Spring 2001

Cornet Bay Revisited: Placing the Excavations Conducted at 45-IS-31b within a Regional Context

Ross E. (Ross Elliott) Smith
Western Washington University

Cornet Bay Revisited: Placing the Excavations Conducted at 45-IS-31b within a Regional Context

by

Ross E. Smith

A Thesis Submitted in Partial Fulfillment of the Requirements for the Completion of the Undergraduate Honors Program

Western Washington University
Anthropology Department
Honors Department

May 2001

WESTERN
WASHINGTON UNIVERSITY

An equal opportunity university

Honors Program

Bellingham, Washington 98225-9089
(360)650-3034 Fax (360) 650-7305

HONORS THESIS

In presenting this honors paper in partial requirements for a bachelor's degree at Western Washington University, I agree that the Library shall make its copies freely available for inspection. I further agree that extensive copying of this thesis is allowable only for scholarly purposes. It is understood that any publication of this thesis for commercial purposes or for financial gain shall not be allowed without my written permission.

Signature

Date 5/16/07

ABSTRACT

This research re-examines the chronological interpretations of the prehistoric occupation at Cornet Bay, Whidbey Island, Washington. Bryan's excavation in the 1950s produced an assemblage that he felt illustrated a transition from a terrestrial to maritime economy. Important aspects of the site, such as the possible existence of a house structure, and the additional artifacts collected by Nelson, also in the 1950s, have not been adequately described in the literature. This research integrates Bryan and Nelsons' excavations, utilizes diagnostic artifact in assigning chronological interpretations, and evaluates the house structure and artifact assemblage in light of more recent excavations and interpretations.

ACKNOWLEDGEMENTS

In the process of this research project I received assistance from many people. My advisor Dr. Sarah Campbell deserves the most credit for helping me to get this project moving, for guiding its development and at times curbing its growth. Her interest in this project and my results was unwavering even when I would approach her out of the blue with wild ideas that would have taken years of field work to sort out. Her support in the course of this project was invaluable, especially when it came to obtaining access to the Burke Collections and her criticism of the many drafts of this paper. I would also like to thank Dr. Todd Koetje for his assistance in running the Brainerd-Robinson analysis in Kintigh's archaeological analysis software.

I am indebted to the staff at the Burke Museum who have contributed so much time and energy into organizing the Cornet Bay collections and guiding me in the process of understanding the history of these collections. I would especially like to thank Peter Lape, the Curator of Archaeology at the Burke Museum, for granting my application to conduct research on the Cornet Bay collections. Laura Phillips, Archaeology Collections Manager, and Paula Johnson, the Assistant Archaeology Collections Manager, always went out of their way to make me feel welcome and to help me in the process of examining these collections and interpreting the often-contradictory reports that surfaced in the course of this work. Without the interest and hard work of the dedicated staff of professionals and volunteers at the Burke Museum, this avenue of my research would never have been explored. I hope my results will be of some use to you.

I would like to thank Dr. Alan Bryan for his pioneering work in northern Puget Sound and for sharing your insights into the initial excavations conducted at Cornet Bay. I would also like to acknowledge the work by the Washington Archaeological Society led by Dr. Charles Nelson. Thank you all for providing me with material to write about almost fifty years later.

I would like to thank Dr. Gail Thompson for her interest in my project and her willingness to discuss the methodology and the intentions underlying the classification system utilized in her 1978 analysis.

The assistance of the staff of the Washington State Office of Archaeology and Historic Preservation in the course of my background research was greatly appreciated.

I would like to thank Shelby Anderson for her assistance in the field and for her help during the editing process.

Finally, I never would have met my deadline if it hadn't been for the assistance of Josh Music and Christie Weitzel.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

In March of 1953, Alan L. Bryan from the University of Washington began the first organized survey of the northern Puget Sound area including Snohomish, Skagit and Island Counties. In the course of this pioneering study, Bryan located a total of 153 archaeological sites and conducted test excavations at 8 sites. Based on this research, Bryan developed an interpretive model of changing cultural adaptation in the Puget Sound area. The Cornet Bay site, 45-IS-31b, was one of the sites Bryan tested in the course of his 1953 research. Bryan concluded that the earliest evidence of human occupation present in the sites he excavated came from the lowest levels of the Rosario Bay site (45-SK-7) and Cornet Bay (Bryan 2001 Personal Communication). Based on excavations of these sites from the Deception Pass area, Bryan suggested that changes in the distribution of artifact types and faunal remains were evidence of a shift in resource utilization from a terrestrial adaptation to a marine subsistence economy. In 1957, the Washington Archaeological Society, under the direction of Charles Nelson, expanded the excavation begun by Bryan at 45-IS-31b four years earlier.

Almost 50 years after the initial excavations, 45-IS-31b is still one of the most extensively excavated archaeological sites on Whidbey Island. However, little follow-up work has been conducted in the years since the last excavation. Although Bryan's interpretations were innovative at the time, subsequent excavations in along the Northwest coast have increased our current understanding of prehistory in nearby areas. The interpretations of the Deception Pass sites excavated by Bryan have not been updated and integrated with contemporary interpretive frameworks.

In terms of current archaeological standards, the excavations conducted at the prehistoric archaeological site in Cornet Bay in the 1950s seem archaic in their own right. During the initial excavation conducted in 1954, Bryan did not record artifact point provenience. In 1957, when Nelson expanded Bryan's excavation units, artifact point provenience was collected. However, neither excavation collected representative samples of faunal material or conducted any sort of quantitative analysis of faunal remains. Radiocarbon assays were not performed on organic materials, and screens were not consistently employed during either excavation. In the years that have elapsed since these excavations were conducted, the archaeological community has refined artifact typologies and expanded descriptions of cultural phases and artifact typologies, and developed new interpretive frameworks focused on resource procurement and seasonal variations in subsistence strategies. This change in focus led to the development of data collection and analytical techniques which are capable of generating detailed data regarding faunal representation and that are capable the establishment of better stratigraphic control.

In this research I reanalyze and integrate the results of Bryan and Nelson's work; I determine how this work relates to updated chronologies; and I evaluated the available evidence of a possible occupation structure in light of more recent excavations. It is my

hope that this research will provide the basis for a reexamination of this area employing modern methods of data collection so that the work done in the past can be successfully integrated with current understandings of Northwest Coast prehistory.

GOALS OF RESEARCH

The initial goals of this research were to reanalyze the published information regarding the Cornet Bay site (45-IS-31b) and to examine and reanalyze the Cornet Bay artifact assemblage housed at the Burke Museum in Seattle. The primary aim of this research was to reassign the cultural components discussed by Bryan and Nelson to temporal periods based on regional typologies and phase chronologies developed since the 1950s. In his initial interpretations, Bryan (1955:119) suggested the presence of a house structure. Research was aimed at evaluating the evidence of a house structure in light of the greater comparative database of excavated Northwest coast house features that have been recorded since the 1950s. In order to accomplish these goals, much of my time was spent on the task of integrating the records of the two excavations, defining analytical units to begin to compare them and trying to develop an accurate catalog of the artifacts recovered from this site. In the process of conducting this research I have evaluated current deficiencies in our understanding of the prehistoric use of this area as it is seen through the archaeological deposits at in Cornet Bay. Recommendations for further field data collection, which are beyond the scope of this project, are made in the conclusions.

HISTORY OF PREVIOUS RESEARCH AT CORNET BAY

Cornet Bay is a shallow bay on the northeast side of Whidbey Island at the east end of Deception Pass (Figure 1). This area of the Northern Puget Sound is just south of the junction of the Straits of Georgia and the Straits of Juan de Fuca, and thus near the border of the Gulf of Georgia and Puget Sound culture areas. In the years between 1953 and the present, two large excavations and five site visitations have been performed at the Cornet Bay site. In addition, this site has also been the subject of one non-archaeological investigation of late Pleistocene and Holocene fauna.

Initial Survey 1953

A.L. Bryan and R.B. Lurman recorded archaeological site 45-IS-31 in April of 1953. (See Appendix A for copies of original site forms) In the original site survey form, they described the archaeological site as a shell midden composed of two parts occupying both sides of Cornet Bay. The southern shell midden exposure, designated 45-IS-31a, was located on private land owned by E.G. Rodger, and the northern shell midden, designated 45-IS-31b, was located within Deception Pass State Park. The two site areas were described as separated by a small stream. Site 45-IS-31a was described as occupying an area at the base of a slope adjacent to the beach. Site 45-IS-31b was described as occupying an area beginning at beach level that slowly rose to the north to approximately 15' above the beach where it met the base of a bedrock outcrop known as Goose Rock.

In their assessment of the condition of the sites at the time of survey, they reported that the southern midden had been destroyed and that the northern midden had been disturbed by wave action.

Although later surveys expanded in some way on descriptions of the 45-IS-31b site area, after the initial 1953 site survey and the description of the site area in Bryan's M.A. thesis (Bryan 1955:60) there was no update to the description of 45-IS-31a. There have since been several archaeological surveys in Deception Pass State Park, Solland (1963), Hedlund (1968), Benson (1979) and Wessen (1988b) all revisited 45-IS-31b. However, none of these reports mention 45-IS-31a. New site forms prepared for 45-IS-31 by Solland and Stenholm (1963), and Wessen (1988a) focus only on what Bryan recorded as 45-IS-31b.

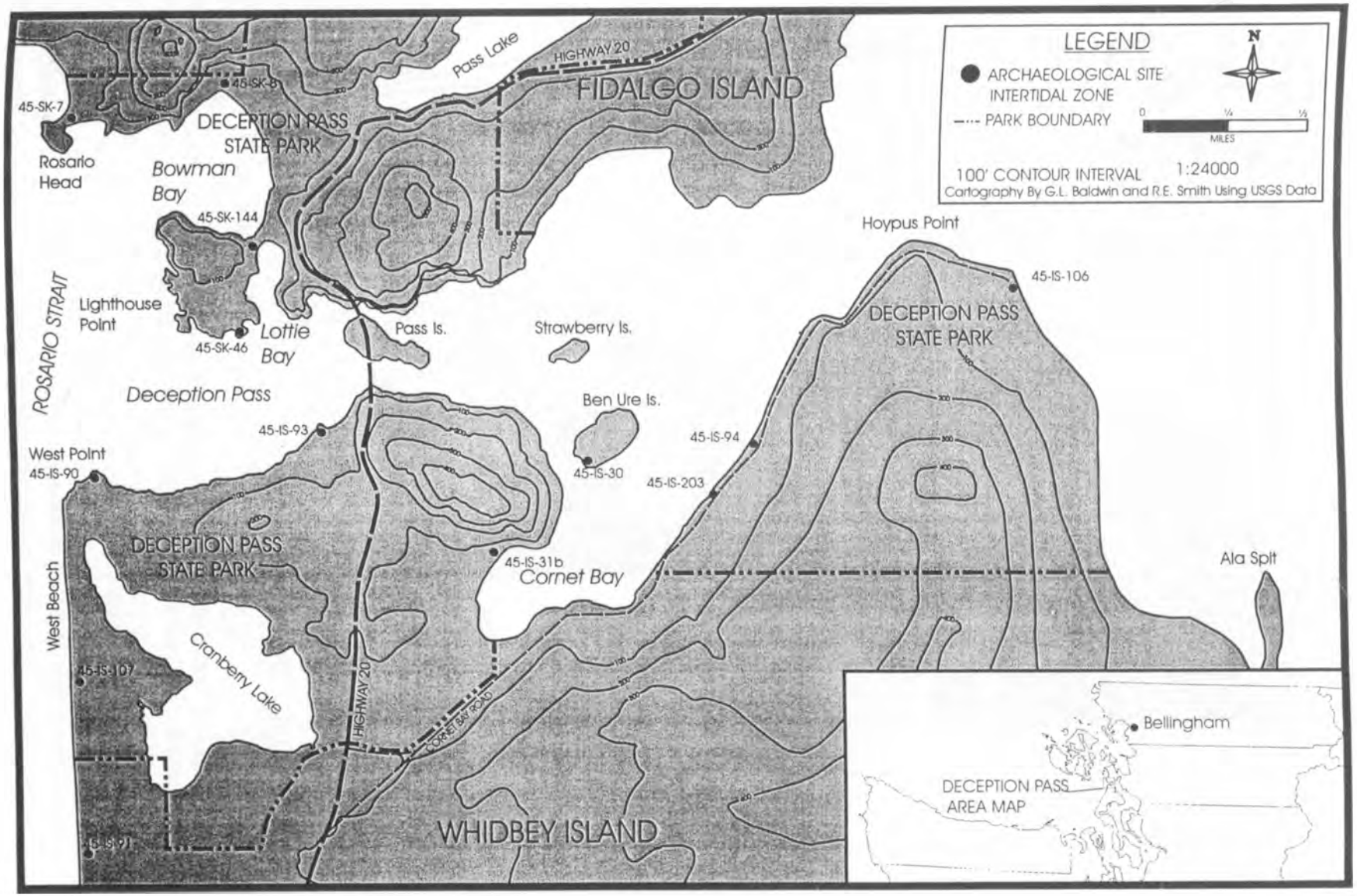


Figure 1: Map of the Deception Pass area and archaeological sites.

Excavations 1954-1958

In June of 1954, Bryan established a grid using 5' x 5' units and began excavating two trenches near the northern periphery of site 45-IS-31b. Over the course of the summer, a total of eleven units were excavated perpendicular and parallel to the shoreline (Figure 2). A total of 135 artifacts were recovered from the 1954 excavations. In addition to the artifact assemblage, 15 features were uncovered. These included a slab-lined hearth (visible in Figures 3 and 4), a possible cache pit, and several features interpreted as cooking pits. Although Bryan collected charcoal samples from hearth features found in the basal layers, none of these samples were submitted for radiometric dating (Bryan 2001, Personal Communication). Three profiles of the excavations were constructed (Figure 5).

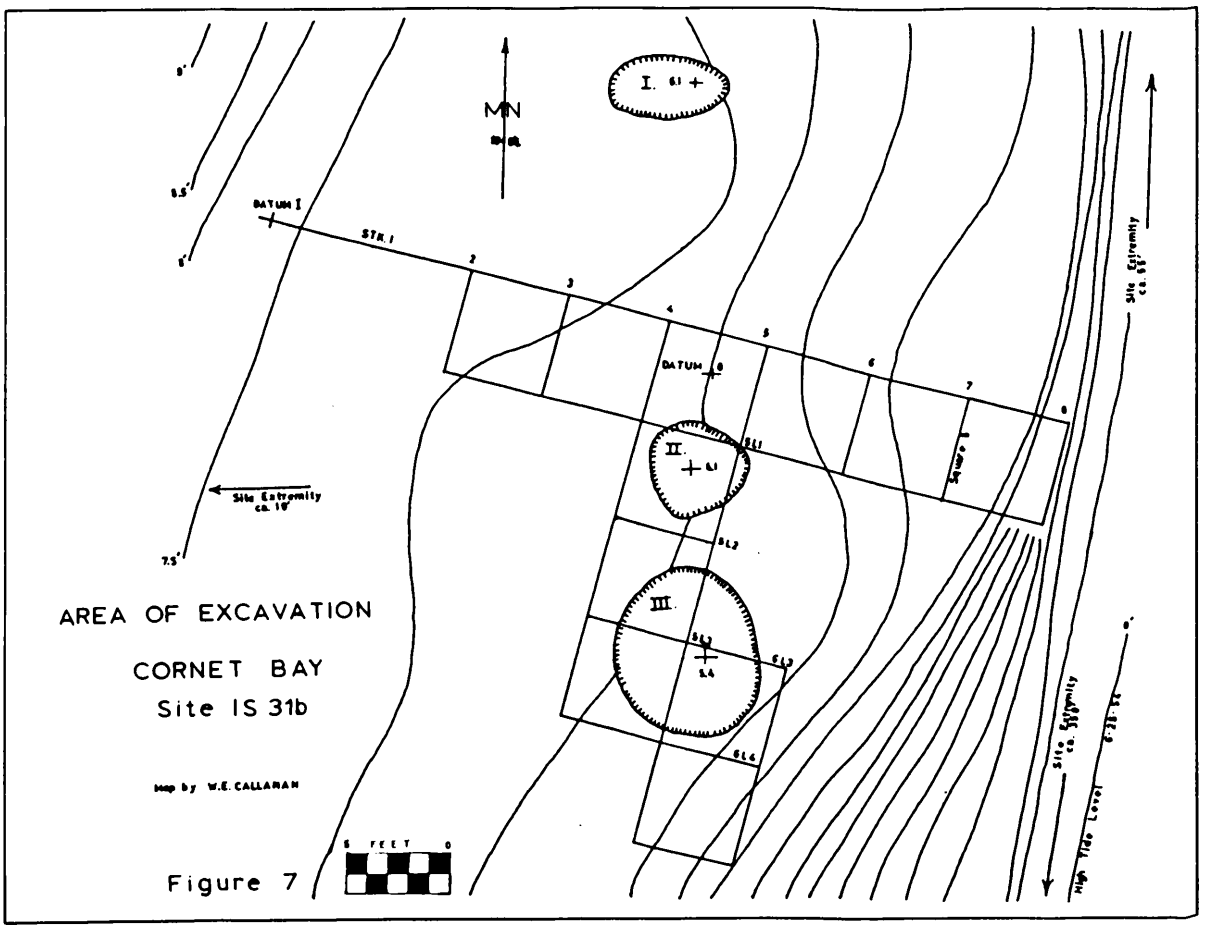


Figure 2: Map of Bryan's 1954 excavation units (Reproduced from Bryan 1963). According to Bryan (1963:29), the surface depressions are located 3 feet too far to the northwest.

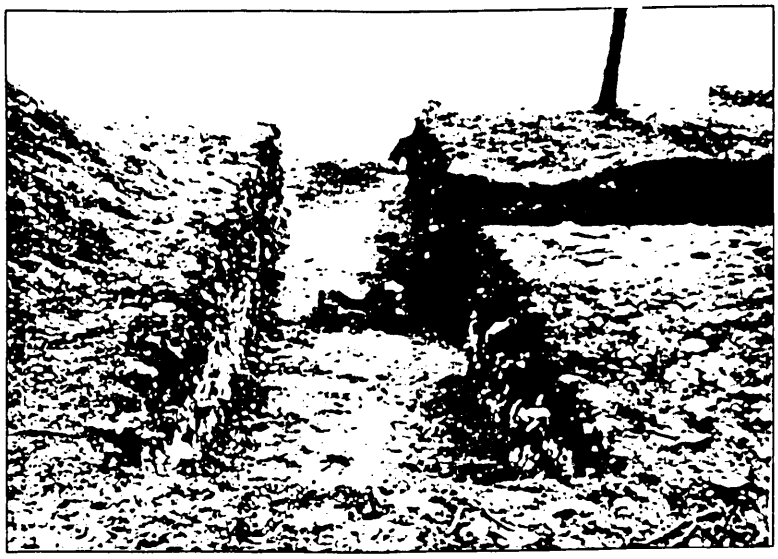


Figure 3: Bryan's east-west trench during the 1954 excavation. (Reproduced from Bryan 1955 Plate IV) Note the rock slab hearth feature visible at the bottom of the trench in analytic unit 1.

Figure 4: Close up of the rock slab hearth feature viewed from the south. (Reproduced from Bryan 1955 Plate IV).

During his excavation, Bryan defined two cultural strata that he used to characterize the stratigraphy and artifact distribution. These strata were labeled 1 through 3 from the lowest level to the highest level. Stratum 1 was interpreted as representing a primarily terrestrial adaptation based on the presence of stone tools and the absence of shell. Stratum 2 and 3 contained greater quantities of shell, marine fauna and modified bone artifacts that were interpreted as consistent with the development of an increasingly marine adaptation. The presence of a linear shelf extending into the Pleistocene sediments underlying cultural materials in Stratum 1, combined with the presence of post molds and the artifact distribution found in this stratum, led Bryan to suggest that this was the wall of an excavated habitation structure. The results of Bryan's survey, excavation and analysis of the sites in the Deception Pass area were published in a final report to the Washington State Parks Commission (Bryan 1954), in his masters thesis

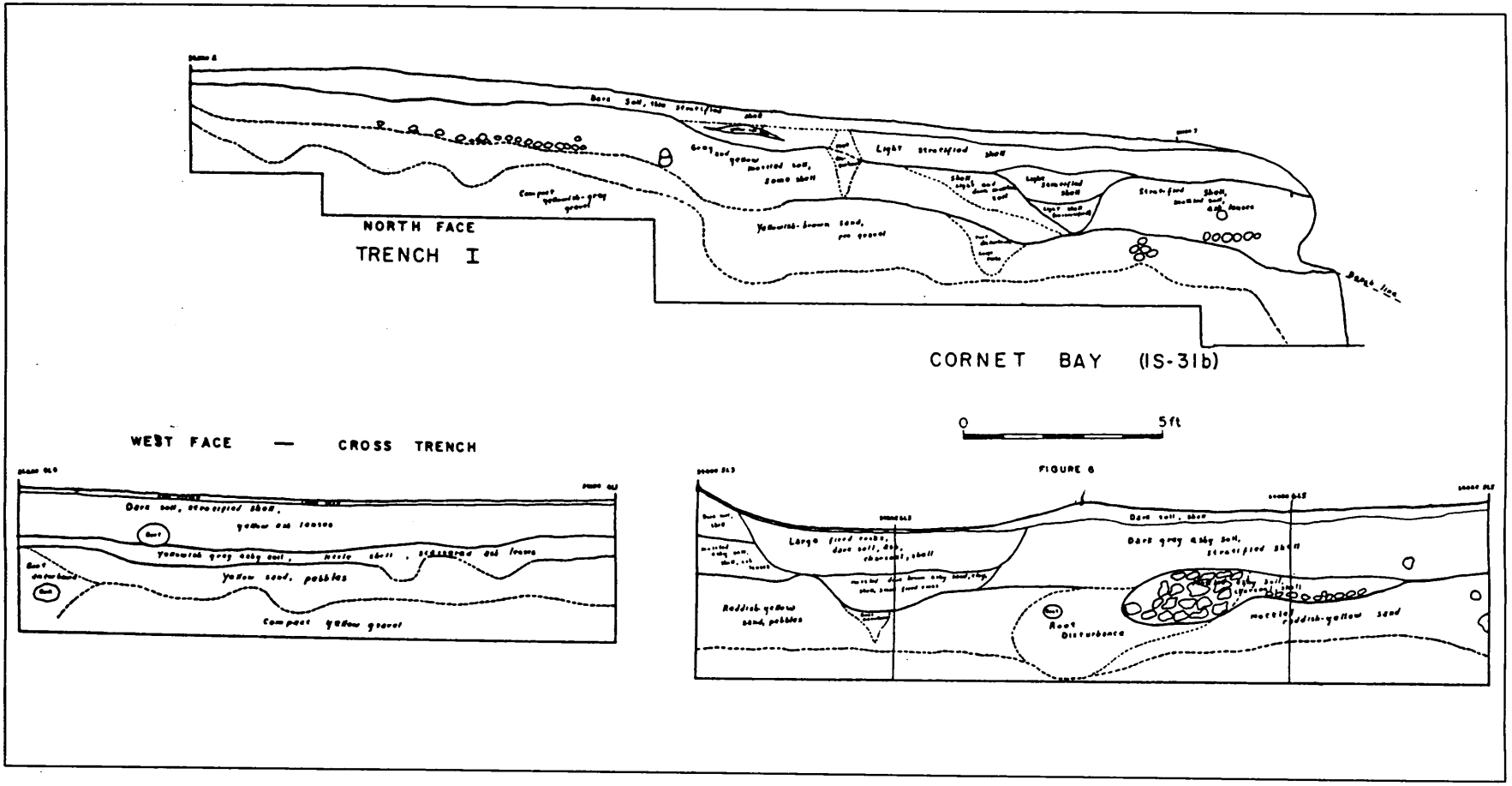


Figure 5. Bryan's excavation units (reproduced from Bryan 1963: Figure 6).

(Bryan 1955), as an article in the *Davidson Journal of Anthropology* (Bryan 1957), and as a report published by the Idaho State University Museum (Bryan 1963).

In 1957 and 1958, Charles Nelson with the Washington Archaeological Society, expanded Bryan's excavation by adding fourteen 5'x5' units adjacent to Bryan's earlier excavation units (Figure 6), which had been left open as an interpretive display (Bryan 1954:1). A total of 42 artifacts were recovered from a volume of approximately 680 cubic feet of cultural material. A total of 4 hearth features and one human burial were excavated. Three profiles of excavated units were constructed (Figure 7). The results of Nelson's excavations were published by the Washington Archaeological Society in their newsletter (Nelson 1962).

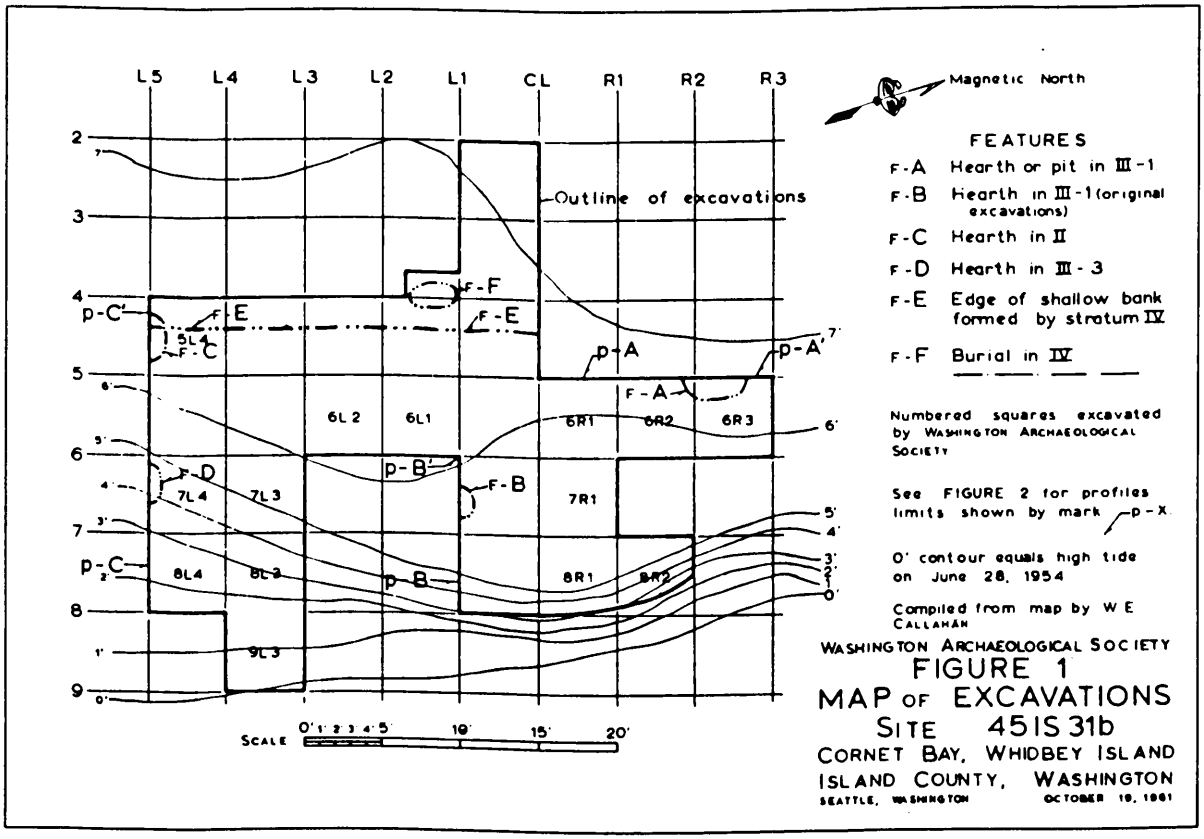


Figure 6: Nelson's 1957-58 excavation map.

Nelson interpreted the stratigraphy at 45-IS-31b as illustrating two cultural components. Like Bryan, Nelson believed that this cultural sequence represented a transition from a subsistence economy based primarily on terrestrial resources to one that primarily utilized marine resources. However, the two cultural components defined by Nelson do not correspond to Bryan's cultural components.

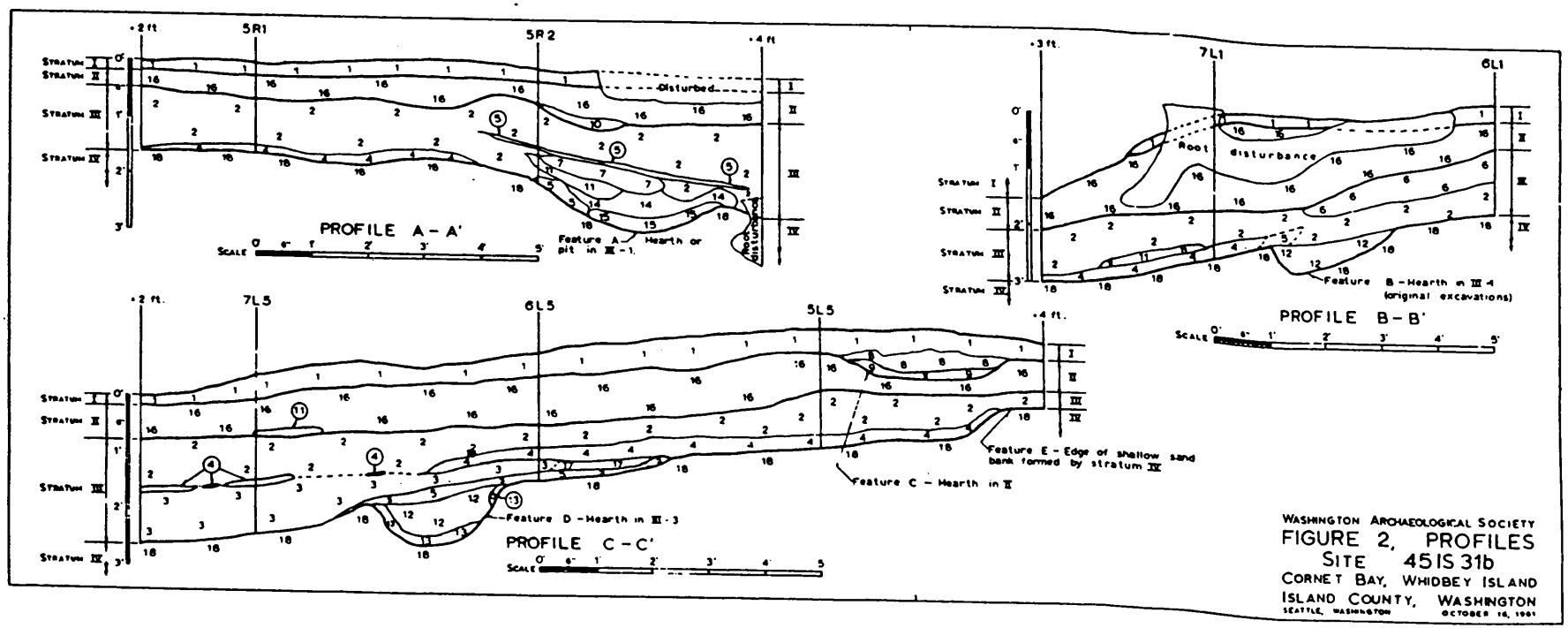


Figure 7. Nelson's excavation profiles (Reproduced from Nelson 1962: Figure 2).

Although Nelson's excavations were completed and the results were published by the time of Bryan's 1963 publication, Bryan did not fully integrate Nelson's (1962) results. When I have encountered references to the Cornet Bay site, Bryan's 1963 publication is the most commonly cited reference and Nelson (1962) is rarely referred to. Therefore, subsequent publications regarding this site have tended to ignore a substantial portion of the diagnostic artifacts recovered from 45-IS-31b and the expanded unit profiling that was conducted during the 1957-58 investigations.

Site Visitation and Faunal Study 1963-1991

In 1963, Sonja Solland and Nancy Stenholm revisited Cornet Bay as part of their survey of archaeological sites in western Washington State Parks. They refer to the site number as 45-IS-31 (Solland and Stenholm 1963a). They were the first in a series of researchers revisiting this site who did not differentiate 45-IS-31a from 45-IS-31b as Bryan and Nelson had done in the previous years. A sample of faunal materials was collected from the area of the previous excavation. In their assessment, Solland and Stenholm concluded that due to the prior excavations that had been conducted at the site, no further work was required in order to document this site. (Solland 1963b:19) In addition to their report, Solland and Stenholm also submitted an updated archaeological site form to the Washington State Office of Archaeology and Historic Preservation. (See Appendix A)

In 1968, Gerald Hedlund, from Green River Community College, visited the archaeological sites within Deception Pass State Park. In his report, Hedlund describes each site location and evaluates the potential of each site for excavation. During Bryan's excavation, Hedlund visited the site (Hedlund 1968:2). However, Hedlund was apparently unaware that Nelson and the Washington Archaeological Society had excavated at Cornet Bay as well. On the basis of his 1954 visit, Hedlund concluded that the previous excavations "were not extensive enough for more than test purposes" (1968:2). However, based on the amount of vegetation covering the site, the size of the trees, the proximity of the park recreational camp and potentially harmful attention an excavation could bring to the site, Hedlund concluded that excavation at 45-IS-31(b) would be problematic.

In 1979, as part of her assessment of the effect of capital projects within Washington State Parks, Charlotte L. Benson visited 45-IS-31(b) and evaluated the potential effect on the site by the installation of underground utilities. Benson concluded that the Group Camp (currently the Cornet Bay Environmental Learning Center) was situated on an ancient inlet into Cornet Bay and that the shoreline located along the periphery of the camp possessed the highest potential for containing previously unrecorded cultural materials. However, in the course of her survey within the State Park, no additional cultural resource sites were recorded. In her assessment of 45-IS-31(b), Benson concluded that the path crossing the excavation area was contributing to erosion of the site and increasing the potential for vandalism. She recommended that park personnel discourage use of the trail onto the beach.

In 1988, Gary Wessen of Wessen & Associates, revisited 45-IS-31(b) and submitted an update to the archaeological site form housed at the Washington State Office of Archaeology and Historic Preservation. (See Appendix A) In a photograph taken of the excavation area from the shore, a log is visible that had been placed across the path leading onto the beach possibly in an effort to cut down on use of this trail as per Benson's suggestion. Wessen's updated archaeological site form also includes a presence/absence list of the faunal materials, and an estimation of their relative frequency (See attachment to Wessen's 1988 archaeological site form provided in Appendix A). In the course of Wessen's work no materials were collected.

In 1989, Ted Weasma, a geologist with the Bureau of Land Management, with the permission of state parks personnel, collected a small sample of faunal remains from the 45-IS-31b shell midden. At the time, Weasma did not seem to be aware of the fact that the "shell deposit" (Weasma 1991:1) was of cultural origin. Preliminary analysis of the faunal remains led Weasma to conclude that the fauna represented within the sample were not consistent with the species presently found in Cornet Bay. In January 1990, the Washington State Department of Parks and Recreation issued a permit for the collection of additional faunal remains from the midden at 45-IS-31b. Fieldwork was conducted between May 14 and May 17, 1990.

Weasma collected less than one cubic meter of material from a total of 6 test units spaced across the exposed midden face, and from one test unit placed behind the exposure (Figure 8). In addition, one unit sample (Unit 7) was taken from an exposure of Everson Glaciomarine Drift underlying the shell midden that contained the shells of Pleistocene mollusks in growth position (Weasma 1991:6). Excavation was conducted using ten-centimeter levels. Samples obtained from the midden were not weighed prior to their analysis. Samples were removed to Boise, Idaho where they were dried, screened, and cleaned of adhering soil. Species level identifications were made when the remains and comparative materials permitted this level of identification. (See Appendix B for a list of the species present in each of Weasma's test units)

From this analysis Weasma concluded, "the site conditions are not supporting the development of a shell beach today," (1991:9) and that differences existed between the faunal species represented in the shell deposit and the contemporary species found in Cornet Bay. Specifically, Weasma noted that echinoderms, *Tresus capax, Nucella lamellosa, Searlesia dira*, and *Semibalanus cariosus* were not present in Cornet Bay, and that *Mya arenaria* and *Margarites sp.* were present in Cornet Bay, but not in the shell deposit (Weasma 1991:9). A sample of charcoal collected from test unit 2 recovered from a depth of greater than 20cm was submitted for radiocarbon analysis. A radiocarbon date, the first ever generated from materials recovered from this site, yielded a date of 540 +/- 155 years. However, Weasma noted "that the charcoal is related to the cultural part of the deposit and may not be representative of the whole deposit." (1991:11)

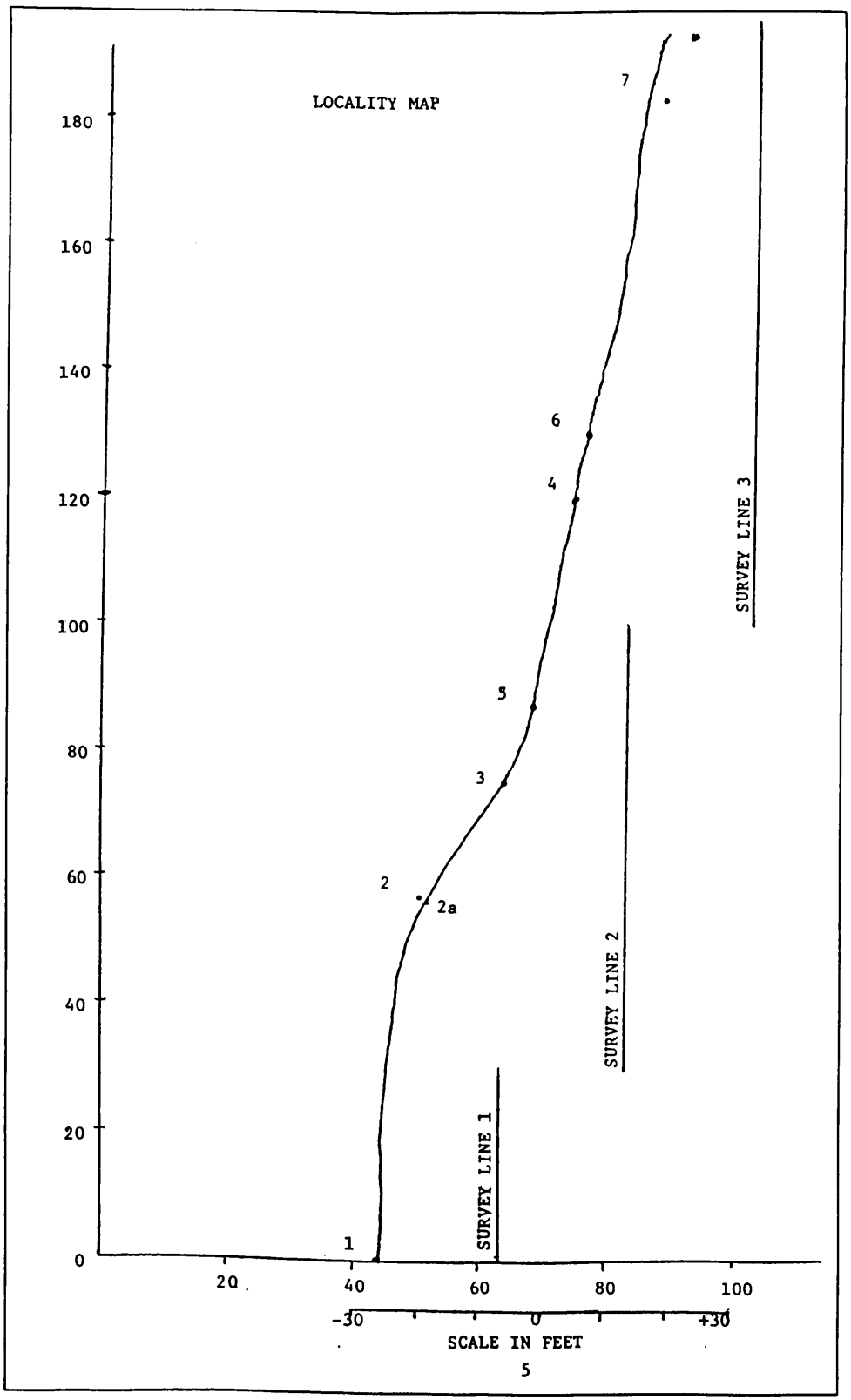


Figure 8: Weasma's 1991 locality map and collection units (Reproduced from Weasma 1991).

DEVELOPMENT OF REGIONAL NORTHWEST CHRONOLOGIES SINCE 1950

In 1950, Charles Borden of the University of British Columbia began excavations at archaeological sites on the Fraser Delta that eventually enabled him to formulate a sequence of prehistoric cultural change for this area (Borden 1970). This became known as the Fraser Delta Sequence. Since the mid-1950's, increasing use of radiometric dating techniques, excavation of sites in the Gulf of Georgia, San Juan Island, and Puget Sound areas have refined the Fraser Delta Sequence and generated new region specific chronologies (Ames and Maschner 1999, Matson and Coupland 1995).

When Borden's chronology was initially developed, the predominant view of changes in artifact distribution involved population migration and replacement. As more data has been gathered in the course of subsequent excavation and analysis, the perspective has shifted from replacement to one of cultural continuity between the formalized phases (Mitchell 1971). From this perspective, changes in artifact distribution represent gradual adaptation to changing climatic conditions, sea level stabilization, and changes in resource availability where generalized subsistence strategies shift towards increasing specialization.

Despite the prevailing interpretation of cultural continuity, formal variations in the artifact types and technologies have been shown to consistently appear over space and time. The local variations in artifact assemblages obtained from excavations in the San Juan Islands form the core of the interpretive phases currently used to discuss prehistoric change in the southern Gulf of Georgia cultural area. The last 5000 years of prehistory in the southern Gulf of Georgia culture area are encompassed by the Locarno Beach, Marpole and San Juan phases.

Locarno Beach Phase

The Locarno Beach phase extends from approximately 3200 to 2400 years before present (BP). During the Locarno Beach phase a generalized marine and terrestrial subsistence strategy appears to have been practiced. Artifact types present during this phase include toggling harpoon points that were constructed in one-piece or composite forms, thick ground-slate knives, small adzes, Gulf Island complex artifacts (Duff 1956), and bilaterally barbed antler points (Mitchell 1971a). The presence of woodworking tools including adzes and large antler wedges in Locarno Beach assemblages suggests that wood working was established and that plank houses similar to those described in ethnographic accounts may have been constructed (Burley 1980). There are very few reports of occupation structures or associated features from Locarno Beach phase sites. At Montague Harbour, one semicircular row of post mold may outline a structure (Mitchell 1968). These post molds range in size from 3-8" (7.5-20cm) (Mitchell 1968:239-240). No larger post molds akin to those described in ethnographic plank houses have been reported from Locarno Beach phase sites (Burley 1980:30). However,

a cautionary note is necessary to point out that few projects have ever systematically attempted to excavate a living surface in the context of a Locarno Beach phase site (Burley 1980).

Marpole Phase

The Marpole phase extends from approximately 2400 to 1600 BP. Site placement and associated faunal remains indicated that the subsistence strategy practiced during this phase was becoming more specialized with increasing emphasis placed on procurement of salmon. Thin ground-slate knives become common during this phase and perforated stone sinkers and anchors also increase in frequency. One of the main differences between the Marpole and both earlier and later phases is that the forms of harpoon points used during this phase do not seem to include toggling forms. Mitchell (1971:71-72) suggests that the apparent shifts seen in harpoon types between the Locarno Beach and Marpole phases may be due to the size of the artifact sample currently available or the result of a shift in the choice of materials that can be seen in other artifact types. Burley (1980:19) notes that a diagnostic characteristic of Marpole artifact assemblages is the variety and abundance of flaked stone points ranging from small triangular shapes to large lanceolate bifaces.

Evidence of Marpole phase dwellings is found at the Marpole, Beach Grove and False Narrows sites. Based on the size of the post molds house outlines and the presence of wood working tools, Mitchell (1971:53) and Burley (1980:29) concluded that their was sufficient evidence supporting the construction of large, long plank houses of the type commonly reported in the ethnographic literature. House outlines visible at the surface of the False Narrows and Beach sites suggest that the size of these houses exceeded 30 x 40' (Mitchell 1971:53).

San Juan Phase

The San Juan phase extends from 1600 BP to the contact period and many of the archaeological materials recovered from sites dated to this phase are similar to ethnographic forms. It is likely that subsistence patterns practiced during this phase closely resembled those that are recorded in the ethnohistoric record. Small bone points and bipoints, likely used in fishing equipment, as well as thin ground-slate knives are present is large numbers. In addition, while the use of flaked stone projectile points appears to have decreased during the San Juan phase, the use of thin ground-slate points increased dramatically.

By the beginning of the San Juan phase, there is ample evidence of heavy timber frame split plank houses fitting the pattern of ethnographic house descriptions. These houses where built using large support posts that were covered with split planks to form the roof and walls. Large support posts commonly exceeded 1-2' in diameter (Mitchell 1968:323).

Previous Efforts to Place Cornet Bay within Regional Chronologies

On the basis of his work in northern Puget Sound, Bryan offered the first interpretation of the prehistory in this area. Bryan's chronology included the definition of two phases. The earliest of these was the Deception Pass phase defined primarily from his excavations at Cornet Bay and Rosario Beach. "Leaf- and triangular-shaped chipped basalt points, cobble choppers, and the paucity of bone and ground stone tools, associated with the almost complete absence of shellfish remains, were considered to be diagnostic of the Deception Pass phase elements" (Bryan 1963:88). Bryan's definition of this phase was first described in a 1957 article and in his 1963 publication he noted that his original phase definition might include several subphases. Although Bryan had laid the interpretive framework, he concluded by saying that further work needed to be performed in this area in order to evaluate his interpretations.

In 1969, Robert Kidd noted the prevalence of flaked stone in the lowest levels found at Cornet Bay and Rosario Beach but was unable to establish any relationship between these levels and the named phases described by King (1950) or Carlson (1960) in their extensions of the Fraser sequence into northwestern Washington (Kidd 1969:55-56).

In his discussion of the temporal and spatial distribution of bird bone needles, and perforated stones, Burley refers to the cultural material in Bryan's Strata III at Cornet Bay as "late period deposits" (1980:24).

No systematic discussion of all of the literature pertaining to the Cornet Bay site has been undertaken since the development of expanded chronologies. After Nelson's excavation, no additional fieldwork has ever been undertaken with the purpose of testing his Bryan's interpretations.

METHODS

Integration of Bryan and Nelson's Excavation Maps

Computer imaging software (Corel Draw version 7.0) was used to generate archaeological site area maps from materials supplied by Microsoft (2000) and archaeological site forms on file at the Washington State Office of Archaeology and Historic Preservation in Olympia, Washington. Excavation maps illustrating feature distributions and profiles were also synthesized using scanned images from the published sources and written descriptions.

Integration of Stratigraphic Descriptions and Analytic Units

Each excavator used their own system of labeling the stratigraphic sequence and defining cultural components. In order to establish a common context and begin to discuss the results of both Bryan and Nelson's excavations, I created a set of analytic units (AUs) based on the information presented in their published reports.

I began the process of integrating Bryan and Nelson's stratigraphic and cultural components by examining an integrated figure of the excavation units illustrating the unit walls that had been profiled by Bryan and Nelson. One 5' section of the south wall of unit 6L4 had been profiled at the conclusion of both excavations. I then compiled a list of stratigraphic descriptions used in both reports. Finally I compared the overlapping profiles and noted similarities in the strata descriptions, and the sequence and trend of the stratigraphic units.

Analytic Units were defined on the basis of similarities in stratigraphic descriptions and in the grouping of strata and cultural components.

Analysis of Collections at the Burke Museum

In the first of many visits to the Burke Museum, Laura Phillips, Dr. Sarah Campbell, and Paula Johnson assisted me in compiling a list of all the artifact numbers present in the three 45-IS-31 collections housed at the Burke Museum. During this visit, it became apparent that there were three collections housed at the Burke that were labeled with the 45-IS-31 Smithsonian trinomial number. In the course of subsequent visits, I photographed and developed written descriptions of all of the 45-IS-31 artifacts present at the Burke Museum.

After learning that three 45-IS-31 collections were housed at the Burke, I tried to correlate the artifacts contained in these collections to the existing documentation. Beyond the Smithsonian trinomial designation and artifact numbers written on the Cornet Bay artifacts, very little accompanying documentation existed in the records housed at the Burke Museum. At the time of this writing, no field catalogs from either Bryan or

Nelsons' excavations have been located. Therefore, I relied heavily on the published catalogs and artifact figures in order to sort through the collections and establish the source of the different artifact number series.

I developed an artifact catalog that combined the catalogs published by Bryan (1963) and Nelson (1962). (See Appendix C) I then compiled a second catalog of numbered artifacts present in the three Cornet Bay collections housed at the Burke Museum (See Appendix D). This catalog includes published references to artifacts, both present and absent, in the collection, and descriptions of artifacts currently not present in the collections that were obtained from records created by Dr. Robert E. Greengo during inventories of the Burke collections.

Comparisons were made between the published catalog and the Burke catalog to determine if artifacts were present in the Burke collection that were not recovered in the 1950s excavations.

Chronological Analysis

A chronological analysis of the 45-IS-31b collection published by Bryan and Nelson and the Cornet Bay collections housed at Burke Museum were undertaken using a variety of approaches each focusing on different attributes of the artifact assemblage. This was done in order to discern any affiliation with established artifact typologies, or similarity to dated collections.

The functional analysis devised by Gail Thompson (1978) was selected for use in this research because it was effective in analyzing a large data set and constructing clusters that were shown to differentiate settlement patterns and prehistoric activities. The analytical technique used in this analysis was also flexible enough to allow the addition of subsequent site data for comparison to site assemblages originally analyzed by Thompson.

In the course of her analysis, Thompson (1978) created a typology composed of 20 functional types defined by the attributes of shape, the kind of wear present, the location of wear, and the hardness of the material used in the manufacture of the artifact. These 20 functional types were then used to classify individual artifacts from the dated or affiliated archaeological assemblages. This typology was designed in order to analyze published artifact assemblages that could no be accessed directly in the course of her study. Since artifact provenience was not available for large parts of the Burke collection, Thompson's typology was applied to the Burke collection in its entirety. Thompson's typology was applied to the published collection as a whole as well as to Bryan and Nelsons' cultural components (represented within my analytic units) in order to compare them to the dated site components originally analyzed by Thompson.

In my initial application of Thompson's typology to the published artifact assemblage and Burke museum collection problems arose as a result of unclear type definitions. The definitions of types 5 and 6, "Bone and antler unipoints and foreshafts" and "Bone

fishook barbs and gorge hooks" respectively, did not appear to be mutually exclusive or exhaustive categories. Types 5 and 6 share the same kind of wear, location of wear, and hardness of material dimensions (specifically no wear is detectable and the material is softer than 6 on Moh's hardness scale). The problem with these types arises from the definition of the shape attributes. Type 5 is defined as possessing shape mode IV, and type 6 is defined as possessing shape mode V (Figure 9).

Figure 9: The object shape modes IV and V illustrated by Thompson for functional types 5 and 6 (Reproduced from Thompson 1978:73 Figure 25).

Shape IV is defined as "a long, narrow cone" and shape V is defined as "Bipointed" (Thompson 1978:72). The correlation between the shape mode definitions and the illustrations in Figure 9 are ambiguous and difficult to apply to actual artifacts that were often fragmentary.

Campbell (1981) was critical of Thompson's (1978) functional analysis because the attribute of shape was treated as a single dimension while Thompson's definitions of the shape modes combine two and three dimensional geometric figures that were not mutually exclusive (Campbell 1981:267). Campbell also suggested that this method should not be used where the assemblages could be physically examined. Despite these criticisms, this method provided a useful framework for intra-site comparisons focusing on the evolution of settlement patterns. The Thompson analysis employed in the course of this research was conducted in two parts. The first involved an analysis of the integrated artifact catalogue published by Bryan (1954, 1955, and 1963) and Nelson (1962). The second part involved examination of the artifacts present at the Burke museum and the application of Thompson's classification to the assemblage. The results of the two analyses were then compared to determine if examination of the actual artifacts influenced the results.

While Thompson was able to clarify the intent behind the definition of these two functional types (Thompson 2001 Personal Communication), I was left to develop my own methodology for classifying the published artifact descriptions and the often fragmentary artifacts from the Burke collections.

Thompson (2001 Personal Communication) defined type 5 in order to classify parts used in the creation of composite toggling harpoon points. Type 6 was defined with the intent of classifying traditional fishing equipment. However, I have been unable to locate a systematic discussion of the specific attributes of the different points employed in these equipment types. Based on the treatment of bone points discussed by Campbell (1981), I employed a qualitative measure of asymmetry to primarily differentiate these two types of points. For the purpose of this analysis, asymmetrical bone points and bipoints were classified as type 5 if they possessed manufacturing marks along their entire length and at

the proximal end. Type 6 was used to describe bipoints possessing greater symmetry and complete unipoints that possessed evidence of having not been finished along their entire length or at the proximal end. I justified these criteria by arguing that for the purpose of binding a bone unipoint to a composite fishhook, a roughened surface on the proximal end would be beneficial. The roughened surface would decrease the likelihood of slippage due to the increased friction resistance resulting from the play between the binding and surface. In order to construct a composite harpoon point (Figure 10), the proximal end of a bone unipoint or bipoint must be fit securely into the socket formed by the toggling valves. In this case, a snug fit could only be ensured if the entire surface of the point was worked. Once the typology had been applied to the Cornet Bay assemblage, the similarity analysis could be completed.

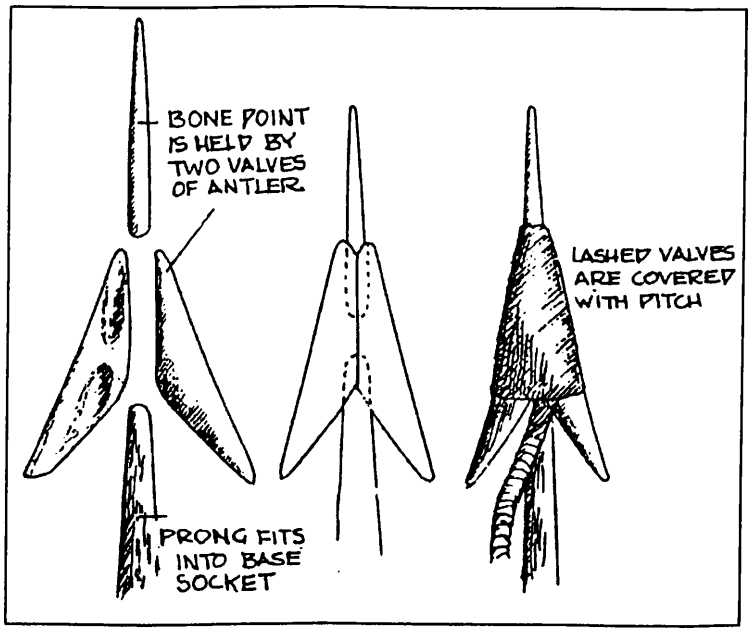


Figure 10: Composite harpoon point assembly (Reproduced from Stewart 1977:71).

In the 1978 analysis, Thompson used the CLUST3 program to group sites on the basis of the similarity between frequencies of artifacts represented in each assemblage. The CLUST3 program utilized Brainerd-Robinson (BR) similarity coefficients to join pairs of sites to create larger groups of increasing dissimilarity. The BR similarity coefficient is a measure of the degree of similarity between assemblages calculated by comparing the relative artifact frequency percentages. The absolute value of the difference in frequency percentages is summed and subtracted from 200 in order to generate the BR coefficient. The BR coefficient produced from this comparison can range from 0 to 200, where a score of 0 represents extreme dissimilarity and a score of 200 represents extreme similarity.

I used the DIST program, distributed by Keith Kintigh in the Tools for Quantitative Archaeology software package, to calculate the pair-wise BR coefficients for each of the sites originally included in Thompson's analysis. In addition, the BR coefficient was

calculated for the IS-31b total classified assemblage from the published catalog and the Burke catalog as well as for each of the analytic units. In Thompson's analysis 7 clusters were defined for assemblages linking above the 105 level of similarity. However, most of the clusters were well formed by at least the 130 level of similarity. In the analysis of the assemblage from 45-IS-31b, the 130 level of similarity was chosen as a boundary for comparison with Thompson's clusters and settlement types. Pair-wise comparisons yielding BR coefficients of greater than 130 were examined in order to determine the associated phase of the known assemblage.

In addition to the assemblage analysis technique described above, diagnostic individual artifacts and artifact types were analyzed using an analysis designed by McMurdo (1972) to classify and assign chronological affiliation to harpoon points, and by visual comparison of stone points obtained from 45-IS-31b to published stone points from dated site assemblages.

McMurdo's (1972) typology examines both the general and specific attributes of harpoon points. The general attributes address the overall construction of the points: whether they were fixed, detachable, the material used in its manufacture, the length, profile, and the number and application of barbs. Specific attributes of barb height above the profile of the point, the density of barb placement and the method of line attachment (where applicable) are also addressed in her typology. Application of this typology was complicated by the fact that only one complete harpoon point was recovered from 45-IS-31b. However, it was possible to apply McMurdo's definitions to some of the fragments with limited results.

Fieldwork

Field survey and recordation was conducted on April 22 and May 4, 2001, by the author assisted by Shelby Anderson, from Western Washington University. In the course of these visits, we photographed the site area and we examined and photographed the context of Weasma's collection units along the midden visible in shoreline exposures (Figure 8). To create a sketch map depicting the boundaries of the 45-IS-31b midden, measurements were taken of the visible exposures of midden along the shoreline, a pedestrian survey was conducted and surface exposures of midden were noted.

RESULTS

Integrating the Published Stratigraphy and Creation of the Analytic Units

The excavation methods used by Bryan and Nelson were very different. Each excavator used their own system of labeling the stratigraphic sequence and defining cultural components. In addition, the methods used to describe the stratigraphic units provided in the profiles were not consistent. As a result the data they produced were not easily combined to facilitate analysis. In the course of this research I was able to successfully integrate the published results of Bryan and Nelsons' excavations through the creation of analytic units that enabled me to avoid the confusion that arose when I tried deal with their independent numbering systems, stratum designations and cultural components.

In defining his excavation grid (Figure 11), Bryan established the protocol of labeling units from the northeast corner stake. Nelson also employed this system during his later excavation. Bryan's units were excavated in arbitrary six-inch levels, and trowels were used to expose the horizontal extent of well-defined strata (Bryan 1963:28). Screens were initially used at 45-IS31b, however this process was dropped because it took too much time (Bryan 1963:28). Instead, Bryan employed trowels and dustpans to separate materials near their original position. At the time, Bryan believed this method to be nearly as effective as screening. When larger crews were employed at the site or when it was felt that the material lacked cultural remains, shovels were used to excavate. Artifact provenience was not recorded and screening was only performed in the vicinity of broken artifacts to recover matching fragments. Depth measurements were taken for soil and charcoal samples, features and stratigraphic units. However, Bryan does not mention what was used as the vertical datum for recording the depth of objects and features encountered in the course of excavation.

In the course of the 1954 excavation, Bryan defined three strata in addition to the culturally sterile subsoil (See Appendix E). Stratum I was found directly on top of the culturally sterile subsoil. During the excavation of stratum I the occurrence of shell was rare. However, Bryan noted that the shells of *Macoma nasuta* were present, but that they often possessed barnacle scars, indicating that they were not live at capture. In addition, the plates of *Balanus cariosus*, chiton and isolated clam valves were recovered from the stratum 1 material (Bryan 1963: Appendix B:11). Stratum II was described as a stratified gray and yellow soil interspersed with ash and charcoal lenses. Layers of shell were noted up to 1 foot thick near the north wall of the excavation. However, towards the south and west, these shell layers decreased in thickness. Stratum III consisted of stratified shell and dark soil interspersed with charcoal and ash lenses (Bryan 1963:32). In his interpretations, Bryan defined stratum I as cultural component II, and grouped strata II and III into cultural component I.

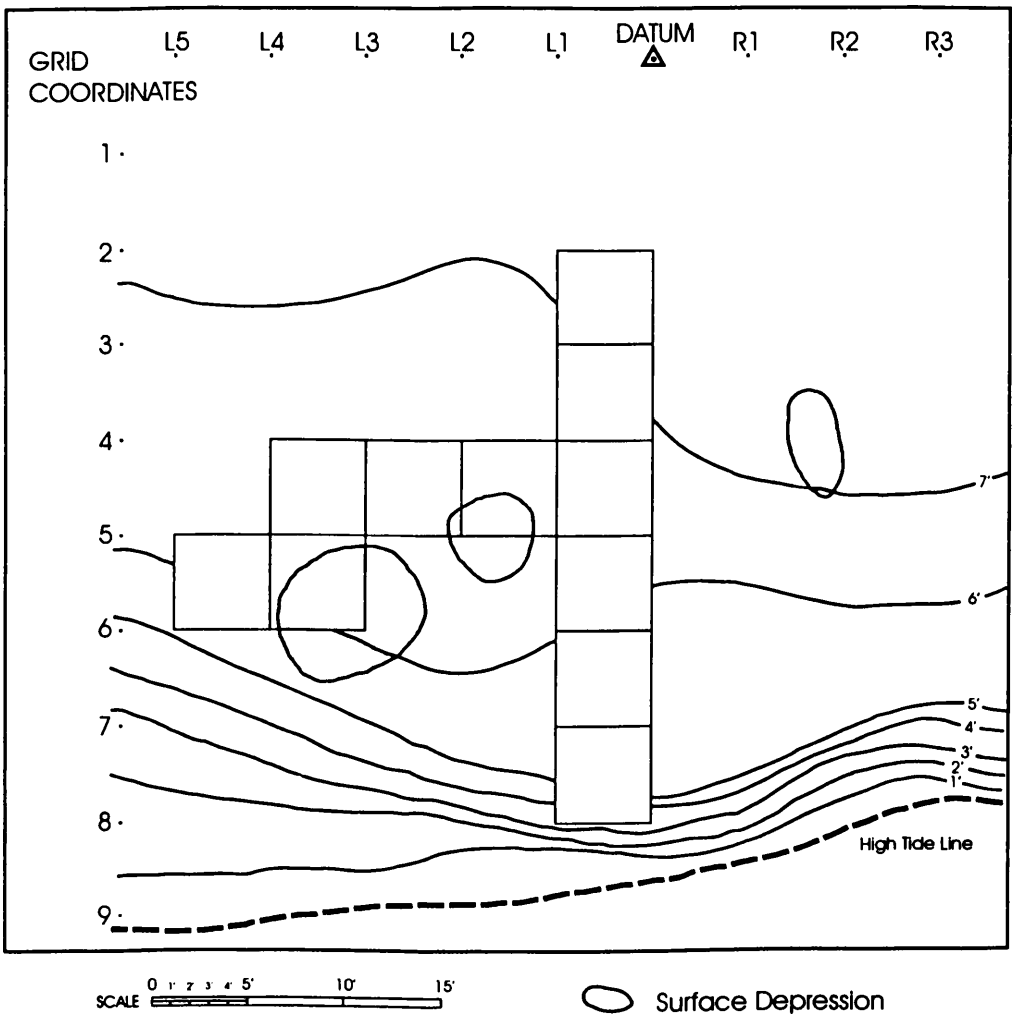


Figure 11: Bryan's 1954 excavation units, showing the corrected locations of surface depressions.

In 1957 and 1958, Nelson excavated 14 units adjacent to Bryan's previous units (Figure 12). Nelson's excavations were conducted using arbitrary six-inch levels and point provenience was taken for all artifacts from the south and east walls of the unit; depth within the unit was measured from the highest corner of the unit. In the course of his excavation, Nelson defined four strata and two cultural components (See Appendix E). The strata were labeled from the surface down. Strata 1 described the surface humus layer. Stratum II was composed of large quantities of shell and ash lenses. Stratum III contained whole and crushed shell in a dark black matrix that also contained fish and mammal bone. Nelson further subdivided stratum III into three layers labeled A, B and C. Stratum IV referred to what Nelson defined as culturally sterile subsoil underlying the midden deposit.

Based solely on the stratigraphic descriptions composed by Bryan and Nelson, I was unable to synthesize the results of their excavations. However, when I began to develop a figure illustrating the locations of the unit profiles conducted at the end of each excavation, I discovered that one 5' section of the south wall of unit 6L4 had been profiled by both Bryan and Nelson (Figure 13).

When the two overlapping profile sections were placed side by side and compared, the profile generated by Nelson extended to 3' below surface level while Bryan's profile extended 5 ' below the surface level (Figure 14). In Nelson's description of the excavation and profiles, he interpreted Stratum IV as the culturally sterile subsoil beneath the shell midden. However, Bryan interprets the mottled reddish-yellow sand that appears to correlate with Nelson's Stratum IV as a non-shell cultural component. Bryan reports recovering 5 flaked-stone artifacts and 1 chopper-hammerstone from this non-shell cultural component (1963 Appendix A:1). In his excavation, Nelson apparently did not recognize the non-shell cultural component because he does not define a cultural component that lacks shell. It is not safe to assume that their interpretations of the subsoil underlying the lowest cultural component refer to the same stratigraphic unit. In addition, based on the profiles, Nelson does not appear to have excavated 3-4' below surface level across the excavation area, whereas Bryan's excavations usually extended well beyond 3' in depth, well into the stratigraphic unit underlying Bryan's Stratum 1.

Based on my interpretations of the overlapping profile sections, I was able to develop analytic units (Table 1) that grouped their cultural components and allowed me to avoid the confusion accompanying the simultaneous use of two different interpretive systems.

Analytic unit contains Bryan's component II. Analytic unit 2 contains Nelson's component II and Bryan's component I. Because Bryan's published artifact catalog (1963 Appendix A) was organized by stratum, I was able to differentiate artifacts from Bryan's stratum II and III in order to group them with artifacts from Nelson's component 1. Analytic unit 3 contains Bryan and Nelsons' component I.

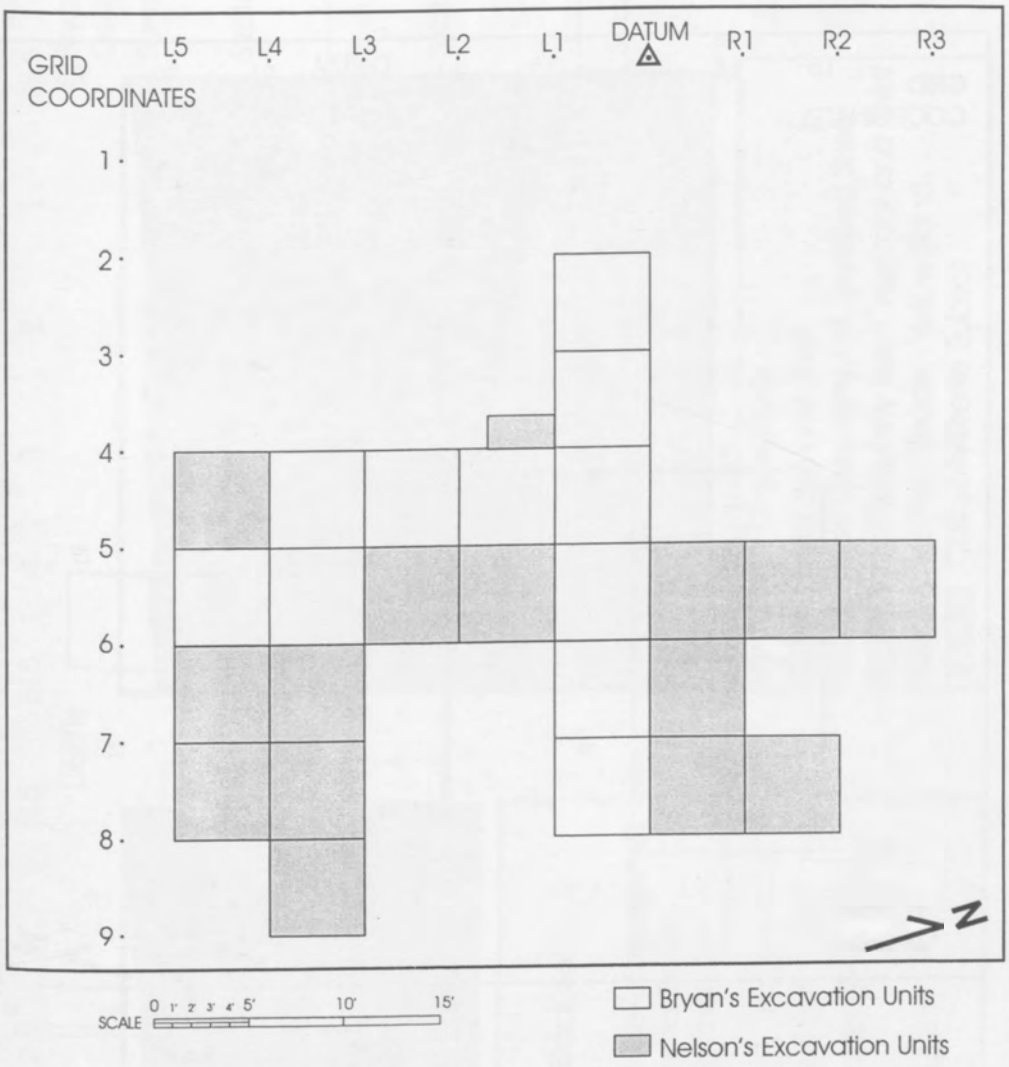


Figure 12: Bryan and Nelson's combined excavation units.

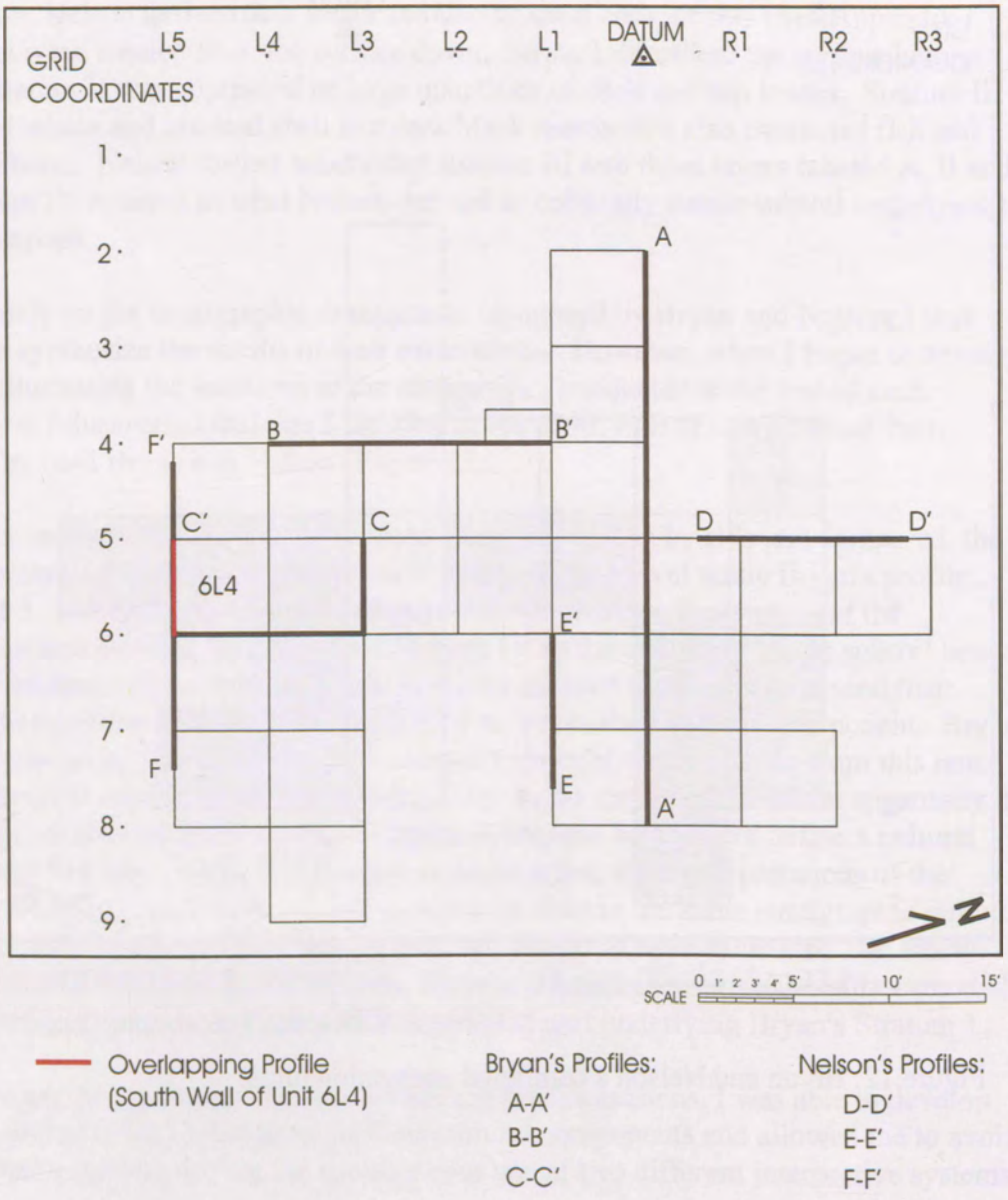


Figure 13: Bryan and Nelson's profiled units.

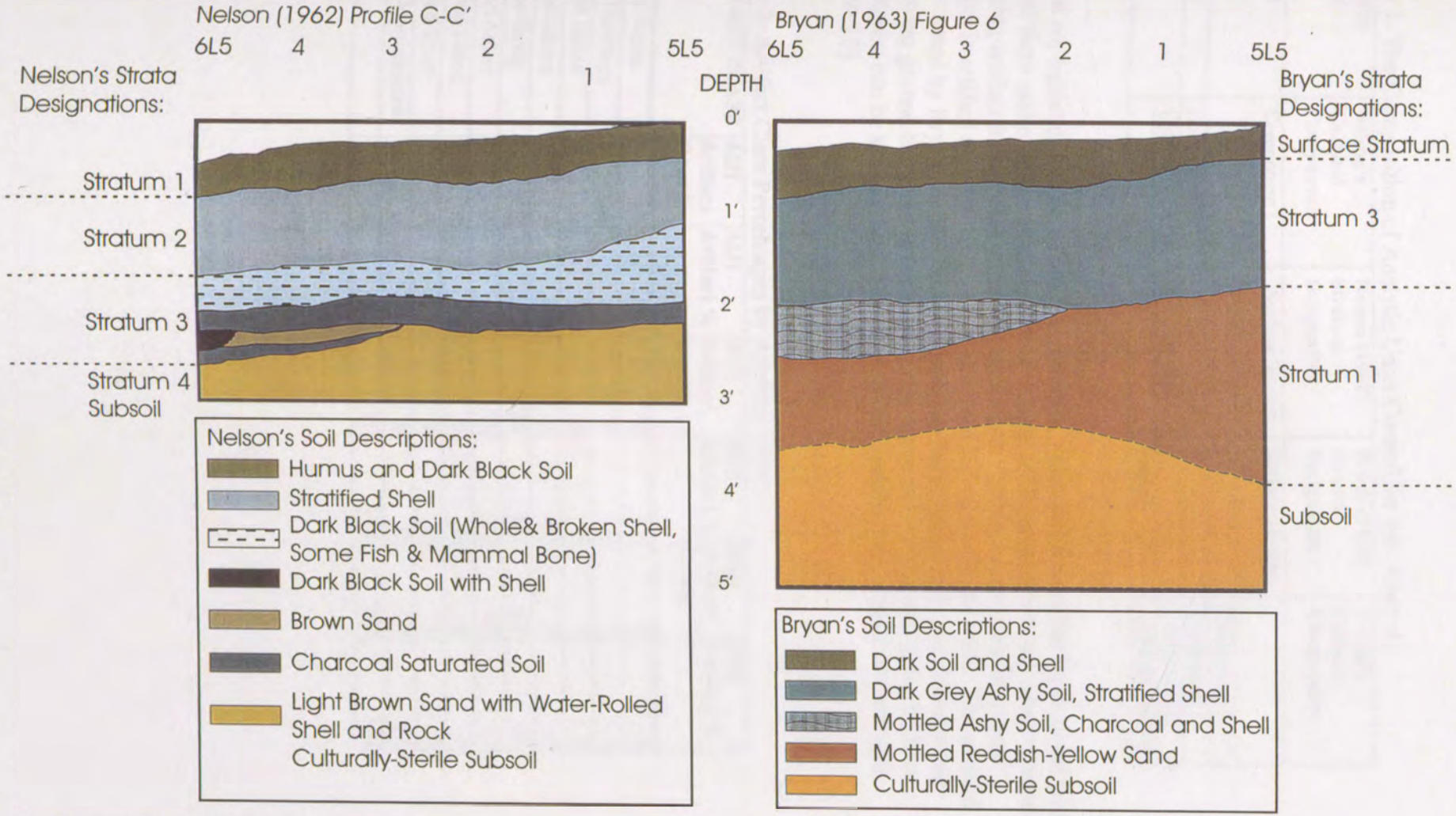


Figure 14: Comparison of overlapping profiles, south wall of Bryan and Nelson's excavation unit 6L4.

Table 1: The Composition of Analytic Units Created for this Analysis.

Analytic Units	Nelson's Cultural Components	Nelson (1962) Stratum Designation	Bryan (1963) Stratum Designation	Bryan's Cultural Components
AU 3	Component I	Surface Stratum (I)	Surface Stratum (IV)	
		II	III	Component I
AU2	Component II	III	II	Component I
AU1	Culturally Sterile	IV Subsoil	I	Component II
			Subsoil	Culturally Sterile

To test my initial definition of the analytic units, I grouped the artifact types found within each of them and examined the difference in light of Bryan and Nelsons' observations of changing artifact frequencies through their stratum. Table 2 illustrates the overall changes in artifact type frequencies that occurred between analytic units. The general trends noted by Bryan and Nelson of decreasing flaked stone tools and debitage and increasing ground bone and antler seen as you move from the lowest to the highest component can be seen in the composition of the analytic unit artifact assemblages (Figure 15).

Table 2: Artifact Class Percentages by Analytic Unit.

ARTIFACT CLASS	AU1 Artifact Count	AU1 Artifact %	AU2 Artifact Count	AU2 Artifact %	AU3 Artifact Count	AU3 Artifact %
Flaked Stone	7	21	8	17	0	0
Flake Debitage	24	73	0	0	0	0
Pecked Stone	0	0	0	0	4	3
Ground Stone	2	6	8	17	7	5
Ground Bone	0	0	20	43	51	36
Ground Antler	0	0	10	21	17	12
Modified Wood	0	0	0	0	5	3
Modified Shell	0	0	1	2	1	1
Euro. Manufacture	0	0	0	0	58	41
Total	33	100	47	100	143	100

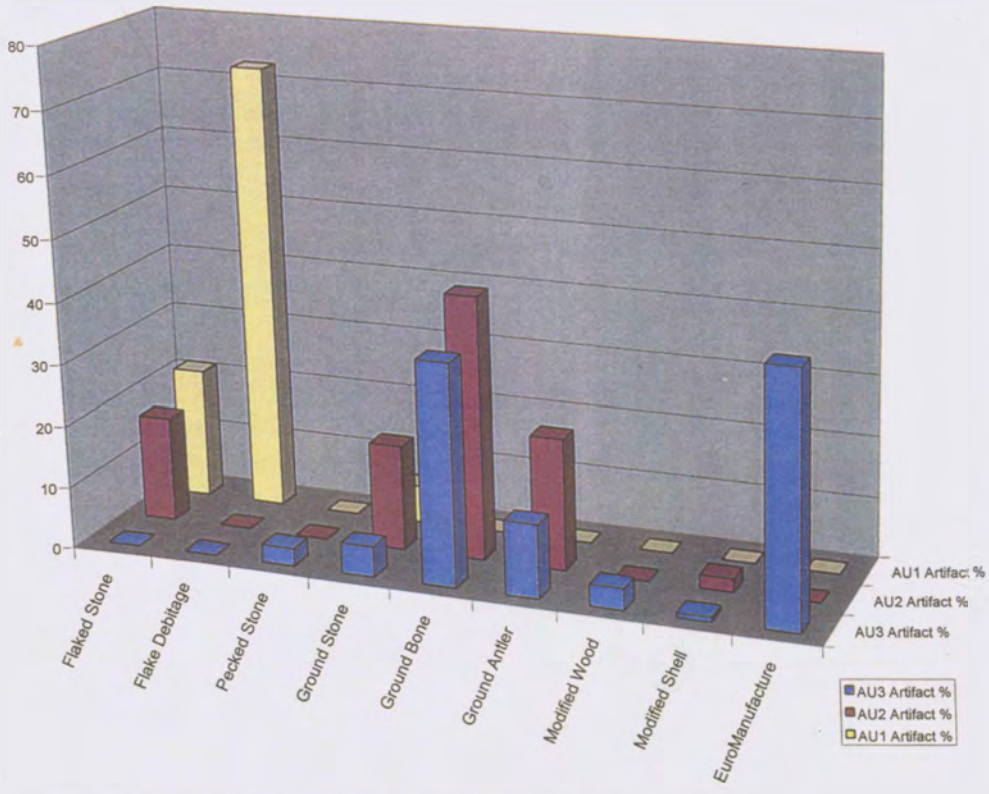


Figure 15: Graph of the artifact class percentages by analytic unit.

Description of Analytic Units

The following are my descriptions of the analytic units (AUs) based on both Nelson and Bryans' field observations, features, strata descriptions and artifact catalogue.

AU 1 (Figure 16), which contained a high proportion of flaked stone tools and debitage represents the earliest occupation uncovered in the course of these excavations. At the base of this unit, a slab lined hearth feature (Figure 4) and associated charcoal concentrations were uncovered. One depression was excavated and found to contain a basalt core. Bryan interpreted this feature as a cache pit. Two post molds measuring approximately 8.5" (21.6cm) were located in close proximity to a sloping shelf feature that descended 2' into the underlying subsoil before leveling off towards and forming a relatively flat area to the east (Figure 17). This shelf feature extended parallel to the shoreline for 20 feet between the north wall of unit 5 and the south wall of unit 5L3. Bryan noted that once the subsoil began to slope towards the shoreline, cultural material appeared and increased in depth (1963:30). In his interpretations, Bryan noted that the area directly to the east of the shelf feature appeared to contain extensive amounts of cultural material. From this observation he suggested that the area to the east of the shelf had seen the most intense utilization found in the earliest occupation (Bryan 1963:30).

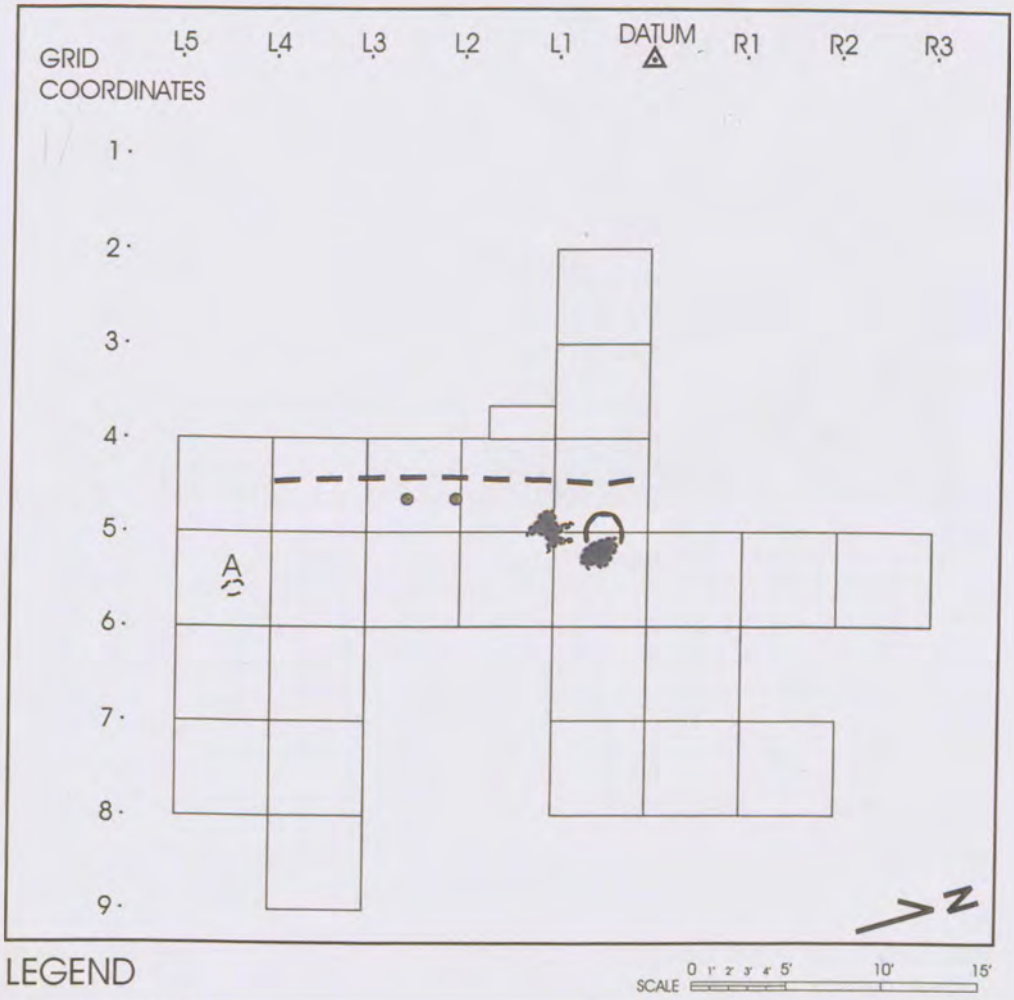


Figure 16: Features encountered during the excavation of Analytic Unit 1.

Figure 17: Photo of the shelf feature visible at the base of AU 1. The shelf feature slopes towards the left (east) and extends along the center of the excavation units. The break between the dark colored shell midden contained in analytic units 2 and 3 and the lighter colored sediments of analytic unit 1 is visible near the bottom of the profile at the end of the trench. This photograph was probably taken within a few months of Bryan's excavation. Plants have begun to grow out of the wall of the excavation units, and the rising tide has deposited drift material, visible at the bottom of the photograph, in the excavation units. Photograph was reproduced from a slide taken by Herbert Taylor, Western Washington University.

The material deposited in AU 2 was much darker and contained much more shell than the material found in AU 1. In addition, the shell was often whole or only slightly broken into large fragments. Fish and mammal bone was also more prevalent than in the earlier analytic unit. Between the deposition of AUs 1 and 2, the number of flaked stone artifacts declined slightly while the amount of flake stone debitage decreased sharply. A large rectangular depression measuring 4'x 3.5' and extending 1' in depth was in AU 2 (Figure 18). This feature contained large fire modified rocks and dark ashy soil mixed with shell and charcoal. Bryan interpreted the feature as a cooking pit. A large concentration of fire modified rock and several smaller hearths were also described in this analytic unit. One post mold, measuring approximately 10" in diameter was uncovered near the large cooking pit. This post mold extended through AU 1 into the subsoil beneath. During the 1957-58 seasons, Nelson uncovered one human burial from the west wall of unit 5L1. Although Bryan had profiled this wall during his initial excavation (1963 Figure 6:West Face-Cross Trench), slumping of the wall in the three years after Bryan's initial excavation may have exposed the burial. Although the remains were highly fragmented, it could be determined that the individual had been placed in the grave in a flexed position on their side, facing away from the shore (Nelson 1962:13).

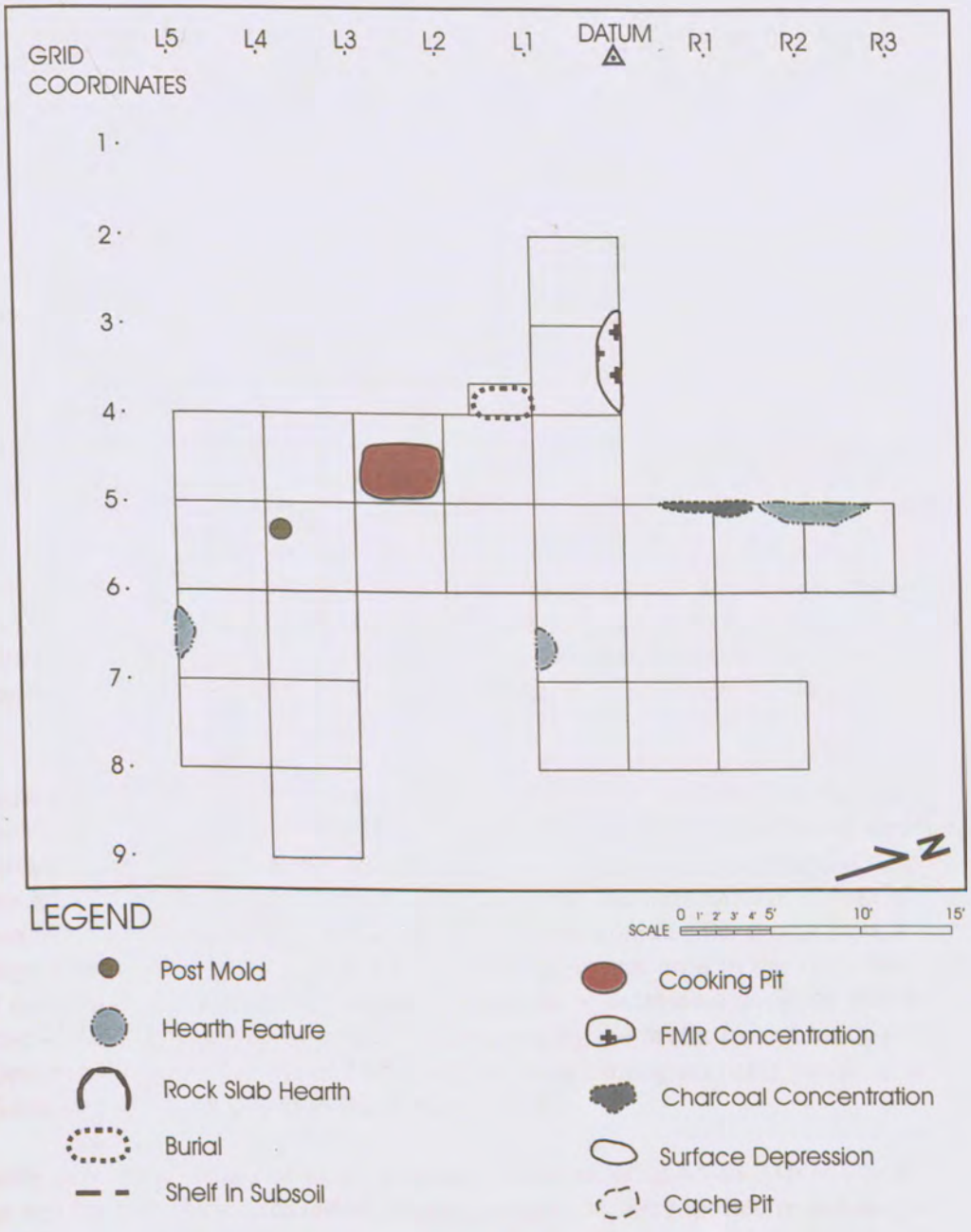


Figure 18: Features encountered during the excavation of Analytic Unit 2.

The excavation of AU 3 exposed shell midden that was very dark colored and contained stratified shell deposits composed of large shell fragments. Five features were encountered during the excavation of this analytic unit (Figure 19). Two of the features, labeled B and C, were determined to be hearth features associated with surface depressions noted by Bryan prior to excavations. The cooking pit illustrated on the north wall of unit 7 was described as a bowl shaped intrusion that had been promptly filled with shell and gray ashy soil.

45-IS-31b Artifact Assemblage Housed at the Burke Museum

The Burke Museum houses three assemblages labeled with the Smithsonian trinomial designation 45-IS-31. (See Appendix D) These three assemblages appear to have been cataloged separately based on the differences in the numbering of artifacts. One of the assemblages contains artifacts that do not match the illustrated artifacts or descriptions published in by either Bryan or Nelson. Since Nelson appears to have been the last to collect artifacts at 45-IS-31b, it is unlikely that this assemblage of 22 artifacts were recovered from the site. The artifacts contained in the two remaining assemblages match the artifact photos and descriptions published in Bryan (1954, 1955 and 1963) and Nelson (1962).

This analysis describes the correlation between these three collections and the published reports of excavation and artifact collection conducted in Cornet Bay. For convenience of discussion, the letters A, B, and C were assigned to the three collections. However, these letters do not appear anywhere in connection with these collections except in this report.

The first collection (Collection A), containing 22 artifacts, was labeled using the Smithsonian trinomial designation (45-IS-31) followed by a dash (-) which separates the prefix from the unique sequential number (1 through 22). The second collection (Collection B), containing 124 artifacts, was labeled using the Smithsonian trinomial designation (45-IS-31) followed by a backslash (/) which separates the prefix from a unique sequential number between 1 and 127 (there are several gaps in the sequence). The third collection (Collection C), containing 42 artifacts, is labeled using the trinomial designation 45-IS-31b followed by a backslash separating the prefix from a unique number between 201 and 242. As of May 2001, no field catalogues corresponding to these collections have been found in the Burke records.

Two reports have been generated from excavations conducted at 45-IS-31b in Coronet Bay. The results of the first excavation, conducted in 1954, are reported in Bryan (1955, 1957, and 1963). A second excavation conducted by the Washington Archaeological Society (WAS) during the 1957 and 1958 field seasons is reported in Nelson (1962).

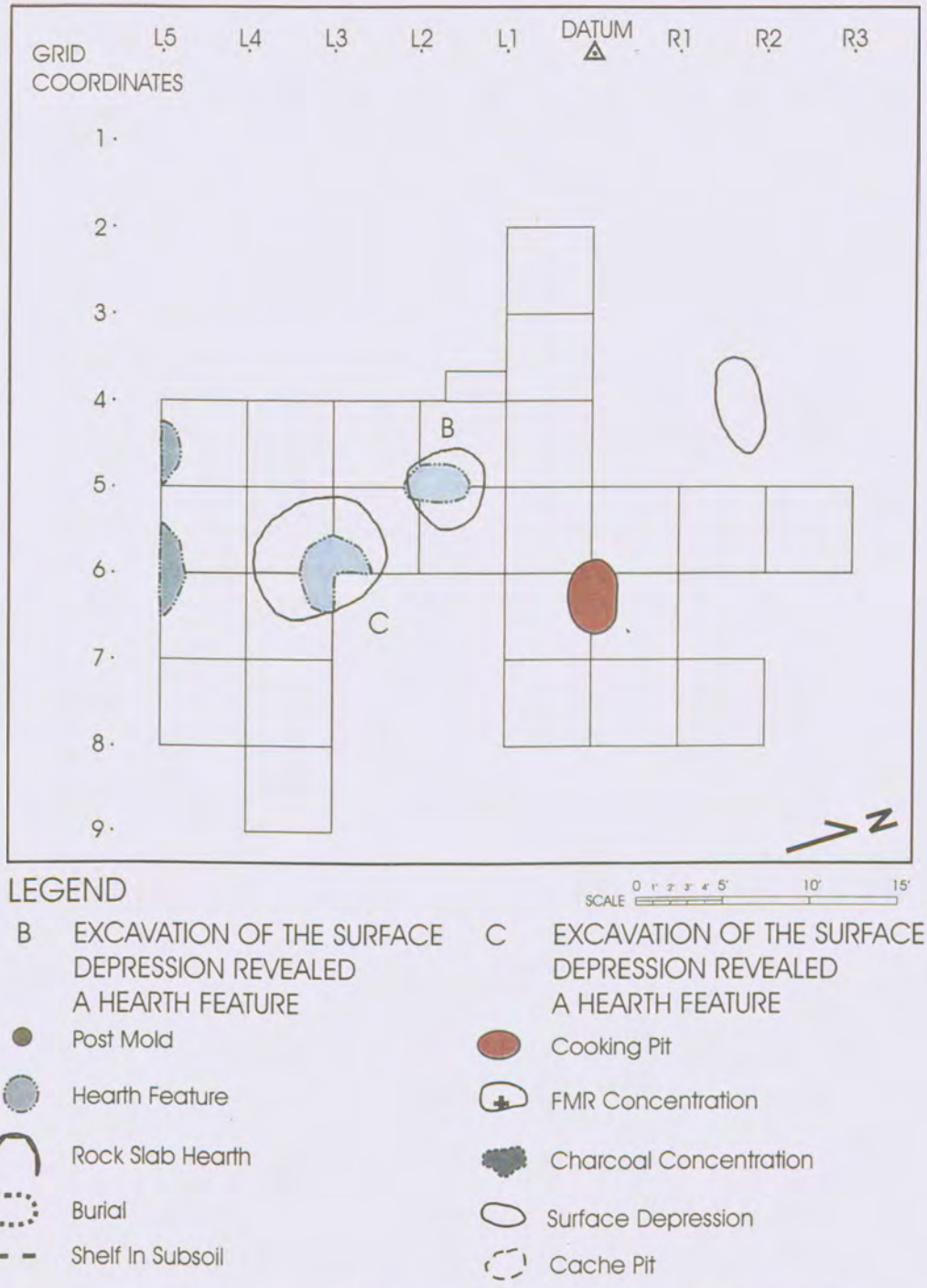


Figure 19: Features encountered during the excavation of Analytic Unit 3

Collection A does not appear to correspond with any reported assemblage from Cornet Bay. Although it was tempting at first to assume that this sequence was simply a separate cataloguing event of material collected by Bryan, a comparison of specific artifacts typed do not support this interpretation. The strongest evidence that these are not materials collected by Bryan is found in the unilaterally barbed harpoon points. There are 3 unilaterally barbed harpoon points in Collection A, one complete, one base with a single notch, and one midsection. Bryan lists two unilaterally barbed harpoon points in Appendix A although consultation of the figure references reveals that one Figure 13(2) is actually from 45-IS-13 (Bryan 1963). Collection B includes the midsection fragment (45-IS-31/34) that is illustrated in Bryan (1963) Figure 22:14. It seems improbable that Bryan or Nelson would have omitted mention of 3 harpoon points. We think the origin of this collection should be considered unknown.

Possible scenarios regarding the origin of Collection A:

- It was collected during an unrecorded excavation at 45-IS-31b that was not described by Nelson (1962) or Bryan (1963). This seems unlikely because the site is within Deception Pass State Park and there should be a record generated from the permitting process.
- It was collected by Bryan but somehow separated from the rest of the collection and catalogued separately (which could account for the repetition of catalogue numbers) and the information omitted from the report. This only seems likely if the artifacts were misplaced prior to his analysis and photography of the collection since the most significant artifacts were not included in his report.
- It was collected by a private landowner from 45-IS-31a and was donated to the Burke Museum for curation, the records of which (if they exist) have not been recovered.
- It is not originally from 45-IS-31 but was mistakenly labeled.

Because of the suspect provenience of the artifacts located in what we have referred to as Collection A, these artifacts were not included in the chronological analysis of the Cornet Bay artifact collection housed at the Burke Museum.

A comparison of artifacts at the Burke to report illustrations links Collection B to Bryan's 1954 excavation at 45-IS-31b. I used the photos in Bryan (1955) because they included artifact #'s in the plate captions, which were omitted from the 1963 report. Collection B contains 15 artifacts that correspond both in terms of catalog number and their physical characteristics to the illustration. Four additional artifacts are illustrated in the plates. However, the catalog numbers written on these artifacts do not match the artifact number specified in the plate captions. It is possible that these discrepancies are the result of typing errors in the drafting of the report. Three artifacts are illustrated but are not present in the Cornet Bay collections housed at the Burke.

Bryan (1963) includes an appendix that lists the artifact categories found at each site. A total of 135 artifacts are indicated as having been collected from 45-SI-31b (Bryan 1963 Appendix A). Based on a comparison of these descriptions and Bryan's published artifact figures to the artifacts found in Collection B, there appears to be a relatively good

match with Collection B. Although the highest number in Collection B is 127, there are a number of gaps in the sequence (no artifacts present with those numbers) and other artifacts that have duplicate numbers with a letter suffix distinguishing them (24A and 24B) for example. The total number of artifacts present at the Burke that were reportedly recovered from the Cornet Bay (45-IS-31) site is 193.

The artifact descriptions presented in the text of Nelson (1962) appear to be a complete catalogue of the 42 artifacts recovered during the 1957 and 1958 field seasons. Collection C containing 42 artifacts appears to match Nelson's catalog when compared numerically. A tally of the numbers of certain distinctive artifact types such as unilaterally barbed harpoon points matches well although not perfectly (eg., 5 stone points are described in the report, but there are only 4 in the collection). Nelson (1962) published the photographs of 28 artifacts present in Collection C.

The major source of confusion relating to Collection C is an accession list from the records of the Burke Museum. This list, dated November 30, 1972, compiled by Dr. R. E. Greengo reports that 34 artifacts were received from the WAS in 1955. The date must be in error because the WAS excavations were conducted between 1957 and 1958. The artifact types described in this accession list correspond generally with Nelson (1962) (Table 3).

Table 3: Comparison of the Greengo (1972) Inventory and the Nelson (1962) Artifact Catalogue.

General Description	Nelson (1962) Described #	Burke Accession List (1972) Described #
Ground Stone (Slate, Nephrite)	2	2
Ground Concretion	1	1
Ground Sandstone	3	3
Basalt Projectile Points	5	4
Flake Debitage, Utilized Flakes/Spalls	1	0
Modified Bone	4	1
Bone Wedge/Chisel/Adze	3	3
Bone Unilateral Barbed Harpoon Point/Frag	3	3
Bone Unbarbed Harpoon Point/Frag	1	0
Bone Unipoint Complete or Frag	5	4
Bone Bipoint Complete	1	1
Modified Antler	3	3
Antler Wedge/Chisel/Adze	4	3
Ground Beaver Incisor	1	2
Ground Canine (non Beaver)	1	0
Square Nail	1	1
Modified Wood	3	3
Total	**42**	**34**

Note that the difference of 8 artifacts illustrated in Table 3 is made up by lower numbers in several artifact categories (in other words there does not appear to have been a systematic omission of a particular artifact type or addition of any extra artifacts).

Of the 193 artifacts present in the Cornet Bay collections housed at the Burke Museum. 47 of these artifacts can be positively identified using photographs or illustrations from published reports.

Results of the Chronological Analysis

Results of the Thompson (1978) Analysis

Application of Thompson's (1978) functional classification to the published artifact assemblage, the AU assemblages based on the published data, and the assemblage housed at the Burke Museum yielded some interesting similarities to dated components from other sites included in her study.

Using Thompson's 20 types to classify the assemblage from IS-31b, and examining the BR similarity coefficients revealed that the combined artifact assemblage from IS-31b was most similar to sites in clusters 4 and 5 which contain sites corresponding to the Gulf of Georgia phase (Table 4). The analysis of the Burke collection from 45-IS-31b revealed that this assemblage was most similar to sites found in clusters 4, 5, and 6 which correspond to the early and mid-Gulf of Georgia phase. These results are similar to those generated by the analysis of the 45-IS-31b collections housed at the Burke Museum. However, the Burke Museum collection is also similar to an Early Gulf of Georgia site in cluster 4 (Table 4).

The artifact frequencies from analytic unit 3 were most similar to sites in cluster 5, analytic unit 2 was most similar to assemblages contained within clusters 3. The results from both analytic units 3 and 2 correspond to mid to late periods of the Gulf of Georgia phase. The assemblage from analytic unit 1 was most similar to clusters 4 and 6. The site components from cluster 4 possessing the greatest similarity to analytic unit 1 have been dated in the early to mid-Gulf of Georgia phase and the components from cluster 6 exhibit late Marpole and early Gulf of Georgia phase affiliations (Table 5). However, the results of the analysis of analytic unit 1 need to be viewed with caution due to the small artifact sample size. While a total of 33 artifacts were recovered from analytic unit 1, only 7 artifacts could be classified according to Thompson's typology. The remaining 26 artifacts recovered from analytic unit 1 consisted of dacite cores and flaking debitage that are not included in Thompson's functional classification.

Comparison of the results from the analysis of the published assemblage to the results generated from analysis of Burke museum assemblage reveal that the results generated from the Burke assemblage were more characteristic of the cluster membership variation seen in the analysis of analytic units.

Table 4: Results of Cluster Analysis for Published Assemblage versus Burke Museum Collection (Components Combined).

45-IS-31b Assemblage Sample	**Brainerd-Robinson Similarity Coefficient**	**Site Name (Site Number-Component)**	**Thompson Cluster Membership**	**Associated Ratiometric Dates (Years B.P.)**	**Associated Culture Type or Phase Designation**
Integrated Nelson and Bryan Published Catalog	141	Montague Harbour (DfRu13-3)	6	790±130, 730±130	Mid Gulf of Georgia
	134	(EaSh6-1)	5	-	Gulf of Georgia
Burke Catalog of Artifacts Present	137	Montague Harbour (DfRu13-3)	6	790±130, 730±130	Mid Gulf of Georgia
	131	Dionisio Point (DgRv3-2)	4	1400+/-90	Early Gulf of Georgia
	134	(EaSh6-1)	5	-	Gulf of Georgia

Table 5: Results of Cluster Analysis by Analytic Unit Based on Published Assemblage Description.*

45-IS-31b Assemblage Sample	Brainerd-Robinson Similarity Coefficient	Site Name (Site Number-Component)	Thompson Cluster Membership	Associated Ratiometric Dates (Years B.P.)	Associated Culture Type or Phase Designation
AU 3	132	EaSh6-1	5	-	Gulf of Georgia
	133	Rosario Beach (Sk7-2)	5	<600±100	--
AU2	138	Fish Town (Sk33-6)	3	<425±75	--
	131	Fish Town (Sk33-5)	3	425±75	--
AU1	130	Montague Harbour (DfRu13-3)	4	790±130, 730±130	Mid Gulf of Georgia
	132	Dionisio Point (DgRv3-2)	4	1400±90	Early Gulf of Georgia
	136	Glenrose Cannery (DgRr6-3)	6	2030±95, 2300±70, 2310±105, 2340±115	Marpole
	147	St Mungo Cannery (DgRr2-2)	6	1120±95	--

*Includes all site components in Thompson's analysis with a Brainerd-Robinson similarity coefficient of 130 or greater

Results of the McMurdo (1972) Analysis

I was able to apply McMurdo's (1972) classification to one complete bone harpoon point and two harpoon point fragments recovered from 45-IS-31b (Figure 20). Artifacts #221 and #233, both fixed bone harpoon points with unilaterally arranged, low, extended, isolated barbs, were recovered from analytic unit 3. Artifact #221 possesses convex shaped barbs and a thinned pointed base, while #233 possesses straight barbs and a thinned wedge shaped base. The characteristics of artifact #221 suggest that it was produced during the near the end of the Marpole phase. Although Artifact #233 could be classified, no dated types illustrated by McMurdo (1972) correspond to the characteristics of #233. Artifact #34 possesses unilaterally arranged, square shaped, high enclosed barbs that are densely spaced. Artifact #34 could not be included in McMurdo's chronological typology because it lacked its base and because she does not define a type for high enclosed barbs. However, in her descriptions of excluded miscellaneous points, McMurdo includes a fragment from DfRu13-1 (Mitchell 1968), dated to the Locarno Beach phase, that closely matches the description of artifact 34.

Comparison of the results of this analysis to McMurdo's chronology of point types suggests that analytic units 2 and 3 were deposited between the end of the Locarno Beach phase and the end of the Marpole phase. However, since only three unilaterally barbed bone points were recovered at 45-IS-31b, and due to the fragmentary nature of artifacts #34 and #221, the assignment of AUs 2 and 3 to these phases is far from conclusive.

Results of the Stone Point Literature Review

The results of the stone point literature review are shown in Table 6. The stone points recovered from Analytic Unit 2 were similar to point styles dated from approximately 5000 BP to the contact period. Stone points recovered from Analytic Unit 1 (Figure 21) were most similar to point styles that existed during the Locarno Beach and Marpole phases. The date of 5000 BP suggested by Carlson (1996) does not seem consistent with the results of this literature review or with the results produced by the Thompson and McMurdo analysis. Based on this analysis, initial occupation of the Cornet Bay site likely occurred during the late Locarno Beach or Marpole phase.

Artifact #	AU	Attachment	Barb Arrangement				Barb Shape	Base	McMurdo Type	Date/Phase
			Unilat/Bilat:	Height:	ext./enclos:	Spacing				
221	3	Fixed	Unilateral	Low	Extended	Isolated	Convex	Thinned Pointed	VII	Late Marpole?

233	3	Fixed	Unilateral	Low	Extended	Isolated	Straight	Thinned Wedge	III	---

34	2	---	Unilateral	Hight	Enclosed	Dense	Squared	---	*	Locarno Beach

All barbed bone points are actual size
ARTIFACT PHOTOS COURTESY OF THE BURKE MUSEUM

Figure 20. Application of McMurdo's typology to barbed bone points.

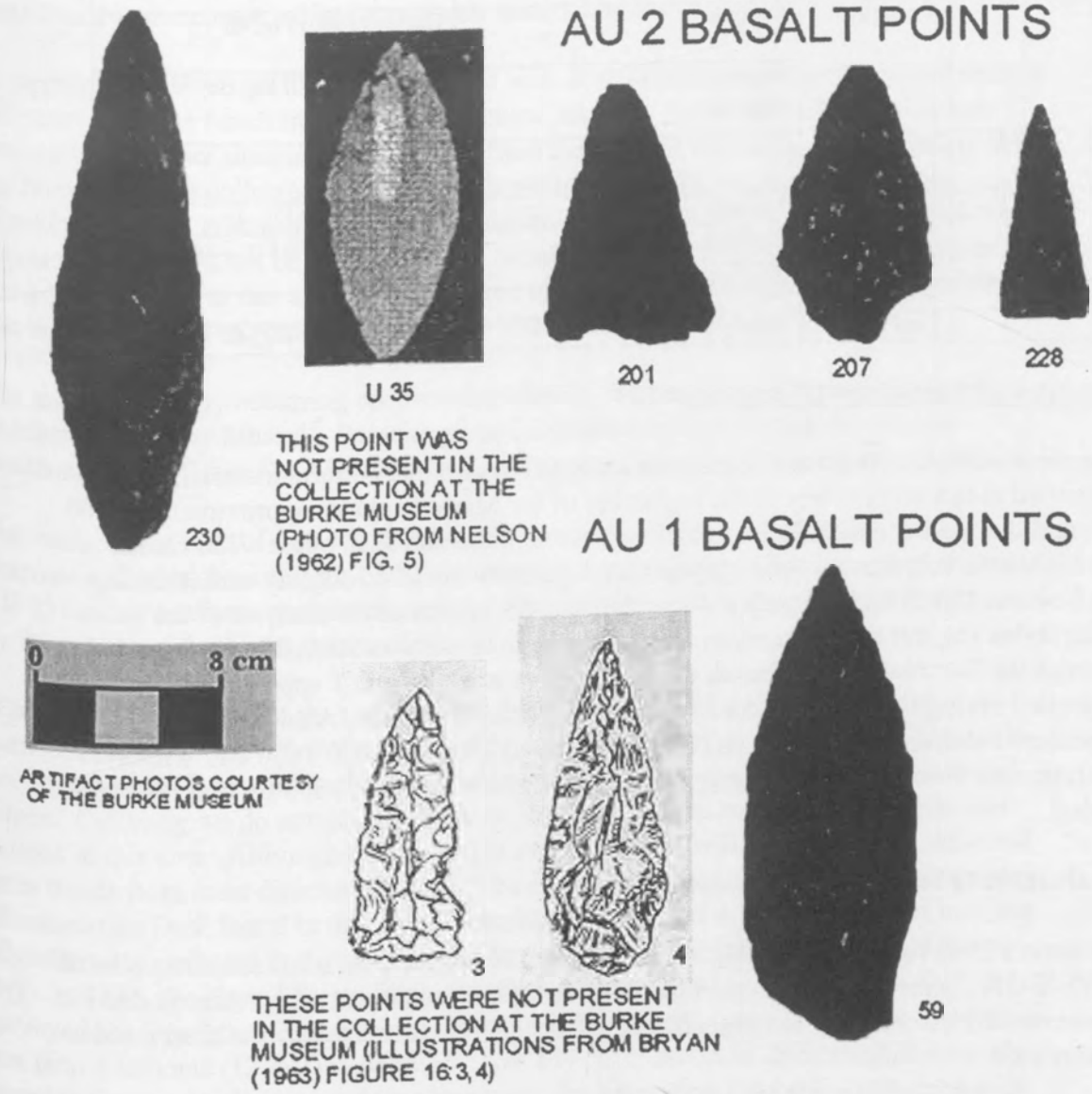


Figure 21: Projectile points by analytic unit.

Table 6: Results of Stone Projectile Point Literature Review

Artifact #	AU #	Shape	Culture Phase	Reference
230	2	Leaf	Middle Period (5000-2000 BP)	Carlson (1996) Fig. 3e
201	2	Triangular	Marpole	Burley (1980) Fig. 4g
207	2	Contracting Stem	Marpole	Burley (1980) Fig 4c
			Strait of Georgia, Marpole, Locarno Beach	Mitchell (1990) Fig. 2e, 3c, 5g
			Middle Period (5000-2000 BP)	Carlson (1996) Fig. 3e
228	2	Triangular	Marpole	Burley (1980) Fig. 4h
			Strait of Georgia Marpole	Mitchell (1990) Fig. 3b, 5e
U35	2	Bipointed Leaf	---	---
59	1	Lanceolate Fractured Base	Marpole	Burley (1980) Fig. 4a
			Marpole Locarno Beach	Mitchell (1990) Fig. 2d, 3a
3	1	Triangular?	---	---
4	1	Leaf	Marpole	Burley (1980) Fig. 4k

Summary of Cornet Bay Chronology

The results obtained from the Thompson analysis suggest that cultural materials were deposited at this site as early at the beginning of the Marpole phase, approximately 2200 BP, and that utilization of the site continued through the San Juan phase. The results of the McMurdo harpoon analysis suggest that deposition occurred slightly earlier during the Locarno Beach and Marpole phases. Finally, the results of the analysis of the stone point styles suggest that occupation may have began as early as 5000 BP and extended through the San Juan phase. Based on this analyses analytic unit 1 appears to have been deposited during the late Locarno Beach or early Marpole phase. Analytic unit 2 was deposited between the Marpole and San Juan phases between 2400-1600 BP. Finally, analytic unit 3 was deposited during the San Juan Phase between 1600 BP and the contact period.

Evaluation of Weasma's Analysis and Results

Weasma's 1991 report, concerning the collection and analysis of faunal remains collected at 45-IS-31b, is the first systematic identification of the faunal remains present at this site. However, the treatment of the depositional environment represented by the shell midden is confused.

From his treatment of the depositional processes contributing to the formation of the midden, specifically when he refers to the midden as a "fossil beach" (Weasma 1991:2), I believe that his initial assessment of the site did not include a cultural origin. Rather, I believe that he interpreted the midden material to be a possible ancient beach or organic

rich backwater environment, which could be analyzed to infer changes in local environmental conditions, and associated shifts in faunal representation. At some point in his research it appears that he became aware of the fact that his samples had been deposited at the site by human rather than coastal processes. His integration of the cultural origin of these materials is half-hearted at best and his view of the depositional context is colored by his earlier interpretations. However, this report is the most detailed discussion of the faunal materials present in the 45-IS-31b midden currently available and should not be ignored because of inadequacies present in the collection methods or the biases of the researcher. In fact, Weasma's perspective and the questions that he raised regarding the possible presence of recessive beach deposits or structures should be considered in the course of future research undertaken at this site.

In Appendix B, Weasma lists 7 species that were identified solely from the faunal sample collected from the beach in front of the exposed midden. Since these species are not present in any other sample taken directly from the midden exposure, the possibility that the faunal remains collected from the beach washed in by the rising tide cannot be discounted. Until direct sampling of the midden material identifies the presence of these species, they should not be included in the list of faunal species present in the cultural components found at this site. Weasma's list of faunal species also included 3 species that are not marked as present in any of the test unit samples.

The most commonly occurring species identified in Weasma's (1991) analysis were *Mytilus edulis* (Bay Mussel), *Balanus glandula* (Barnacle) and *Strongylocentrotus droebachiensis* (Green Sea Urchin) which were present in all of the samples collected.

The radiocarbon date of 540 +/- 155 years, obtained by Weasma from a sample of charcoal collected from test unit 2 below 20cm below surface (probably located within AU 3) further confirms occupation into the San Juan phase that was previously suggested by the results of the Thompson analysis.

Weasma's conclusion that the material found in the midden deposits at Cornet Bay is based on his assumption that the deposits represent a regressive "shell beach" that could not be generated from the modern local environment is without basis due to its cultural origin. Currently we do not understand how long the modern marine environment has existed in this area. Although the northwest corner of Cornet Bay is relatively sheltered from winds from most directions that may be eroding the clay rich deposits of Everson Glaciomarine Drift found in this area (Easterbrook 1968), isostatic rebound and infilling might have contributed to the shallow bay environment currently found within Cornet Bay. In 1841, the United States Exploring Expedition commanded by George Wilkes surveyed the Deception Pass area. In their 1841 chart, Cornet Bay is illustrated as being less than 2 fathoms (12 feet) in depth (Wilkes 1841). If the local environment currently found in Cornet Bay has existed for some time, the Deception Pass area contains a wide range of microenvironments capable of supporting all the faunal species represented in the 45-IS-31b midden. Each of these microenvironments would have been readily accessible to coastal-adapted peoples possessing dugout canoes or similar watercraft.

Discussion of Possible House Structure

Ethnohistoric Accounts of Native American Structures in the Deception Pass Area

The north end of Whidbey Island and Deception Pass lie at the junction between two large groups of native peoples, the central coast Salish and the southern coast Salish. These groups are primarily defined by their language. The north end of Whidbey Island was the traditional use area of the contemporary Samish (Lukengen speaking) and Swinomish (Lushootseed speaking) tribal groups. At the time of contact, the Samish occupied Fidalgo Island and part of the San Juan Islands. The Swinomish had settlements in the vicinity of Dugualla Bay and on the mainland to the east (Wessen 1988b). The Samish and Swinomish both employed a flexible subsistence strategy that required great mobility but allowed them to maximize their returns. Typically, settlements consisted of a fixed winter village and a number of smaller camps distributed in the areas where specific resource procurement activities were carried out. Depending on the available resources of the area, camps were employed in plant and shellfish collecting, fishing and hunting, and were often the area where primary processing took place. The village was often placed within range of winter resources that could be accessed to supplement stored foods.

House structures built at the winter villages were very different from shelters used in temporary camps. The ethnographic accounts of Samish and Swinomish habitation structures describe the shed-roof plank house (Figure 22) as the most common form used by these groups in their winter villages (Suttles and Lane 1990:491, Suttles 199b:462). These houses were usually constructed parallel to the shoreline with roof sloping towards the rear of the structure (Suttles 1990b:462). Temporary houses used at camps were supported by a pole frame and covered with housemats (Suttles and Lane 1990:491). The use of seasonal camps in the Deception Pass area during the contact period is corroborated by an account of native settlements from Charles Wilkes, commander of the United States Exploring Expedition.

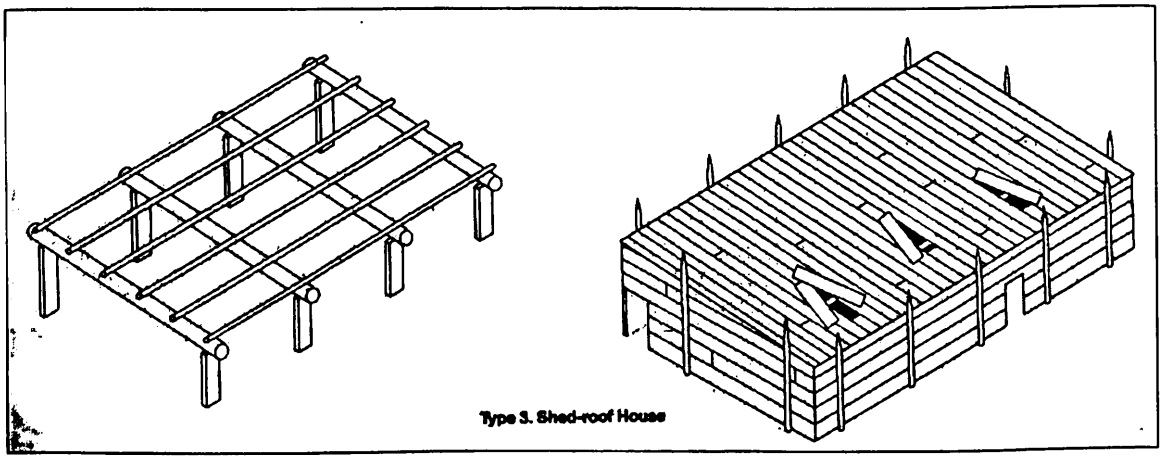


Figure 22: Diagram of shed-roof plank house construction (reproduced from Suttles 1990a:7).

The earliest extensive survey of the Deception Pass area was undertaken by the United States Exploring Expedition. In June of 1841 the U.S. ships Porpoise and Vincennes, commanded by Charles Wilkes, sailed north through Possession Sound and Saratoga Passage between Whidbey and Camano Island. While mapping these passages, the expedition stopped at Penn Cove and described the natives living in the area. On June 18, 1841, the expedition sailed through Deception Pass. In his narrative account of the expedition, Wilkes describes the Indians they encountered in the Deception Pass area as mobile and occupying temporary shelters. However, no specific locations of settlements are given in this account no. The Wilkes expedition spent a total of 8 days in the vicinity of Deception Pass taking soundings across Saratoga Passage, into Similk Bay, and through Deception Passage. The chart produced by this survey illustrates Cornet Bay and depicts it as shallow. Aside from the narrative description of the native's mobility, no mention is made of the locations of these camps or any other permanent settlements in this area.

Evaluating the Archaeological Evidence of a Structure

During the 1954 excavations Bryan uncovered features in the earliest cultural material that led him to suggest that a structure may have been built in this area during the earliest occupation of the Cornet Bay site.

Bryan (1963:30) noted an abrupt shelf in the subsoil underlying AU 1 that extended 20' (6m) from the north wall of Unit 5, seen in profile A-A', (Figure 23) to the north wall of Unit 5L4. Bryan also noted that Units 3 and 4 were sterile of cultural material in AU 1 until the subsoil began to dip towards the shoreline in Unit 5 (Bryan 1963:31). Once the subsoil began to dip, the depth of the cultural material increased dramatically. This led Bryan to conclude that the area along this shelf was an area of intense deposition. (1963:31). Two post molds were found in close proximity to this shelf feature (Figure 17) and the slab lined hearth feature was recorded on the same occupation surface.

In profile A-A', (Figure 23) the shelf feature appears as a nearly vertical wall approximately 2-2.5' high that transitions into a level surface extending towards the shoreline for approximately 15 ft (4.6 m). In Bryan's profile of Unit 6L4, he marks the bottom of AU 1 at a depth of approximately 5'. Nelson excavated and profiled the south wall of Unit 5L4 (Profile F'-F). However, his profile only extends to 3' in depth and does not illustrate cultural material below AU 2. I believe Nelson did not excavate much deeper than the base of AU 2 because he believed that the soil underlying AU 2 was culturally sterile. However, Nelson did recognize a shelf feature (Figure 6) and the profile of Unit 5L4 reveals a dip in AU 2 that may be a response to an underlying topographic depression. On this basis, I suggest extending Bryan's vertical wall found in AU1 into the F'-F profile of 5L4 (Shown as a dotted line, labeled "conjectured wall" in previously referenced Figure 23).

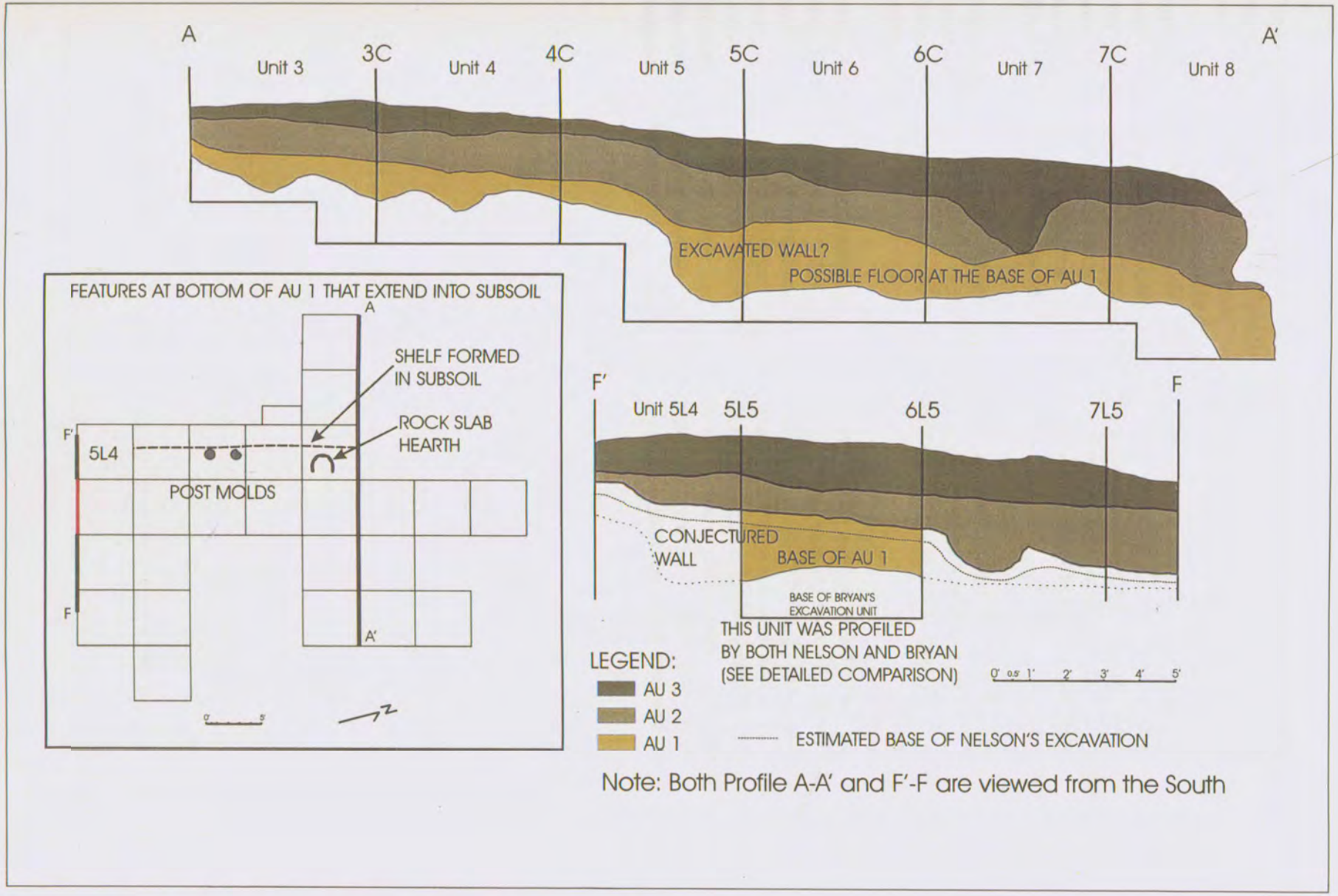


Figure 23: Possible evidence of a structure found in Analytic Unit 1.

The two post molds encountered in analytic unit 1 could correspond to the smaller exterior posts illustrated on the right in Figure 22. Since these posts did not function to support the large beams of the roof, but instead provided lashing support for the horizontally stacked planks, these exterior posts did not have to be as large in diameter as those found in the interior. Although no large post molds were found originating in analytic unit 1, one post mold, measuring approximately 10" (25 cm) in diameter, was located in analytic unit 2. It is possible that the larger diameter of this post may have prevented it from rotting as quickly as the smaller post found in analytic unit 1. If this is the case, it is possible that this post may represent the interior beam support post illustrated in Figure 22 on the left.

Bryan's interpretation of the shelf and level area as an excavated wall and floor of a house structure seem reasonable given the association of two closely spaced post molds, (8.5" in diameter), a rock slab hearth located at the base of AU 1, and the increased deposition of cultural materials near the edge of the shelf.

Bryan's observation suggests a pattern of artifact density similar to that which is described by Huelsbeck (1989) in his analysis of faunal remains recovered from the house floor midden within Ozette houses. Huelsbeck notes that "large bones and shells tended to be removed from the high traffic central floor area and relocated outside the house or into the adjacent beach zone" (1989:161). Heulsbeck also noted that large shell (greater than 1cm) and identified mammal bones tended to concentrate near the wall of the structure. The distribution of artifacts on the artifact location maps (Figure 24) suggests that higher artifact densities were found near the edge of the structures.

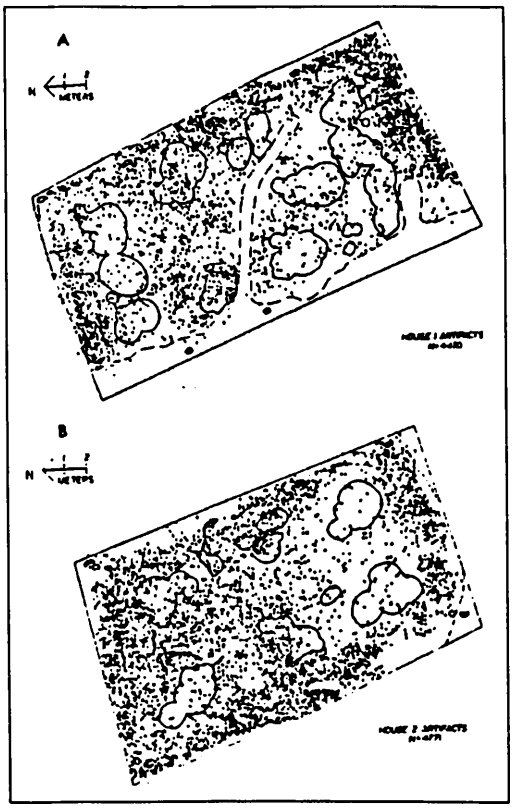


Figure 24: The distribution of artifacts within Ozette houses A and B. (Reproduced from Huelsbeck 1989:160, Figure 4).

In an initial assessment of the site stratigraphy, the presence of relatively large amounts of shell in analytic units 2 and 3 when compared to analytic unit 1, would seem to support an interpretation of changing resource use. However, if the cultural materials found in analytic unit 1 were deposited within an occupation structure, this raises a new set of issues when evaluating Bryan and Nelsons' interpretations of changing resource utilization. Comparison of house interior deposits with those from the exterior of the structure may lend themselves to very different interpretations of site usage and the type of subsistence strategy that was practiced at this site in the course of its occupation. In his analysis of spatial patterns in Ozette longhouse floor middens, Samuels (1989) states that although the matrix of the interior and exterior middens were similar "there were consistently observable differences in element composition between the two types of midden" (Samuels 1989:144). In Gose's (1976) analysis of features excavated at the Glenrose Cannery site, he described surfaces interpreted as living floors as "compacted silt and finely crushed shell," (Gose 1976:193). The presence of large hearth features and the composition of the midden material in AUs 2 and 3 suggest that the later components were not located within the interior of a structure (Samuels 1989). The possibility that the AU 1 component may have been deposited within a house structure raises questions regarding Bryan and Nelsons' interpretations of changing subsistence strategies.

The features observed and recorded during the excavation of analytic unit 1 suggests that a structure may have been present in this area during the earliest occupation. The

excavated wall and leveled surface involved an investment of time and energy suggesting long term use of this site. The cache pit, hearth feature, and the location of the post molds at the base of analytic unit 1 suggest that the surface to the east of the shelf was located within the interior of the structure. The increase in artifact density observed by Bryan near the excavated wall, and the characteristics of the midden material found in analytic unit 1 add support to this interpretation.

The features uncovered during the excavation of analytic unit 2 suggest that site use in this immediate area may have shifted, possibly to a more seasonal temporary occupation. Based on the profiles seen in Figure 23, a leveled surface was still present in this area at the beginning of the deposition of analytic unit 2 material. According to Samuels (1989) Ozette research, the presence of midden containing whole shell and large bone fragments suggests that analytic unit 2 was not deposited within a structure. Instead, the midden found in analytic unit 2 is more consistent with outdoor deposition. The large hearth features located within analytic unit 2 are more consistent with expectations of a temporary camp or processing area where the majority of the activities took place outside any temporary structure that may have been present.

The characteristics of the midden and features found in analytic unit 2 suggest that this area was still in use as a primary activity area. However, a more permanent house structure does not appear to have been present during at this time. Between the deposition of analytic units 1 and 2 there appears to have been a shift in utilization of the immediate site area uncovered during the 1950s excavations. Temporary shelters may have replaced more permanent plank houses as resource utilization shifted to more seasonal species. An examination of the features and characteristics of midden present in analytic unit 3 suggests that this pattern of seasonal site use continued until the contact period. This interpretation is supported by the historic account of Wilkes (1845) who described the native people as living in temporary shelters in the Deception Pass area in 1841.

Site Revisitation 2001

Site visits were conducted in Cornet Bay area (Figure 25) in April and May of 2001. The probable location of 45-IS-31a (Figure 26), and the known 45-IS-31b site area located at the west end of the bay (Figure 27), were examined in detail.

The 45-IS-31a Site Area

In light of the treatment of 45-IS-31a by researchers in the early 1960s through the 1990s, I familiarized myself with the site description and location information provided in the initial survey (Bryan and Lurman 1953) prior to the 2001 field survey.

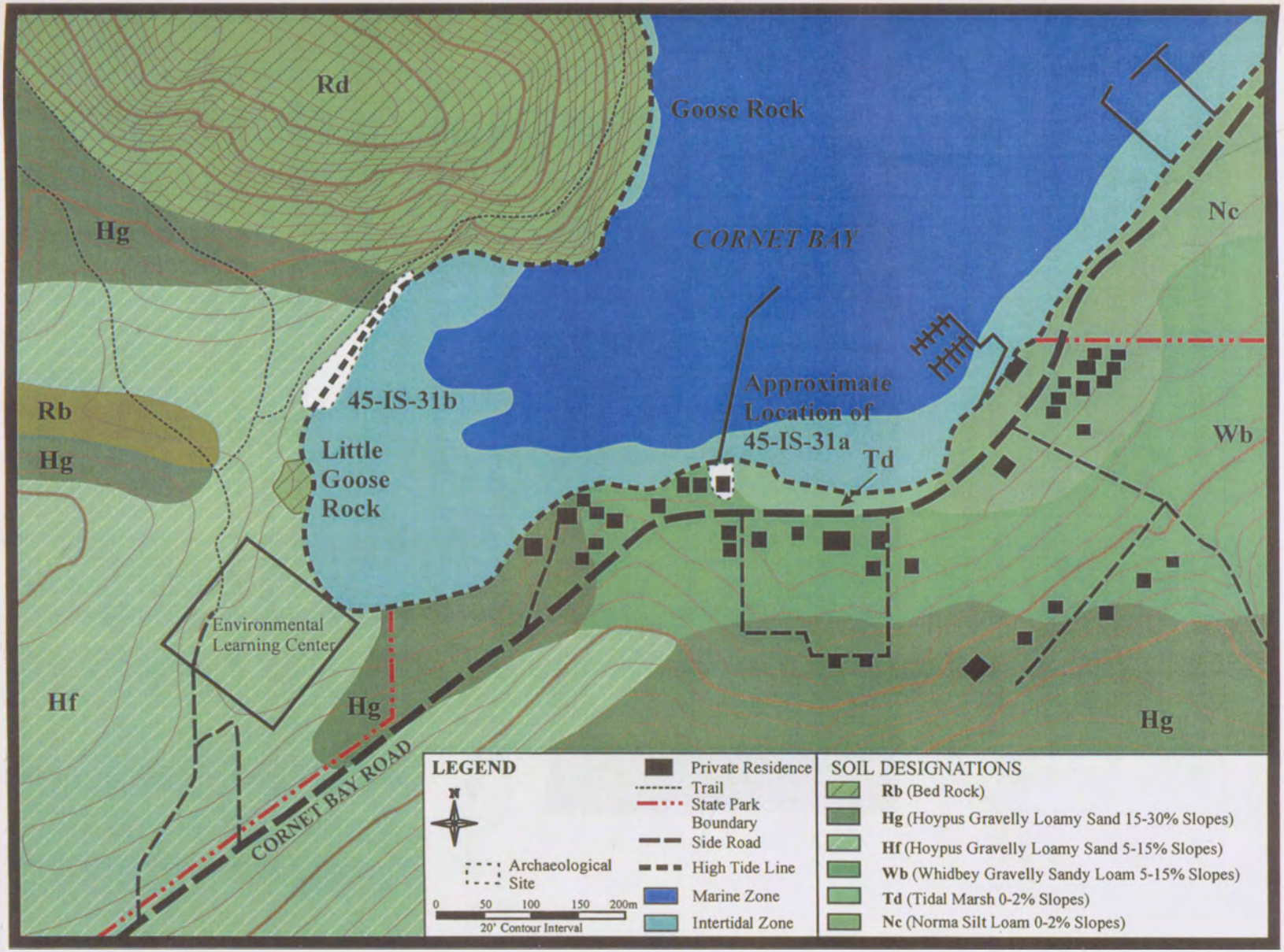


Figure 25: The Cornet Bay area. This map illustrates the local soil types (Ness and Richins 1958), the boundaries of Deception Pass State park, the development of private land, and the boundaries of archaeological sites.

In the course of photographing the 45-IS-31b site area, I encountered disturbed shell midden material on the edge of a private lot adjacent to a public access parking lot and floating dock located along the north side of Cornet Bay Road (Figure 26). A search of the known sites along the east side of Cornet Bay revealed that 45-IS-94 and 45-IS-203 are located approximately 750m to the northeast. The physical location of the shell midden corresponds to the description of the 45-IS-31a site area recorded by Bryan and Lurman in 1953 and the Township and Range location given in Bryan's masters thesis (1955:60). On the basis of the presence of disturbed midden, the similarity between the physical location and Bryan and Lurmans' site description, the lack of a corresponding site designation, and the Township and Range coordinates supplied by Bryan (1955), I believe that this cultural material represents site area 45-IS-31a.

Figure 26: Aerial photograph of the approximate location of site 45-IS-31a. This site is located on private land located on the south shore of Cornet Bay in the lot adjacent to the public parking area. (Peltier et al. 1997)

The 45-IS-31b Site Area

The 45-IS-31b site area (Figure 27) was extensively photographed (Figure 28, 29, and 30) in the process of a pedestrian survey conducted to define the extent of the midden and to create a sketch map of the site area (Figure 31). One cobble tool (Figure 32) was located in the course of this survey.

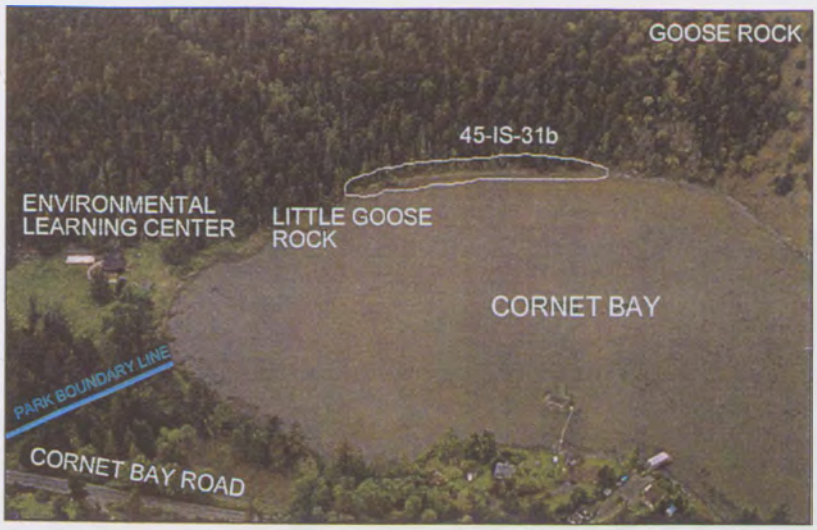


Figure 27: Aerial photo of the 45-IS-31b site area. The Cornet Bay site 45-IS-31b is located in the northwest corner of Cornet Bay between the foot of Goose Rock and Little Goose Rock.

Figure 28: Looking northwest across Cornet Bay from the 45-IS-31a site at the 45-IS-31b site area.

Figure 29: View to the southwest from the foot of Goose Rock along the shoreline towards Little Goose Rock.

Midden visible in the exposed bank extends 78m along the shore (Figure 30). In addition, shell midden is exposed in the upper limits of the intertidal zone where forest underbrush gives way to intertidal vegetation (Figure 31). The total length of midden exposure along the shoreline, including that visible within the intertidal zone, was 146m. Surface pedestrian survey undertaken to ascertain the western boundary of the 45-IS-31b shell midden revealed midden exposures on the southern end of the site at the junction of two foot paths and around a large cedar tree. Both of these exposures are located at distances greater than 20m inland from the shoreline. In addition, examination of a tip-up exposure to the southwest did not uncover any evidence of cultural material. Therefore, the south end of the shell midden appears to lie somewhere between these two exposures.

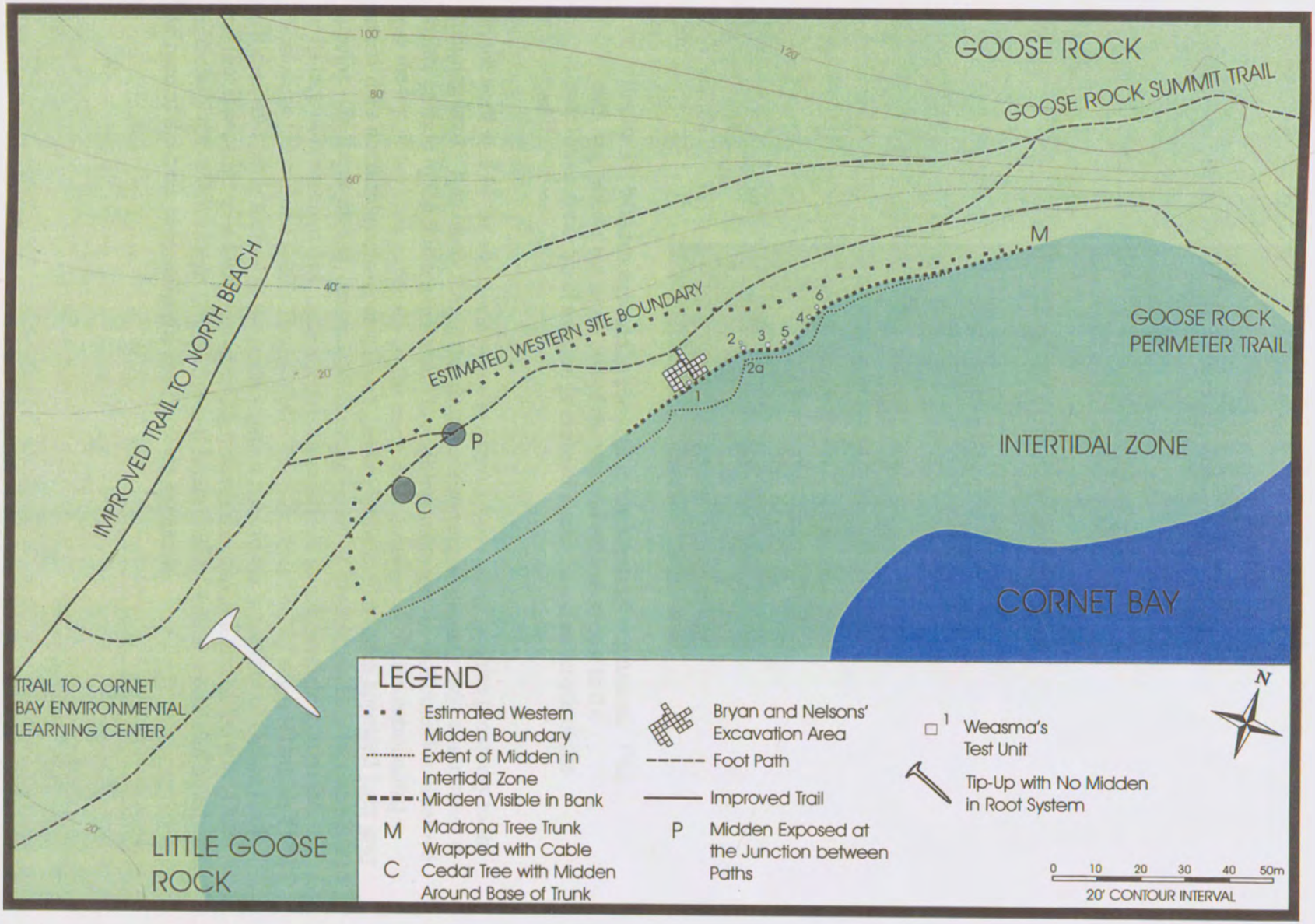


Figure 30. Sketch map of the 45-IS-31b site area illustrating the estimated site boundaries based on pedestrian survey.

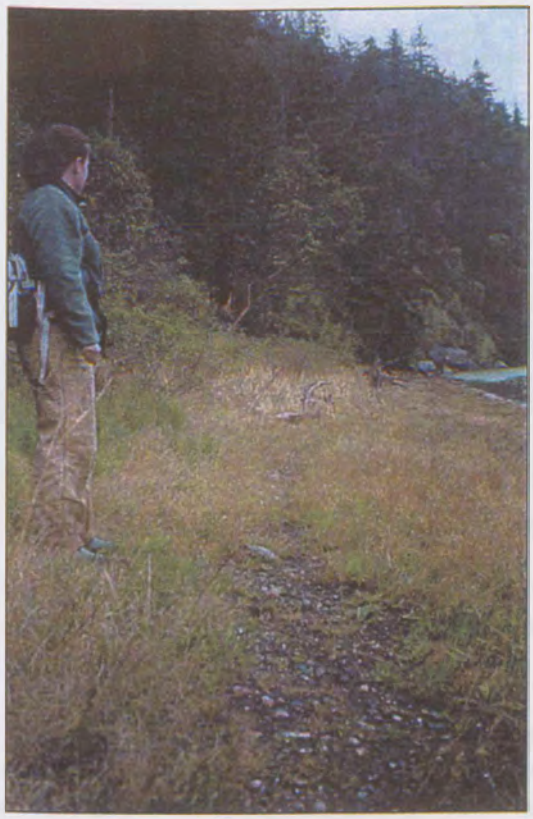


Figure 31: Midden exposed in the path in the intertidal vegetation. This path begins near the south end of the site and runs northeast to the excavation area. Shell midden is exposed along the entire length of the path.

On the north end of the site, Pleistocene sediments were noted in close proximity to the slumping bank. It is likely that in this area the increased slope may have contributed to greater erosion of the midden material. In addition, although the shell midden observed near the top of the bank exposure on the north end contained shell, the surrounding matrix does not display charcoal staining. Instead, this shell midden appeared light gray in color. On the north end, determination of the extent of the midden may be complicated by its lack of distinctive dark coloration that would help to differentiate it from the Pleistocene gravels and sand. The results of the pedestrian survey suggest that the 45-IS-31b shell midden is narrow to the north where it rises towards the foot of Goose Rock and that it expands to at least 20m in width towards the southern end of the site. One unifacially retouched cobble (Figure 32) and dacite flaking debitage was also noted along the base of the bank containing the shell midden exposure.

Figure 32: A quartzite cobble tool found during pedestrian survey. This tool was found near the north end of the midden on the beach. The Leatherman tool is 10cm in length.

The surface topography and features illustrated in the 1950s photographs (Figures 33 and 34) were useful in relocating the excavation area. Remnant surface depressions mark the units excavated between 1954 and 1958 and spoil piles are still visible (Figures 35 and 36).

Figure 33: Bryan's excavation units in the spring of 1954.

Figure 34: Photograph of Bryan's excavation units taken in the fall of 1954. Photograph reproduced from a slide taken by Herbert Taylor, Western Washington University.

The log present in Wessen's 1988 (See site form in Appendix A) and Weasma's 1991 photographs of the excavation area has since been removed and the trailhead onto the beach is once again in use (Figure 35 and 36). Foot traffic in this area is contributing to erosion of intact midden around the excavation area (Figure 37).

Figure 35: 2001 photograph of the area excavated by Alan Bryan in 1954, and Charles Nelson in 1957 and 1958. Note the tree trunk that visible in the 1950s photographs is still present along the shoreline.

Figure 36: The 1950s excavation area viewed from the shoreline. The trail leading out to the beach is seen to the right of center where it cuts through the dark colored midden. The spoil piles from the excavation units are visible to the right and left of the trail.

Figure 37: The base of the shell midden exposed along the side of the trail that cuts through the excavation area onto the beach. The Leatherman tool is 10cm in length.

SITE RECOMMENDATIONS

45-IS-31a

Relocation and assessment of condition of cultural deposits could be undertaken in the course of future research in this area. Since this site is located on private property, this would require contacting the current owner and securing permission to examine/test the cultural materials located on their property. A title search of the land parcels where midden is present could be conducted to determine the identities of the past owners of the property. If it is possible, interviews could be conducted with past and current owners of the property to establish how the cultural materials have been impacted by past development of the property. Based on this information, testing for the presence of intact midden deposits could be undertaken with the permission of the property owner.

45-IS-31b

Although the length of the shell midden deposits can be estimated from the exposure of shell midden in the bank along the shoreline, and existing surface disturbances along the path suggest that the southern extent of the site exceeds 20m in width (Figure 31), subsurface testing should be conducted to establish the western boundary of the site area along its entire length. This can be performed in a sensitive manner using shovel test pits to establish a pattern of midden presence/absence involving minimal disturbance of the midden material if the excavation of each individual shovel test is discontinued once midden is encountered. Although this will not provide information regarding the thickness of the midden in shovel test pits where midden material is present, it would be a useful strategy in delineating the western boundary of the site area.

At least two samples of charcoal obtained from Analytic Unit 1 are currently housed at the Burke Museum. Radiocarbon dating of these samples could be conducted in order to establish basal dates for occupation at this site.

Diversion of the footpath around the excavation area and refilling of the excavation unit depression could be undertaken to diminish the continued erosion of the intact midden.

Reprofiling of the intact midden exposures found along the shoreline could be undertaken to establish better stratigraphic control over the midden deposits. The profile should be carefully examined for evidence of occupation surfaces. If evidence of an occupation surface is located, these layers should be sampled and microstratigraphic analysis could be performed on the component levels. Column samples of midden material could be collected from profiles and a quantitative analysis of the faunal remains should be undertaken in order to generate information regarding resource utilization throughout the occupation of this site. In addition, samples could be taken from the column for the purposes of radiometric dating in order to establish conclusively where this site into the prehistory of the Deception Pass area.

CONCLUSIONS

Based on this analysis of the Cornet Bay assemblage, utilization of the Cornet Bay site (45-IS-31b) likely began during the late Locarno Beach or early Marpole phase and continued through the San Juan phase. Bryan and Nelson both interpreted the stratigraphy found at site 45-IS-31b as representing a change in subsistence strategy from a pattern of terrestrial resource utilization to one based primarily on marine resources. Without quantitative faunal data to demonstrate changes in resource utilization, this conclusion should not be accepted. Certainly the stratigraphic descriptions provided by Bryan and Nelson illustrate the fact that the lowest cultural deposits do not contain shell, while later cultural deposits contain large quantities of shell. Initially this would seem to support Bryan and Nelson's interpretation of shifting subsistence strategy. At the time Bryan made his interpretation, the lack of shell in the lower levels of a few sites could be interpreted broadly as indicating a regional terrestrial subsistence pattern. Almost fifty years later, we have ample evidence of marine resource use in Locarno Beach and Marpole components. The absence of shell in the earliest component at 45-IS-31b may be better explained in terms of local depositional processes than sweeping economic trends.

When you consider the possibility that the earliest component may represent the interior of an occupation area/structure, the pattern of artifact placement and midden distribution takes on a whole new light and many questions are raised which cannot be answered using the available information. Solland (1963) concluded that the site has been tested and adequately described. However, this conclusion is presumptuous when considering the available documentation, the results of this cumulative analysis and the number of questions that still remain regarding this site. Clearly more work needs to be performed in Cornet Bay.

REFERENCES CITED

Ames, K. M. and H. D. Maschner
1999 Peoples of the Northwest Coast: Their Archaeology and Prehistory. Thames and Hudson Ltd. London.

Benson, C. L.
1979 Archaeological Assessments of State Parks Capital Projects. Office of Public Archaeology, Institute for Environmental Studies, University of Washington, Renaissance Report No. 27. Seattle.

Borden, C. E.
1970 "Cultural History of the Fraser-Delta Region: An Outline," *BC Studies*, No. 6 and 7, pp. 95-112.

Bryan, A. L.
1954 Final Report of Excavations in Deception Pass State Park, June-August 1954. Report Submitted to the Washington State Parks Commission. Department of Anthropology, University of Washington, Seattle.
1955 An Archaeological Survey of Northern Puget Sound. MA Thesis, University of Washington, Seattle.
1957 "Results and Interpretations of Recent Archaeological Research in Western Washington with Circum-Boreal Implications," *Davidson Journal of Anthropology*, Vol. 3, pp. 1-16.
1963 An Archaeological Survey of Northern Puget Sound. Occasional Papers of the Idaho State University Museum, No. 11. Pocatello, Idaho.

Bryan, A. L. and R. B. Lurman
1953 University of Washington Archaeological Site Survey Form, on file at the Washington State Office of Archaeology and Historic Preservation.

Burley, D. V.
1980 Marpole: Anthropological Reconstruction's of a Prehistoric Northwest Culture Type. Department of Anthropology, Simon Fraser University, Publication No. 8.
1989 Senewelets: Culture History of the Nanaimo Coast Salish and the False Narrows Midden. Royal British Columbia Museum, Memoir No. 2.

Burt, W. H. and R. P. Grossenheider
1976 A Field Guide to the Mammals. Houghton Mifflin Company, Boston.

Campbell, S. K.
1981 The Duwamish No. 1 Site: A Lower Puget Sound Shell Midden. University of Washington, Institute of Environmental Studies, Office of Public Archaeology Research Report No. 1. Seattle.

Carlson, R. L.
1960 "Chronology and Culture Change in the San Juan Islands, Washington." *American Antiquity*, Vol. 25, NO. 4: 562-586.
1996 The Later Prehistory of British Columbia. in Early Human Occupation in British Columbia. edited by Roy Carlson and Luke R. Dalla Bona. University of British Columbia Press, Vancouver, British Columbia, Canada.

Duff, W.
1956 Unique Stone Artifacts from the Gulf Islands. Provincial Museum of Natural History and Anthropology, Report for the Year 1955, pp. 45-55. Don McDiarmid, Victoria, British Columbia, Canada.

Easterbrook, D. J.
1968 Pleistocene Stratigraphy of Island County, Washington. Washington Department of Water Resources, Water Supply Bulletin, No. 25.

Farrand, J.
1988 Western Birds. McGraw-Hill Book Company, New York.

Gose, P.
1976 The Features at Glenrose. in The Glenrose Cannery Site, ed. R.G. Matson. National Museum of Man Mercury Series. Archaeological Survey of Canada Paper No. 52.

Hedlund, G.
1968 Archaeological Sites in Deception Pass State Park. Report Submitted to the Washington State Office of Archaeology and Historic Preservation. Green River Community College, Auburn, Washington.

Huelsbeck, D. R.
1989 Food Consumption, Resource Exploitation and Relationships within and Between Households at Ozette, in *Households and Communities: Proceedings of the Twenty-first Annual Conference of the Archaeological Association of the University of Calgary,* edited by Scott MacEachern et al. pp. 143-156. University of Calgary Archaeological Association. Calgary, Alberta, Canada.

Kidd, R. S.
1964 "A Synthesis of Western Washington Prehistory From the Perspective of Three Occupation Sites," MA Thesis, University of Washington, Seattle.
1969 The Archaeology of the Fossil Bay Site, Sucia Island, Northwestern Washington State, in Relation to the Fraser Delta Sequence. Paper No. 2. *Contributions to Anthropology VII*, Bulletin 232. National Museums of Canada, Ottawa.

King, A. R.
1950 Cattle Point: A Stratified Site in the Southern Northwest Coast Region. Memoirs of the Society for American Archaeology, No. 7. Menasha, Wisconsin.

Lamb, A. and P. Edgel
1986 Coastal Fishes of the Pacific Northwest. Harbour Publishing Co. Ltd., Madeira Park, British Columbia, Canada.

Matson, R. G. and G. Coupland
1995 The Prehistory of the Northwest Coast. Academic Press, San Diego, California.

McMurdo, A. D.
1972 A Typological Analysis of Barbed Bone and Antler Projectile Points from the Northwest Coast. MA Thesis, Simon Fraser University.

Menzies, A.
1792 Menzies Journal of Vancouver's Voyage. Archives of British Columbia, Memoir No. V. Victoria, British Columbia, Canada.

Microsoft
2000 TerraServer Webpage. http://terraserver.homeadvisor.msn.com/default.asp

Mitchell, D. H.
1968 Archaeology of the Gulf of Georgia Area: A Natural Region and its Culture Types. University of Oregon, Phd Thesis.
1971a Archaeology of the Gulf of Georgia Area: A Natural Region and its Culture Types. Syesis, Vol 4. Supplement 1. British Columbia Provincial Museum. Victoria, British Columbia, Canada.
1971b The Dionisio Point Site and Gulf Island Culture History. Syesis, No. 4: 145-168.
1990 Prehistory of the Coasts of Southern British Columbia and Northern Washington. in the Handbook of North American Indians, Vol. 7. edited by Wayne Suttles. Smithsonian Institution, Washington D.C.

Morris, P. A.
1966 A Field Guide to Pacific Coast Shells. Houghton Mifflin Company, Boston.

Nelson, C. M.
1962 The Washington Archaeological Society's Work at 45-IS-31b. The Washington Archaeologist. Vol. VI, No. 2: 2-15.

Ness, A. O. and C. G. Richins
1958 Soil Survey, Island County Washington. Soil Survey Series 1949, No 6. United States Department of Agriculture in cooperation with the Washington Agriculture Experiment Station, Institute of Agricultural Sciences, State College of Washington. United States Government Printing Office, Washington D.C.

Peltier, T., Shipman, H., and B. Lynn
1997 Washington State Department of Ecology, Shoreline Aerial Photos. http://www.ecy.wa.gov/apps/shorephotos/

Samuels, S. R.
1989 Spatial Patterns in Ozette Longhouse Floor Middens, in *Households and Communities: Proceedings of the Twenty-first Annual Conference of the Archaeological Association of the University of Calgary,* edited by Scott MacEachern et al. pp. 143-156. University of Calgary Archaeological Association. Calgary, Alberta, Canada.

Solland, S. O.
1963 University of Washington Archaeological Site Survey Form, on file at the Washington State Office of Archaeology and Historic Preservation.

Solland, S. O. and N. A. Stenholm
1963 Archaeological Survey of Western Washinton State Parks. University of Washington. Seattle.

Stewart, H.
1977 Indian Fishing: Early Methods on the Northwest Coast. University of Washington Press, Seattle.

Suttles, W.
1990a Introduction to the Handbook of North American Indians, edited by Wayne Suttles et al. Vol. 7. Smithsonian Institution, Washington D.C.
1990b Central Coast Salish in Handbook of Native American Indians, edited by Wayne Suttles et al. Vol. 7. Smithsonian Institution, Washington D.C.

Suttles, W. and B. Lane
1990 Southern Coast Salish in Handbook of Native American Indians, edited by Wayne Suttles et al. Vol. 7. Smithsonian Institution, Washington D.C.

Thompson, G.
1978 Prehistoric Settlement Changes in the Southern Northwest Coast: A Functional Approach. University of Washington, Department of Anthropology Reports in Archaeology, No. 5.

Weasma, T. R.
1991 Field Report on Preliminary Testing of Cornet Bay Shell Deposits, Deception Pass Area, Whidbey Island, Washington. Report Submitted to Washington State Office of Archaeology and Historic Preservation. Roseburg, Oregon.

Wessen, G. C.
1988a Washington Archaeological Site Inventory Form. on file at the Washington State Office of Archaeology and Historic Preservation.
1988b Prehistoric Cultural Resources of Island County, Washington. Report Prepared for the Washington State Department of Community Development, Office of Archaeology and Historic Preservation. Wessen & Associates, Seattle.

Wilkes, C.
1841 Deception Passge, Oregon Territory. United States Exploring Expedition Map. Housed at the University of Washington Allen Map Library.
1845 Narrative of the United States Exploring Expedition, 1938-1842. Vol. IV. Lea and Blanchard, Philadelphia.

APPENDIX A: 45-IS-31 SITE FORMS

Appendix A Notes:

Please note that there is an error on Bryan and Lurmans' 1953 site survey form. Under the "Location" section, the legal description of the "S" (South) part of the midden (45-IS-31a) corresponds to the actual location of the north midden (45-IS-31b).

In Bryan's masters thesis (Bryan 1955:60), he describes the location of 45-IS-31a occupying an area located at Section 36, Township 34 N, Range 1 E, Northwest Quarter. This area description was confirmed during the 2001 site revisitation conducted by Anderson and Smith.

UNIVERSITY OF WASHINGTON
ARCHAEOLOGICAL FIELD FORMS
SITE SURVEY FORM

County Island Site No. IS 31

1. Map reference Metsker County and Metsker Township p.7 #1389
2. Type of site shell midden
3. Cultural affiliation prob. Lmatish
4. Location Both sides of Cornet Bay on N end of Whidby Island.

S part NW¼ sec.26 and Sec. 25 T. 34N R. 1E

5. Owner and address E.G. Rodger owner of S part. State Park N. part.
6. Previous owners
7. Tenant
8. Informants E.G. Rodger
9. Previous designations for site
10. Site description Shell middens. S part at base of slope adjacent to beach N part forms level beach which rises from base of rock outcrop to east until bank ca.15' above beach.
11. Position of site and surroundings on both sides of Cornet Bay. Old stream mouth at head of bay now occupied by group camp. N part is covered by typical forest cover including large firs.
12. Area of occupation S part ca. 100'x 25' N part ca. 135yrds.x ca. 65'.
13. Depth and character of fill S part- ½ strat. midden still exposed. N part ca. 3' (max.) strat. midden
14. Present condition S part destroyed. N part disturbed only by wave action.
15. Previous excavations
16. Material collected basalt frag. probably chipped from northern beach
17. Material observed Rodgers-two celts. percussion flaked then ground .
18. Material reported and owner
19. Recommendations for further work N part on state land should be tested.
20. Photograph Nos.
21. Maps of site

Recorded by A.L. Bryan, R.B. Lurman Date april 18, 1953

County

Site No.

UNIVERSITY OF WASHINGTON
ARCHAEOLOGICAL FIELD FORMS
SITE SURVEY FORM

Park: Deception Pas ST. Pk.

County Island Site No. 45IC31

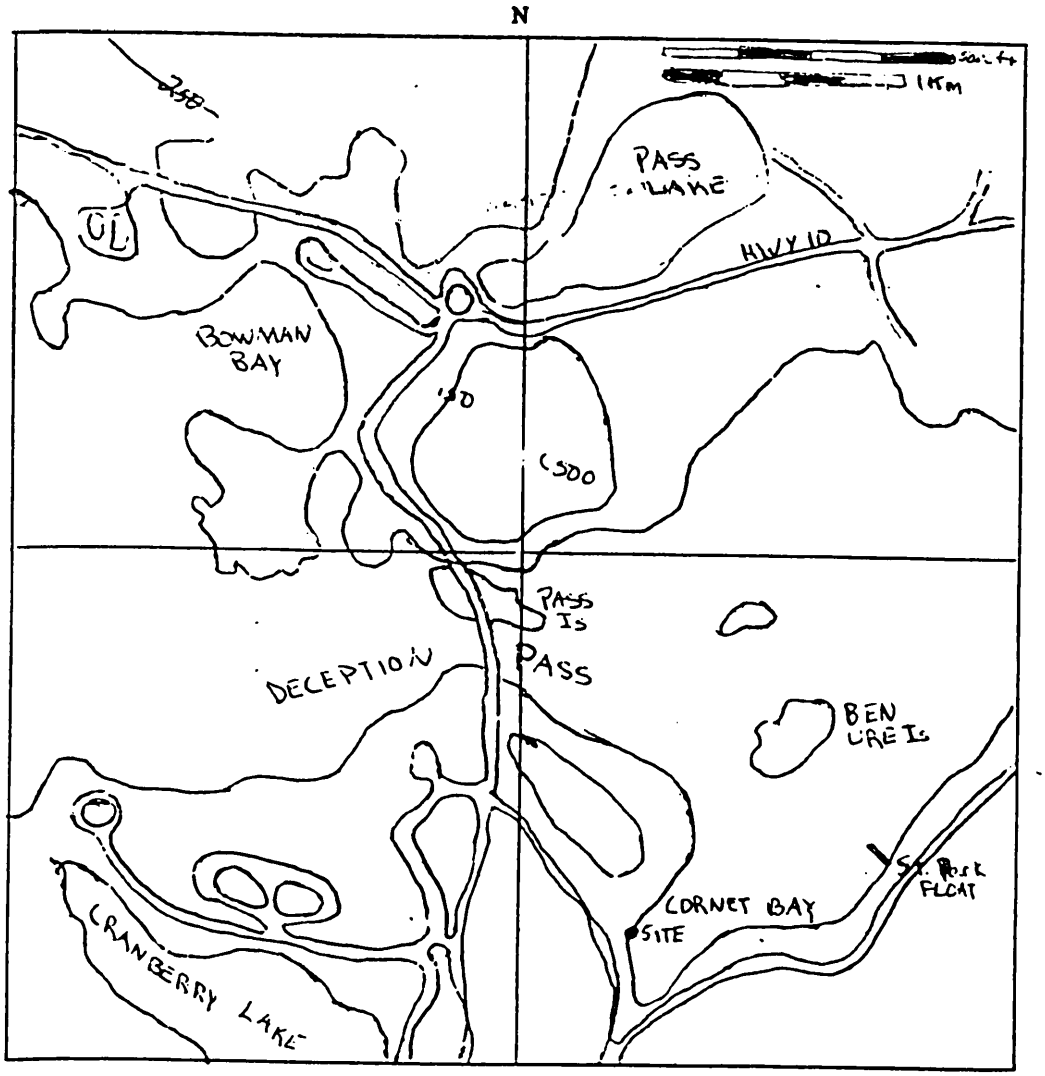
1. Map reference U.S.C.&G.S. Deception Pass Quad., Ketcker Island Map.
2. Type of site Shell midden
3. Cultural affiliation
4. Location located at the head of Cornet Bay, slightly to the north, in the St. Pk. group camp area, to the SE of Deception Pass.
   NE ¼ of NE ¼ Sec. 35 T. 33N R. 1E
5. Owner and address Washington State Park and Recreation Commission
6. Previous owners
7. Tenant
8. Informants
9. Previous designations for site 45 IS 31 and/or Cornet Bay Site
10. Site description consisting of a layer of coarse frag. shell in a black matrix in a wave cut bank on Cornet Bay.
11. Position of site and surroundings Excav. E-S cuts the bay, it fades into the wave cut bank to the N and to the S backed by forested area with many foot paths. It is to the N of the group camp houses etc.
12. Area of occupation 120 +. along the beach x 12'+. wide @
13. Depth and character of fill Thin layer of humus over 0 30 to 100 cms of coarse shell (this was exposed in the previous excavation cuts)
14. Present condition area of previous excavation poor, rest of site intact
15. Previous excavations (1)
16. Material collected shell and bone sample from area of previous excavation
17. Material observed shell layer, chared rocks, bone
18. Material reported and owner
19. Recommendations for further work None
20. Photograph Nos.
21. Maps of site refer above and to the reverse side

Recorded by Sonja O. Folland, Nancy A. Stenholm Date 7/27/63

County

Site No.

Site No. 45 IE31 Mapped by ~~H.A. Stenhelm~~ Date ~~7/27/63~~



reconstructed from Marine Atlas(1959) vol.1,

Scale Deception Pass 15' Quad. Reliability: good

22. Approach to site: Best approach is over highway (I-D) and then turn E onto park road (black topped) which runs along the south side of Cornet Bay. Then take a road which veers to the N to the group camp. The site is to the north of the group camp on the water's edge.

23. Remarks:

WASHINGTON ARCHAEOLOGICAL SITE INVENTORY FORM

Date: June 1988 County: Island
Compiler: Gary Wessen Site #: 45-IS-31

SITE DESIGNATION

Site Name: Coronet Bay
Field or other designations:
Computer Number: 1389

SITE LOCATION

UTM ZONE: 10 Easting: 52700- Northing: 536048-
Legal Description T: 34N R: 1E Section: 25 & 26
1/4,1/4,1/4: NW 1/4,1/4: SW 1/4: SW
1/4,1/4,1/4: SE 1/4,1/4: SE 1/4: SE
Latitude: Longitude:

Elevation (ft): 3-5 Slope: Aspect: SE

USGS Quad: Deception Pass, Wash. Series: 7.5 min Date: 1978

Other Maps Type:
Scale: Source: Date:

Location Description:
The site is located on the northern shore of Coronet Bay on the northern end of Whidbey Island. The site area is a low relatively narrow terrace between the beach and the steeper slopes of Goose Rock immediately to the north. The area is approximately .4 kilometers northeast of the Coronet Bay Interpretative Center; a maintained park trail passes the rear of the site, but it is otherwise undeveloped.

Approach to Relocate:
From the junction of Highway 20 and Coronet Bay Road, proceed east approximately .5 kilometers to the entrance to the Coronet Bay Interpretive Center. Turn north, enter, and park at the center. Walk to beach and proceed northwest along the beach to the site.

SITE DESCRIPTION

Narrative Description:
This site is a continuous mass of shell midden deposits exposed in wave cut, wave undercut, and slump-stabilized banks along the beach. The deposits contains a moderate to high density of variable fragmented shell dominated by Saxidomus and Mytilus e. The exposures reveal complex stratigraphy and whole valves are present in some areas. The WAS excavation units are still evident. Published accounts of test work here indicate that this site is much deeper than present observations.

Site Type: PS, MS/Shell Midden

Dimensions Method of horizontal measurement: Hipchain
Length (m): 180 Direction: SW-NE Width(m): 6 Direction:NW-SE
Method of vertical measurement: tape measure
Depth (cm): 65

Vegetation
Regional: Tsuga heterophylla Zone (Franklin and Dyrness 1973)
Local: Dry Coniferous Forest (Atkinson and Sharpe 1985)
On Site: Psuedostuga, Rosa, Mahonia.

Landforms
Local: Protected Saltwater Shoreline
On Site: Tideflat Beach

Water Resources
Type:
Distance:
Permanence:

CULTURAL MATERIALS AND FEATURES

Narrative Description:
Cultural materials noted in 1988 included faunal materials, lithic debris and fire-cracked rock. Faunal materials included mammal and fish, and the remains of at least 13 varieties of shellfish. Basalt chipped stone debitage is present in exposed deposits and on the beach in front of the site. Fire-cracked rocks are well represented.

No materials collected.

SITE AGE

Component: Phase:
Date(s): Dating Method:
Basis for Phase designation: none

SITE RECORDERS

Observed by: Address:

Recorded by: A. L. Bryan & R. Lurman Date: April 18, 1953
Affiliation: University of Washington

Revisited by: Washington Archaeological Society
Date revisited: 1957 and 1958
Affiliation:

Revisited by: S. Solland & N. Stenholm Date revisited: 1963
Affiliation: University of Washington

Revisited by: G. Hedlund Date revisited: 1968
Affiliation: Green River Community College

SITE HISTORY

Previous Work:
When recorded, this site was described as the intact portion of a larger site whose southern half was destroyed by construction of the Interpretative Center. This site has been the subject of more sustained excavation research than any other in Island County. A focus of efforts for Bryan, and later the Washington Archaeological Society, it has also been examined by several later surveys. Prior to the present effort, it was last examined in 1977. Currently, this site appears to contain - intact cultural deposits.

References:

Bryan, Alan L.
1955 An Intensive Archaeological Reconnaissance in the Northern Puget Sound Region. Unpublished Masters Thesis in Anthropology, University of Washington, Seattle.

1963 An Archaeological Survey of Northern Puget Sound. Occasional Papers of the Idaho State University Museum No. 11

Benson, Charlotte L.
1979 Archaeological Assessments of State Parks Capital Projects 1977-1979. Reconnaissance Report No. 27. Office of Public Archaeology, University of Washington, Seattle

Hedlund, Gerald
1968 Archaeological Sites in Deception Pass State Park. Washington Archaeologist 15(2).

Nelson, Charles M.
1962 The Washington Archaeological Society's Work at 45IS31B. The Washington Archaeologist 6(2):2-15.

Solland, Sonja O.
1963 Archaeological Survey of Western Washington State Parks. Report on file, Office of Archaeology and Historic Preservation, Olympia.

SITE OWNERSHIP

Owner: Washington State Parks and Recreation Commission
Address: Deception Pass State Park
Tax lot No.:

FORM RECORDS

Other Forms attached: Map Page, Fauna Page, Photo Page.

WASHINGTON ARCHAEOLOGICAL SITE INVENTORY FORM

(PAGE 4)

Site # 45-IS-31
(for WARC use only)

USGS MAP

Quad Name* DECEPTION PASS, WA.

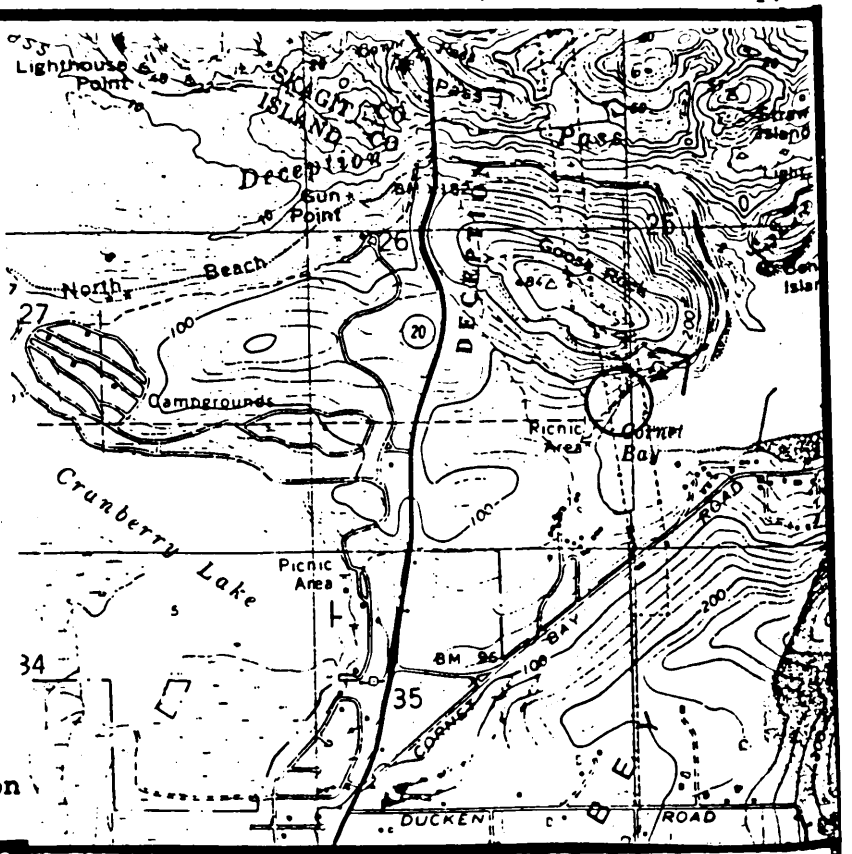
Series* 7.5 MIN

Date* 1978

PHOTO VIEW →

Section 25 & 26

Plot site location



SKETCH MAP

Legend

Known boundary _·_·

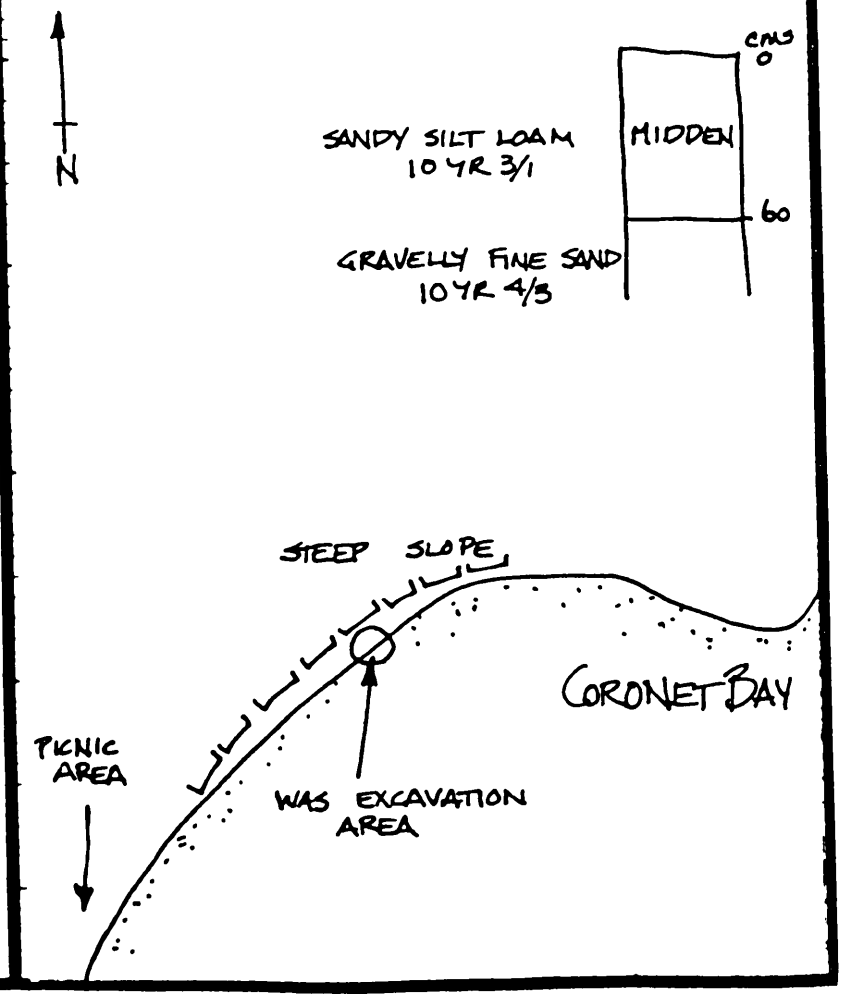
Possible boundary ⌐¬⌐¬

Other symbols
(other than USGS)

100 METERS

SCALE:
1" = 100 M

North Arrow
(mag.)



WASHINGTON ARCHAEOLOGICAL SITE INVENTORY FORM

Photo Page 1

Site Number: 45 IS 31
Roll Number: 3
Photographer: G. Wessen

Frame Number: 21
Date: APRIL 1988

AREA of detail
in Photo 2

WASHINGTON ARCHAEOLOGICAL SITE INVENTORY FORM

Photo Page Z

Site Number: 45 IS 31
Roll Number: 3
Photographer: G. Wessen

Frame Number: zz
Date: APRIL 1988

WASHINGTON ARCHAEOLOGICAL SITE INVENTORY FORM
Fauna Page

45 IS 31

SHELLFISH

Protothaca staminea	- Minor Species -
Saxidomus giganteus	- Major Species -
Mytilus edulis	- Major Species -
Mytilus californianus	- not observed -
Clinocardium nuttalli	- Minor Species -
Tresus spp.	- Minor Species -
Macoma nasuta	- Minor Species -
Macoma irus	- not observed -
Macoma secta	- not observed -
Hinnites multirugosa	- not observed -
Ostrea lurida	- not observed -
Thais lamellosa	- Minor Species -
Thais emarginata	- Minor Species -
Thais caniculata	- not observed -
Fusitriton oregonensis	- not observed -
Littorina sitkana	- Minor Species -
Acmaea pelta	- not observed -
Acmeae t. scutum	- not observed -
Searlesia dira	- not observed -
Natica clausa	- not observed -
Polinices lewisi	- not observed -
Bittium eschrichti	- not observed -
Cryptochiton stelleri	- Minor Species -
Katharina tunicata	- Minor Species -
Cancer productus	- not observed -
Balanus spp.	- Minor Species -
Strongylocentrotus drobachiensis	- Minor Species -
Strongylocentrotus purpuratus	- not observed -
Strongylocentrotus franciscanus	- not observed -

VERTEBRATES

Odocoileus hemionus	- Present -
Cervus canadianus	- not observed -
Moderate-sized unidentified mammal	- Present -
Small unidentified mammal	- not observed -
Unidentified terrestrial mammal	- not observed -
Phoca vitulina	- not observed -
Eumetopias jubata	- not observed -
Phocaenidae	- not observed -
Cetacea	- not observed -
Unidentified marine mammal	- not observed -
Large unidentified bird	- not observed -
Moderate-sized unidentified bird	- not observed -
Oncorhynchus spp.	- Present -
Squalus acanthias	- not observed -
Clupea spp.	- not observed -
Pleuronectiformes	- not observed -
Unidentified fish	- Present -

APPENDIX B: SPECIES PRESENT IN WEASMA (1991) FAUNAL ANALYSIS

Appendix B Notes:

Common names of vertebrate and invertebrate species were obtained from Farrand (1988), Lamb and Edgel (1986), Burt and Grossenheider (1976), and Morris (1966).

Common Name	Genus	Species	Vertebrate/ Invertebrate	Locality							
				1	2	2a	3	4	5	6	G
Spiny Dogfish	Squalus	acanthias	Vertebrate	P	P	A	A	A	P	A	A
Big Skate	Raja	binoculata	Vertebrate	P	P	A	A	A	P	P	A
Ratfish	Hydrolagus	colliei	Vertebrate	P	P	A	A	A	P	A	A
Salmon	Onchorhynchus	sp.	Vertebrate	P	P	A	A	A	P	A	A
Buffalo Sculpin	Enophrys	bison	Vertebrate	P	A	A	A	A	P	P	A
Red Irish Lord	Hemilepidotus	hemilepidotus	Vertebrate	P	A	A	A	A	P	A	A
Sculpin	Icelinus	sp.	Vertebrate	P	P	A	A	A	P	A	A
Pile Perch	Damalichthys	vacca	Vertebrate	P	P	P	A	A	P	P	A
Starry Flounder	Platichthys	stellatus	Vertebrate	P	A	A	A	A	A	A	A
Unidentified Frog	----------	----------	Vertebrate	P	A	A	A	A	A	A	A
Western Pond Turtle*	Clemmys	marmorata	Vertebrate	A	A	A	A	A	A	A	P
Kingsnake/Milksnake	Lampropeltis	sp.	Vertebrate	P	A	A	A	A	A	A	A
Unidentified Bird	----------	----------	Vertebrate	P	P	P	A	A	P	A	A
Horned Grebe**	Podiceps	auritis	Vertebrate	A	A	A	A	A	A	A	A
Goose**	Anser	sp.	Vertebrate	A	A	A	A	A	A	A	A
Canada Goose	Branta	canadensis	Vertebrate	A	A	A	A	A	A	P	A
White Winged Scoter	Melanitta	fusca	Vertebrate	A	A	A	A	A	A	A	P
Vole	Microtus	sp.	Vertebrate	P	A	A	A	A	A	A	A
Muskrat	Ondatra	zibethicus	Vertebrate	P	A	A	A	A	A	A	A
Raccoon	Procyon	lotor	Vertebrate	P	A	A	A	A	A	A	A
Fox*	Vulpes	sp.	Vertebrate	A	A	A	A	A	A	A	P
Mule Deer**	Odocoileus	hemionus	Vertebrate	A	A	A	A	A	A	A	A
Lined Chiton	Tonicella	lineata	Invertebrate	P	A	A	A	A	A	A	A
Chiton	Mopalia	hindsii	Invertebrate	P	A	A	A	A	P	A	P
Black Katy Chiton	Karharina	tunicata	Invertebrate	P	P	A	A	P	P	P	P
Giant Chiton	Cryptochiton	stelleri	Invertebrate	P	A	A	A	P	P	P	P
Rough Key Hole Limpet*	Diodora	aspera	Invertebrate	A	A	A	A	A	A	A	P
White-capped Limpet*	Acmaea	mitra	Invertebrate	A	A	A	A	A	A	A	P
Limpet	Lottia	digitalis	Invertebrate	P	P	A	A	A	A	A	A
Limpet	Lottia	pelta	Invertebrate	P	P	A	P	A	A	A	A
	Tectura	scutum	Invertebrate	A	P	A	A	A	A	A	P
Unperfortated Limpet	Lottia	strigatella	Invertebrate	P	P	A	A	A	P	A	P

Appendix B: Species Identified in Weasma (1991) Faunal Analysis

Sitka Periwinkle	Littorina	sitkana	Invertebrate	P	A	A	A	A	P	A	P
Checkered Periwinkle	Littorina	scutulata	Invertebrate	P	A	A	A	A	P	A	P
Eschricht's Bittium	Bittium	eschrichtii	Invertebrate	A	P	A	A	A	A	A	A
Sculptured Rock Shell*	Ocenebra	interfossa	Invertebrate	A	A	A	A	A	A	A	P
Frilled Dogwinkle	Nucella	lamellosa	Invertebrate	P	P	A	A	P	P	P	P
Emarginate Dogwinkle	Nucella	emarginata	Invertebrate	P	P	A	A	A	P	P	P
Dire Whelk	Searlesia	dira	Invertebrate	A	P	A	A	A	A	A	P
Lean Dog Whelk	Nassarius	mendica	Invertebrate	A	P	A	A	A	A	A	A
Odostome*	Odostomia	sp.	Invertebrate	A	A	A	A	A	A	A	P
Bittersweet	Glycymeris	subobsoleta	Invertebrate	A	P	A	A	A	A	A	A
Bay Mussel	Mytilus	edulis	Invertebrate	P	P	P	P	P	P	P	P
Nuttal's Cockle	Clinocardium	nuttallii	Invertebrate	P	P	A	A	P	P	P	P
Horse Clam	Tresus	capax	Invertebrate	P	P	A	A	P	A	P	P
Bent Nose Clam	Macoma	nasuta	Invertebrate	P	A	A	A	A	A	P	P
Pacific Littleneck Clam	Protothaca	staminea	Invertebrate	A	A	A	A	P	A	P	P
Butter Clam	Saxidomus	giganteus	Invertebrate	P	P	A	A	P	P	P	P
Barnacle	Semibalanus	cariosus	Invertebrate	P	A	A	A	P	A	P	P
Barnacle	Balanus	rostratus	Invertebrate	P	A	A	A	A	A	A	A
Barnacle	Balanus	glandula	Invertebrate	P	P	P	P	P	P	P	P
Dungeness Crab	Cancer	magister	Invertebrate	A	A	A	A	A	P	A	P
Unidentified Crab	Cancer	sp.	Invertebrate	P	P	A	A	P	P	A	P
Green Sea Urchin	Stongylocentrotus	droebechiensis	Invertebrate	P	P	P	P	P	P	P	P
Red Sea Urchin	Stongylocentrotus	franchisanus	Invertebrate	P	A	A	A	A	A	A	P

* This species was only present in samples collected from the beach level. Since these faunal remains were not collected directly from the midden, their presence in association with the cultural deposit should be questioned until further analysis proves otherwise.

** This species is listed, but is not reported as present in any of the samples.

The faunal remains from locality seven were not included in this appendix because they were collected from a Pleistocene deposit of Everson Glaciomarine Drift and were found in growth position.

The following abbreviations were used in this appendix:

P	Present
A	Absent
G	G Refers to specimens presumed to have eroded out of the profile and collected along the base of the bank.

APPENDIX C: INTEGRATED CATALOG OF ARTIFACTS PUBLISHED BY NELSON (1962) AND BRYAN (1963)

Appendix C: Integrated Catalog of Artifacts
Published by Nelson (1962) and Bryan (1963)

Description	Modification	Material		AU	T Class	Bryan (1963) Strata	Nelson (1962) Cultural Component	Unit	Fig
Point	Flaked	Stone	Basalt	1	8	1			16:04
Point	Flaked	Stone	Felsite	1	8	1			16:05
Point	Flaked	Stone	Basalt	1	8	1			16:03
Chopper	Flaked	Stone		1	9	1			
Chopper	Flaked	Stone		1	9	1			
Chopper	Flaked	Stone, Cobble		1	9	1			16:1,2
		Hematite		1	.	1			
	Ground	Stone	Fragment	1	.	1			
Debitage	Flake	Stone	Metamorphic	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Debitage	Flake	Stone	Basalt	1	.	1			
Core	Flaked	Stone	Basalt	1	.	1			

	Ground	Stone	Incised	1		1			
Chisel Bit	Ground	Bone		2	1	2			22:13
	Groove/Snap	Bone		2	1		2	6L1	
Wedge	Ground	Bone	Fragment	2	1		2	5R2	
Wedge	Ground	Antler	Asymetrical, Long, Unibeveled	2	1	2			
Wedge	Ground	Antler	Broad, Flat	2	1		2	8L3	
Wedge	Ground	Antler	Bifacially Ground, Broken Bit	2	1		2	7R1	
Wedge Bit	Ground	Antler	Fragment	2	1	2			
Wedge	Ground	Antler		2	1		2	6L1	
Adze	Ground	Stone	Nephrite	2	2	2			16:08
Adze	Ground	Stone	Slate	2	2		2	7R1	
	Ground	Stone	Bibeveled Bit	2	2		2	9L3	
UnilatPointBase	Ground	Bone		2	3		2	7L3	
UnilatPointBase	Ground	Bone	PossiblePointBase	2	3		2	9L3	
Abrader	Ground	Stone	Sandstone	2	4		2	6L2	
Abrader	Ground	Stone	Mudstone	2	4		2	7L4	
Abrader	Ground	Stone	Fragment	2	4	2			
Point	Ground	Bone	Paddle Shaped	2	5		2	7L4	
	Ground	Bone		2	6		2	5R2	
	Ground	Bone		2	6	2			20:02
Bipoint	Ground	Bone	Flat	2	6		2	8L4	
Point	Ground	Bone	Bird	2	6	2			22:03
Point	Ground	Bone	Bird	2	6	2			22:03
Point	Flaked	Stone	Basalt	2	8		2	7R1	
Point	Flaked	Stone	Basalt	2	8		2	5L4	
Point	Flaked	Stone	Basalt	2	8		2	7R1	
Point	Flaked	Stone	Basalt	2	8		2	7R1	
Point	Flaked	Stone	Basalt	2	8		2	7L4	
	Flaked	Stone	Fragment	2	9	2			
"Knife"	Flaked	Stone	Retouched Flake	2	9		2	7C1	
	Flaked	Stone	Utilized Flake	2	9		2	9L3	
	Ground	Stone	Slate	2	10	2			
	Ground	Mussel		2	10	2			
	Ground	Bone	Ulna	2	11	2			
Awl, Needle	Ground	Bone		2	11		2	5R1	
	Ground	Bone	Frag Midsection	2	11		2	9L3	
Point	Ground	Bone		2	11	2			22:01

Appendix C: Integrated Catalog of Artifacts
Published by Nelson (1962) and Bryan (1963)

Awl	Ground	Bone	Splinter	2	11	2			22:16
Tine		Antler		2	13		2	6L2	
Tine	Adzed/Snapp	Antler		2	13		2	7L4	
Haft	Ground	Antler		2	16	2			
	Ground	Bone	Deer Scapula	2	17		2	5R1	
Unilat Point	Ground	Bone		2	18	2			22:14
Whistle	Ground	Bone	Bird	2	.	2			
Pendant	Ground	Tooth	Canine	2	.	2			19:09
Debitage	Ground/Polish	Antler	Fragment	2	.	2			
Debitage	Whittled	Antler	Fragment	2	.	2			
	Ground	Stone	Polished	2	.	2			
Beaming Tool	Ground	Bone	Elk Rib	3	1	4			
Chisel	Ground	Bone		3	1	3			22:11
Wedge	Ground	Antler	Asymetrical, Long, Unibeveled	3	1	3			
Wedge	Ground	Antler	Asymetrical, Short, Bibeveled	3	1	3			
Wedge	Ground	Antler	Asymetrical, Short, Unibeveled	3	1	3			
Wedge	Ground	Antler	Bifacially Beveled Bit	3	1		1	8L2	
Adze	Ground	Stone	Schist-Slate	3	2	3			
UnilatPoint	Ground	Bone		3	3		1	9L3	
UnilatPoint	Ground	Bone		3	3		1	8L4	
	Ground	Bone		3	3	4			13:02
Abrader	Ground	Stone	Sandstone	3	4	3			
Point	Ground	Bone		3	5		1	8L3	
Bipoint	Ground	Bone		3	6	3			22:05
	Ground	Bone		3	6	3			22:09
	Ground	Bone		3	6	3			22:09
	Ground	Bone		3	6	3			22:09
	Ground	Bone		3	6	3			22:09
	Ground	Bone		3	6	3			22:09
Point	Ground	Bone	Bird	3	6	3			22:04
Point	Ground	Bone	Bird	3	6	3			22:04
Point	Ground	Bone	Bird	3	6	3			22:04
Point	Ground	Bone	Bird	3	6	3			22:04
	Ground	Bone		3	6	3			19:04
	Ground	Bone		3	6	3			19:05
	Ground	Bone		3	6	3			22:10
	Ground	Bone		3	6	3			22:10

	Ground	Bone		3	6	3			22:10
	Ground	Bone		3	6	3			22:10
	Ground	Bone		3	6	3			
Point	Ground	Bone		3	6	3			
Point	Ground	Bone		3	6	3			
Point	Ground	Bone		3	6	3			
Point	Ground	Bone		3	6	3			
Point	Ground	Bone	Bird	3	6	3			22:02
Point	Ground	Bone	Associated	3	6	3			22:06
Point	Ground	Bone	Associated	3	6	3			22:07
Point	Ground	Bone	Associated	3	6	3			22:08
	Ground	Stone	Slate	3	10		1	6L1	
	Ground	Slate	Fragment	3	10	3			
	Ground	Bone	Ulna	3	11	2			
Needle	Ground	Bone	Bird	3	11	3			
Needle	Ground	Bone	Bird	3	11	3			
Awl	Ground	Bone	Ulna	3	11		2	5L4	
Awl	Ground	Bone		3	11		1	7R1	
	Ground	Bone		3	11		1	7L4	
Point	Ground	Bone		3	11	3			22:01
Point	Ground	Bone		3	11	3			22:01
Awl	Ground	Bone	Metapodial	3	11	3			19:03
Awl	Ground	Bone	Metapodial	3	11	4			
Awl	Ground	Bone	Splinter	3	11	3			
Awl	Ground	Bone	Splinter	3	11	3			
Awl	Ground	Bone	Splinter	3	11	3			
Awl	Ground	Bone	Splinter	3	11	3			
	Ground	Tooth	Beaver	3	14		1	8L3	
Hammerstone	Pecked	Stone		3	15	3			
Hammerstone	Pecked	Stone		3	15	3			
Hammerstone	Pecked	Stone		3	15	3			
Hammerstone	Pecked	Stone		3	15	1			
Anchorstone	Ground	Stone		3	19	3			
Club	Ground	Bone	Whale	3	.	4			21:04
	Ground	Bone	Deer Phalange	3	.	4			
Debitage	Sawed	Bone		3	.	3			
Debitage	Sawed	Bone		3	.	3			

Appendix C: Integrated Catalog of Artifacts
Published by Nelson (1962) and Bryan (1963)

		Shell	PigmentBowl	3	.	3			
Awl or Point	Ground	Wood		3	.	3			
Awl or Point	Ground	Wood		3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Ground/Polish	Antler	Fragment	3	.	3			
Debitage	Whittled	Antler	Fragment	3	.	3			
Debitage	Adzed	Antler	Fragment	3	.		1	7L3	
	Ground	Slate	Perforated	3	.	3			
	Ground	Stone	Fragment	3	.	3			
	Burned	Wood	Fire Hardened	3	.		1	7L3	
	Burned	Wood	Stake	3	.		1	8L4	
	Hist	Wood	Stake	3	.		1	7L4	
	Unmod	Bone		3	.	3			
	Unmod	Bone		3	.	3			
	Unmod	Bone		3	.	3			
	Unmod	Stone	Mudstone	3	.	4			
	Unmod	Faunal	Dogfish Spine	3	.	3			
	Unmod	Faunal	Dogfish Spine	3	.	3			
	Unmod	Faunal	Dogfish Spine	3	.	3			
Coin	EuroMan	Metal	US Nickle (1914)	3	.	3			
Nails (56)	EuroMan	Metal	Iron	3	.	3			
Wire	EuroMan	Metal	Iron	3	.	3			
	Ground/Drilled	Tooth	Canine	3			1	8L3	
	Flake	Stone	Utilized Flake	.	9	.			

APPENDIX D: BURKE MUSEUM CATALOG OF ARTIFACTS FROM CORNET BAY

Appendix D Notes:

For the purposes of this analysis the following descriptive definitions were used:

Bone "Point" was defined as a fragment with one point.

Bone "Unipoint" was defined as complete with one point.

Bone "Bipoint" was defined as complete with one point.

Appendix D

Burke Museum Catalog of Artifacts from Cornet Bay

Catalog #	Desc	Complete/Fragment	Modification	Material		Present/Absent	T Class	Reference
2*	Abrader	Fragment	Ground	Stone		P	4	
3*	Sinker	Fragment	Flaked	Stone		P	19	
Unnumbered			Ground	Shell	California Mussel	P	10	
45-IS-31-#'s	**Collection A**							
1	Wedge/Adze/Chisel	Bit Fragment	Ground	Antler		P	1	
2	Abrader	Fragment	Ground	Stone	Sandstone	P	4	
3		Fragment	Unmodified	Bone	Sea Mammal	P	.	
4	Wedge/Adze/Chisel		Ground	Bone		P	1	
5	Abrader, Dish Shaped	Fragment	Ground	Stone	Siltstone Concretion	P	4	
6		Fragment	Adzed, Ground	Bone	Rib?	P	.	
7	Unilateral Harpoon Point	Complete	Ground	Bone		P	3	
8		Fragment	Ground	Bone		P	.	
9		Fragment	Ground	Stone		P	4	
10	Ground Face, 2 Beveled Edges	Fragment	Ground	Stone	Slate	P	10	
11	Unilateral Harpoon Point	Fragment	Ground	Bone		P	3	
12		Fragment	Ground	Bone		P	11	
13		Fragment	Adzed, Ground	Antler		P	1	
14	Wedge/Adze/Chisel	Bit Fragment	Ground	Bone		P	1	
15	Awl		Ground	Antler		P	11	
16	Debitage	Fragment	Adzed, Snapped	Antler	Tine	P	.	
17		Fragment	Split	Antler		P	.	
18		Fragment	Adzed, Grooved	Antler	Tine	P	.	
19	Unilateral Harpoon Point	Fragment	Ground	Bone		P	3	
20	Knife, 1 Bibeveled Edge, 1 Blunt Edge	Fragment	Ground	Stone	Slate	P	10	
21	Wedge/Adze/Chisel	Flattened Point	Ground, Polished	Antler	Tine	P	1	
22							.	
23	Sample	Soil w/ Seeds				P	.	

24	Sample	Wood, Bone - 2 Unmodified Fragments				P	.	
25	Sample	Bone Fragments, Unmodified				P	.	
45-IS-31/#'s	**Collection B**	**Bryan 1954 Collection**						**Bryan (1955) Reference**
1a**	Unipoint		Ground	Bone		P	6	Plate XIV:6
1b**		Fragment	Unmodified	Bone		P	.	
1c**	Bipoint		Ground	Bone		P	6	Plate XIV:7
1d**	Needle		Ground	Bone		P	11	Plate XIV:8
1e**		Fragment	Ground	Bone		P	.	
1A	Dogfish Spine	Complete	Unmodified			P	.	
1B	Dogfish Spine	Complete	Unmodified			P	.	
1C	Dogfish Spine	Complete	Unmodified			P	.	
2	Bipoint		Ground	Bone		P	6	
3			Unmodified	Bone	Ulna	P	.	
4	Long-bone Shaft	Fragment	Unmodified	Bone	Avian	P	.	
5		Fragment	Ground	Bone	Avian, Shaft	P	.	
6						A	.	
7						A	.	
8	1 Bibeveled Edge	Fragment	Ground	Stone	Slate	P	10	
9	Pendant		Grooved	Tooth		P	.	
10	Debitage		Ground, Grooved, Snapped	Bone	Metapodial	P	.	
11	Wedge	Bit Fragment	Ground	Antler		P	1	
12						A	.	
13		Fragment	Ground	Bone		P	.	
14	Abrader		Ground, Flaked	Stone		P	4	
15	Coin, 1911 Nickle					P	.	
16	Debitage	Fragment	Ground	Bone		P	.	
17		Fragment	Ground	Bone	Rib	P	.	

Appendix D

Burke Museum Catalog of Artifacts from Cornet Bay

18	Bipoint		Ground	Bone		P	6	
19	Bipoint		Ground	Bone		P	6	
20						A	.	
21	Awl	Complete	Ground	Bone		P	11	
22	Wedge	Complete	Ground	Antler	Tine	P	1	Plate XIII:3
23	Awl	Complete	Ground	Bone		P	11	
24A	Needle	Complete	Ground	Bone	Avian	P	11	
24B		Fragment	Ground, Burnished	Bone	Avian	P	.	
25			Adzed, Ground	Antler	Beam	P	1	
26	Unipoint	Complete	Ground	Bone	Split Rib	P	6	
27	Unipoint		Ground	Bone	Split Rib	P	6	
28		Fragment	Ground	Bone		P	.	
29	Club Handle	Fragment	Ground	Bone	Sea Mammal	P	.	Plate XIII:4
30						A	.	
31						A	.	
32	Abrader	Fragment	Ground	Stone	Sandstone	P	4	
33A	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
33B	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
33C	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
33D	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
33E	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
33F	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
34	Unilateral Harpoon	Fragment	Ground	Bone		P	3	Plate XIV:14
35		Fragment	Ground	Bone	Avian, Shaft	P	11	
36A	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
36B	Cobble/Core	Split, Retouched	Flaked	Stone	Dacite	P	9	
37	Bipoint		Ground	Bone	Split Rib	P	5	Plate XIV:9
38		Fragment	Unmodified	Bone		P	.	
39		Fragment	Ground	Bone		P	.	
40		Fragment	Ground	Stone	Nephrite	P	2	
41	Awl	Fragment	Ground	Bone	Avian	P	11	
42						A	.	Plate XIV:10
43			Burned	Antler	Tine	P	.	
44						A	.	

45						A	.	
46	Flaked Tool	Complete	Flaked	Stone	Metamorphic	P	9	Plate V:9
47						A	.	
48			Grooved, Split, Ground	Bone		P	11	
49A		Fragment	Unmodified	Stone	Metasedimentary	P	.	
49B	Debitage	Shatter	Flaked	Stone	Dacite	P	.	
49C	Debitage	Shatter	Flaked	Stone	Dacite	P	.	
49D	Debitage	Shatter	Flaked	Stone	Dacite	P	.	
49E	Debitage	Shatter	Flaked	Stone	Dacite	P	.	
49F	Debitage	Primary	Flaked	Stone	Dacite	P	.	
49H	Cobble/Core	Shatter	Flaked	Stone	Dacite	P	.	
50						A	.	
51						A	.	
52	Flake	Fragment	Ground	Stone	Nephrite	P	.	
53	Leaf Basalt Point	Complete	Flaked	Stone	"Basalt"	A	.	Plate V:4
54	1 Bibeveled Edge	Fragment	Ground	Stone	Blue Schist	P	2	
55A	Debitage	Primary	Flaked	Stone	Dacite	P	.	
55B	Debitage	Shatter	Flaked	Stone	Dacite	P	.	
55C	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
56A	Debitage	Tertiary	Flaked	Stone	Dacite	P	.	
56B	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
57	Point	Fragment	Ground	Bone		P	6	
58	Sample, Charcoal					P	.	
59	Point		Flaked	Stone	Dacite	P	8	Plate XIV:5
60A						A	.	
60B						A	.	
61	Possible Fixed-Point Base	Fragment	Ground	Bone		P	3	
62	Point	Fragment	Ground	Bone		P	.	
63	Hammerstone, Battering Wear at 1 End		Percussion	Stone	Rose Granite	P	15	
64						A	.	Plate XIV:5
65	Unipoint	Complete	Ground	Bone	Split Rib	P	11	

Appendix D
Burke Museum Catalog of Artifacts from Cornet Bay

66	Hammerstone, Battering Wear at 2 Ends		Percussion	Stone		P	15	
67	Whistle, Hollow Shaft w/ Hole Midshaft		Ground	Bone	Avian, Shaft	P	.	
68	Cobble/Core		Flaked	Stone	Dacite	P	.	
69	Cobble Tool, Battering Wear Opposite Flake Scars		Flaked	Stone		P	15	Plate V:1-2
70	Fragment		Unmodified	Bone		P	.	
71	Sinker		Notched	Stone	Phyllite	P	19	
72						A	.	
73						A	.	
74	Fragment		Unmodified	Bone		P	.	
75A	Debitage	Secondary	Flaked	Stone	Metasediment ary	P	.	
75B	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
75C	Debitage	Tertiary	Flaked	Stone	Dacite	P	.	
76			Ground	Shell	California Mussel	P	10	
77	Unipoint		Ground	Bone		P	11	Plate XIV:11
78			Unmodified	Stone		P	.	
79	Point	Fragment	Ground	Bone		P	6	
80	Bipoint		Ground	Bone	Avian	P	6	Plate XIV:4
81						A	.	
82	Point	Fragment	Ground	Bone		P	11	
83	Adze		Ground	Stone	Nephrite	P	2	Plate V:8
84						A	.	
85A	Debitage	Secondary	Flaked	Stone	Dacite	P	.	
85B	Debitage	Tertiary	Flaked	Stone	Dacite	P	.	
86		Fragment	Ground	Bone	Avian	P	.	
87	Bipoint	Complete	Ground	Bone		P	6	
88						A		
89			Ground	Stone	Sandstone	P	4	
90	Bipoint	Complete	Ground	Bone	Avian	P	6	Plate XIV:3

91	Wedge	Complete	Adzed, Snapped, Ground	Antler	Tine	P	1	
92	Wedge	Bit Fragment	Ground	Antler		P	1	
93	Hammerstone, Battering Wear on Unlabeled Surface Near Both Ends		Percussion	Stone		P	15	
94	Wedge	Fragment	Ground	Antler	Beam	P	1	
95	Shell Container			Shell	Saxidomus Valve	P	.	
96	Unipoint	Fragment	Ground	Bone	Split Rib	P	6	
97	Unipoint	Fragment	Ground	Bone		P	6	
98	Unipoint	Complete	Ground	Bone		P	11	
99	Unipoint	Complete	Ground	Bone	Avian	P	6	
100	Unipoint	Fragment	Ground	Bone	Avian	P	6	
101	Point		Ground	Bone	Metapodial	P	11	Plate XIV:13
102		Fragment	Ground	Bone		P	.	
103	Bipoint	Complete	Ground	Bone		P	6	
104	Awl	Complete	Ground	Bone		P	11	Plate XIV:16
105		Fragment	Whittled	Wood		P	.	
106							.	
107	Bibeveled Edge	Fragment	Ground	Stone	Slate	P	10	
108						A	.	
109	Wedge	Complete	Ground	Antler	Tine	P	1	Plate XIII:1
110	Retouched on 3 Adjoining Edges		Flaked	Stone	Dacite	P	9	
111	Debitage		Grooved, Split, Ground	Bone	Metapodial	P	.	
112	Tabular w/ 2 Unifacial Flake Scars		Flaked	Stone	Sandstone	P	.	
113A		Fragment		Wood		P	.	
113B		Fragment		Wood		P	.	
113C		Fragment		Wood		P	.	
114	Bifacial Flaking		Flaked	Stone	Slate	P	9	
115	Nails	2 , Square Headed				P	.	
116	Saw	Complete	Ground	Stone	Sandstone	P	7	

Appendix D
Burke Museum Catalog of Artifacts from Cornet Bay

117	Debitage		Ground, Split	Bone		P	.	
118	Awl		Ground	Antler		P	11	
119	Debitage	Shatter	Flaked	Stone	Dacite	P	.	
120	Nails					P	.	
121	Unipoint	Fragment	Ground	Bone		P	6	
122	Debitage	Shatter	Flaked	Stone	Dacite	P	.	
123	Needle	Complete	Ground	Bone		P	11	Plate XIV:1
124	Awl	Fragment	Ground	Antler		P	11	
125	Abrader***	Ground Face and Groove	Ground	Stone	Sandstone	P	.	
126	Unipoint	Fragment	Ground	Bone	Avian	P	6	
127	Hammerstone, Battering Wear on Surface Opposite Potlid Spall		Percussion	Stone		P	15	

45-IS-31b/#	Collection C	Nelson 1957-58 Collection						Nelson (1962) Reference
201	Point		Flaked	Stone	Dacite	P	8	Fig. 5t-2
202						A	.	
203						A	.	
204	Retouched Flake		Flaked	Stone		P	9	Not Pictured
205						A	.	
206	Awl		Ground	Bone	Ulna	P	11	Fig. 4b-6
207	Point		Flaked	Stone	Dacite	P	8	Fig. 5k-7
208	Wedge		Ground	Antler		P	1	Fig. 5f-8
209	Bipoint		Ground	Bone	Split Rib	P	5	Fig. 4g-9
210	Awl		Ground	Bone	Metapodial	P	11	Fig. 5c-10
211							.	
212	Debitage		Adzed, Snapped, Ground	Antler		P	.	Fig. 4d-12
213							.	
214		Fragment	Whittled	Wood		P	.	Fig. 5p-14
215	Nail					P	.	

216			Ground	Tooth	Beaver	P	.	Fig. 4k-16
217	Bead	Complete	Ground	Tooth		P	.	Fig. 4l-17
218		Fragment	Ground	Bone		P	.	Fig. 4h-18
219	Wedge	Complete	Ground	Antler		P	1	Fig. 4a-19
220			Ground	Stone	Siltstone Concretion	P	4	Fig. 5a-20
221	Unilateral Harpoon	Fragment	Ground	Bone		P	3	Fig. 4i-21
222	Wedge	Bit Fragment	Ground	Bone		P	1	Fig. 5h-22
223	Pin	Complete	Ground	Bone		P	11	Fig. 5o-23
224	Unipoint	Complete	Ground	Bone	Avian	P	6	Fig. 4f-24
225		Fragment	Ground	Bone		P	6	Fig. 5c-25
226		Fragment	Ground	Bone	Avian	P	6	Fig. 5b-26
227							.	
228	Point		Flaked	Stone	Dacite	P	8	Fig. 5l-28
229	Fragment			Wood		P	.	
230	Point, Leaf Shaped		Flaked	Stone	Dacite	P	8	Fig. 5d-30
231	Point	Fragment	Ground, Burnished	Bone		P	11	Fig. 4e-31
232		Complete	Adzed	Antler	Tine	P	13	Fig. 5r-32
233	Unilateral Harpoon	Fragment	Ground	Bone		P	3	Fig. 4j-33
234		Fragment	Ground	Bone		P	1	
235							.	
236							.	
237		Complete	Adzed, Burned	Antler	Tine	P	13	Fig. 5s-37
238		Fragment	Flaked	Stone		P	9	Fig. 5y-38
239							.	
240		Fragment		Wood		P	.	
241	Adze/Wedge	Proximal End Intact, Bit End Fragmented	Ground	Slate		P	2	Fig. 5i-41
242	Split Cobble	Retouched Along Straight Edge	Flaked	Stone		P	9	Fig. 5w-42

* These artifacts were collected by R.S. Kidd in 1962

** I labeled these "a-e" in order to keep track of them since they were all recorded as 45-IS-31/1

*** This artifact was collected from the beach in front of 45-IS-31a (Bryan Appendix A:2) and was not included in the chronological analysis of 45-IS-31b.

APPENDIX E: BRYAN AND NELSON'S STRATIGRAPHIC DESCRIPTIONS

E 1: Bryan's Stratum Descriptions (Bryan 1963:31-32)

Stratum	Description	Associated Features
Stratum III	Consists of stratified shell and dark soil, interspersed with charcoal and ash lenses. Extends horizontally across excavated site.	No. of ash lenses increase noticeably on south face of units 5 and 6.
Stratum II	Stratified gray and yellow soil interspersed with many ash and charcoal lenses. Exhibits a westward decrease in amount of shell, averaged well over 1' thick on north face of main trench On south face, from stake 5L1 to 4L1 suddenly decreases in thickness both westward and southward. To the south gradually tapers to indistinct ending near stakes 4L4 and 5L3. Does not reappear in units 6L3 or 6L4, original excavation of SD I and II (this could be an error, possible he means SD II and III?) may have destroyed what evidence there may have been of this stratum in these areas.	Heavy concentration of large FMR immediately over Strat. I in units 3 and 4
Stratum I	Composed of dark reddish-brown soil with pebbles, scattered shell fragments, burned and unburned mammal bone and few fish bone fragments. West of drop off – from 0.5' to 1.0' thick, sterile of cultural materials, until subsoil started dipping in unit 5. Thinned considerably on the slope then increased in thickness to approx. 2' Bryan notes that shoulder of original excavation was apparently one of the most utilized areas in lowest horizon.	
Sterile Soil	Light gray which becomes increasingly coarse and compact with depth. Eg. Unit 3 sterile subsoil composed of compact light sand which gradually merged into compact gravel and sand. From unit 5 eastward, uppermost sterile subsoil was compact gravel with little sand.	

Note: Bryan does not define the humus layer as a stratum, whereas Nelson refers to it as part of his stratum I

E 2 : Nelson's Strata Designations (From Nelson 1962:3-4)

Stratum # (From In-Text Discussion)	Subtratum	Associated Features, Horizontal Extent & Profile Location	Profile Designation	Description
I	None	Surface Deposit	1	Humus & Dark Black Soil
		Feature C (Profile C-C')	8	Yellow brown ash.
			9	White ash.
II	None	Site Wide	16	Stratified Shell Deposit
		Profile A-A': Bottom of pit feature	10	Brown ash.
		Profile C-C'	11	Light brown ash.
III Broken Up Into 3 Layers		Site Wide	None	Dark Black Soil w/ Small Quantities of Whole & Crushed Shell, w/ Scattered Lenses of Shell and Brown Loam
	Layer 1 (Also Referred to as Layer A)	Continuous throughout site	2	Dark Black Soil w/ Small Quantities of Whole & Broken Shell, Fishbone, & Sizeable Amounts of Mammal Bone
		Profile B-B'	6	Dark brown loam
		Profile B-B': between 2 and 4, SE of pit feature B	11	Light brown ash.
		Feature B (Profile B-B')	12	Gray ash and angular rock.
		Feature A (Profile A-A')	5	Charcoal saturated soil.
			7	Charcoal saturated soil w/ shell.
			11	Light brown ash.
			14	Light brown ash and whole clam shell.
			15	Gray-brown ash.
	Layer 2 (B)	Starts in Western portion of the excavation near a shallow bank of sand formed by stratum IV	4	Thin Black Deposit of Earth Saturated w/ Charcoal
	Layer 3 (C)	Appears in the Southeast corner of the excavation (Units 7L4 & 8L4)	3	Dark Black Soil w/ Whole & Broken Shell, Some Fish Remains, Mammal Bone & Occasional Ash
		Feature D (Profile C-C')	5	Charcoal saturated soil.
			12	Gray ash and angular rock.
			13	Dark gray ash and soil.
		Profile C-C': between 4 and 5, blends into 3 to the South	17	Brown sand.
IV		None Underlies all cultural deposits	18	Light Brown Sand w/ Water Rolled Shell & Rock, culturally sterile (Beach Deposit?)