. At Bernard Creek Rockshelter and Kirkwood Bar, both in Hells Canyon, suckers and minnows dominate, but salmon are present. At Fivemile Rapids, at least 150,000 salmon vertebrae were recovered. This collection is one of the largest faunal assemblages ever recovered from a single site on the southern Plateau. Some researchers (Schalk and Cleveland 1983) have suggested that the association of salmon bones and human artifacts at Fivemile Rapids was the coincidental result of natural processes, but V.L. Butler (1993) has shown that the bones were the result of human butchering of salmon. The



after Leonhardy and Rice 1970:figs. 2, 4.

Fig. 2. Early projectile point forms. top, Windust phase unstemmed (left) and indented base points; bottom, Cascade phase lanceolate and side-notched (right) points. Length of top left, 5 cm; others to same scale.

role of a salmon fishery at Fivemile Rapids in the subsistence economy of this period remains a matter of debate.

Southeast Plateau

The great majority of Period IB sites, particularly before 7000 B.C., are concentrated in the central and eastern por-

tions of the region. Only one major site, Lind Coulee, is located in the Columbia Basin. Meyers Cave, a little-known site in the basin, may contain materials from this period (Bryan and Tuohy 1960). The major sites are along the Snake River and its tributaries. Sites are also documented in the surrounding plateaus and mountainous uplands, indicating that all regional environments were used (Butler 1962; Keeler 1973; Brauner 1985; McPherson et al. 1981).

Marmes Rockshelter (fig. 3) (Bense 1972; Fryxell and Daugherty 1962; Gustafson 1972; Rice 1969, 1972) is the major site for this period in the southeast plateau. Its large, diverse artifact assemblages, reported faunal assemblage, and lengthy series of radiocarbon dates (Rice 1972; Shepard et al. 1987) have made it the basis for much of the published discussions of this period in the southeast Plateau. However, the site is unusual: it is one of the few excavated rockshelters dating to this period; its artifact assemblages are unusually diverse (containing artifacts such as very small bone needles, which seldom occur elsewhere); and it was used for burials throughout this period, which makes it unique.

Materials from this period are more commonly recovered from open sites with poor faunal preservation and few features. Early materials have also been recovered from the surfaces of deeply buried gravel bars at Hatwai (Ames, Green, and Pfoertner 1981), Granite Point (Leonhardy 1970), Lenore (Toups 1969), and Cooper's Ferry (Butler



Fig. 3. Excavations at Marmes Rockshelter on the Lower Snake River in southeast Wash. Photograph by Roy M. Chatters, 1964.

1966) along the Snake and its tributaries. Lind Coulee (Daugherty 1956a; Irwin and Moody 1978) is an important exception to this. It is an open site located north of the Snake River in the Columbia Basin. The site contains a significant faunal assemblage dominated by bison.

A number of upland sites have been excavated in the tributary basins of the Clearwater and Salmon rivers in Idaho, and in the Blue Mountains of northeast Oregon (Butler 1962; Keeler 1973; Corliss and Gallagher 1972; Hackenberger 1988; Hackenberger, Sisson, and Womack 1989; Wildesen 1982; Womack 1977; Reid 1988, 1991, 1991a; Reid, Draper, and Wigand 1989). Of these, Pilcher Creek (Brauner 1985) is particularly interesting. Quarrying soapstone and carving beads out of it were among the activities pursued at the site.

Leonhardy and Rice (1970) organized these materials into two cultural phases: Windust, 11,000 years ago–7000 B.C., and Cascade, 7000–5000 B.C. The Cascade phase was further subdivided into Early (7000–5800 B.C.) and Late (5800–5000 B.C.). The differences among these phases and subphases were originally based on projectile points: Windust is marked by the stemmed and unstemmed lanceolate points (Windust points), Early Cascade by laurel-leaf shaped points (Cascade points), and late Cascade by the presence of Northern Side Notched and Cold Springs points with Cascade points (Bense 1972). While some researchers have suggested no other differences exist among these periods (Bense 1972; Rice 1972) it seems evident that there were some shifts in settlement patterns (Ames 1988) and tool technologies around 7000 B.C., including the disappearance of bola stones.

South-central Plateau

While Period 1a assemblages have not been identified in the south-central Plateau, considerably more is known of the latest cultural occurrences of Period IB. Original definition of the Vantage phase in the middle-Columbia area (Swanson 1962; Nelson 1969; Galm et al. 1981) incorporates many of the characteristics of the Cascade phase defined for the Lower Snake River region (Leonhardy and Rice 1970; Bense 1972). The hallmark artifact of these phases, the lanceolate bipointed projectile, is ubiquitous throughout the region. Strong similarities in general artifact assemblage content also exist as edge ground cobbles, large bifacial knives, formed scrapers, and a wide variety of expedient flake and spall tools have been reported from throughout the area. Comparable assemblages in the Okanogan (Chatters 1986) and Kartar (Campbell 1985) phases defined for Wells and Chief Joseph reservoirs may include a slightly higher proportion of cobble and spall tool forms than found in the southern components. The presence of the Levallois-like Cascade Technique lithic technology (Muto 1976) is better represented in southern assemblages but is known to occur as far north as site 45CH309 in Rocky Island Reservoir (Stevens and Galm 1991). The relatively high percentage

use of fine-grained basalt recognized in southern assemblages is less well represented in the north. However, silicified mudstone and related metamorphic rocks are reported from Kartar phase assemblages at Chief Joseph Reservoir (Campbell 1985), although an association with this technology is uncertain. The presence of microblades in assemblages of this age is best represented at sites along Chief Joseph Reservoir (45DO282 and 45DO273; Campbell 1985) and Wells Reservoir (45OK49; Chatters 1986), and Ryegrass Coulee near Vantage (Munsell 1968). Despite descriptions of a microblade industry from southwestern Washington (Kelly 1982), microblades do not appear to be part of the assemblage documented for the Lower Snake River region (Bense 1972; Leonhardy and Rice 1970). Edge ground or "edged" cobbles are well represented in assemblages reported from Wells Reservoir (Chatters 1986) to Kettle Falls (Campbell 1985; Chance and Chance 1982, 1985). Large side-notched points, considered a hallmark of a late subphase of the Cascade phase (Leonhardy and Rice 1970) are very poorly represented on the Columbia River upstream of Rocky Island Reservoir (Galm and Masten 1988) north to Kettle Falls (Chance and Chance 1985).

Chatters (1986) reports two, possibly three, Period IB (Okanogan phase) dwellings from Wells Reservoir (fig. 4). Two Period IB dwellings from Wells are extremely small examples (<11 square meters) constructed on the natural ground surface. They consist of circles of stones with a trampled interior. Associated hearths are outside the structures, indicating their use as sleeping quarters only. At Kettle Falls, Washington, in the Northern Plateau, is a similar surface dwelling with an area less than 15 square meters dating to the Slawntehus period.

Southwest Plateau

In the southwest Plateau, the occupation sequence can confidently be extended back to about 8500 B.C. Evidence of occupation during this period was first encountered in Hat Creek and Cold Springs, both in McNary Reservoir (Shimer 1961). Other important sites include Indian Well (Butler 1959) and Goldendale (Warren, Bryan, and Tuohy 1963). Apparently the remains of a short-term camp, Goldendale was located on a camas flat. Without features, there were nevertheless numerous edge-ground cobbles; basalt slab milling stones with small handstones; ovoid knives; drills and gravers; two projectile points with weakly contracting stems and concave bases; and a small leaf-shaped point with serrated edges. The Goldendale site has an unusually high frequency of milling stones for this period, and so it is one of the best possibilities of a plant-processing locality dating to this period on the southern Plateau.

Fivemile Rapids, at the upstream end of the Columbia River Gorge, like Marmes Rockshelter, defined and shaped archeologists' understanding and research questions of this early period for many years. It was one of the first major

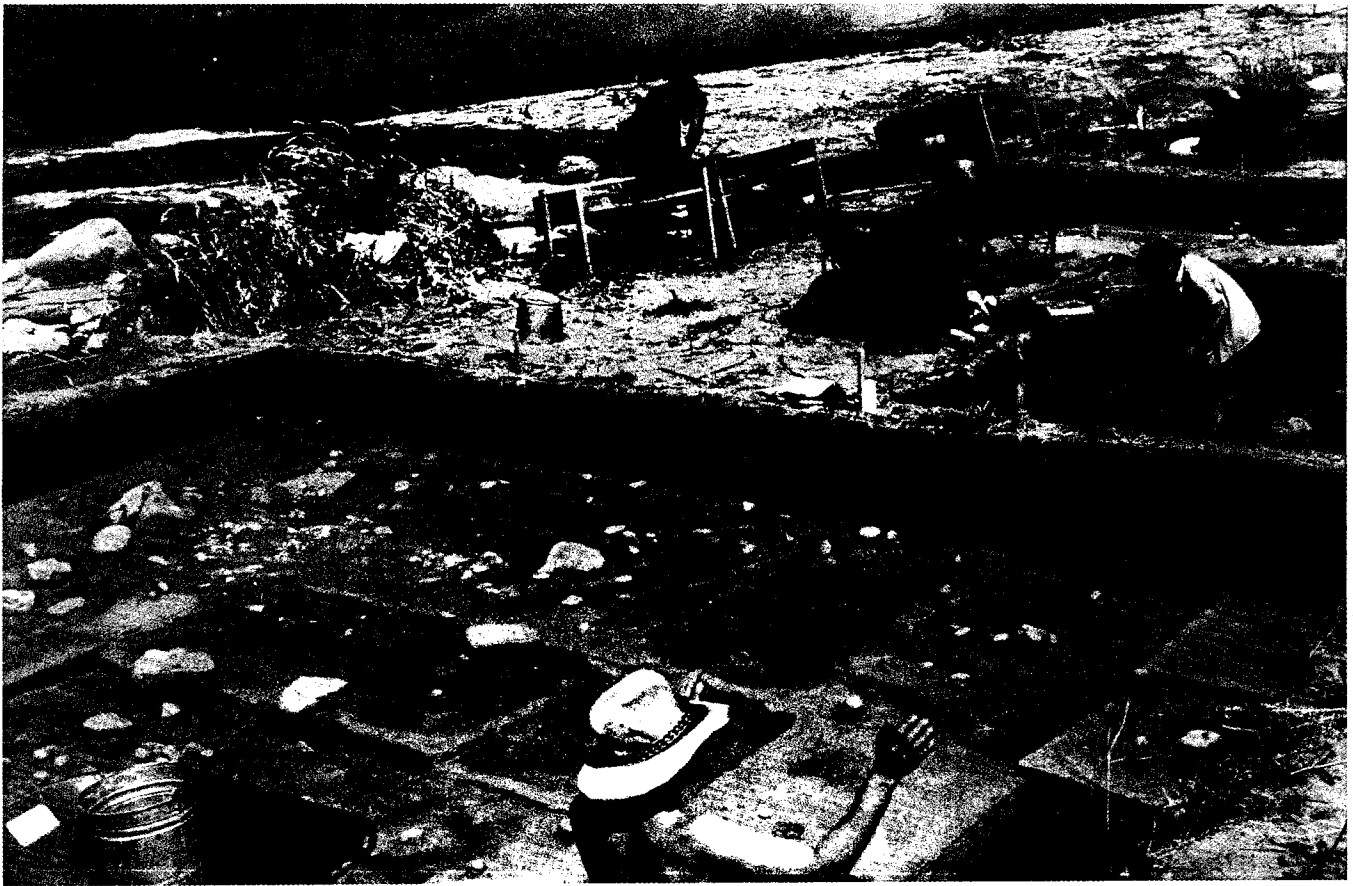


Fig. 4. Excavations at the Plew site (45DO387) on the Columbia River near Pateros, Wash. The circle of large stones in the left portion of the excavation marks the floor of a small structure. The site dates to about 5500 B.C. Photograph by James Chatters, 1984.

sites on the southern Plateau to have been dated using radiocarbon dates, an honor it shares with Lind Coulee. The presence of large numbers of salmon bones at Fivemile Rapids lead Cressman to conclude that intensive salmon fishing existed on the Plateau by 9,800 years ago.

Cressman (Cressman et al. 1960) assigned water-lain deposits below a volcanic ash to the Early stage of culture at that site. (The ash, although not identified at the time, appears almost certainly to have been from Mt. Mazama.) The Early stage was in turn divided into three substages (Cressman et al. 1960). Initial entry, from the lowest meter of the Fivemile excavation, comprised a limited inventory of stone-cutting implements. A composite date on this entire stratum of 9300 B.C. is the earliest from this site. Given the river-borne origin of the matrix, however, it seems possible that the composite date applies to elements of the redeposited fill other than the limited cultural material.

The Paulina Lake site, in Newberry Crater in central Oregon, contains one of the Plateau's major early occupations (Connolly 1995). One feature produced a radiocarbon date of 11,000 B.C., which while quite early, is contemporary with the earliest radiocarbon dates from the Hatwai site in the Southeast Plateau (Ames, Green, and Pfoertner 1981). The site also produced a well-defined structure, either a wickiup or windbreak, with a series of radiocarbon dates

averaging to 9500 B.C. This is the earliest structure anywhere in the Plateau culture area. Artifacts associated with these features include the stemmed, lanceolate Windust points typical of the earliest assemblages on the Southern Plateau, as well as the somewhat younger Cascade points. The assemblage is distinctive for its large number of cobble and ground stone tools, including what may be abraders or grinding slabs.

The Full and Final Early stages saw the development of a rich bone and antler industry, and stone implements including burins and bolas stones. Composite charcoal from throughout 1.2 meters of the lower of two strata assigned to this substage yielded a radiocarbon age of 6524 B.C., while a sample from a more restricted layer some 40 centimeters higher produced a date 200 years earlier. Although the deposit yielding the date of 6524 B.C. was not so obviously water-borne as the lowest cultural stratum, the numerous raptor birds in the faunal sample seem a strange component of the human diet and of a culturally constructed deposit. Fortunately, the date obtained is confirmed by that immediately above it, so that the cultural material must date before 5000 B.C.

Projectile points of the Early stages were largely unstemmed or with constricted stems, although illustrated points are not identified as to precise provenience (Cress-

man et al. 1960: fig. 41a). Milling stones are said to have been found from the beginning, although no distribution is given (Cressman et al. 1960:59, 62). With the end of the Early stages the bone and antler tools and faunal remains disappear, perhaps as the result of local preservational rather than cultural factors.

Bobs Point (Minor and Toepel 1986), located just upstream from Miller Island, has produced nondiagnostic flake tools, cobble tools including an edge-ground cobble, and thousands of pieces of debitage below Mazama pumice. Charcoal from a fire hearth exposed below the ash yielded a radiocarbon date of 6469 B.C. Use of the site resumed after the Mazama ash fall, with the later assemblage including one leaf-shaped and two side-notched points. Bobs Point is situated just upstream from Hells Gate Rapids, a highly productive fishery now inundated by the reservoir pool. A preponderance of fish remains in the pre-Mazama component at Bobs Point suggests that fishing was an important activity at sites other than Fivemile Rapids during the early portion of the cultural sequence.

At the Wildcat Canyon site in the John Day Reservoir, the Philippi phase is estimated to date from about 7000 to 5500 B.C. on the basis of one radiocarbon determination and the position of the materials beneath a primary deposit of tephra from the eruption of Mount Mazama. Materials from what were apparently open, ephemeral campsites included projectile points of lanceolate form, a large proportion of which contain indentations at the base, some with weakly set-off stems; broad, chipped knives; scrapers; graters; some burins; and occasional milling stones. Fauna included the remains of artiodactyl, not further identified (Dumond and Minor 1983).

At Umatilla, evidence of early occupation was limited, consisting of three artifacts and 27 flakes from Stratigraphic Zone 7 assigned to Component D. Faunal remains were also scant but among the animals represented were salmonid and nonsalmonid fish, rabbits, hares, bison, sheep, and freshwater mussel (Schalk 1980). No radiocarbon dates are available, but the position of Zone 7 stratigraphically below a deposit of Mazama ash suggests that Component D relates to the Philippi phase downstream at Wildcat Canyon. This idea is supported by the recovery along the shoreline of the river of two lanceolate points of the type characteristic of this phase (Minor and Toepel 1986a).

What seems clear is that all the assemblages mentioned above bear considerable similarity of one another in stylistic terms and, where dated by absolute means, in temporal terms as well. They also appear to represent some differing facets of a broadly oriented hunting-gathering economic adaptation, an adaptation that included fishing, the hunting of fairly large land animals, the taking of birds and, to judge from the milling apparatus, the grinding of something that must include vegetal materials. What is not so clear is the relationship of stylistic variants within the universe of the finished projectile points.

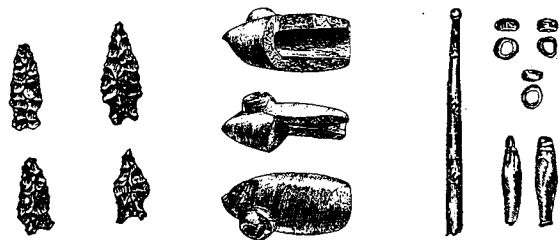
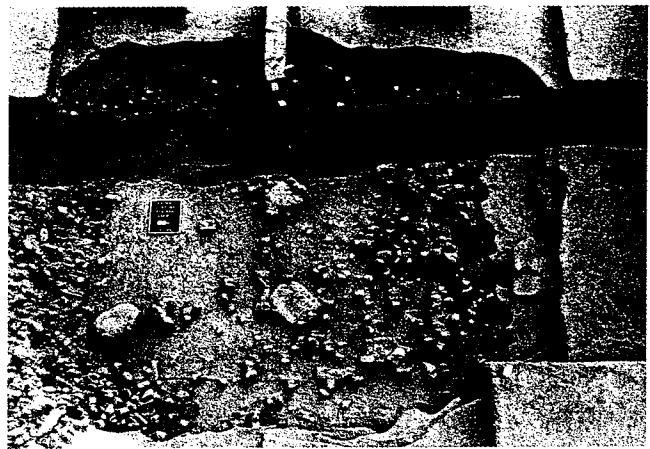


Fig. 5. House I and associated artifacts at Hatwai on the Clearwater River, near Lewiston, Idaho. top, House floor dating 3500 B.C. with hopper mortar bases and a scatter of artifacts and fire-cracked rock within the central 4 by 4 m pit of the house. The 2 m wide bench around the pit has been removed. The pit house was 8 m square. Photograph by James P. Green, 1978. bottom, Selected artifacts from House I and other Hatwai localities: left, 4 Hatwai-eared projectile points; center, 3 views of a carved stone pipe; right, bone ornaments including one elongated grooved and incised pin, a smaller grooved pendant, and 3 bone beads (2 views of each) recovered from deposits postdating A.D. 1500 in another part of the site. Drawings by Joy Stickney. Length of pipe, 9 cm; others to same scale.

Period II, 5000/4400–1900 B.C.

This period is difficult to characterize in some ways. In some parts of the southern Plateau, the evidence differs little from Period I. However, Period II is marked by important changes in settlement and subsistence patterns in some areas, and the disappearance of certain artifact types and technological traits characteristic of Period I. Semisubterranean pit houses appear in the region's archeological record for the first time; there is evidence for increased levels of exploitation of certain nutritious roots and of salmon; projectile points decline in frequency among artifact assemblages across the region relative to Period I; milling stones, which in Period I were small, are large, substantial stone slabs, sometimes associated with stone pestles; less investment was made in working chipped stone tools, which appears in some areas as a decline in quality. Edge ground cobbles and prepared cores are among the artifact types that become rare or disappear during this period.

Projectile point styles present at the end of Period I continue, including Cascade, Bitterroot, Northern Side Notched

and Cold Springs points. Projectile point styles become more variable in space after about 3800 B.C., with some styles having wide distributions, others being more localized. The reasons for this variability are little understood.

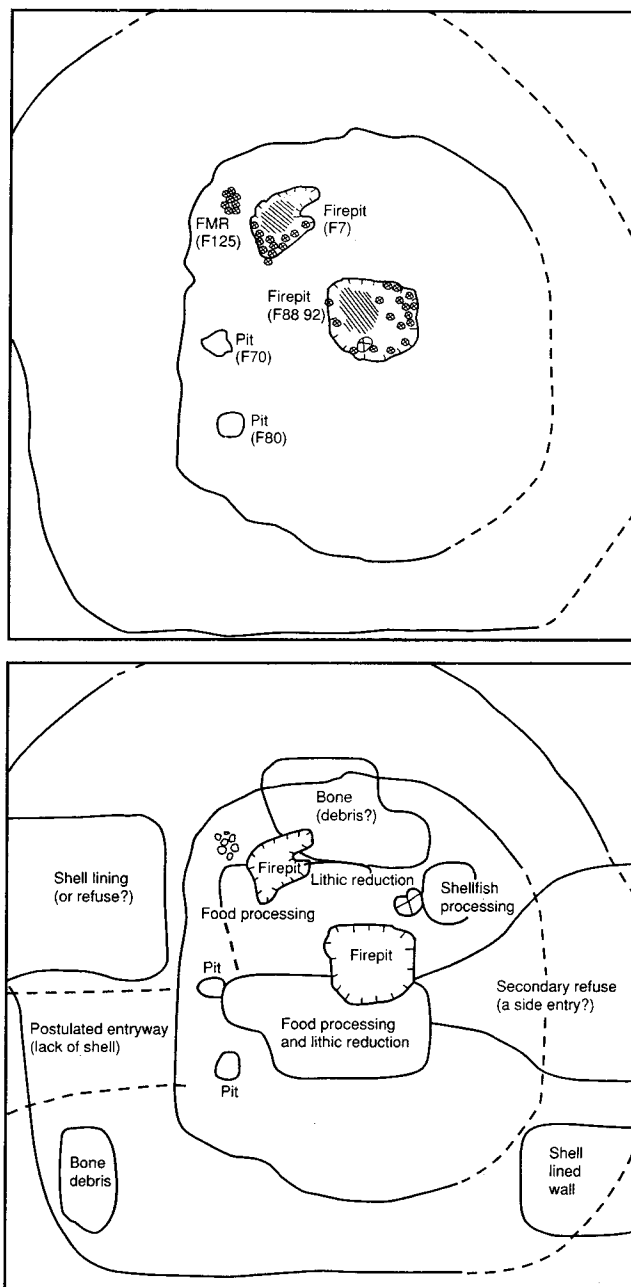
Southeast Plateau

Period II incorporates the last portions of the Late Cascade subphase and part of the Tucannon phase. While a number of sites, such as Marmes Rockshelter (Rice 1968; Kennedy 1976), Granite Point (Leonhardy 1970; Kennedy 1976), and the Tucannon site (Nelson 1966; H.K. Kennedy 1976) are relevant to this period, the most crucial are Alpowa (Brauner 1976), Hatwai (Ames 1940), and Hatiuhpuh (Brauner and Stricker 1990; Chance et al. 1989). These three sites contain semisubterranean pit houses with radiocarbon dates having calibrated age ranges concentrated in the millennium between 3200 and 2400 B.C. Hatwai has at least one earlier structure, House 6, which has a charcoal-based radiocarbon date of 3825 B.C. House 1 at Hatwai (fig. 5) has one date as early as 4387 B.C. But the average date for three other charcoal dates from the same floor complex has an age range of 3133–2927 B.C. House 2 at Hatwai has a charcoal date of 2665 B.C. with an age range between 2940 and 2420 B.C. House 5 at Alpowa dates to approximately 2700 B.C. Houses 2 and 3 at Hatiuhpah span a period between 2900 and 1800 B.C.

These dwellings are seven to eight meters across, circular to rectangular in plan view, and one to two meters deep. Some have earthen annular benches approximately two meters wide around their interior circumference. The houses generally lack evidence of superstructures. Their contents are very similar to each other and include clusters of large hopper mortar bases and anvils resting on their floors (fig. 5 top). Hopper mortar bases are round, flat milling stones with evidence of grinding and pounding on one or both flat surfaces. This evidence is usually a circular depression at the center of the stone's surface. This depression is probably the result of a hopper—perhaps a basket—being placed on the stone base, filled with vegetal material or perhaps dried meat, and then this food pulverized into a flour or meal with a stone pestle. Anvils are essentially large flat stones that lack the evidence of pounding but are in contexts that suggest their use. Associated faunal remains include freshwater mussels and the bones of a diverse array of large and small mammals, including herbivores and carnivores. Elk, deer, and pronghorn were the principal game animals. Fish remains include those of small numbers of salmon and other, resident fish. There is a single net weight at Hatiuhpuh. There is some debate (Lyman 1980a) as to whether this period is marked by increased exploitation of mussels. The presence of large mortar bases, anvils, and pestles has led some (Ames and Marshall 1980) to argue that plant foods, particularly certain roots, were of major importance in the

subsistence of this period, but this interpretation is a matter of debate (Lohse and Sammons-Lohse 1986; Thoms 1990).

The presence of semisubterranean pit houses is generally taken to represent a region-wide shift in settlement patterns to some form of semisedentism (Chatters 1989; Ames 1991). This shift is widespread, and apparently short-lived. There are few dated dwellings in the region 2000 to 1800 B.C. There is considerable controversy over the subsistence and economic changes that accompanied this preliminary shift to semisedentism (Ames 1991; Chatters 1989, 1995; Lohse and Sammons-Lohse 1986).



after Lohse 1984:figs. 6–13, 6–23.

Fig. 6. Late middle period Upper Housepit I at site 45OK11 at Chief Joseph Reservoir, Wash. top, Plan drawing of housepit showing associated features; bottom, postulated activity areas based on excavated remains.

Dominant projectile point styles include side- and corner-notched forms and a stemmed point. The side-notched points are notched low at the side; and they have very rounded shoulders, a deeply convex base, and thick cross-section. These have been termed Hatwai-eared (fig. 5). Corner-notched points have expanding stems and barbed shoulders and are sometimes called Snake River Corner-Notched (Leonhardy and Rice 1970). The stemmed points have a diamond- or lozenge-shape blade and contracting stems. These points have overlapping, but distinct spatial distributions (Ames 1990; Brauner 1976; H.K. Kennedy 1976).

While sites of this period are somewhat less common than those of the preceding or following periods, archeological materials of this time are found in all the major physiographic zones of the southeast Plateau (Ames 1990). There is no widely accepted explanation for this reduction in site numbers (Ames and Marshall 1980; Brauner 1976; Ham-matt 1977).

South-central Plateau

The transition to Period II is marked by changes in material-cultural assemblages, including the disappearance of Cascade technique technology. Fewer sites of this period are known from the southern portion of the study area than from the northern. However, the entire region appears influenced by an expanding population base and significant changes in subsistence strategies. More efficient exploitation of root crops and salmon are at the center of interpretations of changes in Period II adaptive strategies. Nevertheless, assessments of how and why such changes occurred remain topics of considerable debate.

Throughout the region, post-3000 B.C. economic adaptations appear to have a stronger linkage to the exploitation of anadromous fish than in the preceding period. The seasonal reoccupation of sites is a phenomenon that commonly begins in Period II and continues into the late prehistory of this region. This trend toward increasing sedentism is part of an overall pattern of intensive exploitation of riverine environments for the procurement of foodstuffs, most likely focusing on the harvesting of salmonids (cf. Campbell 1985; Chatters 1986; Galm and Masten 1985).

The earliest-dating pit houses in the study area are reported from Chief Joseph Reservoir (Lohse 1985)(fig. 6), where the oldest excavated dwelling was identified at 45OK11 and dated to about 3200 B.C. Portions of perhaps as many as 11 separate pit houses were reported from this site. Of these, seven are dated by radiocarbon dates that span the period from 3200 to 2200 B.C. The largest in this group is circular in outline and approximately 12 meters in diameter. Pit house forms include both circular and oval outline plans, and most exhibit shallow depressions excavated into relatively soft sediments. Internal or external post or post-mold patterns occur infrequently in association with these dwellings. However, the size of these dwellings, in many

cases, exceed the physical capabilities of a simple tepee-style external pole arrangement erected over an excavated depression. Pit houses measuring over approximately eight meters in diameter would have required an internal super-structure, usually taking the form of a two- or four-post structural support in the center of the dwelling.

Projectile point forms include a variety of laurel-leaf, or Cascade, forms (Lohse 1985) as well as Cold Springs Side Notched. In addition, Lohse (1985) reports a form he calls the Mahkin Shouldered. This point style has a blade with a variable outline and a broad stem. Artifact assemblages in general are similar to those described for the southeast Plateau.

The faunal remains are much more diverse (Lohse 1985) than those at Hatwai and Alpowa (Ames, Green, and Pfoertner 1981; Atwell 1989; Lyman 1976) and include much larger numbers of fish and freshwater mussels, suggesting a more diverse subsistence economy. The excavators believe the site was occupied year-round, representing a form of full sedentism.

Other dwelling sites, with smaller, shallow pit houses and similarly diverse faunal assemblages have been found in Wells Reservoir (45OK382, 45K383; Chatters 1986) and near Wenatchee (Cox's Pond; Hartmann 1975). These sites also contain evidence of trade, in the form of pipes of exotic material at Cox's Pond and marine shell at 45OK383. Nonpit-house sites include hunting camps, and open sites that in many ways resemble Period IB (Campbell 1985; Chatters 1986; Chatters and Zweifel 1987).

Southwest Plateau

This period is largely hypothetical in this subregion, since no clearly definable habitation or even coherent living floor can be definitely assigned it anywhere in the subregion. What is possibly the clearest evidence of occupation is from the middle strata of Hobo Cave (Musil 1984). Among these materials were more than 59 projectile points that included several varieties with contracting stems (see Shiner 1961: pl. 46), additional side-notched points, and a series of primarily broad-necked, corner-notched points; scrapers; pounders; bone awls; and some shell beads. A small amount of obviously intrusive historical material, largely derived from looters' disturbance, may cast doubt on the coherence of the remainder of the collection. Faunal debris includes remains of fish, deer, sheep, hare, and rabbit. The existence of numerous remains of young deer or sheep (not distinguished) suggests spring to have been the season of use.

At Wildcat Canyon, a similar but small assemblage can be derived from strata between that yielding remains of Period IB occupations and the overlying stratum in which were enclosed most of the constructed houses of the ensuing Late period (Dumond and Minor 1983, reference to strata F and Gh). However, this assemblage could easily be the result of

physical mixture of underlying and overlying materials rather than a component in its own right. No living surfaces can be assigned to it.

The same may be the case at Fivemile Rapids, where artifacts from more than a half-meter of deposit above the levels yielding the radiocarbon date of about 4000 B.C. show no real change in type from the earlier period (which included a number of projectile points with contracting stem). Above this, the projectile point forms that occur are those particularly characteristic of the period after 500 B.C. so that there appears to have been a hiatus in occupation between 4000 and 1000 B.C. Essentially the same can be said for the nearby Big Eddy sites. Finally, although two radiocarbon assays from the base of occupation at the Hook site suggest a possible beginning at 2000 B.C., the nature of the materials that follow suggest them to date to at least a millennium later.

If there is a cultural manifestation represented during this interval, then, it is clearly transitional in its stylistic elements between the better represented Period IB, and the vastly better represented Period IIIA. Any such entity must also have continued the subsistence orientation of the earlier time and continued a pattern of living that involved ephemeral and shifting, rather than stable, settlements.

Period III, 1900 B.C.—A.D. 1720)

The beginning of this period is marked by the widespread reappearance of pit houses (Chatters 1989; Ames 1991), indisputable evidence of increasingly heavy reliance on fishing (Johnston 1987; Thomison 1987) and storage of salmon (Chatters 1988), intensive exploitation of camas (Thoms 1989), and evidence of land use patterns that persisted into the nineteenth century. These land use patterns include seasonal (usually winter-early spring) villages in the canyons and exploitation of uplands and mountains from special use camps during the summer and fall. The period ends with the appearance of the horse—the harbinger of the arrival of Europeans—on the Plateau.

By 500 B.C., pit houses are ubiquitous in the Southern Plateau. The house pits found in Period III tend to be highly variable in size, and evidence of superstructures ranges from little in the southeastern subarea to complex post structures in the south-central area. Large pit houses (diameters greater than 12 meters) became increasingly common after A.D. 1000. Very large concentration of houses—towns and villages—also appear in the record by A.D. 500. The best known of these is the Miller site on Strawberry Island near the confluence of the Snake River with the Columbia (Cleveland 1976; Schalk and Cleveland 1983; Schalk 1980).

At the same time, new house forms develop. Longhouses enter the record after A.D. 500. Though longhouses were sometimes erected over a pit as much as a meter deep (Rice 1987), their superstructure was a pole frame covered with bark and woven reed mats.

Like pit houses, net weights become ubiquitous. While nets may have been in use since the earliest occupation of the region, the evidence indicates that their use increased markedly after 2000 B.C. Net weights display increasing variation in size through time, and there are changes in how they were suspended from the nets, perhaps suggesting a greater variety of nets, and refinements in net making. Harpoons and barbed bone points continue to be present in the record.

There was very little direct evidence of storage in Periods I and II. Storage pits with salmon remains in them are present in the Wells Reservoir at the beginning of Period III. For the first time, generally contemporary assemblages of faunal remains from many parts of the plateau have large numbers of salmon bones in them. At the Wells Reservoir, faunal collections are completely dominated by salmon bones (Chatters 1986), and they form a significant proportion of the faunal remains in sites in the Chief Joseph Reservoir as well (Campbell 1985).

This is the only period in Plateau prehistory that is also represented by fiber and wood artifacts and other perishables. Storage pits in dry caves along the middle reaches of the Columbia and Lower Snake rivers typically contained cordage and matting, but basketry, fishing implements, bows, arrows, and even dried food have been found as well (Swanson 1966).

While Period II land-use patterns are not clear, those of Period III are clearer. The archeological record of this period is rich in residential sites, marked by the presence of pit houses. Sites with pit houses are found along the Columbia and its tributaries and their tributaries, for example, along the Salmon River in central Idaho (Knudson et al. 1982; Wildesen 1982; Hackenberger 1988; Hackenberger, Sisson, and Womack 1989). Clusters of house pits have been located on terraces of very small streams that flow into the larger rivers. House pits have also been found in totally unexpected places, at relatively high elevations (Reid and Gallison 1992) and out in the middle of the Columbia Basin itself (Osborne 1959). Archeologists have usually assumed that these house pit clusters are the remains of winter residences, or “winter villages” (Swanson 1962; Nelson 1973), but some may have been constructed at other times of year (Lohse 1985) and been “summer villages,” for example. Sites and isolated artifacts from this period are distributed across all of the major landforms and ecological zones of the southern Plateau. It is thought that much of this material represents short-term encampments or special use sites.

Southeast Plateau

Period III corresponds to the last half of the Tucannon phase and includes all of the Harder, Piqúnin, and Numípu phases as originally defined. Some have suggested that the Harder

and Piqúin phases should be lumped (Yent 1976), but others prefer the split (Ames 1990; Brauner and Stricker 1990).

- SUBPERIOD IIIA, 1990–500 B.C. The beginning of this subperiod is clearly marked by an increased intensity of occupation, or even reoccupation, of certain major sites along the Snake and Clearwater rivers, such as Granite Point (Leonhardy 1970), Alpowa (Brauner 1976), and Hatwai (Ames, Green, and Pfoertner 1981), occupations that are continuous after this time. Houses appear to have been much smaller than during Period II (Ames 1991). Sites assigned to this subperiod are distributed across all of the major environmental zones of the southeast Plateau (Randolph and Dahlstrom 1977; H.K. Kennedy 1976; Leonhardy 1970; Mattson 1983; Keeler 1973; Gaarder 1967a; Brauner 1975, 1976) based upon projectile point styles.

Projectile point forms are similar to those at the end of Period II: Hatwai-eared, large Snake River side notched, and the unnamed style with a diamond shaped blade and contracting stem known downriver as Rabbit Island stemmed. Laurel-shaped points continue to be found in small numbers, as they were during Period II. These may be technologically different from the classic Cascade point. Artifact assemblages have low frequencies of projectile points and relatively high frequencies of cobble tools, fishing gear, and mortars and pestles.

The few faunal assemblages from this period are dominated by deer, though elk, pronghorn, fish, birds, and furbearers such as martin and beaver are present (Atwell 1989). The wide distribution of sites assignable to this period suggests a broader resource base than earlier. The sites with fauna, all found along the major rivers, may represent seasonal occupations. The increased frequency of net weights in the artifact assemblage may indicate an increased role of fishing in the economy (Ames 1990). Fish bones are the third most common bones in these faunal collections.

Because sites chosen for excavation were confined to those in the river bottom and also were those that promised to yield the most remains, there is a bias toward base camps and permanent villages in the archeological evidence, and knowledge of activities in places of more ephemeral use is underrepresented. Despite this shortcoming, and despite the inability in many cases to be absolutely certain of the season in which the base camps were inhabited, two things seem clear: that there were seasonal movements between base camps and more temporary habitation sites and that the base camps themselves evidence much more stability of settlement than had been the case in earlier periods.

- SUBPERIOD IIIB, 500 B.C.–A.D. 500/1000 Sites dating to this period are well represented on all the major drainages in the southeast Plateau. Crucial sites include Harder (Kenaston 1966), Tucannon (Nelson 1966), Three Springs Bar (Daugherty, Purdy, and Fryxell 1967), and Alpowa (Brauner 1975) on the Snake River; Arrowbeach, Lenore (Toups 1969), the Fish Hatchery (Sappington 1988), and Kooskia Bridge on the Clearwater; as well as Hells Canyon

Creek (Pavesic 1986) and Pittsburgh Landing in Hells Canyon (Reid 1991, 1991a). Materials from this period are widely dispersed in the uplands. It is also during this period that extensive utilization of the dry central Columbia Plateau begins (Chatters 1980; Greene 1975).

House pits become increasingly common during this subperiod. These pit houses are presumed to represent the semi-subterranean houses known elsewhere in the Plateau in historic times, roofed with a light framework covered with mats and earth. That any earth cover was light, however, is clear from the lack of heavy fill above the uppermost floor in most houses. The fill between superimposed floors in excavated houses, with many of them including three such floors, suggests that no roof inhibited the encroachment of the plentiful sand during periods of nonoccupation. The conclusion is that the roof was light and was removed at the end of each season of occupation.

Projectile points are the single most common artifacts in artifact assemblages, and their forms change somewhat. Early forms such as the Hatwai Eared, the stemmed form, and the laurel leaf points of the preceding subperiod disappear. The broad-necked Snake River Corner Notched continues to be present in assemblages, accompanied first by large, basal notched forms. These are subsequently replaced by smaller corner and basal notched forms that are probably arrow points, which appear between 350 and 150 B.C. (Brauner 1976; Schalk 1983).

While artifact assemblages during this subperiod are dominated by large numbers of projectile points, these assemblages are much more diverse and varied than during subperiod IIIA. Significant trends include increasing numbers of net weights, though hand-held fishing gear such as leisters and harpoons are still present. Grinding and pounding tools increase in absolute numbers, though their proportional representation declines (because projectile points are so common).

Faunal assemblages also diversify. Once again, the assemblages are dominated by deer. Interestingly, bison bones are the second most common bones in these assemblages, displacing elk. Fish continue to be the third most common animal in the assemblages. There has developed a question as to what this appearance of bison may represent (Schroedl 1973; Lyman 1985)—a shift in climate, a change in bison range, a sampling problem, or a change in subsistence? What is clear is that the resource base expanded during this subperiod to include more animal species. This parallels the trends in the artifact assemblages.

- SUBPERIOD IIIC, A.D. 500/1000–1720 The appearance of the horse on the Plateau ends this period at approximately 1720; the shift in domestic architecture from pit house to longhouses is among the changes that initiates this subperiod. Why this shift occurred is unknown. It did not occur everywhere at once; for a time the house forms were used side-by-side, but pit houses were not in use on the southeast plateau at contact. Chance (1978, 1978a; Chance and Chance 1985a) excavated the possible remains of a long-

house at Spalding, Idaho, in 1978. The structure postdates 1400 and may be the earliest excavated longhouse on the southeast Plateau. In general, this period is poorly known on the southeast Plateau.

There is evidence for the formation of very large pit house villages and towns at the confluence of the Snake and Columbia rivers at the beginning of this subperiod. The Miller site (Cleveland 1976; Schalk 1983) on Strawberry Island, in the Snake River, just above that confluence, contains several hundred pit houses that postdate 500. The pits vary in size from three meters across to 20 or more meters. These size differences may reflect some social differentiation among households, or functional differences, that is, the pits may not all represent pit houses. Some could represent storage features, for example (Thoms 1989).

Sites and materials from this period are ubiquitous through all environmental zones on the southeast Plateau. It is very likely that settlement patterns were similar to those of the nineteenth century, with winters spent in small villages in the canyon bottoms, and then groups dispersing into the uplands and mountains to hunt and collect plant foods. During the eighteenth and nineteenth centuries, very large groupings would form in late summer and early fall around major camas grounds. Other individuals would be in the canyons fishing. The data suggest that human populations were at their peak numbers during at least the early portion of this subperiod.

Artifact assemblages are generally similar to those of IIIB. There are changes in projectile point styles. These are dominated by small, delicate corner and basal notched forms. These small projectile points doubtless armed arrows. Reported faunal assemblages are dominated by deer, fish, and elk remains. Though bison bones are present, they occur in much lower frequencies than during Subperiod IIIB.

South-central Plateau

• SUBPERIOD IIIA, 1900 B.C.—A.D. 1 Some of the more significant changes characterizing the transition to Period IIIA settlement in the west-central Plateau can be summarized as follows: large populations relative to earlier periods, increased sedentism and associated changes in patterns of subsistence, large riverine villages and the appearance of communal dwellings, larger and more functionally diverse artifact assemblages, and a more vigorous trade in non-local commodities using the pre-existing trade network. Elements of these patterns can often be seen in Period II but do not reach their full expression until Subperiod IIIA. At the center of changes recognized in late prehistoric adaptations is an increasingly efficient exploitation of the natural environment with attendant shifts in the seasonality, timing, and duration of settlements. Improvements in storage technology (Schalk 1986) presumably facilitated more efficient use of foodstuffs, thereby reducing the time spent in subsistence

pursuits. An expansion in human populations is indicated by a larger number of sites in both riverine and off-river, upland environments and by the larger sizes of riverine villages.

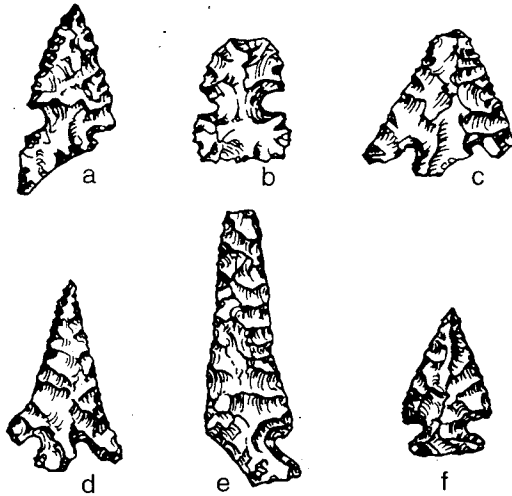
Larger numbers of pit houses and a greater diversity in their form mark the transition to Subperiod IIIA. Nineteen Hudnut phase houses are reported from five sites at Chief Joseph Reservoir (Sammons-Lohse 1985), 10 from three sites at Wells Reservoir (Chatters 1986; Grabert 1968), and a possible occurrence at Rock Island Reservoir (Hartmann 1975). Subperiod IIIA houses also are thought to occur at sites along present-day Wanapum and Priest Rapids reservoirs (Greengo 1986, 1986a).

Circular, subrectangular to oval, and square floor plans all occur in this sample of pit houses. Dimensions vary from a low of four to five meters in diameter (Chief Joseph and Wells reservoir sites) to a high of 11 by 9 meters for Housepit 1 at 45OK250 (Sammons-Lohse 1985: table 14-4). The smaller structures in this range are likely to represent ancillary structures, such as menstrual houses and storage facilities, while the larger examples are capable of housing multiple family groups. The greater diversity in the physical styles of housing and the larger numbers of dwellings documented during Subperiod IIIA are thought to be reflective of an expanding regional population base. There is also some suggestion, particularly in the northern portion of this region, of movement of peoples into the area. Although there is no clear understanding if or when such movements of people occurred (cf. Chance and Chance 1985), the pit house style of dwelling was already present in the region.

At Chief Joseph Reservoir, Subperiod IIIA sites reveal increasing richness and densities of artifacts over those of Period II, a condition also common along the upper Columbia (Campbell 1985). Artifact assemblages throughout the period are dominated by expedient tools such as flake knives and scrapers, graters, and spokeshaves. Local, cryptocrystalline silica raw materials predominate, and there is a marked reduction in the use of fine-grained basalt over the preceding period.

At sites ranging from the middle to the upper Columbia, salmon are a dominant component of faunal assemblages. Large mammals are also a principal source of food and the raw materials required for implement and clothing manufacture, judging from the faunal samples. Off-river hunting of game is part of a settlement pattern involving seasonal movements of people into upland areas for extended periods of time. In addition to hunting, root and vegetal food gathering and raw material extraction were among the prominent activities pursued from these upland camps.

Storage facilities have been found in both house floors and dry caves. Extensive collections of perishable artifacts made by Swanson (1962, 1962a, 1966) in the Priest Rapids and Wanapum reservoirs contained numerous varieties of wood and fiber artifacts. This period, which he called the Frenchman Springs phase, was distinguished from the next by its content of predominantly Z-twist cordage, which became nearly exclusive toward the end of the phase.



after Chatters 1984:figs. 14-16.

Fig. 7. Late prehistoric projectile points from site 45OK197, a hunting camp on the Columbia River near the Grand Coulee Dam, Wash. a-d, side-notched arrow points; e-f, corner-notched arrow points. Length of a, 3 cm; others to same scale.

• SUBPERIOD IIIb, A.D. 1-1720 In all sections of the subregion, north to south, Subperiod IIIb occupations bear the unmistakable stamp of the ethnographically defined "winter village pattern" (cf. Ray 1933; Ames and Marshall 1980). The seasonality and scheduling of Subperiod IIIb subsistence activities and attendant settlements follow a pattern first recognized, at least in southern sections of this subregion, during IIIa. By about 500 B.C.-A.D. 1, pit house villages are found along most salmon-bearing rivers and streams, and upland camps and use areas occur in expanded numbers. Upland sites (Chatters 1980; Chatters and Zweifel 1987; Gough 1990; Galm et al. 1981; Dancey 1974) typically exhibit artifact assemblages best suited for use in specialized activities. Hunting and hunting-related activities, plant gathering and processing, and lithic quarries and collection areas are among the most common of site occurrences in these areas.

Artifact assemblages reveal relatively few outright changes in the type categories represented but instead reflect the accretion of new forms along with changes in the frequencies of occurrence of specific styles. Large cobble chopping and cleaving tools, large flake and bifacial knife implements, formed scrapers ("keeled end" varieties), hammerstones, hopper mortar bases, and even some types of bone implements are very similar in style to examples present in the preceding period (Galm et al. 1981). Small basal notched-barbed, stemmed, and corner and side notched projectile points predominate in period assemblages (fig. 7). However, the late components at 45CH302 (Boreson and Galm 1997) and 45DO176 (Galm and Masten 1985) are typical of many in the region in that the frequencies of specific point types often vary widely between components of the same age. Small point forms mark the appearance of

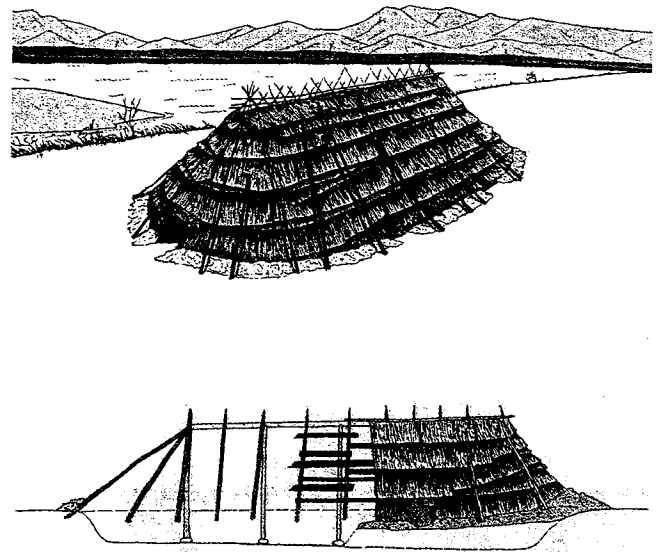


Fig. 8. Late late period longhouse at Avey's Orchard site in East Wenatchee, Wash. top, Artist's reconstruction of the longhouse. center, Partial cutaway view of the longhouse showing the principal construction elements including the central and side support beams, the cross-pieces, and the covering mats. This view also shows the depth of the house floor beneath the surrounding ground surface. Drawings by Pamela K. McKenney. bottom, Excavated burned beams from the longhouse. Photograph by Jerry R. Galm, 1983.

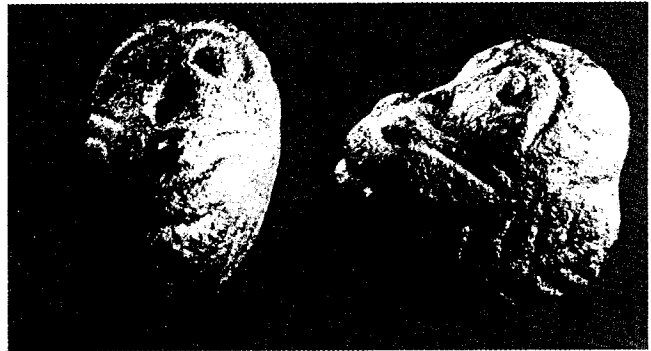
bow and arrow technology throughout this area at least by A.D. 1. Riverine villages contain the largest and most functionally diverse assemblages of any time period. Items of ornamentation, often manufactured from materials representing trade with areas outside the Plateau, proliferate and include dentalia and olivella marine shell beads, bone cylinder and cut disk bone and shell beads, incised steatite and soapstone pendants, and bone pins. Examples of incised beads, mainly dentalia and bone cylinder types, are not uncommon, with typical motifs consisting of continuous chevron, ladder, and simple hatch designs. So-called "wine glass" stem pipes manufactured primarily from steatite and

soapstone also are common occurrences in larger site assemblages. Despite a general increase in the occurrence of formed objects, expedient tool forms continue to dominate combined implement categories at most sites. Swanson (1966) found a change from predominantly Z to predominantly S twist in cordage at the start of Subperiod IIIB.

The most dramatic changes in residential architecture are represented in the transition from Period II to Period III occupation of the subregion. The first documented examples of the ethnographic "long lodge" or longhouse appear in a slightly modified form during Subperiod IIIB. These are multifamily or communal structures that in the postcontact era are known to have held as many as several hundred residents (Smith 1983). During late prehistory, this style of dwelling is represented by a single, dated example from the Avey's Orchard site in East Wenatchee (fig. 8). This structure, dated to about A.D. 889, measured over 15 meters long and 11 meters wide (Falm and Masten 1985). Unlike historic longhouses, this prehistoric example was a semisubterranean structure, implying an evolution of the longhouse from a semisubterranean structure to a surface structure, a change most likely linked to the adoption of a equestrian lifeway over most of the region after 1720. Other examples of longhouses are reported farther south on the Columbia along the present-day Wanapum, Priest Rapids, and McNary reservoirs, but none is firmly dated.

Other large styles of dwellings appear during this period as well. These are also semisubterranean structures that, in the main, range from circular to subrectangular in plan view. Sizes generally range from 10 to 14 meters in diameter (or long dimension), although even larger examples are known to occur. Large communal houses are documented, including occurrences at Chief Joseph (Campbell 1985), Wells (Grabert 1968), and Rock Island (Galm and Masten 1985; Boreson and Galm 1997) reservoirs. From this evidence, changes involving the incorporation of communal residences in the composition of village structure and an apparent aggregation of riverine settlements are represented during the last half of Period III. Dates on these larger, communal houses indicate that this important change in settlement structure occurred between A.D. 500 and 1000 throughout this area. As Grabert (1968) observed during his work at Wells Reservoir, there is a tendency for earlier-dating pit house forms to exhibit a deeper depression than those forms representing the post-A.D. 1000 period. This trend applies most consistently to the approximate northern half of the study area and may be indicative of connections to cultural developments in the Northern Plateau.

Despite the above mentioned changes in housing, the circular, semisubterranean pit house or mat lodge remained the dominant form of housing for the entire span of Subperiod IIIB. Like the larger longhouse, the mat lodge was easily adapted to a surface structure with the introduction of the horse and the attendant increase in settlement mobility. Size range distributions are distinctly bimodal with clusters occur-



U. of Oreg., Oreg. State Mus. Of Anthr., Eugene: 1-110.

Fig. 9. Two views of a sculpted stone head resembling a mountain sheep. The features of this figure were pecked into a block of vesicular basalt using a tool of harder stone. Collected by Thomas Condon near the mouth of the Deshutes River, Oreg., before 1872. Height 23 cm.

ring around six- and eight-meter diameter intervals. The number and diversity of nondwelling structures likewise increases in sites of this period. Such structures most likely include sweatlodges, menstrual huts, framed brush arbors or ramadas, and covered storage facilities.

Southwest Plateau

• SUBPERIOD IIIA, 1000 B.C. TO A.D. 1000 The occupation of Wakemap Mound, a large, very important site on the Washington shore in the vicinity of The Dalles (Strong, Schenck, and Steward 1930; Caldwell 1956; Butler 1960), apparently began during this period, but the bulk of the occupation falls into Subperiod IIIB. The Big Eddy site on the Oregon side of the Long Narrows may have been occupied during this period, but it had been too heavily affected by construction to draw firm conclusions.

One house depression of this period was excavated at Mack Canyon on the lower Deschutes River not far from The Dalles (Cole 1967, 1969). More information derives from work in the John Day Reservoir, where more than 30 houses in nine sites were excavated in whole or in substantial part. Although a few of these do not pertain to Period IIIA, the majority of them do.

In original form these houses were apparently round to square or rectangular, three to eight meters across in two opposing dimensions, anywhere from about 30 centimeters to one meter deep, often with areas of charcoal or even stone-ringed fireplaces somewhere within them, sometimes with superimposed floors. In almost no cases were structural details apparent, although in one (at Wildcat Canyon) a portion of the sidewall was lined with rock, presumably to stabilize the sand (Dumond and Minor 1983), and at another (at Umatilla) a square floor was outlined by small posts (Cole 1966). Charcoal from the Umatilla house yielded a radiocarbon date of 559 B.C., which remains the earliest dated pit house feature along this section of the Columbia River.

Whether some of these features are actually datable to a time as early as 1000 B.C. is not entirely sure, although it seems clear that a number of the excavated examples date from as early as about 500 B.C. Throughout the same period, the presence of occupation floors that had apparently not been deeply excavated into the contemporary surface suggests the use of more immediately portable shelters, possibly the mat-covered tentlike lodge known in the region at the time of contact (Southard 1973; H. Rice 1985). The resulting picture, then, is one in which during certain seasons most or all of the population resided in semisubterranean houses, or at least in mat lodges or other tentlike habitations set well into the ground, and that in other seasons they resided in tentlike shelters set on the surface and less suggestive of permanence.

Contributing even more to the impression of stability and sedentism conveyed by the pit house villages, is the fact that near the habitation clusters in a number of cases were cemetery areas thick with inhumations. The most extensively excavated of these sites is at Umatilla, where 224 burials or other human remains were recorded in excavations that led to formal reinterment (D. Rice 1978). The majority of these inhumations can be assigned to Period IIIB on the basis of grave offerings of projectile points and other items. Contemporary with these burials, as indicated by a series of radiocarbon dates, were deeply excavated circular pit houses with benches around the periphery, hearths, and storage pits (D. Rice 1978; Schalk 1980; Minor and Toepel 1986a).

Features associated with house pits included earth ovens, those masses of fired rocks that are interpreted as having been used in the underground cooking of camas or other foodstuffs. Consistent with the occurrence of these features are the remains of pestles and their close formal relatives, shaped stone mauls. The increased importance of fish is indicated by the presence of notched pebble net sinkers and by the more common occurrence of fish among the faunal remains. Other fauna represented include many deer, some elk, bison, and sheep, animals that are indicative of seasonal hunting. At the Wildcat Canyon site there were also recorded a series of dog remains, apparently buried, although the purpose is, of course, unclear.

It is in this period, too, that the famous stone sculptures of The Dalles region began to appear (fig. 9) (Butler 1959; Strong 1961). Among the most plentiful of the portable artifacts are the projectile points, which appear frequently in corner- or basal-notched forms with expanding stems. Early in the period these were relatively broad—more than eight millimeters—across the neck (that point where the stem meets the body of the point), but as time progressed more and more small and narrow-necked examples of the same form appeared, presumably as the bow and arrow supplanted the atlatl and dart. This appearance becomes unmistakable before the beginning of the Christian era, and at about A.D. 1 the narrow-necked points begin to outnumber broad-necked ones. In The Dalles region and the lower area of the

John Day Reservoir the fashion began to shift again around A.D. 500 to one in which points began to be made with very narrow stems, straight-sided or even contracting, that have been called "pin stems" (Dumond and Minor 1983). Whether these reached the upriver areas around Umatilla and the McNary Reservoir at such an early date is not so clear. Excavations at Alderdale on the Washington side of the Columbia River produced no pin-stemmed points (Oetting 1986), and at Umatilla very few of them, although in other respects the assemblages appeared to be of times only shortly before contact.

• SUBPERIOD IIIB, A.D. 1000 TO CONTACT Although relatively permanent sites were sought for excavation in projects such as that of the John Day Reservoir, their selection involved no strong preconceptions regarding artifactual indicators of relative date, so that late sites, at least, should be represented in proportion to their actual occurrence. But the remains actually explored are overweighted toward Subperiod IIIA: of 30 radiocarbon determinations from the inception of the subperiod in the John Day Reservoir, only six relate to time after A.D. 1000. On the one hand, the paucity of dates for the later subperiod may relate to the relative impermanence of habitations, compared with those of Subperiod IIIA (for the habitations were a major target of dating efforts). On the other hand, this dating situation may also relate to some shrinkage of population in the John Day Reservoir area.

So far as excavations reveal, habitations were most commonly in the form of above-ground lodges, possibly mat-covered. And around The Dalles and the lower John Day Reservoir area, projectile point styles changed so that pin-stemmed points were favored over those with slightly expanding stems. Upriver, even in the upper portions of that reservoir, this is not so clearly the case.

At Umatilla, the earlier substantial house pits were succeeded by shallow circular houses without benches and rarely containing storage pits. These were found in considerable number, and to judge by the quantity of relevant radiocarbon dates there was no shrinkage of population. Associated burials had little burial furniture, and projectile points were predominantly small and corner-notched rather than pin-stemmed (D. Rice 1971, 1978). That pin stems were not entirely unrepresented in prehistoric times in this upstream region of the John Day Reservoir is indicated by some material from Umatilla and by a site at Boardman, Oregon (35MW1), in which they are plentiful. In the McNary Reservoir they appear at least by early historic times, but with some small triangular side-notched forms that are virtually nonexistent in the John Day and The Dalles areas (Shiner 1961:pl. 46b). It has been suggested (Dumond and Minor 1983) that the appearance of the pin stem style is the result of interaction with peoples from the west along the lower reaches of the Columbia River, where a similar style seems to have been perceptible since about A.D. 1 or before (Pettigrew 1981). This projectile point style

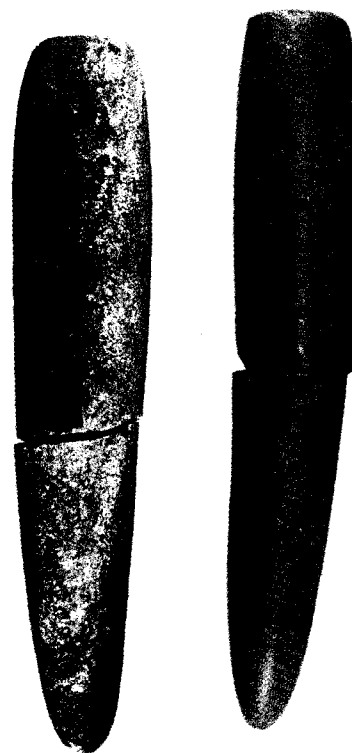
is not the only downriver trait to appear in the region treated here.

Whereas the mat-covered surface lodge appears to have been the favored habitation in the John Day Reservoir area, at Wakemap Mound, the lower village level dating from about A.D. 900 to 1400 apparently consisted entirely of mat lodge dwellings set into the ground (Butler 1960:27). The upper village level was indicated by a large number of pit house depressions exposed on the ground surface, which apparently were the remains of rectangular plank houses representative of the Chinook house style known downstream (Caldwell 1956; cf. Butler 1960:82-83). This is not surprising, inasmuch as the Wishram of the Washington shore of the Long Narrows were the easternmost Chinookan-speaking people. Whether their characteristic houses appeared also on what is now the Oregon side of the Narrows is not known, although it is by no means impossible. People of the lower end of the Narrows were reportedly the Chinookan Wasco. Those of the upper end, at what was to become the Fivemile Rapids archeological site, were apparently not Chinookan but rather the westernmost of the Sahaptin speakers of the John Day region (Rigsby 1965).

The earlier mortuary pattern involving primary interments in flexed or semiflexed positions continued to be practiced during this period, in association with pit, talus, and cairn burials (Strong, Schenk, and Steward 1930:16-25; Cole 1954:74-77; Caldwell 1956:268-286). The use of talus burials is particularly well illustrated at Crates Point just downstream from The Dalles where this practice persisted into protohistoric times (Minor and Hemphill 1990). Aside from this basic pattern, large cremation pits with the charred remains of many individuals are known from both The Dalles and the McNary Reservoir area. Although many of these cremations apparently date to early historic times, especially in the McNary area (Osborne 1957; Osborne, Bryan, and Crabtree 1961), at least some of them appear to have been prehistoric.

At The Dalles in historic times, as on the lower Columbia, the principal means of disposal of the dead was in charnel houses, usually located on islands in the river, as in some of those removed for reburial from the vicinity of Bonneville Dam (Phebus 1978), and others removed for the same purpose from islands near The Dalles Dam (Cole 1958). A similar means of disposal may have been used at Umatilla prehistorically, following the earlier period of inhumation burials (D. Rice 1978:31).

These changes from the preceding period notwithstanding, the overall subsistence practices of the people during Subperiod IIIB do not appear to have diverged from those of their predecessors. The same styles of net sinkers, pestles (fig. 10), and milling stones continue to be represented. Faunal remains continue to reveal fishing but include numerous deer, elk, mountain sheep, sometimes pronghorn, often some bison. Toward the very end of the period horse bones appear in some sites in the McNary region (e.g., site 45BN6 as described by Shiner 1961).



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Fig. 10. Late period polished stone pestles. left, Granitic stone pestle; right, greenstone pestle. Excavated by Herbert W. Krieger, Wahluke Ferry, Wash., before 1926. Length of left, 35 cm.

All in all, the impression is of great continuity with the preceding period, although with some shift in housing styles, and with the adoption of some artifact and burial styles from downriver.

Hinterland: The Southern Periphery

Early but limited work in the upper John Day River drainage produced rare evidence of mortuary practices in the interior Southern Plateau (Cressman 1950). At Butte Creek Cave a burial in the form of an extended inhumation was found in a grass-lined pit. Associated Catlow twine basketry produced a radiocarbon date of A.D. 1443. Nearby, a talus slope above Hoover Creek was found to contain a cremation pit, suggesting ties to the late prehistoric cremation complex along the Columbia River. Among the associated artifacts was a copper pendant, indicating that this feature dates to the early historic period.

Seasonal camps in the Clarno Basin involving apparently a variety of activities have been radiocarbon dated between 500 B.C. and A.D. 1517. The artifacts are said to reflect close ties with the Columbia River cultures to the north (Gannon 1976; Endzweig 1994).

Salvage excavations were conducted at sites along the confluence of the Metolius and Crooked rivers with the