WOODEN FEATURES ON THE COAST OF BRITISH COLUMBIA: AN IMPACT MANAGEMENT APPROACH

by

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ABSTRACT

The thesis presents both an outline for the management of archaeological sites with wooden features on the coast of British Columbia and the results of the application of the first stage of such a program to sites in the Bella Bella region. Wooden features consist mainly of the remains of aboriginal style architecture mortuary houses and poles, and structures related to resource utilization such as fish traps. Past and current efforts to conserve wooden features are reviewed. The conclusions reached are that no systematic attempt to prevent the loss of these artifacts has been attempted, that sub-regional impact management programs will have to be implemented, and that proper recording of the sites will be necessary in order to make management decisions and to serve as an operational approach for conservation of the resource.

The recommended impact management program consists of a multi-stage effort involving overview assessment, detailed inventory and mitigative proceedings. Special attention is given to the nature of research design in such a program and the identification of research problems involving architectural and mortuary features. The application of an overview assessment of wooden features in the Bella Bella region includes a summary of the biogeography, archaeology and ethnography of this area. A summary of available data on mortuary features and architectural sites, the two types that occur there, is presented.

Appendices at the conclusion of the thesis outline recording procedures for mortuary and architectural sites, and present the results of a field reconnaissance at selected sites in the study region.

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This thesis is dedicated to the memory of my brother Brian who did not know exactly why I studied archaeology, but thought it was great anyway. It is also for his children, Jason and Rachel, who grow more precious every day.

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CHAPTER 1

INTRODUCTION

The following is concerned with the management of a class of archaeological remains on the coast of British Columbia which have received little systematic attention. These are large surface aboriginal wooden features. They consist mainly of the remains of architecture, mortuary structures and features related to resource utilization.

These wooden features date from the late prehistoric through historic period and represent both fully aboriginal lifeways and occupations significantly effected by European contact. Few coastal archaeological sites that contain wooden features have been documented with specific reference to the features. Little can be said about these artifacts. For most, information consists of brief reference to the wooden features on archaeological site survey forms.

The ongoing deterioration of wooden archaeological features in the rainforest environment of the coast imparts a sense of urgency to the study. While archaeologists have long been aware of the continuing loss of this unique class of artifact, mitigative procedures have not prevented the loss of the physical specimens. Inadequate recording means that not only are the wooden features being lost, but there will be little information to refer to once the features are gone.

This thesis presents the results of a management strategy for intervening in the loss of wooden features. The strategy for intervention consists of two main parts. First, was to devise an impact management program specifically for wooden features and to apply the resulting design to the Bella Bella region on the Central Coast of British Columbia. Second, was to devise and test in the field recording procedures for two main types of wooden features that would be adequate to provide data for management decisions and which would in itself be a mitigative procedure.

Chapter 2 presents an introduction to wooden feature sites from a coast-wide perspective. This includes a description of the features, and a summary of available data on the artifacts. A history of efforts to conserve wooden features is briefly described as are the problems of the present Archaeology Program of the Province in protecting the resource. Alternatives for intervening in the loss of feature sites are evaluated. It is argued that implementing sub-regional impact management programs is the best solution. The idea of recording wooden features to provide data for management planning and as an actual mitigative action is also outlined.

Chapter 3 presents a design for the impact management of wooden feature sites. This design is based on precedents provided by other researchers concerned with regional impact problems. The design derived for wooden feature sites consists of a multi-stage program with three stages: (1) overview assessment (2) detailed inventory and (3) mitigative

proceedings. The program adopted is consistent with that outlined under current impact assessment guidelines of the Heritage Conservation Branch in British Columbia, but has been modified to reflect a specific concern with wooden features.

Chapter 4 is concerned with the archaeological significance of two main types of wooden features and the identification of specific research problems for which such sites are relevant. These are architectural remains and wooden mortuary features, which are the types occurring in the Bella Bella study region. From the outset it is necessary to define why wooden features are important. This assessment can not only shape impact strategy but is essential in weighing the costs and benefits of such a strategy.

In Chapters 5 through 8 the application of the first stage of the impact design to the Bella Bella region is presented. Chapter 5 presents an introduction to the region including a summary of ethnographic, archaeological and biogeographical data on the region. This chapter also summarizes data on all archaeological sites in the region in order to provide a background for wooden feature sites. In Chapter 6 an introduction to mortuary complexes and an overview of sites with mortuary structures for the study region is presented. This is the first site type occurring in the Bella Bella region. The overview includes a summary of information on mortuary customs, a summary of data on the sites and an analysis of distribution. In Chapter 7 an introduction to architecture and an overview of architectural sites in the study region is presented. As for

mortuary sites this includes a summary of data on architectural styles, a summary of the sites, and an analysis of site distributions. Aspects of the results of a field reconnaissance at selected sites in the study region are also outlined.

Chapter 8 outlines a strategy for conducting detailed inventory, the second stage of impact proceedings in the study region. It includes an estimate of the actual resource potential in the study region and of crew and scheduling concerns for carrying out detailed inventory.

In Chapter 9 summary remarks are made on the results of the management strategy derived and conclusions on the conservation of wooden feature sites from a coast-wide perspective are made. Appendices at the conclusion of the thesis present substansive results on the actual sites investigated in 1985 and outline recording formats for wooden feature sites.

CHAPTER 2

WOODEN FEATURE SITES ON THE COAST OF BRITISH COLUMBIA: AN INTRODUCTION TO THE PROBLEM AND A CONSIDERATION OF ALTERNATIVES.

The following chapter: (1) defines the types and extent of wooden features with which the thesis is concerned with from a coast-wide perspective (2) points out the almost complete loss of these data that will occur without intervention (3) evaluates past and current efforts at conserving the resource and (4) outlines why an impact management program combined with detailed recording of the sites is the best solution to the problem. These objectives are accomplished through a review of the Features Project, which provided a basis for the thesis.

The chapter assumes the reader is familiar with the jargon of cultural resource management or conservation archaeology. Most of the terms are self-explanatory, but those unfamiliar with this field should consult Schiffer and Gumerman (1977) or McGimsey and Davis (1977).

The Features Project - 1984: Introduction to the Problem

The Features Project began with the concern of a director of the British Columbia Heritage Trust over the deterioration of coastal aboriginal sites containing such artifacts as wooden burial boxes and carved poles. The problem was referred to Professor Philip Hobler of Simon Fraser University and, in turn,

to the author. In initially considering the problem it became apparent that the loss of these artifacts was occurring throughout the coast and was not confined to a few sites but involved many sites and several feature types. A logical starting point was to acquire data on the scope of the problem and to explore alternatives to prevent the complete loss of what were now collectively referred to as wooden features. The Features Project was officially initiated in 1984 by Simon Fraser University under the direction of the author, with funding provided by the British Columbia Heritage Trust. Goals of the 1984 work were: (1) to provide an inventory of the type and extent of known wooden features on the coast (2) to explore the history of efforts to conserve the resource (3) to determine the effectiveness of the present Archaeology Program in British Columbia for protecting the resource and (4) to make recommendations for the conservation of wooden features (Burton and Bedard 1985).

The 1984 inventory was based mainly on a search of some 10,000 coastal site survey documents on file at the Heritage Conservation Branch in Victoria. Also searched was the extensive file of Permit Reports prepared in conjunction with various surveys and excavations. The results of this aspect of the project indicated that there are 392 recorded sites on the coast of B.C. that have aboriginal wooden features as either main or associated attributes. Types of wooden features noted within main site categories as classified in the Guide to the B.C. Archaeological Site Survey Form were as follows:

1. General activity - architectural remains, carved poles, boxes, fish processing structures

2. Burial - boxes, mortuary structures, carved poles, canoes, coffins, associated wood

3. Resource utilization - fish processing structures, culturally modified trees, wood stakes, canoes

4. Isolated find - canoes, carved poles

The 1984 inventory served to identify main wooden feature types and showed that the sites occur throughout the coast. However, the most important contribution of the 1984 work was not to provide an accurate inventory of wooden feature sites, but to point out the overall paucity of data on the sites. Data on the artifacts was mainly in the form of brief reference in one of the "additional information" categories on survey forms. For example, it may be mentioned in the "remarks" section that the remains of a 19th century post and beam structure occurred on a midden surface. More recent survey documents contained somewhat better information with the dimensions and locations of wooden features often indicated on accompanying chain and compass maps. However, even the survey form presently in use in the province for recording archaeological sites is inadequate to allow for detailed information on wooden features. It was concluded that, overall, the information available on feature sites is limited, non-specific and subjective. This means that not only are wooden features being lost, but there will be little information to refer to once they are gone (Burton and Bedard 1985).

A review of the history of efforts to conserve wooden features showed efforts have been focussed on objects considered

to be of artistic value. The main form of "conservation" has consisted of the collection of boxes and carved poles by individuals, museums and other institutions. A second conservation category has involved the restoration, collection and/or replication or in-situ maintenance of carved poles. Early projects involving the collection or restoration of carved poles often represented questionable commercial ventures (Darling and Cole 1980). More recent projects have mainly been careful and considered attempts to preserve for future generations examples of the unique art style of the native cultures of the Pacific Northwest Coast (Duff 1964).

A review of current proceedings in the province of British Columbia to conserve wooden features shows that one major project is presently being conducted. This is the work of the British Columbia Provincial Museum, the Heritage Conservation Branch, and the British Columbia Heritage Trust involving the in-situ maintenance of carved poles at Ninstints on Anthony Island. This has involved a careful program using measures to slow down the deterioration rate of the poles and has involved the work of professional conservators (Acheson 1980; Florian, Beauchamp and Kennedy 1983, Florian and Hebda 1981).

While it was concluded in 1984 that work to conserve carved poles on the coast represents a signigicant achievement, other classes of wooden features have been essentially ingnored. It was also concluded that with the exception of the present support of the Features Project that the Archaeology Program of the province has not been involved in any systematic attempt to

conserve wooden features. This represents not the ineptitude of the Heritage Conservation Branch, but ultimately that the scientific community has not recognized the significance of the artifacts. In turn, this is not the result of incompetence in the academic realm. It reflects the fact that it is only in the last few years that important methodological and theoretical developments in archaeology have meant that the study of wooden feature sites could contribute substantially to adding to knowledge of Pacific Northwest Coast Culture. This is explored in depth in Chapter 4 of the thesis. In British Columbia, as elsewhere in North America, the scientific community is a main force in shaping the policies of the provincial Archaeological Program (see Epp and Spurling 1984; Fladmark 1981; Goodyear et al 1978; McGrimsey and Davis 1977; Schiffer and Gumerman 1977). The lack of systematic concern with wooden feature sites, and the loss of the resource, reflects an expectable lag between developments in the scientific community and the response of the Archaeology Program to recognize these developments.

A second factor which complicates the issue of wooden feature conservation is the inherant assumption of cultural resource management that economic development is the chief cause of the destruction of heritage resources. This also is explored below.

The 1984 report concluded with a set of recommendations that could be explored for the conservation of feature sites (Burton and Bedard 1985:56-61). A main recommendation was that a systematic and comprehensive feature specific management program would be necessary to prevent the loss of the sites. It was

suggested that the Archaeology Program in the Heritage Conservation Branch fullfill the central management role. In addition to this it was recommended that various conservation procedures be explored. These included: (1) in-situ maintenance (2) collection (3) replication and (4) documentation. It was suggested that various alternatives be explored as soon as possible.

The 1985 Features Project - A Consideration of Alternatives

In 1985 recommendations for preventing the loss of wooden feature sites were more carefully explored (Burton 1986). It remained clear that a systematic management program would be necessary to prevent the loss of wooden feature sites. However, the possibility of the Archaeology Program in taking the central management role was re-examined for several reasons.

Cultural Resource Management government agencies were developed in the 1960's in North America and somewhat later in Canada as a response to the growing awareness that increasing numbers of archaeological sites were being destroyed as the result of present-day cultural activity (see Epp and Spurling 19884; McGimsey and Davis 1977; Schiffer and Gumerman 1977). The government agency responsible for ensuring the protection of archaeological sites in British Columbia is the Archaeology Program of the Heritage Conservation Branch in the Ministry of Tourism Recreation and Culture (see Fladmark 1981 for a history of legislation and development agencies to protect archaeological

resources in British Columbia). The objectives of the Archaeology Program (as stated in Guidelines for Heritage Resource Impact Assessment in British Columbia 1982:4) are as follows:

(a) to preserve representative samples of the Province's heritage for the scientific, educational and recreational benefit of present and future generations

(b) to ensure that proponents of development consider heritage resource values and concerns in the course of project planning and

(c) to ensure, where decisions are made to develop land, that proponents:
    (i) avoid heritage sites wherever possible,
    (ii) implement measures which will mitigate project impacts on heritage sites, or
    (iii) compensate British Columbians for unavoidable losses of significant heritage value.

According to its stated objective as outlined in section (a) above, the Archaeology Program is responsible for the conservation of feature sites. However, the remainder of the objectives set out above explain why the program is unable to ensure the protection of wooden features. The entire assumption is that the impact of archaeological resources results from the development activites of present day cultures. Implicitly this policy assumes that archaeological data is essentially stable and not subject to large scale destruction except through modern day cultural activity. In these terms the Archaeology Program does not carry out actual impact proceedings, but rather ensures that development agencies sponsor the work in accordance with minimal standards of the professional community. Moreover, the

Archaeology Program is not in a position to conduct impact proceedings because its policy assumes that developers are responsible for impact, and therefore for the financial cost of mitigating impact. Finally, the program does not have, and is not likely to acquire under current restraints the resources and manpower to carry out impact procedures for wooden feature sites. This is not intended as a criticism, but simply reflects the manner in which cultural resource agencies work and the assumptions underlying impact policy.

The conclusion that the Archaeology Program is not realistically in a position to fullfil a central management role for a wooden feature conservation program represented a discouraging drawback. However, the process of reviewing the field of cultural resource management clearly pointed out that an impact management approach is the ideal solution to intervening in the loss of wooden feature sites. During the last two decades in Canada and the United States methodologies for impact management have been well developed. While these have been designed to mitigate against heritage losses caused by cultural destruction it was reasoned that these impact models could provide important precedents for developing a wooden feature impact management program. The idea of applying an impact management model to a heritage resource threatened by natural destruction represented a unique development. The next step was to explore how such a solution could be made operational (Burton 1986).

The two main problems with implementing the idea were: (1) how impact managment could be applied to the coast as a whole (2) the actual conservation procedures that would be viable. For both of these problems it was found that the solution is inherant in the impact managment model. First, many such models have been developed to cope with the impact of distinct regions. For a wooden feature site program it is logical to take a coastal sub-regional approach. By dividing the management role among local community institutions the cost and manpower related to feature conservation is spread out. Moreover, local community involvement in feature conservation is essential because the high visibility, and in many cases, sensitive nature of the sites, greatly increases native interest in the sites. In terms of logistics, a local and sub-regional approach is also logical. At the same time it was recognized that feature site work should be monitered by the provincial Archaeology Program and be carried out under Ministerial Permit to ensure that qualified personnel could evaluate the work (Burton 1986:125).

The second problem was to explore actual conservation procedures for the sites. In-situ maintenance as a main operational approach was rejected. This is an expensive undertaking and while work at Ninstints, for example, is an important project for a significant site, such a program for the majority of sites is not viable. Moreover, in-situ maintenance is not a complete solution, because while the deterioration of wooden features in a natural environment can be slowed down, it cannot be completely halted. The collection of features for some

of the data, especially burial boxes, is possible, provided important site context data is obtained. However, the widespread collection of wooden features would require major storage facilities. Moreover, the utility of storing such features as architectural remains is questionable. Replication of large numbers of wooden features is also not a viable solution. This would be an expensive undertaking, and the problem of where the features would be kept also arises. It was concluded that while not a main operational approach, all three of the conservation alternatives outlined above would be desirable for selected sites. A problem is that on the basis of available data it is not possible to make decisions on which sites should be chosen for specific action.

The solution to the problem of actual conservation alternatives was found once again to be inherant in the impact management model. This was that, by definition, impact managment assumes that the resource will be lost. The entire goal of impact models is to collect and/or record data on the heritage resources to be destroyed. In this manner the information on the resource is preserved even though the actual archaeological sites are destroyed. For wooden feature sites the majority of data is located on the surface. This means that the high resolution documentation of the sites is an ideal solution for mitigating against the loss of the resource. In other words, it is simply not possible to "preserve" the majority of the artifacts, but it is simple to record the information on the wooden features even though the majority of the sites will eventually be lost.

Moreover, data acquired through proper documentation of wooden feature sites would provide a basis for choosing selected sites for more costly conservation measures such as in-situ maintenance, replication and collection (Burton 1986).

The Bella Bella Project

The 1985 Features Project culminated with field investigations in the summer of 1985 to test the model outlined above. The Bella Bella region on the Central Coast of British Columbia was chosen for several reasons. First, it has been the focus of previous archaeological investigations by Simon Fraser University and the University of Colorado (see Hobler 1982a:1-13). In previous work these institutions had defined a region for their investigations (Hester 1978; Pomeroy 1980). This provided the 1985 project with what may be described as an analytical unit where previous work had been carried out. A second reason for choosing Bella Bella was the friendly relations between the community and faculty and students at SFU brought about by many field seasons of work by the Department of Archaeology in the area. It was suggested by the Heiltsuk Cultural Education Centre in Bella Bella that the project be a joint HCEC-SFU venture. Prior to entering the field the details of the joint project were worked out. The result was an ideal situation; a sub-regional approach combining community involvement, including a local crew, and outside academic

support. Work was carried out under Ministerial Permit to ensure monitering and evaluation by the provincial Archaeology Program.

The main goals of the 1985 Features Project were:

(1) to devise an impact management program specifically for wooden features and to apply the first stage of such a design in a pilot project in the Bella Bella region of British Columbia.

(2) to define, in general, the scientific potential of the site types explored in 1985, which were architectural remains and features related to mortuary complexes.

(3) to devise and test in the field documenting procedures for the site types investigated in 1985 that would be applicable throughout the coast for such sites.

The remainder of this thesis presents the results of the 1985 Features Project.

CHAPTER 3

A SUB-REGIONAL IMPACT MANAGEMENT DESIGN FOR WOODEN FEATURE SITES

This chapter reviews strategies for impact managment and outlines how a wooden feature program would differ from a situation where economic development is the agent responsible for impact. In recent years the most widely accepted approach to deal with impact situations in large regions is one involving a multi-stage program (see for example McGimsey and Davis 1977 and Schiffer and Gumerman 1977). Most researchers identify three stages (1) overview assessment (2) detailed inventory and (3) mitigation. In the first part of Chapter 3 each stage is separately examined and developed for a wooden feature program.

The second part of Chapter 3 is concerned with the problem of research design in impact archaeology. This is discussed first in general terms and second in terms of how research design may be integrated into an impact program for wooden features.

A Multi - Stage Impact Design

1. Overview Assessment

This is the first stage of impact proceedings and the main purposes of this stage are: (1) to define the study region (2) to obtain background information on the area (3) to note the known heritage resources in the study area (4) to assess the

actual resource potential in the study area (5) to identify research problems in the study area (6) to make a preliminary interpretation of data in light of research problems (7) to assess how impact will affect heritage resources and (8) to make recommendations on how to conduct the second stage (detailed inventory) aspect of impact proceedings (Guidelines for Heritage Resource Impact Assessment in British Columbia 1982; Scovill, Gorden and Anderson 1977).

Each of these points are discussed below.

Defining the study region

In most impact projects the boundaries of the study region are defined by the exact area to be impacted by economic development. Impact zones defined by the area to be affected by development are often a major constraint in impact proceedings. This is because the researcher must adapt his research design to fit the body of data available (Lipe 1977:32-37; Schiffer and Gumerman 1977:81-82). In this manner an impact program for wooden feature sites has the advantage in that boundaries can be defined on the basis of physiographical/ ecological considerations and/or ethnographically known tribal or linguistic distributions. In some instances defining a region for a wooden feature impact program will be easy, but in areas where cultural ecological or culture type areas are not distinct, defining such boundaries may be more difficult. For a wooden feature site program actual boundaries may be defined during overview

assessment. The researcher should clearly state the criteria used to draw boundaries and should outline where ambiguity in data may make it difficult to assign such boundaries (cf Lipe 1977).

Background information

The main purposes of researching background information are to define research problems and to acquire an idea of the nature and extent of heritage resources in the study region (Canouts 1977a:122; Schiffer and Gumerman 1977:211-212). Conducting this research usually begins with a review of documents such as survey forms and reports of all previous heritage inventories and projects in the study area, legal land survey records, ethnographic, ethnohistorical, anthropological, archaeological, paleoecological and biogeographical reports on the region. For wooden feature sites a review of ethnographic and ethnohistoric data is very important because most of the sites probably date to the post-contact period. In addition, a review of Indian Reserve data can also be important because documents compiled by government agents can contain data on the location and possible function of wooden feature sites.

A second aspect of background research may consist of consultation with individuals familiar with the area and with individuals living in the area (Hickman 1977:271). This can provide information on the nature of heritage resources in the study region. This is especially important for wooden feature

sites because the location and function of many sites are known to locals through oral tradition or because of high surface visibility.

In some cases a preliminary field reconnaissance is a desired aspect of background research (Guidelines for Heritage Resource Impact Assessment in British Columbia 1982). This will be true in areas where so little is known that not even an initial assessment can be made of the resource potential of the study region. Such a reconnaissance may or may not be necessary for a wooden feature impact program, depending on the particular sub-region being studied and the institutions involved in the study. Often a preliminary field project will be desirable to identify logistical problems of conducting more detailed studies. In addition, where outside institutions are involved, preliminary field work can serve to establish ties with the local community and community institutions.

In many cases background research may involve studying an area larger than, or in close proximity to, the actual impact zone (Schiffer and Gumerman 1977:212). For example, the study of an area adjacent to the study region that may be well surveyed can provide an idea of the resource potential within the nearby study zone (Bettinger 1977). At the present stage of research identifying research problems may also be on the basis of a larger area. This was the case for 1985 work, because at the present stage of research little is known of the exact research potential of the sites.

Known heritage resources

Recorded sites should be plotted on maps and available data on the sites and associated attributes should be summarized. Unlike most impact proceedings, a wooden feature program is concerned mainly with a single component as opposed to all of the heritage resources in the study region or impact zone. However, it is recommended that the researcher include an assessment of all known heritage resources in the study region for a feature specific program. There are several reasons for this. First, the study of all resources can be important in identifying relevant research problems in the study region. Second, a study of all resources may be necessary in order to glean data on which portions of the region have been surveyed. A study of all sites can also help to determine if wooden feature sites were recorded by researchers or were ignored because these were deemed irrelevant to the concerns of the researcher. A third reason for studying all sites in the region is that this can provide a comparative basis for making interpretations on the nature and distribution of wooden feature sites. For example, it may be possible to detect how contact has affected site distributions.

Assessing the actual resource potential

An assessment of the actual resource potential of the study region is a crucial and most difficult aspect of overview research. Such an assessment is critical because it provides a

basis for determining the techniques and amount of work necessary to conduct detailed inventory. The data for assessing actual resource potential for a wooden feature project as for any impact program comes from background research and prior knowledge of known heritage resources in the study area (Schiffer and Gumerman 1977:211-215). This could include a comparison of the type and number of sites in areas surveyed to the total area present. Consultation with local individuals and study of adjacent areas, as previously discussed, can also aid in projections of resource potential. The division of the study area into distinct physiographic/ecological zones and a consideration of the types and numbers of sites within each zone can also provide data on resource potential (Bettinger 1977).

Identifying research problems

The issue of research design and the identification of research problems as they relate to overview assessment and the other stages of impact proceedings is important and is reviewed in the second part of Chapter 3.

Interpretation of overview data

A preliminary interpretation of data accumulated in overview assessment should be made in terms of research problems identified. This will serve to refine research problems and to identify additional problems not previously recognized. It may

also condition the manner in which detailed inventory is carried out. This is discussed in the second part of Chapter 3.

Assessing the affect of impact on heritage resources

Assessing impact for wooden feature sites is not the same process as is the case where development is the destructive agent. In situations where economic development occurs the level and extent of impact on the study region is initially assessed at the overview stage (Schiffer and Gumerman 1977:291-301). This is accomplished by drawing in primary and secondary impact zones on the basis of data provided by the developer. For example, in a hydroelectric project, some areas will be completely inundated, while others will be subject to slope failure. Determining the level and extent of impact on wooden feature sites involves an assessment of the condition and stability of the features. At present, data in all areas of the coast is too poor to make even initial assessments of the condition and stability of wooden features. This must be accomplished during detailed inventory.

Recommendations for conducting detailed inventory

A final aspect of overview assessment are recommendations for conducting a detailed inventory of heritage resources in the study region. This includes outlining a methodology for inventory and logistical considerations such as crew size and scheduling. Methodology is based mainly on background

information, known heritage inventory and estimated resource potential. Logistical considerations, such as crew size and scheduling may be based on preliminary field work and also on previous studies of the time required to survey areas and record and test sites.

In recent years, issues relating to survey methodology, both probabalistic and judgemental, has been a topic of considerable interest and has resulted in a large body of literature (Mueller 1975; Nance 1983; Schiffer and Gumerman 1977). The utility of probabalistic techniques either to locate wooden feature or other site types in coastal British Columbia is not clearly understood. I am unaware of any probabalistic surveys having been conducted on the coast. Most researchers on the coast would argue that the lack of homogeneity in coastal environments present the worst possible conditions for probabalistic techniques. As for locating other types of heritage resources on the coast a judgemental approach is likely to remain the main operational method for locating feature sites not previously recorded.

The judgemental technique, or combination of techniques used, will depend on the sub-region under study. Many researchers favour the use of local informants as the principal technique for locating historic sites, presumably because sites are recalled as having been occupied or are known because of high surface visibility (Hickman 1977; South 1977). The use of informants to locate wooden feature sites, the majority of which probably date to the post-contact period, is likely to be a main technique for conducting detailed inventory.

2. Detailed Inventory

The second or detailed inventory stage of impact proceedings is generally associated with field survey to locate and test sites in the study region. Activities associated with detailed inventory are: (1) interviewing local individuals for information on the location and function of sites (2) recording and testing sites (3) noting types and distributions of sites and summarizing available data on sites (4) estimating the actual number of sites in the study region (5) interpreting inventory data in light of research problems (6) identifying additional problems (7) assessing nature and level of impact that will affect each site (8) assessing the significance of each site (9) making recommendations for mitigation (Guidelines for Heritage Resource Impact Assessment in British Columbia 1982; Scovill, Gorden and Anderson 1977:55-56).

Local individuals and ethnographic information

Many wooden feature sites have been used or occupied during the lifetimes of local peoples, or are remembered in oral history. It may be recalled, for example, that a site containing architectural remains was a winter village. For this reason interviewing local individuals, especially band elders, is an important aspect of the detailed inventory proceedings of a feature specific program. The study of ethnohistoric and

ethnographic data can also provide information on the function of wooden feature sites.

Recording and testing sites

For most detailed inventory proceedings the minimal recording format used by researchers conducting detailed inventory is that derived by provincial or state government agencies for documenting achaeological sites. The actual recording of sites is more important in a wooden features program, and may actually be considered as part of mitigative proceedings. This is because for many wooden feature sites the majority of information on the features is located on the surface. For this reason significant information can be obtained by the detailed recording of wooden features and associated site attributes. This is in marked difference to most archaeological sites where most of the data are buried. Some researchers would argue that the recording procedures outlined in Appendix 2 of the thesis are too detailed. However, the amount of information that can be obtained is worth the extra time required.

Although test excavations were not conducted in 1985 fieldwork, it is recommended that sites containing architectural remains be tested during detailed inventory. Unlike other feature sites, those with architectural remains may contain a subsurface component, such as sills or floor structure. For architectural sites it is likely that excavation of selected sites will form part of mitigative proceedings. Test excavations

will help to determine which sites contain intact or partially intact subsurface architectural remains and/or house floors that are distinguishable from surrounding strata.

Noting types and distributions of sites and summarizing data

As for any detailed inventory the types and distributions of sites should be plotted and data obtained summarized.

Estimating actual numbers of sites

An attempt should be made to estimate the actual number of sites in the region. There are many methods for achieving a quantitative estimate when probabalistic techniques are used in survey (Mueller 1975; Nance 1983). Where judgemental procedures are used it is not possible to make statistical predictions on the actual numbers of sites in the study region. However, the researcher may still evaluate the percentage of sites that have been located.

Interpreting data in light of research problems

Data accumulated in detailed inventory should be analyzed within a research framework to address research problems, for example on issues relating to subsistence and settlement. A comparison of wooden feature sites to other sites in the region will probably be necessary in addressing research problems. This

issue is more carefully considered in the second part of Chapter 3.

Identifying additional research problems

During and following the conclusion of detailed inventory additional research problems not recognized at the overview stage may be recognized. These may condition the manner in which mitigation is conducted and problems should be explicitly stated. At this point hypotheses may be advanced to address research problems.

Assessing the nature and level of impact

For a wooden feature program this would involve determining the condition and stability of the wooden features. This is an important process because the condition/stability of the features may be very important in deciding which sites to focus on during mitigative proceedings. For example, if a site is rapidly deteriorating it may be decided to focus additional work at the site. Conversely if a site is stable and is likely to remain intact for some years mitigative action may be delayed.

At present, there are few guidelines for making objective, rapid and knowledgeable assessments on the condition/stability of wooden features. A detailed study can be a complex procedure requiring careful study and considerable expertise. The only precedent for assessment of deterioration and stability in

British Columbia is the ongoing work on the carved poles at Ninstints, which has resulted from the program of in-situ preservation of the features (Florian, Beauchamp and Kennedy 1983; Florian and Hebda 1981). This type of detailed study is unlikely to be viable for the majority of wooden feature sites. However, it is possible to assess in general terms the condition and stability of features, as will be shown in a later section of the thesis. As data accumulates it may be possible to define criteria to more accurately assess the deterioration state and stability of wooden features.

Assessing the significance of each site

A further aspect of detailed inventory proceedings in any impact project involves the assessment of sites in a series of significance categories. Categories defined through the work of archaeologists over many years are: (1) scientific (2) ethnic (3) public and (4) economic significance (Charlton 1986; Epp and Spurling 1984; Kidder 1982; Schiffer and Gumerman 1977:241-289).

The scientific significance of a site may be defined as the research potential of the site in terms of providing data to address specific research problems (Schiffer and Gumerman 1977:241). Ethnic significance is the importance of the site in relation to the particular history of local native groups (Schiffer and Gumerman 1977:244). The public significance of a site is generally the importance of the site in terms of its value in contributing to public education (Schiffer and Gumerman

1977:245). In recent years archaeologists have started to consider another category, which is the economic significance of a site. This may be defined as the potential of the site to act as a display/interpretation centre or to contribute information to such a centre where funding may be generated by people visiting the centre (Charlton 1986; Kidder 1982).

In assessing significance at the conclusion of detailed inventory each site in the study area is assessed in the categories outlined above. This, in turn, forms a main basis for determining which sites will be chosen for detailed analysis in the final mitigation stage. Significance assessment for a feature specific program will not differ in any major way than for any impact program. An exception is that the stability/condition of the site may be a factor which is taken into account during significance assessment.

Recommendations for mitigation

The final aspect of detailed inventory is to make recommendations for the last stage of impact proceeedings, which is mitigation. Decisions on which sites to select for detailed analysis will depend largely on significance assessment, as outlined above. As well, most researchers aim to ensure that sites chosen for detailed analysis are a representative cross section of resources in the area (Lipe 1977:34-36). Recommendations for mitigation will include a presentation of

methodologies to be used and crew and work scheduling (Grady 1977).

3. Mitigation

In most impact projects the final stage involves the detailed analysis of selected sites chosen on the basis of significance categories previously outlined (Grady 1977; Schiffer and Gumerman 1977:241-289). Usually this stage is associated with excavation. For wooden feature sites mitigation may involve such procedures as: in-situ maintenance of selected features, collection and storage of some of the data and replication of some features (see Burton and Bedard 1985:58-60). As was previously discussed the detailed documenting of wooden features and associated site attributes is a form of mitigation. For the majority of such sites this will likely be the main operational approach for mitigating against impact. The excavation of selected sites containing architectural remains would also form part of mitigative proceedings. As will be pointed out in Chapter 4 excavations of structures could provide valuable data in addressing current research issues in archaeology as well as in reconstructing specific cultural activities. The excavation of sites containing wooden features related to mortuary complexes could also provide valuable data. However, such undertakings must be carefully weighed in relation to the attitude of local bands in investigating burial sites.

An important aspect of mitigation is the possibility of constructing a display centre in the sub-region under study. Such a centre would act as a repository for data, as a centre for public education where feature and related data is interpreted and as a possible way of generating funding for features projects by charging entrance fees (Burton 1986:14-16).

Unlike most impact situations, mitigation scheduling for wooden features is not conditioned by immediate destruction of sites by economic development. For this reason such proceedings may be spread out over several years. In addition, selected sites would be chosen for monitoring the deterioration of the wooden features.

Research Design

General issues

An important consideration for a wooden feature site impact program is the nature of research design. In recent years it has been argued that impact programs should maintain a problem oriented approach and that the results should contribute to mainstream academic research (King 1977; Lipe 1977:33-34; Schiffer and Gumerman 1977:79-86). The major criticism leveled at those involved in conservation archaeology is that researchers have failed to make significant research contributions (Epp and Spurling 1984; Fladmark 1981; Goodyear et al 1978; Lipe 1977). In addressing this issue Schiffer and Gumerman (1977:81) outline

some of the constraints which affect research in impact archaeology. These are: (1) a lack of time in implementing a research design and carrying out appropriate work (2) a lack of funds and (3) the nature of the boundaries of the impact zone, which are usually determined by the developer.

The first two constraints have been lessened considerably in recent years as the result of improved legislation to protect heritage sites and with increasing pressure on agencies responsible for impact to provide funding for mitigative action. The third constraint can be more limiting because the researcher must adapt the design to fit the body of data available.

Another important constraint in research design is that introduced by the responsibilities of the researcher involved in impact archaeology vs. those of the academic researcher. In a region threatened by destruction the researcher is responsible for all of the heritage resources in the impact zone. Academic researchers are rarely concerned with such a broad data base and can focus on a narrow research issue. Moreover, the main concern of the academic researcher is research that will contribute to a particular scientific problem. The impact archaeologist is concerned not only with the scientific value of the resource but with ethnic, public and economic significance categories. A decision to focus on a site or group of sites for study on the basis of research potential must be weighed against the importance of the site in other significance categories.

A second issue is the procedural approach in orientation (King 1977). This is the argument of the deductive vs. inductive

approach. At two extremes deductive vs. inductive approaches have been defined as: (1) a deductive stance is one in which "the explicit formulation of potential laws (hypotheses) and their empirical consequences directs the collection of data" (Fritz and Plog 1970:405) vs. (2) an inductive stance in which "undirected data collection forms the first and the abstraction of laws forms the last step" (Fritz and Plog 1970:405). Arguments relating to the deductive/inductive stance are considerable and will not be reviewed here (see for example Binford 1964; Fritz and Plog 1970; Goodyear et al 1978; Redman 1973; Willey and Sabloff 1980). As Redman (1973) points out the inductive-deductive argument is partly rhetorical in nature. From an inductivist point of view few researchers would embark on "undirected data collection" without some theory or problem to which they planned to address the data. Similarly, a deductive stance invariably uses as a basis for an hypothesis information that has been induced from previous work.

Many researchers involved in impact situations argue that deriving a research orientation is best conducted by combining an inductive and deductive strategy (Canouts 1977a, 1977b; Schiffer and Gumerman 1977:129-133; Lipe 1977:33-36). In this strategy work should not be focused on a single research problem, but a series of problems relevant to the study area (Canouts 1977a; Lipe 1977:33-36). At the first, or overview stage, problems relevant to the area are identified on the basis of background research. This represents an essentially inductive exercise. Problems identified should be explicitly stated. Whether or not

the researcher can advance specific hypotheses relating to various problems at the overview stage will depend on the amount of information available for the impact zone and surrounding region (Schiffer and Gumerman 1977:130-131). Generally, possible solutions to the problems identified, as well as the identification of additional problems will take place when the researcher begins to notice patterns in overall site types and distribution of sites in the impact zone (Canouts 1977a). Ideally, this would occur at the overview stage, but realistically, it may not become obvious until during detailed inventory proceedings. By the time the detailed inventory is complete the researcher should have a complete list of research problems, and probably several hypotheses to address these problems. At this point sites are assessed in terms of scientifice significance or research potential in reference to providing data for solving the hypotheses outlined. Significance assessment then forms the basis for deciding which sites will be more intensively studied. At each stage of proceedings the collection of data to address narrow research issues at the expense of all other classes of data must be avoided (Lipe 1977:34-36).

Research design for wooden features

Some of the constraints that affect most impact proceedings are not major problems in a wooden features program. First, time constraints are not as great a concern as is usually the case in

an impact situation. While features are deteriorating, there is more time to implement impact programs than is the case where economic development is the agent responsible for destruction. Constraints imposed by impact boundaries are also not a major problem in a wooden features program. A constraint which would affect feature conservation is funding. This is because economic development is not the main destructive agent which means there is no corporation or individual responsible for mitigative work. At present, work is underway to investigate the concept of user-benefit analysis as a way of generating funding for feature site impact proceedings (Burton 1986:114-116). A discussion of this is beyond the scope of work presented here.

As was discussed above, in most impact situations the researcher is concerned with all archaeological data in time and space in the study region. In a wooden feature program main efforts are concentrated on a single component. This focus simplifies the task of the researcher.

Incorporating a research design for a feature specific program is probably best accomplished by using the strategy outlined above. At the overview stage a series of problems relevant to the study region is identified. Because so little is known on feature sites identifying research problems at the present stage of research is best accomplished by drawing on issues relating to the coast as a whole. In addition, the research potential of the wooden features goes beyond specific sub-regional problems, meaning that issues relating to archaeological method and theory should also be explored.

Chapter 4 is concerned with the specific identification of research problems that are applicable to both the Bella Bella sub-region and the coast as a whole.

At the conclusion of detailed inventory a set of complete research problems should be drawn up. These may be more concerned with region specific problems than is the case at the overview stage. The research potential of the sites, or scientific significance of the sites in light of these problems can then be assessed. This will form a basis, along with other significance categories for mitigation proceedings.

Summary

To summarize, a wooden features impact program as for any regional impact situation would best be conducted using a multi-stage approach. The first stage would consist of an overview assessment. Unlike most impact proceedings defining boundaries for the study region is not determined by development zones. Other ways in which a feature specific program may differ at this stage is on the greater emphasis on ethnographic and ethnohistoric background data. At this stage, as well as in detailed inventory, assessing the level and extent of impact is different than is the case where economic development is the destructive agent. For detailed inventory proceedings the use of local informants will be a main locational strategy. The second stage of impact proceedings is different than in most situations mainly in terms of the detailed data required at the sites.

Because so much of the information on feature sites is located on the surface the recording of this information may itself be considered a mitigative action. The other way in which detailed inventory may differ for a wooden features program is that the condition/stability of features may be, along with significance assessment, a factor in choosing sites for more detailed investigation. Mitigative action for wooden feature sites may include in-situ maintenance, collection, replication, excavation, interpretation, and public display. It would also include the monitoring of selected sites into the stratigraphic record.

Incorporating a research design into a feature specific program starts with the identification of relevant research problems at the overview stage. Whether the researcher can advance specific hypotheses to solve problems identified at the the overview stage will depend on the amount of information available for the region under study. Realistically, solutions to problems may not be apparent until detailed inventory is underway. By the time detailed inventory is finished a complete list of research problems should be made and hypotheses formulated to address these problems. Sites may then be assessed in terms of research potential in testing these hypotheses. This, along with other significance categories will form the basis for choosing selected sites for detailed analysis.

CHAPTER 4

ARCHITECTURAL REMAINS AND MORTUARY FEATURES: IDENTIFYING RESEARCH PROBLEMS

This chapter is concerned with determining the research potential of two main types of wooden feature sites. Such an exercise is not just to justify the time and expenditure of conserving the resource, but because defining problems at the outset is critical in maintaining a research oriented approach. In the following discussion the focus is on architectural remains and on wooden features related to mortuary complexes. These are the main types that occur on the coast, and the types that occur in the Bella Bella study region (Burton and Bedard 1985). Because so little is known about wooden feature sites identifying research problems is done from a coast-wide perspective.

A review of the scientific literature on Pacific Northwest Coast Cultures indicates three basic kinds of studies: (1) those that may be viewed as essentially cultural historical (2) those concerned with the complex development of the culture at what may be termed the general level of theory and (3) those concerned with the aboriginal acculturative response to European contact and subsequent interaction. In the following discussion research problems in each of these areas are outlined. Second, the potential for investigating architectural remains and mortuary features to understanding these problems is explored. At the conclusion of the chapter a list of specific research problems to

which architectural remains and mortuary features could provide relevant data is made.

Culture History

Published and unpublished reports on the prehistory of the Pacific Northwest Coast reflect the cultural chronological concerns of archaeologists. The majority of these, including recent syntheses (Carlson 1983; Fladmark 1982) are essentially descriptive in nature and are concerned with chronologies and comparative chronologies for the coast based on artifact assemblages, and to a lesser extent, faunal remains. A review of these works indicates three major problems of concern: (1) the origins of the first inhabitants of the coast (2) the reasons for the start of shell midden accumulations throughout the coast at about 4500 BP. and an accompanying shift in technologies (3) the subsequent developments leading to the culture as it was known at contact.

While these issues are identified, explanations are generally confined to very brief discussions of possible alternatives within the cultural historical framework in which data is presented (cf Carlson 1983; Fladmark 1982; Hester and Nelson 1978; Mitchell 1971). This is because as Fladmark (1982:104) points out the nature of the evidence on the coast is a simple recognition of changes over time of artifacts and faunal remains. In terms of the dynamics of the prehistoric culture, and the development of this culture, knowledge is cursory. In reviewing

the state of information on Pacific Northwest Coast prehistory Fladmark states:

> ...most excavations have tended to be of the "telephone booth" type with only a relatively few pits or trenches penetrating through the deep midden, resulting in very little information about prehistoric architecture, house floors, village lay-outs, and the overall spatial distribution of intrasite activities. These problems, and others, such as understanding processes of midden formation and transformation, are recognized by most coastal archaeologists...but, at the moment, the bulk of information available about coastal prehistory consists of artifact and faunal remain studies, with very little data directly pertaining to prehistoric settlement patterns, demography or social organization [1982:104].

In commenting on why archaeological research on the coast has not gone beyond the level of chronology building, Fladmark (1982:102) identifies two major reasons. First, is that archaeological research on the coast has a relatively short history with the majority of work having been conducted in the last twenty years. Given the short amount of time in which research has been conducted it is logical that work has been dominated by cultural historical concerns. A second reason is that the bulk of the evidence is located in shell middens which often represent complex stratigraphy. A lack of information on prehistoric architecture and house floors, which could prove crucial in addressing questions on cultural development, is partly the result of problems in identifying these structures in the archaeological record. As Fladmark points out (1982:112) only one complete prehistoric house floor has been excavated for the entire coast.

General theory

The second type of study that dominates the literature on Pacific Northwest Coast culture is concerned with the problem of the complex development of the culture at what may be termed the general level of theory. Early theories viewed diffusion and migration as explaining the development of the culture (Borden 1954). Later theories have been presented mainly within a cultural ecological framework, probably reflecting theoretical developments in anthropology pioneered by Leslie White (1949) and Julian Steward (1955). Beginning in the 1960's the anadromous salmon runs on the coast have been viewed as the prime variable in the development of Pacific Northwest Coast culture. Suttles (1968) viewed not the apparent abundance of salmon as the key to explaining social hierarchy, but rather the periodic scarcity of the resource. In this model an emphasis on rank and status facilitated effective redistribution networks during times of hardship. More recent theories have also stressed periodic failure of salmon runs as explaining social hierarchy on the coast. Ames (1981) argues that a hierarchy would be more efficient in terms of processing information and effectively conducting redistribution of resources during periods of resource stress. Matson (1982) views an increasing specialization on salmon as a stimulus for increased social specialization in terms of a general systems model, similar to that proposed by Flannery (1968) for the development of agriculture in Mesoamerica.

An important point to note in reviewing the above is that arguments are based on the culture as it is known ethnographically. Little information of an archaeological or diachronic nature is presented other than mention of the likely time of appearance of status differentiation. This is based first on the questionable criteria of the occurrence of art objects and second on burial goods where context is often a problem (Ames 1981; Carlson 1983; Fladmark 1982). An exception to a lack of diachronic evidence is the work of Fladmark (1975) who argues that environmental change prior to 5000 BP resulted in a stabilization of sea levels which facilitated the reliable anadromous fish runs of salmon. Within this model cultural development is viewed as the result of adaptation to a stable environment. Mechanism to explain complex development is a general systematic model with positive feedback generating increasing energy harvesting efficiency over time.

Not only is there little archaeological data to support the general theoretical models outlined above, but the type of solid ethnographic data that could lend weight to various arguments is also lacking. Suttles (1968) pointed out that there is a paucity of ethnographic data on subsistence methods and coastal demography as well as detailed knowledge of the ecology of the coast. He commented:

> I am confident that with the growing body of biological and climatological data on the area, we shall one day be able to state fairly accurately what the resource base of each people's territory were [Suttles 1968:60].

In the same article he noted:

> ...I discovered that it was still possible to do ethnography and get much new data on subsistence. I am sure that my experience could still be duplicated in other areas if for no other reason that some activities survive yet in modified form [Suttles 1968:62].

Twenty years later, while knowledge of some aspects of the ecology of the coast has improved, most notably in data on salmon (Schalk 1977), the overall state of knowledge on ecology and ethnography has not been substantively increased.

Acculturative response to European contact

A third topic of interest in the scientific literature on Pacific Northwest Coast culture is the aboriginal response to European contact and the effect of subsequent interaction. Most researchers identify two main periods in the trajectory of European influence on aboriginal cultures. These are the fur trade era and the period of European missionaries and colonization. Many researchers argue that the fur trade period had little effect on aboriginal cultural systems (cf Acheson 1984; Fisher 1977). First, the fur traders had no interest in changing aboriginal world views. Second, the fur trade simply fed into an already well established economic system. A main change brought about by the fur trade was a florescence in aboriginal art, in the form of carved poles, which was an expression of the wealth engendered by the trade and the

introduction of metal tools (Duff 1964; Barbeau 1973). It was not until the period of European colonization and the coming of the missionaries that major changes in aboriginal culture took place (Fisher 1977).

Problems in isolating the effects and timing of European influence on aboriginal cultures are a lack of data on both pre-contact and contact period demography and settlement patterns. This is accompanied by a lack of information on the exact extent to which the introduction of disease, mainly smallpox, affected aboriginal cultures (cf Duff 1964; Fisher 1977). Most researchers argue that starting in the fur trade era there was a process of reformation and amalgamation that culminated in final resettlement in European type villages in the missionary period (Hobler 1982b). This process is however, poorly understood.

Middle range theory - bridging the gap between culture history and general theory

An obvious question is: in what manner can the study of architectural remains and mortuary features contribute to general research issues outlined above? In reviewing archaeological evidence on the coast Fladmark (1982:101) noted that there is little data that can be used to address problems of cultural historical development. Nash (1982) in reviewing the theoretical state of research on the coast concludes that at the general level of theory, research is quite healthy. However, he suggests that what is lacking is middle range research, both in terms of

predictive models based on ethnographic research and data to support these models. In the following paragraphs it is suggested that the study of architectural remains and features related to mortuary complexes, in conjunction with ethnographic and other data, could contribute to middle range theory. This could provide a basis for understanding the development of Pacific Northwest Coast culture from a cultural historical perspective and in turn provide data for testing general theoretical models of development.

Middle range theory was developed to bridge the gap between archaeological evidence and general cultural theory. It operates in the "middle ground between abstract general concepts and empirical facts" (Goodyear et al 1978:161). Middle range researchers are concerned with identifying what kind of patterned cultural activities give rise to what patterns in archaeological remains (Binford 1976, 1977, 1978). A goal of middle range research is to define operational models that predict what social and other correlates "can be expected given certain kinds of variation in the archaeological record" (Nash 1982:12). Data for constructing models and obtaining evidence for middle range theory is through experimental archaeology (Schiffer 1983), observations of present day cultures (Binford 1976, 1978) and more recently the use of ethnohistoric data (South 1977). The assumption underlying the value of middle range work is that processes that operate in the present also operated in the past (Schiffer 1976). Middle range research does not represent simple ethnographic analogy and, in fact, a goal of middle range work is

to prevent the inaccurate use of such analogies. As Binford points out (1977) interpretations of past cultures have always been based on ethnographic analogy and a goal of middle range work is to use objective observations as a basis for recognizing and testing the assumptions that condition what is "seen" in the archaeological record and how this is interpreted.

As with all aspects of enquiry there is controversy as to the actual utility of middle range research (see for example Trigger 1978, 1982), as well as considerable rhetorical argument (for example Binford 1985; Gould 1985). Some researchers distinguish two levels of middle range work: low and middle range theory (see Willey and Sabloff 1980). Whatever the arguments relating to middle range research, this type of work has contributed to a more precise understanding of patterns and variability of cultural remains and the social and other correlates of these remains (for example Binford 1978; Cannon 1983; Hayden and Cannon 1982; Jochim 1976).

To return to scientific issues on the cultures of the Pacific Northwest Coast, it is unlikely that the study of architectural remains and features related to mortuary complexes could shed light on the problem of the first inhabitants of the coast. Similarly, it is difficult to determine how the study of such sites could provide data directly applicable to understanding the accumulation of shell middens at about 4500 BP and the accompanying shift in technologies. In terms of the third cultural historical issue which is the development of Pacific Northwest Coast culture after 4500 BP the study of architectural

remains and features related to mortuary complexes could provide data for middle range theory building first in identifying patterns in the archaeological record and second in interpreting these patterns.

The first way in which the study of these sites could prove useful is as a basis for identifying similar structures in the stratigraphic record. As was previously pointed out shell midden strata is often extemely complex and identifying occupation levels and house floors difficult. Observing the transformation process of aboriginal architectural remains that presently occur on the coast, as these deteriorate, and are buried in the stratigraphic record could provide a basis for identifying similar structures in the prehistoric record. Monitoring the transition of grave structures and other mortuary features could also help to indicate the presence of such structures in the archaeological record. A study of artifact patterns associated with features related to mortuary complexes could also be useful in interpreting the prehistoric record.

The excavation of house structures and surrounding strata could provide, in conjuntion with ethnographic and ethnohistoric data, a basis for unravelling the achaeological record. First, excavation could provide data on artifacts, features (such as post holes and hearths) and faunal patterns that are associated with house floors. This in turn could provide a basis for identifying floors in the stratigraphic record. This idea was suggested by Carlson (1984) but has been given little consideration by other researchers. Excavation could also

provide a basis for determining how differential preservation could effect artifact, floral and faunal assemblages. Many sites on the coast are documented in ethnohistoric records or are known ethnographically as being summer or winter villages. The excavation of house structures and surrounding strata where season of occupation is known could provide data on artifact and faunal patterns that reflect season specific activity. This, in turn, could provide a basis for identifying season of occupation in the stratigraphic record. Excavation of house structures could also indicate if status differentiation and craft specialization is evident in artifact patterns. The size and style of architecture could also indicate status differentiation or differences related to season of occupation. At the regional level the study of sites containing architectural remains could contribute to reconstructing demography, and to reconstructing settlement patternsy. A study of architectural styles could indicate whether these reflect ethnic differences or other factors.

Charting the acculturative resonse to European contact

A third issue identified in the scientific literature on Pacific Northwest Coast cultures is the aboriginal response to European contact and subsequent interaction. The study of architectural remains and mortuary features could also provide data in this area of research. Moreover, such a study would be necessary in order to screen out the types of information that

are applicable in understanding the prehistoric record, and which reflect a response to European contact.

On the basis of available data it is not possible to determine the age of the majority of wooden features but on the the basis of preservation these date mainly from the late prehistoric to late historic times. Hobler (1987) has demonstrated that the quantitative analysis of the types and frequencies of European trade goods in excavated houses can provide a firm basis for dating the time of occupation of the houses. This information, in conjunction with a study of the style, location and number of houses for different periods could provide valuable information on how European interaction effected demography and settlement patterns. The study of sites containing mortuary features and artifacts associated with these features could also shed light on European influence on aboriginal systems.

Summary

To summarize, both archaeological and general theoretical studies for the coast lack models and data of the middle range variety that could be useful in reconstructing the development of Pacific Northwest Coast culture. The study of architectural remains and wooden mortuary features could provide a basis for deriving models supported by empirical data that could increase understanding of Pacific Northwest Coast culture in the ethnographic period. This could contribute to a body of middle

range theory useful in studying the prehistoric record and in providing the evidence that is necessary for testing general theoretical models for the development of the culture. The study of the sites could also help to shed light on the acculturative response of aboriginal peoples to European contact and interaction. A summary of research problems to which the study of architectural remains and features related to mortuary complexes could provide relevant data is:

(1) Monitoring the transition of the wooden features into the stratigraphic record could provide a basis for identifying similar structures in the archaeological record.

(2) A study of artifacts associated with mortuary features could shed light on interpreting prehistoric burials.

(3) The excavation of structures could indicate what types of features, artifact and faunal patterns indicate prehistoric house structures.

(4) Excavation of structures and surrounding strata could indicate how differential preservation could effect artifact and faunal patterns in the prehistoric record.

(5) Excavation of structures and surrounding strata at sites known ethnographically to have been occupied in specific seasons could provide data for identifying seasonality in the prehistoric record.

(6) Excavation of structures could indicate if it is possible to detect status differention and craft specialization in the ethnographic period and, in turn, in the prehistoric period.

(7) A study of the size and style of houses at the intra and intersite level could indicate if these reflect status, ethnic, seasonal or other differences in the ethnographic period and in turn for the prehistoric period.

(8) The excavation of structures and the size, number and style of houses over time could provide data on aboriginal demographics as well as effect of interaction with Europeans on demographics and other aspects of aboriginal lifeways.

(9) The location of house structures/villages could provide data on factors explaining settlement patterns and, over time, how these were effected by contact.

(10) A study of mortuary features and associated artifacts over time as well as the location of these sites could provide information on aboriginal response to the interaction with Europeans.

CHAPTER 5

INTRODUCTION TO THE BELLA BELLA STUDY REGION

The remainder of this thesis presents the application of the impact model outlined in previous chapters. This chapter presents an introduction to the Bella Bella Study Region which is the location of a pilot project for an impact program for wooden feature sites. Work to date consists of an overview assessment of the resource and the designing of field-tested recording procedures for architectural remains and wooden features. In the following paragraphs the study region is defined and the biogeography of the area described. This is followed by a short summary of archaeological excavations and ancillary studies. A section on the history and results of survey in the study region is given more detailed consideration. This is because isolating possible bias in survey and noting the distribution of all sites in the region provides an important background for studying feature sites. Following this is a brief summary of the culture as it is known in the pre-contact period. The last section of Chapter 5 contains a more detailed discussion of the culture in the contact and post-contact era. This includes data from archaeological, ethnographical, and ethnohistorical sources. Greater consideration is given to the contact period because the majority of wooden feature sites probably date to this period. A consideration of both the contact and pre-contact periods is

important, as well, because it serves to provide a background for identifying region specific research problems.

Boundaries of the study region

The most exhaustive work on the traditional distribution of Heiltsuk speaking peoples (often referred to as the Bella Bella) has been the work of Pomeroy (1980) in defining a region for his study on Bella Bella subsistence and settlement. For the wooden features impact program the study region derived is almost identical as that defined by Pomeroy who described the region as follows:

> ...on the south, the southern tip of Calvert Island, and Addenbroke Point, including Fish Egg Inlet, progressing north, past Namu on Fitz Hugh Sound into Burke Channel...Dean Channel to and including Cascade Inlet; westward covering Roscoe Inlet, the end of Spiller Channel and the Ellerslie Lake area; then west to Oscar Passage and the southern tip of Price Island. The longitudes and latitudes bounding the study area are approximately 51° 25' to 52° 40' north, 127° 30' to 128° 45' west. The approximate centre of this area is the town of Bella Bella... [1980:3].

There is not enough evidence at present to indicate the closeness of fit between the region defined by Pomeroy and the exact region traditionally inhabited by Heiltsuk speaking peoples. A consideration of the anthropological and archaeological literature indicates a confusing picture of boundaries defined for linguistic, culture type and other purposes that include or crosscut the area in the vicinity of

Bella Bella (Duff 1964; Driver 1972; Fladmark 1982; Hobler 1982a; Kroeber 1953; Olson 1955). For the purpose of land claims the Heiltsuk people today claim most of the study region and additional territories to the north and east.

The study region defined by Pomeroy was chosen for a pilot wooden feature impact program for two main reasons. First, it represents a region that has meaning in that it corresponds to the area inhabited by a distinct group, according to the most detailed study in the area. Second, it represents an analytical unit in which previous methodological studies have been conducted.

For the Features Project, Pomeroy's southern and western boundaries have been slightly increased to correspond with Borden unit divisions. The latitudes and longitudes bounding my study area are: 51° 20' to 52° 40' north latitude and 127° 30' to 128° 50' west longitude (Figure 1).

Biogeography

The study region is located in 2 major physiographic zones, the Western and Coastal Mountain Systems (Farley 1979:30-31). The island archipelago which forms a large part of the study region is included in the Western System, and much of this area lies in a subdivision of the System referred to by Holland (1976:34-35) as the Hecate Lowlands. This is a strip of low lying land 16-40 km wide, which extends from Prince Rupert to Vancouver. These lowlands contain many islands, but in some

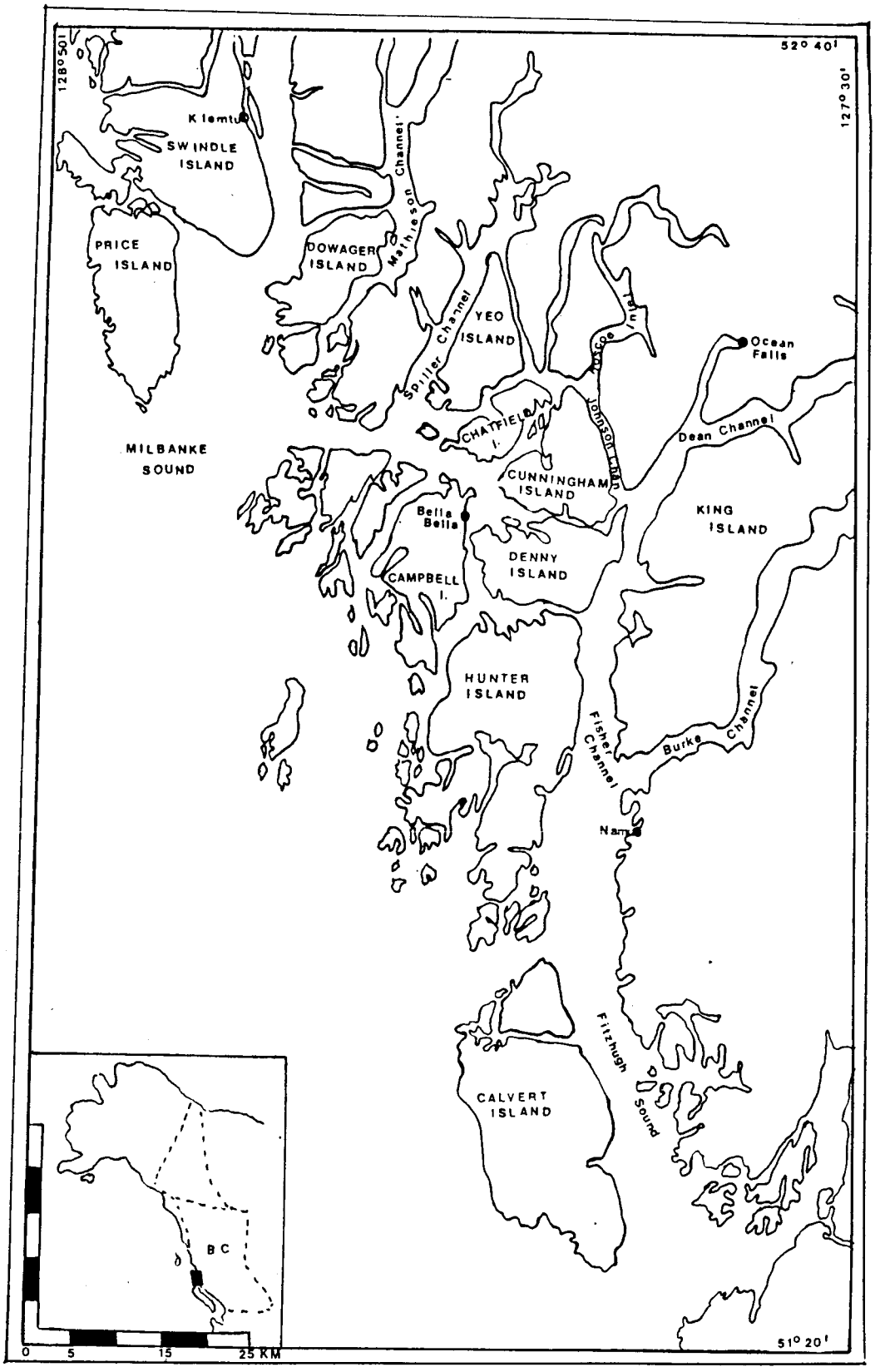


Figure 1. The Bella Bella Study Region

cases extend onto the mainland. The lowland is characterized as a whole by summit levels below 600 metres. Much of the island archipelago also lies in an area of the Hecate Lowlands referred to as the Milbanke Strandflat. This sub-region is characterized by a low lying flat plain mainly below 30 metres in elevation and containing poorly drained muskeg. The mainland, which occurs in the eastern part of the study region lies in the Coastal Mountain System. Characteristic of this System as a whole, this part of the study region contains long narrow fjords which are bordered by mountains which rise steeply from the ocean to elevations often exceeding 2500 metres (Farley 1979:26).

The study region is located in Farley's (1979:48-49) Coastal Western hemlock biogeoclimatic zone. Criteria for placement in this zone is a mean annual precipitation of 155-440 cm, and a climate characterized by mild winters and temperate summers. The region is mainly forested and dominant species of the climax forest include Western hemlock, Western redcedar and Sitka spruce (Chapman and Turner 1956; McTaggert-Cowan and Guiget 1973; Farley 1979). As would be expected in a region lying in two major physiographic zones there is considerable variation in rainfall and vegetation. During work in 1985 it was noted that even over short distances environments are highly variable.

Food resources consist of a diverse array of flora and fauna. Edible plants include salmonberry, huckleberry, blueberry, salal, and several types of seaweed and root plants (Szczawinski and Hardy 1962). Terrestrial faunal resources include deer, wolf and bear (Cowan and Guieget 1973). Sea-based resources include

shellfish, mammals, halibut, several species of salmon and a broad array of local ocean fish (Chapman and Turner 1956; Cowan and Guiget 1973; Farley 1979).

Archaeological Research - Excavation and Ancillary Studies

A total of 14 sites have been excavated in the study region. In his 1938 explorations in the study region Drucker excavated test trenches at FbSx 4, FbTb 4 and FbTb 5 (Drucker 1943). The next set of excavations took place 25 years later with work by the University of Colorado under the direction of Hester at 3 sites; ElSx 1, ElSx 3, and FbSx 6 (Conover 1978; Finegan 1972; Hester 1968, 1969, 1978; Luebbers 1978). In 1972 Pomeroy and in 1974 Pomeroy and Carlson of Simon Fraser conducted excavations at ElTb 10 (Carlson 1975, 1976; Pomeroy 1972, 1980). Hobler, of Simon Fraser University initiated excavations in 1969 in Burke Channel at Kwatna in an area of overlap between Bella Bella and Bella Coola territories just outside the study region. Carlson joined these excavations in 1970 and in all three sites were investigated; FaSu 1, FaSu 2, and FaSu 10. In 1977, 1978 and 1980 archaeological work was conducted at FaSu 19. Reports detailing the results of the Kwatna excavations are those of Hobler (1969, 1970, 1976) and Carlson (1970a, 1970b, 1971, 1972a, 1972b). Carlson initiated excavations at ElSx 1 in 1977 and completed them in 1978 (Carlson 1978, 1979). In the last few years Hobler directed excavations at Fort McLoughlin, a mid 19th century Hudson's Bay outpost near Bella Bella (Hobler et al

1983). Carlson conducted excavations of architectural remains at FbSx 9 near Bella Bella and Hobler tested cultural deposits atop McKenzies Rock in Dean Channel (Hobler 1984). A synthesis of the results of excavations in the study region are presented in Carlson (1983), Fladmark (1982) and Hobler (1985). A final site excavated in the region was that of Simonsen (1973) at FcTe 4 in the far northwestern part of the study region.

Several ancillary studies have been conducted in the study region. Apland (1982) studied intertidal chipped stone assemblages and Pomeroy (1976) published data on stone fish traps in the area. Graham-Bell (1983) of the British Columbia Provincial Museum visited several sites in the study region that contained carved poles and made recommendations for slowing down the deterioration of the poles. Some of these procedures were implemented in 1985. Streich (1983) in association with Simon Fraser University supervised a group of Heiltsuk summer students in restoring gravesites in the vicinity of Bella Bella. The work of Streich included high resolution mapping and meticulous documenting of the sites which proved an invaluable source of data in the overview of wooden mortuary sites in the region.

Archaeological research - survey

Survey was initiated by Philip Drucker in 1938 whose work in the area remains a significant contribution (Drucker 1943). His method of using local informants to find sites has remained an important survey strategy on the Central Coast. Large scale

systematic survey in the area began in 1968 when Hobler of Simon Fraser University instituted his long term Central Coast Archaeological Project (Hobler 1982a). During this season J. Hester of the University of Colorado and J.A. Pomeroy joined Hobler at Ocean Falls with the specific responsibility for survey west of Fisher Channel - Fitzhugh Sound, essentially the Heiltsuk area as it was then conceived. In the Heiltsuk area after 1968 Pomeroy continued with archaeological surveys in 1969 and 1970 and in 1974 he was joined by Apland of Simon Fraser University. Reports of the above surveys are those of Apland (1974), Hester (1968, 1969, 1978) and Pomeroy (1980). Most of the sites located in the region were by Pomeroy and various crews. Techniques used are evaluated below.

Other surveys which have taken place in the study region are those of Simonson (1973) in the far northwestern part of the region and Hobler (1970, 1978) in the eastern and southern portion. These were incidental to the region, but increased the total inventory. Mitchell surveyed in the southeastern portion of the study region in 1969 and recorded a large number of sites. Rollins and Blake (1975) surveyed all of Roscoe Inlet in response to concern of local peoples over logging in the area. Their methodology was judgemental, based on the use of informants. They also attempted to survey by walking along the shoreline, but terrain was so rough that in one day they covered 2 km and so abandoned the technique.

A consideration of the distribution of all sites, and distributions of different site types in the study area is

important for comparison to the distribution of wooden feature sites. This can help to indicate what factors may effect the location of wooden feature sites and whether, during the contact era, changes occurred in settlement patterns. A consideration of survey data can also shed light on methodologies for locating wooden feature sites as well as indicate whether the distribution of presently known sites has been effected by bias introduced by researchers. For these reasons survey data is carefully examined below.

In obtaining data on all sites in the study region a search was made in June 1986 of the site files at the Heritage Conservation Branch in Victoria. Files were compiled which listed each site and relevant information. For site distributions, copies of Geological Survey of Canada 1:50,000 maps also on file at the Branch were made. These maps have the location of sites plotted. This information was studied in conjunction with permit and other reports in order to obtain background information on archaeological survey.

As of June 1986 a total of 540 sites in the study region had been recorded. The site types, frequency of occurrence and number of sites recorded on the basis of informants is listed in Table 1.

In classifying these data the system used here is mainly that presently in use in the province for categorizing archaeological sites (Guide to the B.C. Archaeological Site Survey Form). Almost all of the general activity sites consist of shell middens. Sites containing architectural remains are included in

Table 1. Summary of all archaeological sites in the Bella Bella Study Region showing types, frequency of occurrence and numbers located on the basis of informants.

SITE TYPE	NUMBER OF SITES	LOCATED VIA INFORMANT
General activity	282	65
Resource utilization	113	6
Rock art	97	22
Burials	22	17
Lithic	16	0
Other	10	0
TOTALS	540	110

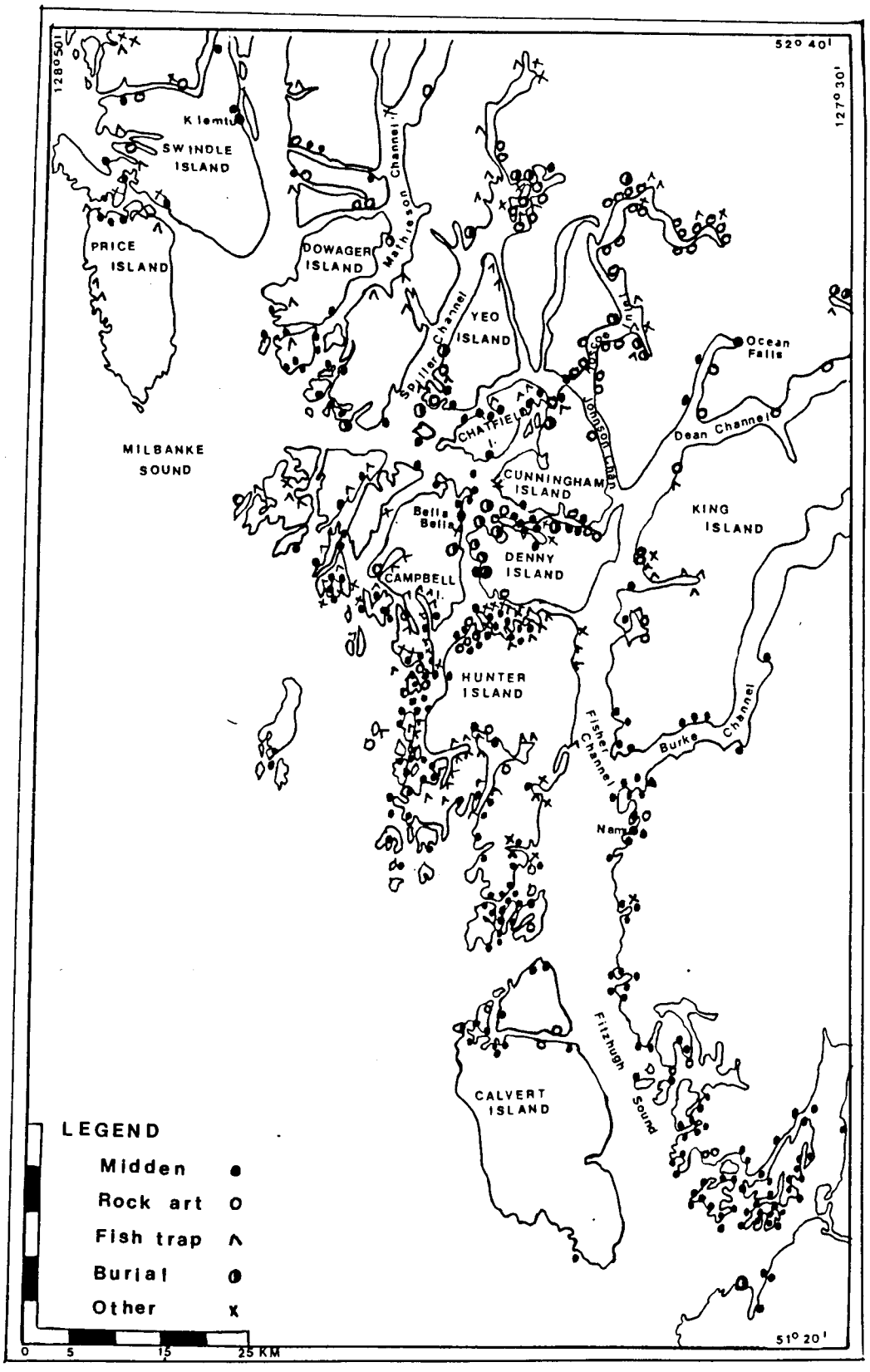


Figure 2. Map of the distribution of all archaeological sites in the study region.

this category, whether these are associated with a midden or not. All of the resource utilization sites in the study region consist of fish traps. Rock art sites consist of pictographs and petroglyphs. Lithic sites consist of quarries or intertidal beach sites. The latter are thought to represent the remains of middens that have been eroded by fluctuating sea levels (Apland 1982). Sites which do not properly fit into any category are simply listed as "other" and include isolated finds. Figure 2 presents a graphic display of these site distributions in the study area.

In assessing all site data it is first necessary to consider the work of Pomeroy (1980) who was involved with the main survey efforts in the region. Pomeroy viewed a distinct relationship between site distributions and physiographic zones in the study region. He identified four zones: (1) Outer Islands (2) Inner Islands (3) Central Channels and (4) Inner Channels. He made a total of sixteen conclusions on site types and distributions (1980:160-161). These are directly quoted below:

1. Large shell middens with a high shell content do not necessarily indicate winter villages.

2. Midden sites on the Outer Islands tend to be in clusters based upon the subsistence items available in the area.

3. Middens predominatly have good beaches for access.

4. Most small middens were in recent use. This inference is based upon low, light green, floral coverage and historic artifacts.

5. Most midden sites are well protected from bad weather and maurauders.

6. Middens with the greatest elevation and high shell content are associated with large clam flats.

7. The highest concentration of both middens and fish traps is in the central portion of the study area.

8. The largest number of fish traps, mainly small ones, is found in areas with numerous middens, though generally not directly associated with them. These are areas with small salmon streams, usually in small bays, coves, and lagoons.

9. Of the four zones, the Inner Channel has the smallest number of middens and fish traps. This is the area of larger rivers and greater salmon abundance; therefore fish traps tend to be large and intertidal.

10. Generally, villages located at mouths of major streams have fish traps associated.

11. Most ethnographically identified winter villages are not at the mouths of large salmon streams; they therefore have few associated fish traps.

12. Petroglyphs appear to be associated with middens.

13. Pictographs are apparently not associated with any other site type, most are found along channels on rock faces.

14. Graves are most often located on islands.

15. Chipped lithic scatter is found on intertidal beaches. Though I have reported the highest density in the Outer Island zone, I feel this may not be the case due to survey bias.

16. Historic sites do not have a specific distributional pattern.

In addition to the above conclusions Pomeroy (1980:85-159) made a number of additional observations. These included that: (1) only 17% of middens are associated with large streams, but that 55% of middens have minor water sources such as springs or small streams (2) productive clam flats and edible flora are important factors in midden location (3) Outer Islands have the highest number of middens and fish traps (4) direct or very near proximity to fish traps is not a determinant factor in midden location, with only 18% of middens very close to or directly associated with fish traps (5) Inner Islands have the second highest concentration of middens but a low concentration of fish traps (6) Central Channels have a low incidence of middens, but a high concentration of fish traps (7) the Inner Channel zone has a small number of middens and fish traps.

Pomeroy suggests that more extreme terrain on the Inner Channels may explain the lower site frequencies as one moves away from the Outer Islands and on to the mainland. He views resource availability as the main factor in explaining site clustering, but does not specify exact resource availability except to note higher occurrences of clam flats and edible flora in association with middens. Pomeroy's observations are important for providing comparative information on wooden feature sites in a later section.

A problem with Pomeroy's (1980) thesis is that he does not address the problem of possible bias in survey coverage. There are four factors which could introduce bias in the type and locations of sites recorded. These are: (1) the techniques used

(2) the actual areas surveyed (3) the expertise of the researchers and (4) whether researchers were more interested in certain types of sites. These are examined below.

In 1968 the technique used by Hester (1968) was to interview local informants who would point out known sites on navigational charts. For the region as a whole informant data was the basis for locating 110, or 20% of the sites. Of these, 41 were wooden feature sites which is important in recommendations made for detailed inventory in a later section. If wooden feature sites are deducted from the total number of sites the percentage of sites located on the basis of informants is 13%. In 1969 the use of informants as a main locational strategy was dropped by Pomeroy (1980:78-84). The new technique was to choose likely looking areas from navigational charts and to search these areas for sites. This remained the primary survey strategy. Apparently a second technique was to cruise close to shore and to go ashore at likely looking spots (Apland 1974). It is difficult to determine whether picking likely looking areas from charts or from cruising close to shore yielded the largest number of sites. I suspect that these techniques were used in conjuntion and simply not reported as such. The researchers would have had to traverse the region to get to likely looking spots on charts. Once familiar with the territory it is unlikely they would have failed to search likely looking locales along the way.

The use of informants as a survey technique may have introduced bias in site distributions. This is because it would be expected that informants may be more familiar with sites

closer to Bella Bella. Figure 3 presents a graphic display of sites located on the basis of informants. This illustrates that outside of a cluster on Denny Island informant located sites are quite widely disbursed in the study region, although these follow general trends. I would argue this wide distribution indicates that central clustering of sites in the central part of the study region is not a result of bias introduced by informants.

The expertise of the researchers was also a factor in the number of sites located. In 1969 Pomeroy recorded only 20 sites. After 1969 this number increased dramatically with 102 sites recorded in 1970, 63 in 1971 and 108 in 1974. Hobler (1987 personal communication) suggests, as well, that the increasing expertise of Pomeroy and others as sailors, as well as better equipment after the short 1969 field season also explains the increase in the number of sites recorded. Expertise as a factor in locating sites may also be indicated by the cluster that occurs in the far southeastern portion of the region. These were recorded by Mitchell (1969) who had years of experience in coastal survey prior to his brief foray into the study region.

A third factor in isolating bias, as well as the manner in which the types of bias discussed above may have effected site distributions, is exactly which areas were surveyed and more specifically which areas were surveyed using which technique. Unfortunately, with the exception of Apland (1974) there is no information on exactly which areas were covered. It would appear that there was some overlap because the area covered by Apland (1974) had at least partly been searched by Pomeroy in 1970 and

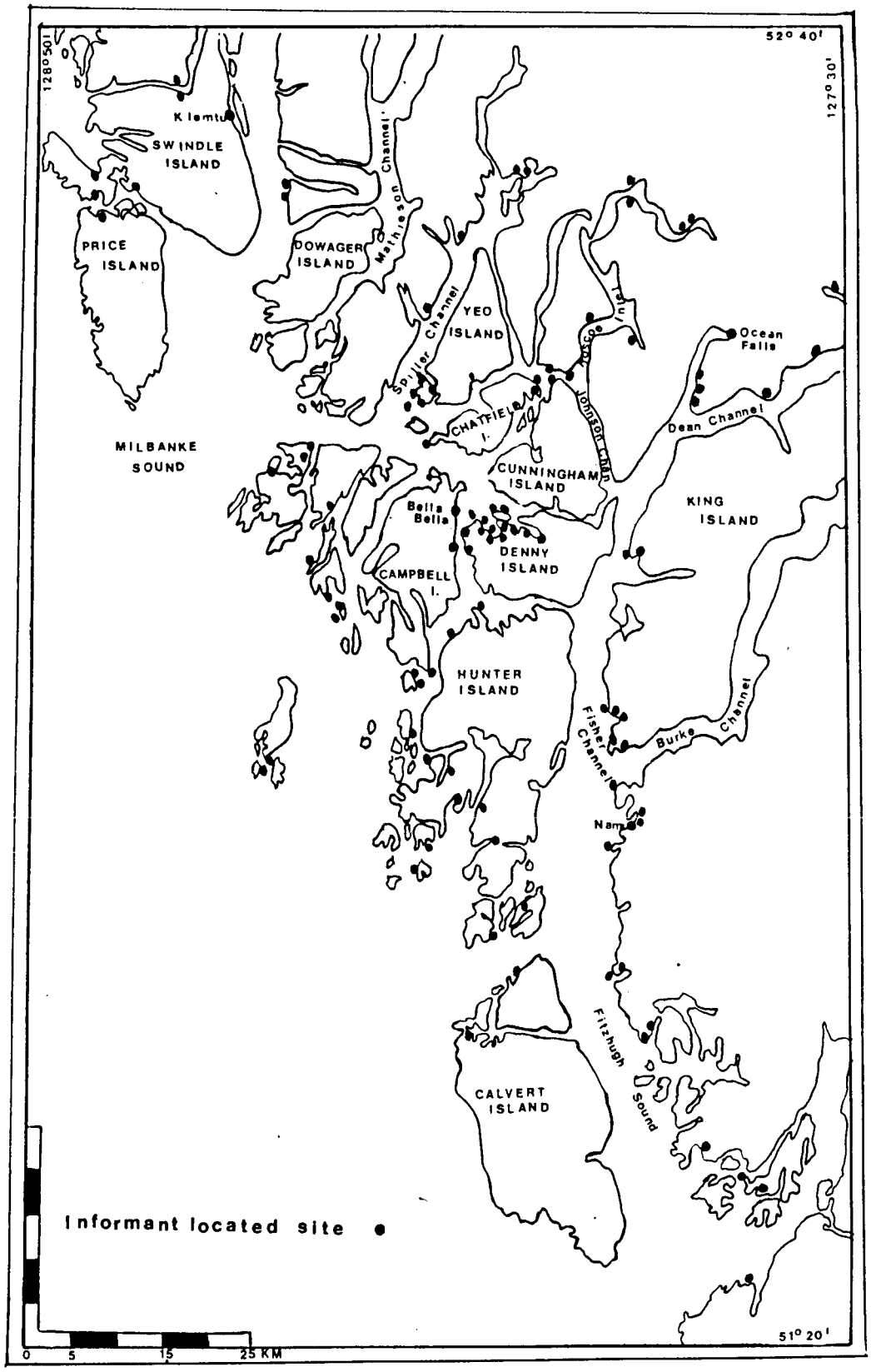


Figure 3. Map of sites in the study region located on the basis of informants.

1971 (Pomeroy 1980:80). To some extent therefore central clustering of sites in the study region may reflect more intensive survey here. Similarly a few parts of the region may not have been surveyed, for example, Calvert Island and Briggs Inlet where almost no sites are located. However, the overall wide distribution of the sites indicates that much of the region was covered. Hobler (personal communication 1986) who is familiar with the survey work of Pomeroy in the area recalls that an attempt was made to make sure that all parts of the study area were equally covered. The investigators were working from a large live-aboard boat using outboard boats for the actual survey. Thus, their logistical arrangements permitted them to work with equal intensity in all parts of the study area. This provided a greater advantage for evenness of coverage than would be the case if a single base camp had been used. Overall, it would appear that unequal coverage did not introduce major bias in the study region. It is also unlikely that expertise introduced major bias because while plotting sites in Figure 3 it was noted that regions surveyed in 1968 and 1969 when researchers were unfamiliar with the area and encountered technical problems with their boat were mainly resurveyed in the 1970, 1971 or 1974 field seasons. Some bias may have been introduced by the two techniques used of picking likely-looking areas from charts or by cruising close to shore. However, I suspect, as previously pointed out, clearly distinguishing these two strategies simply represents ambiguities in reporting between Apland (1974) and Pomeroy (1980).

A final factor to consider in isolating the effect of bias is whether researchers were more interested in some sites than others and looked specifically where they suspected such sites would be. Also to be considered is whether some site types, specifically those containing wooden features, were ignored. According to data from Pomeroy (1980:134) only one site type is under-represented in the study area. These are burial sites which were hard to locate and which Pomeroy felt that the time locating them was unduly great. Because the main attributes of burial sites are wooden features this means that this type is under-represented. It was originally thought that architectural remains may also be under-represented because researchers may not have viewed these sites as important unless associated with an earlier component. However, as is described in a later section a significant number of such sites were recorded in the absence of a prehistoric component. This indicates that researchers recorded these sites as they were located in the course of routine survey.

To summarize: to what extent does the distributional pattern of recorded sites reflect the real distribution of archaeological sites? Even though a few areas were not searched and apparently more effort was expended in some areas, the distributions of sites across the landscape probably reflects real site dispersal in the study region. Moreover, it is likely that where greater effort was expended in some areas it was because researchers were aware of higher site populations in these regions. In terms of bias introduced by technique used I suspect this has had a

minimal effect. Pomeroy's survey efforts in the Bella Bella region represent the most extensive and one of the most exhaustive endeavours on the coast. Still, for future investigators there remains some uncertainty as to specifically which stretches of shoreline were actually walked out, which were investigated close-up from an outboard boat, and which may only have been scrutinized at a distance by binoculars through a misty boat cabin window on a rainy day.

The conclusion that site distributions reflect actual distributions will be important in interpreting wooden feature site distributions, all of which were located in routine survey. A second important conclusion is that burial sites are under-represented but that architectural sites are not. Pomeroy (1980) viewed subsistence factors as the main determinant in settlement patterns. His conclusions will provide an important basis for comparison to wooden feature site distributions in a later section.

Prehistory and History

In the following paragraphs a very brief outline of the pre-contact era is outlined. A more lengthy discussion of the contact period is presented because most of the wooden feature sites probably date to this era.

The Pre-Contact Period

Carlson (1983) has defined a regional chronology for the North Central Coast, which includes our region and is based on a syntheses of excavation reports previously cited. Fladmark (1982) has also presented an outline of coastal prehistory which includes the study region. More recently Hobler (1985) has addressed specific issues in Central Coast prehistory.

Carlson (1983) recognizes three periods or stages for the North Central Coast. These are the Early Period (10,000 BP - 5500 BP), the Middle Period (5500 BP - 1500 BP) and the Late Period (1500 BP to contact). The earliest evidence for human occupation occurs at Namu where a basal layer has been dated to almost 10,000 BP. Artifacts of this component are typical of a Southern Coast complex termed the Pebble Tool Tradition and include cores, flakes, pebble tools, bifaces and scrapers (Carlson 1979, 1983; Hester 1978; Luebbers 1978). A microlithic assemblage is also associated with this component at Namu (Carlson 1979, 1983).

Assemblages dating to the Middle Period occur at several sites in the study region (Apland 1982; Carlson 1976, 1983; Conover 1978; Drucker 1943; Fladmark 1982; Hester 1978; Hobler 1985; Luebbers 1978). In the study region, as for the coast as a whole, the period is marked by the occurrence of shell middens. Evidence is for artifact diversification, a specialized fishing and sea mammal technology, the presence of wood-working, wealth-status objects and population aggregates. Microblades disappear

and assemblages include the appearance of bone tools, ground celts and leaf shaped projectile points.

Late Period assemblages are recognized at several sites in the study region (Carlson 1976, 1983; Fladmark 1982; Hobler 1985; Luebbers 1978; Pomeroy 1980). In the Central Coast, Carlson (1983) and Fladmark (1982) argue for cultural continuity from the earlier period and the growth of regional traditions. During this period evidence is for a decrease in artifact diversity. Fishing is at a peak with the major species remaining salmon, but with greater utilization of other species than in earlier times (Conover 1978). Complex fish traps occur in the region, but may date to earlier times (Pomeroy 1976). Archaeological data indicates evidence for winter villages, population aggregates and social emphasis on wealth and status.

Recently Hobler (1985) has addressed specific problems related to Central Coast prehistory from 5500 BP to contact. He suggests that the archaeological record of the distant past may indicate that the initial population of the Central Coast may have resulted from a southern movement of maritime cultures. However, in considering historic linguistic distributions and in reviewing the work of Suttles and Elmendorf (1962) Hobler points out a model of southward movement is oversimplified. For example, the Bella Coola represent an isolated group of Salish speakers surrounded by Heiltsuk, Kwakiutl and other groups, which are dialects of the Wakashan family. Suttles and Elmendorf (1962) argue that the Bella Coola were once the northernmost end of a continuous distribution of Salish speakers that extended

from the Gulf of Georgia. The isolation of the Bella Coola may have been the result of the southern expansion of Wakashan groups. In reviewing this model Hobler (1985) states that the prehistoric sites of the Bella Bella (Heiltsuk) and Bella Coola can be differentiated back to about AD 1, when the distinction becomes blurred. In terms of the major material changes that occurred between about 4500 BP and AD 1 Hobler considers the possibility that during this period older flaked stone industries may have been replaced by a maritime technology introduced by an ancestral Salish population.

The Contact and Post-Contact Era

The contact and post-contact era is crucial in research related to wooden features since the majority of the sites date to this period. In the following discussion traditional lifeways of Heiltsuk people are considered. This is followed by a discussion of the effect and timing of contact on peoples in the study region.

Traditional lifeways

In terms of traditional lifeways, ethnographic and archaeological data even for the later post-contact period is sketchy. Vancouver (1798) explored Heiltsuk waters in the Bella Bella region but like Mackenzie (1971) who also reached the study area in 1793, he touched only briefly on contacts with people

here. Later accounts of Hudson's Bay Company officials provide information on the study region (Anderson 1834; Tolmie 1963). While these sources provide some insight into Heiltsuk lifeways notes of the traders make few references to events outside of day to day transactions with local peoples. Ethnographic data provided by anthropologists is likewise sketchy. Boas recorded myths and tales of the Bella Bella (1969, 1973) but did not provide a comprehensive account as he had earlier done for the Southern Kwakiutl (1966). Olson (1955) also recorded myths and described sub-groups of Heiltsuk peoples prior to amalgamation, but once again provided little data on lifeways. Archaeologists have interviewed local people concerning traditional culture (Drucker 1943; Hester 1978; Pomeroy 1980). However, native informants represent a rich and still largely untapped source of information. Censuses taken by Canadian Indian Affairs government officials, while notoriously inaccurate, provide some data on native population and land use in the late post contact period (RRCIA 1916). In recent years the Heiltsuk Cultural Education Centre at Waglisla (Bella Bella) has instituted a vigorous program of research on traditional Heiltsuk culture which will contribute substantially to reconstructing lifeways.

The only substantive study on settlement and subsistence for the region is that of Pomeroy (1980). His work involved study in three distinct areas. The first was a review of traditional Heiltsuk distributions and population. This was based on a review of ethnographic data as well as new data collected from William Gladstone, an aged Bella Bella informant. The second

part of the study involved archaeological survey in the region, which was previously reviewed. In the third part of the study Pomeroy compiled information on modern salmon escapement data. He then compared site distributions, ethnographic band territories, and salmon distributions to obtain data on traditional Heiltsuk subsistence and settlement.

Pomeroy (1980:49-70) identified eight distinct Heiltsuk sub-groups and postulated the distribution of these groups as well as identifying their winter villages. Figure 4 presents a graphic display of these sub-groups and winter villages based on Pomeroy's work. In reviewing population estimates he noted weaknesses in the data and presented information from all sources (Pomeroy 1980:Table 1). These estimates ranged from a high of 2700 in 1780 to a low of 298 in 1897. The survey results of Pomeroy's study were previously outlined in which he viewed a relationship between site distributions and physiographic zones. He also suggested that there was a relationship between ethnographic sub-groups and physiographic zones (162-166). From Figure 4 it is apparent that this relationship is not clear cut and Pomeroy (1980:162) noted there is overlap. The uneven distribution of sites in the study region and widely divergent sizes of ethnographic territories suggests there would be differences in the sizes of these groups although Pomeroy does not address this. Differing physiography and site distributions also suggests considerable variation in resource availability, but for salmon, Pomeroy (1980:167-209) concluded that distribution was fairly uniform with the exception of part of the

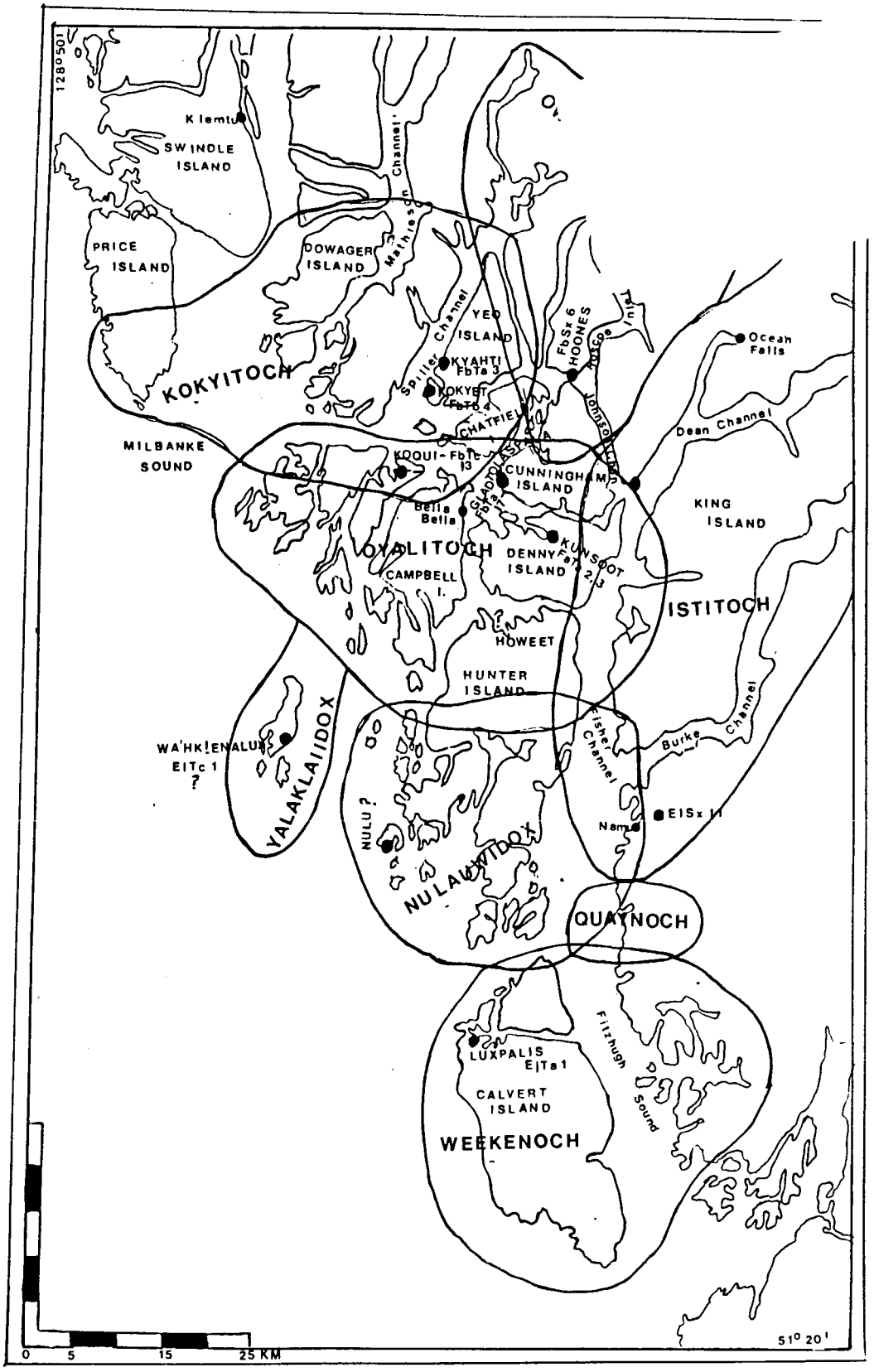


Figure 4. Distribution of traditional Heiltsuk sub-groups and winter villages based on Pomeroy's (1980) reconstruction.

southern and western portions, which had lower values. In relating salmon data to the distribution of Heiltsuk sub-groups Pomeroy concluded that six of the eight groups had sufficient salmon resources within the boundaries defined (1980:174-189).

There are some problems with Pomeroy's study which he himself recognized. First, is the identification of distinct sub-groups whose boundaries can be identified. Other researchers have identified various traditional sub-groups in the region. In 1834 Tolmie (1963) identified four Heiltsuk sub-groups and eight Heiltsuk chiefs. Almost one hundred years later Drucker (1943) stated that the Heiltsuk originally consisted of four sub-groups. Olson (1955) interpreted from his informants that some six village-tribes merged in the decades prior to final amalgamation at Bella Bella. However, before this, many more village-tribes existed. Some became extinct. Others merged and remerged to form the six main tribes and others moved out of the area.

Perhaps one of the problems with attempting to define exact sub-groups, as well as distinct geographical boundaries is that during the post-contact period groups were on the move and may have been constantly reforming. Moreover, it is possible that even in pre-contact times sub-groups were fairly flexible. Boas (1973) mentions in several tales that the people of one winter village moved for a time to the winter village of another group.

Given the difficulty of defining ethnographic sub-groups and their territories interpreting salmon distribution data in terms of these sub-groups is fraught with difficulties. A completely different approach to salmon and settlement patterns is that

taken by Hobler in comparing Bella Bella and Bella Coola areas. In a quantitative study Hobler (1983) noted interesting results in settlement patterns on the Inner and Outer Coast. Comparing salmon escapement data he found that on the Inner Coast village sites correspond to the location of major salmon streams. However, on the Outer Coast there is little correlation between areas of higher salmon productivity and habitation sites. The reason given is that river areas inland contain most of the only flat terrain suitable for habitation sites. However, on the outer coast limited accessibility of flat terrain is not a factor affecting settlement patterns. Hobler (1983) also noted that on the Inner Coast sites occur in distinct clusters once again reflecting steeper physiography and limited access to flat terrain as one moves inland.

Clearly a study on overall resource availability could shed light on the settlement patterns in our region. We know from Hobler's (1983) and Pomeroy's (1980) work that direct access to salmon was not a major factor in habitation locations in the Bella Bella region. Pomeroy, as previously outlined, viewed resource availability as the main factor in site locations and clustering. However he noted that salmon is fairly evenly distributed in the region so that either other types of resources, or factors not yet clearly understood, must explain site distributions. More evidence on seasonal scheduling could also prove valuable. Tolmie (1963) mainly mentions two types of settlements; winter and summer, but little is known of the exact seasonal scheduling of traditional Heiltsuk peoples.

Data on the socio-political organization of peoples in our region is also scanty. In describing the Heiltsuk Olson uses the term "village-tribes" and remarks:

> The village...is the basic unit and, if the term "tribe" is used at all, it should be used as applying to this unit. But "village" too, is scarcely acceptable since in some instances the "tribe" occupied several villages; and between these there may have been a vague notion of a closer affiliation than between them and some distant groups [1955:320].

Village-tribes according to Olson had at least one permanent winter village and many other seasonal villages or camps that were generally owned by particular families (1955:320). It is unlikely that each group had one "chief". Tolmie (1963) mentions a lot more Heiltsuk chiefs than he does villages. Moreover, he noted (1963:275) the presence of three chief's houses at one village. The basic socio-political unit in our region was probably the winter household. Each household would have its own "headman" although the status of each headman within the winter village differed.

Contact: History and Effect on Heiltsuk culture

In a recent article Hobler (1987) attempts to characterize excavated historic components at Central Coast sites. He proposes a new quantitative technique for the systematic comparison of these components which should provide the basis for the subdivision of the historic period into meaningful units

based upon stages of change in material culture occurring in response to European contact.

Prior to his 1987 quantitative analysis Hobler had suggested that the historic period of the Heiltsuk fall into five periods (1982b). The first period is from 1793 - 1833 and the onset is marked by the almost simultaneous arrival in the study region of George Vancouver and Alexander Mackenzie. Almost nothing is known of this period. The second period starts in 1833 when the Hudson's Bay Company established a fur trading post, Fort McLoughlin, two kilometres south of the present village of Bella Bella. The fort was established to create a monopoly on the fur trade, to discourage Russian and American traders, and to bring the trade under the control of the Canadian government (Anderson 1834; Fisher 1977). It also seems likely that the fort was established to provide direct access to trade for inner coastal groups, thus eliminating the role of outer coastal groups, who, in acting as middlemen, inflated the value of the furs (Anderson 1834; Hobler 1982b). Hobler points out the Heiltsuk were well aware of the purpose of the fort to create a monopoly and local groups were not particularly pleased with the establishment of Fort McLoughlin. Whatever the initial reaction of the Heiltsuk, within the first year after the fort was built a native settlement had begun in the immediate vicinity (Tolmie 1963:305). In 1843 the fort was abandoned as being unprofitable and the fur trade, which was in decline anyway, was carried on by periodic visit by company boat.

In the study region the abandonment of Fort McLoughlin in 1843 until the 1870's marks a third and little known period of the post-contact era. While the fort was abandoned the native community that had become established at Fort McLoughlin survived, although in what form is not known, because there is little data for the period. Hobler (1982b) suggests that the community now known as Bella Bella or Old Town may have profited by selling wood to steam powered vessels. Almost all inside passage shipping must pass through Lama Passage, directly in front of the old town of Bella Bella. Possibly the village survived as a trading centre in the area. In 1866 a store was established at the old town of Bella Bella by an independant trader, indicating the community continued to be an important focus in the area (Hobler 1982b).

The fourth period in the post-contact era begins in the mid 1870's with the advent of photographic records for the old town of Bella Bella. Early photographs show native type houses along the beach that may be very similar to traditional styles and layout (Hobler 1982b). In September 1880, the first missionaries arrived at the old town of Bella Bella, and unlike the earlier European fur traders, were determined to influence the native way of life. Photographs of Old Bella Bella after this time show the abandonment of the old large native style houses and the construction of small European type dwellings. In the fall of 1880 a mission house and school were built. The community continued to grow in the 1880's with native residents increasingly indicating European influence in material culture.

The Reserve Commission, in 1888, surveyed and set aside 19 of the 22 reserves eventually assigned to the Heiltsuk. In 1890 one of the last of the outlying bands under Chief Kite moved into the old town of Bella Bella. Near the turn of the century a cannery was built across the passage from Old Bella Bella and the first commercial logging enterprises were underway. This marked a final move to a wage-economy (Hobler 1982b).

The final period of post-contact history dates to the last few years of the 19th century when the entire village of Old Bella Bella was abandoned and the town moved north to its present locale, today known as Waglisla. The old town was apparently abandoned because of an absence of room for expansion (Hobler 1982b).

The only studies to address the effect of contact on native cultural systems are those of Hobler (1982b, 1985) and Pomeroy (1980), although this has been addressed for the coast as a whole by other researchers (Duff 1964; Fisher 1977).

Both Vancouver and Mackenzie noted that trade goods were highly visible among native groups of the Central Coast (Hobler 1985). This indicates that prior to the official 1793 date of contact that European culture had already affected native groups in the study area. Of course the most obvious and deleterious effect of European contact was the population decimation as the result of disease, mainly smallpox (Duff 1964; Fisher 1977).

In recent years researchers have argued that the fur trade did not have an effect on native cultural systems, first because the traders were not interested in changing the aboriginal way of

life and second because the fur trade fed into an already well established aboriginal economic system (cf Acheson 1984; Fisher 1977). Hobler (1982b) in considering the fur trade era on the Central Coast views two processes as major factors in changing aboriginal cultural systems. For the first forty years from 1793 to the establishment of Fort McLoughlin fur traders in Heiltsuk waters operated by sea. It is likely that during this time the fur trade resulted in an intensification of trading with the Heiltsuk amassing considerable profit from the trade. As Hobler (1982b) points out the most important traditional aboriginal trade flow in our area was probably from east-west (and vice-versa) because differences in resources were much greater from the outer to inner coasts and interior regions of the province than along a north-south direction. The advent of the fur trade era simply fed into an already well established east-west trade system. In the early years the Heiltsuk were in an advantageous position and could act as middlemen for furs trapped by inner coastal and even interior groups. This was facilitated in that trading vessels because of weather and other factors did not keep a regular schedule. For this reason interior groups were unable to directly trade. Once Fort McLoughlin was established, however, these groups had direct access to trade. This explains the initial hostility of the Heiltsuk to the fort.

Aside from an intensification of trading during the fur trade era Hobler (1982b) views another response to European interaction as the reformation, amalgamation and settlement nucleation of Heiltsuk groups. This was partly a response to declining

population and partly related to participation in the fur trade. In spite of the fact that Fort McLoughlin was initially greeted with hostility the fort soon became the focus of settlement nucleation, a process which had likely started earlier. Hobler (1982b) argues that in the Heiltsuk area proximity to salmon resources was never a key settlement factor anyway. This means that while groups continued to practice traditional subsistence patterns these may not have had an entirely predictable effect on settlement. Though Fort McLoughlin probably displaced the profitable role of the Heiltsuk as middlemen, it continued to be of economic importance in the region. For this reason it served as a focal point for the nucleation process.

Pomeroy (1980) outlines two main effects of European contact in the study region. These were a decrease in population as the result of disease and a tendency for people in outlying areas to move closer to the centre of fur trading which was Fort McLoughlin. He states:

> The pre-contact pattern of winter, spring, summer and fall villages or camps for the attainment of subsistence needs continued throughout the nineteenth century, but as many of their subsistence needs began to be met at Fort McLoughlin and then at New Bella Bella, this pattern slowly diminished [Pomeroy 1980:72].

Pomeroy (1980:Figure 16) outlines the amalgamation and nucleation of Heiltsuk sub-groups based on his ethnographic work in the area. This involved an amalgamation process that culminated with nucleation at the old village of Howeet and from here resettlement at the old town of Bella Bella.

Both Hobler (1982b) and Pomeroy (1980) view amalgamation and nucleation as major responses to European interaction but this process is little understood. While nucleation may have been underway prior to Fort McLoughlin and have intensified while the fort was in existence it is likely that Pomeroy's statement above is wrong in viewing subsistence as a factor in nucleation during the years when Fort McLoughlin was in existence. In fact, according to several references made by Tolmie (1963:293,298,301), residents at the fort were dependent on the natives to meet their food requirements, mainly salmon and deer. This was supplemented by rice and peas brought in by company vessels and by a garden at Fort McLoughlin (Tolmie 1963:307,309,310).

A key period in getting at possible resettlement patterns is from 1843 when the fort was abandoned and 1880 when the missionaries arrived and when historic records start for the region. Another area requiring investigation is how contact and subsequent European interaction effected subsistence systems. It was probably not until late in the historic period that such systems changed, and even today salmon remains an important resource. Possibly major changes in aboriginal systems occurred when traditional technologies for acquiring resources changed, which probably did not occur until well into the post contact era.

While the fur traders made no attempt to directly change aboriginal lifeways the missionaries had other plans. Hobler (1982b) suggests that the success of the missionaries in

dramatically affecting aboriginal material and other aspects of culture was probably economic in nature. He argues that the missionaries introduced not so much catchy religious ideas as a whole new range of Victorian technological and stylistic objects to replace the old status symbols. The dramatic change in native appearance that accompanied the arrival of the missionaries in the old town of Bella Bella in 1880 may have been largely superficial.

CHAPTER 6

SITES WITH WOODEN MORTUARY FEATURES: INTRODUCTION TO MORTUARY CUSTOMS AND AN OVERVIEW ASSESSMENT OF THE SITES

This chapter is concerned with an assessment of burial sites with wooden features in the study region and with related data on mortuary customs. The first part of the chapter summarizes archaeological, ethnohistorical and ethnographic data on mortuary practices in the study region. The next section summarizes data on the sites containing wooden mortuary features. A summary at the conclusion of the chapter relates the above to research problems outlined in Chapter 4. It will be recalled that a main goal of 1985 fieldwork was to derive proper recording procedures for sites containing mortuary remains. The procedures derived as well as substantive data on a mortuary site visited in 1985 are detailed in Appendix 1 and 2 at the conclusion of the thesis.

Mortuary Complexes in the Study Region

There are several sources of information on mortuary complexes in the study region. First, in terms of early and later prehistoric practices evidence comes from excavation. For the post-contact period data comes mainly from notes in the journal of Tolmie (1963) and ethnographic data collected by Drucker (1943). These sources are explored below.

Hobler (1985) notes that on the outer coast burials are commonly found in shell middens. The most extensively studied burial and skeletal sample in the region comes from the site of Namy (ElSx 1) (Finnegan 1972; Luebbers 1978). At this site two distinct types of burials were identified; single inhumations and group burials containing two or more individuals. Hobler (1985) suggests that the group burials may represent inhumation in burial houses, similar to those described in a later section, in which the structure has decomposed.

In late prehistoric components on the outer coast Hobler (1985) notes a decline in the number of burials. This is an important development as it would be expected that changes in mortuary practices would reflect changes in other aspects of the cultural system. However, at the present time it is not possible to determine the significance of the decrease in shell midden burials. Fladmark (1982) notes that midden burials are generally less common throughout the coast in later prehistoric times.

Tolmie's Data

For the contact period, ethnohistorical data on mortuary customs consists of the notes made by Tolmie (1963) during his residence at Fort McLoughlin in 1834-1836. He makes references to three mortuary events. These are directly quoted below.

> On Sunday I visited the grave of the late Qyostijuice who was chief of the Owialetoch sept before Boston. The family sepulchre is at the foot of Weweeshla nearly opposite Pt. Portlock, but more to S. & is in a small

cave or niche. The cave is about 20 feet long and six wide - for about half its length it is open above, but posteriorly it is overarched with a granite roof & blocks of the same rocks form the walls. Logs laid longitudinally & transversely in the bottom form a dry bed for the coffins of which there are two - these are large chests of native manufr. & contain besides the body skins, blankets, masks & all the paraphernalia for Tseetsaiak or conjuring. Over the coffin heavy cedar boards are laid which completely cover & conceal them. In the mouth of the cave bushwood is placed to obstruct the ingress of wolves or robbbers, & as a further protection, a bath blanket steeped in urine is placed at the inner end but does not emit any disagreeable odour. 5 wooden figures resembling the arm and hand in an extended postion were deposited in a niche in the wall- they as well as the masks bear the general name of nawilock [Tolmie 1963:306].

The Indian who was murdered the other day at Boston's Village, suffered, from his being supposed to have caused by magic the death of a man last winter. He was shot, while sitting at the beach, evacuating [sic] & lived till night. To dispose of his property to his different relations - his friends proposed to convey him here, in case anything could be done for his preservation, but he objected, saying "tis good that I die." According to the custom of his tribe with persons who die by the knife or gun, his remains were burnt. He did not bear a very high character at the Fort, but I never saw him behave ill & he used to profess great attachment to the whites. His fate has struck me the more as I lately had dealings with him (in exchanging a canoe & had employed him to make a small model of a canoe) [Tolmie 1963:308].

Yesterday a man died in one of the houses at the beach- for nearly 24 hours before his death a constant wailing was heard from the lodge. Visited the lodge yesterday & found the sufferer moribund - his head was adorned with down, & supported by a male relative, face painted & body covered with a new blanket. Close by stood an open chest intended for the coffin - at his feet a grey haired crone who chanted the dirge or coronach occasionally joined- he died about 11 - & about 2 p.m. his coffin was conveyed in a canoe manned by 3 or 4 hands across to Qyostijuic's cave & there deposited [Tolmie 1963:310].

Several facts can be gleaned from these journal entries. An interesting aspect is that he mentions the dispositions of both a chief and commoner. Tolmie mentions that the cave burial he viewed represented a family interment location. This may of course, simply have been his interpretation, and it is unclear as to exactly what a "family" may mean. The large chest described is probably the typical bentwood cedar box, the remains of which are common in cave burials in the study region today. Gravegoods are mentioned as being inside the box and include dance paraphernalia. The 5 wooden figures are an interesting inclusion and represent a type of miniature carving not known ethnographically. Also interesting is that the figures show hands in an extended position. The larger mortuary poles reported in the study region display hands folded over the chest, or resting on legs, presumably to indicate mourning.

Burial goods overall, indicate a rich assortment of what were likely considered high status objects. An interesting factor is that the gravegoods do not include items of European manufacture although these would have been available at the time Tolmie visited the site. Importantly, from an archaeological perspective, the gravegoods all consist of perishable materials. The most resilient objects would probably be the grave box and the cedar planks covering it.

The second mortuary event witnessed by Tolmie was of a man murdered as the result of a feud although we do not know the exact circumstances. Tolmie suggests that the man was cremated because of the manner of his death. However, it is possible that

cremation as a form of disposal also reflected his obviously low status as did the rapid disposal to relatives of his belongings. From an archaeological perspective there may be little evidence for this type of disposal although charred human bone could indicate this practice (Erle Nelson, personal communication 1987).

The final mortuary event noted by Tolmie may represent an individual of fairly high status, but not a chief. Had it been a "chief" Tolmie would no doubt have mentioned this as he seemed to be familiar with who the Heiltsuk personages of highest status were. Whether or not gravegoods such as those associated with Qyostijuic's burial were included is not stated. No mention of possible family connections is made. The rapid disposal of the body and the fact that none of the local chiefs showed up while the individual was sick may indicate that the man was not of very high status. This is an important factor to note because Tolmie mentions throughout his journal constant visiting between chiefs of neighbouring villages, including during times of illness.

Although it is speculative it may be inferred from Tolmie's notes that there was a distinct difference in treatment of the dead on the basis of status. A chief's burial would include rich gravegoods, someone of who may be termed middle status less ceremony and no rich gravegoods, and a low status person cremation and immediate disposal of property. This last however, may reflect cause of death as much as the status of the individual. It is likely however, that in the feud that precipitated the death that the individual was marked because he

was of low status. Also to be noted is the possibility that the rapid disposal of the "middle status" person into the grave box was done so that the body could be placed in the flexed position before rigor mortis set in (Hobler personal communication 1987).

Drucker's Data

A second source of data on mortuary customs in the study region is the work of Drucker who summarized data on ethnographic practices in the region in his 1943 monograph on archaeologicial investigations and in his 1948 element trait list compiled for the entire coast. Drucker noted that in the study region small gravehouses were built and the bodies of relatives interred there over time (1943:43). He also noted that cave and rockshelter burials were common (1943:43). At the time of death of at least a noted person large quantities of goods were destroyed, much of it burnt. This has important implications for interpreting the prehistoric record as there may be little evidence remaining of the practice of burning goods. This custom persists right up to the present with food offerings burnt for the dead. Drucker (1943:34) noted that in late historic times valuables were placed at, or near graves, and included such goods as gramophones, ceramics and sewing machines.

Drucker's (1948:216-219) element trait list for burial customs was compiled on the basis of interviews with a single informant. The list includes such traits as: the corpse was left in the house and surrounded by property for four days, that the

corpse was dressed in finery, and the face painted, that caves and charnel houses were used, that mourning songs were sung nightly and that there was no special burial for chiefs. A consideration of Drucker's trait list does not match in many details with Tolmie's notes. For example, the rich gravegoods associated with Qyostijuic indicates special burial for chiefs. There did not appear to be a lag time in the death of the person and disposal as noted by Tolmie. Conversely, Tolmie does not mention nightly mourning songs following the death of the individual. Discrepancies may be the result of several factors. Drucker's information was collected over 100 years after Tolmie's notes were made and practices may have changed over this time. Within the study region different sub-groups may have practiced different mortuary customs and Drucker's informant may have been recalling the practices of a particular group. Whatever the discrepancies there are also many similarities between Tolmie's account and Drucker's list; for example in the use of burial boxes, burials in caves, face-painting and inclusion of gravegoods.

Overview Assessment of Sites with Wooden Features Related to Mortuary Complexes in the Study Region

The identification of sites with wooden mortuary features in the study region was based on the search of site files at the Heritage Conservation Branch in 1984 and 1986. As of June 1986, there is a total of 20 such sites in the study region. Two main

types of burial sites are indicated. These are, first, burials in rockshelters and second, what may be termed burial grounds.

Burials in rockshelters

There have been recorded a total of 12 rockshelter burials in the study region containing wooden feature remains. Table 2 summarizes feature and site attributes for these sites. Although descriptions of the wooden features are not well detailed on survey forms, and are rarely mapped, data on these features is much better than for sites with architectural remains.

The description of the sites as caves by some researchers is subjective; there are no true caves known in the study region. For this reason whether referred to as caves or rockshelters on survey forms all sites are referred to here as rockshelters. Where mentioned, the dimensions of the rockshelters is quite small with the exception of FcSx 1. Half of the survey forms mention that more than one individual is represented, but exact numbers are rarely estimated. The number of individuals represented appears to vary from 1 to 3 or 4. In many cases estimates were not made because remains were scattered. One site, the large cave FcSx 1, contained at least 14 burials. Perhaps the small dimensions of most caves indicates why there is generally very few individuals interred. Five of the sites mention traditional boxes, either of bentwood sewn, or bentwood kerfed constuction. Such boxes, common throughout the coast for many uses, were made by steaming adzed cedar planks and bending

Table 2. Summary of wooden features and site attributes for rockshelter burials in the Study Region.

	LOCAT. VIA INFORM	SITE DIMEN- SIONS (in m)	NUMBER OF INTERR MENTS	TRAD. GRAVE- BOX OR BOX REMAINS	BOX - EURO. INFL- UENCE CONSTR.	GRAVE PLANKS	GRAVE GOODS	
FaSx 3	X	2 x 2	>1	X		X	X	Bentwood box. Several cedar planks. Basketry fragments.
FcSv 1	X	4 x 6			X		X	Box fragments with nails; 70 x 50 x 34 cm. 1 brass button, 5 beads, 1 pc rope, 1 fur, 1 worked shell, 1 cedar box fragment.
FcSv 2		3 x 4	1 - 2	X (?)				Box fragments only.
FcSx 1	X	15 x 20	14	X (?)		X		Box parts, one almost complete box, 20 grave planks.
FcSx 4	X	3 x 5		X		X		Decorated box lid, cedar planks.
FcSx 6	X			X (?)				Small burial box.
FdSx 6		2 x 3	1 child	X (?)				Box fragments.
FaTa 48			>1	X				Remains of 3 reefed & sewn boxes.
FbTa 20			3 - 4		X			3 or 4 unpainted boxes with round nails. 60 x 60 x 45 cm.
FcTa 1	X		3	X (?)				Log bulwark in front of burials.
FdTa 10	X			X			X	Bentwood box. Remains of 2nd box. Coil of cedar bark rope.
FdTa 11	X			X		X	X	Kerfed box, missing lid. Several planks, cedar bark rope fragments

them to form the sides. Joints were then sewn or fitted with pegs to hold the sides and bottoms together (Figure 5). Lids and bottoms were fitted after the sides were constructed (Burton 1985). Only two of the survey forms mention the dimensions of the boxes. At FcSv 1 dimensions of 70 x 50 x 34 cm are given. Presumably the first two measurements define the length and width and the last the depth. At FbTa 20 dimensions given are 60 x 60 x 45 cm. A typical box would require the individual be placed in a flexed position. Five additional sites probably contained traditional boxes, but exact construction is not specified except to note that box or box fragments are present. At two of the sites boxes are noted which contain nails. At one of these round wire nails indicates the site must date to the present century. The dimensions of this box indicates that the individual must have been placed in the traditional flexed position.

There is an overall paucity of gravegoods associated with the burials in rockshelter sites. Three sites contain the remains of cedar weaving, perhaps the remains of clothing or basketry. A fourth site, FcSv 1, contained a brass button, 5 beads, a piece of rope, 1 fur, cedar bark fragments and 1 worked shell. This is one of the sites containing a burial box with nails although round or square is not specified. Hobler, who recorded the site viewed a mid-ninteenth century date for interment. Perhaps the presence of nails dates the site to around 1866, when a store was established ot Old Bella Bella. An overall paucity of gravegoods at sites is probably the result of two factors. The first of these is preservation, with perishable objects having been lost.

B.C. Provincial Museum photo - 1969

Figure 5. Photograph of a burial in a bentwood box at a rockshelter site in the study region.

From Tolmie's data, at least, the objects noted would be easily perishable with the most resilient being the cedar boxes and planks. A factor which would help to determine this would have been the researchers assessment of the conditions of rockshelters, for example, if these were open to the elements. I suspect that looting may be a major factor in the absence of gravegoods. This would also explain the apparently disturbed state of many of the sites where human remains and box fragments are often reported as scattered. Natural disturbance factors, such as animals may also explain the scattered nature of remains at many sites. Hobler (personal communication 1987) notes that he has seen burials in cave/rockshelters that had obviously been disturbed by bears.

Several of the sites mention the occurrence of planks. When I first noted mention of these remains I was puzzled as to why these would be present. It seems clear, however, in reference to the quote by Tolmie (1963:306) that these were placed over the graveboxes to protect them from disturbance.

Overall, a lack of historic material and the use of traditional construction of graveboxes indicates that rockshelter burials represent pre-contact mortuary practices. It is difficult to assign an exact date to the sites, but many must be earlier than FcSv 1 where historic and other gravegoods indicate a mid-nineteenth century date. The occurrence of a gravebox of traditional dimensions and round nails indicates that for some time in the historic period traditional mortuary practices were continued, at least by some individuals.

Burial grounds

The second type of mortuary sites in the study region are termed burial grounds. Data on these sites is very good as seven of the eight sites were visited in the 1983 Bella Bella Gravesites Project. This project involved the work of Heiltsuk students under the direction of Anja Streich Brown, at that time a student at Simon Fraser University. The goal of the project was to clean up overgrown gravesites and to map and record data on the sites. One of the sites, FaTa 54, was revisited in 1985 in order to obtain data on devising recording and documenting procedures for mortuary sites (see Appendix 1).

Table 3 presents a summary of site and feature attributes for burial grounds in the study region based on the work of Streich (1983). The variety in wooden feature and site attributes makes it difficult to categorize the data. Types of wooden features which occur at burial ground sites are: grave-structures, burial boxes and carved poles.

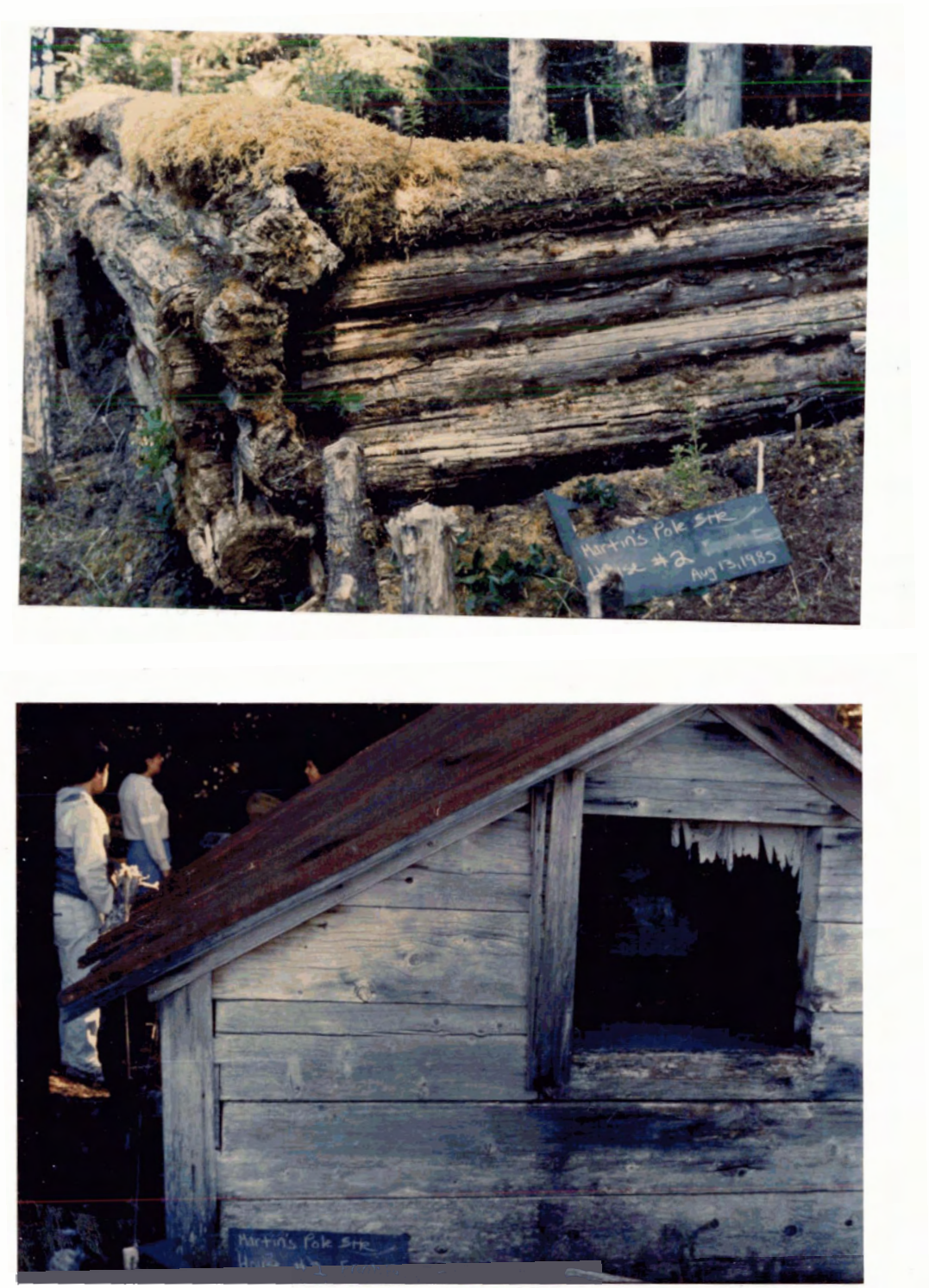
Three main types of grave-structures occur. The first of these are log cribhouses which consist of logs stacked on four sides (Figure 6). In some cases the logs are notched and contain square nails. The cribhouses are square, or rectangular, varying from 2.0 by 3.0 m to 4.0 by 4.0 m in dimension, and generally 1.0 m high. Logs consist of sections of immature trees, but species is not specified (Streich 1983). Due to heavy forest littermat, moss and vegetation on the top of the structures, it is not possible to tell if they were originally roofed. The same

Table 3. Summary of wooden feature and site attributes for burial grounds in the Study Region. (Compiled from data obtained by Streich, 1983).

SITE & ATTRIBUTES	LOCAT. VIA INFORM	SITE DIMENSIONS (in m.)	LOG CRIB-HOUSE	EURO. STYLE HOUSE	CRYPT STYLE HOUSE	TRAD. BOX	EURO. BOX	NO. OF TOMB-STONES	DATES ON TOMBSTONES	HIST-ORIC GRAVE-GOODS	PRE-HIST. GRAVE-GOODS	CARVED POLE
FaTa 3	X	5 x 10 25 x 22	1	>1			X	48	1879 - 1951	X		
FaTa 4	X	30 x 40 2 x 2 3 x 4 7 x 4		2	6			73	1881 - 1917			
FaTa 23	X	10 x 4 4 x 4 25 x 25	3	5	1			35	1879 - 1945	X		X
FaTa 54	X	15 x 15	1	1			X	9	1890 - 1922	X		X
FbTa 24								187	1884 - 1981			
FbTb 2	X											X
FbTb 8	X	5 x 5	2			1	X			X	X	
FbTc 9	X											2

conditions make it difficult to ascertain whether there are graveboxes in the structures, or the number of individuals interred (Streich 1983). However at FbTb 8, one log cribhouse contained bentwood box fragments, and the second a European tea chest and iron trunk. A small wooden grave figure was also noted at this site and is perhaps similar to that observed by Tolmie (1963:306) in Qyostijuic's cave. Additional cedar box remains were associated with the bentwood box (Streich 1983). This is the only burial ground site in the region that contains traditional type gravegoods. Significantly, the site also lacks tombstones, indicating it may be the earliest known burial ground site in the region. At the same time one of the log cribhouses at FbTb 8 shows evidence for having contained a glass window, perhaps indicating the site dates to after 1866, the date of the construction of a store at Old Bella Bella (Streich 1983). The occurrence of square or cut nails in several cribhouses may also indicate these date to after 1866. In all, four of the eight burial ground sites in the study region contain log cribhouses.

The second type of grave-structure in the region displays European influence in construction design and building materials. These are constructed of milled lumber, are roofed and contain a window. The structures resemble miniature gabled European houses (Figure 6). Inside, these structures where information is available, individuals are interred in extended positions in European style coffins, although number is rarely specified and often houses have collapsed to the extent that no inventory could be made. At FaTa 54 the European style gravehouse contained 11



Shirl Hall photos - Features Project - 1985

Figure 6. Photographs of a log cribhouse and a gravehouse showing European influence in design.

coffins. Dimensions of the European style gravehouses ranges from 2.2 by 3.8 m to 3.0 by 5.0 metres (Streich 1983). Heights are rarely specified, but appear to be 1.0 m high. Four of the sites in the study region display European style gravehouses.

A final type of grave-structure noted in the study region consists of underground or partly excavated crypts, often with shored walls (Streich 1983). The crypts are covered with a variety of structures. These include miniature type houses of the type described above. A second type is similar, but lacks windows and is about half the height of the miniature houses. Wooden slabs were also noted as forming covers over shored crypts (Streich 1983). None of the crypts displayed log cribhouses built overtop.

Overall, European style grave-structures and crypt styles are the most common in burial grounds with log cribhouses much less common. At three of the sites log cribhouses occur with European style grave-structures. At one site, FaTa 23, all three types of grave-structures occur, with European type miniature houses representing a late historic transition from earlier type cribhouses. Presumably this would be after 1880 when missionary influence affected house construction in Old Bella Bella. Streich suggests that these structures in turn were replaced by the use of shored underground crypts and these finally gave way to the single underground grave in use in modern times.

It is clear that log cribhouses are earlier than European style structures. This is indicated by the use of square nails. Cribhouses must predate the arrival of the missionaries as at one

site these occur in the absence of tombstones. It is however, difficult to state exactly how old the practice of interment in log cribhouses is, but these may date to pre-contact times. There is no precedent in the use of "house" type structures in Europen mortuary customs that would suggest that such a style was adopted by aboriginal peoples. Dating the cribhouses is an important issue, and further investigation will be required in order to determine if as Hobler (1985) suggests that some group burials in middens may represent interments in log cribhouses that have decayed.

At five of the burial ground sites historic tombstones occur. These do not show a clear association with European style gravehouses as might be expected. Tombstones generally show more than one name and often depict carvings denoting native styles. The number of tombstones varies from nine at FaTa 54 to one hundred and eighty-seven at FbTb 24. In some instances last names on the tombstones show a high frequency of one or two last names indicating these were associated with a particular family. In other cases such an association is not clear (Streich 1983). A more in depth study of names on tombstones and relations of individuals buried at various sites, based on interviewing local individuals, could shed light on historic, and perhaps even earlier social structure.

The size of burial grounds also varies from very small, containing only a few grave-structures, to very large. There is no apparent correlation between the sizes of burial grounds and dates of use as indicated on tombstones. The earliest date noted

on a tombstone is 1879 and the latest 1981. It would appear that many sites were used contemporaneously, indicating family ties of some kind, to particular sites. Some of the sites do display tombstones that have a greater frequency of occurring in discrete time periods. FaTa 4 contains mainly tombstones dating to the late 1800's, perhaps reflecting the occupation of Old Bella Bella which was adjacent to the location of the site. Tombstones at FaTa 23 date mainly from the late 1800's through early 1920's. FbTb 4 contains mainly tombstones dating to after the turn of the century.

At three of the burial ground sites wooden features and attributes occur in distinct clusters over a wide area. This is why separate site dimensions are given for three of the sites in Table 3. This may reflect local physiographic factors or be related to distinct family or other groupings.

Historic gravegoods were noted at most of the burial ground sites. These most often consist of kitchen ware, such as enamelware and china but also include such goods as sewing machines and bedposts. Gravegoods are mainly located outside of grave-structures, are often widely scattered, and in some cases are located at some distance from grave-structures (Streich 1983). In most cases where several grave-structures occur together there is no clear association of goods with particular structure. A lack of direct association of goods with a structure or structures and occurrence outside structures has interesting implications for interpreting the archaeological record.

The occurrence of tombstones dates almost exactly to the arrival of the first missionaries in Bella Bella in 1880. Streich (1983) argues that the effect of the missionaries on native lifestyles was immediate and profound. However, it is likely that the acculturative response to the arrival of the missionaries was complex and must be viewed within the framework of earlier post-contact aboriginal and European interaction.

Another type of wooden feature associated with mortuary complexes in the study region are carved poles. There are six such poles at five burial sites in the region. At two of the sites carved poles are the only mortuary remains present, but these were included in the overall burial ground category to avoid confusion in making a separate category.

Photographs of mortuary poles in the study region show them to be quite similar stylistically (Figure 7). They depict human type carved figures with tall hats, probably indicative of status (Shirl Hall personal communication 1985). The positions of the hands and arms of the carvings probably has some significance. One of the poles in the study region at FaTa 54 is of a totally different style than other poles in the region (Figure 8). It more closely resembles Southern Kwakiutl carving styles and depicts in zoomorphic style the clans of the individuals it was carved to commemorate (Appendix 1). This pole is probably later than the others and was commissioned to a Southern Kwakiutl carver, which explains the difference in style.

Heights of two of the carved mortuary poles are 4.3 and 3.6 m. The majority appear to be constructed of Western redcedar.

P.M. Hobler photos - 1983 - SFU

Figure 7. Carved mortuary poles in the study region.

P.M. Hobler photo - 1969 - SFU

Figure 8. A carved mortuary pole resembling Southern Kwakiutl style.

Little is known of the origin and carver of these six Heiltsuk poles, with the exception of the one at FaTa 54 (Appendix 1). We talked to several elders in 1985 concerning the nature of mortuary poles. We were told that usually such poles were carved to commemorate the death of prominent individuals lost at sea. The pole would be erected near the location where death occurred. However, possibly this tradition had been modified historically because at only one site (FbTc 9) did such poles occur in the absence of other burial remains. On the other hand isolated poles would probably have less of a chance of being located.

Assessing the Condition and Stability of Wooden Features at Burial Ground Sites

Assessing the amount and nature of deterioration of wooden features is important in making decisions for mitigation. The stability of wooden features may be assessed in terms of their resistance to both weathering and rot causing organisms. In general, preservation of wood in rockshelters is a direct result of exposure to moisture. If wooden materials are up off the damp floor of the shelter and are sufficiently protected from rain blowing in and drip from walls preservation is usually excellent. Native peoples were well aware of this and often placed burial boxes on rocks and planks to keep them dry beneath. Planks were sometimes placed over the tops of boxes as a protection from the weather.

Table 4. Assessment of condition and stability of wooden features at burial ground sites in the study region. (Based on data from Streich 1983).

SITE	GENERAL COMMENTS ON CONDITION/STABILITY OF WOODEN FEATURES	OVERALL RATING
FaTa 3	Two standing gravehouses in good condition. Good exposure to sunlight. No data on condition of collapsed gravehouses.	Standing structures good & in stable condition.
FaTa 4	Gravehouses are all collapsed, little exposure to sunlight. Poor condition.	Poor; wooden features unstable.
FaTa 23	Gravehouses in fairly good condition & photos indicate little exposure to sun. Carved relief on pole is good, but top and base deteriorating & moss in some areas.	Structures fair but unstable. Carved pole; good but unstable.
FaTa 54	Gravehouses in excellent condition, good exposure to sun. Carved pole in fair condition but exposed to moisture & deteriorating.	Structures excellent & stable. Carved pole; good but unstable.
FbTb 24	Unable to assess on the basis of available data.	-
FbTb 2	Carved pole is badly deteriorated, carved relief blurred & rotted.	Carved pole; very poor, unstable.
FbTb 8	One log cribhouse in fair condition; other cribhouse partially collapsed, grave figure very rotted.	Structures & grave-figure; poor & unstable.
FbTc 9	Carved pole, carved relief indicates in good condition.	Carved pole; good unstable.

Streich's work has added measurably to information available on burial ground sites (1983). Her photographs are particularly detailed and useful in estimating the condition of the sites she visited. An assessment of wooden features at burial ground sites is presented in Table 4. Gravehouses vary from very poor condition to very good. A main factor in the amount of deterioration is whether wooden features receive enough sunlight to permit periodic drying out. Those sites where exposure permits this, display the best preserved and most stable features. This is a conclusion similar to that noted by researchers at Ninstints where exposure to sunlight was noted as a positive preservation factor (Florian, Beauchamp and Kennedy 1983, Florian and Hebda 1981). Interestingly, the deterioration of log cribhouses does not appear more advanced than that of more recent structures. Thus, it may be that microenvironment rather than age is a principal factor in the stability of wooden features.

Overall, carved poles are in fair to good condition when evaluated on the basis of clarity of carved relief surfaces. The tops and bases of the poles provide surfaces where rot and plant growth can set in. Both top and especially bases of the poles also act to collect water which speed up the deterioration (Florian, Beauchamp and Kennedy 1983, Florian and Hebda 1981). I emphasize that, because of the greater vulnerability of poles, which provide relief that can collect moisture, all of the poles are essentially unstable.

Distribution of Burial Sites With Wooden Features

Figure 9 shows the location of burial grounds and rockshelter burial sites in the study region. Overall, there is a tendency for sites to cluster in the vicinity of Bella Bella, with seven of the sites occurring within a 10 km radius of the village and an additional four within 20 km. Thus 50% of these kinds of sites occur within 20 km of Bella Bella. This overall clustering is best understood by considering burial grounds and rockshelter sites separately.

The 6 burial ground sites in the immediate vicinity of Bella Bella clearly reflect the amalgamation of Heiltsuk peoples, first at Old Town Bella Bella and later at the present location of the village. All of these sites contain historic tombstones. At three of the sites log cribhouses occur which may predate the arrival of the missionaries in 1880. This indicates that in late historic times burial grounds which were used in earlier times continued to be used after the arrival of the missionaries.

The three burial grounds located at a greater distance to the north-northwest of Bella Bella consist first of FbTb 8 the site containing the log cribhouses with a bentwood box and European tea chest. Significantly this is the only true burial ground site lacking historic tombstones. FbTb 8 seems to date to an earlier time than the other burial ground sites and reflects an era prior to final amalgamation at Old Town. It may be associated with the old Heiltsuk winter village of Kilkitei, which was located just across from it on Yeo Island. People of

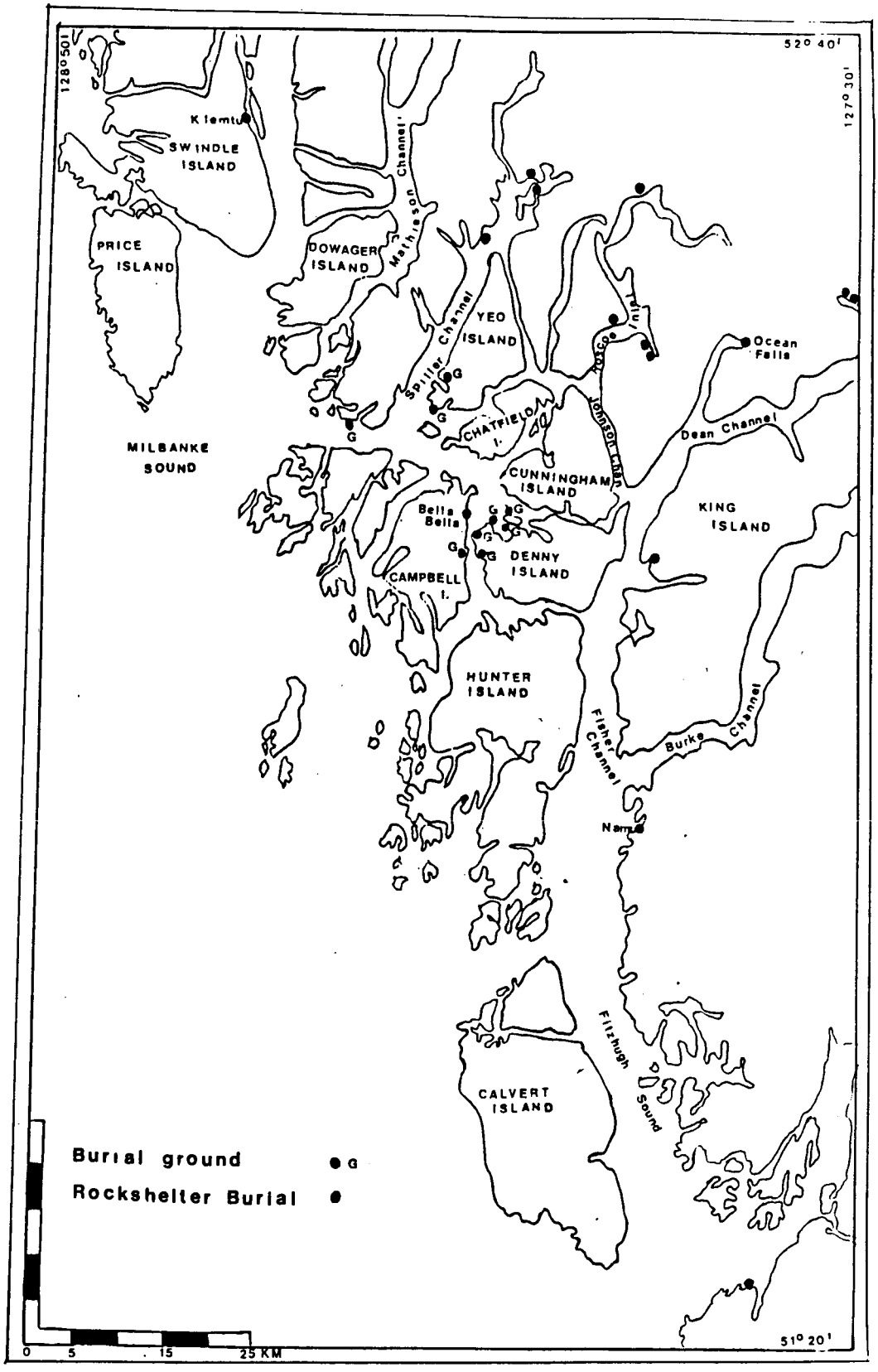


Figure 9. Map of burial grounds and rockshelter burials containing wooden features in the study region.

this village, under Chief Kite were one of the last groups to leave their village for Old Town, reportedly in 1891-92 (Streich 1983:3). The probable association of FbTb 8 with Kilkitei lends weight to the argument that log cribhouses represent traditional, possibly pre-contact mortuary practices. Survey in territories surrounding the areas of known winter villages could result in the location of cribhouse burial grounds and shed light on the little known period before the coming of the missionaries.

The other two burial ground sites located north-northwest of Bella Bella are, properly speaking, not burial grounds, but isolated carved poles. A lack of association of other mortuary remains indicates that these poles may be earlier than other poles in the study region and reflect the traditional practice of locating poles at the location where ranking individuals were lost at sea.

The majority of rockshelter sites are located in areas of steeper relief, where as one moves inland, rockshelters increase. The dispersed location of these sites in the study region also probably reflects an earlier era prior to final amalgamation at Old Town. It is quite likely that rockshelter sites are greatly under-represented in the study area. As previously pointed out researchers felt that the time required to locate the sites was unduly great.

Eight of the twelve rockshelter sites were located on the basis of informants. No bias in distribution of rockshelter sites introduced by informants is obvious and the wide dispersal of the sites indicates the informants wide ranging familiarity

with the study region. The use of informants to locate such sites is likely to remain a main strategy.

I have argued that the clustering of burial ground sites near Bella Bella reflects amalgamation. It could be concluded that informant data affected this distribution in that local people would be expected to be more familiar with areas closer to home. Seven of the eight burial ground sites were located on the basis of informants. However, the historic tombstones clearly indicate that amalgamation explains the clustering of burial ground sites near Bella Bella. At the same time it is possible that earlier burial ground sites in the study region occur and have not been located because of preservation factors, or because surveyors have failed to locate the sites.

Pomeroy (1980:162) noted only that graves are most often located on islands. This is true of burial grounds where eight of the nine sites are located on islands. Whether or not this is significant is difficult to ascertain seeing as islands make up such a large part of the study region. Three of the burial ground sites are located on very small islands or islets. This could indicate a preference for the use of burial islands/islets, but is not conclusive. In the case of rockshelter sites the majority are not on islands.

In only one instance is a site located in direct proximity to a habitation site. This is FaTa 4, which is adjacent to Old Town Bella Bella. This indicates that in the historic period the practice of locating burial sites away from habitation sites continued. The practice of disposal of the dead away from

habitation sites is almost certainly prehistoric as there is a general absence of skeletal remains in the upper levels of late middens. Figure 2 shows the distribution of burial sites compared to all sites. This shows that distribution of burial sites follows general trends in the region.

Summary and Interpretation

Archaeological research indicates that burials in shell middens in the study region were common in earlier times. However, in the upper levels of late middens in our region, as elsewhere on the coast, burials become less common. Does this mean that the use of rockshelters and possibly log cribhouses are a late innovation in the Bella Bella region? This is possible, but such practices may extend well back into the prehistoric period with this evidence having been lost. It is also possible that the practice of rockshelter burial in our region has never been very common given the low numbers of rockshelters in the area. A consideration of log cribhouses presents the identification of a research problem specific to the region. First, do group burials in middens represent interment in cribhouses long since vanished? The study of the decay of presently occurring cribhouses, as well as the excavation of selected structures could shed light on this problem. However, this must be tempered with the fact that investigation of such sites is a sensitive issue with Heiltsuk people. A second question is: Were log cribhouses used in association with, but

not necessarily in direct proximity to, traditional villages? Survey in the vicinity of known villages could provide evidence for this and could shed light on the antiquity of such structures.

Tolmie (1963) provided important data on Heiltsuk burial customs including observations of differential treatment on the basis of status. An important conclusion from an archaeological perspective and in terms of the type of middle range issues identified in Chapter 4 is that the gravegoods noted by Tolmie in the burial cave consisted entirely of perishable objects. A second important observation was that of cremation, a practice subsequently unknown in the study region. Drucker's (1943, 1948) summary of burial practices shows that some of his data matches Tolmie's observations, but in other cases it does not. This could represent changes in burial practices in the hundred years since Tolmie's observations. It could also mean differences in the practices of various Heiltsuk sub-groups. Also likely is that Tolmie was unaware of some of the ritual that accompanied death. For example, he may not have noted the destruction and burning of property. This is an important documented custom and since it was practiced away from the immediate gravesite would leave no recognizable evidence in the archaeological record.

The coming of the missionaries in 1880 had a direct effect on Heiltsuk burial practices. Log cribhouses were replaced by milled lumber houses of European type construction. European style coffins were adopted, as were tombstones. However, customs reflected a mixture of traditional Heiltsuk practices and

European innovations. The use of gravestructures, for which there is no precedent in European custom, was probably a traditional Heiltsuk practice. Tombstones often contained aboriginal designs. Carved mortuary poles, which probably dated to an earlier era, were erected at burial grounds. Gravegoods were placed at burial sites as offerings to the dead. Food was burnt and the tradition of holding a feast (potlatch) for the death of a person of status continued (Shirl Hall personal communication 1985). The retention of many traditional Heiltsuk practices lends weight to Hobler's (1985) argument that missionary influence was less pervasive than they themselves thought.

The distribution of burial sites also reflects acculturative response to European interaction. A cluster of burial ground sites near Bella Bella reflects amalgamation while the wider dispersal of rockshelter sites reflects an earlier era. The location of rockshelter burials also reflects physiographic factors where terrain becomes steeper as one moves inland.

Technical data provided by Streich (1983) has provided valuable information. The location of gravegoods often widely scattered and not in direct association with particular structures could be important in interpreting the archaeological record. The condition and stability of wooden features at mortuary sites reflects microenvironment as opposed to age related factors. The excellent work of Streich underlines the importance of properly recording wooden features.

CHAPTER 7

SITES WITH ARCHITECTURAL FEATURES: INTRODUCTION TO ARCHITECTURE AND AN OVERVIEW ASSESSMENT OF THE SITES

This chapter is concerned with architecture in the study region. The first part of the chapter summarizes archaeological, ethnographical and ethnohistorical data on architecture in the study region. Also discussed are some of the results of a field reconnaissance of selected architectural sites investigated in 1985. In the second part an overview assessment of architectural sites in the study region is presented. This includes a summary of all data on the sites and an assessment of factors effecting the condition and stability of the sites. Also outlined is data on the distribution of the sites in the region. In the summary at the conclusion of Chapter 7 a discussion of architectural remains in light of research issues previously outlined is made. Detailed documentation procedures for sites with architectural remains derived in 1985 fieldwork are contained in Appendix 2 at the conclusion of the thesis. Substantive data on the three architectural sites visited in 1985 is presented in Appendix 1.

Architecture in the Study Region

Several sources provide data on the architecture of Heiltsuk peoples. This includes the work of archaeologists within the study region. Overall, ethnohistorical data is poor and the main

source of information is once again from the work of Tolmie. Ethnographic data for the region is limited. All of these sources are investigated below.

Prehistoric data

From a prehistoric perspective Simonson's (1973) excavations at FcTe 4 in the far northwestern part of the study region revealed features thought to form part of a house dated to 2000 BP. Luebbers (1978) speculated that several hearths uncovered in excavations at Namu (ElSx 1) represented portions of house floors. Hobler (1984) found wooden floor planks and a floor joist from a house at a depth of 1.5 m dating to the late prehistoric at McKenzies Rock (FaSu 1) directly adjacent to the study region. Carlson (1970b, 1971,1972b) identified and excavated house structures at FaSu 2 and FaSu 10, in the Kwatna area directly adjacent to the study region. Overall, however, prehistoric data on architecture in the study region is scanty. There is more data from an archaeological perspective for the post-contact period in the study region and this is discussed below.

Ethnohistoric data

The main ethnohistoric document on aboriginal houses and villages during the time when such sites were occupied in the study region are the observations made by Tolmie during his 1834-

1836 residence at Fort McLoughlin. Notes from his journal are directly quoted below:

Feb 24, 1834 ...found only a few good pines on a point about a league from Fort where Boston and his people had their winter village - the frames of about a dozen houses are still standing & some are formed of round posts & beams from a foot to 18 inches in diameter & have a very substantial appearance - the floors are considerably elevated above the ground & are accesible by staircases which also remain entire but all the boards & c have been carried away to form the summer habitations [Tolmie 1963:270].

April 11, 1834 ...entered a spacious bay at the head of which saw a winter village of Boston's sept - the houses of the three great chiefs Boston, Kaghetasso & Umcheets were most conspicuous except the house of a chief lately deceased, Qyositigous which exceeded all the others in size - the posts of the latter were about 12 feet high & 18 or 24 in. in diameter - the lower half carved into hideous monsters intended to represent men - the carving is tolerable but their ideas of proportion bad, the head being immensely large - the figures are in a sitting posture & holding a child between the knees. The head is surmounted with a hat resembling an inverted water pail- nose aquiline, eyes large & staring & mouth of very capacious dimensions - paint red, white and black is liberally daubed on the face to cover the eyeballs, eyelashes, cheeks, lips & c - higher on the post a nondescript quadraped is carved. I should have mentioned that only the frames of the houses are standing, the walls being carried away when the camp is broken up - the beams are fixed to the posts by a mortice and tenon joint - which alone is ornamented with the specimens of sculpture [Tolmie 1963:275].

Nov 27, 1834 ...led by Q. to the Conjuring House, a large building cleared of inhabitants for the occasion. On each side was a rude seat extending the length of the building, elevated about 4 feet above the ground & capable of accomodating three rows of sitters. It was composed of broad cedar boards, supported by round poles driven into the ground. Supported also by these posts were broad boards placed on edge & reaching from the floor to the horizontal boards forming seats, between these at intervals were small doorways which led I fancy

to the dormitories of the inmates. A wall of painted boards reaching from the floor to the level of eaves extending from side to side & having a small door way in centre, formed a screen behind which the actors and artists prepared for the evenings entertainment. Was introduced into this Sanctum Sanctorum by Q. as a mark of distinction none but chiefs being so honored. The apartment was narrow but extended the breadth of the house - it was filled up on one side with oil boxes & an immense chest of foreign manufacture containing masks. In the centre of the room glimmered a small fire & on the back wall of the house there was a doorway communicating externally...an immense fire burns in the middle of apartment... A bed was prepared for me with three or four new blankets on some boards elevated 4 or 5 feet above floor... Previous to starting out, walked over the village which consists of about a dozen large houses & is situated on a narrow point at head of Kyeet's Cove. The houses are placed close to the beach on an embankment 6 or 8 feet high, supported by pallisades & are approached by ladders formed of notched logs. Wowialla's one of the largest houses measured 45 feet in length and 54 in breadth - all the houses had a seat or bench on each side, similar to that in theatre, & on these were piled chests, hampers and other baggage [Tolmie 1963:294-297].

Several pieces of important data can be gleaned from Tolmie's observations above and throughout his journal. The three villages visited by Tolmie are described as winter villages. He does mention a visit to the summer quarters of Kyeet's people but does not describe the houses at the summer site (1963:271). In the note made Feb. 24, 1834, he refers to the site visited as Boston's winter village. Boston is referred to several times in Tolmie's journal as a Heiltsuk chief. The village was not occupied at the time of Tolmie's visit and inhabitants had moved to the summer habitations. February may seem early in the year for leaving a winter village, but we know little of the exact seasonal scheduling of peoples in the study region. Most of the references in Tolmie's journal are to winter and summer

habitations. However, he also refers in his journal to another village of Boston's called Spring Island Village. Is he suggesting in this case that the village is a spring habitation, distinct from summer and winter habitations? In a census taken Feb. 28, 1835 he gives the number of people and lodges at Spring Island Village which would lead the reader to conclude that the village was then occupied (1963:304). In his note of Feb. 24, 1834 he stated that Boston's people had departed for their summer quarters leading to the conclusion that Spring Island Village was a summer habitation. If so, however, the summer quarters were abandoned fairly early because on May 5, 1835 he visited Spring Island Village "now untenanted save by dogs & crows" (1963:310). Ambiguity in Tolmie's notes, as well as confusion as to the seasons in the aboriginal world view makes it difficult to determine if the Heiltsuk had separate winter, spring and summer villages, all of which had substantial dwellings. I suspect, however, that because Tolmie mainly mentions summer and winter villages that it was only at these sites where substantial houses were constructed. Pomeroy (1980:25) apparently interpreted Tolmie's data to include winter, spring and summer villages.

Another confusing point in Tolmie's notes is that he refers to the site visited Feb. 24 as Boston's winter village and also the site visited April 11, as a winter village of Boston's sept where Boston had a house. This could be an error in transcription or could mean that Boston's people occupied two winter villages, either at the same time or in different years. An interesting point is that at the village visited April 11 the

houses of 4 chiefs are noted. This lends weight to earlier arguments that in Heiltsuk social hierarchy the concept of one chief for each sub-group doesn't work very well. On the other hand perhaps one of the 4 chiefs was more powerful than the others.

In terms of construction and style Tolmie notes that some of the frames at the first village he visited are formed of round posts and beams from a foot to 18 inches in diameter (30-45 cm). He noted "some of the houses" and perhaps this indicates that not all of the houses were so constructed. He notes the floors are considerably elevated above the ground and accessible by staircases. This probably means the houses were constructed along a midden edge. It is difficult to tell if he is suggesting that the floor and stair boards were left at the abandoned village. Apparently wall and roof planks were taken on the seasonal round. At the next village Tolmie was obviously struck by the substantial size of the houses. At this site he mentions the houses of four Heiltsuk chiefs; the most substantial one containing carved posts. Dimensions of the posts are 12 ft. high (3.6 m) and 18 or 24 inches in diameter (45-60 cm). These are the only carved posts mentioned by Tolmie in his observations of Heiltsuk villages. I would argue that this may indicate that such posts were rare and reserved for an individual who had achieved particularly high staus. Tolmie also notes at this and the village visited Nov. 27 that houses differ in size. This may be indicative of differential status. Tolmie does not refer to the number of posts and beams which comprised Heiltsuk houses.

In terms of the dimensions of the houses he noted this for only one house. This was at Kyeet's winter village where dimensions were given as 45 ft. in length and 54 ft. in width (13.6 x 16.4 m).

Tolmie's description of the interior of the "Conjuring House" indicates the considerable work that went into the house. Wide benches supported by posts driven into the ground were located on either side of the house. Tolmie suggests that behind these benches were "dormitories" but a more likely explanation is that these were storage areas as after the feast Tolmie slept on one of the benches. The apartment he referred to probably occurred at the back of the house (the front of the house would have contained the main entrance doorway). Tolmie's description of the house where the feast was held as a special "Conjuring House" may be inaccurate. From his further descriptions of the village the house does not appear to differ from the other houses.

In terms of village layout and number of houses Kyeet's winter village (visited Nov 27) apparently resembles the village visited Feb 24. Houses are close to the beach and embankments referred to probably represent middens, with ladders constructed along the front face to reach the house. It is difficult to tell the function of the palisades described. It seems likely that at villages houses were constructed in a single row along the beach because Tolmie would likely have mentioned it if there was more than one row. Tolmie mentioned "about a dozen" houses at the first village visited, did not mention the number at the second, and "about a dozen" at the third site.

Additional data on Heiltsuk villages is found in Tolmie's journal when he conducted a census of local peoples (1963:304,306,307). This census was not conducted in person, but through third parties not specified by Tolmie. These data are summarized in Table 5. Whether Tolmie was referring to summer or winter villages is unclear. Actual numbers given by Tolmie must represent estimates as they are too well rounded to represent exact enumerations. The number of houses varies from 11 to 23 and the average number of inhabitants per house from 23.5 to 28 with an overall average of 25. Shirl Hall (personal communication 1985), based on conversations with Heiltsuk elders, suggests that four nuclear families inhabited each house in a village and that each family was assigned a separate corner of the house. If this is true it would mean that four nuclear families of an average of 6 individuals inhabited each house. The data provided by Tolmie's census and summarized in Table 5 is very important because it could prove crucial in reconstructing demographics for the pre and post-contact periods.

It is interesting to note that one of the villages in Table 5 has a much higher number of houses and people as well as 140 slaves. Tolmie (1963:272) suggests that the chief of the village, Wacash, was the most powerful of the Heiltsuk chiefs. Confusing the issue is of course that in his journal Tolmie mentions several chiefs for many villages, but in his enumeration lists only one chief per village. Perhaps he is referring to the most powerful chief at each village.

Table 5. Summary of Tolmie's (1963) enumeration of Heiltsuk villages, number of houses and number of inhabitants.

CHIEF & VILLAGE	NAME OF SUB-GROUP	NO. OF HOUSES	NO. OF PEOPLE	* PEOPLE PER HOUSE
Boston's Village	Owieltoch	16	175 men 30 boys 150 women 42 girls 2 others TOTAL 399	25
Owialla's Village	Kokwyetoch	13	100 men 50 boys 100 women 50 girls 4 slaves TOTAL 304	23.5
Wacash's Village	Wheetletoch	23	215 men 210 women 25 children 140 slaves TOTAL 590	25.5
	Eestsesstlich	11	160 males 130 females 15 slaves TOTAL 305	28

Archaelogical data

Drucker's data

In his element trait list Drucker (1948:178-181) listed information on Heiltsuk architecture. As for his mortuary trait list this data is sometimes substantiated by ethnohistoric and other sources of information, but in other cases inconsistencies occur. Drucker's list, while useful for comparitive purposes to other regions, is quite generalized and does not add substanially to data we already have. For this reason it will not be reviewed here.

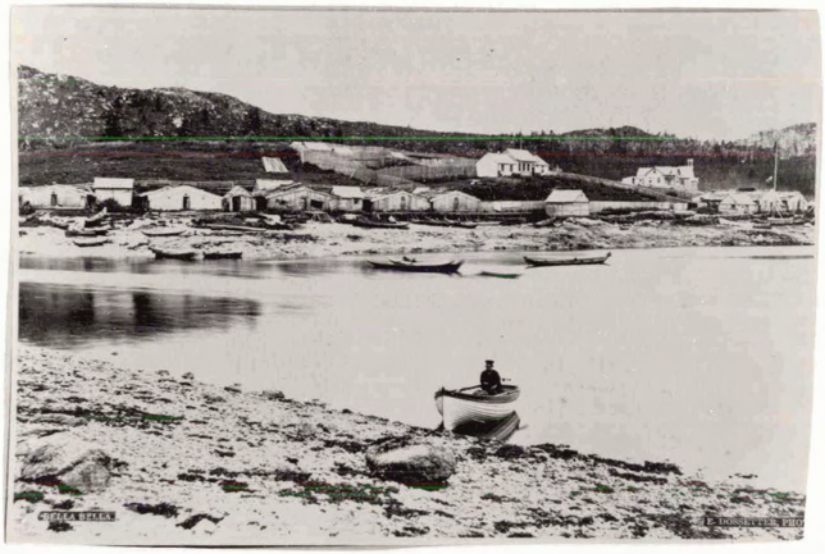
Hobler's data

An important contribution to information on Heiltsuk architecture is Hobler's (1982b) review of house styles at Old Bella Bella. Based on a series of photographs beginning in the 1870's Hobler traces the development of architectural styles in Old Bella Bella (Figure 10). The earliest photographs show large plank structures of apparently traditional construction. Roofing materials and gable ends are constructed of split planks. Hobler (1982:35) notes that in early photographs houses appear to have horizontal planking. In this design thin vertical poles on either side of the walls were used to hold the planks in place. Pairs of poles were lashed together between each plank. To remove the planking the lashing was simply untied. One of the

houses in this early photograph displays zoomorphic figures painted on planks above the doorway. Over time the photo records show that horizontal planks are replaced with vertical planks. Hobler suggests that the old houses were simply re-sided. Vertical siding gives the houses a more finely finished appearance. These planks were shorter, narrower and thinner than horizontal planks. From photos it is not possible to tell if these planks were hand-split or of milled lumber. It is also not possible to tell on the basis of photos how the vertical planks were held in place. Possibly nails were used. A grooved baseboard, such as occurs at FbSx 9, discussed below, may have been used. Hobler (1982:38) suggests the possibility that vertical siding was nailed into place and reflected an attenuated seasonal round with people living at Old Town more on a year round basis. In the 1881 photograph the mission house and school, built in the fall of 1880, can be seen. From this point native style houses quickly disappear to be replaced by European style frame houses.

Carlson's data

A significant contribution providing data on Heiltsuk architectural construction techniques was the excavation of a house at FbSx 9 by Carlson in 1983. This site was also visited in the 1985 Features Project and additional details are presented in a later section. Carlson's reconstruction of the house is directly quoted from his report below:



In the photograph above, taken in the early 1880's native style plank houses occur along the beach at Old Bella Bella. (British Columbia Provincial Museum Archives photo)

By the mid 1890's almost all of the native type architecture has been replaced by European type framed houses at Old Bella Bella. (Heiltsuk Cultural Education Centre Archives photo)

Figure 10. Photographs of Old Bella Bella showing changes in architectural styles.

> The house itself was square (14.7 m x 14.40 m) with the roof supported by four posts in whose concave tops rested single beams which ran from front to back. The side walls were composed of vertical planks whose ends rested in a large baseboard timber which contained a longtitudanal groove. The front and back walls were presumably of similar construction; but no grooved baseboards remained. The timber at the back of the house was squared and tapered from 15 cm to 30 cm, but was badly rotted and may originally have been larger... The floor of the rear one-third of the house was slightly elevated and was of packed earth. A raised plank floor flanked both sides of the forward half of the house with the planks resting on pairs of joists. This planking probably continued across the front of the central hearth area which was open... A framework of smaller posts and cross pieces probably tied together must have supported the walls although we found no specific archaeological evidence for these features... A similar framework would have supported the roof planks [Carlson 1984:8-12].

The identification of grooved baseboard timbers for vertical planks indicates the house at FbSx 9 used vertical planking. To remove these planks, lashing was detached and planks lifted from the groove. A low yield of European artifacts and low absence of nails led Carlson to suggest a date of between 1850-1880 for the construction of the house at FbSx 9. Later quantitative analyses by Hobler (1987) of artifacts recovered at the site indicated an occupation date to around the middle third of the nineteenth century.

Carlson's (1984) excavation indicated that at the house at FbSx 9 the floor was of planks except for the rear one-third of the house which consisted of packed earth. In his excavations Carlson noted difficulties in distinguishing the house floor at FbSx 9 with an earlier, probably prehistoric component at the site.

Features 1985 Project

Additional data on Heiltsuk architecture was obtained in the 1985 field investigations of three architectural sites in the study region. In addition, 1985 work shed light on site use in the contact era. Substantive information on the sites investigated is presented in Appendix 1 at the conclusion of the thesis. Selected aspects are reviewed below.

The first site examined in 1985 field investigations was FbSx 6, known ethnographically as the Heiltsuk winter village of Xvnis. Remains of 2 traditional houses were identified at the site. Wooden features recorded consist of 7 houseposts, 2 possible houseposts, 3 sills and 11 beams, or related structural elements. The height of houseposts ranges from 1.28 to 3.39 m but deterioration had effected these estimates (Figure 11). Dominating the features are 2 colassal beams, beautifully adzed in a fluted pattern (Figure 12). The dimensions of these beams are 14.5 m and close to 1.0 m in diameter.

A hypothetical reconstruction of the two houses was made in 1985 (see Appendix 1). In this the framework postulated consists of four main posts, 2 at the front and 2 at the rear of the houses. A double ridgepole which rested along the centre beams formed the main roof support elements. Dimensions postulated for the two houses are 11.0 x 10.5 m and 13.0 by 14.0 m.

Data obtained in 1985 also shed light on the historic use of traditional sites in the study region. In 1985 we talked to Mrs. Beatrice Brown, a Heiltsuk elder, who knew of the site as her

parents were from there. She recalled that in her parents lifetime the site was occupied at different times of year. In the spring until late fall people went in for fishing, berries and meat hunting, as well as handlogging. During the winter trapping was done. Mrs. Brown was born in 1906 so the occupation she refers to dates to around the turn of the century. It is likely the type of utilization referred to by her goes back several years before the turn of the century. In 1888 the site was surveyed and designated as No. 2 reserve of the Bella Bella Indians. At that time the surveyor sketched in the location of a single house, probably the larger house identified in 1985 (Jemmett 1888). In 1913 the McKenna-McBride commission on Indian Affairs (RRCIA 1916) stated that the site was a fishing station occupied briefly each year.

Architecture and ethnographic data on Xvnis suggest the site was a traditional winter village. Drucker (1943) who visited the site in 1938 originally identified the remains of 6 houses there. The occupation described by Mrs. Brown suggests that after the site was abandoned as a winter village it continued to be used by local peoples as a resource utilization base. A single house sketched in by surveyer Jemmett (1888) indicates that the site was abandoned as a winter village sometime prior to 1888. In 1985 work it was postulated that the single house at the site was maintained for use while other houses deteriorated or were dismantled. Thus, 1985 field investigations at FbSx 6 shed light not only on Heiltsuk architecture, but on settlement and subsistence patterns in late historic times.

Maria McKay photo - Features Project - 1985

Figure 11. Photograph of FbSx 6, the Heiltsuk winter village of Xvnis, showing the remains of a housepost at the site.

Maria McKay photo - Features Project - 1985

Figure 12. Photograph of FbSx 6, showing a fallen beam at the site.

A second site visited in 1985 was FbSx 9. While this site had been carefully explored by Carlson we revisited FbSx 9 to gain expertise in documenting procedures and to obtain an artist's rendition of the house at the site.

Two houses were mapped at the site and features include four carved houseposts and floor elements in the house excavated by Carlson in 1983 (Figures 13 and 14). Dimensions of the houseposts were 3 m average length and .72 m average width. The reconstruction of the house as previously postulated by Carlson indicated that it is similar to the houses at Xvnis in construction and size. A housepost and what were probably secondary elements were identified in a second house at FbSx 9.

An artist's reconstruction of the house with the carved posts at FbSx 9 is presented in Figure 15. According to Shirl Hall, the 1985 Features Project artist, the carved posts told the story of the chief, his ancestors and his wife. The women's story would be represented by the posts at the front of the house. At the other end would be the posts depicting the man's story. Hall recognized carvings at FbSx 9 as representative of the raven, eagle and grizzly clans. At the sides of the house Hall has illustrated sleeping platforms. Storage chests would have been kept here and under the platforms. Between the two back posts is another platform and behind this a partitioned room. Here the dancers would have assembled prior to a ceremony, entering the main area through a hole in the screen. There may have been an entrance at the back of the house. Aside from a main hearth, there are several subsidiary hearths for warmth and food

preparation. Hall's reconstruction, as illustrated in Figure 15 is based on her observations in the field, data from Carlson, interviews with Heiltsuk elders and notes made by Tolmie.

Ethnographic data and traditional architecture indicate that FbSx 9 was once a winter village of the Heiltsuk people. Survey by Carlson (1984) along the bay in which the site is located suggests there were once 6 or 7 houses at the site. While the site probably once funtioned as a winter village our talks with Mrs. Beatrice Brown indicate that in the late historic period the site was utilized in much the same manner as FbSx 6. Shirl Hall talked to Mrs. Brown about the site and an excerpt is quoted below:

> This was a winter village when feasting [potlatching] was still allowed. They [Canadian government officials] came right in there and said we are going to jail if we feast there anymore. They were in there for crab, clam, mussels, all kinds of salmon then. Winter deer and goat hunting, trapping mink and marten. My mom made me a blanket from the last goat my dad got in there - I still have it. My parents were living there but went to Rivers Inlet when I was born August 17, 1906. I think I was 12 years old the last time I was in there [1985].

A final site investigated in 1985 is quite different than the two sites described above. This is FbTa 25, the Wounded Bear site. This site is much smaller than FbSx 6 and 9 and probably represents a resource utilization camp dating to after the turn of the century. A total of 18 wooden features comprising the remains of posts and beams from 3 structures were identified (Figure 16). The dimensions of 2 of the structures were postulated as 6.0 x 6.0 m and 7.0 x 7.0 m. This site, while probably fairly recent, is important because it may be

Anja Streich Brown photos -
Features Project - 1985

Figure 13. Photographs of FbSx 9, showing carved houseposts at the site.

Shirl Hall photo - Features Project - 1985

Figure 14. Photograph of FbSx 9, showing excavated floor of House 1.

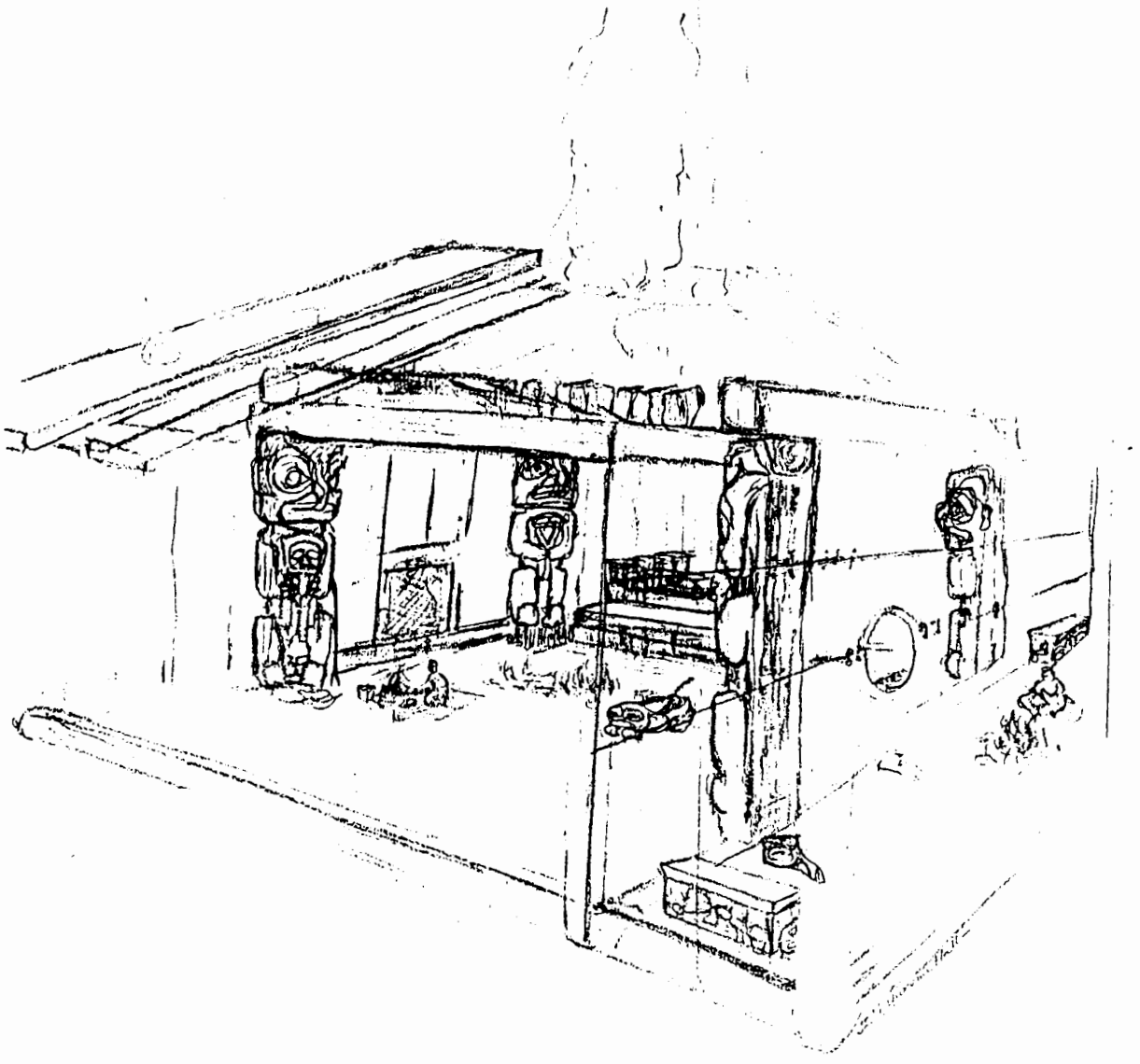


Figure 15. An artist's rendition of the house at FbSx 9.

reminiscent of the small resource utilization camps used in contact and pre-contact times, about which, little is known.

Effect of contact on architectural styles in the region

An important factor in solving research problems outlined in Chapter 4 is to understand the affect of European contact on Heiltsuk house construction. Hobler (1982b) suggests that post on sill construction and vertical nailed planking at Old Bella Bella represented European inspired modification of a basically native house. In commenting on the Bella Coola he remarked:

> ...the houses in the Bella Coola Valley described by Mackenzie in 1793 bear little architectural resemblance to what the archival photographs show as typical of native plank houses for the area in the 1870's [Hobler 1982b:31].

While the same may be true of Heiltsuk architecture I suspect the houses described by Tolmie, earlier houses at Old Bella Bella and houses at FbSx 6 and 9 reflect traditional styles, and that Heiltsuk architecture was not as profoundly effected as was the

Anja Streich Brown photos - Features Project 1985

Figure 16. Photographs of FbTa 25, showing the remains of architectural structures.

case in the adjacent Bella Coola territory. This is because in the Bella Coola region except for certain parts of the Bella Coola Valley, flat terrain for building is almost non-existent. This explains one main type of Bella Coola house, which was constructed out over the water and built on pilings (Vastokas 1966:49-56). Once amalgamation took place and affected settlement patterns, traditional styles, geared to specific geographical factors, may have been abandoned.

Overview Assessment of Sites with Architectural Remains

As for mortuary sites the identification of sites in the study region containing architectural remains was based on a search of site files at the Heritage Conservation Branch in 1984 and 1986. As of June 1986 there is a total of 54 sites in the region with architectural remains. From information on survey forms these sites are divided below into two main categories based on general chronological and stylistic considerations. The first category are "traditional" sites where evidence is for an overall lack of European modification, or else modifications which are minimal. In the second or "recent" category are sites which are obviously recent or where it is not possible to determine any chronological age. Data on the architectural remains and associated site attributes is summarized below.

Table 6. Summary of wooden feature and site attributes for traditional architectural remains in the study region.

SITE	LOCATED VIA INFORMANT	SITE DIMENSIONS (in m.)	SHELL MIDDEN	DEPTH OF MIDDEN (m.)	CANOE SKIDS	HIST ARTIF	PRE-HIST ARTIF	COMMENTS
ElSw 2	X		X	.75		X		Square nails in plank houses. Later houses with sawcut boards.
ElTc 2	X	400 m N-S	X	surface		X		Fallen posts. Possible remains of 1 structure.
FbSx 6	X	100 x 20	X	4.0	X	X	X	6 Houses rep. in 1938. 2 Houses in 1985; 13 x 13 m. and 11 x 10.5 m.
FbSx 9	X	100 x 30	X	2.0	X	X	X	7 houses ethnographically. 2 houses in 1985. 1 is 14.7 x 14.40 m. 4 carved posts.
FaTa 7	X		X	2.0				2 smokehouses, 1 milled lumber, 1 hand hewn lumber
FbTc 1	X		X	2.75	X			Plank remains. Scattered remains of houses.
FcTe 1	X	150 x 50	X	2.0	X			Remains of at least 6 houses. Timbers on ground. A winter ceremonial place.
FdTd 4	X							Several house platforms. Timbers on the ground. 2 houses are 15 x 15 m.

Table 6. Summary of wooden feature and site attributes for traditional architectural remains in the study region (cont.)

SITE	LOCATED VIA INFORMANT	SITE DIMENSIONS (in m.)	SHELL MIDDEN	DEPTH OF MIDDEN (m.)	CANOE SKIDS	HIST ARTIF	PRE-HIST ARTIF	COMMENTS
FdTd 7	X	200 x 50	X	1.0	X			House depressions, plank lined, village site.
FdTd 8		200 x 20	X	3.0				Post 1900 wooden structure Indian construction.
FdTe 10		75 x 50	X	1.0				Village/refuge islet. Several house platforms with timbers and planks.

Sites with Traditional Wooden Architectural Features

Table 6 lists surveyed sites with traditional architectural wooden features. This list includes sites investigated in 1985. There are 11 sites in the region displaying aspects of traditional architecture. At 2 of the sites evidence for European modification is present. These are ElSw 2 where square nails are noted and some houses are constructed of milled lumber and FaTa 7 where 1 house is constructed of milled lumber. However, in both cases evidence for traditional construction is present. At some of the sites it is possible that European modifications are present, but were not mentioned.

In survey files there is little specific information on the construction and dimension of these structures. The largest are two houses with platforms at FcTe 1 reported as 15 x 15 m, somewhat larger than those at FbSx 6 and 9. Also reported in the general area, at FdTe 7, are house depressions with planks lining the depressions. This suggests sunken floors not known ethnographically in the study region.

Where reported the number of house structures identified varies from 1 to 6-7 for FbSx 6 and 9, and 6 at FcTe 1. At no sites do there occur as many house structures as reported by Tolmie (1963), or noted in late historic times in photographs of Old Bella Bella. This may reflect lack of archaeological visibility or changes in settlement patterns and population size after the 1830's when Tolmie was a resident at Fort McLoughlin. I think the smaller number of houses reported on these site

survey forms compared to the number reported by Tolmie may be significant. These sites may date to the era between the 1830's and 1870's that is little known in the study region. If the small number of houses represents population decline it would be necessary to re-examine our ideas of group reformation and amalgamation prior to the 1870's. In the process of the reorganization and amalgamation of Heiltsuk sub-groups outlined by Hobler (1982b) and Pomeroy (1980) one would expect fewer villages, but the same number of houses at each village. The occurrence of sites with fewer numbers of houses than reported by Tolmie perhaps suggests the continued use of villages by groups with a smaller population, for some time in the historic period. This is of course, purely conjectural, but represents the identification of an important research issue. It is also possible that the smaller number of houses represents maintenance for seasonal use by families normally resident at Old and later New Bella Bella.

It is not possible to determine season of occupation or dates of occupation for the majority of the sites. Exceptions are FbSx 6 and 9 which are documented as winter villages but were utilized as seasonal camps in the later historic period. Many of the sites may date to the latter half of the 19th century, but this is difficult to clarify. At only 2 sites, ElTc 2 and FaTa 7 are traditional remains found with more recent structures. However, we know, for example, that FbSx 6 and 9 were used at least in the early years of the 20th century. Perhaps in the first decades of the century the use of these older habitation sites declined.

A consideration of associated site attributes indicates that 10 of the 11 traditional sites are located on shell middens. Most of the middens appear fairly extensive ranging from 75 to 400 m in length and 20 - 50 m in width. The average length and width of the middens is 175 x 37 m. Very little data on natural physiographic features is available, but the majority of the middens probably represent a linear extension along the beach with natural physiographic barriers forming boundaries as is the case, for example, at FbSx 6. The depths of middens, as estimated by survey crews ranges from 0.75 to 4.0 m with an average depth of 1.75 m. Although it is speculative because we know so little about midden formation I would suggest the occurrence of traditional structures on fairly extensive middens indicates these areas were chosen partly as habitation sites because of physiographic factors in that enough space was available for building. This cannot be verified on the basis of available data.

Additional site attributes include the presence of canoe skids at 5 sites, perhaps also suggesting these were important habitation sites. Four of the sites contain associated historic artifacts and two prehistoric artifacts. However, excavation has been conducted at only 2 of the sites so comparative presence/absence of artifacts is not particularly meaningful.

Sites with Recent Wooden Architectural Features

There is a total of 43 sites in the study region containing recent architectural remains. These sites are listed in Table 7. There is a very wide variety of architectural features in this category as is indicated by the descriptions outlined in Table 7. A few of the sites appear to represent purely European settlements, for example, FaSx 1. The majority however, indicate either cabins, smokehouses or what may be termed shack type dwellings that probably represent mainly native use. Dimensions are rarely mentioned, but structures are probably small, and for the most part temporary dwellings. It is likely that almost all of the sites in this category represent temporary habitation/resource utilization sites used mainly in the early decades of the 20th century. Many of the sites probably represent cabins used as a base for trapping and structures used for smoking salmon and/or as habitations which served as base camps during some aspect of salmon procurement.

An obvious question is the utility of even considering recent sites in the Features Impact Program. There are several reasons for this. First, many of the sites were probably used in much the same manner as in traditional patterns, so that a study of such sites could provide data on traditional subsistence/ settlement patterns. Second, it is difficult to determine on the basis of available data which of these sites should be included and which should not. For this reason all were included.

Table 7. Summary of wooden feature and site attributes for recent architectural remains in the study region.

SITE	LOCAT. VIA INFOR-MANT	SITE DIMEN-SIONS (in m.)	SHELL MID-DEN	DEPTH (m.)	CANOE SKIDS	HIST. ARTIF	PRE-HIST. ARTIF	COMMENTS
EiSw 13		50 x 10	X	.5				Old lean-to on site, small logging operation.
EiSv 16		20 x 5	X	.5				3 abandoned shacks, ca. 1948.
EjSx 2		65 x 35	X	2.0				Recent collapsed shake-house, several house platforms.
EkSw 2						X		5 collapsed structures, maybe an old homestead.
EkSx 11		53 x 30	X	3.5		X		Remains of an old historic cabin; round nails.
ElSx 2	X	12 x 5	X	1.0				A recent cabin.
ElSx 4	X		X	2.5		X		A recent house, decomposed, probably 20th century.
ElSx 5	X	55 x 30	X	1.5			X	Log cabin, chipped stone artifact.
EjTa 1	X	350 x 10	X	1.0				Modern cabin on site.
EjTa 2		60 x 90	X	3.0				Modern house on site.
EkTa 2	X	12 x 20	X	1.0	X	X		One late 20th century split cedar house.
EkTa 18			X	1.5				Remains of historic cabins; short upright posts with notches holding cross beams & floor planks. Some well preserved cedar.

Table 7. Summary of wooden feature and site attributes for recent architectural remains in the study region (cont).

SITE	LOCAT. VIA INFOR-MANT	SITE DIMEN-SIONS (in m.)	SHELL MID-DEN	DEPTH (m.)	CANOE SKIDS	HIST. ARTIF	PRE-HIST. ARTIF	COMMENTS
ElTa 25		80 x ?	X	0				Cabin on site.
ElTb 1	X	50 x 10	X	5.0		X		3-4 recent houses in good condition. Houses built with 3 uprights at each end with crossbeams still in place.
ElTa 4		10 x ?	X	0				Remains of a cabin, split cedar, round nails.
FaSx 1	X							Homestead cabin.
FbSw 1	X	30 x 8	X	1.0			X	Summer cabins on site.
FcSw 9	X	60 x 20			X		X	Collapsed houses.
FbSv 2		40 x 30	X	1.0				Remains of a recent cabin.
FcSx 15								Recent home, not standing.
FcSx 20	X							2 small vertical posts, 1 beam, probably a smokehouse.
FaTa 1	X							Historic smokehouse, round nails.
FaTa 2	X	35 x 75						Remains of 3 smokehouses.
FaTa 5		600 x 30	X	2.0		X		Remains of 4 framed house structures.
FaTa 6	X							2 houses.

Table 7. Summary of wooden feature and site attributes for recent architectural remains in the study region (cont).

SITE	LOCAT. VIA INFOR-MANT	SITE DIMEN-SIONS (in m.)	SHELL MID-DEN	DEPTH (m.)	CANOE SKIDS	HIST. ARTIF	PRE-HIST. ARTIF	COMMENTS
FaTa 8	X							Smokehouse. Newspaper inside - 1936.
FaTa 17	X	70 x 3	X	1.5			X	Remains of cabin below site.
FaTa 18		35 x 12	X	2.0				Recent houses on site.
FaTa 32		60 x 25	X	3.5				Several remains of historic buildings
FaTa 33			X					Homestead cabins.
FaTa 47		35 x 20	X	1.5				Cabin of post & beam construction with cedar shakes; gabled.
FaTa 49		30 x 46	X	2.0				Remains of at least 2 historic houses & 3 cabins.
FaTb 1	X							2 nearly complete split cedar planks with evidence of very recent occupation. Improvements on original structures.
FaTc 1	X	25 x 13	X	1.0				2 ruined structures, fairly recent with round nails, sawn planks, wire.
FaTc 3		270 x ?	X				X	Modern cabin.
FbTa 15		300 x ?	X	2.0				Remains of historic structure.
FbTa 25		25 x 12	X	.50				Remains of 3 post & beam structures. 1 is 7 x 7 m, 1 is 6 x 6 m.

Table 7. Summary of wooden feature and site attributes for recent architectural remains in the study region (cont).

SITE	LOCAT. VIA INFOR-MANT	SITE DIMEN-SIONS (in m.)	SHELL MID-DEN	DEPTH (m.)	CANOE SKIDS	HIST. ARTIF	PRE-HIST. ARTIF	COMMENTS
FbTc 5			X					Split cedar house remains.
FbTc 7			X					Remains of a flattened shake structure.
FbTc 17	X							Smokehouses.
FcTa 3			X	.5				Log cabin.
FcTc 3			X	.50				Flattened shake structure.
FcTc 5		100 x 20	X	1.0				2 recent flattened shake structures.

A consideration of associated site attributes indicates that 27 of the 43 sites, or 64% are located on shell middens. This may be significant and indicate that these sites were used in much the same way as in the prehistoric period; mainly as resource utilization camps. A consideration of midden dimensions where these are noted indicates a range of between 10-600 m in length and 3-300 m in width with an average of 94 x 36 m. However, if one very large site measuring 600 x 300 m (FaTa 5) is eliminated this total is reduced to a mean 73 m length and 24 m width for shell middens. As for sites containing traditional wooden architectural remains, middens are probably linear along beaches, but once again there is little data in survey records on site physiography. The difference in the dimensions of shell middens for recent sites (94 x 36) to middens for traditional sites (175 x 37) represents an interesing contrast. I would argue that the larger size of the middens with traditional structures indicates that natural physiographic factors supplying a larger area of flat terrain was a factor in the location of traditional permanent habitation sites.

The mean depth of shell middens for recent architectural remains is 1.50 m, just 25 cm less than for middens containing traditional structural features.

Other associated site attributes of recent architectural remains indicates that only 2 of the sites have canoe skids. The near absence of canoe skids may mean that the sites represent temporary camps both in historic and pre-contact times.

Six of the sites have produced historic artifacts. This number is surprisingly low considering that most of the sites are recent, and surface artifacts may be expected. It may simply reflect that researchers did not view this information as important, although in general, on the Northwest Coast surface survey yields few artifacts. At thirteen of the sites the presence of prehistoric artifacts is noted, mainly eroded from middens.

Assessing the Condition and Stability of Wooden Features at Architectural Sites

As for mortuary sites the amount of deterioration and stability of wooden architectural features may be an important factor in making mitigative decisions for each site. For sites recorded only on survey forms there is almost no infomation on the condition and stability of wooden features. Making assessments for these sites will require field investigation.

For the three sites investigated in 1985 a lot of information on the condition and stability of wooden features was collected. These investigations make possible several summary observations on factors affecting the deterioration of wooden features.

In all cases site vegetation is distinctly different from the surrounding climax forest. Typical climax vegetation of the environments visited this summer consist of Western Redcedar, yellow cedar and intermittent spruce. Within site boundaries, however, cedar is rare to absent and spruce is dominant. In most

instances spruce has become established on wooden features and not directly on the midden surface. This suggests that midden surfaces do not provide a good environment for coniferous growth. Vegetation on midden surfaces consists of grass, bushes and in a few cases stands of alder. At all the sites visited on-site vegetation is much less dense than surrounding forest. However, the amount of sunlight penetrating overstory varies considerably depending on the exposure and size of the site.

There is a great deal of variation in the deterioration state of wooden features investigated in 1985. This appears to be related to microenvironment as opposed to age-related factors. Wooden features are best preserved where penetration of sunlight facilitates yearly drying out. The importance of intermittent drying out is a positive preservation factor noted by researchers at Ninstints (Florian, Beauchamp and Kennedy 1983, Florian and Hebda 1981).

Spruce growth is the most ubiquitous and destructive agent causing destruction of wooden features. The limiting factors in growth of the trees appears to be the amount of surface deterioration on the wooden features and the size of the features. It appears that a certain amount of surface deterioration of the cedar is necessary before spruce can become established. Beam ends and post tops are susceptible to deterioration and it is here that the spruce has become best established. The size of the features may also be a factor in spruce growth. Smaller features may not be large enough to sustain the growth of large trees as most of the large spruce

trees are associated with large features. Our conclusions that spruce is the most destructive agent causing destruction of features is similar to findings at Ninstints (Florian, Beauchamp and Kennedy 1983, Florian and Hebda 1981).

Although the ever present spruce is a disadvantage in terms of its destructive influence the presence of this tree could prove advantageous to archaeologists. This is because the occurrence of these trees where climax forest consists mainly of cedar or other vegetation types could actually indicate the presence of a wooden feature site.

Assessing the stability of wooden features usually requires careful study over time, (Florian, Beauchamp and Kennedy 1983, Florian and Hebda 1981), but speculative comments can be made. Many of the features are unstable. The houseposts at FbSx 6 are almost completely destroyed and the presence of spruce seedling and saplings where parts of the posts are still exposed indicates this process is ongoing. Beams at the site, however, are well preserved and appear stable probably reflecting intermittent drying out. At FbSx 9 both houseposts and wooden structural elements are in poor condition and appear to be deteriorating and unstable. These features probably never dry out. Since 1983 spruce seedlings have become re-established on the houseposts. Overall the wooden features at FbTa 25 are also in poor condition and beneath surface moss the features are non-cohesive and often completely deteriorated to resemble a crumbly red soil. Little sunlight penetrates the dense overstory of the site and the features are probably unstable.

The comments on the stability of the features are made in relative terms. In fact, even those that are well preserved and appear stable are still deteriorating, if at a slower rate than others.

Distribution of Architectural Sites in the Study Region

It is reasonable to assume that if site distributions in the study region represent real distributions, as was earlier concluded, then the distribution of sites containing architectural remains, located during routine survey, represent a mainly unbiased distribution. Figure 17 maps the location of sites containing architectural remains in the study region.

The distribution of architectural sites is rather surprising. It may be expected that these sites would cluster in the cental part of the study region, reflecting overall site distributions. Moreover, because of preservation factors it is likely that the majority of the sites date to the post-contact period and it may be expected that central clustering would occur to reflect a tendency towards nucleation at Old Town and later New Bella Bella. At first glance, it would appear that sites do cluster near Bella Bella, with two distinct groupings of recent sites occurring on the northern end of Hunter Island, and east of Bella Bella on Denny Island. Aside from these two groups, and on

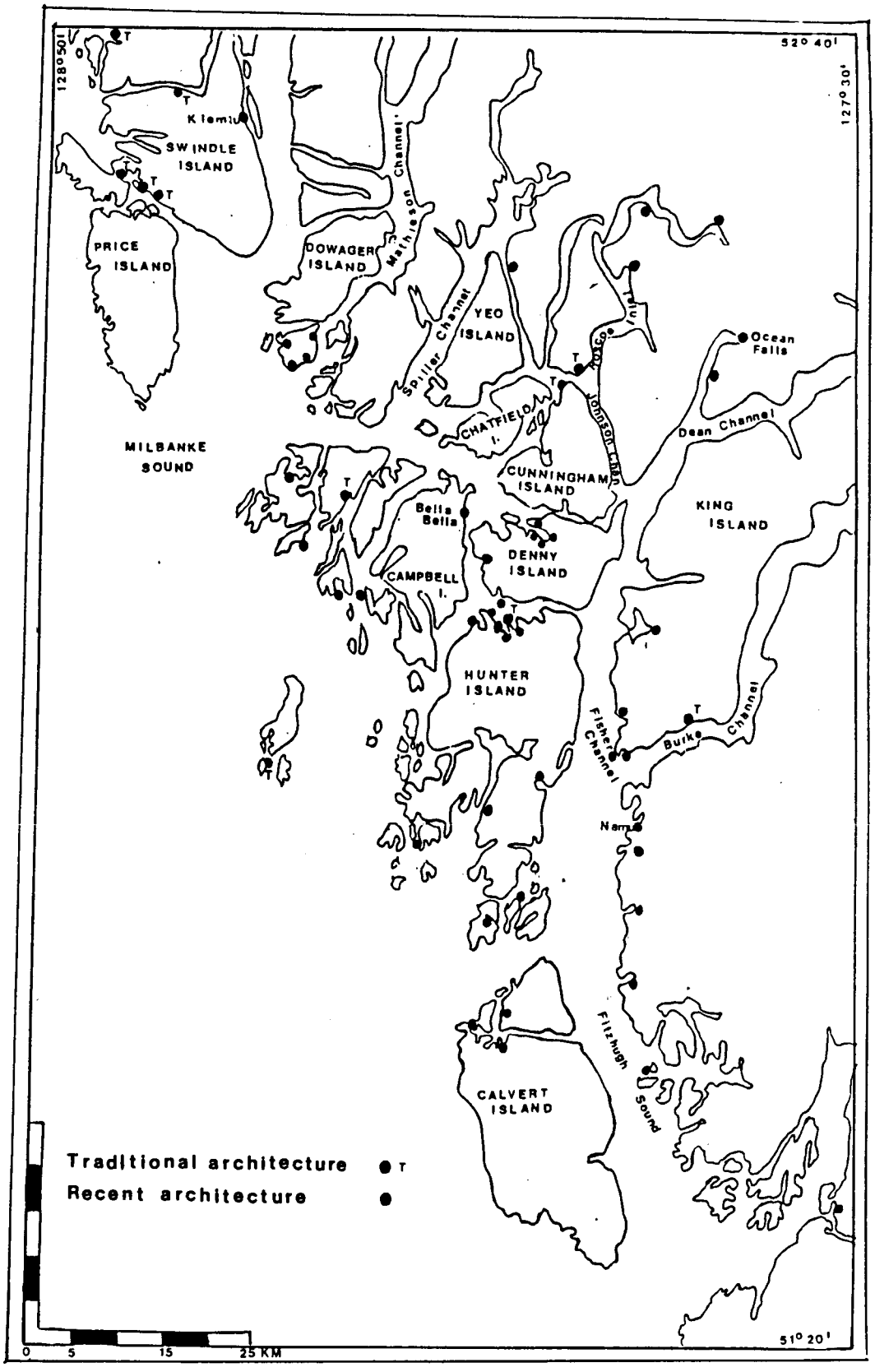


Figure 17. Map of sites containing wooden architectural sites in the study region.

closer inspection, the distribution of architectural sites is quite widely dispursed throughout the study region. When traditional sites are considered separately, all of the sites occur in the northern half of the study region. However, within this pattern there is no discernable tendency towards nucleation at Old Town Bella Bella. I think this is an important factor and indicates once again the need to re-examine amalgamation and nucleation of Heiltsuk peoples. Pomeroy (1980:72) viewed relocation closer to Fort McLoughlin and later Old Bella Bella as a response to contact. However, as indicated in Figure 16 no such process is evidenced. This statement must be tempered with the fact that we know little of how nucleation processes were working.

If the widespread dispersal of habitation sites with no tendency to cluster centrally reflects traditional patterns this would indicate that higher site concentrations in the central zone may not reflect higher traditional populations. These may simply reflect higher areas of seasonal utilizaiton of resources, perhaps of clam beds where remains produce more visible sites. It should be recalled that Pomeroy (1980:160) found that large shell middens did not necessarily indicate winter villages.

A widespread distribution of recent architectural sites, presumably the majority being short term utilization camps, indicates that people in the study region were familiar with and utilized resources quite far from Bella Bella. At the same time the home base for many of these people may have been Namu, Klemtu, or Ocean Falls.

A majority of the architectural sites were located on the basis of informants; 73% of the traditional sites and 42% of recent sites as compared to the 13% of non-wooden feature sites located via informants for the region as a whole. This has important implications for deciding strategies for detailed inventory. There are probably two reasons why informant data is a more successful site locational technique. One is that sites are remembered in local history and were often used by informants still living. The second reason is probably because of the higher surface visibility of the sites.

In order to identify possible similarities and differences in the distribution of architectural sites to archaeological sites in the study region as a whole I compared various factors to conclusions made by Pomeroy (1980) that were summarized in Chapter 4. A list of 5 possible factors which may affect the location of architectural sites was drawn up. These were: (1) access to freshwater (2) exposure to elements (3) beach access (4) proximity to fish traps and (5) proximity to other sites. Table 8 summarizes the results of this exercise.

Pomeroy (1980:100) noted that a low percentage of shell middens were associated with rivers or major streams. Results for architectural sites show similar findings and indicate that access to a main water source was not a locational factor for architectural sites.

In his findings Pomeroy (1980:97-100) concluded that protection from the elements was a main locational factor for midden sites. Table 8 demonstrates that sites with recent

architectural remains tend to occur in well protected areas. The opposite is true for sites with architectural remains in the traditional category. Perhaps a reason for this is that while traditional sites may be located in unprotected areas these would also permit better visibility for strategic reasons.

A third factor considered in the location of sites with architectural remains is beach access. Table 8 shows that architectural sites tend to have a main beach access area. Pomeroy (1980:93-100) also found beach access to be an important factor in midden locations. He viewed access to clam flats as the reason for location of sites on beaches.

Proximity to fish traps is the fourth factor considered in Table 8. Traditional sites are not located in direct association with traps, 4 occur within 2 km of a trap and an additional four from 2-5 km of a trap. A summary of recent sites shows that 2 are directly associated with a trap, 9 within 2 km and 10 from 2-5 km. Overall, this indicates that direct or very near proximity to fish traps is not a main locational factor for either recent or traditional architectural sites. This compares to findings of Pomeroy that very close proximity to fish traps is not an important factor in midden locations in the study region (1980:101).

Table 8 indicates that both categories of sites tend to occur in site clusters. For traditional sites this could indicate such sites may have occurred in areas of high resources. Pomeroy (1980:85-103) states that a multiplicity of subsistence factors were determinant in midden locations. Possibly also social

Table 8. Summary of data on factors which may influence the location of sites with architectural remains.

FACTOR	TRADITIONAL SITES	RECENT SITES
NEAREST MAIN WATER SOURCE	RANGE: 0-2.5 to >10 km X: 1.1 km 1 SITE LOCATED ON MAIN WATER SOURCE	RANGE 0-5 km X: 1.2 km 5 SITES ON MAIN WATER SOURCE
EXPOSURE TO ELEMENTS	WELL PROTECTED: 2 SEMI-PROTECTED: 1 UNPROTECTED: 8	WELL PROTECTED: 18 SEMI-PROTECTED: 9 UNPROTECTED: 10
LOCATED ON BEACH	7	23
PROXIMITY TO FISHTRAPS	DIRECTLY ASSOCIATED: 0 WITHIN 2 KM: 4 WITHIN 2-5 KM: 8	DIRECTLY ASSOCIATED: 2 WITHIN 2 KM: 9 WITHIN 2-5 KM: 10
SITE OCCURS IN CLUSTER (MIDDEN/S OR TRAP/S WITHIN 2 KM OF SITE	6	24

factors are operating which have not yet been isolated. For recent sites I would argue that occurrence in association with archaeological site clusters indicates that these sites were located in areas of higher prehistoric site utilization.

Overall, the comparison of locational factors for architectural sites with Pomeroy's conclusions for the location of middens indicates similar findings.

Summary and Interpretation: Overview Assessment of Architecture and Sites with Wooden Architectural Features in the Study Region

Data on prehistoric architecture in the study region consists of portions, or possible portions of house floors excavated in shell middens, but overall information is scanty. By combining ethnohistoric and archaeological data it is possible to come up with some general ideas on Heiltsuk architectural styles. From Tolmie's observations there were both summer and winter villages which contained substantial permanent dwellings. There is no information on possible structural differences in architecture at these sites. Tolmie's observations and informal census indicates there were between 11-23 houses at Heiltsuk villages and an average of 25 people per house. Houses were built on the edge of middens in a single row and accessed, at least in some cases, by ladders.

Houses contained a framework of substantial posts and beams. At FbSx 9, 2 main pairs of posts were noted and 2 additional pairs postulated in the framework. At FbSx 6 it was suggested that 4 main posts also formed the main structural elements. Two

main beams resting on the centre houseposts from front to rear formed a double ridgepole. Data from Tolmie and the work of Carlson indicates that floors were elevated. Plank rather than earthen floors are the rule, although some houses may have had partial earthen floors and earthen areas around hearths. Heiltsuk houses had a main hearth in the cente or front/centre of the house and several smaller hearths. Internal benches were constructed and planks formed internal partitions. External wall construction, at least in Bella Bella, shifted from broad horizontal planks tied onto the house frame to narrower vertical planks possibly nailed in place during the last half of the nineteenth century.

A suggestion from ethnohistoric and archaeological data is that carved houseposts were not particularly common. On the other hand we have little information on the internal design of houses at Old Bella Bella. However, Tolmie noted carved houseposts at only one of the sites he visited. Architectural survey has identified only one set of carved houseposts; those at FbSx 9. Differences in status may have been reflected in the size of houses in Heiltsuk territory. Tolmie noted differences in house sizes and this is also the case at FbSx 6, visited in 1985 field investigations.

Work in 1985 also provided data on the late historic use of traditional sites. This indicates that these sites were used until just after the turn of the century as resource utilization camps after amalgamation at Old and later New Bella Bella.

The examination of archaeological survey files provided additional information on 54 sites with architectural remains. None of the traditional sites were anywhere near the size of settlement described by Tolmie in the 1830's. The 43 sites with recent features show mixed forms of architecture including post and beam cabins, fragments of milled lumber structures and a variety of outbuildings. Architectural sites show a tendency not to cluster in the centre of the study region but are widely distributed.

An overview of wooden architectural sites in the study region serves to illustrate the potential of the sites in addressing research problems outlined in Chapter 4. Several research problems identified for architecture cannot be clearly addressed until selected sites are excavated. Monitoring selected sites as these deteriorate in the stratigraphic record will also be necessary to address several problems outlined in Chapter 4. However, preliminary work, as indicated by excavations by Carlson in 1984 suggests problems in distinguishing house floors from underlying components. Additional work will be required to determine if this methodological problem will turn out to be the rule. The use of plank floors in Heiltsuk structures may prove to make the identification of activity patterns in houses a difficult problem.

Other aspects of research at the overview stage indicate greater promise. Status difference in Heiltsuk villages appears to be reflected in the sizes of the houses. Data from Tolmie on the average number of individuals per house could prove crucial

in reconstructing the demography of Heiltsuk peoples. A comparison of the number of houses at traditional sites today to information provided by Tolmie indicates the need to reexamine ideas of the processes of Heiltsuk reformation, amalgamation, and nucleation in the contact period. The widespread distribution of traditional architecture also points out the need to reexamine this problem.

Information on site attributes indicates that physiographic factors may have formed a role in the location of traditional architectural sites. For both categories of architectural sites locational considerations in the contact period appear to be similar to those operating in earlier times even though these are not as yet clearly understood. This has important implications for using the sites as a basis for middle range research that could shed light on reconstructing traditional Heiltsuk lifeways. Additional ethnographic and archaeological research will make it possible to understand post-contact settlement patterns, which in turn will provide a basis for studying prehistoric patterns.

CHAPTER 8

Recommendations for Phase 2 of the Bella Bella Project: Detailed Inventory

This chapter is concerned with outlining recommendations for Phase 2 of a wooden feature impact management program in the Bella Bella region. In the recommendations below the following main categories will be considered: (1) re-visiting, re-recording and testing of previously recorded wooden feature sites (2) locating additional sites and estimating the actual resources in the study region (3) ethnographic coordination of work (4) institutional involvement and (5) scheduling and crew considerations.

Known Sites

The overview of known sites in the study region has pointed out the need for additional survey information on wooden features and associated sites. A majority of the sites should be revisited and recorded using procedures derived in 1985. Various wooden feature site categories are considered below.

All 12 of the rockshelter burial sites should be visited and re-recorded. Procedures for documenting mortuary sites in 1985 focused on those sites which would fall in the burial ground category. However, most archaeologists are skilled in mapping and the proper recording of rockshelter sites should not present

any difficult problems. Mapping these sites with a transit or alidade is probably unnecessary and more rudimentary forms should suffice. Careful attention should be paid to the location of remains and associated site attributes. I would suggest that the possibility of collecting boxes be considered. These artifacts are easily transportable and easy to store. I would also suggest that human remains be collected for analysis. At the very least the number of individuals represented at sites should be determined.

The majority of burial ground sites in the region have been adequately documented as the result of Streich's (1983) work. Re-recording all of the sites at this phase of proceedings is unnecessary. Exceptions are FbTa 24, FbTb 2 and FbTc 9 which should be re-visited and re-recorded. FbTa 24 was only partly documented by Streich because of time considerations. FbTc 9 contains two carved poles which have not been viewed for some years. Only minimal data is available for the carved pole at FbTb 2. These sites should be recorded using procedures derived in 1985.

All 11 traditional architectural sites should be revisited and recorded using procedures derived in 1985, with the exception of FbSx 6, 9 and that part of FbTa 25 already mapped. It is likely that excavation of selected sites will form part of eventual mitigative proceedings in the study region. FbSx 6, 9 and FbTa 25 should be revisited for the purpose of conducting test excavations to acquire information on the subsurface component of these sites. This will indicate if wooden features

are located beneath the surface and if house floors are definable from underlying strata. In turn, this will form a basis for outlining final mitigative procedures for these sites.

All recent architectural sites should also be revisited, and in some cases re-documented using procedures derived in 1985. As was previously discussed, it is difficult to determine on the basis of available data which sites are significant in terms of reconstructing Heiltsuk settlement/subsistence patterns. A decison on whether to map sites will be determined by viewing the sites and acquiring ethnographic data on the sites.

Locating additional sites and estimating actual resources in the study region

From talks with local individuals in the 1985 field season it was clear that there are many wooden feature sites in the study region that have never been recorded. Complete areal coverage would be very expensive. I would suggest two main methods for completing a detailed inventory in the study region. These are: (1) use of informants (2) use of air photographs.

The widespread distribution of wooden feature sites, many located on the basis of informants, indicates that individuals in the study region are very familiar with the landscape. In addition the higher surface visibility of the sites has increased the liklihood that local people know of feature sites. Compared to non-wooden feature sites in the region of which 13% were located by informant data, over 50% of wooden feature sites were

located on this basis. For these reasons I would argue that the systematic and extensive interviewing of local individuals should be the prime survey strategy for conducting detailed inventory in the study region. Special candidates would be handloggers who are very familiar with shoreline in the area.

It is possible, although so far untested, that the use of air photographs could also be very useful as a means of locating feature sites. As was previously pointed out vegetation on feature sites is distinctly different than surrounding environment. It may be possible to note differences in vegetation in air photos to determine the locations of feature sites. This could be tested by determining if vegetation differences are discernable on air photographs, where known feature sites occur.

New sites located in the detailed inventory should be documented using procedures derived in 1985.

What are the actual number and types of wooden features in the study area? This is difficult to determine and cannot be estimated using any quantitative formulae. Nonetheless a qualitative estimate can be made.

Pomeroy (1980:80) noted that when the same area was searched in successive field seasons that additional sites were located. For this reason it must be assumed that numerous unlocated wooden feature sites occur. Researchers in other regions have noted that in surveyed areas the number of sites located is often greatly underestimated (Schiffer and Gumerman 1977:212). Little data for the coast is available.

Given the overall wide and carefull survey coverage in the study region as concluded in Chapter 4 I would argue that more than 50% of wooden feature sites have been located. In addition the higher surface visibility and familiarity of wooden feature sites to local individuals increases the likelihood that a good percentage of the sites have been located. I would estimate that 65% of wooden feature sites have been located. For rockshelter burial sites this number is almost certainly underestimated and for burial ground sites probably overestimated. However, I would recommend that Phase 2 be implemented with the assumption that 65% of wooden feature sites have been located, and that this estimate be re-evaluated after a field season to conduct detailed inventory has been conducted.

Ethnographic Coordination

For Phase 2 of the impact program it is recommended that a full time ethnographic coordinator be part of the crew involved in conducting detailed inventory. As Trigger (1983) points out it is difficult for the archaeological director collecting field data and dealing with logistical problems to establish proper relationships with informants and to find the time to collect proper ethnographic data. A solution is to assign an individual whose sole task is to collect such data. Ethnographic data collection is crucial in a Features Project. First, interviewing local individuals is a prime survey strategy. Second, many of the sites are recalled in local history, and some were utilized

in the memory of individuals still living. In order to unravel post-contact patterns and ultimately prehistoric patterns it will be necessary to determine when settlement/subsistence and other patterns changed, right through to the 20th century. Recently, the Heiltsuk Cultural Education Centre has been attempting to reconstruct traditional patterns of resource utilization. This data should be integrated into the impact program with the assistance of an ethnographic coordinator.

Institutional Involvement

From the outset of the Features Project it was pointed out that a coastal sub-regional approach would be the best way to deal with the resource. In 1984 it was suggested that a central agency, probably the Heritage Conservation Branch, would serve as the main management and administrative body for implementing wooden feature programs. Since the initial report I have modified this view and suggest that local community institutions are better equipped to fulfill the central role.

For the Bella Bella region the Heiltsuk Cultural Education Centre is the logical institution to fulfill the central management role for a sub-regional impact program. Where necessary, individuals from outside institutions should work with the Centre. Work should be carried out under ministerial permit to ensure that projects are monitered and evaluated by qualified personnel of the Heritage Conservation Branch.

Scheduling and Crew Considerations

Work in 1985 provided data on the time required to adequately document wooden feature sites. It was found that it takes approximately 5.0 person days to acquire necessary data from recent architectural sites, 10.0 person days for traditional architectural sites, which are usually larger than recent sites, and 2.5 person days for mortuary sites. The optimum crew size for conducting work is 4 persons, including the director. Table 9 presents an estimate of the person days it would take to document all recorded sites in the study region as well as the estimated potential number of sites based on an estimate that 35% of the sites have not been located. An additional 2.0 person days have been added to recent architectural sites and 4.0 to traditional sites to allow for test excavations to obtain data on sub-surface components. As well, 1 person day has been added for each site to allow for travel and locating the site. The results of this exercise indicate that it would take 535 person days to properly document recorded sites and an additional 291.5 person days to document the estimated number of sites not presently recorded. This means that conducting a detailed inventory for the entire study region would require 826.5 person days of fieldwork. The estimate may be under-represented because the data used for site potential projections is only a qualitative assessment. This is partly allowed for in that it is assumed that all recent architectural sites would require complete recording which is unlikely to be the case. Time would also have

to be separately allotted for interviewing locals on the location of sites.

In a four month field season in a crew of 4 individuals there is 348 person days of work. This means that to conduct a proper detailed inventory in the study region excluding interviewing of locals would require 3 field seasons giving a total of 1044 person days. The extra person days would almost certainly be required to allow for the contingency of bad weather days on the Central Coast. It would also allow for the fact that, actual site potential may be much higher than estimated.

It is recommended that Phase 2 of the Bella Bella Project be implemented at the earliest possible date.

Table 9. Estimates of person/days required to record actual and potential wooden feature sites in study region.

SITE TYPE	ESTIMATED RECORDING RATE-PERSON DAYS	NUMBER OF SITES PREVIOUSLY RECORDED	NUMBER OF SITES ESTIMATED NOT YET LOCATED	PERSON DAYS TO RECORD PREVIOUSLY RECORDED AND UNLOCATED SITE
TRADITIONAL ARCHITECTURAL	14.0	9 (excluding FbSx 6 & 9)	6	210
RECENT ARCHITECTURAL	7.0	43	23	462
ROCK-SHELTER BURIALS	2.5	12	3	37.5
BURIAL GROUNDS	2.5	3	3	15.0
TOTALS		67	35	724.5
ADD 1 DAY TRAVEL TIME		67	35	826.5

CHAPTER 9

CONCLUSIONS

This thesis has been concerned with a class of architectural data on the coast of British Columbia which has received no systematic attention. These are aboriginal wooden features consisting mainly of the surface remains of architectural structures, features related to resource utilization and those related to mortuary complexes. At present the bulk of the data on wooden features in coastal British Columbia consists of brief reference on archaeological site survey forms. The need to investigate this class of data is underlined by the fact that the resource is deteriorating in the rainforest environment of the coast.

In preventing the loss of wooden feature sites two main ideas have been developed and tested in the Features Project. The first of these is to suggest that sub-regional impact management programs, with models developed to suit problems unique to wooden features, is the best solution for intevening in the loss of the resource. Although there are no precendents for this on the scale suggested here, the thesis clearly pointed out that the application of regional models developed for economic impact situations is probably the only way to successfully mitigate against the loss of the resource.

The second idea in preventing the loss of wooden features outlined the need for proper documentation of the artifacts.

This will provide data for management planning and will be an actual operational approach for conservation.

To briefly review the thesis: in Chapter 2 the loss of wooden feature sites from a coast-wide perspective was considered. Main conclusions were that wooden features occur throughout the coast of British Columbia and that very little is known about these artifacts. A review of the history to conserve the resource showed no systematic solution to the problem has been attempted. Under current restraints it is doubtful that the present cultural resource management program of the Province will be able to deal with the loss of the resource. It was suggested that intensive recording of the sites and sub-regional impact management programs be the main strategy in preventing the loss of wooden feature sites, or, at least, the loss of the information they contain.

In Chapter 3 a three phase impact management program specific to wooden feature sites was outlined. These sites present an optimal situation for carefully planned management. The decomposition of wooden features is an ongoing, but slow process. There is not the crashing immediacy that sometimes hampers judgement and careful planning. A management program for wooden feature sites, as for any regional impact situation, is best undertaken with a multi-stage approach. The identification and review of existing knowledge should result in the evaluation of significance and the definition of research goals to be pursued in detailed inventory and the final mitigative stage. The research goals associated with the management of wooden feature

sites can be more like those of "pure" research in that subject matter is less geographically constrained. That is, the researcher is not restricted to a narrow zone defined by scientifically irrelevant factors such as construction zones or the area slated for logging. Moreover, because the researcher is mainly concerned with a single component maintaining a research orientation is less complex than is usually the case in an impact situation.

Chapter 4 was concerned with identifying the research potential of architectural remains and wooden mortuary features. Even on first approximation it is clear that the sites are highly significant in scientific terms. For the Pacific Northwest Coast there is a lack of models and data of the middle range variety that could be useful in reconstructing the development of the cultures in the region. It was argued that the study of architectural remains and wooden mortuary features could provide a basis for constructing models for the ethnographic period and recognizing and collecting data to test these models. This, in turn, could provide a basis for unravelling the prehistoric record.

Chapters 5 through 8 presented the application of the first stage of an impact management program for wooden features to the Bella Bella region of British Columbia. This included a summary of the biogeography, archaeology and ethnography of the area. It was concluded that most of the study region has been surveyed and that site distributions, including wooden feature distributions reflect real dispersal of the sites across the landscape. An

overview of mortuary sites containing wooden features showed the effect of European interaction on traditional Heiltsuk customs and the distribution of the sites reflects amalgamation and nucleation at Old Town and later New Bella Bella. The overview of architectural remains in the study region provided information on Heiltsuk styles and the distribution of the sites showed the need to re-examine ideas of Heiltsuk reformation, amalgamation and nucleation in the little known period prior to the arrival of the missionaries in 1880. Chapter 8 outlined recommendations for conducting Phase 2 of the impact program in the study region.

In British Columbia the impact stage for wooden feature sites is now. There is little doubt that the proper conduct of an impact program will be an expensive undertaking. However, even on first approximation the scientific significance alone of the sites warrants this expense. This does not even take into account the significance of the sites in ethnic, public and economic terms. From a scientific point of view the sites discussed here can contribute to understanding not only later aboriginal cultures, but as a precedent for reconstructing dynamic aspects of the past cultures of the Pacific Northwest Coast. By studying the sites it may be possible to contribute substantially to an understanding of the relationship of artifacts and culture and how the passage of time complicates our ability to understand these relationships.

APPENDIX 1

RESULTS OF A FIELD RECONNAISSANCE AT SELECTED SITES IN THE BELLA BELLA STUDY REGION

APPENDIX 1

RESULTS OF A FIELD RECONNAISSANCE OF SELECTED SITES IN THE BELLA BELLA STUDY REGION

The sites used as an experimental basis for deriving recording procedures also served to set in motion detailed inventory of wooden features in the study region. Substantive results of investigations at these sites are presented below.

FaTa 54 - Martin's Pole

Streich (1983) had already laid the groundwork for recording burial sites and recognized the limitations of the standard site survey form for such work. Martin's Pole was chosen for 1985 field work because we hoped to raise the fallen pole at the site. This proved to be an elusive goal but the site did provide a good testing ground for deriving recording procedures.

FaTa 54 is located 3.5 km south of Bella Bella, directly across from Napier point (Figure 18). The site is located on the west side of Denny Island on the edge of a rocky point approximately 10 metres above the high tide mark. The rocky point is about 30 metres wide and on either side of it is a small cove. Steep trails from each cove lead to the site. Wooden features at the site consist of a log crib gravehouse, a milled lumber gravehouse, European style coffins, and a carved pole.

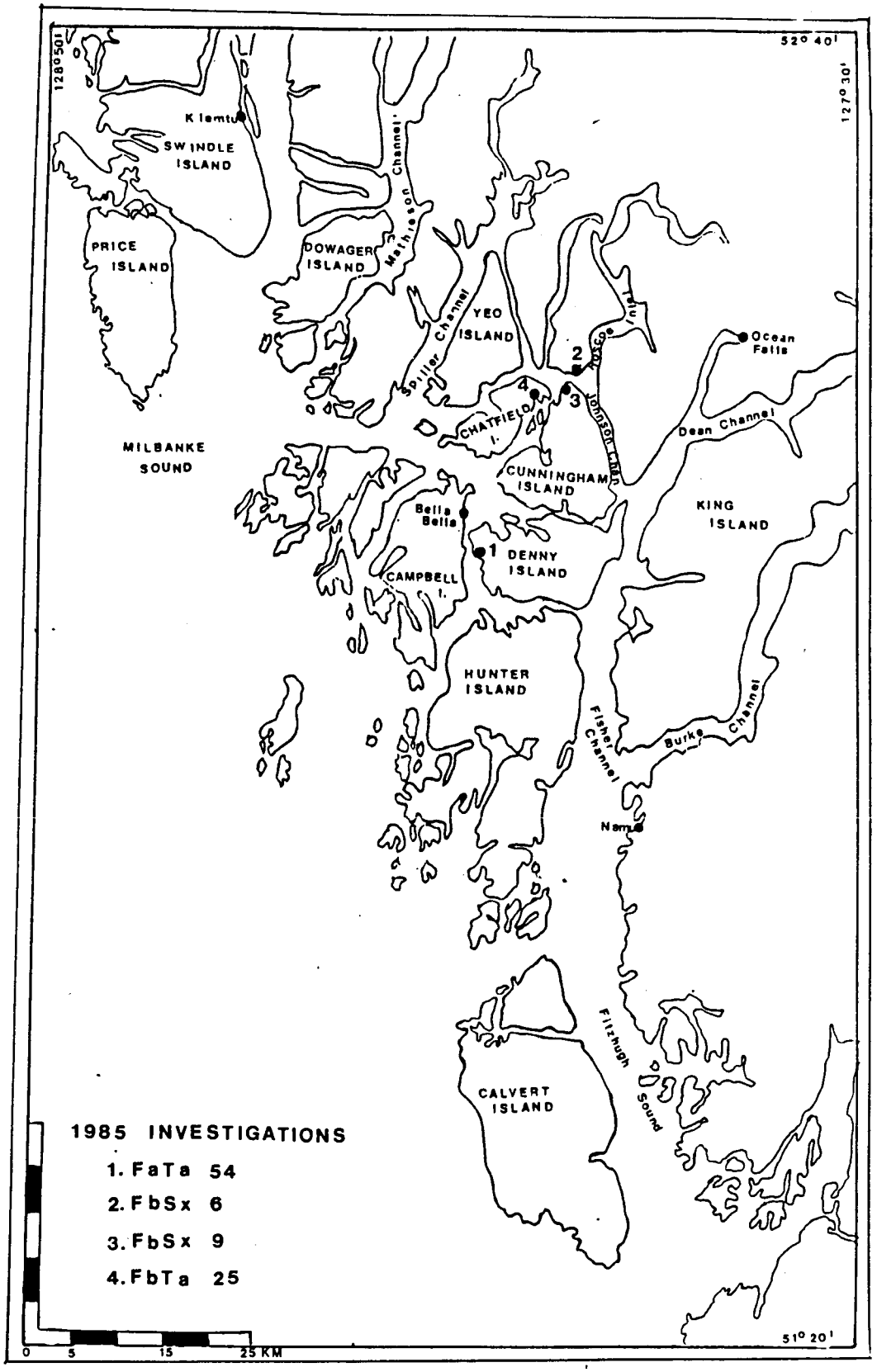


Figure 18. Location of wooden feature sites visited in 1985 field investigations.

Associated artifacts consist of historic tombstones and gravegoods.

The site is well known to residents of Bella Bella and was investigated by Streich in 1983. Locally the site is known as the Martin family gravesite and is referred to as Martin's Pole. The carved pole has fallen over the edge of the cliff and is precariously perched at an angle of 60°-70° on a sharp slope in front of the site. According to local stories, sometime in the 1970's two white men had attempted to steal the pole by pulling it down and dragging it over the cliff face. Presumably they planned to tow it away by boat. They were caught by local residents and while the effort to steal the pole was thwarted the pole remains in an insecure position and is susceptible to deterioration. In 1985 we located the depression where the pole originally stood next to the milled lumber gravehouse.

The late Mrs. Beatrice Brown and Mrs. Margaret Campbell (nee Martin) told Shirl Hall, our project artist, about the pole. It was carved to commemorate the deaths of two Martin family chiefs and brothers, Wilfred and George Martin. The brothers were trapping on Hunter Island, were caught in a storm around Spider Island in Howeet, and lost at sea in 1934. The pole was carved by Charlie George, a Fort Rupert Kwakiutl carver and probably erected one year after the death of the men. Mrs. Margaret Campbell, who is Wilfred Martin's daughter recalls a feast (potlatch) held for the brothers also one year after their death. She was just going on 14 when her father died. The feast would have been a hurried affair because potlatches were outlawed.

Shirl Hall explained that traditionally mortuary poles were erected for ranking individuals lost at sea. Traditionally, the pole would be erected near the location where the accident occurred. A tombstone for Wilfred Martin is presently located outside the Martin family house in the village. The pole may have been placed at the gravesite because of the disapproval of the mission.

Wooden features

The more recent structure at the site, designated Gravehouse 1, is a gabled structure consisting of milled squared notched logs of Western Redcedar (Figure 19). Dimensions of the house are 3 m x 3 m and approximately 2 m maximum height at the top of the gabled roof. The roof consists of corrugated iron. At the front of the gravehouse is a window that looks out to the ocean. The window glass had been broken and bits of it lie scattered about the front of the house. Eleven coffins of European design were counted inside the gravehouse from the window outside. Pieces of manufactured clothing lie in haphazard fashion in the house. We did not enter or in any way distrub the gravehouse.

The second and older structure at the site was designated Gravehouse 2. This gravehouse is constructed against an earthen bank. The bank formed one wall and the remaining three walls are constructed of stacked logs. These consist of immature yellow cedar and alder. The structure is built on a natural west to east incline and logs are stacked higher on the eastern (front?)

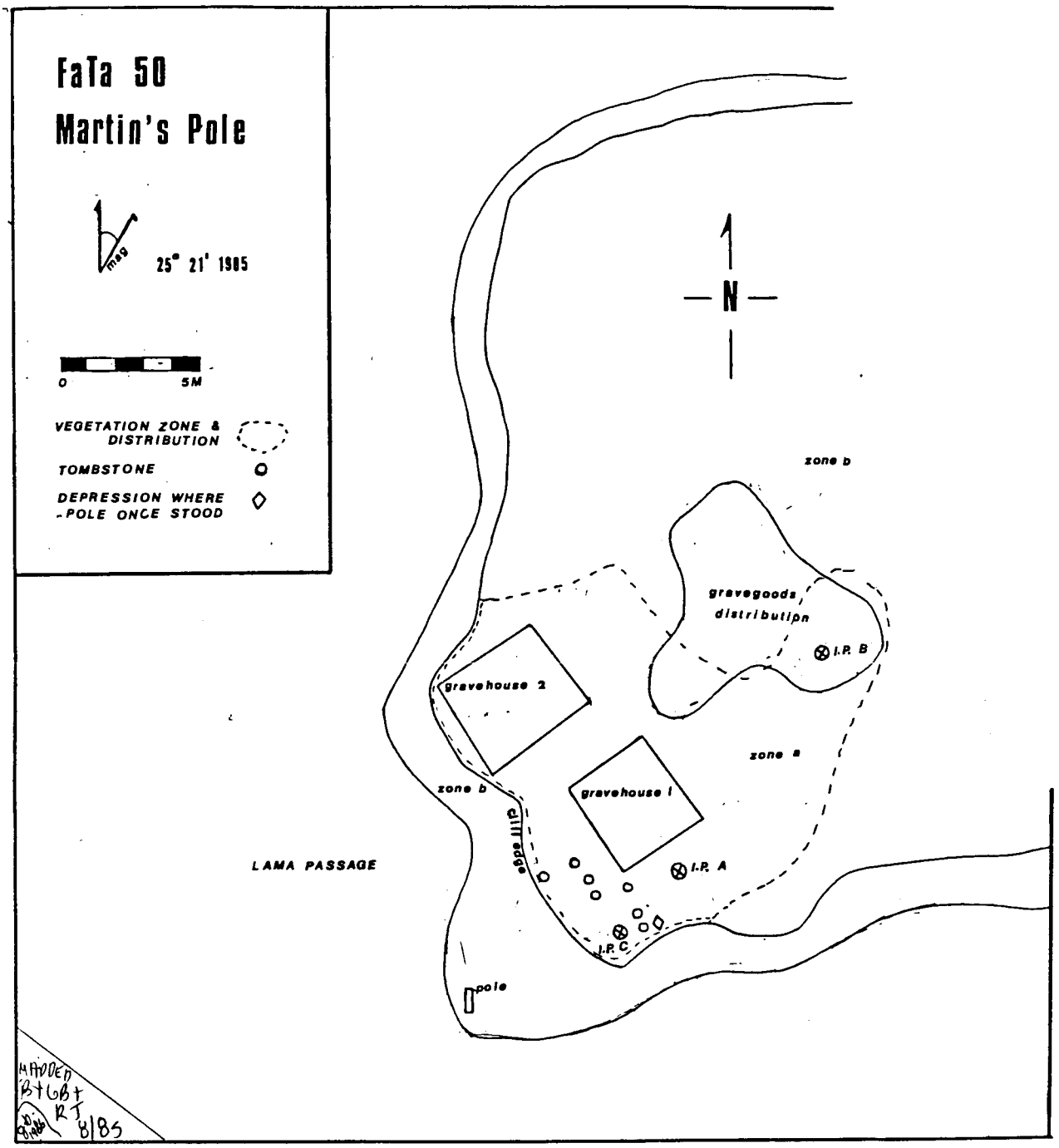


Figure 19. Site map of FaTa 54 - Martin's Pole

portion of the structure facing the ocean. Three cut (square) nails were noted in the bottom log of the eastern part of the structure. The top of the house consists of a depression, filled with moss and forest litter. Streich (personal communication 1985) suggested that the gravehouse never had a roof. Dimensions of gravehouse 2 are 4.0 by 4.0 m and the maximum height is 1.4 m.

The fallen mortuary pole at the site is known as Martin's Pole. It is lying upside down on the cliff face and appears to be held in place only by a root system directly below it. Most of the carved face is not in the ground but the top of the pole is wedged into the ground. The pole is approximately 2.0 metres in length from the base where it was broken off and 30 cm in diameter. It is constructed of Western Redcedar. Shirl Hall, our project artist, provided a rendition of the pole (Figure 20). This is drawn to scale based on Hall's measurements in the field. Two crests are represented on the pole. At the top is eagle and the lower part whale. These are crests of the Martin family. At the base of the pole is carved the inscription:

George	Wilfred
Martin	Martin
Drowned	Feb 19, 1934

In style, the pole is quite different from other mortuary poles in the region. Its style more closely resembles Southern Kwakiutl art styles than traditional Heiltsuk styles. This probably reflects the fact that the artist commissioned to carve the pole, Charlie George, was from Fort Rupert.

Associated features

Other features associated with the gravehouses at Martin's Pole consist of tombstones and gravegoods. The tombstones are located in front and to the east of Gravehouse 1 and are all probably associated with this structure (Figure 19). In all, there are 9 tombstones with dates between 1890 and 1922. These name 14 persons (see Streich 1983). Surnames on the stones are six Martins, three Watsons and five other. We do not know the exact relationship of the individuals interred at the site.

Also noted at the site were gravegoods almost all of which are located several metres behind the gravehouses and not in direct association (Figure 19). These goods were individually mapped by Streich (1983) and were not further recorded by us. The more than 50 items recorded consist mainly of enamelware, bottles, chinaware, and cooking utensils. Clearly, such things were not in themselves offerings to the dead but rather were containers for food brought to the grave site at the time of burial and perhaps repeatedly afterward. The custom of providing food for the dead is still practiced at Bella Bella as elsewhere on the Northwest Coast.

In dating the site it can only be said that it is somewhat older than 1890, the earliest date on the tombstones. The tombstones appear to be associated with the more recent gravehouse so that 1890 may be the date of this structure. The log cribhouse may be considerably older and in this context it should be remembered that the site is fairly close to Old Bella

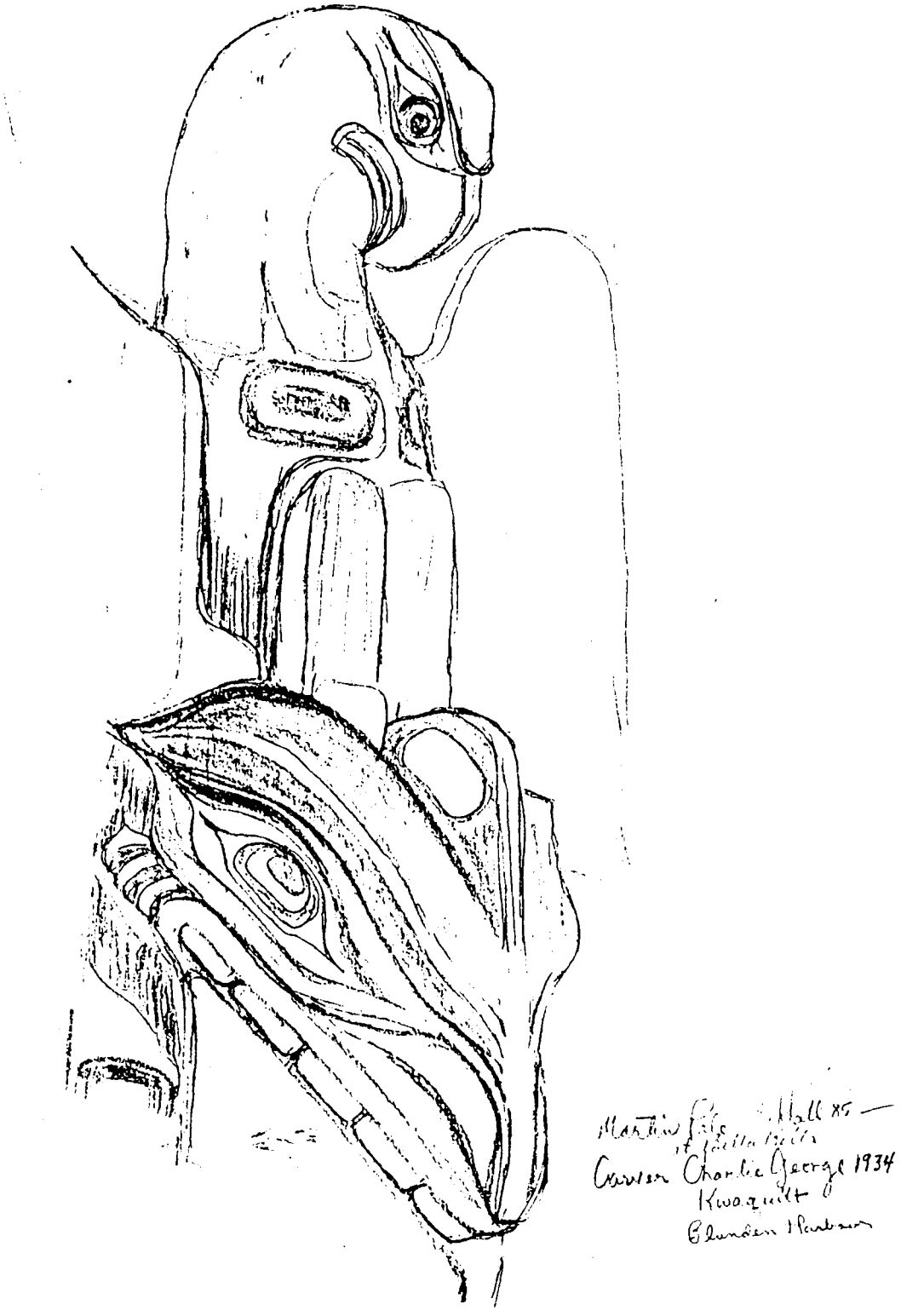


Figure 20. Artist's rendition of the Martin Pole.

Bella where native settlement is known to have begun as early as 1834 (Hobler 1982b).

Vegetation

Two main vegetation zones were noted at the site. Zone A consists of an area cleared by Streich in 1983. Immature spruce, alder, salal and huckleberry bushes had grown back since Streich's visit and were cut. A row of immature to mature alders fronts the gravehouses on the slope in front of the site. These probably reflect that the ground on the site had been disturbed/cleared for construction of the houses. The slope acts as a collection place for water and explains the establishement of alder which requires large amounts of water. Cedar and spruce needles cover the ground in the area of the gravehouses. Dense climax forest surrounds the site and consists of mature spruce, Western Redcedar, huckleberry and other bushes (Zone B). Overstory from the surrounding forest is dense but enough sunlight penetrates from a clearer area directly above the site and in front of it to permit periodic drying out of the features. Prior to leaving the site salal and huckleberry were cleared. We also cut down branches of trees surrounding the site and the area of the pole to facilitate access to sunlight and air circulation.

The outer surface of Gravehouse 1 is quite weathered but the structure is mainly free of vegetation and appears sound. There is some moss growing in the spaces between the beams and around the window. Much of the surface of the gravehouse is covered

with a whitish growth which is growing flush with the surface, and appears to be superficial only. There is more vegetation on Gravehouse 2. On top the moss is as much as 50 cm in depth and several immature to submature spruce trees have become established. The stacked logs which have large gaps in between are also filled with moss. In some cases moss has become established on the logs, but mainly these are vegetation free. Except for surface bark deterioration, the logs appear quite sound.

Martin's Pole itself is fairly well preserved but vegetation has become established. On close examination it became obvious that the pole is waterlogged. Our hopes of raising the pole could not be realized because we did not have the manpower or equipment necessary. Simply dragging the pole up the cliff slope would cause damage because the cliff edge has a slight overhang. Moreover, the waterlogged state of the pole means that it would take considerable power to move. Pushing it over the cliff edge and towing it to a safe location was ruled out because in its waterlogged state it would probably sink. Even though the weather had been hot and dry for some time prior to our visit the pole was damp. There is thick heavy moss on the underside and on the right face of the carved whalehead. Lighter moss occurs on the left face and in radial cracks. Salal, huckleberry and hemlock seedlings have become established on the pole, mainly in cracks and on carved surfaces. These cracks and carved relief surfaces collect moisture causing rot and providing an environment for the establishment of vegetation.

Immature spruce was cut from Gravehouse 2. Vegetation was also cut to just above the surface of the pole. Moss was not removed as it was uncertain as to whether this would remove carved relief and otherwise damage the surface.

Gravestructures at Martin's Pole appear to be relatively stable and receive enough sunlight to dry out for part of the year, facilitating preservation. However, the carved pole is not stable and is deteriorating.

FbSx 6 - Xvnis

This site is located on the mainland on the southern tip of Florence Peninsula about 22 km north-northwest of Bella Bella (Figure 18). It is located in a bay just west of the mouth of Roscoe Inlet on Return Channel and has a commanding view of Return Channel, inner islands of the coastal archipelago and to the south-southwest of Johnson Channel. The site is located on reserve land which was surveyed and designated in 1888 as No. 2 reserve of the Bella Bella Indians.

The site consists of two middens approximately 75 metres apart which are separated by a steep hill that tapers into a rocky point in the bay. A gently sloping pebble and sand beach fronts the entire site and is exposed for about 100 metres at low tide. On the beach in the central to eastern portion of the site is an isolated rock outcropping which during high tide forms a steep walled islet. This islet would be of strategic advantage during times of attack. Several petroglyphs (designated FbSx 10)

occur on the southwest front of the islet facing the sea. At low tide the outline of what was probably a canoe skid can be viewed on the beach in front of the western midden. During low tide it is possible to walk along the beach from one midden to the other, but at high tide it is necessary to climb over the hill which separates the middens. Our investigations at FbSx 6 were concentrated on the eastern midden where architectural remains occur today.

The eastern midden parallels the beach in an east-west direction and is aproximately 100 m in length east to west and 30 m wide. The midden rises directly from the beach at an angle of about 20° - 25° to a maximum elevation of just over 4 m. A steep rock bluff almost 20 m in elevation defines the eastern boundary of the midden. A shallow depression runs along the back of the midden, becoming broader at the northeast corner of the midden where it slopes gently before coming into contact with the rock bluff. The top of the midden is flat, but about three quarters of its extent to the east it begins to slope gently south and east until it merges at the rock bluff at sea level. On the west, the boundary of the eastern midden is defined by the hill which separates the two middens at FbSx 6. At about 20-30 m east of the hill a creek cuts through the midden. Between the creek and the hill the eastern midden has a much lower elevation and consists of a small low-lying flat area. At the back of the eastern midden, beyond the shallow depression, the ground rises gently for about 20-30 m at which point elevation rises steeply. The shallow depression serves as a drainage ditch for the midden

during the rainy season and in turn drains into the creek and along the rock bluff. At the time of our work in August the creek consisted of a small trickle.

FbSx 6 is well known to local residents of Bella Bella and is called Xvnis (pronounced who-nees). This is a Heiltsuk term which translated into English means "Cold Springs" and probably refers to a spring fed creek near the site.

According to ethnographic information obtained by Drucker (1943:81) the eastern midden was known as "Landslide Place" (hwinis) and the western half as "Ready to fight" (tiai'is). At the time it was designated I.R. No. 2 it was named Hoones by government surveyor William Jemmett (1888). It is likely that the name Hoones represents Jemmett's version of the site name as given him by locals as this is close to the English pronunciation of Xvnis. Boas (1973) mentions the village of xune's in several Bella Bella tales, and it seems likely his informants were referring to the site known today as FbSx 6. Olson (1955:321) in collecting data on the Bella Bella, was told of "A permanent village at the tip of Florence Peninsula..." He recorded the name of this village as Huni's, and translated it to mean "springwater".

Whatever the spelling and translation it is clear that Hoone's, Xvnis, xune's, hwinis and Huni's refer to the archaeological site today designated FbSx 6.

Boas mentions Xvnis in three Bella Bella tales and recorded the tribe who lived there as the Awiliidexu (1973:95,96,107,115). According to Pomeroy's informant Xvnis was the winter village of

a tribe of people referred to as the Roscoe (Inland) People. The informant also mentioned 5 other sites utilized by this tribe, including 3 summer villages (1980:34). However, Pomeroy placed 2 of these villages in areas inhabited by different sub-groups (1980:55). In this interpretation the people who inhabited the area which included Xvnis were termed the Owitlitoch (1980:18-71). Pomeroy based this identification on Tolmie, (1963). According to Drucker's ethnographic information FbSx 6 was the winter village of the Owiklit (owilit). Olson, who visited Bella Bella at about the same time as Drucker interpreted from his informant that Xvnis was a permanent village of the Uwi'tLidox also known as Roscoe Inlet People (1954:320-322).

In 1985 the late Beatrice Brown, a Heiltsuk elder knew of the site as her parents were from there. The tribe of people who lived there were the 'Wuit'itxv - the Inlet People. In Mrs. Brown's parents lifetime the village was occupied all year round and different activities carried out there. In spring until late fall people went in for fishing, berries and meat hunting, as well as handlogging. During the winter trapping was done. Potlatches were held at Xvnis. There was always at least 3 families camping there at once. About 15 or so people lived in (each?) house. People brought their own roof and wall planks and took them away when they left. Over a period of time people just stopped going there.

In 1913 the Royal Report of the Commission on Indian Affairs listed Xvnis (I.R. 2) as a hunting and fishing station.

Drucker described architectural features at Xvnis and excavated two test trenches, one in the eastern midden and one in the western (1943). On the eastern midden Drucker described the remains of what he termed House 1 (Figure 21). Architectural remains of the house consisted of 3 houseposts at the front of the house and 3 at the back, and 2 eave and 1 ridge beam. Some of the posts were in good repair and displayed a concave notch on the top where beams had been rested. A sill, which ran along the front of House 1 was embedded in the ground and used to bank dirt against in order to level off the floor. The dimensions of House 1 were defined by Drucker as 46-47 feet from front to rear and 38.5 feet in width (14.2 x 11.7 metres). Just west of House 1 Drucker recognized the remnants of another set of 3 pairs of posts and beams. The second house was smaller with dimensions of 37 by 33 feet (11.2 x 10 metres). To the east of House 1 stubs of other posts were seen, but a complete set was not found (Drucker 1943:83-84).

On the western midden three house structures were also identified (Drucker 1943). House 4 was defined by a rectangular area 38 by 36 feet outlined by a row of hemlocks on one side and by a bank of earth along the back and other side. Banked earth may suggest houses on the western midden had walls constructed in a manner similar to that outlined by Boas (1888) for the Kwakiutl. However, banking was not noted all around the house described by Drucker. The fifth house was defined by ridges and a flat rectangular surface and indicated dimensions of 35 by 23 feet. House 6 was indicated by a level area 48 by 38 feet with a

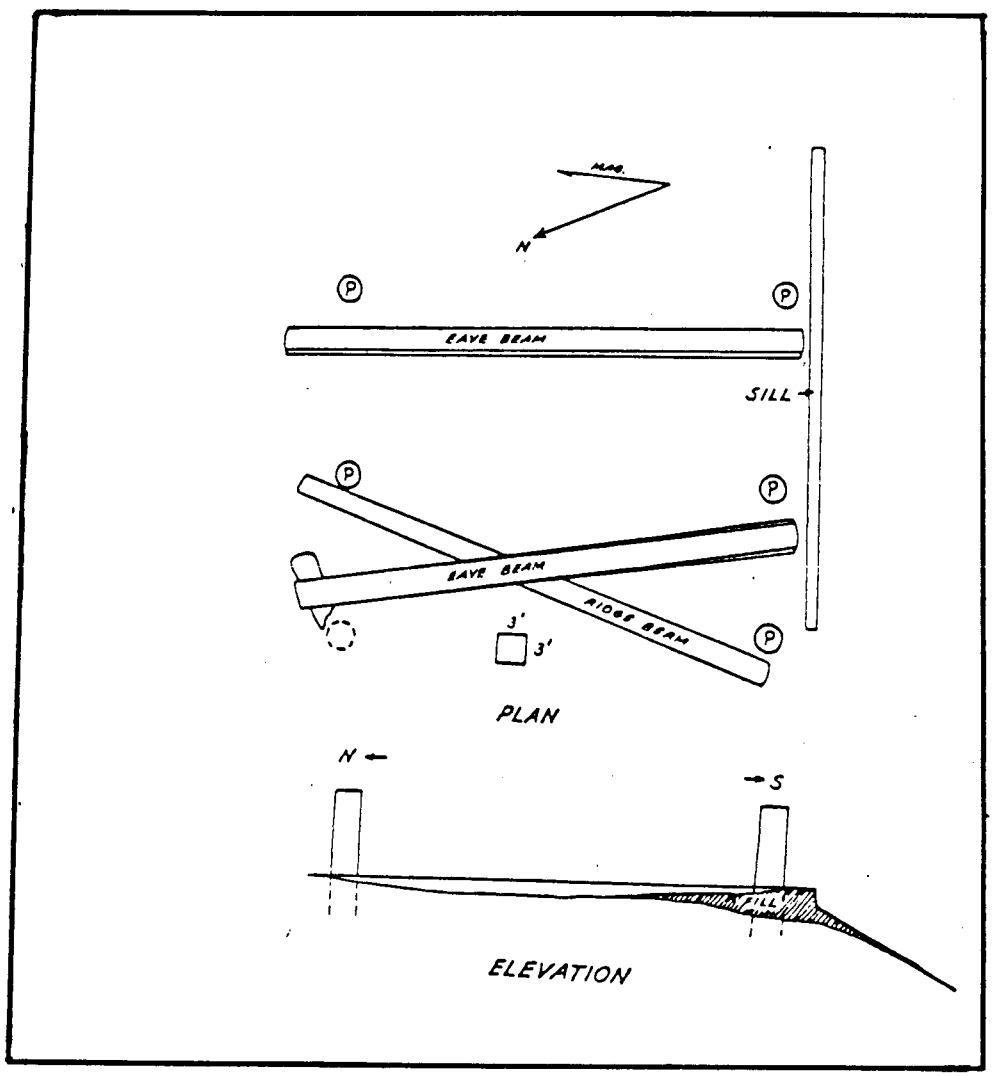


Figure 21. Drucker's map of architectural features on the eastern midden of Xvnis

bank along the back. In the centre of House 6 a heavy beam was noted and another such beam occurred along the northern side of the house.

Drucker found historic material in the upper horizon of the trench excavated in the eastern midden. This trench was excavated inside House 1 and historic goods included glass beads, an iron object and a chinaware fragment. In the same level were traditional artifacts, mainly bone, but also 2 stone hand mauls. It is interesting to note that historic artifacts seem to have been associated with traditional ones. This could perhaps indicate an early historic occupation for House 1.

Excavations in the western midden in Drucker's House 4 yielded no historic artifacts. This could indicate an earlier use for the western midden. Drucker argued that the eastern midden was more recently occupied than the western one because architectural features are better preserved on the eastern midden. A lack of historic artifacts in trenches could however, simply indicate sampling error.

A University of Colorado group also conducted an excavation at FbSx 6 in 1970. This consisted of a small trench on the western midden directly adjacent to Drucker's trench (Luebbers 1978). A radiocarbon date was obtained from fairly close to the surface and yielded a date of 2140 +/- 100 years BP. On the basis of artifacts recovered, and typological comparisons to other sites Luebbers (1978) viewed the occupation span of FbSx 6 as dating from 4200 - 1500 BP. This would place occupation within the Middle Period as defined by Carlson (1983).

Considering the small sample and the occurrence of architectural remains on the surface it is difficult to understand why Luebbers viewed 1500 BP as a terminal date of settlement at Xvnis. Possibly he viewed these remains as very recent and not relevant to the questions he was trying to address. No historic materials were found in the 1970 excavations, possibly once again indicating that the latest occupation of the western midden is earlier than the eastern midden. No mention of architectural remains is made in Luebbers reports.

Xvnis or Hoones as it was designated by surveyor Jemmett was surveyed in 1888. Jemmett (1888) made no mention of architectural structures in his notes. However, in a rough sketch map of the site he has drawn in a single house on the eastern midden (Figure 22). A lack of other houses could indicate that the use of FbSx 6 as a winter village was discontinued for some time before 1888. The single house drawn by Jemmett may represent the maintenance of a single house in late historic times for use by several families as a resource utilization base as outlined by Mrs. Brown. Prior to 1888 the site was abandoned as an important winter village and the remainder of the houses, some of which were located on the western midden fell into disrepair and deteriorated or the frames were dismantled and removed for utilization elsewhere.

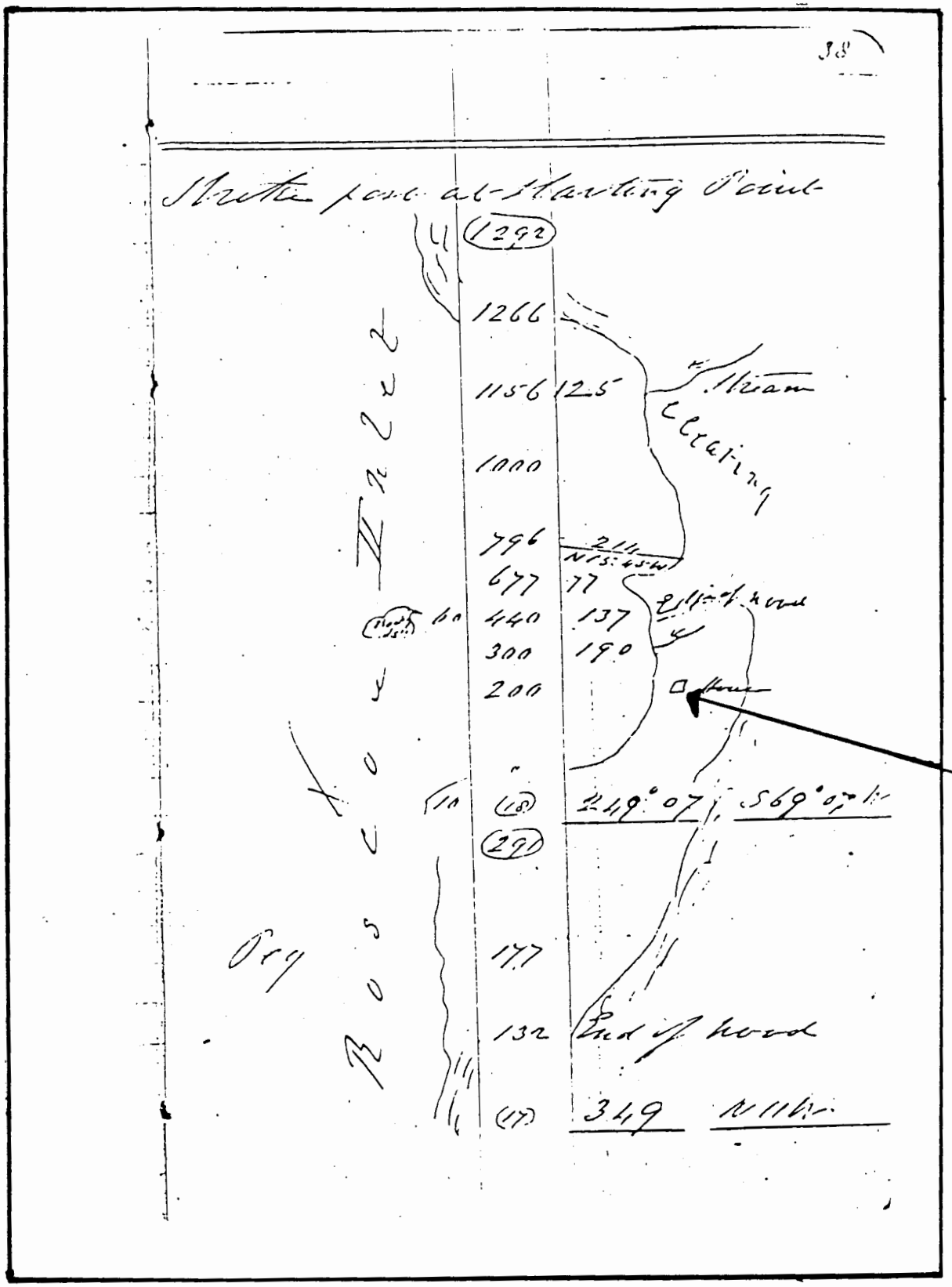


Figure 22. Jemmett's (1888) sketch map of the eastern midden of Xvnis showing the location of a house structure.

The western midden was intensively surveyed in an effort to locate the two house beams and house outlines described by Drucker. House 4 is easily identifiable. A straight line of mature hemlock grows along the eastern edge of the house, just as described by Drucker (1943:84). These had probably become established on a beam or sill which has since deteriorated. The ridge defining the back of the house is also visible, although it is difficult to determine what function the ridge had. A ridge which Drucker described as forming the third side of House 4 was not visible in 1985.

We were unable to identify the outlines of Houses 5 and 6 and could not locate the remains of the two beams reported by Drucker. Surface erosion and/or logging activities may have obscured these activities.

A total of 21 architectural features were identified on the eastern midden of FbSx 6. All of the features consist of Western Redcedar. These occur in an area approximately 25 x 20 m which is directly adjacent to the creek which cuts through the far western boundary of the eastern midden. Of the 21 features identified, 7 are houseposts (features 1,2,3,6,7,8,9), 2 are possible houseposts (features 4 and 5), 3 are sills (features 10,16,21) and the remainder beams or related structural elements (Figure 23).

The height of features definitely identified as houseposts ranges from 1.28 to 3.39 m. Most of the posts have large spruce

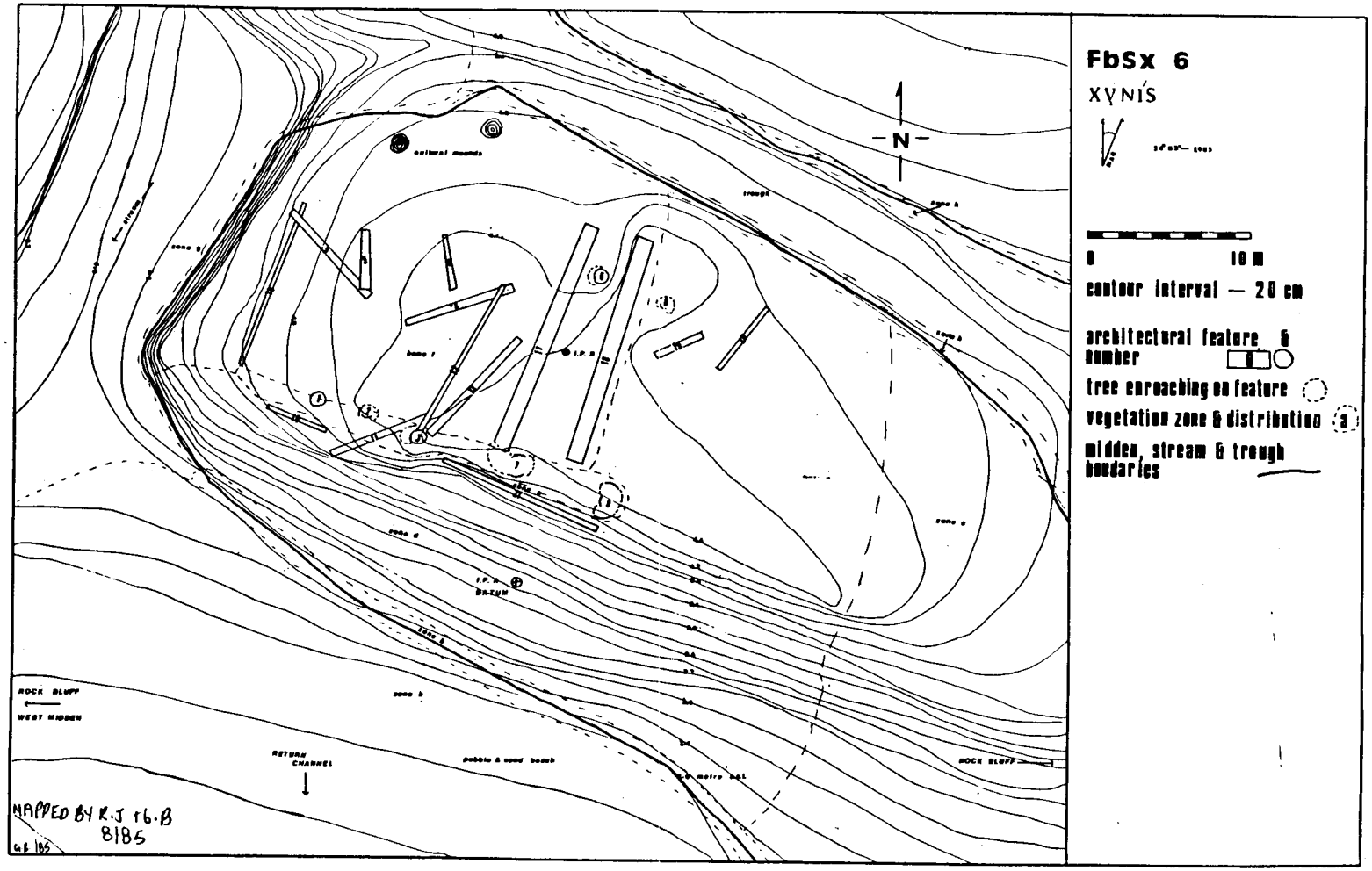


Figure 23. Site map of FbSx 6 - Xvnis

trees growing around them so that it is not possible to determine the original height. Where the top, or portions of the top are visible, deterioration is very advanced also complicating estimates of original height. The diameter of the posts varies from 42 to 92 cm but these estimates are often complicated by spruce encroachment. However, the maximum dimension of 92 cm (37 inches) indicates posts were considerably larger than those described by Tolmie. None of the posts appear to be carved. The concave niches as described by Drucker (1943:84) are not visible. Features 4 and 5 could be houseposts which had fallen, but could also represent other structural elements. The reason for identifying these fetures as possible posts is that they are approximately the right size and in approximately the right position to correspond to standing posts (Features 1 and 2). It is interesting to note that two small shell mounds approximately 1 metre in diameter and height are located some distance behind Features 4 and 5. Perhaps these represent the most recent refuse areas at the site.

Three features are identified as sills because these are embedded in the ground and occur at the interface between the top and slopes of the midden. Drucker (1943:84) found in the excavation in the eastern midden that the sill of House 1 was used to bank dirt against in order to level off the floor. In fact, the entire western half of the eastern midden may have been artificially leveled. Differences in contour across the surface are only 50 cm. Sills may also have provided stability because the midden top at the interface of the slope is prone to erosion.

The sills designated as features 21 and 16 appear to be more or less complete, but number 10 was either much smaller or had deteriorated.

The remainder of the architectural features at FbSx 6 consist of structural elements, mainly beams. Overwhelming all of the features are the two huge beams designated features 17 and 18. The length of the beams is 14.5 m and close to 1 m in diameter. Raising the beams must have been an impressive engineering task. Although moss cover and in some cases deterioration made it difficult to view wood surfaces, many of the beams, including features 17 and 18 are beautifully adzed in a fluted pattern.

It is difficult to reconcile our site map with information recorded by Drucker in 1938, partly because of a difference in resolution, and partly because the two sets of data do not match particularly well. Features designated 9, 7, 3, 8 and 6 probably correspond to the houseposts outlined in Drucker's House. However, the sill as documented by us is smaller than shown by Drucker. Possibly this is because today a large spruce tree 1 m in diameter is growing on the end of the sill. This would still not account for the entire discrepancy in the length of the sill. Other discrepancies in measurement also occur, for example, in the distances between and angle of the two large beams (Drucker's House 1 - Features 17 and 18). Two features noted by Drucker as an eave beam and a fallen post were not located by us. Remnants of another set of posts described as occurring east of House 1 were also not located. Moreover, vegetation east of the house is

very clear, with no spruce tree encroachment as would be expected if posts had been there.

Drucker postulated that the architectural remains on the eastern midden of Xvnis represented three houses. House 1 contained 3 main support beams, 3 pairs of posts and was 46-47 feet north-south and 38.5 feet east-west. The adjacent House 2 on the west was defined as being 37 feet by 33 feet. Dimensions of House 3 on the east of House 1 were not estimated. Our 1985 work also indicates the presence of two houses, probably Drucker's House 1 and 2. However, I believe that Drucker may have incorrectly interpreted the structural framework and dimensions. Nowhere on the coast, to my knowlege, has a type been reported that contains 3 pairs of posts and beams at each end of the house as the main structural framework (see Vastokas 1966). A few groups used a kind of modified single ridgepole (Vastokas 1966:35,39). Drucker (1948: 178) reports the use of a single ridgepole for the Clayoquot, Kwakiutl (sometimes) and the Kwexa. For the Heiltsuk he reports that single ridgepoles were not used. This counters his suggestion that the houses at Xvnis had a main structural framework of 3 pairs of posts which would mean a single ridgepole was used.

One method of attempting to reconstruct the houses at Xvnis is to compare the distance between the posts and the alignment of the posts. Figure 24 represents an illustration of this with the posts plotted in exactly the same relationship as they occur at the site. From the site map it is difficult to determine if post 3 corresponds to 7 and 9 as the three are an equal distance

apart. However, as illustrated in Figure 23 post 3 is not aligned with 7 and 9, suggesting it is not part of the same structure. Post 3 is aligned with 1 and 2 and is the same distance from these posts. It is likely that post 1, 2 and 3 were part of the same structure. Logically, the structure would have been quite close to the sill constructed for levelling and stability. For this reason I have postulated that another pair of posts, front and rear and east of posts 1 and 4 may have formed part of the original structure. A third post corresponding to post 4 has also been postulated. In this reconstruction posts 4 and 5 are not exactly aligned to 1 and 2. However, it should be recalled that they are not standing and this would explain a slight difference in alignment. As reconstructed the dimensions of the house would be 11 m north to south and 10.5 m east to west (Drucker's House 2). In considering other elements associated with the structure (refer to site map) feature 12 may have been a main beam, but because of its relatively small width would probably have been a secondary structural element. Features 14, 15 and 11 are probably roof supports which rested on main beams and ran east to west (crosswise) on the structure. The actual dimensions of the house may have been somewhat larger than that suggestd here. In the house described by Tolmie and in the one excavated by Carlson the houses extended for several metres past the rear posts. Assuming the back walls of House 1 extended past the rear walls the dimensions of the house would be similar to that outlined by Tolmie (13.6 x 16.4 metres).

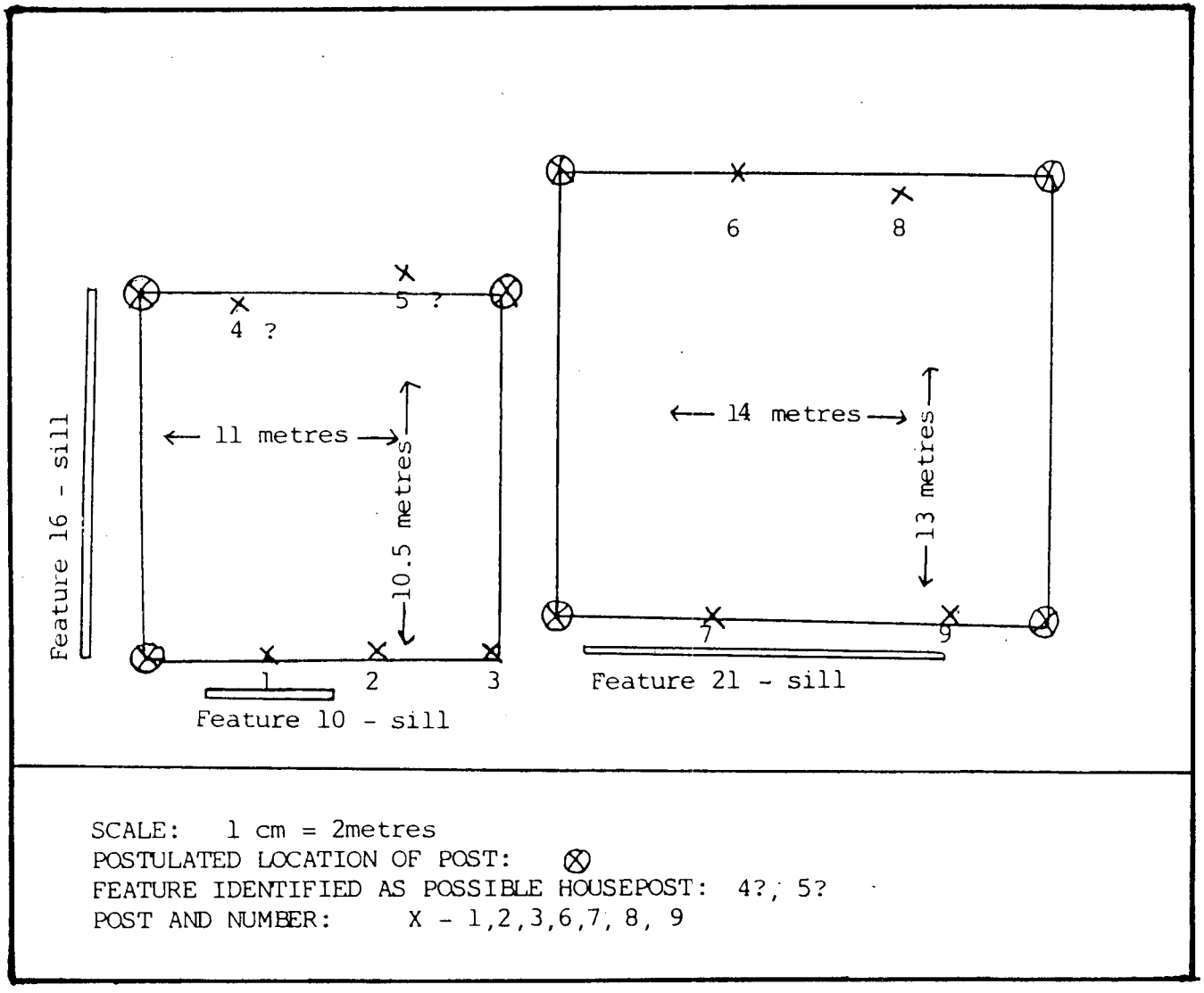


Figure 24. Reconstruction of housepost locations at Xvnis.

Posts designated as features 6, 7, 8 and 9 probably represent the main elements of a second house at FbSx 6 (Drucker's House 1). As illustrated in Figure 23 the alignment of posts 6 and 7 suggest these were matching pairs that formed support for a main beam. Posts 8 and 9 are difficult to interpret because the alignment of the posts as matching pairs is off. However, the posts are close enough together to make it unlikely that each corresponds to separate main posts no longer present. I would argue that 8 and 9 are corresponding posts and that the position has become distorted as the result ot the large spruce trees growing over and around them. Post 9 had actually been split into 3 separate parts by the spruce in and around it. Exposed parts of the post are separated by as much as 2 metres as illustrated on the site map. In the reconstruction postulated two additional pairs of posts have been suggested. Main structural beams would also have been associated with these posts. This would mean the house was more or less square with dimensions of 13 x 14 metres. Features 17 and 18 would form main beams supported by posts 6, 7, 8 and 9.

Why are some structural and other elements present while others are not? The planks were probably taken away by the house owners. It is difficult to understand why so few main and secondary beams are present. Differential preservation is an unlikely explanation considering that the beams at FbSx 6 are well preserved. Most likely the framework elements were removed for utilization elsewhere after the final abandonment of the site.

Vegetation

Careful attention was paid to site-wide vegetation as well as feature specific vegetation. Because architectural remains occur today in the eastern midden considerable detail was paid to vegetation. A total of nine vegetation zones were identified at Xvnis at and around the eastern midden. The distribution of the zones is plotted on the site map (Figure 23) and is described below:

Zone A - Beach grass which formed a strip approximately 30 metres wide which fronted the eastern midden along the beach.

Zone B - Mature cedar and spruce which formed a strip 2-3 metres wide which occurred along the whole length of the midden at the interface between the midden and the beach.

Zone C - Mature spruce interspersed with immature spruce forming a 2-3 metre strip along the midden at the interface of the top of the midden where it began sloping to the beach. This zone occurred from the extreme southeastern top of the midden and extended to just past feature 18. It appeared that this strip represented spruce which had become established on features.

Zone D - Mainly grass and some moss occurring on the front slope of the midden from the eastern edge where the stream cut

through the midden and extending along the slope west for approximately 45 metres. This zone also occurred on top of the midden from just beyond feature 18 to approximately 20 metres past feature 18.

Zone E - Grass, bushes and immature deciduous trees extending from Zone D and covering the top and southern slope of the midden.

Zone F - Mature spruce, immature spruce, moss, grass, ferns, occurring on the western half of the midden in the area where architectural remains are located.

Zone G - Mature alder stands which occur along the creek that cuts through the midden and along the edge of the rock bluff which defines the eastern edge of the site.

Zone H - Mature and immature cedar, mature and immature spruce and occasional alder, occurring on either side of the shallow trough which is in back of the midden.

Zone I - Climax forest surrounding the site consisting of dense stands of red and yellow cedar, spruce and some hemlock. Understory is dense consisting of huckleberry and other bushes. Ground is covered with moss and ferns.

Vegetation on the eastern midden is not particularly dense. The vegetation is densest in the western half of the eastern

midden where architectural remains occur. Even here a large percentage of growth represents immature spruce so that the overstory permits light penetration. Although Drucker (1943) only briefly described vegetation on the eastern and western middens of FbSx 6 it would appear that there has been no significant vegetation changes in the last fifty years.

As is discussed below, mature spruce and in many cases immature spruce on the eastern midden of FbSx 6 is associated almost exclusively with wooden features. Spruce does not appear to be well established on the midden surface except where growing on the cedar features. This is especially noticeable in Zone D of the midden where features and spruce are absent. This indicates that there were no architectural features contemporaneous and west of the ones located this summer. If there had been, and these had since deteriorated the ever present spruce should occur on the eastern half of the eastern midden.

Few sites on the coast that contain architectural remains have been described in detail in relation to vegetation. An exception is Ninstints, in the Queen Charlotte Islands, where for some years an ongoing in-situ program for carved poles has been conducted (Florian and Hebda 1981, Florian, Beauchamp and Kennedy 1983). A comparison of the two sites indicates that the variety of plant assemblages and types that occur site wide on the eastern midden of Xvnis and at Ninstints are very similar.

The western midden of FbSx 6 displays much heavier vegetation, consisting of mature and immature hemlock and spruce, one of the factors which led Drucker to believe the architectural

remains on the western midden were older than on the eastern midden.

The most obvious and destructive vegetation on the features on the eastern midden is spruce trees, some with a diameter of 1.5 m. These large trees have become established on the end of beams and the top of houseposts. This suggests that the end and tops of the features are susceptible to decay, thus facilitating an environment where spruce can become established. Where spruce has grown on top or directly adjacent to houseposts the roots and trunks of the trees have in many cases grown completely around the post so that only parts of the posts are visible. Similarly, large spruce on the ends of beams completely encompasses the beam ends. Spruce saplings are noted at random points growing along beams. The immaturity of these trees suggests they have only recently become established. This could indicate that it is only in very recent years that surface deterioration has proceeded to the point where spruce can become established along the beams.

Moss, with an average depth of about 7 cm entirely covers all features which are lying on the ground. In many instances moss is completely dried out. Whether this is a yearly event or the result ot the unusually dry summer of 1985 is not known. Underneath the moss, the features are mainly very well preserved as is indicated in that it is still possible to detect adze manufacturing marks. There is little moss or lichen on the faces of the standing houseposts. Areas where moss or lichen is established is along cracks in the surface and on the tops of the posts where these are not obscured by spruce. Other vegetation

on features and the tops of posts consists of occasional huckleberry and other bushes. Occasional immature spruce was noted as being established at the bases of houseposts and frequently at the top of houseposts where these are exposed.

Prior to leaving FbSx 6 vegetation on the western half of the midden, with the exception of mature trees was cleared. This was to prevent the growth of overstory which would decrease light penetration. On the wooden features spruce saplings and bushes were cut to just where the roots entered the feature. Moss was not removed as it was uncertain whether this would decrease surface stability. It was interesting to note that a beam at the site which had been cleared in 1983 by an SFU field school passing through to expose the fluted adze technique remained completely clear of moss in 1985.

FbSx 9 - Deer Pass

The site is located on Troup Passage, in a bay on the northwest side of Cunningham Island (Figure 18), 20 km north-northeast of Bella Bella. To the west the site has a view of Troup Passage, Return Channel, the mouth of Briggs Inlet and Florence Peninsula. In front and to the east of the site is a small group of islands in Return Channel and beyond this Chatfield Island. The site is 2 km south-southwest of FbSx 6.

The bay in which the site is located is crescentric in shape, is 800-900 m long north to south and is bounded by a rocky point at either end. Directly back from the beach is a flat strip 30-

75 m in width which runs somewhat discontinuously along the entire length of the bay. Behind this the ground rises steeply. A beach consisting of pebbles and boulders fronts the site and is exposed for about 30 m at low tide. Architectural remains occur a few metres back from the beach in the central part of the bay. A shallow shell midden deposit is associated with these remains. Several tiny creeks cut through the deposit in the vicinity of the architectural remains. The site is densely forested and one can walk along the beach only a few metres away from it and not see the architectural remains.

Locally the site is known as Deer Pass, but this also refers to the narrows in the inlet half a km away. According to ethnographic information collected by Carlson (1984) there were once seven houses along the bay where the site is located, some of them of milled lumber. The house presently occurring at the site, which contains four carved posts was not a dwelling, but a potlatch house of traditional construction, used for entertaining guests. Elders who visited and discussed FbSx 9 with Carlson in 1983 said that the name Deer Pass also referred to a site at the mouth of Webster's Creek. Carlson (1984:4) suggested that this may indicate a dispersed settlement pattern at the time FbSx 9 was occupied with several sites recognized as a single village.

The site is located in, or in close proximity to, the territory of the Heiltsuk sub-group who inhabited Xvnis - the 'Wuititxv or Inlet People. Carlson (1984:27) suggested that on the basis of preservation the construction of the house may date to between 1850 - 1880. Excavations at the traditional house

yielded few European artifacts and a near absence of nails. This may date the site to before 1866 when the store was built at Old Bella Bella.

In 1985 the late Mrs. Beatrice Brown of Bella Bella recalled the Deer Pass site. She recalled that it was a winter village, and that some of the family names at the site were the same as Xvnis family names. Mrs. Brown recalled that her parents were living at the site in 1906 when she was born.

The account by Mrs. Brown suggests that the site was once a winter village. While it may have been built prior to 1866 it was apparently utilized until after the turn of the century, perhaps in much the same manner as is postulated for Xvnis.

The area where FbSx 9 is located had twice been surveyed, by Drucker in 1938 (1943) and by University of Colorado crews in 1969 and 1970 (Carlson 1984:1). Considering the dense forest that obscures the site it is not surprising that these researchers did not find FbSx 9. The site was recorded by Carlson and Hobler of Simon Fraser University in 1972 on the basis of a local informant (Carlson 1984:1). Archaeological investigations were conducted at FbSx 9 in 1983. This consisted of the excavation of the house associated with the four carved houseposts and survey for other house remains along the bay where the features occur (Carlson 1984).

Artifacts recovered from 1983 excavations included quartz crystals, pipe fragments, bottle glass and glass beads. The yield of somewhat unusual objects led Carlson to conclude that the house was, in fact, a special purpose house used for

entertainment (Carlson 19884:23). Other artifacts recovered included flaked stone which Carlson suggested belonged to an earlier occupation at the site which was stratigraphically inseparable from the house (1984:23). Faunal remains were calculated using NISP as a base unit. This yielded a total of 134 identifiable bones including harbour seal, deer, mink, duck, salmon and butter clam (1984:26). Seasonality as determined by sclerochronology indicated the shellfish were eaten on the site in both spring and late summer. However, because of the overall paucity of faunal material Carlson (1984:26) concluded that few statements regarding seasonality and subsistence could be made.

Excavation of the house at FbSx 9 also provided evidence for several hearths of varying sizes and completeness. A large central hearth provided heat for the entire house. Rocks from the central hearth were scattered over an area of 4-5 m suggesting these had been disturbed. Six subsidiary hearths were identified at the back of the house, where the earth floor would have been. The reconstruction of the house by Carlson was outlined in the main text of the thesis.

The 1985 investigations at FbSx 9

The Deer Pass site had been thoroughly described by Carlson but we returned to the site to sharpen our skills in mapping and to aid in deriving recording procedures.

In addition to the traditional house we mapped the remains of a second house directly adjacent to the traditional house. The

remains of this structure were also noted by Carlson in 1983. Additional structures in the bay are indicated by lighter vegetation and probably raised hearth areas, but no wooden features or clear outlines of such houses were evidenced in our survey of the bay in which the site is located.

Architectural features from the structure directly south of the main house designated House 2, as well as the feature associated with the main house, were mapped and documented (Figure 24). A total of 11 features were identified in House 2. One of these is a housepost which is almost entirely obscured by a spruce tree. The post has fallen over and is almost completely covered by a trunk and root of the tree. Two ends of the post are visible through gaps in the trunk and roots. The remainder of the features are structural elements vaying from 1.7 to 9.5 m in length and .17 to .66 m in width. None appear large enough to be main beams and I would argue that these represent frame and not floor structures. First, in the case of the larger features these appear too large for floor structures, at least in comparison to the adjacent excavated house. Second, the irregularity of the features approximates collapsed structural elements, not aligned floor supports. Finally, floor structural elements would not be visible on the surface. Most floor elements were not exposed in House 1 until after excavation. All of the features at the site consist of Western Redcedar.

On the basis of available data reconstructing House 2 at FbSx 9 is not possible. If features 7 and 10 are taken as the outer limits, the north-south width of House 2 would be 14-15 m.

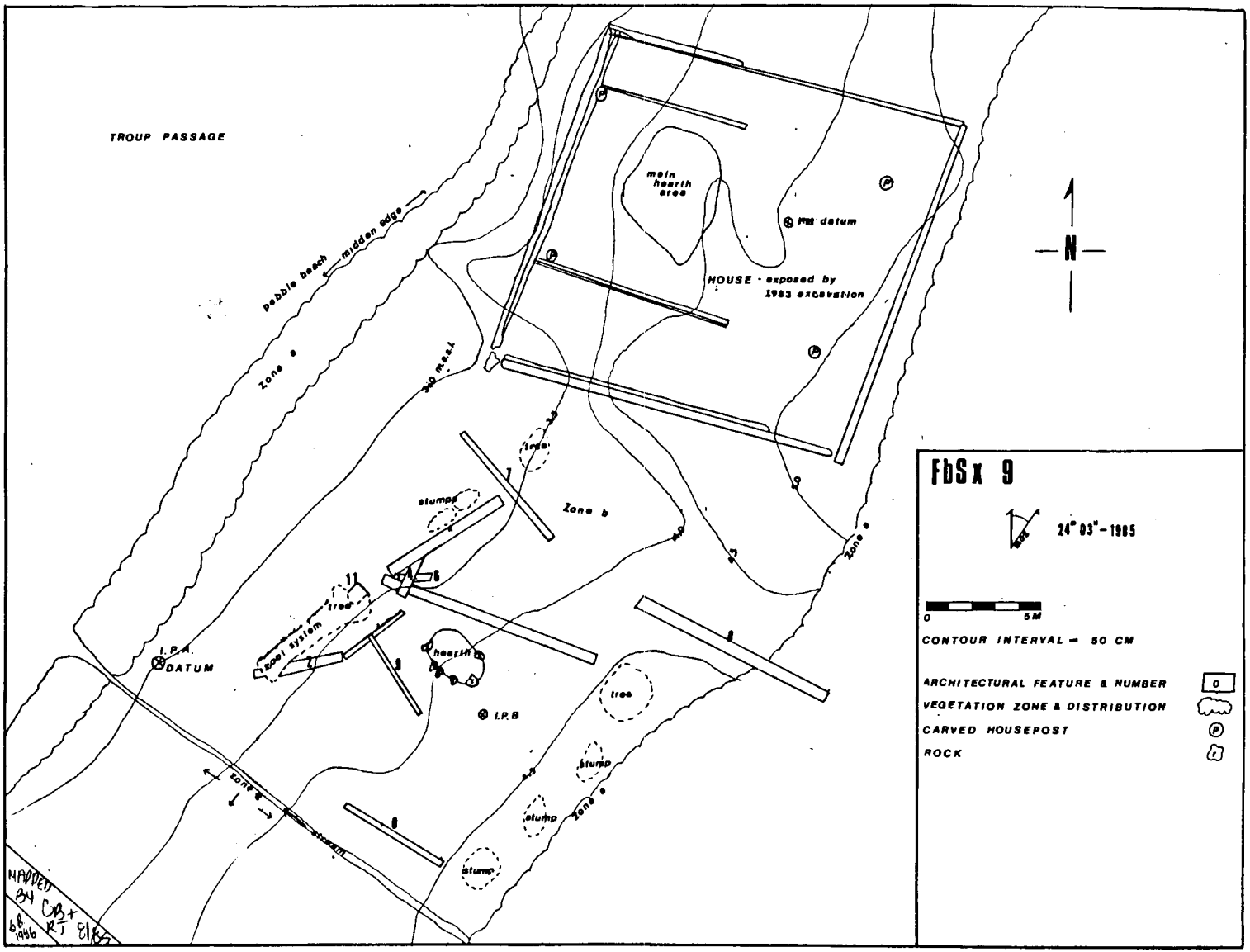


Figure 25. Site map of FbSx 9 - Deer Pass.

Similarly if feature 11 (housepost 1) and the edge of vegetation Zone A are used as the front to rear boundaries the east-west width of the house would be 14 m.

The actual framework of House 1 indicates similarities and differences to the houses at Xvnis. At FbSx 9 the distance between the 2 carved posts, front and rear and along the beach is 6.5 - 7 m. The distance between houseposts at Xvnis is 3.5, 4.5, and 6.5 m. The last measurement is distorted because of spruce tree encroachment. This indicates that the posts at FbSx 9, House 1, are further apart along the front and back of the house. The distance between the posts front to back of House 1 at FbSx 9 is 11.5 m. This is about halfway in between the posts in the 2 houses at FbSx 6. This indicates that from front to back the house at Deer Pass was somewhat between the 2 houses at Xvnis in size. However, from side to side House 1 at FbSx 9 would have been the same as House 2 at FbSx 6.

Certain structural elements from the house at Deer Pass are missing including the main beams of House 1. This cannot be explained as the result of selective deterioration. Carlson (1984:8) stated that the house had been dismantled prior to or following abandonment. Roof, wall and probably floor planks had been removed from the main house. Ethnographically, at least, house frames were usually left in place, but after final abandonment of the site the frame of House 1 and other structures at the site must also have been taken for utilization elsewhere.

Vegetation

Three vegetation zones were identified at FbSx 9. These are mapped in Figure 25 and described below:

Zone A - This zone represents climax forest occurring in a narrow strip (2-5 m) along the front of the site, behind the area containing architectural remains, and in the southern and northern parts of the bay. The zone consists of dense forest with mature red cedar, yellow cedar, spruce and some hemlock. Understory is also dense consisting of blueberry, huckleberry and other bushes. The ground is almost completely moss covered.

Zone B - This zone occurs in the area of the two houses identified at the site, and presumably formed part of Zone C prior to 1983 clearing by the SFU crew. House 1 was completely cleared of trees and only a few small huckleberry bushes were noted growing in the area. The area of House 2 contained immature spruce, immature cedar and occasional mature spruce, as well as huckleberry and other bushes. Ground in the region of House 2 was completely moss covered.

Zone C - Represents vegetation along much of the flat narrow strip behind Zone A along the bay. This zone consists of dispersed mature spruce and frequent immature spruce

and cedar. Huckleberry and other bushes are numerous and the ground is completely covered with moss.

Unlike FbSx 6 the overstory at FbSx 9 is very dense with the climax forest in front and behind the site permitting little direct sunlight. Even on the hottest days in 1985 the site was cool, dark and damp. Prior to leaving the site we cleared immature growth and young trees from the area of House 2 and new growth of huckleberry and other bushes from the area of both houses.

Two of the posts were leaning at a precarious angle when Carlson visited the site in 1983 (1984:27). The SFU crew at that time pulled them upright and braced them in their original position with the same stones orginally used to hold them in place.

In their work at Ninstints, Florian, Beauchamp and Kennedy (1983) noted three zones on carved poles which are the most susceptible to deterioration. These are the burial niches of mortuary poles, the pole bases and carved faces and cracks on the poles. The same zones at Deer Pass also appear to be the most susceptible, with the concave tops of the posts where beams rested comparable to the burial niches described at Ninstints. Bases of the 4 carved houseposts at FbSx 9 are quite badly deteriorated. They are much narrower than the rest of the post where they have been eaten away. Moss grows around the base. The tops of the posts are also deteriorated as indicated by variability in the length of the posts. Since Carlson's 1983

excavations when crews trimmed vegetation at the site, huckleberry bushes have again become established on the top of the posts. The carved faces of the posts as well as cracks display moss growth. Huckleberry and tiny spruce saplings were also noted in cracks and on carved faces. Presumably these had also grown up since 1983. No spruce has become established on the posts. The condition of the posts is also affected by vandalism. On the southeast pole a front midsection, which had probably been a carved human figure, has been removed. Axe marks clearly show the method of removal.

The remainder of the wooden features at Deer Pass are in poor condition. Structural elements of House 2 are covered with 10-15 cm of moss. Beneath this wooden features are damp, and non-cohesive and in many cases deteriorated to resemble a crumbly red soil. Bushes were noted growing on the features and small spruce roots were noted growing just beneath the surface. Spruce saplings have become established on several of the features. Moss had been removed from floor structural elements in House 1 in 1983 and only a few huckleberry bushes have since become established.

Prior to leaving the site bushes on features of both houses were clipped and immature spruce cut to just where these entered the surface on the features of House 2.

The present condition of houseposts and other wooden features at Deer Pass is probably unstable and undergoing rapid deterioration.

FbTa 25 - Wounded Bear

The site is located on Troup Passage on the eastern portion of a small bay on the west side of Chatfield Island (Figure 18) approximately 15 km north-northeast of Bella Bella. The site has a partial view of Troup Passage and Seaforth Channel but this view is partly obscured by an island fronting the bay. The bay is crescentric in shape, runs roughly east-west and is about 100 m in length. In the centre (north) part of the bay a gently sloping sand beach is exposed for approximately 40 m at low tide. On the east and western part of the bay the beach tapers off and becomes narrow and rocky. On each end of the bay the beach area completely disappears and rock points of a few metres elevation descend directly into the sea.

Natural terrain defines the site boundaries; on the south and east the sea, and behind the site to the west a steep hill. On the north, the flat area tapers off and is blocked by a deadfall from several overturned trees and stumps which may have resulted from logging. At the southern end of the site a flat narrow strip (8-10 m wide) between the hill and the sea runs west of the site before gradually tapering off. The beach in front of and west of the site consists of large pebbles and boulders but is exposed for only about 10-15 m at low tide. At the far southeastern and southern end of the site a small rocky point a few metres in elevation defines the site boundary. A shallow midden with a maximum depth of 0.50 m is found along the flat area. It consists mainly of dark humic soil and some shell. At

high tide the salt water comes close to the level of the cultural deposits except on the rocky points. The top of the midden is quite flat, and slope increases gradually from west to east and north to south. Architectural remains occur along a 35 x 12 m flat area (Figure 26).

The site was named Wounded Bear by the 1985 field crew after our encounter with a large black bear that had earlier been wounded by a local hunter. We could obtain no ethnographic information on the site. Given the small site area, and small dimensions of the features, it is reasonable to assume the site was not a major winter village.

The site is located in, or in close proximity to the Heiltsuk sub-group that inhabited FbSx 6 and 9. If, as I suspect, the occupation was fairly recent, traditional territories had broken down and it was likely utilized seasonally by a family or families living at New Bella Bella. A reason for investigating this site is that it provided a comparison to Xvnis and Deer Pass, which were winter villages with significant architectural remains.

Architectural remains at the site consist of Western Redcedar. The wooden features probably represent the remains of small post and beam structures used for habitations and/or for smoking salmon. A total of 18 wooden architectural features were identified and documented at FbTa 25 (Figure 26). The length of the features varies from 0.90 to 8.7 m and width from 0.11 to 0.85 m. Some of the larger features were probably wall and roof framework elements especially those lying at an angle (for

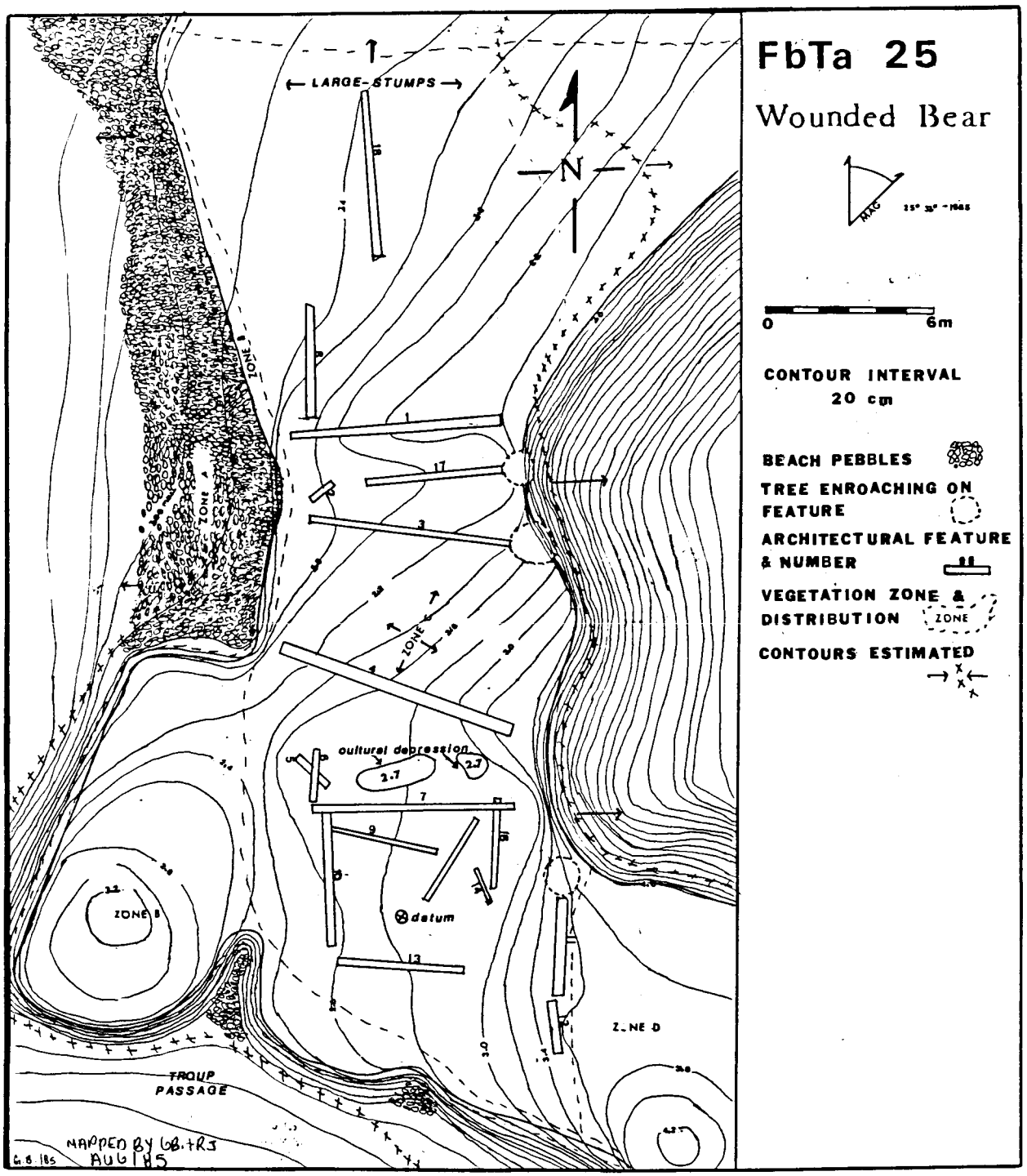


Figure 26. Site map of FbTa 25 - Wounded Bear.

example features 3 and 4). Smaller features may represent remains of floor structure. None of the features could be positively identified as posts, although possibly feature 11 represents a fallen post.

The structural wood was moss covered although some of the elements are well preserved. We could detect no manufacturing marks beneath the moss and in fact in some cases it appeared as if the bark had not been removed. This suggests the features were not constucted of milled lumber. No nails were noted.

Three structures appear to be represented. The first, designated Structure 1, on the southernmost portion of the site is represented by features 7, 9, 10, 13, 14, 15 and 16. If features 10, 7, 16 and 13 are taken as marking the edges of the structure the dimensions would be about 6 m by 6 m. Features 11 and 12 may represent part of another structure or be part of Structure 1. If these are part of Structure 1 and the spruce tree adjacent to feature 11 obscures a post associated with the same building the dimensions of Structure 1 would be larger than previously suggested. The second structure just north of structure 1 may be represented by features 4, 3, 17 and 2. If features 17 and 4 are taken as the north-south boundary of the postulated structure and the length of 3 and 4 as the east-west extent the dimensions of Structure 2 would be about 7 m by 7 m. Features 5 and 6 may be associated with either structure 1 or 2. The cultural depressions between features 4 and 7 may represent storage pits associated with either structure or occurring between the structures. A third structure in the northern part

of the site may be represented by features 1, 8 and 18. The east-west dimensions as indicated by feature 1 would be just over 7 m. It is not possible to estimate other dimensions of the postulated third structure.

Vegetation

A total of 4 vegetation zones were defined at the site. Figure 26 maps the location of these zones which are described below:

Zone A - A beach grass zone about 5-10 metres wide occurs on the rocky beach area from the mid to northern part of the site.

Zone B - Along the eastern and southern edge of the site is a dense strip 2-5 metres wide consisting of mature cedar and some mature spruce. Huckleberry and other bushes as well as a thick ground cover of moss also occurs in Zone B. This zone probably represents climax forest and occurs on the hill in back of the site and north of the site.

Zone C - The site area where architectural remains occur is not densely forested and this consists of immature spruce, some medium mature spruce and a few mature spruce.

Huckleberry and lily of the valley occur sporadically, and the ground is almost completely covered with moss.

Zone D - This zone occurs on the small flat area east of the site. It consists of huckleberry, salal, immature spruce and grasses and grades into mature forest.

The overstory above the site is not dense but mature forest around the site permits little direct sunlight to reach the features. Prior to leaving the site we cleared smaller trees, most of which were growing on the features. All of the features are covered with moss with an average depth of 4 cm. Beneath the moss some features are relatively well preserved, while others are crumbly and non-cohesive. This suggests some areas of the site may get more sunlight than others. Medium spruce with an average diameter of 20 cm was observed growing at the ends of many of the features. Smaller spruce and spruce saplings are established at random points along the features. Huckleberry, salmonberry, blueberry, salal and lily of the valley were also growing on the features. Vegetation at surface level was removed from the features prior to leaving the site.

Although not as badly deteriorated as at FbSx 9 the features at FbTa 25 are probably unstable with deterioration proceeding at a fairly rapid rate.

Upon my return from the field in 1985 I talked with Brian Apland who had seen additional architectural remains at FbTa 25

in the centre of the bay. The site should be revisited to locate and record these wooden features.

APPENDIX 2

RECORDING GUIDLEINES FOR WOODEN FEATURES

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RECORDING GUIDELINES FOR WOODEN FEATURES

Methodology

A total of four sites were investigated in the Bella Bella Region in 1985 to provide data experience in developing recording guidelines for architectural remains and other wooden features. The goal was to define guidelines that would be effective, rapid and applicable on a coast-wide basis. Three of the sites chosen contained architectual remains and one site contained mortuary structures. Sites were chosen on the basis of variability, proximity to Bella Bella, which was our base camp, and local community interest.

The first step in deriving recording procedures was to determine data demands. This is defined as the type and resolution of information that should be acquired from each type of wooden feature site. The next step was to derive procedures for meeting data demands. Results are detailed below.

Determining data demands

The nature and resolution of data recorded by archaeologists is generally based on the types of questions to which the data will be addressed. For this reason, the researcher must be aware of relevant research and other problems (not all of which are archaeological in nature) and the data needed to address these problems. Moreover, in a mitigative situation in which the resource is threatened the researcher must attempt to anticipate future problems and therefore future data demands, (Lipe 1977). This is a difficult task. However, because the data to be obtained when documenting feature sites represents a single component, most of which is located on the surface, the task is less complex than situations calling for excavation. The nature of the problems or questions for which features data is relevant were broadly outlined in the main text of the thesis.

In order to determine data demands these problems can be reduced to two main categories:

(1) In terms of specifically scientific problems, but also ultimately other categories data must meet this demands:
- it must be sufficient to be able to clearly observe the deterioration process of the features, or the transition of these features into the archaeological record. For the archaeologist or other researcher of the

future such a complete "before" picture would prove invaluable.

(2) To meet the data demands of scientific, ethnic and public-education problems it is necessary to be able to accurately reconstruct features on the basis of information acquired in the field. This is not intended to mean the reconstruction of the features at the time they were made. For some sites this may never be done and for most it would require extensive work. What is meant is to be able to reconstruct the features as they were at the time of recording by the archaeologist.

Anticipating the data demands of future researchers is difficult, especially at such a preliminary stage of the investigation of wooden feature sites. However, it seems reasonable to assume that if data is sufficient to locate and reconstruct the features it will be sufficient to address many future problems.

In determining data demands the following assumptions must also be made:

(1) That the initial field documentation may be the only work that will ever take place at the site under study.

(2) That the context in which the features occur is as important as the actual features. As for all categories

of archaeological artifacts the associated cultural and natural attributes are crucial in subsequent interpretations. For this reason, recording details of the site landscape, both natural and cultural is essential.

Meeting data demands

A few of the problems in meeting data demands did not become apparent until we were out of the field and the data was interpreted and maps drawn up. Some of the final guidelines recommended were not actually implemented at the sites visited, but most were. Initially, it seemed likely that forms for documenting features would be derived. For the most part however, the data is simply too variable to lend itself to a strictly "form" approach. This explains why the recording formats are described as "guidelines." These guidelines should be sufficient to allow for variability and to meet data demands in a standardized manner. Many of these guidelines may appear overly meticulous. However, describing recording formats, especially mapping, is always more complex than the real thing. Obtaining data was rapid once we had a system worked out.

The data that should be obtained for wooden feature sites does not differ in principle than that collected for any archaeological site under the present system as outlined in the Guide to the British Columbia Site Survey Form. However, the resolution of data obtained should be much finer than that

generally collected during routine survey. There are several reasons for this: (1) British Columbia site survey forms are not designed for the recording of large or complex surface features or to be able to accurately relocate non-permanent features (2) these site forms would rarely form the sole basis for mitigative decisions. Rather, the researcher should obtain additional data on the site or sites in a region. (3) in the case of wooden feature sites a researcher would rarely feel qualified to take mitigative action on the basis of existing site forms. This is especially true of older survey forms which most often do not even contain a measured map of the sites. (4) because a majority of the data on wooden feature sites is located on the surface-high resolution recording can provide crucial information.

For most wooden feature sites it is necessary to otain enough information to construct an accurate three dimensional map of the site. Aside from obtaining specific point measurements of the wooden features a contour map of the site area will aid in subsequent interpretations as well as locating structural outlines once the wooden features are gone. Exceptions may be mortuary sites where point measurements of structures should suffice. A plane table and alidade are the best tools for the job. An exception may be rockshelter sites where chain and compass maps are probably more suitable. The context in which the wooden features occur is important in the interpretation of the site. For this reason site boundaries, non-wooden cultural features and physiographic details of the site landscape should be mapped. In many cases sites are very large and densely

forested and mapping the entire site unwarranted. For some sites, tieing in site boundaries and permanaent physiographic landmarks by compass is sufficient.

The recording guidelines outlined below are divided into six main categories. These assume that the reader has a knowledge of basic mapping techniques. As previously pointed out variability in wooden features and site attributes means that a strictly form approach doesn't work very well. Every site will require a somewhat different and often creative approach.

Guidelines

(1) Preliminary survey and site-clearing

(a) The best procedures for mapping a site can best be determined with a clear idea of what is present at the site. In mapping as few instrument positions as possible are desired, because moving the instrument is time consuming. If possible, all secondary instrument positions should be visible from the main datum. This decreases cumulative errors in measurement variation from successive instrument positons. Preliminary survey aids in identifying optimal instrument postions.

(b) Flagging and labeling features and other attributes to be mapped ensures no features are missed and that different crewpersons can measure and map wooden

features without confusion as to the exact feature being recorded.

(c) Vegetation in the area of features and surrounding site (with the possible exception of large trees) should be noted and then cleared prior to mapping. This includes cutting back overstory to enable as much light as possible to reach the features. Clearing vegetation in the area of the features, prior to mapping, removes obstructions when taking sightings and reveals features hidden by plant growth.

(d) The procedure derived this summer for preliminary survey and clearing was as follows:

- sites were surveyed on foot and natural and obvious cultural attributes flagged and labelled.
- most crewmembers then proceeded with clearing vegetation away from features (make sure "before" pictures are taken).
- while this was being done, one crewmember, using a compass and pace technique sketched a rough map of the site and drew in vegetation distributions and types. This included noting details of overstory, understory and ground. A description of vegetation outside of the site was also noted.

- once the site was cleared, additional features uncovered were flagged and labeled.
- main datum point was established on the basis of information derived by this preliminary work.

(2) Site-wide mapping

(a) An alidade will usually be necessary to provide the resolution required for a feature site.

(b) A permanent marker should be constructed over the main site datum. Site data in 1985 consisted of stainless steel nails placed in the ground. After mapping at the site was completed a rock cairn was constructed over the main datum.

(c) A second permanent marker should be placed at some distance directly south (180) of the main datum to fix the 0 baseline. No matter how carefully sightings are taken, a reading varies when several measurements are taken. This means first that the original baseline may be off by a few degrees and be slightly different each time the insrument is set up. Over large distances distortions may be considerable. This problem may be avoided by setting up a permanent marker or second "datum" due south of the main datum, and using the sighting between the two as a 0 baseline each time the

instrument is set up. Recall that the researcher of the future may want to exactly relocate the position where features were. A permanent marker will ensure that the future researcher can tie into the exact baseline.

(d) When setting up all secondary instrument positions, ensure that back-sightings to the main datum are taken to avoid error from measurement variation.

(e) Site boundaries should be marked in and mapped in if possible. In some cases these boundaries are difficult to determine and/or may extend for some distance beyond feature remains. Where the sight is large and covered with thick vegetation mapping boundaries can be time consuming, requiring that the instrument be moved several times. In this case compass bearings and chain or pace off the main datum or secondary instrument positions can be used to tie boundaries into the site map.

(f) Natural physiographic attributes such as streams, beach and rock bluffs should be mapped in. Once again compass bearings may be used to tie in these attributes.

(g) A sufficient number of measurements (elevations) in the area where features occur should be taken to provide data for a contour map. Data for a contour map of the

entire site may be too time consuming to obtain. In these instances, data for a contour map in the area where features occur should be taken and "spot" elevations at other points, obtained.

(h) The vertical provenience of the main site datum should be measured on the basis of elevation above sea-level. Contours of the finished map can then be expressed in metres above sea level. Establishing vertical provenience is based on the mean tidal datum or "0" tide line.

(i) Each feature should be mapped at most obviously significant points. For example, for house beams, at either end, for gravestructures, the four corners. For large features, such as housebeams and standing posts the points where measurements are obtained should be indicated in field notes.

(j) Cultural features, such as depressions and mounds should be mapped.

(k) Photographs of the site both before and after clearing of vegetation should be obtained. This should include photos from various angles and vantage points. All vegetation zones should be photographed. Wide-angle lenses are probably best for most photos.

(3) Feature Specific data

(a) The face of each feature is defined as each separate exposure of the feature. For example, a fallen house beam will have 5 faces: the top, two sides and two ends.

(b) The dimensions of each feature, and each face of the feature, should be measured using a tape.

(c) Forms may be devised for each feature type, but variety of types does not lend itself to a single comprehensive form.

(d) Manufacturing techniques, where evidenced should be noted.

(e) Noting overall vegetation on features is best accomplished through close-up photographs and verbal descriptions.

(f) The percentage of moss covering the feature should be noted, as well as the depth of moss and variations in the depth by taking several measurements.

(g) Variations in the depth of humus around the features should be noted.

(h) It should be noted if the feature is dry or damp and whether it receives sufficient sunlight to dry out for part of the year.

(i) The overall deterioration and stability of the feature should be assessed.

(j) Each face of each feature should be photographed before and after clearing vegetation off the feature. Photographs should show detail of vegetation and frequently more than one photo of any particular face will be required to obtain sufficient detail on vegetation. In addition, photos of the entire feature and groups of features from various angles should be obtained.

(k) Some vegetation should be cleaned from the features to slow down the deterioration process. Trees, where possible, and saplings growing on the features should be cut down at the base, close to the surface of the feature. Vascular plants and bryophytes should also be removed by cutting close to the surface. Moss should not be removed.

(4) Ethnographic data

Ideally, the researchers will want to obtain both regional and site-specific information relating to feature sites. Examples of the types of questions that should be asked are:

- When was the site occupied?
- Who lived there?
- What time of year did they live there?
- What kind of food did they collect there?
- How many people lived there?
- How many houses were there?
- What was the relationship of the people who lived there to each other?
- Where did the informant get the information on the site?
- Has the informant ever been to the site?

(5) Artist's renditions

Assessing the degree of subjectivity present in artist's reconstructions of the features is important. This can be simply accomplished by asking the artist. Shirl Hall, our project artist provided detailed notes on her reconstruction of carved poles and other features, explaining why she believed her reconstructions were accurate, and the source of her information.

(6) Time-cost records

Estimates of the amount of time involved in documenting procedures is important in future planning for feature projects. Each crew member should keep a careful record of the tasks he or she performs each day and the time spent on each task. It is the responsibility of the director to ensure this is done, and that records are translated into accurate estimates of time-cost units of measure.

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