

METES AND BOUNDS:
A SEARCH FOR ARCHAEOLOGICAL INDICATORS
OF HUNTER-GATHERER TERRITORIALITY

By

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B.A., Simon Fraser University, 1980

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES
(Department of Anthropology and Sociology)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
May 1987

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ABSTRACT

The subject of hunter-gatherer territoriality is still a matter of some debate in the anthropological literature. It has been asserted that territorial systems involving perimeter defence and exclusive use rights by fixed membership groups are rare among hunters and gatherers. It has also been suggested that there is an association between this form of land tenure and the evolution of complex society. Since the problem is a developmental one, archaeology, with its developmental and temporal perspective, should be able to contribute to an understanding of this phenomenon. Unfortunately, little attempt has been made to identify material correlates of territorial land use.

This thesis seeks to facilitate the development of an archaeologically operational definition of hunter-gatherer territoriality. Toward this end a number of propositions are formulated which postulate relationships between territoriality and various classes of archaeologically observable data. In a comparative/contrastive format the propositions are then applied to data derived from two hunting and gathering societies, the Gitksan and Chilcotin peoples of British Columbia, the one highly territorial, the other with a flexible land use strategy of loosely defined borders and unrestricted access to resources. The study is ethnoarchaeological in that the data base against which the propositions are evaluated, is derived from ethnographic, archival, and archaeological sources.

A number of kinds of material patterning related to Gitksan territoriality are identified. Whether the kinds of patterning identified here can be successfully recovered and interpreted in an archaeological context awaits the application of these findings to an archaeological data base. The degree to which the material expression of territorial land use identified in this study are typical of territorial hunters and gatherers in general, also needs to be demonstrated.

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Acknowledgements

A great many individuals contributed directly or indirectly to this thesis. The members of my committee: Dr. R. G. Matson, Dr. D. Pokotylo, Dr. D. Aberle, and Dr. M. Blake offered guidance and encouragement throughout, frequently adjusting their schedules to meet the needs of an out of town graduate student. The thoughts of Dr. Matson on the role of property in the evolution of complex society did much to pique my own interest in this subject. I am also grateful to Dr. Matson for providing me with the opportunity to carry out field work in the Chilcotin. Dr. Pokotylo first suggested that hunter-gatherer territoriality might make an interesting thesis topic. The editorial zeal of Dr. Pokotylo has done much to improve the readability of this manuscript. In this regard I am also indebted to Dr. Aberle, who pointed out many liberties I had taken with the English language. I am also grateful to Dr. Aberle for suggesting the title of this thesis and for directing me to numerous references of which I was unaware.

Moiria Irvine worked magic on the maps and figures and provided additional editorial assistance. Ingrid Wilson patiently deciphered her way through my handwritten copy to produce the typed draft. Dr. Halpin made Duff's Barbeau-Beynon file, on which I have relied extensively, available to me. Diane Lulua, Nora Lulua, Chris Hogarth, Daphne Beggs, and Robert Tyhurst provided valuable assistance in the field.

Susan Marsden, Richard Overstall, Don Ryans and Neil Sterritt of the Gitksan-Wet'suwet'en Tribal Council provided access to important reference material and insights into Gitksan culture. I am particularly indebted to Susan Marsden in this regard. Though she may not agree with all that is written here, her ideas influenced many of my own. I have also benefitted from discussions with my fellow students Sylvia Albright, Sheila Greaves, Gary Coupland and Martin Magne.

Throughout my educational career my parents, Jim and Joan Burnard, offered financial and emotional support. During the writing of this thesis they responded repeatedly to SOS signals when the demands of motherhood conflicted with various academic deadlines. Doug and Solie Hogarth also came to the rescue in this department and provided me with a home away from home during visits to the Lower Mainland.

My husband Chris has participated in every aspect of this research. He has listened to and commented on countless versions of the arguments presented here, sacrificed weekends and holidays to be at the other end of the tape measure, and mastered the idiosyncrasies of a cranky computer in order to turn out the final final draft. This thesis is dedicated to him, and to our two sons Ryan and David, who had their own agenda and who put things into perspective.

CHAPTER 1: Introduction

Territoriality: Definitions & Debate

The subject of human territoriality has precipitated considerable discussion in the anthropological literature. Debate has focused largely on hunter-gatherer territoriality, since it is generally conceded that territoriality is characteristic of agricultural societies. With regard to hunting and gathering societies, however, anthropologists remain divided on a number of points. In one camp are those who maintain that all hunter-gatherers are territorial (either because territoriality is an innate, genetically fixed behavior (Ardrey 1966), or because it is an inevitable or necessary consequence of the hunting and gathering adaptation (Williams 1974; King 1975; Peterson 1975). Other anthropologists argue that territoriality is the result of specific social and/or environmental conditions which are not universal in distribution (Reynolds 1966; Crook 1968; Dyson-Hudson and Smith 1978; Bishop 1983; Cashdan 1983), and that rather than being a universal phenomenon, territoriality, in the strict sense of the word, is actually quite rare among hunters and gatherers (Reynolds 1966; Anderson 1968: 154; Bishop 1983).

A lack of consensus is especially apparent in the descriptive literature on specific hunting and gathering groups. Contradictory statements about the presence, absence or degree of territoriality exhibited by particular societies are numerous (see for example Hiatt 1962, 1968, Stanner 1965, and Peterson 1975 on the Australian Aborigines; and Heinz 1972, Lee 1979: 333, and Cashdan 1983 on the San).

The source of at least part of the controversy is definitional ambiguity. The term 'territory' is often applied indiscriminantly to any area of geographic space. In such a context, 'territoriality' is assumed to be synonymous with 'spatial organization'. The term is also used in a slightly narrower sense, however, to refer to the means by which a group becomes attached to and identified with a designated area. In this latter sense, 'territoriality' encompasses a continuum of land use strategies involving increasing degrees

of boundary formation, perimeter defense, and exclusivity of land use. At the low end of this continuum, territoriality involves little more than a regular association between a particular group and the general area utilized (often nonexclusively) by that group. Thus all hunter-gatherer societies exhibit at least some degree of territoriality, since "in all cases there is some, and in most a rather strict, definition of band in terms of the general locality it occupies, even when boundaries are not specific" (Service 1966:30).

It is important to note that in neither of the above contexts is any distinction made between the ecological concepts, 'territory', a defended area, and 'home range', an undefended, nonexclusive use area. A number of anthropologists are quite explicit about this. "If the broad concern in territoriality is with areal based spacing mechanisms, then home ranges and other undefended areas, while distinct from defended areas, are clearly part of the same phenomenon" (Peterson 1975: 56; see also Wilmsen 1973:3). For other investigators, including myself, it is precisely this distinction that is of interest. This latter group tends to adhere to still narrower definitions of territoriality in which the term 'territory' is reserved for defended areas of exclusive use (cf. Dyson-Hudson and Smith 1978).

For the purposes of this investigation, territoriality is defined as "the exclusive use for exploitive purposes, of spatially fixed and clearly bounded areas by means of defense and/or communication (see Dyson-Hudson and Smith 1978, and Smith 1983). Under the terms of this definition, any group which does not maintain and defend spatially fixed and clearly bounded areas of exclusive use may be considered nonterritorial. Nonterritorial societies are those in which all resource exploitation takes place within areas that might be characterized by the ecological concept 'home range'. (I acknowledge that in certain instances, a group may be territorial with regard to some resource areas and nonterritorial with regard to others.)

Although the above definition focuses on the division of geographic space into clearly bounded segments, it implies the existence of similarly bounded and defined social units. This point is important and will be elaborated later.

In defining territoriality in terms of exclusive use and boundary defense I reject

Cashdan's (1983) assertion that social group defense with reciprocal access to resources is analogous to perimeter defense. Cashdan's definition of territoriality emphasizes 'control' of access to resources. She argues that greeting ceremonies and formalized procedures for requesting the use of a neighbouring group's resources constitute mechanisms of control. Cashdan states, however, that among her sample populations, "Permission to use the resources of another area is always asked but rarely if ever refused" (1983: 53). I agree with Riches' (1982: 115) comment that if evidence of control "is to be provided through the existence of "asking permission" behavior, then it is to be found in instances where people properly "ask permission", and yet admission is refused" (emphasis in text). He argues that

far from being concomitant with the existence of a band group's exclusive rights to the allocation of resources on its territory. . . . , this behavior is an entailment of a territorial ideology in terms of which nonresidents are conceptualised as unknown, and hence strangers, and therefore as people who are potentially hostile. The rituals amount to a statement of friendly intention.

Riches (1982: 124)

Cashdan's own discussion offers support for Riches' interpretation. To illustrate her concept of territoriality Cashdan cites Peterson's (1975: 62) description of Australian rites of entry. There, the failure to engage in the proscribed greeting ceremonies,

is taken as a prelude to an act of hostility and provokes the likelihood of aggression from the territory occupiers. Once a person or party has been through a rite of entry, however, they have equal access with the hosts to the everyday resources of the territory.

Peterson (1975: 62)

Social vs. Spatial Organization

In addition to the definitional controversies discussed above, a number of other areas in the literature are badly in need of clarification. One is the distinction between social and spatial units as they relate to territoriality. References to flexible or fixed

territorial units and stable or unstable spatial organization are frequent in the literature. It is not always clear, however, whether these terms refer to fixity in the location and extent of geographic divisions, or to stability of membership in the social units exploiting those particular areas. The distinction is important since spatial and social units need not be coterminous. It is quite possible, for example, for regional bands to be geographically stable and yet maintain a high degree of instability or flexibility of membership between themselves.

Territoriality and Land Tenure

A further area of confusion is the relationship between territoriality and land tenure. Dyson-Hudson and Smith (1978: 25 – 26) state that, "The term 'territory' and 'territoriality' tends to be applied to hunters and gatherers and pastoralists, while what may be equivalent behavior among agriculturists is described in terms of land tenure systems". I would add that there is also less of a tendency to discuss the territoriality of agriculturalists in terms of models derived from studies of animal behavior. One wonders to what degree the use of animal study models has conditioned the classification of hunter-gatherer territoriality.

I think that Dyson-Hudson's and Smith's observation reflects an implicit assumption on the part of many anthropologists that hunter-gatherer land use does not constitute ownership and that the concept of land tenure is therefore inappropriate. Riches (1982:116) is quite explicit in his disavowal of ownership on the part of many hunters and gatherers: "I suggest that in the literature on nomadic hunters and gatherers, notions of ownership over territory might better be rendered as customary association or occupation and that discussion relating to matters of territory might better be rendered in less ownership oriented language". Riches (1982: 114) claims that "Ownership connotes the notion of exclusive rights in respect of allocation of resources for some purpose or purposes".

Riches' definition of land ownership is so narrow as to exclude even our own system of land tenure where resource allocation rights are subject to a number of governing and

regulatory bodies, none of whom may be said to hold 'exclusive' control. I favour a definition of ownership that focuses on the right to exercise any of a number of forms of economic jurisdiction.

Crocombe (1974: 5 – 6), in his analysis of land tenure, identifies six different jurisdictional categories with regard to land: 1) rights of direct use, i. e. , the right to plant, harvest, and gather; 2) rights of indirect economic gain, e. g. , rent and taxes; 3) rights of control, i. e. , to impose restrictions on use and exploitation, 4) rights of transfer; 5) residual rights and 6) symbolic rights or rights of identification. He points out that "there is no land tenure system in existence wherein all rights to any parcel of land are held by a single party. . . ."

Although they may be related, ownership concepts are not inherent within the strict ecological definition of territoriality. As stated above, ownership involves rights. 'Rights' imply and require legitimacy, the existence of a social system which recognizes, validates and sanctions the relationship between an individual or group and a particular entity. As used by ethologists, territoriality is a behavioral phenomenon which revolves around exclusivity of land use resulting from territorial defense and/or advertising. Such behavior does not require property concepts and is usually explained in terms of environmental factors. Indeed, since property concepts are a cultural phenomenon it is only within human society that territorial land use may be socially validated as a legitimate "right". The question then becomes, "Is territorial land use in human societies always socially entrenched as a property concept?" I argue that all societies recognize some jurisdictional rights in relation to land. These jurisdictional rights reflect, and to some degree dictate, the character of man-land relations. If territorial patterns of man-land relations are widespread in a particular society, it therefore seems reasonable to assume that they are an expression of a particular set of jurisdictional rights.

From the above discussion it should be clear that I do not regard the distinction between territorial and nonterritorial hunters and gatherers as one of land ownership vs. an absence of land ownership. I believe, rather, that territorial and nonterritorial land use strategies are the behavioral manifestations of two distinct forms of land ownership.

The Evolutionary Significance of Territoriality and the Role of Archaeology

It is often asserted that territorial systems involving perimeter defense and exclusive use rights by fixed membership groups are rare among hunters and gatherers (Steward 1968: 333 – 334; Anderson 1968: 154; Lee & Devore 1968: 7 – 9; Bishop 1983). An association between this form of land tenure and the development of socio-political complexity is often implied in the literature (e.g., Reynolds 1966; Matson 1981: 12; Plog and Upham 1983), and finds support in the evolutionary tenets of Morgan (1963) and White, (1959).

Given the evolutionary significance which has been accorded the development of territorial ownership, the identification of those factors contributing to the emergence of this phenomenon among hunters and gatherers is important. Archaeology, with its temporal and developmental perspective should be able to contribute significantly to an understanding of this problem. Unfortunately, little attempt has been made to identify material correlates of territorial land use. Unless concepts like "ownership rights" and "restricted access" can be translated into archaeologically recognizable terms we are likely to make little progress.

In one of the few attempts to examine territoriality in an archaeological context, Bettinger (1982; 1983) posits that territoriality should be reflected in the distribution patterns of certain raw materials. Plog and Upham (1983: 204) also suggest that "If a resource is relatively free, one would anticipate heavy use in localities where it is abundant and a gradual or clinal decline as one moves away from the centre of availability. Sharp gradients in a distributional pattern indicate some cultural or natural restriction of access". Unfortunately, the utility of this suggestion is limited to circumstances where territories contain unique materials from an identifiable source – a situation which is probably quite rare. Also, given the embedded nature of

ethnographically observed raw material procurement strategies (Binford 1979: 259 – 261; Pokotylo and Hanks 1985: 5), it is entirely possible that sharp gradients in raw material distributions represent sequencing in the subsistence cycle rather than restricted access to particular localities. In short, it is evident that archaeologists are still a long way from being able to investigate prehistoric territoriality with any degree of confidence.

Research Strategy

... If we can advance a strong argument to support the contention that some class of empirical material reliably and unambiguously informs us about [population pressure], we have provided meaning to that material through an operational definition of [population pressure]. . . A definition is not a hypothesis. A definition specifies the relationship between a concept, word or phrase and a class of empirical or observational experience.

(Binford 1977a: 2)

This thesis seeks to facilitate the development of an archaeologically operational definition of hunter-gatherer territoriality. Toward this end a number of propositions are formulated which postulate relationships between territoriality and various classes of archaeologically observable data. In a comparative/contrastive format the propositions are then applied to data derived from two hunting and gathering societies, the Gitksan and Chilcotin peoples of British Columbia – one highly territorial, the other with a flexible land use strategy of loosely defined borders and unrestricted access to resources. The study is ethnoarchaeological in that the data base against which the propositions are evaluated, is derived from ethnographic, archival and archaeological sources.

It is acknowledged that a sample size of two societies hardly constitutes a statistically relevant 'test' of the propositions. Nevertheless, the application of these propositions, in even a limited sense, should provide a basis for evaluating and/or illustrating their potential utility. During the process of investigation, further, more specific insights into the material aspects of territorial behavior may occur.

The propositions that structure this investigation postulate empirically observable

differences in the social organization, environmental settings, maintenance strategies, and site formation processes associated with territorial and nonterritorial land use. Separate chapters deal with each of these four areas.

Chapter two examines the organizational requirements of territorial land use. I argue that territoriality is correlated with the formation of residentially coherent corporate groups and that these groups are materially reflected in the settlement patterns and mortuary customs of a society. Organizational layout, occupational duration, the presence or absence of public ritual/administrative facilities, the use of communal storage facilities, and the permanence and elaborateness of residential structures are all examined as possible indicators of corporate group formation. The discussion of mortuary customs focuses upon the symbolic expression of corporate identity, the significance of formal cemeteries, and variation in the number of dimensions of the social personae given symbolic recognition in a mortuary context.

Chapter three looks at environmental variables which have been put forth by various investigators as correlates of hunter-gatherer territoriality. Implications of these variables for patterning in the archaeological record are examined.

Chapter four focuses on material correlates of territorial maintenance strategies – the methods used by territorial hunters and gatherers to restrict access to a particular area and thus preserve territorial integrity. Both overt and nonaggressive maintenance strategies are considered. The effect of territoriality on site formation processes, specifically on the permanence and elaborateness of site furniture, is considered in chapter five.

Test implications and evaluation procedures are incorporated into the text of each chapter. The conclusion, chapter 6, presents a summary and evaluation of the findings.

The Study Area

The Chilcotin and the Gitksan cultures of British Columbia provide the data base used in the evaluation of the propositions.

The Gitksan are one of three subdivisions of Tsimshian speakers. Although culturally

affiliated with the Northwest Coast, their territories are centered along the Skeena River upstream from the community of Terrace (see Figure 1.1). Entirely inland in their distribution, the Gitksan provide an interesting illustration of the high level of cultural development that can be supported by an inland hunting and gathering economy.

Like other Tsimshian groups, the Gitksan were highly territorial. Control and access to resources and resource areas were carefully regulated. Territories were regarded as the exclusive property of independent corporate groups known as "Houses", and territorial boundaries were clearly defined, spatially fixed and defended (Duff 1959; Barbeau n.d.; Cove 1982).

The Chilcotin are members of the widespread Athabaskan language family. They occupy the western limits of the Fraser Plateau in the region that today bears their name (see Figure 1.2). In contrast to the Gitksan, the Chilcotin are described by their principal ethnographer as having had vague concepts of land ownership:

All Chilcotin had right to use all the Chilcotin territory. Bands occupied vaguely defined geographic areas. They did not "own" such areas. . . . Around all of the boundaries, lines of demarcation were vague. In most border areas there were indefinite zones that were utilized by both the Chilcotin and neighboring groups.

Lane 1953: 173-174

Data Base

Ethnoarchaeological research was carried out in both the Chilcotin and the Gitksan regions of British Columbia. Field work in the Chilcotin was conducted during the summer of 1983 under the auspices of the Eagle Lake Archaeology Project, directed by Dr. R. G. Matson of the University of British Columbia. Investigations were restricted to the Chilko River area shown in Figure 1.3. Within the Gitksan territories, field investigations were made intermittantly throughout 1983 - 1985. Here, ethnoarchaeological research was supplemented by archaeological site surveys of a number of locations along the middle Skeena.

Field investigations focused largely on contemporary salmon fishing sites and were aimed at documenting variation in site formation processes under territorial and

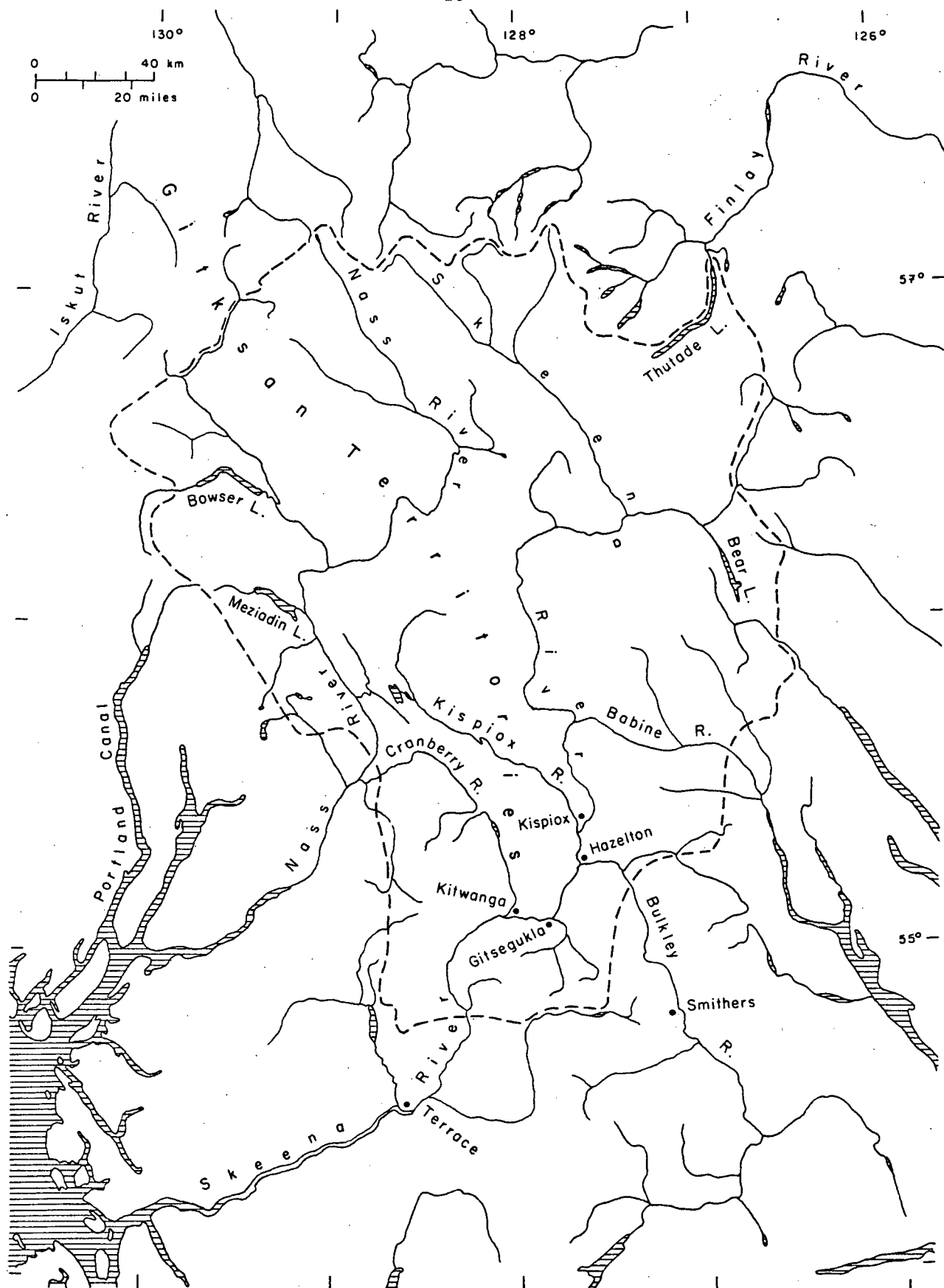


Figure 1.1. Gitksan territories.

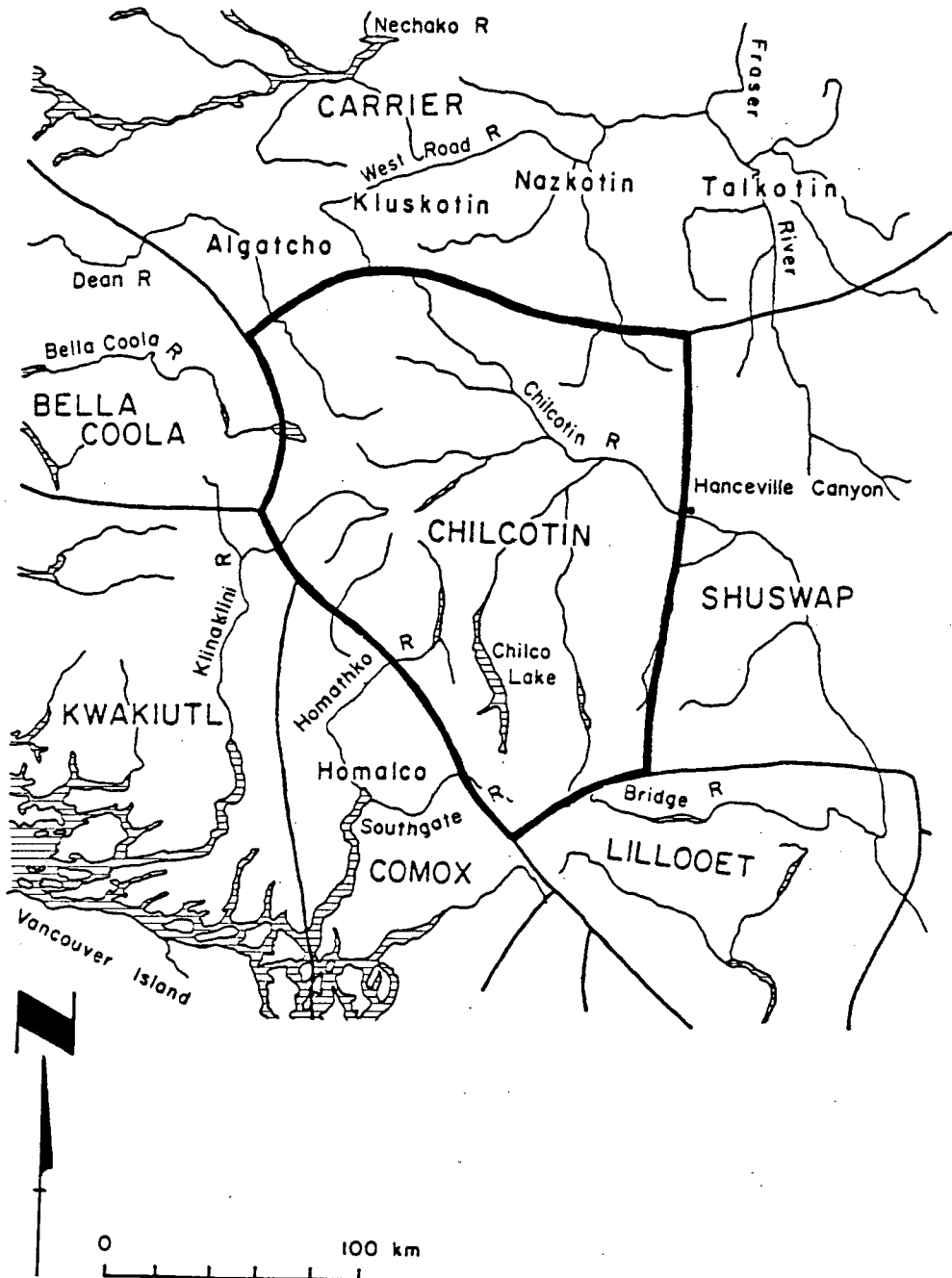


Figure 1.2. Area occupied by the Chilcotin.

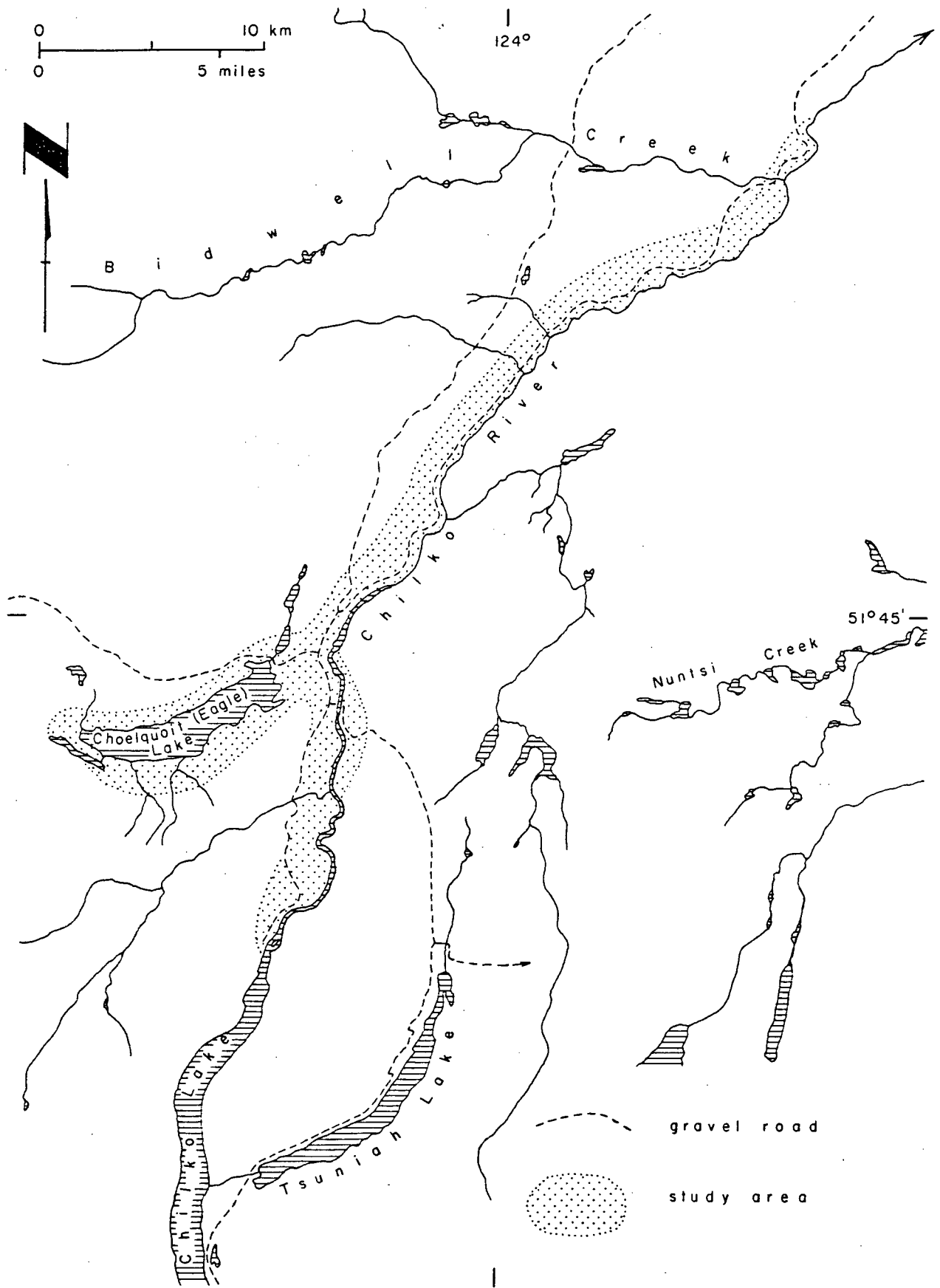


Figure 1.3. Chilko River study area.

nonterritorial conditions. The methodology employed is described in chapter five.

In addition to field data this study relies heavily on previous archaeological and ethnographic research. Unfortunately, there is a great disparity both in the quality and quantity of information pertaining to the two groups in question.

Primary ethnographic sources on the Chilcotin are limited to the works of Farrand (1898, 1900); Morice (1893, 1906), Teit (1909), Ray (1942) and Lane (1953, 1981). Of these I draw primarily on Lane and Morice. Although Morice's work is invaluable for its detailed descriptions of Western Dene material culture, his presentation is oriented to the Carrier groups with whom he was most familiar. Consequently, it is often difficult to determine how much of Morice's information is directly applicable to the Chilcotin. Lane's data, while gathered at a later time, deals specifically with the Chilcotin. With the exception of Morice, Lane was the only one of these ethnographers who had extensive and direct contact with the Chilcotin. Where conflicting information or interpretations arise (and these are more frequent than is desired), I generally accept Lane's position.

In addition to the published ethnographic references, I refer to the unpublished field notes of R. Tyhurst, who carried out ethnographic research in the Chilcotin from 1975 to 1984.

In comparison to the Chilcotin, ethnographic materials on the Gitksan are abundant. Many of these are general works on the Tsimshian as a whole, however, and tend to focus on the better known Coast Tsimshian groups (e.g., Boas 1916; Garfield 1939; Garfield and Wingert, 1979). While similar in basic outline, there were important differences between the Coast Tsimshian, Nishga and Gitksan. For this reason I attempt, whenever possible, to restrict myself to materials which pertain specifically to the Gitksan. In this I rely most heavily on the unpublished field notes of Barbeau and Beynon, painstakingly transcribed and organized by Wilson Duff, and placed on file at the University of British Columbia. Duff's Barbeau file includes maps and descriptions of Gitksan House territories as well as a wealth of information on land use and social and economic organization. A detailed inventory of the original Barbeau-Beynon material that is on file at the National

Museum in Ottawa has recently been published (Cove, 1985), and should make this valuable source material even more accessible to future researchers.

Neither the Chilcotin nor the Gitksan regions are well known archaeologically. As yet there are only three published archaeological references on the Gitksan: a monograph describing Parks Canada excavations at the Kitwanga Dawzep (MacDonald 1979), one of several known Gitksan fort sites; a short site report on the excavation of a deeply stratified village site in Hagwilget Canyon on the Bulkley River (a major tributary of the Skeena); and a summary description of the same project and an associated survey (Ames 1973; 1979a). The Chilcotin are somewhat better documented archaeologically, but there are problems associated with the use of much of the data. The Chilcotin are believed to be newcomers to the area, and distinguishing Chilcotin occupations from earlier ones has proven to be quite difficult. Fortunately, the work of Matson and Magne (Matson 1985b; Matson et al 1980; Magne and Matson 1984) has done much toward resolving this problem while substantially increasing our knowledge of the area's archaeology.

CHAPTER 2: Territoriality and Social Organization

This chapter is founded on the premise that the structure of man-land relations conditions, and is conditioned by, the structure of social relations. Specifically I postulate that territorial land use among hunters and gatherers is associated with land based corporate groups. Geographically defined social units, i.e., territorial groups, may be discerned among all hunters and gatherers. I submit that only among territorial hunter-gatherers do these land based groups assume a corporate character, and further, that these groups differ sharply from the noncorporate, loosely integrated, and spatially and temporally transient social groups so typical of hunters and gatherers.

Land based corporate groups: a definition

The term "corporate groups" here refers to identity conscious social groups with self contained authority and administrative structures; a collectively held 'estate'; closed membership with selective rules of recruitment; and finally, the norms for endurance in perpetuity (see Hayden and Cannon 1982: 133-135). Corporate groups are not restricted to territorial contexts. Ritual, ceremonial and political concerns can all provide a focus for corporate group formation. It is expected, however, that land based corporate groups will differ from other kinds of corporate groups in exhibiting a recognizable degree of residential coherency (see Befu and Plotnicov 1962; Hayden and Cannon 1982).

Discussion:

It is difficult to say when corporateness is needed by a group. What conditions would require a group to take on corporate characteristics, and what are the ideological correlates of such corporate structures?

Sharp (1968: 160-161)

Implicit in the postulated correlation between territorial land use systems and corporate group formation, is the assumption that territorial land use "fixes" the structure of man-land relations, spatially as well as temporally, and further, that the fixing of man-land relations requires that man-man relations also be fixed. These characteristics of territorial land use both facilitate and require the development of corporate groups.

A number of investigators posit an association between restricted access to the resource base (territoriality) and the emergence of corporate groups. Many, however, limit their discussion to corporate groups defined on the basis of unilineal descent, and to explaining why unilineal descent is adaptive in situations of restricted access to land. Sahlins (1965: 105) suggests that descent can function as the 'charter' of territorial communities:

"...under pressure agnation is functional, if not factual: as in the defense of claims by authentic lines to scarce resources, in protective consolidation of territorial communities, in minimizing encroachments among co-ordinate ('brother') communities while maximizing their co-operation for (or against) predation."

In the same vein Collier (1975: 53) notes that "In relation to land, a unilineal descent principle could reduce conflict by defining rights to land unambiguously."

I argue that it is not unilineality per se which is adaptive in these circumstances but rather "corporateness". Unilineal principles are useful because they provide a ready made structure for regulating corporate group membership, filling administrative roles, defining rights of ownership and access to group property, and transmitting these rights to future generations. Grossman (1965) and others argue that nonunilineal descent can also perform this function. Alternatives to descent based (unilineal or nonunilineal) corporate group organization are conceivable, though probably rare among hunters and gatherers.

Whether descent principles or other criteria are used to define corporate membership, some means of delineating the territorial social unit must exist in territorial societies in order to distinguish those who have rights to particular resource areas from those who do

not. Where access to resources is unrestricted, formal definition of territorial group membership is superfluous.

The limitation of subsistence alternatives which accompanies the adoption of a territorial land use system is expected to further enforce the 'permanent' nature of the corporate group and to accentuate the need for rules which ensure the perpetuity of the corporate estate. Such situations should also select for mechanisms which promote the consolidation and mobilization of the land owning social unit in response to territorial encroachment. Residential coherency has been put forth as one such mechanism (Befu and Plotnicov 1962: 323; Ember, Ember & Pasternak 1974: 77 – 78). Since group fission is a less viable option when all available land is claimed by closed corporate groups, administrative structures are needed to alleviate and resolve conflicts which are an inevitable product of prolonged association.

Ethnographic information on Gitksan and Chilcotin social organization lends support to the postulated correlation between territorial land use and land based corporate group formation. The various levels of social groupings present within each society are described in order to demonstrate the presence or absence of land based corporate groups in each situation.

The Gitksan

Gitksan society was/is cross cut by several levels of social groupings.¹ Like all of Tsimshian society the Gitksan were divided into four exogamous phratries or, as the Gitksan referred to these divisions, "pdek". Each Gitksan village had representatives of two or more of the four pdek. Phratry membership was determined at birth and was therefore closed. According to Garfield and Wingert (1979: 20) "Phratries had no important function other than the regulation of spouse selection". They did not have an administrative structure, were not landholding units, and did not exhibit any degree of residential coherency.

Each phratry was in turn composed of a number of smaller units which Barbeau

(1929) identifies as clans. (In her early work, Garfield (1939) refers to Barbeau's phratry divisions as clans, and to Barbeau's clans as subclans. In later publications, however, she follows Barbeau's terminology). Representatives of the various clans were distributed through a number of Gitksan, Coast Tsimshian and Nishga villages – or tribes as the villages are sometimes referred to (e.g., Barbeau 1929: 153). Clans may be said to have held corporate estates in that the members of each clan shared a number of crests, privileges and ceremonial prerogatives. Clans were not landholding units, however, nor did they possess administrative structures or exhibit residential coherency. As such, neither the clan divisions nor the phratry divisions may be considered to be corporate territorial groups.

Clans were made up of still smaller social units which were called 'wilp' or 'House' groups by the Gitksan. Houses were corporate territorial groups. They had self-contained authority structures, closed membership and collectively held estates. Each house exclusively owned a series of names, crests, privileges, songs and ceremonial prerogatives. House property included hunting, fishing and berry territories which were used jointly by all House members.

House membership was determined by birth and was traced through the female line. Within the House, leadership was in the hands of the lineage head. These individuals managed all House resources and property, directed production and other work, controlled the distribution of strategic resources and exercised political authority (Garfield and Wingert 1979: 26–27).

The matrilineally related male members of a House lived together in one or more communal dwellings. House groups therefore exhibited a recognizable degree of residential coherency. A household might consist of a head man, his wife and children, his unmarried sisters and widowed mother, and his brothers and his sister's sons, together with their wives and children (Garfield 1939: 277).

The Gitksan use the term wilp to designate both the corporate group (the House) and the physical dwellings in which these groups resided. Wilp was also used in reference

to the household unit which, due to the requirements of exogamy, included some individuals who were not members of the House (i.e., the property holding group) and who therefore had no ownership rights to the house. In this discussion I use 'House' to refer to a corporate group, 'house' to designate a residential structure and 'household' to identify the occupants of a particular structure.

Traditional ethnographic accounts that identify the House as the fundamental property holding unit (e.g., Barbeau n.d; Darling 1955; Garfield 1939; McNeary 1976) have been challenged recently by Adams (1973: 23), who identifies the local clan segment as the primary territory holding unit among the Gitksan. Since Adams provides no data to support his thesis, his conclusions are difficult to evaluate. My own analysis of Barbeau's data on Gitksan landholding groups (as recorded in the Duff's Barbeau files) does not support Adam's interpretation.

Tables 1 to 4 summarize information on landholding group composition in four Gitksan villages at the turn of the century. If local clan segments were the primary landholding unit, as Adams suggests, we would expect to find that Houses belonging to the same clan segment shared the same territories. Such was rarely the case, however. In Kitwancool village, for example, each House had its own territories – even those Houses belonging to the same clan. In Gitsegukla there were two instances where independent Houses were recorded as sharing the same territories, but in neither instance was membership in the territory sharing unit coterminous with membership in the clan segment. In fact, in one of the two cases the territory sharing Houses were from different clans! The pattern also appears to hold for Kisgagas although the situation is less clear because my information on clan membership is incomplete.

I suspect that the explanation for shared territories lies in the fact that Houses, as living functioning entities, were constantly in flux. At any one time some of the Houses in a village were likely to be in the process of amalgamating or dividing as their populations rose and declined. Investigation into the histories of territory sharing houses usually reveals that one of these two processes was underway. The situation in

Landholding Unit	Composition of Landholding Units		
	House	Clan	Phratry
1	wixɛ'	Kaïen Island Clan	Laxkibu (Wolf)
2	wilits (txawɔq)		
3	mali'	Prairie Clan	
4	haidzəms ^u	Second Wild Rice Clan	
5	g.amlaxyɛ'lk		
6	wudaxayɛ'ts	Wild Rice Clan of the Larhsail	Larhsail (Frog-Raven)
7	luxɔ'·n		
8	tɔ'·xəns ^u (yaxyaq)	Tongue-Licked Clan	
9	kwinu	Frog Woman Clan	

Sources: Barbeau 1929; Duff n.d.

Table 2.1. Kitwancool landholding units.

Landholding Unit	Composition of Landholding Units		
	House	Clan	Phratry
1	wigε't	independent	Gisg.a'·st (Fireweed)
2	guxsa'n	Skyclan Proper	
3	ha'nāmux		
4	hapəgwɔ'·tux	Third Branch of Skyclan	
5	ksg·əg·əmlax '		
6	mə'lxən (há'g·asu)	Subdivision of Qawm's Clan	Larhsail (Frog-Raven)
	wəg·al.ɔ	Wild Rice Clan	
7	tu'pəsu		
	g·aimlix		
8	wist'is (gaxsg·abaxs)	Tongue Licked Clan	

Source: Barbeau 1929; Duff n.d.

Table 2.2. Gitsegukla landholding units.

Landholding Unit	Composition of Landholding Units		
	House	Clan	Phratry
1	məlu'·ləq	Wild Rice Clan	Larhsail (Frog-Raven)
2	al·ε'ist	Wild Rice Clan	
3	wist'i's	Tongue Licked (Neqt) Clan ?	
	wiməhə'·zək	Tongue Licked (Neqt) Clan ?	
4	kcəmgitgigε'nix	Tongue Licked (Neqt) Clan	
5	ni'·kəp	Wild Rice Clan	Laxkibu (Wolf)
6	wig·a'·ix		
7	xstu'·xumlaxε'		
8	nə·ʔs		
9	gun·ani'tu		
	gwilaxa'·n		
10	axmatxəmwil	?	Gisg·a'·st
11	wa'iget	?	(Fireweed)

Sources: Barbeau 1929; Duff n.d.

Table 2.3. Gisgagas landholding units.

Landholding Unit	Composition of Landholding Units			
	House	Clan	Phratry	
1	qɔq	Gitanraet Clan	Laxski'k (Eagle)	
	sqayɛ'n			
	te'walasu			
2	t'engwəx ----- 'axg.ɔ'.t ----- halus	Subdivision of Qawm's Clan	Larhsail (Frog-Raven)	
	3	lɛ'lt ----- ha'k ^u ----- t'hak ^u		Frog Woman Clan
		? incomplete information		arhteeh
hrpeelarhae				
ɬots				
tenəmge't				

Sources: Barbeau 1929; Duff n.d.

Table 2.4. Kitwanga landholding units.

Kitwanga appears to have been rather anomalous, and here I suspect that other factors came into play. In Kitwanga there was, indeed, one instance where all members of a local clan segment shared the same territories. The local clan segment in this case was also coterminous with the phratry, so it might just as well be argued that the phratry was the territory holding unit. The group of Houses in question – the Kitwanga Lax ski'k, are generally believed to be newcomers to the area (Barbeau 1929: 133). The size and distribution of their territories suggests that most of the land may have been already occupied prior to their arrival, hence the need to share access to what was available.

The Kitwanga Larhsail phratry was divided into two territory sharing groups of Houses, neither of which was coterminous with clan membership. Barbeau (1929: 48) refers to the Kitwanga Larhsail as 'semi-independent' Houses, each with a chief and a separate house. This remark implies that the process of acquiring full House status was considered to be still in progress and that it required more than leadership and a house structure. It has been suggested that the acquisition of territories was an integral part of the subdivision process (S. Marsden personal communication) – a point echoed in the following passage by Darling (1955):

When the housegroup became too large for the house, it was customary for the head to appoint one of his potential heirs as leader of a new group composed of the surplus members. . . . When segmentation took place, the head of the parent household, with the consent of the group as a whole, might assign part of its land to the new household being formed. If sufficient land was not available to do this, the new group was expected to strike out on its own and lay claims to land which was not held by others².

In short, territorial ownership appears to have been crucial to a House's status and recognition as an independent social unit. This is unlikely to have been the case if land was held jointly by clan segments, as Adams suggested.

The Chilcotin

Lane (1953) identifies two levels of territorially based social groupings among the Chilcotin – the band and the encampment. The degree to which these units exhibited 'corporate' characteristics is examined below.

Bands

The most inclusive Chilcotin social unit was the band, described by Lane (1953: 166) as "a loosely associated group of families who wintered in the vicinity of a lake or group of lakes". Chilcotin bands were named after the most important lake in their area (1953: 167) which implies that some sense of band identity did exist. Bands were not organized political units, however, and had no administrative or authority structures (1953: 204; 1981: 407). Unlike corporate groups, which have closed or selective rules of recruitment, membership in a Chilcotin band was determined by residence and geographic proximity (1953: 167; 1981: 407). According to Lane (1953: 167) "... At least in late pre-white times bands shifted their territorial foci and altered in composition, segments of different bands combining to form new bands".

Bands also lacked collectively held estates. There were no explicitly defined band territories, and every Chilcotin individual had the right to use any part of Chilcotin territory. Not only did the territories utilized by particular Chilcotin bands overlap, but "in most border areas there were indefinite zones utilized by both the Chilcotin and neighbouring groups" (Lane 1953: 173 – 174). Other forms of property– corporeal and incorporeal (e.g., ritual sites and knowledge, insignia etc.) that could be regarded as constituting a corporate estate, also appear to have been lacking among the Chilcotin bands.

Finally, although geographically defined, Chilcotin bands did not exhibit a recognizable degree of residential coherency. According to Lane (1953: 171), bands assembled only for rare ceremonial occasions. While band members might be concentrated in one part of their territories during the mid winter, they were never assembled in one place. During three months of the year families from several different bands gathered at particular root

gathering grounds in the mountains and later at salmon fishing sites along the Chilko and Chilcotin Rivers.

Encampments

Bands were made up of a number of unnamed local groups which Lane calls encampments. Encampments consisted of several families who camped together, particularly during the winter, and who co-operated closely in daily activities. The member families of an encampment were united by bonds of friendship, economic dependence or kinship. There was a great deal of mobility between encampments, and most families belonged to several in the course of their existence (Lane 1953: 170).

Unlike bands, Chilcotin encampments exhibited a degree of residential coherency. Lane (1981: 406) says that residential structures within an encampment were built close to, though often out of sight of one another. Since the encampment functioned as a unit for only about three months of the year (1953: 172), however, this residential coherency was temporary.

The encampment was not a property holding body. It did not own any form of corporeal or incorporeal property nor did it have defined territorial rights. Previous occupancy was regarded as establishing a certain claim to winter camping areas and fish trap sites. Lane says, however, that there were no strong rules about this and that to ignore such claims was merely regarded as impolite. Failure to use camp or fish trap locations for a season was considered to nullify the claim. (1953: 170 - 171).

In summary, given the data gathered by Lane, territorially based social units among the Chilcotin did not exhibit corporate characteristics. That is to say Chilcotin encampments and bands were not identity conscious social groups with self contained authority structures; a collectively held estate; closed membership with selective rules of recruitment and the ability to endure in perpetuity; and integrated residential patterns.

Lane's reconstruction of Chilcotin social organization, on which the above discussion is based, has been challenged. Grossman (1965) argues that in the recent past the Chilcotin

were organized into residential groups composed of nonunilineal descent groups centered around the control of salmon resources. Such groups sound suspiciously like territorial corporate groups. Because of their potential significance to this discussion, Grossman's arguments merit examination.

While acknowledging that ethnographic data on the Chilcotin provide little support for his interpretation, Grossman (1965: 255) maintains that "There are reasons for the lack of information on the Chilcotin descent system". He cites Morice's (1906: 307) reference to a decimating smallpox epidemic in 1862, claiming that "Only a few persons who were in the mountains survived". Morice's words were actually, "Smallpox . . . played havoc among the Chilcotins, decimating them until almost those parties only who were away in the mountains were left to represent the tribe". Depending on the time of year this number could represent considerably more than the "few persons" Grossman interprets it to mean. Elsewhere, in fact, Morice states that the smallpox epidemic wiped out one third of the Chilcotin population (1906: 317) – considerably less than Grossman's wording implies. Later in the same passage cited by Grossman, Morice goes on to describe the effects of the same smallpox epidemic on the Southern Carrier. In spite of suffering similar population losses, the Southern Carrier were able to maintain their system of social organization and descent. One wonders, then, why the Chilcotin apparently were not.

Grossman finds support for his theory in Teit's (1909: 786) comment that the Chilcotin had a clan system and that a child belonged to the families of both parents. As Dyen and Aberle (1974: 398) point out, however, bilateral descent is associated with two types of societies, "those with organized nonunilineal descent groups and those composed of loose networks of kinsmen". In other words there is no necessary relationship between bilateral descent and organized nonunilineal descent groups.

Ethnographers working in the Chilcotin area since Teit's time have failed to find any trace of the clan system he referred to (Lane 1953: 186; Tyhurst n.d.). Grossman points out that Teit, who gathered information in the early 1900's, probably had access to informants who remembered the customs of the Chilcotin prior to the 1862 smallpox

epidemic. Presumably so did those who worked in the Chilcotin prior to Teit. It is therefore significant that Farrand in 1898 concluded, "As regards the social organization, persistent inquiry failed to disclose any traces of a clan system" (1898: 645).

Grossman concludes by mentioning that the Lower Carrier, who were neighbours to the Chilcotin, had descent groups and that the Chilcotin, like the Carrier, were in the salmon area where "descent groups are present in order to maintain control of the rich sources of salmon" (1965: 26). Ignoring the question of whether descent groups, particularly nonunilineal descent groups, can always be expected to form where there are rich, controllable resources, it should be noted that archaeology, ethnography and oral tradition all suggest that the Chilcotin only recently acquired access to the salmon resources of the Chilcotin River watershed.

Ethnographic sources agree that prior to the late 1800's, the centre of Chilcotin distribution was further west, near Anahim Lake (Farrand 1898: 645; Lane 1953: 66; Morice 1893: 23; Teit 1909: 761). Lane (1953: 271) suggests that the Chilcotin only began to concentrate in the Anahim Lake area at the beginning of the fur trade, in order to secure easier access to the Bella Coola, whose territories are thought to have extended considerably inland at this time. Based on oral history, he speculates that prior to the fur trade the Chilcotin were centered further north around the headwaters of the Blackwater River near Kluskus Lake. In their discussion of Athapaskan movements, Magne and Matson (1985: 15 - 16) present a similar scenario, in which the Chilcotin gradually migrated southward along the eastern flank of the Coast Range at the start of the fur trade, swinging eastward toward the Chilcotin River only later. Significantly, neither the Blackwater headwaters nor the area around Anahim Lake would have offered the Chilcotin direct access to significant numbers of salmon.

Archaeological evidence lends support to the reconstructions of Lane, Matson and Magne. Excavations in both the Anahim Lake and the Eagle Lake - Chilko River regions suggest that Chilcotin occupation of these areas has relatively little time depth (Wilmeth 1978; Magne and Matson 1985). Wilmeth (1978: 173; 159-162) associates the Chilcotin

presence at Anahim Lake with his Component Cluster IV, the dates for which range from A.D. 1705 to A.D. 1830 (although he suggests the initial occupation may have occurred several hundred years earlier). Magne and Matson (1985: 19), based on their work at Eagle Lake, similarly conclude, "At present, we have no evidence that Chilcotin arrived here permanently prior to A.D. 1700, other than two tentative dates from a small circular housepit (CR #71) of 360+/- 80 BP by radiocarbon and A.D. 1561 by tree rings".

Further support may be found in Chilcotin oral traditions that refer to an earlier time when the Chilcotin did not have salmon. One account tells how a wandering hunter came across the camp of some strangers and discovered some salmon bones. Not knowing what kind of bones they were, the hunter took them back to show his people. Some time later, the story continues, the Chilcotin assembled together all their men and drove off the inhabitants of the river valley where the camp was located (Lane 1953: 271 - 272).

In short, there is considerable evidence to suggest that the Chilcotin, in the fairly recent past, did not have access to rich salmon resources - the control of which Grossman sees as necessitating descent group formation. If, as he suggests, the control of salmon resources is responsible for the formation of nonunilineal descent groups, the absence of these groups among the Chilcotin becomes quite understandable.

Dyen and Aberle's (1974) study of Proto-Athapaskan kinship through lexical-reconstruction, suggests that in the more distant past the Chilcotin may have been matrilineally organized and situated in a resource rich homeland far to the north. Given this situation, Chilcotin band organization may have resulted from a disintegration of matrilineal bonds in response to an increasing dependence on hunting and a more nomadic settlement pattern necessitated by a less bountiful environment. In this, they, and their environmental circumstances, appear to resemble eastern Athapaskan groups like the Dogrib, Bear Lake, and Slave more closely than their nearest Athapaskan neighbours, the Carriers.

In the preceding sections I have shown that Gitksan House groups were land based corporate groups and that equivalent social units were lacking among the Chilcotin. While

the results tend to support the postulated correlation between territoriality and corporate group formation, the problem of archaeological identification remains.

THE ARCHAEOLOGICAL IDENTIFICATION OF LAND BASED CORPORATE GROUPS

Given the existence of corporate territorial groups how might such social units be detected in the archaeological record? Three variables which were expected to be sensitive to the presence of land based corporate groups and which were known to enjoy some degree of archaeological visibility were identified. These were: settlement patterning, mortuary practices, and symbolic communication. Symbolic communication is discussed at length in Chapter 4. Predicted differences in the settlement patterning and mortuary practices of corporate and noncorporate hunting and gathering societies are outlined below.

Settlement Patterning

The assumption that there is a relationship between social structure and the spatial configuration of settlements is a basic tenet in archaeology (see Chang 1962). If, as I have argued above, territorial and nonterritorial land use strategies are associated with very different forms of social organization (i.e., corporate vs. noncorporate), it follows that the settlement patterns of these two organizational types should also differ. Unfortunately there have been few attempts to correlate specific characteristics of settlement configuration with various forms of social organization.

In trying to specify the nature of this relationship in the context of land based corporate groups, it was reasoned that the integration and stability which characterize the corporate social unit would be reflected by integration and stability in the settlement patterns generated by these groups. Archaeologists have used a number of variables implicitly and explicitly as indices of social integration and stability. These include residential stability, the presence or absence of public ritual and/or administrative structures, structural permanence and elaboration, community planning, and the use of communal facilities. Thus it is predicted that the settlement patterns of territorial hunters

and gatherers will be distinguished by:

- 1) residential stability
- 2) primary residential structures of a permanent and/or elaborate nature
- 3) public ritual/administrative facilities (reduplicated in the event of multi-corporate group communities)
- 4) communal storage facilities
- 5) organized or planned settlement layouts

In contrast to the above, nonterritorial noncorporate hunter-gatherer settlement patterns should reflect the loosely regulated and fluid nature of noncorporate social units.

This is consistent with:

- 1) residential instability
- 2) temporary or portable residential structures
- 3) an absence of administrative structures
- 4) nuclear family storage facilities
- 5) ad hoc, irregular arrangements of residential structures and facilities

In order to evaluate the utility of these variables as archaeological indicators of land based corporate groups and to identify qualifying and limiting factors in their application, ethnographic and archeological data on each of the above aspects of Gitksan and Chilcotin settlement patterns were gathered.

Residential Stability

A number of archaeologists have suggested that the need to defend or restrict access to valued resource areas will promote the development of long term occupation sites in territorial situations (Flannery 1972: 28 - 29; Matson 1985a). It has also been suggested that high residential mobility inhibits the formation of residential corporate groups (Coupland 1985: 345). It would appear, then, that the requirements of territoriality and residentially

coherent corporate groups are both seen as favouring residential stability.

In view of the above, it was expected that the Gitksan, indeed all territorial groups, would be characterized by permanent occupation sites and a low degree of residential mobility.

The ethnographically documented pattern of residential mobility among the Gitksan conforms to the pattern predicted for land based corporate groups. Although the Gitksan subsistence cycle involved considerable mobility in pursuit of game and/or spatially incongruent resources, i. e. , simultaneously available critical resources distributed in widely separated locales (see Binford 1980: 15), most of this mobility was logistically organized (see Binford 1980; Kelly 1983) and did not involve the residential relocation of an entire corporate group. For much of the year the Gitksan lived in permanent villages situated along the Skeena River and its tributaries. There were, however, two periods when most groups left the villages. In late February or early March, the bulk of the Gitksan populace is said to have moved to camps along the Nass River for the annual oolachen harvest. Later, when the salmon began running, House groups again left their permanent villages en masse, and moved to their traditional fishing grounds in order to harvest and process the winter's supply of salmon.

Oral traditions regarding Gitksan village sites indicate a long term stability of locations. Although none of the contemporary villages have been excavated, Ames (1973: 9) who conducted an archaeological site survey within Gitksan territory and examined the depth of cultural deposits in exposed profiles commented "The occupied villages are the only localities which appear to have been intensively occupied for any great period". Although I would challenge his conclusion that these are the only locations of long term occupation, it is evident that many of the contemporary villages enjoy considerable antiquity and date back hundreds, possibly thousands of years.

Presumably the pattern of seasonal mobility described above is reflected in the archaeological record. Unfortunately, archaeological evaluation of the ethnographically documented pattern is not possible due to a lack of excavated sites in the Gitksan area. The

ethnographic data contain information relevant to future efforts in this direction.

Archaeological assessments of hunter-gatherer residential stability are frequently based on evidence of long term site use and/or reconstruction of the seasonality of site use (i.e., annual occupational duration). Determination of seasonality is often dependent upon analysis of faunal materials present at a site. The remains of species which migrate, hibernate, or which exhibit maturation evidence in their bones, teeth, antlers or shells are all used to establish the season of use. Sites are inferred to have been occupied during the periods in which the represented faunal species were harvested. The Gitksan data suggest that this inference is sometimes unwarranted. The presence of salmon remains at a Gitksan village site, for example, does not necessarily mean that the village was occupied during the season of the salmon run. Frequently, salmon were harvested and preserved away from the village sites. With stored foods, the time of consumption and hence deposition of the remains, does not necessarily reflect either the time or place of harvesting (Binford 1978). Therefore archaeologists must be cautious in the application of traditional techniques for inferring seasonality and annual occupational duration to groups which practice intensive harvesting and storage of resources.

Finally, while it was suggested that a settlement pattern consisting entirely of temporary, short term occupation sites was not compatible with residential corporate group formation, it is evident that temporary and short term occupation sites were present within the Gitksan site inventory, e.g., travel camps used en route to the Nass. The identification of short term or temporary occupation sites is not, therefore, sufficient to label the occupants of these sites as nonterritorial in their adaptation.

While Gitksan residential sites do appear to conform to the pattern predicted for territorial corporate groups, the possibility that the semi sedentism exhibited by the Gitksan was a response to other factors known to restrict residential mobility, e.g., seasonality, must be considered. Both the Gitksan and the Chilcotin were sedentary during the winter months when subsistence was based largely on stored foods. Gitksan sedentism during this period probably had as much to do with storage and seasonality (see Binford 1980) as it did

with territoriality or group corporateness.

Earlier it was proposed that short term occupation sites were compatible with nonterritorial adaptations. Therefore, Chilcotin settlement patterns were expected to be characterized by residential mobility and temporary occupation sites. A review of the ethnographic data pertaining to Chilcotin settlement patterns reveals that this was not the case.

The Chilcotin did exhibit the expected mobility for much of the year. During the winter months, however, when stored resources provided for most of their dietary requirements, the Chilcotin were largely sedentary. Like the Gitksan, then, the Chilcotin had both long and short term occupation sites. Significant differences in the pattern of Chilcotin and Gitksan occupation are apparent, however, within each of these site classes. Gitksan winter villages were not only occupied for a large portion of the year, they were also permanent, i.e., they continued to be occupied year after year. While Chilcotin winter camps were sometimes occupied for a number of successive winters there is reason to believe that diminishing firewood supplies resulted in the relocation of winter camps every few years. According to Lane (1953: 46) fires had to be kept burning continuously in the winter houses in order to provide adequate heat "This took a great deal of firewood and, if the camp was occupied for some time, maintaining a supply of fuel became a problem". Morice (1893: 93), in his discussion of northern Athabaskans, states that "formerly, with their limited facilities for felling trees and bringing wood home they had to change every year their winter quarters". Although he seems to be referring specifically to the Carrier here, the remark no doubt also applies to the Chilcotin, who were technologically similar and who also lived under harsh climatic conditions in houses that were structurally similar.

Chilcotin short term occupation sites were of two kinds – those associated with locationally fixed resources like roots and fish spawning grounds, and those associated with the harvesting of mobile and unpredictable resources. Sites of the first kind were reoccupied year after year by large aggregations of individuals from several different bands, while the second type were more fortuitously located due to the unpredictable nature of the

target resource. The Gitksan also exploited both fixed and locationally unpredictable resources, but their exploitation strategy was usually one of logistical rather than residential mobility. In addition, the occupation sites (task group field camps) associated with both resource categories were fairly permanent among the Gitksan. This was not because mobile resources were somehow more predictable in the Gitksan area, but because land use restrictions limited exploitation options. Within any one group's territorial holdings there were a finite number of places where a particular resource category was likely to be found in any quantity. Permanent base camps were therefore established at or near these locations. I expect that the relationship between limited foraging options, and permanent base camps associated with unpredictable resource categories, will hold for other territorial groups as well.

The Chilcotin and Gitksan data demonstrate that other factors besides territoriality can influence residential mobility and thereby the occupational duration of site use. Both groups exhibited a low degree of residential mobility during the winter months when stored foods provided for the bulk of the dietary requirements. During the months when stored foods did not provide the dietary focus, however, only the Gitksan continued to exhibit a high degree of residential stability – this a consequence of logistical procurement strategies, facilitated by the corporate nature of the resource owning group. In interpreting the significance of long term hunter-gatherer occupation sites, then, archaeologists must attempt to rule out other possible explanations for restricted residential mobility before concluding that the phenomenon is a reflection of corporate group formation.

Permanence and Elaborateness of Residential Structures:

Structural permanence and elaboration is in part a factor of occupational duration. Archaeologists have also asserted, however, that there is a relationship between the size of the capital investment (here seen in structural elaboration and permanence), and the exclusiveness of site ownership and use (e.g., Ames and Marshall 1980: 31). Others have argued that noncorporate groups with their ephemeral membership do not have the

incentive, organizational capacity or the commitment to invest in large scale, permanent or elaborate residences (Hayden 1977: 4).

The relationship between corporate organization and structural permanence and elaboration is clearly reflected by Gitksan house structures. Since they drew upon large, clearly defined wealth and labour pools with a long term interest in each other and in the structure itself, the Gitksan had both the incentive and the ability to construct large scale and elaborate residential structures. Gitksan houses represented a considerable capital investment to which all members of the corporate groups contributed, even those who were not to live there. Garfield (1939: 276) states that "A woman of the lineage, even though living with her husband in his home, contributed to that of her lineage relatives. Her children also contributed if they were old enough". Male children had a clearly vested interest since they stood to eventually inherit the structure they were assisting to build.

The following description, by Chismore (1885), of a house observed among the Nishga in 1870, matches closely information on traditional Gitksan house structures recorded in Emmon's unpublished field notes (Emmons n. d. File D) and in archival photographs. I quote it at length because it graphically illustrates the degree to which residential structures in the area represented an investment of time, energy and wealth far in excess of strictly utilitarian requirements.

At the four corners of a square space of level ground, timbers, deeply grooved on the sides facing each other, are firmly planted, rising some 10' above the surface of the soil. At intervals along the lines, similar timbers of proper height, grooved on the edges are erected. Thick planks, split with wooden wedges from spruce or cedar logs, and cut to right dimensions, are slipped into the grooves, one on top of the other, till the walls are formed. Just within the walls at each end of the building, equidistant from the sides to the central line, two large uprights are solidly fixed, saddled at the tops to receive the main supports of the roof. These supports consist of two immense spars, hewn perfectly sound and true, and extending the whole length of the structure. When raised and placed in position their great weight causes them to remain in situ. Round poles are used for rafters. Their butts rest upon the spars, and the tops are notched together to form the ridge. Other

poles are laid across the rafters, and the whole covered with sheets of bark, lapped to shed rain, and kept in place by heavy stones. The ends are then finished to the gable. The pitch of the roof is very low. In the center of the ridge a large square hole is made to serve in lieu of chimney, and is covered by a raised moveable shelter that can be shifted, as the wind changes, to make it draw well. The floor is planked, leaving a large opening in the center over which to build fires. . . . Each house affords plenty of room for from 20 to 50 persons, sometimes for many more. Some of the planks are very large. One in Mus-ke-boo's dwelling measured fifty-four feet in length, four feet one inch in width, and five inches in thickness.

(Chismore 1885: 454 - 455)

Although not mentioned in this description, Gitksan houses were frequently adorned with the crest designs of their owners. These were painted on the front of the houses, or carved onto support posts and/or the main roof supports.

In contrast to Gitksan residential structures, those of the Chilcotin were spartan and utilitarian in design as the following description from Lane (1953: 144 - 145) reveals:

The Niy[^]q , "dirt"/house or "stick house" was the basic house type. It was rectangular. The size varied. Most of the estimates given centered around twenty feet long by fifteen feet wide.

The floor was leveled, but not excavated. There was usually one end-post at each end of the house, eight to twelve feet tall and eight to twelve inches in diameter. These were slightly grooved on top, and supported the ridge-pole. Several poles leaned against this ridge-pole, forming a gable shaped frame. There were at least two of these poles on each side. Bark, poles, or split logs which were usually but not always peeled, were laid horizontally upon this frame, covering both sides almost but not quite up to the top. Thus, there was an opening several feet wide the length of the house just under the ridge-pole.

The ends were enclosed by closely spaced vertical bark slabs, poles, or split logs. These were supported upon the end frame poles, and their horizontal cover. Only the end-posts were set into the ground. None of the posts were lashed or mortized.

At one end, some of the vertical pieces were left off to make the door. This opening was covered with a skin. The house was covered with a layer of grass, sod, or bark to chink the holes.

In describing a variant of this house type Lane mentions that if suitably positioned trees were available, these would be substituted for end-posts (1953: 146), further

emphasizing the tendency to minimize the labour investment in these structures.

Ethnographic descriptions of Gitksan and Chilcotin residential structures suggest that the following structural variables may be useful as indices of the time and energy investment represented by a particular habitational structure:

- a) diameter of structural support poles (larger poles require more effort to cut and move)
- b) the number of large supports
- c) depth of post holes
- d) the use of techniques for fixing or anchoring structural elements (as opposed to simply resting them on or against a framework)
- e) type of flooring (e.g., plank floors vs. earth floors)
- f) the use of manufactured or highly modified building materials (e.g., split planks vs. poles or bark)
- g) the presence of decorative elements

Only the first three variables are frequently encountered in an archaeological context, but all of these features may be recovered given proper preservational circumstances.

The Gitksan and Chilcotin data suggest that the degree of investment in residential structures is dependent upon the interplay of four variables: 1) climatic severity 2) annual duration of occupation 3) expectation of reuse and 4) presence or absence of residential corporate groups. Among both the Chilcotin and the Gitksan the most permanent and elaborate residences were constructed at winter occupation sites. Since winter conditions in both areas are severe, the greater investment in winter habitation structures is not surprising. Winter was also a time of relative immobility for both groups, which would have further facilitated structural investment.

Although Chilcotin winter house structures were more permanent and elaborate than those used during other seasons of the year, they were low investment structures in comparison to the Gitksan winter houses. Given the similarity in annual occupational duration and climatic conditions this variation appears to be related to differences in long

term site use and group corporateness.

Comparison of residential structures constructed at Gitksan and Chilcotin summer salmon fishing sites is particularly revealing. According to Lane (1981: 403), warm weather residences among the Chilcotin were "casual shelters of mats, boughs or bark". Equivalent structures among the Tsimshian are described as well built cabins similar in construction to the winter residences (Garfield and Wingert 1979: 11). Since both Chilcotin and Tsimshian summer salmon fishing sites were occupied during warm weather and since salmon fishing sites in both areas were reoccupied year after year, the greater investment represented by residential structures at the Tsimshian fishing sites is best explained by their corporate organization.

Storage Facilities

It is generally held that communal structures and facilities signal household interdependence and the increased solidarity which is characteristic of the corporate community (e.g., Chang 1958: 320 - 321). This is particularly true of communal storage facilities which require that the subsistence efforts of the nuclear family be pooled with, and relinquished to the control of, a larger group. Where access to the resource base is restricted to and dependent upon membership in the corporate body, it is reasonable to expect that the resource owning group, rather than the nuclear family, will be the primary economic unit, and that storage facilities will reflect this situation. In contrast, the food storage facilities of nonterritorial hunters and gatherers are expected to reflect the economic independence of the nuclear family. Large, communal storage facilities are therefore predicted to be lacking in these situations.

Ethnographic information on Chilcotin storage practises indicates that they conformed to the pattern predicted for nonterritorial hunters and gatherers in that each individual family maintained its own storage facilities (Lane 1953: 191). A number of different kinds of storage facilities have been attributed to the Chilcotin. These include underground cache pits, tree scaffolds and log caches, which were low, flat roofed

structures built after the fashion of a log cabin. (Lane 1981: 406; Morice 1893: 197; Teit 1909: 776). The latter two types are believed to be recent innovations, but cache pits have been well documented archaeologically (Matson et al. 1980; Alexander & Matson 1986). The size of these features should readily identify them as noncommunal facilities in an archaeological context.

Gitksan storage practices did not conform to the pattern predicted for land based corporate groups. Both corporate and nuclear family procurement and processing activities were an integral part of the subsistence round. Subsistence activities were regulated by the House chiefs who managed all House resources and property, directed production, and controlled distribution of strategic resources (Garfield and Wingert 1979: 26-27). Within this corporate framework, each nuclear family prepared and stored enough food to meet its own needs plus an additional amount to meet obligatory contributions to House feasts and other corporately sponsored affairs (Garfield 1939: 277). The individuality of the nuclear family as a productive unit was maintained even within communal processing facilities. In smoke houses, for example, each woman was allotted a separate portion of floor and wall space and was responsible for her own wood supply (People of 'Ksan 1980: 21). One can envision a similar arrangement within a corporately owned storage facility. It is clear, however, that whether corporate or noncorporate facilities were used, the individuality of the productive unit was preserved. This is illustrated in the following passage, which describes the storage of berries:

Each picker, child and adult alike, stored her provisions in a spot set aside for her. When winter came and visitors were to be fed, children as well as their mothers brought out their preserved edibles and offered the food to the guests. One informant says, "I had my own little picking basket and my own small storage boxes. Mother helped me dry and roll the berries, but they were mine to give out and I used to feel real proud when I offered guests my own berrycakes or fish that I'd caught".

People of 'Ksan 1980: 14 (emphasis mine.)

In addition to the portable storage containers mentioned above, the Gitksan constructed underground cache pits, raised caches, root-cellar like rooms dug into side hills and special plank storage houses. While the raised wooden caches may not be detectable archaeologically, I have observed both cache pits and side hill cellars in an archaeological context. Plank storage houses are known only through oral traditions (People of 'Ksan 1980: 25).

Again, the size of these facilities is expected to provide the clearest indication of whether they were designed to hold the productive output of many individuals or of a single family unit. A number of factors may have selected against the use of large communal storage facilities, however. Primary among these was the danger of loss through raids from neighbouring groups.

According to MacDonald (1984a: 71) food stores were a major enticement to war in prehistoric times:

"Each woman made her own pit and filled it with preserved fish, berries and meats. They took great pains to disguise their location. Since the location of each pit was known to only one woman, invaders could not force captives to help locate more than a few pits."

Another factor which may have discouraged the use of large communal facilities was the difficulty of finding clean dry insulating material in the middle of winter. Due to the scarcity of insulating material, cache pits were completely emptied once opened (People of 'Ksan 1980: 24). Since all food removed from a cache pit had to be accommodated in other containers until consumed it would make sense to store food in smaller, more manageable quantities.

Gitksan storage practices indicate that the presence of communal storage facilities is not a necessary correlate of corporate group organization and that assumptions about the corporate unit functioning as a storing unit are unwarranted. The data also suggest that per capita storage capacity rather than the communal or private nature of storage facilities may be more useful in distinguishing territorial from nonterritorial hunters and gatherers.

Territoriality selects for mechanisms that socially validate corporately held rights and

privileges. Among the Gitksan, participation of corporate groups in reciprocal feasting arrangements and wealth distributions provided (and still provides), the framework by which corporate territorial claims were publicized and validated. These feasts were therefore crucial to the operation of the Gitksan territorial system. I suspect that similar practices were common to most, if not all territorial hunters and gatherers, although the social validation of territorial claims is rarely identified as a territorial maintenance strategy in the literature on territoriality. Where reciprocal feasting and/or wealth distributions occur, some form of surplus production and social storage (i.e., storage in excess of subsistence requirements see Coupland 1985: 352) must exist. Therefore, per capita storage space should be higher, and variations in individual storage requirements greater, among corporate territorial hunters and gatherers than among noncorporate groups.

Ethnographic accounts reveal significant differences in the storage requirements of individual families within Gitksan society. Responsibility for the social validation of corporately held claims, (including territorial claims) was/is vested in the office of chief. As sponsor of all corporate initiatives a House chief needed to have a large supply of food on hand at all times. To this end House members contributed their labour and some of their surplus produce. In addition, House chiefs frequently received large quantities of food and wealth from other Houses as gifts or in payment for various services. Thus the storage requirements of a chief were much greater than those of other House members.

Since chiefs functioned as accumulative nodes in a redistributive economy, it is reasonable to expect that storage facilities associated with the office of chief reflected their capacity as guardians and managers of corporate wealth. Variations in the storage capacity of individual families within the territorial unit may be difficult to detect archaeologically. Two possible lines of evidence suggest themselves: 1) variation in storage requirements will be reflected by variation in facility size and/or number. 2) chiefly families with their greater storage requirements may have constructed facilities which were typologically different than those of other families. The Gitksan say, for

example, that wealthy families constructed plank storage houses (People of 'Ksan 1980: 25). If we read 'wealthy families' as 'chiefly families' (a correlation which is frequently asserted in the Northwest Coast literature) these plank storage houses may represent a specialized storage strategy designed to accomodate the greater storage requirements of high ranking individuals.

Variations in size within particular classes of storage facility are also evident in the Gitksan area. Barbeau (n.d.) was told of salmon cache pits 12' in diameter. Pits 3' in diameter and 3' - 4' in depth are said to have been more common, however (People of 'Ksan 1980: 22). Given the problems associated with large cache pits discussed earlier, it seems unlikely that these large caches were meant for day to day consumption. Unlike daily subsistence activities, however, feasting involved the immediate consumption of large quantities of food. Bulk storage in connection with corporate feasting activities hosted by chiefly families is a more reasonable explanation for large facilities of the kind reported to Barbeau.

Lacking the productive potential of the corporate group and the social motivation associated with the validation of corporate claims, it is expected that the level of social production engaged in by the Chilcotin, and other noncorporate, nonterritorial hunters and gatherers, would be much less than that of corporate hunters and gatherers, if present at all.

Lane (1953: 191) comments that among the Chilcotin, a poor man would have very few food caches, while a well-to-do man might have a number. He also explains that although the distribution of wealth brought the giver prestige, the accumulation of wealth beyond one's own subsistence requirements brought social censure. "A person who desired to give away food at a feast was forced to resort to concealment and subterfuge; he hunted and stored food away from prying eyes" (1953: 199). Thus while a certain amount of social production was probably engaged in by the Chilcotin, the fact that wealth accumulations were discouraged and represented the efforts of a single productive unit indicates that the scale of social production was nowhere near the Gitksan level.

Translated into archaeological terms this means that the average storage capacity of each family unit and the variation in storage capacity between family units should be less in nonterritorial noncorporate situations. Since storage capacity is a function of facility size and since storage facilities are often highly visible archaeologically, per capita and per family unit storage capacity should be possible to obtain.

Recently, Coupland (1985) attempted to derive such a measure for two Tsimshian village sites in Kitselas Canyon. He calculated the storage capacity of all cache pits within a 250 m. radius of both villages and divided this by estimates of village populations to arrive at an estimate of per capita storage capacity. In applying this methodology, however, Coupland was forced to make a number of very questionable assumptions. Survey data on Gitksan cache pit locations suggest that they were frequently situated much more than 250 m. away from village sites. Even Coupland's survey results show more cache pits lying outside the 250 m. radii than within them! A second assumption made by Coupland is that all cache pits within each radius are contemporaneous, both with each other and with the village to which they had been assigned.

While Coupland's results are questionable, his work is encouraging as one of the rare attempts to explore the information potential of cache pit data. It is evident that given proper temporal and associational controls, estimates of per capita storage capacity can be derived and the postulated relationship between corporate group organization and increased storage tested in an archaeological context.

Public Ritual and Administrative Structures:

Public ritual and administrative facilities are indicative of individuals and/or institutions whose primary function is social integration and control. While social integration is characteristic of corporate groups, such mechanisms are generally absent in most hunter-gatherer societies.

It was predicted that the economic and social structures of noncorporate hunting and

gathering societies would neither warrant nor permit the construction of public ritual or administrative facilities.

Existing ethnographic accounts make no mention of communal ritual or administrative structures and facilities among the Chilcotin. Garfield and Wingert (1979: 10) similarly comment that there were no structures used exclusively for community social or religious functions by the Gitksan.

The Gitksan data suggest that while communal ritual or administrative structures and facilities, where present, may well be indicative of territorial corporate groups, they are not a necessary feature of such adaptations.

Organizational layout:

Ethnographic evidence suggests that corporate community layouts frequently exhibit organizational planning and follow some preconceived pattern. Chang (1962), in a survey of circumpolar community patterns, distinguished two basic community types, the Siberian type and the Eskimo type. Communities of the Siberian type typically take the form of multi dwelling villages "with planned or otherwise symbolically oriented lay-out (segmented or not), or of a single or a small number of multi-compartmental communal houses", while communities of the Eskimo type are characterized by an "irregularity of community layout which has resulted from the flexibility of membership" (Chang 1962: 33).

Chang's Siberian type societies exhibit all the defining characteristics of corporate groups. They are 'strongly integrated as a cohesive body', there is an internal authority structure, membership is restricted and there exists a common estate in the form of 'a fixed territory' (Chang 1962: 33 - 34). Eskimo type social groups on the other hand appear to be noncorporate in that they lack these characteristics. I postulate that organized, patterned community layouts will generally correlate with corporate social group composition in other areas as well. In their interpretation of Anasazi settlement patterns, Schoenwetter and Dittert (1968: 53) similarly propose that the degree of

organization evident in settlement layouts "are indices of community integration and social controls, which allow co-operative planning and cultural cohesion".

While the internal integrity of territorial corporate communities may call for a symbolic projection of this integration in the form of a planned settlement layout, there are inherent difficulties involved with the expectation that the organization and arrangement of permanent and elaborate habitations will accurately reflect the structure of society. History has a certain disorganizing effect. Social groups are not static entities – populations rise and decline. Over time the cumulative effect of such fluctuations may lead to a restructuring of the local community organization. When settlements are composed of spatially fixed, permanent and elaborate buildings, reorganization of existing buildings to reflect such social restructuring is unlikely. Thus through time the degree to which a community layouts mirror the actual composition and organization of a society may diminish (D. Aberle personal communication 1985).

If it is possible to determine the relative age of the various structures within a settlement (e.g., through the use of abandoned structures or rooms as dumping areas or through the depth of associated midden deposits), it may be possible to isolate those structures which composed the original community and conformed most closely to the mental template for community layout characteristic to that particular society. Once the "ideal" organizational pattern is known, it may even be possible to identify cultural "rules" for accomodating corporate group growth or decline within the framework imposed by a particular community pattern.

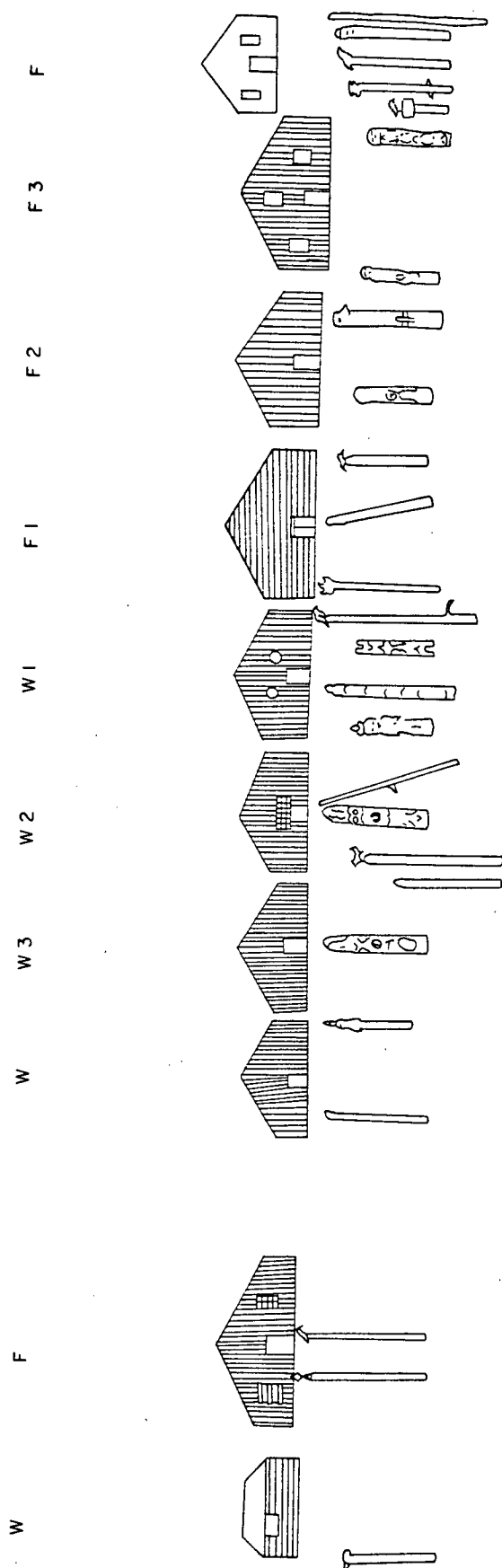
Gitksan and Chilcotin settlement layouts were examined in order to determine whether the organization implicit in corporate group structure was expressed by the positioning of buildings and facilities within the community, and whether an absence of formalized structural definition of suprafamily social groupings corresponded with a lack of organizational planning in settlement layouts.

Within limits established by the landscape and the whims of history (i.e., the growth or decline of constituent House populations, migration, emigration, etc.), Gitksan

villages conformed to a preconceived community pattern. As mentioned earlier, two of the four phrateries were represented in every village, which resulted in a bilateral structure. Where three phrateries were present, two of these were linked together, at least as far as marriage restrictions were concerned (Adams 1973: 23), so that the bilateral structure was retained. (Kitwanga Village provides an example of this arrangement. There the Eagle and Wolf phrateries are linked together and cannot intermarry). This bilaterality was reflected in the community plan. Houses belonging to each phratry or linked phratry were grouped together to form one 'side' (Adams 1973: 23) of the village. Houses were arranged along the river bank in one or more parallel lines. The highest ranking House of each phratry stood in the centre of the row. Other Houses flanked these in descending order of rank.

Figures 2.1, 2.2 and 2.3 are plans of three Gitksan communities at the turn of the century or shortly before. These are based on the unpublished field notes and diagrams of Barbeau, Beynon and Emmons. The plans illustrate both the degree to which reality conformed to the 'idealized' community pattern, and the disorganizing effect of history. Since Gitksan house structures represented a considerable investment of time, energy and wealth, the arrangement of buildings within a village was relatively inflexible. If, for example, a House expanded in membership to the point where a second structure had to be built to house the overflow, there was rarely enough room to accommodate the 'annex' next to the parent house, hence it was added to the end of the row. Structure Fi 6 in Figure 2.3 is an example of this. Structure Fi 6 is actually associated with structure Fi 4 (i.e., the occupants belong to the same House).

Since some degree of fluctuation in the ranking system was inevitable due to the addition of new Houses, either through growth or accretion, village organization through time must invariably have come to reflect the social situation less accurately. As can be seen from the village plans, however, it is along the peripheries that deviation from the ideal pattern is most evident. In general, settlement layouts clearly reflected the conceptual basis of Gitksan social organization. An archaeologist unfamiliar with the



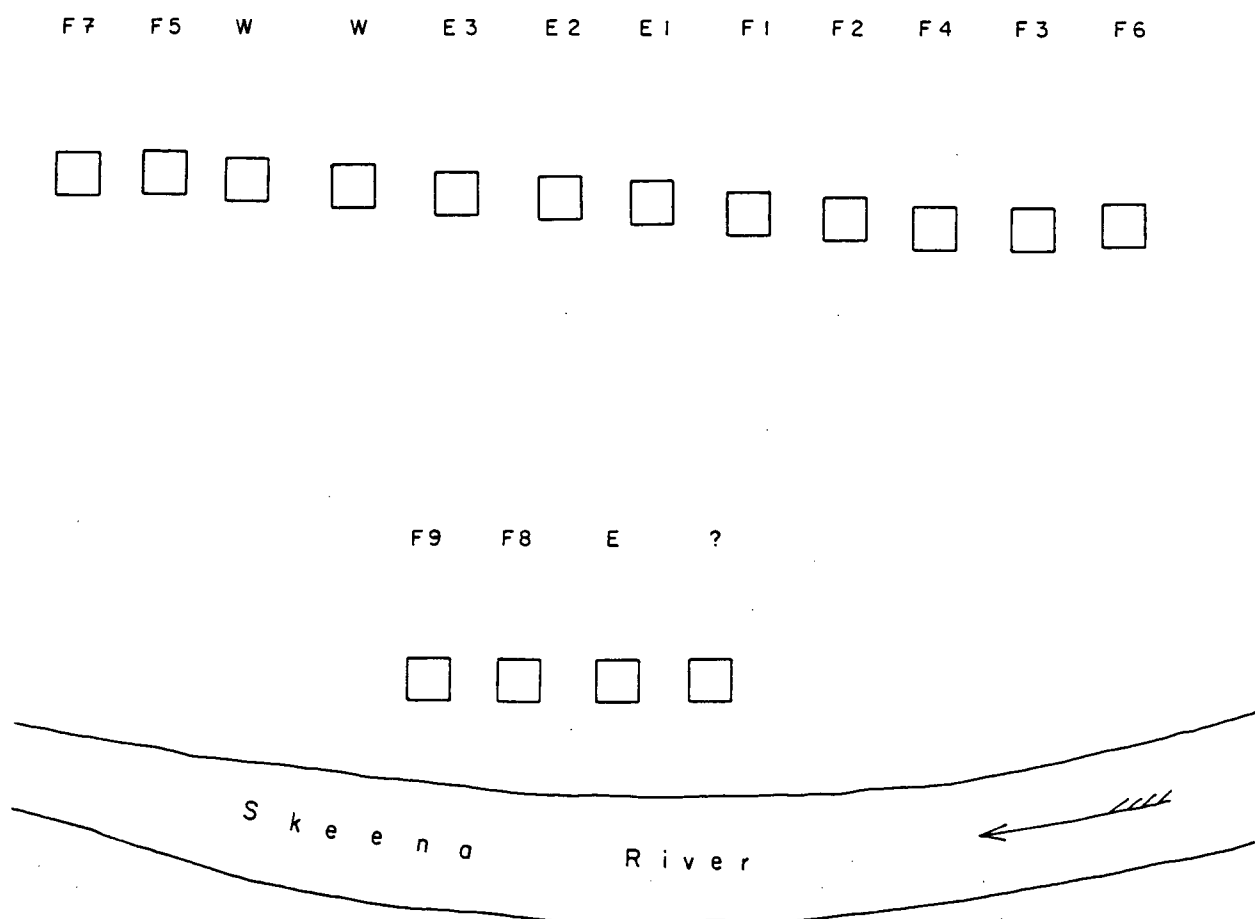
Phratric Affiliation of House

W Wolf (Laxkibu)

F Frog (Larhsail)

Sources: Emmons n.d., Duff 1959:12-13.

Figure 2.1. Kitwancool village layout.



Phratric Affiliation
of House

W Wolf (Laxkibu)

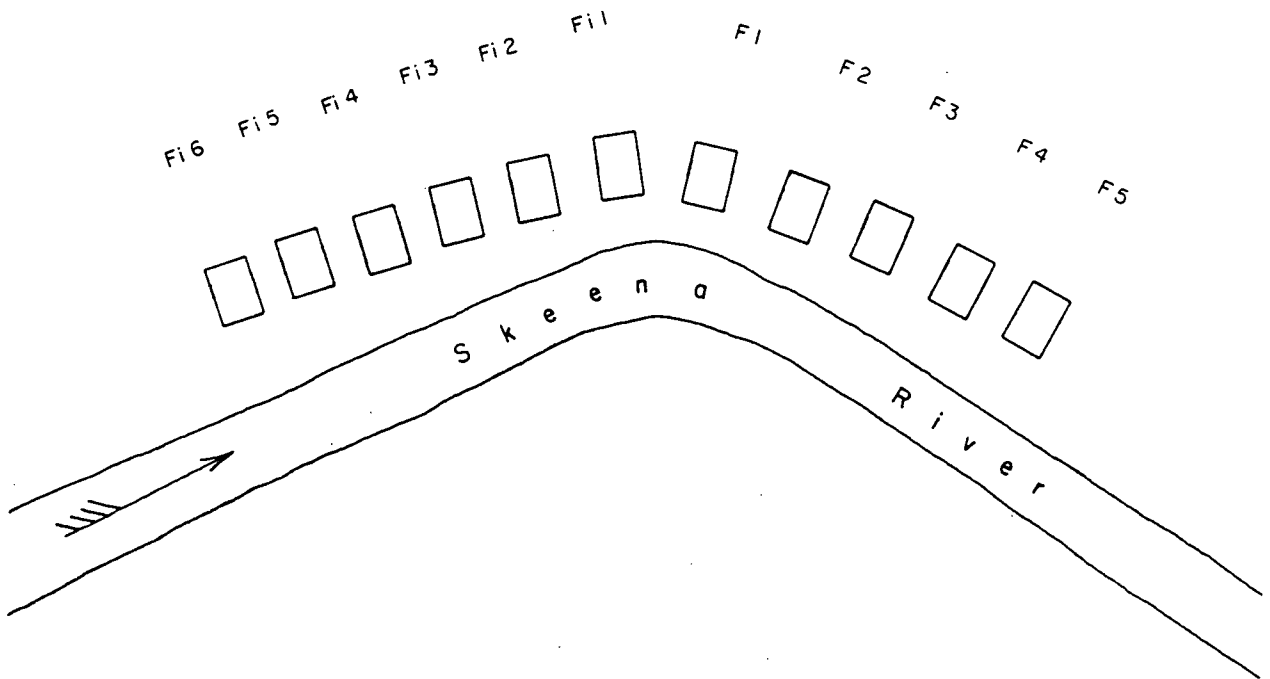
F Frog (Larhsail)

E Eagle (Laxski'k)

Numbers indicate rank of house
chief (where known).

Source: Duff n.d.

Figure 2.2. Kitwanga village plan.



Phratric Affiliation
of House

Fi Fireweed (Gisgast)

F Frog (Larhsail)

Numbers indicate rank of house
chief (where known).

Source: Duff n.d.

Figure 2.3 Gitsegukla village plan.

principles of Gitksan social organization should still be able to detect organizational planning in the uniform orientation of the residential structures (doorways always faced the river) and their linear arrangement. Comparison of several village plans would reveal that settlement layouts conformed to a uniform preconceived plan.

Contrary to Gitksan settlement layouts, Chilcotin settlements did not conform to a preconceived plan. Lane (1953: 47) says that houses were usually situated near a lake but were set back in the trees. In contrast to the protocontact Gitksan pattern, Chilcotin houses were widely more spaced and often out of sight of one another (Lane 1981: 406).

Ethnographic examples of Chilcotin settlement plans are not available, but the archaeological remains of Chilcotin settlements appear to conform to the pattern described by Lane (Wilmeth 1978: 13; Matson et al 1980). Figure 2.4 shows the plan of an occupation site recorded near Anahim Lake. C14 dates and artifacts suggest that structures 2, 4 and possibly 5 were all occupied contemporaneously.

Judging from this site plan, Chilcotin residential structures lacked the common orientation evident in Gitksan settlements. Unlike the Gitksan examples, Chilcotin building sites appear to have been selected without regard for other building locations. Finally, the wide spacing between residential structures suggests that in addition to building orientation and arrangement, the distance between residential structures may also be used to measure organization and cohesion in an archaeological context.

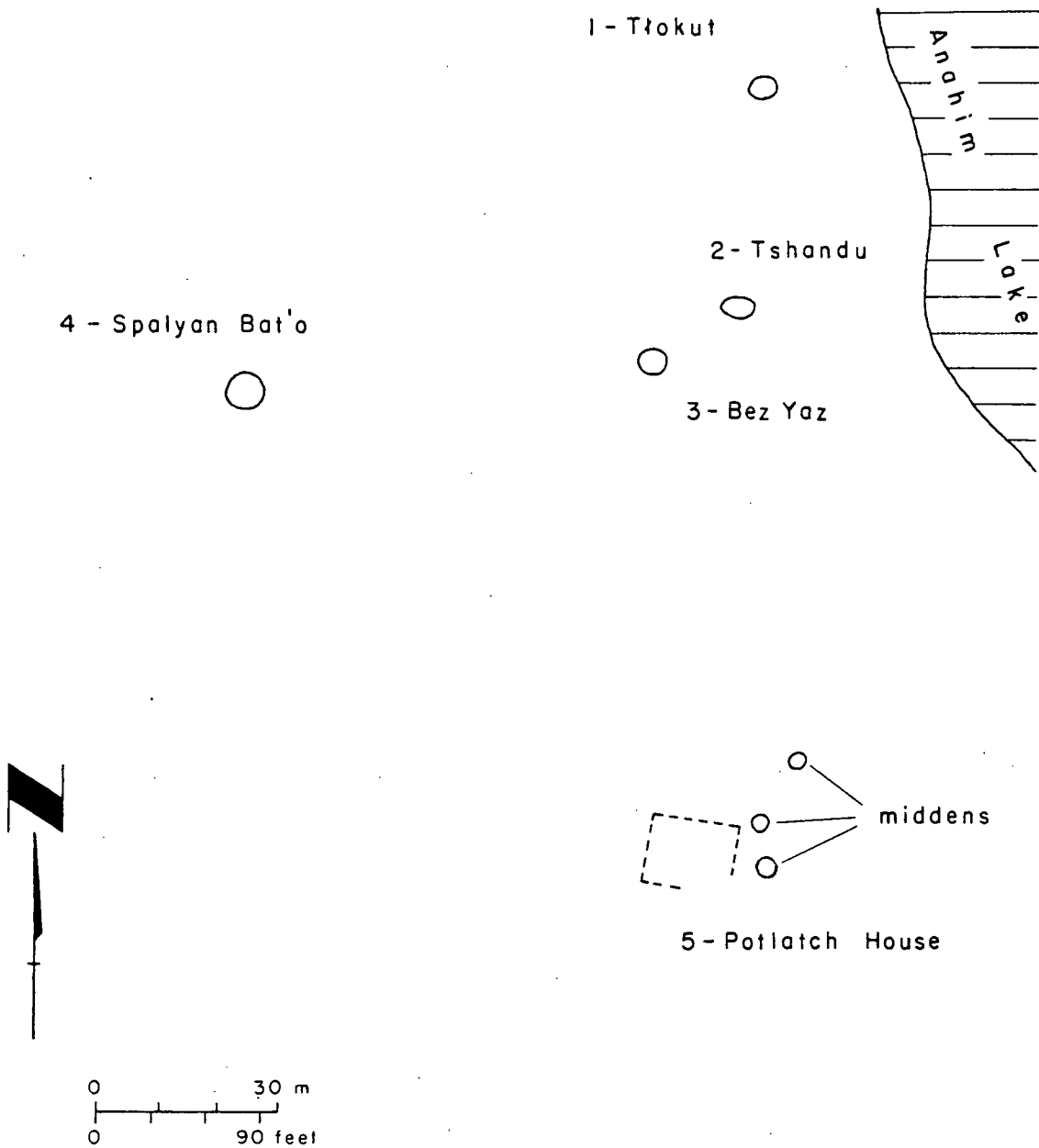
Discussion

The analysis of Gitksan and Chilcotin settlement pattern variables reveals a number of qualifying and limiting factors in their utility as indicators of corporate territorial groups. These findings are summarized below.

Residential stability

Several aspects of residential stability were considered including residential mobility, reflected archaeologically by the annual duration of site use, and residential permanence,

Potlatch Site
FcSi 2



after: Wilmeth 1978:17

Figure 2.4. Plan of Potlatch site residential structures.

reflected by the repetitiveness of residential site use. As predicted, the territorial Gitksan exhibited greater stability in both contexts than the nonterritorial Chilcotin. The differences were relative, however, and likely difficult to detect archaeologically. Further work needs to be done to establish the parameters of residential mobility and permanence which are possible within territorial and nonterritorial adaptations. The Chilcotin and Gitksan data suggest that differences in residential stability are likely to be apparent not in the nature of the sites produced (i.e., long term – short term, permanent – nonpermanent), but in their environmental and social contexts. The Chilcotin, for example, had repetitively used camps only near resources which were spatially predictable. Among the Gitksan, however, permanent base camps were associated with both fixed and locationally unpredictable resource categories.

Residential structures

The Gitksan and Chilcotin exhibited the predicted differences in the scale of residential investment among corporate and noncorporate hunter-gatherers. Structural elaborateness must be evaluated relative to environmental and seasonal requirements, however. It is reasonable to expect that in mild climates corporate group residences will be less elaborate than those constructed by noncorporate groups who have to cope with harsh winter conditions.

Communal storage facilities

Gitksan storage practices demonstrate that separate storage facilities associated with each productive member or unit within the corporate group are not incompatible with group corporateness. In other words, the absence of communal storage facilities does not imply the absence of land based corporate groups. While it is possible that communal storage facilities only occur in association with corporate groups, the Gitksan and Chilcotin data neither refute nor support this correlation. The data do suggest, however, that variations in per capita storage capacity may be useful in distinguishing corporate

from noncorporate adaptations.

Communal ritual and administrative structures

It was postulated that communal ritual and administrative facilities would accompany the development of institutions of social integration and control which characterize territorial corporate groups. While the Gitksan had such integrative and administrative institutions there were no specialized structures associated with them. Communal ritual and administrative structures, where present, may well be indicative of territorial corporate groups, but it is evident that they are not a necessary feature of such adaptations. I anticipate that specialized ritual and administrative structures will be more common where the member families of a corporate group reside in separate dwellings rather than in communal dwellings as among the Gitksan.

Organizational layout of settlements

The settlement plans of corporately organized hunters and gatherers were predicted to exhibit organizational planning, while irregular, disorganized settlement layouts were expected to be characteristic of noncorporate communities. The Gitksan and Chilcotin data strongly support such a correlation. While I suspect that in the absence of centralized political control, organized or planned settlements only occur where there are corporate groups, ethnographic data on other corporate hunter-gatherers (see for example Strong (1929: 43-45) on the Cahuilla), demonstrate that again, the relationship between corporate organization and planned settlements is not a necessary one.

The above analysis indicates that settlement pattern expressions of corporate integration, organization and stability are not uniform from one culture to the next. Corporateness provides the necessary preconditions for a number of settlement pattern attributes, but it does not require their development.

MORTUARY PRACTICES

In addition to settlement patterning it was postulated that mortuary customs would also be sensitive to the presence of territorially based corporate groups. Binford (1971: 23), in a cross cultural survey of mortuary customs, found that the form and structure which characterize the mortuary practices of any society are conditioned by the nature of the organizational properties of that society. If, as I argue, the organizational structure of land based corporate groups is significantly different from that of hunting and gathering peoples who lack land based corporate groups, then these organizational differences should precipitate differences in the form and structure of their respective mortuary rites.

A number of authors (e.g., Anderson 1968: 154, Woodburn 1968: 107-110) have commented on the lack of long term commitment to other individuals and the expedient attitude toward social relations observed among many hunting and gathering groups. Binford (1968: 272 - 273) suggests that these attitudes correlate with an apparent nonchalance in their treatment of the dead and dying, and that these attitudes may be transformed by rights and obligations of stewardship in a facility dependent society. (Binford (1968: 272) defines facilities as objects (or structures) such as fish weirs "which serve to prevent motion and/or energy transfers".) He isolates a number of requirements of facility use that select for this change in attitude. These include precise placement in space, co-operative labour for construction and maintenance and a necessary development of rules governing access to the facility and the distribution of yields. Binford argues that the increasing emphasis on role definition brought about by facility dependence will be reflected in mortuary customs.

Many of the organizational requirements of facility use (and perhaps even facility dependence itself) have been identified as characteristic of territorial corporate groups (i.e., precise placement in space, rules governing access, co-operation, and an increasing emphasis on social role definition). It therefore seems plausible that Binford's

argument about the effect of these organizational requirements on mortuary customs applies here as well.

A number of archaeologically applicable test implications were devised which stipulated the nature of the posited correlation between land based corporate groups and variation in mortuary customs. These test implications were then applied to data on traditional Gitksan and Chilcotin mortuary customs. Although mortuary customs underwent changes soon after contact as a result of missionary influence, some information on pre-missionary practices in both areas is available.

Test implication 1:

Defined cemetery areas will be characteristic of hunter-gatherer societies organized into land based corporate groups (cf. Saxe 1971: 29). As Flannery (1972: 29) has commented, "In a world without written deeds, the presence of the ancestors frequently serves as a group's best evidence that the land has been theirs 'since time began'".

An ideology which seeks to maintain and prolong relations with one's dead ancestors seems in marked contrast to descriptions of hunter-gatherer societies where death is marked by abandonment of a site, where taboos against mentioning the name of the deceased might be invoked, or where no particular social significance at all is attached to death. Such ideologies are expected to be more typical of noncorporate, nonterritorial hunters and gatherers. In these instances burial locations are expected to be situationally determined. In other words, they should be determined primarily by the location of death and the availability of suitable disposal areas (as defined by the cultural preferences of the society in question, e.g., talus slopes, tree burial etc.) in the vicinity.

Ethnographic Application

Test implication 1 suggests that the Gitksan, who were organized into land based

corporate groups, should have utilized formally defined burial grounds, while the noncorporate, nonterritorial Chilcotin are more likely to have utilized situationally derived burial locations.

The Gitksan say that before the arrival of the missionaries they cremated the bodies of their dead. Each village had cremation grounds located nearby, generally behind or off to one side of the residential area. Early travellers in the area described the cremation grounds as being marked by scattered piles of charred logs. Wood fragments not totally consumed during cremation were gathered together and held in place by pairs of crossed stakes hammered into the ground (Collison 1981: 211; Emmons n.d.).

In addition to cremation areas where the funeral pyres were constructed, there may also have been separate disposal areas for funerary chests containing the ashes of the deceased. According to Emmons (n.d.) such chests were placed in gravehouses located a short distance away from the cremation grounds. Another source says, however, that the cremated remains were buried at the site of the funeral pyre, which was then marked with a grave memorial "depending on the rank of the deceased" (Gitsegukla Band 1979: 28). In either event, it is clear that formally defined mortuary grounds were an integral part of Gitksan community plans.

In contrast, formal mortuary grounds were lacking among the Chilcotin until recent times. As among the Gitksan, cremation was formerly the most common means of disposal (Farrand 1898: 647 - 648; Lane 1953: 61; 1981: 405; Ray 1942: 215 - 219), giving way to earth burial in the late 19th century as a result of missionary influence (Farrand 1898: 648; Lane 1981: 405). Cremation, and interment of the cremated remains, usually took place near the location at which death occurred (Ray 1942: 219), a practice that seems to have continued for a time after the adoption of earth burial, since Teit (1909: 788) comments that, "A person's body was buried wherever the death occurred, and no attempt seems to have been made until of recent years to collect the dead in graveyards". A house or camp at which a death had occurred was generally abandoned (Lane 1953: 61; 1981: 405). Several such camps were pointed out or

described to me by Chilcotin friends in 1983.

Test implication 2:

It is argued that where there are formally defined, cohesive membership groups, symbolic expression of solidarity and membership will result from and contribute to that cohesion. Mortuary ritual is an obvious forum for such symbolic expression, particularly in corporate societies where death activates mechanisms for the transmission to succeeding generations of corporately held rights, property and obligations. It is therefore predicted that among corporately organized hunters and gatherers, burial customs will express the membership of the deceased in the territorial corporate group. Among nonterritorial hunters and gatherers, land based corporate groups are not expected to occur. Variation attributable to such membership groups should therefore be absent.

Since symboling involves the arbitrary assignment of meaning to a particular act or entity, the form of expression of membership affiliation may vary from culture to culture. In his cross cultural comparison of mortuary rituals, however, Binford (1971: 22) found that membership groups within a society were frequently symbolized by locational distinctions. Different subgroups often maintained distinct cemeteries or cemetery areas. Alternatively, the graves of group members were sometimes differentially oriented.

Ethnographic application

Applying the terms of the test implication to the Gitksan and Chilcotin, it was predicted that Gitksan mortuary customs would include the symbolic expression of House group membership, Houses being identified as territorial corporate groups. Chilcotin mortuary customs were not expected to reflect territorial corporate group membership, since such groups were supposedly absent.

Examination of the available information on traditional Gitksan mortuary practices

reveals that the corporate affiliation of the deceased was symbolically expressed in a number of different ways. House membership was reflected, for example, in the selection of a cemetery site. Adams (1973: 51) says that in theory, whichever village 'took up the body', inherited the names and crests of that individual, and that for this reason every effort was made to see that high ranking individuals who died in other villages were buried in their own village. Since territorial rights were frequently tied to certain hereditary names, retrieval of the remains of high ranking House members can be seen as crucial to the economic survival of a House. Gitksan ideology implies that it may also have been considered vital to the social continuity of a House. The Gitksan believe in reincarnation. Reincarnated kinsmen are supposed to assume the same names and privileges they held previously (Adams 1973: 30). Rights to land could therefore be validated through reference to ancestors on both a physical and a spiritual level – physically along lines of descent, spiritually through the reincarnation of ancestral spirits in members of the succeeding generation. MacDonald (1976: 12), in a discussion of Tsimshian cosmology, refers to their belief that "The spirit itself can be alienated, or even destroyed by improper treatment of its remains (ultimately its bones)". Given the necessity of properly caring for the remains of House relatives in order to ensure their reincarnation in succeeding generations, it is easy to see why every effort would be made to ensure that the remains of high ranking individuals were returned to their 'home' villages. In this sense community cemeteries were integral to the corporate identities of the represented groups.

House membership was also expressed in the selection of burial location within the community cemetery. According to Emmons (n.d.), it was common for each 'family' to have its own gravehouse or enclosure. (The term 'family' is generally applied to those individuals who belong to the same House group (cf. Barbeau 1929: 153)). In those villages where the graveyard area was situated behind the residential structures I suspect, though the ethnographic record is mute on this point, that the gravehouse and grave enclosures belonging to each House were aligned with the residential structure(s)

associated with that House. The area in front of and behind a house site was generally considered to be House property. Facilities and equipment belonging to House members, e. g. , totem poles, storage houses etc. , were generally located within these areas. It seems reasonable to expect that, geography permitting, this principle would have been extended to include House graves as well. Certainly this was the case among the Tlingit (Oberg 1980: 57 - 59). Although many of the old grave enclosures still stand today, the communal house structures are gone and their locations obscured by more recent construction. It is therefore difficult to document this argument.

In addition to the locational distinctions described above, House membership was also reflected by crest designs painted on the body of the deceased as it lay in state (Boas 1890: 837; 1916: 534). In some instances, crest designs were carved or painted on the funerary box as well (Boas 1916: 535). Crest- bearing memorials erected over the graves of high ranking individuals provided additional statements of the House affiliation of the deceased.

To summarize the above, among the Gitksan, the corporate affiliation of the deceased was symbolically expressed in the preparation of the body, in the selection of the grave site location, on burial furniture associated with the remains, as well as in an archaeologically invisible ritual context.

Similar expressions of territorial corporate group affiliation were expected to be lacking among the Chilcotin, thus Teit's (1909: 788) statement that "When a noble died, his clan gave a large funeral feast and distributed part or all of his property, afterwards erecting a carved pole or mortuary column at his grave" is somewhat surprising. As mentioned earlier, Grossman has argued that Teit's clans were territorial corporate groups. I have already expressed my views regarding the existence of such social units among the Chilcotin, but Teit's statement that the Chilcotin erected carved mortuary columns at grave sites merits further consideration. There are other references to carved poles among the Chilcotin, but these are not referred to as mortuary poles, and their distribution appears to be limited to one particular area near the western edge of

Chilcotin territory (Lane 1953: 189). Oral history suggests that their presence here was the result of Bella Coola influence (see Wilmeth 1978: 5). In spite of Teit's assertion, there is little evidence to suggest that the practice of erecting carved mortuary poles was ever widespread among the Chilcotin. Other sources do not mention such a practice even where the subject of grave markers is addressed (see Ray 1942: 218). Morice (1893: 199 – 203), describes what he believed to be "the sum total of all the carvings now to be seen throughout the whole territory of the Tsi(Koh'tin, the Carrier and the Tsé'Kéhne". None of these is identified as Chilcotin. Teit's statement aside, there is no evidence to suggest that Chilcotin mortuary customs gave any recognition to social group affiliation – either kinship, ceremonial or territorial.

Test implication three:

Binford's (1971: 20) survey data suggest that the mortuary customs of most hunters and gatherers rarely give recognition to aspects of the social personae other than age and sex. It is predicted that hunter-gatherer groups which are organized into land based corporate groups will differ from these others in recognizing additional dimensions of the social personae, e.g., corporate affiliation, status or rank. The mortuary practices of corporately organized hunters and gatherers should therefore exhibit a greater overall variability of form than those of non-corporate hunters and gatherers.

Ethnographic application

According to test implication 3, the mortuary customs of the Gitksan should reflect more social dimensions than those of the Chilcotin, resulting in a greater variability in burial populations among the Gitksan.

In addition to territorial corporate group affiliation discussed in the preceding section, Gitksan mortuary customs gave symbolic recognition to a number of other membership groups.

The crests which served to identify House membership in many instances would also

have identified clan and phratry membership. In addition, burial furniture frequently identified sodality membership. According to Garfield (1939: 241), "If the person had been a secret society member the cedar bark ring of his group was placed on a stick over the ashes. All other ceremonial paraphernalia are said to have been burned with him. . . . These could not be inherited but must be acquired by each individual from his own experience". A complete set of secret society regalia was observed in a gravehouse in Hazelton in the 1890's (Dorsey 1898: 191), which suggests that the burning of these items may not have been a uniform practice. In either case, it is clear that sodality membership was given symbolic recognition.

In addition to membership affiliation, Gitksan mortuary practices also gave recognition to social position or status. Adams (1973: 51) notes that "While it is a matter of concern that every person be given a proper funeral, it is especially so in the case of high ranking people". As mentioned earlier, only the remains of chiefs and high ranking individuals were distinguished by gravemarkers and/or memorial poles (Gitsegukla Band 1979: 28; Barbeau 1929: 6; Boas 1916: 535). On occasion they were spatially segregated from other, lower ranking individuals (Emmons n.d.; Garfield 1939: 241). Methods of disposal seem also to have varied according to the social status of the deceased. Among some Tsimshian groups the bodies of shamans, chiefs and chief's families were not cremated but placed in gravehouses or in caves (Boas 1890: 837; 1916: 534 - 535; Garfield 1939: 241). Slaves were accorded differential treatment in that they were unceremoniously disposed of. According to a source cited by Boas (1916: 535) the bodies of slaves were loaded into a canoe and then dumped overboard.

Burial furniture had a number of referents. Personal items and household utensils were frequently burned or placed with the remains (Garfield 1939: 241; Dorsey 1898: 191). Carved portrait figures are mentioned as another form of burial furniture (Emmons 1925: 37). Such grave goods would have reflected the age, sex and wealth of the deceased.

In summary, ethnographic data indicate that Gitksan mortuary customs encompassed

a considerable degree of variability. This variability correlates with a range of social referents including age, sex, wealth, status and membership affiliation in a number of levels and kinds of social groups.

Chilcotin mortuary customs reflected a much more limited set of social dimensions. According to Ray (1942: 219), shamans, slaves and freemen were all accorded the same treatment. This suggests that status distinctions were not expressed as they were among the Gitksan. There is some suggestion that wealth differences were given recognition in mortuary contexts, however. Teit (1909: 788) comments that the bodies of the wealthy or influential were sometimes disposed of in a different manner from those of other people. Since wealth seems to have been the primary basis for social distinctions among the Chilcotin (Lane 1953: 190), the recognition of wealth in a mortuary context is not surprising. Grave goods which were burned or placed with the remains (see Ray 1942: 217, 219) would have reflected the age and sex of the deceased. Other sources of mortuary variability are not mentioned. Thus, variation in Chilcotin mortuary practices was attributable to three primary referents, as opposed to the six or seven facets of the social personae given symbolic recognition in Gitksan mortuary rites.

Discussion:

Analysis of Gitksan and Chilcotin mortuary customs supports the proposition that land based corporate groups are associated with distinctive patterns of mortuary behavior and that at least some of this behavior has material correlates. Whether or not the material correlates are recoverable in an archaeological context will depend on a) the preservational circumstances of a particular site, and b) cultural preferences reflected in the form of symbolic expression for each referent and in the choice of manufacturing materials (i.e., burial furniture made of stone has a far better chance of recovery than burial furniture constructed of wood or other organic materials).

The data also reveal a number of potential problems associated with the interpretation

of mortuary data in an archaeological context. For example, within a particular cultural system a number of symbolic forms may be used to reflect a single referent. Thus among the Tsimshian, status might be symbolized in all or some of the following ways: a) preparation of the body (bodies of high ranking individuals lay in state for longer periods than those of lower rank; bodies of chiefs were sometimes opened and the internal organs removed (Garfield 1939: 239)), b) the method of interment (cremation vs. placement intact into a burial box), c) the disposition of the remains (i.e., spatial segregation of high ranking individuals, and d) in the form and quality of burial furniture. Without knowledge of the interpretive framework used by the participants of a particular cultural system, identification of the referent (i.e., age, sex, status) symbolized by a particular pattern of mortuary variability is liable to be quite difficult. Although Binford (1971: 23) was able to demonstrate that on a cross-cultural basis certain symbolic forms were more likely to express some social dimensions than others, more work of this nature needs to be done. If the Gitksan are any indication, locational distinctions and emblematic markings on burial furniture will be the primary archaeological indicators of corporate affiliation. Differences in the preparation of the remains, methods of interment, quality and kinds of burial furniture will be more strongly related to other referents.

Notes

1. The use of the past tense in this and later discussion of Gitksan society is misleading as many of the aspects of Gitksan/Tsimshian social and economic organization which are described continue to survive in the contemporary culture.
2. Oral traditions suggest that the latter process usually occurred in the context of migration and colonization of an entirely new region. Certainly at contact there were few if any unoccupied lands to be claimed within Gitksan territories. This perhaps explains why the Gitksan were expanding northward into the area occupied by the highly nomadic Tsetsaut. (Duff 1959: 27-32).

CHAPTER 3: Environmental Correlates of Territoriality

Proposition: Knowledge of resource distribution parameters and settlement dispersal patterns may be used to predict the presence or absence of territoriality in an archaeological context.

This chapter looks at the environmental requirements of territorial land use in an attempt to assess their effect on the archaeological records of territorial societies. The proposition considered here is derived from Dyson-Hudson & Smith's (1978) cost/benefit model of territoriality which asserts: 1) that territoriality is associated with a particular pattern of resource distribution, and 2) that different patterns of resource distribution are correlated with varying degrees of settlement mobility and dispersal. The model is based on optimal foraging strategy theory, which assumes that the spatial distributions of foragers are the result of attempts to maximize foraging benefits while minimizing the costs of exploitation (see Heffley 1981, Wilmsen 1973, Winterhalder 1981). This theory asserts that for every pattern of resource distribution there is one "best" foraging strategy in terms of harvesting efficiency and evolutionary fitness. It is assumed that foragers attempt to maximize or optimize efficiency and fitness and that, therefore, the most efficient foraging solution is the one that will be adopted (see Dyson-Hudson & Smith 1978: 24; Keene 1981: 173; Winterhalder 1981: 15-16). Implicit in the optimal foraging strategy models, then, is the assumption that for a particular foraging species a given resource distribution pattern will give rise to one, and only one, foraging strategy response.

Dyson-Hudson and Smith (1978) and others argue that territoriality will occur where critical resources are predictable and dense (but not so abundant that their availability is not limiting). They argue that only when these conditions are met is the cost of exclusive use and defense of an area outweighed by the benefits. Resource density increases economic defensibility by reducing the amount of land needed to meet subsistence requirements. Since defense costs are invariably tied to the size of the area

being defended, a smaller subsistence area should mean lower defense costs (Cashdan 1983:48; Dyson-Hudson & Smith 1978:25). Resource predictability is important because it reduces the risk associated with territorial land use. A system in which concepts of privatization limit access to resource areas offers limited subsistence alternatives in the event of a local resource failure. Predictability or reliability of resources minimizes the risk resulting from this limitation of alternatives. The model's assessments of the economic defensibility of various resource distribution patterns are presented below. Territoriality is expected to occur only where economic defensibility is high.

Resource Distribution	Economic Defensibility
Unpredictable and dense	low
Unpredictable and scarce	low
Predictable and dense	high
Predictable and scarce	fairly low

(after Dyson-Hudson & Smith 1978:26)

Table 3.1 Relationship between resource distributions and economic defensibility

Dyson-Hudson & Smith (1978:33) make the important point that human groups generally rely upon a broad range of resources and that spatial organization and territoriality may vary according to the distributional characteristics of the target resource. "A particular human group may be described as being either territorial or non territorial depending on the resource which is being considered" (1978:33).

The spatial organization postulated for the various resource distribution patterns is tabulated in Table 3.2. In general, the resource conditions (predictable & dense) that are expected to give rise to territoriality are said to favour a settlement pattern in which foraging units are dispersed in relation to each other (Winterhalder 1981: 32), and fairly sedentary (Dyson Hudson and Smith 1978: 26). Since they consist of isolated foraging units (rather than aggregations of foraging units), coresident groups are expected to be small (cf. Smith 1981: 47). Foraging areas are also expected to be small in comparison

to those associated with other resource distribution patterns. This is because defense costs increase with territory size (Dyson-Hudson and Smith 1978: 25, Cashdan 1983: 48 - 49), and the benefits of exclusive access level off as a territory contains more resources than needed (Cashdan 1983: 48). In contrast, resources which are unpredictable and dense are argued to be most efficiently exploited by highly mobile and aggregated foraging units, and unpredictable and scarce resources by mobile and dispersed foraging units. Finally, the cost/benefit model predicts that reliable, low density resources will lead to the development of home range systems. Characteristically home range systems are composed of dispersed foraging units with large, overlapping but geographically stable foraging areas. (Dyson-Hudson & Smith 1978).

Resource Distribution Pattern Spatial Organization	
Predictable & Dense	Territorial land use. Foraging units are dispersed (from one another). They exploit small, exclusive foraging areas, and exhibit low mobility.
Predictable & Scarce	Foraging units are dispersed from one another and exhibit low mobility.
Unpredictable & Dense	Highly mobile, aggregations of foraging units.
Unpredictable & Scarce	Foraging units are dispersed from one another and highly mobile.

Table 3.2 Model predictions for spatial organization

ARCHAEOLOGICAL IMPLICATIONS

If the economic defensibility model of human territoriality accurately portrays the real world, it has important implications for the archaeological identification of hunter-gatherer territoriality. The model provides an interpretive framework for the use of subsistence data in assessing the feasibility and probability of territorial strategies in

a given situation. Subsistence data in the form of floral and faunal remains, specialized procurement and processing equipment, and selective site distribution are frequently recovered in an archaeological context. Extrapolating from the model, evidence that a prehistoric hunter-gatherer society was reliant on resources which were either scarce or unpredictable in their distribution would indicate a nonterritorial adaptation since territorial strategies are expected to be uneconomical in such situations. In contrast, evidence of intensive exploitation of abundant and predictable resources would identify a situation in which territorial exploitation strategies were not only feasible but advantageous in terms of harvesting efficiency.

As Dyson-Hudson and Smith (1978) point out, territoriality is not necessarily an either/or situation. A society may be territorial with regard to one class of resource or resource area, and nonterritorial with regard to others. For this reason archaeologists must be cautious in assigning a "nonterritorial" designation to a particular group on the basis of subsistence data from a single site or site class, particularly in nonhomogenous environments. In order to assess the presence or absence of territorial development, all phases of the annual subsistence cycle need to be considered. Analysis must include data from a sample of sites representative of the entire seasonal round.

The economic defensibility model also provides a framework for the identification of territoriality on the basis of settlement pattern data. Territorial and nonterritorial exploitation strategies are correlated with varying degrees of residential mobility and population dispersal. Both of these variables have material consequences and should be discernible archaeologically.

The highly mobile and dispersed foraging units predicted to be associated with unpredictable and scarce resources should result in short term occupation sites of limited size and low archaeological visibility. Such groups fall into Binford's (1980) "forager" classification, since they "map onto" resources (i.e., move consumers to resources) through frequent residential moves. Foragers typically employ an "encounter" strategy of resource procurement and tend not to store foods (Binford 1980: 5). This is understandable in terms of the economic defensibility model, since resource

unpredictability would inhibit the use of logistical (resource and location specific) procurement strategies, and resource scarcity would limit the opportunities for harvesting to surpass immediate consumption requirements. Only two types of sites are characteristic of forager adaptations: residential bases and locations (resource extraction sites).

The model predicts that groups relying on unpredictable but dense resources will be highly mobile and that individual foraging units will be aggregated rather than dispersed. Archaeologically this aggregation should result in larger site size, higher bulk procurement and increased visibility.

Where resources are unpredictable, occupational episodes are likely to be widely spaced in time. In such instances, there is a greater opportunity for occupational episodes to be separated by depositional episodes so that the assemblage content of a site accurately reflects the character of individual occupations. This is not the case in situations of highly repetitive site use. Here there is likely to be little event differentiation reflected in assemblage content (Binford 1982: 16 – 17).

Home range land use patterns which are correlated with predictable, low density resource distributions are more geographically stable. In these situations resource predictability may lead to a redundant use of particular site locations. As Binford (1980:9) points out, "The greater the redundancy, the greater the potential buildup of archaeological remains, and hence the greater the archaeological visibility". Predictability should also select for logistical responses to resource incongruencies (cf. Binford 1980:10–12). Hence, in addition to residential bases and locations, we may also expect to find field camps associated with home range hunter-gatherers.

As indicated on Table 3.2, the model predicts that territorial land use strategies will be associated with dispersed, geographically stable foraging units. It is anticipated that these conditions will lead to highly redundant site use and an emphasis on logistically organized foraging strategies. According to Binford (1982: 20),

"...when residential mobility is at a minimum the economic potential of fixed places in the surrounding habitat will remain basically the same, other things being equal... This should have the cumulative effect of

yielding a regional archaeological record characterized by greater intersite diversity among ancillary or nonresidentially used sites but less intrasite diversity arising in the context of multiple occupations".

Logistical strategies in areas of abundant resources are frequently associated with large scale procurement and processing (Binford 1980). Hence, in addition to residential bases and resource extraction sites (locations), territorial systems are expected to produce cache sites and field camps. Large scale procurement and repetitive occupation of sites should also result in an overall increase in archaeological visibility.

Application of the Economic Defensibility Model to the Chilcotin and the Gitksan

The above predictions for the archaeological record assume that the economic defensibility model provides an accurate picture of the real world. Preliminary model applications by Dyson-Hudson & Smith (1978) appear to support such an assumption. In order to assess the utility of the model in this study, however, subsistence-settlement data on the Chilcotin and Gitksan were used to test the accuracy of the model's predictions.

In the following sections the primary subsistence resources utilized by the Chilcotin and Gitksan are first evaluated in terms of their predictability and density. This information is used to derive estimates of the economic defensibility of these resources and to determine the type of exploitation strategy (territorial or nonterritorial) and spatial organization which should, according to the terms of Dyson-Hudson's and Smith's (1978) model, be employed in procuring these resources. These predictions are then evaluated against the ethnographically recorded patterns.

Several points should be made with regard to the distributional assessments. As Dyson-Hudson & Smith (1978:24) point out, predictability has both a temporal and a spatial component. Plants are generally more spatially predictable than animals; however, animals with restricted individual movements or with microenvironmental adaptations may also be considered spatially predictable (Heffley 1981:133; Wilmsen 1973:8). Reliability also has a quantitative component, and while spatial locations may be quite stable, the harvest potential of that resource may vary considerably from one

year to the next. If this variation is cyclical, as is the case with salmon, I have considered the resource predictable. Often however, the quality of the harvest is erratic. Berry crops in the Chilcotin and Gitksan areas are an example of this. In such instances I consider the resource unpredictable even where its spatial location is quite predictable.

The density variable also deserves some qualification. The assessments of density presented here are based largely on the distribution patterns characteristic to a species. This has tended to mask variation within a region which may occur in response to local environmental conditions. Density or abundance must be considered relative to the requirements of the exploitation unit and the reproductive capacity of the resource. One resource may be less dense than another in terms of overall numbers, but due to its larger unit size, more abundant in terms of potential dietary contribution. Similarly, some resources may be numerically abundant, but due to a slow rate of maturation still unable to withstand intensive harvesting. I have placed cambium resources in this category since trees cannot withstand repeated harvesting of this nature, and since immature individuals are not utilized. Only those resources able to withstand intensive, long-term harvesting in a localized area have been classified as dense or abundant.

Finally, many species are densely distributed during some parts of the year and dispersed during others. Generally if there is any aggregation phase I have classified the resources as dense on the assumption that exploitation will occur in those places and at those times that the resources are most readily available.

While the assessments presented in Tables 3.3 and 3.4 are more qualitative than I would like, previous examinations of the relationships between resource distribution patterns, territoriality, and settlement patterning have elsewhere employed similar and equally qualitative resource distribution data with considerable success (e.g., Cashdan 1983; Dyson-Hudson & Smith 1978; Heffley 1981; Richardson 1982; Wilmsen 1973).

CHILCOTIN SUBSISTENCE-SETTLEMENT PATTERNS

The Resource Base

There is some disagreement in the literature as to the primary focus of Chilcotin subsistence strategies, but all sources agree that gathering was subsidiary to hunting and fishing activities. Lane (1953: 42-43) ranks hunting quite closely with fishing in importance. He concludes that, "Faced with the necessity of characterizing Chilcotin culture in terms of a primary subsistence activity, I would say that the subsistence economy was based upon lake fishing, with salmon fishing or hunting and finally gathering in that order". The ranking of salmon behind lake fish in importance is surprising. Lane says that salmon runs were "sporadic" which implies that they were unreliable. In much the same vein, Teit (1909: 779) claims that the Chilcotin obtained the bulk of their salmon through trade with the Bella Coola and the Shuswap. In contrast to Lane and Teit, Tyhurst (n.d.) argues that salmon were by far the most important food resource available to the Chilcotin. Fisheries escapement records tend to support his argument that salmon were available to the Chilcotin in considerable numbers. While sockeye runs fluctuated in size according to a predictable four year cycle, even during the low years of the cycle their numbers were substantial.

Whatever the order of primacy, it is clear that fish resources played a crucial role in Chilcotin subsistence. The major species were trout, whitefish (Coregonidae), kokanee, steelhead (Salmo gairdneri) and suckers (Catostomus), in addition to the two species of salmon (sockeye (Oncorhynchus nerka) and spring Oncorhynchus tshawytscha) which were available. I have classified fish resources as dense and predictable. Strictly speaking, this designation is only accurate during the various spawning seasons. As stated earlier, it is assumed that resources will be most intensively exploited during those periods and in those places that they are most readily obtainable.

Hunting was also of primary importance to the Chilcotin. Large game included elk (Cervus canadensis), deer (Odocoileus), caribou (Rangifer), mountain goat (Oreamonmos americanus) and sheep (Ovis canaderisis), and black bear (Ursus americanus). Elk are now gone from the Chilcotin and have been replaced by moose

(Alces alces). In general, large ungulates like elk and caribou are highly mobile and have been classed as unpredictable (cf. Dyson-Hudson & Smith 1978:33). Small game included marmots (Marmota), rabbits (Lepus americanus), beaver (Castor canadensis), muskrat (Ondatra zibethica), porcupine (Erethizon), ducks, geese, ptarmigan and grouse. While more predictable in their movements, these animals are not abundant in terms of their potential dietary contribution.

Not all species were available everywhere in the Chilcotin. Caribou, for example, are located only along the extreme western edge of the Chilcotin territory, while deer are more numerous in the east than the west. This distributional variation was reflected by variation in Chilcotin subsistence patterns. Teit (1909:782) says that "The Stick Chilcotin hunt caribou, marmots, goats and bear; the Stone Chilcotin hunt deer, sheep, marmots, and goats, while the rest of the tribe hunt principally deer".

Plant foods are generally portrayed in the literature as "supplementary" resources (Lane 1981: 405; Tyhurst n.d.) but, a number were gathered in large quantities and stored for winter use and for trade. These are therefore identified in Table 3.3 as primary resources. They include soapberries (Shepherdia canadensis), service berries (Amelanchier alnifolia), avalanche lily (Erythronium grandiflorum), spring beauty (Claytonia lanceolata), and pine cambium. Like the faunal species plants varied in their distribution and productivity from area to area. As mentioned earlier, berry yields could vary drastically from one year to the next and have been classified as unpredictable. In contrast, avalanche lily and spring beauty were reliable and, particularly in the case of spring beauty, extremely abundant in some locations. Chilcotin people describe fields of spring beauty so dense that when the white blossoms are in bloom, the hillsides appear to be covered with snow.

Table 3.3 lists critical Chilcotin food resources, information concerning the predictability and density of each resource, and an assessment of its economic defensibility. In deriving the defensibility assessments I was guided by the information presented in Table 3.1. It should be emphasized that this list is by no means exhaustive. It represents only those food resources which appear, based on the

available ethnographic information, to have been critical (i.e., important to survival) to Chilcotin subsistence. It is acknowledged that dietary emphasis probably varied considerably within the Chilcotin territory and that some resources which were critical to groups living in one area may have been insignificant to others.

Resource	Distributional Characteristics	Economic Defensibility
Salmon	Dense & predictable	High
Trout	Dense & predictable	High
Whitefish	Dense & predictable	High
Kokanee	Dense & predictable	High
Suckers	Dense & predictable	High
Elk	Dense, unpredictable	Low
Caribou	Dense, unpredictable	Low
Deer	Low density, unpredictable	Low
Mtn. Goat	Moderately abundant, predictable	Moderate?
Mtn. Sheep	Low Density, unpredictable	Low
Black Bear	Low density, unpredictable	Low
Moose (recent)	Low density, unpredictable	Low
Marmot	Moderately abundant, predictable	Moderate?
Rabbit	Low density, predictable	Fairly low
Beaver	Low density, predictable	Fairly low
Muskrat	Low density, predictable	Fairly low
Porcupine	Low density, predictable	Fairly low
Ducks	Dense, unpredictable	Low
Geese	Dense, unpredictable	Low
Ptarmigan	Low density, unpredictable	Low
Grouse	Low density, unpredictable	Low
Spring Beauty	Dense, predictable	High
Avalanche lily	Dense, predictable	High
Pine Cambium	Not abundant, predictable	Fairly low
Service Berries	Dense, unpredictable	Low
Soap Berries	Dense, unpredictable	Low

Table 3.3 The economic defensibility of primary Chilcotin food resources.

Table 3.3 identifies two resource categories as providing a potential focus for territorial organization among the Chilcotin. Both root crops and fish resources (particularly salmon) were, in at least some parts of the Chilcotin and for some periods, dense and predictable in their distribution. The absence of territorial restrictions with regard to salmon fishing sites is particularly surprising since these locations were usually privately owned in other areas. It is true that there was (is) a great disparity in the size of the salmon runs available to the Chilcotin as compared to other groups located further downstream. The Chilcotin runs were, however, comparable in magnitude to those available to Carrier groups within the Fraser River watershed (see tables in Kew 1976). Since it appears that Carrier salmon fishing sites were exclusively owned (Goldman 1940: 366 – 367) there is little to argue that the same could not be true for the Chilcotin. Also, although Chilcotin salmon resources were not as abundant as those available to groups along the lower Fraser drainage, there is evidence to suggest that they were dense enough to support a territorial land use strategy.

According to the economic defensibility model, fish and root exploitation in the Chilcotin should have been carried out by dispersed, geographically stable foraging groups – each group having exclusive harvesting rights within a clearly defined area. This organizational pattern is in contrast to that predicted for other phases of the subsistence cycle when sparse or unpredictable resources were the primary target of subsistence activities.

Dispersal and Mobility Patterns

In conformity with the model's expectations the Chilcotin employed a variety of mobility and dispersal patterns. The following discussion is based primarily on Lane (1953).

Through the winter months (November – February) the basic unit of residence was the encampment, defined as, "a group of families living a relatively sedentary existence in loose geographic association with each other" (Lane 1953: 172). Encampments were usually situated near reliable winter ice fishing lakes with other encampments

located nearby.

Subsistence during this time was based largely upon stored foods and such fish and game as were available in the vicinity. The Chilcotin winter encampments followed a home range exploitation strategy. Dispersed foraging units (encampments) exploited overlapping, nonexclusive exploitation areas. The home range exploitation strategy is consistent with the reliable, low density resource base utilized during this period.

In late February when stored food supplies were running low, the encampments broke up into family units which hunted and foraged independently. These family groups were highly mobile and seldom occupied one site for more than a few days. Game was easy to kill during this season though scarce and in poor condition. Lane (1981: 406) comments that "This could be a critical period, for if the change in weather did not come or if the snowfalls became heavy and wet, people could be immobilized and reduced to starvation". Resources during this period then, can be characterized as unpredictable and scarce. The highly mobile and dispersed settlement pattern of this time is quite in keeping with the model's prediction.

From mid April through June, people gathered at specific lake fishing sites. These aggregations were larger than those at the winter encampments. Lane (1953: 172), refers to them as "semibands" since members were almost always from a single band, though the entire band never assembled at one such site.

Food resources were fairly plentiful at this time. Spawning lake fish were the main focus of subsistence, but in addition muskrats were trapped and plant foods gathered. Game was co-operatively hunted along the major game trails as it moved from the valley bottom wintering grounds up into the high country. Some of the harvested resources were dried and stored for future use.

Spawning lake fish, the primary resource target during the semiband phase, may be considered dense and reliable. According to the model such resources should be associated with a territorial land use strategy and dispersed foraging units. Contrary to these expectations the spring fishing sites were not exclusively used, and the Chilcotin semiband phase marked a period of relative aggregation. This pattern was continued and

expanded in late June when people headed for the root gathering grounds in the mountains. In addition to root resources marmots were trapped, berries harvested and game hunted during this period. Population aggregations in these areas included members of several different bands.

By August the mixed band groups had moved down from the mountains to assemble at the salmon fishing sites along the Chilko and Chilcotin rivers where they remained until September when the salmon runs ended. Following the salmon runs, the mixed bands dispersed into small family groups exploiting a variety of resources – most mobile and unpredictable. In November most groups re-established themselves back at the lakeside encampments.

Discussion

Many aspects of Chilcotin subsistence-settlement organization conform to the patterns predicted by the model, but a number of anomalies are evident. These latter cases involve resources which were singled out on the basis of their abundance and reliability as providing a potential focus for the development of territoriality. Instead, the extraction sites associated with these resources were the least exclusively utilized of all resource categories. In the course of the Chilcotin annual round the largest groupings of people occurred at both the root harvesting grounds in the mountains and at the salmon fishing sites.

One explanation may be that highly productive salmon fishing sites and root harvesting grounds were few in number and access to these resources extremely critical. Attempts to monopolize these resource areas may have been met with such intense opposition that defense costs became uneconomical in spite of the favourable distribution of these resources. This is difficult to demonstrate with the existing data. The fact that such large numbers of individuals gathered at the salmon fishing and root harvesting grounds does, however, suggest that resource areas of this kind were limited in number.

Previous applications of cost-benefit models of human territoriality have not adequately considered the role of competition as it affects the economic defensibility of

an area. It is reasonable to expect that the time, energy and risk associated with defending an area will increase with the degree of competition for that area. Competition or resource stress is a result of the interaction between resource availability (predictability and density) and resource demand, which is frequently a function of population density. Competition cannot be predicted on the basis of resource availability alone. Unfortunately, this is the only variable considered in Dyson-Hudson's and Smith's (1978) discussion of economic defensibility.

Matson (1983) and Coupland (1985: 43-45) present an alternate explanation for the absence of privatized fishing sites among interior groups like the Chilcotin. They claim that the extractive technologies utilized by these groups, namely gaffing and dip-netting, are not sufficiently restrictive in their locales of use to make defense of an area worthwhile. In other words, suitable gaffing and fishing sites are so abundant that their availability is not limiting and there is no competition for access.

This argument assumes that gaffing and dip-netting can be done from almost any stretch of river bank and that productivity is fairly uniform from one site to the next. Information presented in Kew (1976) and my own discussion with Chilcotin fisherman indicate that neither of these assumptions is valid. Dip-netting is only effective when salmon cannot see and thereby avoid the dip-net. Thus dip-netting is usually restricted to turbid stretches of river or done at night when visibility is again reduced. Gaffing and dip-netting are most efficient where river channels are narrow and currents swift causing fish to seek out back eddies close to the river banks. Canyon locations are ideal as such natural obstructions force the fish to aggregate. When channels are wide and currents slow, fish can swim up the middle of the stream beyond reach of gaff and dip net poles. Although fish platforms can increase coverage of the river they cannot compensate for the greater dispersal of the fish which occurs under these conditions. The Chilcotin frequently evaluated fishing sites as to their productivity and I was told of several gaffing locations which had fallen into disuse because changes in the river channel had rendered them less productive. Although it may be true that gaffing and dip-netting may be carried out from almost any section of river bank it is my impression that highly

productive sites are, and were, extremely limited in number.

GITKSAN SUBSISTENCE – SETTLEMENT PATTERNS

The Resource Base

There is no question that fish, particularly salmon, contributed the bulk of the Gitksan diet. While the Chilcotin had only two species of salmon available to them in any quantity, all five species (spring, sockeye, chum, coho and pink) were present in the Skeena watershed within Gitksan territories. Their abundance was such that the Gitksan could afford to discriminate in their harvesting, with sockeye, spring and coho being preferred over pinks and chum. Steelhead, which the Gitksan class as a sixth species of salmon, and trout were also harvested in quantity, while whitefish are said to have been resorted to only in times of scarcity (People of 'Ksan 1980: 30). This is in contrast to the Chilcotin, for whom whitefish was an important food source.

Again I have classified fish resources as dense and predictable in recognition of their distribution pattern during spawning season.

Game species included mountain goat, caribou, deer, porcupine, beaver, marmot, rabbit, bear, grouse, geese, ducks and ptarmigan. As in the Chilcotin, moose are said to be recent arrivals in the area, and caribou, formerly quite widespread, are now confined to a few isolated pockets. Many of the large game animals like caribou and moose are highly mobile and have been classified as unpredictable (cf. Dyson-Hudson and Smith 1978: 33). While the smaller animals like porcupine, beaver and rabbits are fairly common and more circumscribed in their movements, they are not densely distributed. Moreover, their smaller body size means that the yield per individual is not great, and in terms of potential dietary contribution they are not abundant. The same is true of game birds like ptarmigan and grouse.

Several kinds of fruit and berries were gathered in quantities by the Gitksan and preserved for winter use and trading. Saskatoon berries (Amelanchier alnifolia), soapberries (Shepherdia canadensis), several species of blueberries (Vaccinium sp), cranberries (Viburnum and Vaccinium sp) and crabapples (Pyrus fusca) were the most important of these. While berries are extremely abundant in the Gitksan region, the harvest is unpredictable from one year to the next.

Unlike the Chilcotin, the Gitksan utilized pine cambium for immediate consumption only (People of 'Ksan 1980: 80). Hemlock cambium was gathered in much larger quantities and stored for winter use and/or traded. A wide variety of other plant species were also used as food. Rice root (Fritillaria camchatcensis), bracken fern (pteridium aquilinum), the rootstock of a second fern species (the botanical identity of which is controversial), stonecrop (sedum), fireweed (Epilobium angustifolium) and cow parsnip (heracleum lanatum) are among the most frequently mentioned. These appear to have been of secondary importance and are not included on Table 3.4.

Again, it must be emphasized that the Gitksan resource base was far more varied and extensive than this discussion indicates. My concern here is only to identify the major food resources, as it is these which are critical in determining the presence or absence of territorial behavior.

Table 3.4 suggests that in terms of the economic defensibility model, Gitksan fishing sites, particularly salmon fishing sites, provide an obvious focus for territorial development. The distribution patterns of other critical resources utilized by the Gitksan are, however, of low economic defensibility, and according to the model unlikely to have been subject to territorial restrictions.

Contrary to these expectations the Gitksan recognized exclusive ownership and use of their entire resource base. Figure 3.1 shows the territorial holdings of one Gitksan House group recorded by Barbeau. The primary resources harvested from each territory are also shown. It is evident that resources which were neither dense nor predictable in their distributions were the target of territorial restrictions.

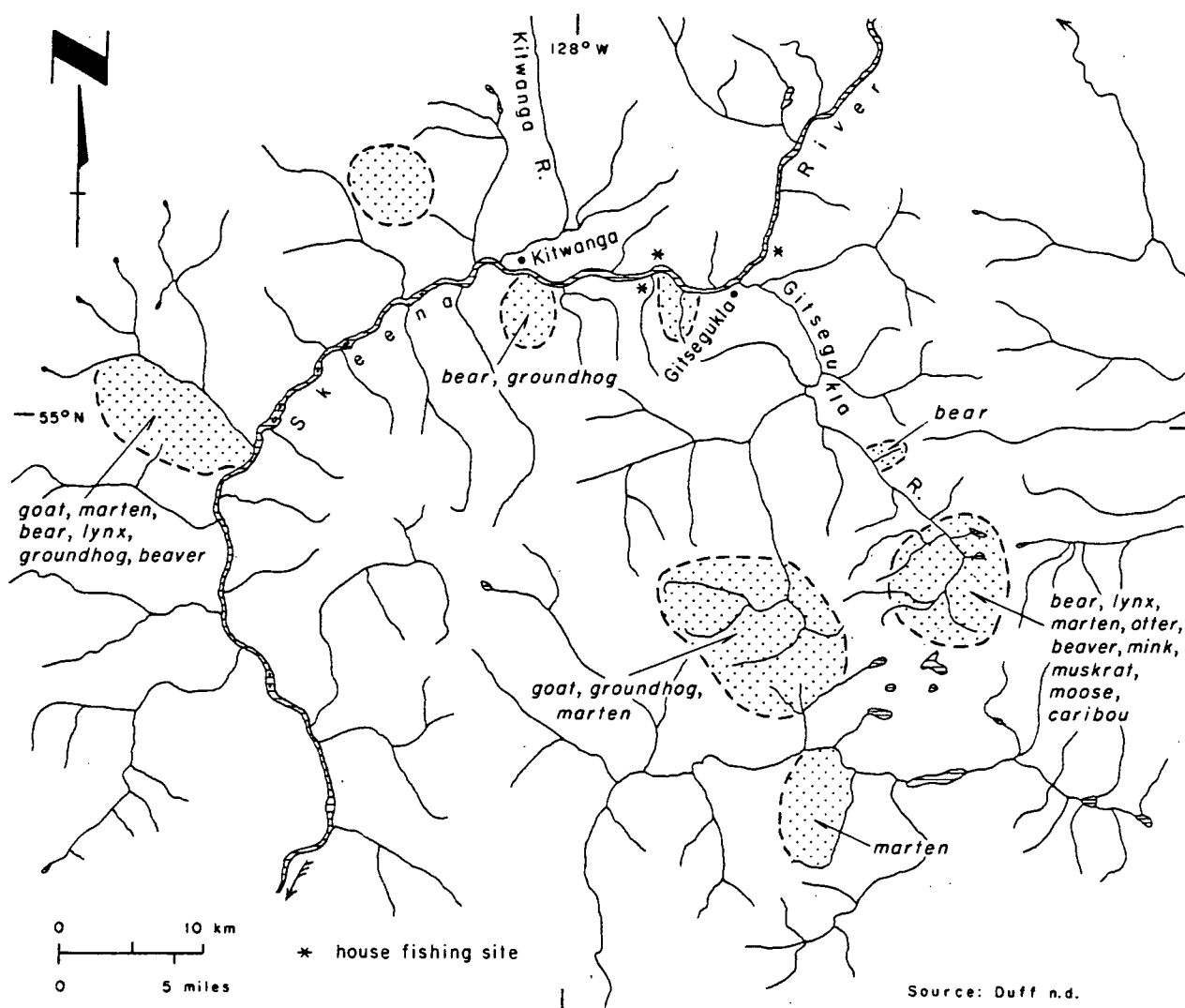


Figure 3.1. Reconstruction of the contact period territorial holdings of one Gitksan house group.

Resource	Distributional Characteristics	Economic Defensibility
Salmon	Predictable and Dense	High
Steelhead	Predictable and Dense	High
Trout	Predictable and Dense	High
Caribou	Unpredictable and Dense	Low
Mountain Goat	Predictable and moderately abundant	Moderate?
Moose (recent)	Unpredictable, low density	Low
Bear	Unpredictable, low density	Low
Deer	Unpredictable, low density	Low
Marmot	Predictable and moderately abundant	Moderate?
Beaver	Predictable, low density	Fairly low
Porcupine	Predictable, low density	Fairly low
Rabbit	Predictable, low density	Fairly low
Grouse	Unpredictable, low density	Low
Ptarmigan	Unpredictable, low density	Low
Ducks	Unpredictable, low density	Low
Geese	Unpredictable, low density	Low
Service Berries	Unpredictable, dense	Low
Soap Berries	Unpredictable, dense	Low
Blueberries	Unpredictable, dense	Low
Cranberries	Unpredictable, dense	Low
Crabapples	Unpredictable, dense	Low
Hemlock cambium	Predictable but not abundant	Fairly low

Table 3. 4 The economic defensibility of primary Gitksan food resources

Mobility and Dispersal Patterns

Gitksan spatial organization can be divided into two phases. The first phase, lasting from late fall to early spring, was one of population aggregation at winter villages. Winter villages were composed of aggregates of independent foraging units (Houses) which were situated along the Skeena and its major tributaries. Stored foods provided the bulk of the dietary requirement during this period.

January and February saw some task group movement out to winter trapping grounds. Target resources were the lower elevation fur bearers. Most of these animals were taken more for their pelts than for their meat, and it is likely that their importance was accentuated somewhat by the post contact fur trade (cf. McNeary 1976: 122). In

general, there was little residential mobility until February, when most of the population headed for the Nass River oolachen fishery. The oolachen fishery was the scene of maximal population aggregation as large numbers of Coast Tsimshian, Nishga, Tlingit and even Haida congregated for the annual run.

The second phase of Gitksan spatial organization began with the return from the Nass and lasted from late spring to early fall. During these months individual foraging units dispersed both in terms of each other and internally as well. This phase was distinguished by a high degree of logistically regulated mobility. It was not uncommon for a House group to simultaneously utilize a number of widely spaced residential bases. One of the primary responsibilities of the heads of each landowning group was to organize and co-ordinate subsistence activities in the various parts of a group's territories.

On the return from the Nass a wide variety of plant and animal resources were sought. The subsistence emphasis probably varied from area to area and from House to House depending upon the location and productive nature of each group's territories. Spring resources varied in their distribution and density, and labour accommodations were made accordingly. Foraging parties left the main village sites for intensive harvesting of specific resources like hemlock cambium and steelhead. These trips could last from one to two weeks. Other resources were gathered more casually and in smaller quantities.

In May through August the intensity of subsistence activities picked up. Most people moved out to their salmon fishing sites. The scheduling of this move was dependent on the timing of the runs in a particular area. Other groups headed for berrying or marmot hunting grounds. Many Houses had permanent residential structures and processing facilities at all of these locations.

September and October also presented numerous scheduling conflicts. While fishing activities continued, many berry crops were also at their best during these months. Month long expeditions to mid-elevation berry grounds occurred in September as did mountain goat and marmot hunting in the alpine areas.

Fall and winter were preferred seasons for the hunting of large ungulates like deer, caribou and more recently, moose. Bear were also hunted in the fall. The meat, and in

the case of bear, fat, from these animals provided an important component of the winter diet. Again, hunting was done by task groups, often working out of permanent residential bases established specifically for such purposes.

The actual sequence of movements and degree of dispersal varied considerably from House to House. Movement in and out of the winter village could occur year round. The amount of time spent in residence at the village depended in large part on the location of a House's territories. Those House groups with territories close to the village might bring harvested resources back to process. Those with territories further out established secondary residences and processing facilities near the procurement locations, where some individuals might stay for months at a time.

Discussion

The Gitksan subsistence-settlement data present a number of anomalies which the economic defensibility model does not predict and cannot account for. Chief among these is the recognition of territorial ownership of resource categories which have a low economic defensibility. Matson (1981) has suggested that once privatization becomes established with regard to dense and reliable resource locations, it is simply extended to include other less defensible resource categories. Although I suspect that Matson is correct in his postulated sequence of territorial development, the logistics of such a scenario still need to be explained. It is not clear, for example, how a social group can ensure restricted access to a resource if the density and reliability of that resource make it uneconomical to defend.

It should be noted that the extension of territorial concepts to include low defensibility resource categories is explicitly rejected by Dyson-Hudson and Smith (1978: 33, 37) who predict that within a single society concepts of ownership will vary according to the distributional parameters of the different resource categories. In other words only those resources that can be economically defended will be. Proponents of the economic defensibility model may argue that unreliable and/or scarce resources can be economically defended if they are in close spatial association to a reliable and abundant

resource which has a high economic defensibility. In the Gitksan area this argument could conceivably be used to explain the ownership of some "low defensibility" resource categories like berries. There is evidence that the Gitksan manipulated their environment both to ensure the spatial association of certain resource categories and to increase their productivity. One example is the burning of hillsides near fishing sites. This practice served to encourage the growth of berry patches at these locations and to maintain and improve existing patches. Burning also increased browsing opportunities and no doubt attracted game to these areas. It is also said that edible wild plant species were sometimes transplanted in the vicinity of fishing sites (D. Ryans personal communication). Today, garden plots are occasionally planted at or near the fish camps.

I would argue that although such practices increased the economic defensibility of these resources, the motivation was probably the increased foraging efficiency that resulted from having a number of important resource categories in close proximity to each other. (This suggests that density of the overall resource base as opposed to density of individual resources (Dyson-Hudson and Smith 1978) might be a relevant variable.) Moreover, it is evident that proximity to highly defensible resources cannot explain all aspects of Gitksan territoriality. If low defensibility resources were subject to territorial restrictions simply because their proximity to fishing sites made the implementation of such restrictions viable, one would expect to find that the territories of each territorial social unit were confined to the "defense radii" of their fishing sites. Examination of Figure 3.1 demonstrates that this is definitely not the case. Frequently, the territorial holdings of a single House group are widely dispersed and separated by territories belonging to other groups.

The economic defensibility model also fails to account for the Gitksan winter villages. The model predicts that territorial foraging units will be dispersed rather than aggregated in villages. An emphasis on stored foods during the winter may have permitted such population aggregations to occur, but this does not explain why they did. The Chilcotin also relied upon stored foods during the winter months and yet remained fairly dispersed.

CONCLUSIONS

Several conclusions emerge from the Chilcotin and Gitksan evidence:

a) knowledge of the density and predictability of critical resources is not sufficient to reliably predict the presence or absence of territorial land use strategies. Gitksan land use patterns provide examples of territorial strategies applied to resources which are unpredictable and/or widely spaced in their distribution. According to the model such resources are uneconomical to defend and should not be subject to territorial restrictions. Conversely, Chilcotin land use patterns illustrate that nonterritorial strategies may be applied to critical resources which are defensible. It would appear that in certain situations resource density and predictability are neither sufficient nor necessary to ensure the application of territorial exploitation strategies.

b) Settlement mobility and dispersal patterns also do not provide a reliable indicator of territoriality since they too deviate from the predicted patterns.

Archaeologically these findings indicate that prehistoric territoriality cannot be identified simply by reconstructing the mobility and dispersal patterns of a particular group, or by determining the abundance and predictability of their resource base. This is not to suggest that territoriality is unrelated to the distribution structure of critical resources or that the settlement patterns of a foraging unit do not reflect territorial land use. The results do indicate that additional variables must be considered and, furthermore, that the definitional ambiguity inherent in those variables that are focused upon needs to be reduced. The variable 'abundance' or 'density' particularly needs clarification. Dyson-Hudson and Smith (1978: 24) state that, "Abundance or density of a resource can be measured in several ways: in terms of average density over a broad area (the average for the territory of home range), as an average value within a particular type of microhabitat (within-patch density) and in terms of the fluctuation in density over time (the range of variability)". These are not equivalent measurements, however. Each of these resource density parameters will have a different effect on territorial development, and by extrapolation, on the archaeological record.

Furthermore, none of these measurements of resource abundance take the consumption requirements of the resident foraging population into account. Without this information abundance and density measurements are meaningless.

A number of authors emphasize the importance of resource "patchiness" or the degree of localization with regard to territorial development (Cashdan 1983: 48; Richardson 1982: 95; Matson 1985: 246). They argue that aggregated resources are easier to defend and should therefore encourage territorial behavior. The land use strategies associated with Chilcotin fishing sites and spring beauty harvesting sites suggest, however, that if the number of available patches is low, competition for these areas may increase to the point where defense becomes unfeasible. The costs of territorial defense are highly dependent on the degree of competition for an area, which is in turn related to population density. Any attempt to determine the economic defensibility of an area must consider this variable.

The developmental implications of the economic defensibility model present further difficulties. Dyson-Hudson and Smith (1978: 37) claim that,

"if it could be shown that clear cut changes from nonterritorial systems of spatial organization to well defined territorial systems occur with any frequency without correlated increases in measures of resource density and/or predictability (holding technology and social organization constant and introducing no new key resources), the model as presented would have to be rejected."

In other words, archaeological evidence of variation in land use patterns in an area without accompanying environmental or technological change refute the model. However, since territorial systems are more complex than nonterritorial systems in that they entail a formalized segmentation or organization of space (cf. Sahlins and Service 1973: 21 - 22); one must presume that they have emerged from a simpler nonterritorial base. If this is true, the archaeological record of most territorial systems should contain evidence of earlier, nonterritorial adaptations. Dyson-Hudson and Smith's assertion stems from the model's assumption that for any particular environment there is only one possible adaptation. As Bettinger (1980: 237 - 238); Layton (1986);

Woodburn (1980) and others have argued, there seems to be no theoretical reason to reject the possibility of multiple alternatives. It may be a fact that particularly harsh environments can support only nonterritorial adaptations, but it does not necessarily follow that 'permissive' environments can support only territorial adaptations.

The application of the model to Chilcotin and Gitksan data reveals that certain aspects of Chilcotin and Gitksan settlement patterns do conform to the model's expectations, but that the material remains associated with these patterns are not as expected. For example, the model predicts that territoriality will be associated with restricted residential mobility. According to Binford (1980: 17) "with any condition that restricts residential mobility of either foragers or collectors, we can expect (among other things) a responsive increase in the degree of logistically organized production". Logistically organized production refers to the acquisition of resources by specially constituted task groups which leave the residential base to procure "specific resources in specific contexts". Logistical mobility is characterized by the production of field camps which serve as a temporary base of operations for the task group. Binford (1980: 10) contrasts logistical strategies with forager strategies where, "a group" maps onto "resources through residential moves and adjustment in group size. . . ."

On the basis of the above it was reasoned that territoriality, by limiting residential mobility would lead to an emphasis on logistical procurement strategies. Working from this it followed that the territorial Gitksan should be more logistically oriented than the Chilcotin, whose mobility was not limited by territorial restrictions. The two groups did exhibit the expected patterns: the Gitksan were more logistically oriented and less residentially mobile than the Chilcotin. The data also revealed, however, that material patterning associated with residential vs. logistical mobility patterns did not conform to the expected pattern.

Binford (1980) identifies a number of archaeologically recognizable sources of variability which should distinguish the two mobility strategies. He argues that the procurement locations resulting from logistical strategies will enjoy greater archaeological visibility, since logistically organized parties harvest resources for groups much larger

than themselves and therefore generate considerable debris. He also proposes that logistical procurement will be distinguished by the presence of cache sites. According to Binford, large scale procurement and hence the production of caches is not characteristic of groups which map onto resources through residential moves.

The Chilcotin illustrate that this pattern is not at all clear cut. Many of the resources which the Chilcotin procured through residential as opposed to logistical mobility, e.g., fish and root resources, were harvested on a large scale. Archaeological work in the Chilcotin (Matson et al. 1980; Alexander et al. 1985) has revealed that the sites generated in these locations enjoy considerable archaeological visibility and include caches. These findings suggest that large scale procurement and storage is determined primarily by the anticipation of temporal fluctuations in resource availability, and is not as closely associated with a particular mobility strategy (logistical vs. residential) as Binford suggests. Moreover, while logistical strategies may be a response to spatial incongruities in the distribution of resources, the existence of such incongruence is not in itself sufficient to ensure the utilization of logistical procurement. Many of the same scheduling conflicts which the Gitksan resolved through the use of logistical mobility were also confronted by the Chilcotin who simply weighed the returns offered by the various alternatives and chose in favour of one. For example, although marmots were at their prime in August and September, most Chilcotin took them earlier in order not to miss the salmon runs of the later months (Lane 1981: 406). The degree to which the use of logistical strategies is limited by the size of the exploitation unit is in need of further investigation. It may be that smaller groups simply do not have the manpower to divide their foraging efforts between widely spaced resource centres.

Possible Directions for Future Research:

One of the stated objectives in applying specific propositions about territoriality to the Chilcotin and Gitksan data base was that in doing so further relationships and potential lines of enquiry might suggest themselves. In this context a number of observations seem particularly provocative. One of these is the abundance of repetitively used sites

in the Gitksan area, associated with resources that are not particularly dense and/or predictable in their distribution. I refer here to the Gitksan hunting camps. While permanence or repetitiveness of site use is not in itself indicative of territoriality (the Chilcotin have many repetitively used site classes) it is usually restricted to situations where resources are spatially predictable. The presence of redundantly used sites associated with resources which are not spatially predictable may be unique to territorial systems. This would have important implications for the archaeological record.

The intensive conservation and patch improvement practices of the Gitksan are also suggestive. Like agriculture, patch improvement is a way of manipulating the distributional dynamics of the resource base. I suspect that a much higher incidence of such behavior will occur among territorial as opposed to nonterritorial hunters and gatherers. Localized shortages caused by overexploitation cannot readily be dealt with through relocation when access to other productive areas is restricted. Such situations should therefore lend themselves to the development of resource conservation measures and ethics. The implementation of conservation measures will be more difficult in nonterritorial situations where the conservation efforts of one group can be nullified by the actions of other groups using the same area. Similarly with patch improvement – the investment of time and energy improving the productivity of an area is not worthwhile if one is unsure of being able to reap the benefits.

I do not mean to imply here that conservation and patch improvement practices are unique to territorial hunters and gatherers. I suspect that cross-cultural research on this subject would reveal that these practices are actually quite widespread. I do wish to propose, however, that intensive, high investment and delayed return conservation and patch improvement will generally be indicative of territorial situations.

Most conservation and patch improvement activities will probably leave little trace in the archaeological record, but some may be quite visible. In the case of the Gitksan, long term cultural burning to manage berry patches and to improve foraging and grazing opportunities for game, have so altered the vegetational succession within parts of the region that botanists have defined a special zone within the vegetation classification

scheme. Known as the "Hazelton Variant" this vegetational zone is essentially man-made. Even after local vegetation patterns cease to reflect past environmental manipulation practices, evidence of burning sequences exceeding rates attributable to natural lightening fires will still be apparent in soil and pollen profiles within the area. Although burning as a method of resource management is not restricted to territorial societies I believe that the intensity of Gitksan burning is of a different order from that of most hunter-gatherers.

The correlation between territoriality and resource conservation posited here conflicts with Hayden's (1981: 349 - 352) view that conservation will occur primarily in unstable environments, since residents in these areas will most affected by overexploitation. Interestingly, Hayden uses the Northwest Coast to illustrate how resource diversity and availability can lead to a lack of conservation practices. References to territorial disputes and quarrels over resource wealth are offered as evidence of the lack of conservation on the Northwest Coast. It is difficult to see how these are related, however, since territorial expansion does not constitute or necessitate over-exploitation. I suggest that there is abundant ethnographic evidence which demonstrates that Northwest Coast cultures deliberately avoided over-exploiting their environments. The Gitksan, for example, ceased hunting and trapping activities during the periods that the animals bore their young, and a conscious effort was made to limit harvests to a level which ensured the continued productivity of a territory. Fish resources were similarly "managed" by the Gitksan. Care was taken to see that fish trap barriers blocking spawning streams were removed frequently to ensure that sufficient numbers of fish were able to spawn, and task groups cleaned clogged spawning channels of debris in preparation for the runs.

Gitksan attitudes toward their environment as expressed in their oral traditions are particularly revealing. It is clear that "respect" for animals is a fundamental Gitksan ethic. The imposition of supernatural sanctions such as punishment for waste and other signs of "disrespect" is a familiar theme in Gitksan oral traditions.

Since territoriality establishes fixed patterns of man-land relationships, the degree to

which conservation and patch improvement practices are influenced by anticipated long term association with circumscribed areas, is worthy of further research.

CHAPTER 4: Material Correlates of Territorial Maintenance Strategies

Territorial maintenance strategies refer to the logistics of territoriality – the actual methods by which access to a particular area is limited and territorial integrity preserved. This chapter explores the premise that territorial maintenance strategies produce identifiable patterns of material remains, the presence of which may be used to distinguish territorial from nonterritorial adaptations. Most previous studies of hunter-gatherer territoriality have focused on the function and causes of this phenomenon, while the mechanics of territoriality have been largely ignored. This is unfortunate, since it is the material consequences of territorial behavior which are likely to be most visible in the archaeological record.

Although they do not elaborate on the subject, Dyson-Hudson and Smith (1978: 22–23) identify two basic kinds of territorial maintenance strategies employed by human groups – overt defense and communication or advertising. This study follows Dyson-Hudson and Smith in distinguishing between strategies which employ some physical means of limiting access (i.e., overt defense), and strategies which rely on symbolic communication (advertising) as a means of maintaining territorial integrity.

Physical strategies of territorial maintenance may consist of tended and untended facilities like defensive walls, forts, and watchtowers, or they may be strictly behavioral in content (as when an intruder is forcibly expelled). Overt defense thus includes both anticipatory and spontaneous behavior in response to a perceived threat of trespass or appropriation. Significantly, physical strategies of territorial maintenance function independently of the cultural milieu in which they are found. Symbolic strategies of territorial maintenance on the other hand, are limited in their range of effectiveness. They can function only when their meaning is understood. Consisting largely of boundary markers, symbolic strategies of territorial maintenance serve in an informative capacity, and are usually anticipatory in nature. I argue that symbolic strategies of territorial maintenance usually denote a situation in which territorial rights and privileges are

socially sanctioned. The implications of social sanctioning of territorial rights and privileges have not been explicitly recognized in previous discussions of hunter-gatherer territoriality, particularly with regard to calculating the defense costs of a territorial strategy.

Three propositions are formulated and evaluated. These identify areas of variation expected to result from the differing defense and communication requirements of territorial and nonterritorial hunters and gatherers, and which might be visible in the archaeological record. Again, archaeological and ethnographic data on the Chilcotin and the Gitksan are used to evaluate the utility of these propositions for distinguishing between territorial and nonterritorial adaptations.

Strategies of Overt Defense:

Defensive facilities

- Proposition 1. Territorial land use strategies encourage the utilization of high cost, fixed defensive facilities like fortifications, barriers, obstacles and guard stations to supplement the use of portable defensive implements. In contrast, nonterritorial hunters and gatherers rely solely on portable defensive implements to meet their defense requirements.

It has been argued that the defensive strategies employed by a group will reflect the aims of defense (Coupland n.d.: 13). It therefore is logical to expect that if the defense requirements of territorial and nonterritorial societies differ, the defensive strategies that they employ will also differ. It is generally assumed that restricted access to resources and resource areas requires some means of enforcing that restriction, i.e., defending those territories (Cashdan 1983: 49; Dyson-Hudson and Smith 1978: 24 - 25). Since nonterritorial populations by definition do not defend territory, defensive requirements of territorial and nonterritorial hunters and gatherers are different. The difference is an additive one. It is expected that both territorial and nonterritorial hunter-gatherers seek to defend people and property (i.e., portable wealth). It is the addition of territory to that list which must account for any variation.

Unlike property or people, territory is permanently fixed in space. Proposition 1 assumes that this characteristic both encourages and permits the employment of defensive strategies that are also fixed in space, (i. e. , facilities). It further assumes that such strategies make little sense when the objects of defense are mobile, as they are likely to be in nonterritorial situations.

Archaeologically, a relationship between territoriality and the use of defensive facilities is useful only to the degree that such features can be located and correctly identified in the archaeological record. It is expected that the success of such attempts will be at least partly dependent on the type of facility, materials and construction techniques characteristic to an area. The following descriptions of Gitksan and Chilcotin defensive investments are presented not only to assess the validity of the relationship itself but to facilitate future archaeological identification of such features in the Gitksan and Chilcotin areas.

Gitksan defensive facilities:

Fortifications: The Gitksan word for fort is Ta'awdzep, which according to MacDonald (1979: 32), "can be analyzed to mean 'built up above', a basic description of a hill fort". The Gitksan, however, use the term to encompass a considerable range of structural variability. Ethnographic records identify at least five different fortified sites in the Gitksan area. Of these five, only two were hill top forts. The other three include a fortified house and two fortified islands.

Gitksan fortifications represent varying levels of socio-political integration. The hilltop fort near the village of Kitwanga (see Figure 4.1), for example, is said to have been a permanent residential base resulting from an amalgamation of Houses from a number of different villages. In contrast, the fortified island near Kispiox village (see Figure 4.2) functioned largely as a refuge site and was geared to the defense of a single village unit. Still further variation may be seen in the Gitsegukla fortification, which

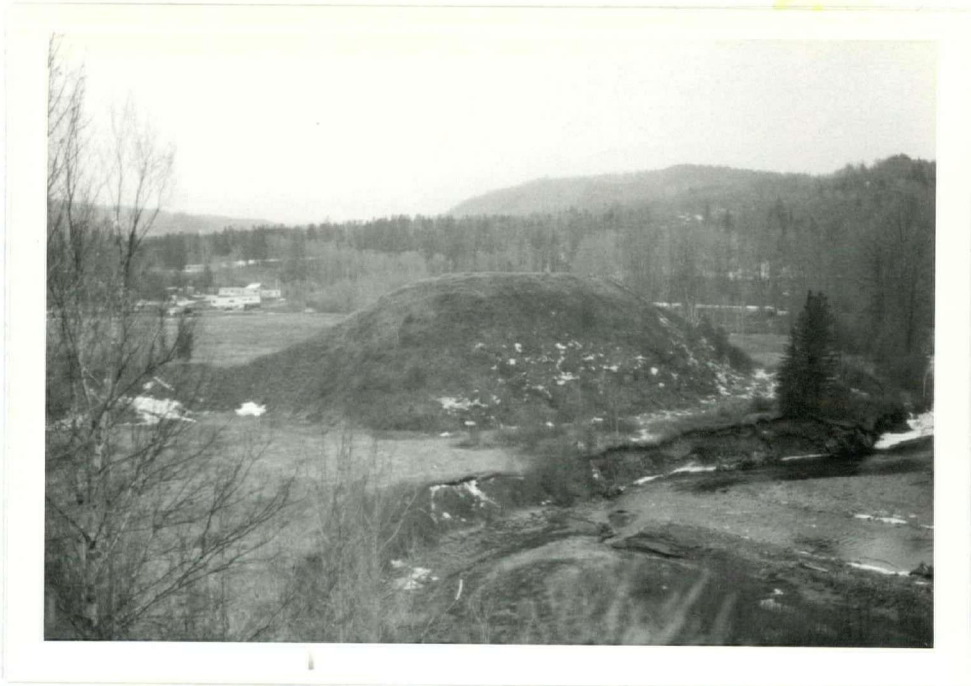


Figure 4.1 Site of Kitwanga Ta'awdzep.



Figure 4.2 Site of Kispiox Ta'awdzep.

consisted of a single fortified house on the perimeter of a larger, unfortified village (Emmons n.d.).

Ethnographic information on the structural features of Gitksan fortification is limited. The following description of a fortified island in Kitselas Canyon is cited at length for its detail. The site referred to is actually just outside Gitksan territory but the Gitksan claim to have been among the original founders of this and other Kitselas sites. The description fits what is known about Gitksan fortifications.

The fortress on Medegam Doktz was enclosed by a palisade of strong timbers stood on end and braced. The people of Kitselas carried many rocks to the palisade to reinforce the timbers. Inside the stronghold big troughs of water were filled and held in readiness. . . . The houses were built close to the edge of the island. Posts were sunk into the bed of the canyon and a canoe coming along side could be sunk with stones. A massive wall ran all around the island and watchmen patrolled the wall from a platform that ran along the top of the wall.

(W. Robinson n.d. : 148)

Palisade walls of upright posts were a common feature of most fortified sites. During times of peace, however, these were probably allowed to fall into a state of disrepair, perhaps even being burned as firewood. A number of photographs were taken of the above site around the turn of the century. While many of the houses were still standing at this time, there is no visible evidence of a palisade.

Oral histories indicate that areas around fortified sites were kept clear of vegetation in order to maximize visibility. This interruption of natural vegetative succession is likely to make such sites visible for several hundred years after abandonment, unless vegetational disturbance in the whole area is frequent and widespread.

A preference for naturally defensible locations is evident at all of the Gitksan fortresses. Islands, steep knolls and high bluffs were favoured locales. The circumscribed nature of such sites imposed certain constraints on the construction and organization of the structures within. Gitksan forts are known to have included from one to ten house structures within palisade walls.

Excavational levelling, land fills, structures built on stilts and crib work supports were

all utilized to maximize building space. All of these techniques have been documented in an excavational context at the Kitwanga hill fort, the only one of the five fortified Gitksan sites to have been investigated archaeologically. This site, excavated in 1979 by G. MacDonald under the auspices of Parks Canada, also provides important information on the nature of other defensive features associated with fortified sites. These included underground hiding places, escape tunnels, and suspended logs which could be released to mow down attackers as they attempted to scale the hillside. Puberty huts and sweat baths are also recorded in association with the Kitwanga Fort, but such features may not have been common to defensive refuges like the Kispiox site.

To summarize, Gitksan fortifications were marked by intensive construction activity, often involving considerable site modification. As such they can be expected to enjoy considerable archaeological visibility. I have examined a number of such sites and found this to be true. The sites are characterized by their relative inaccessability, by the number of house floors crowded into a confined area, and by the density of associated features (e.g., trails, cache pits and other depressions). None of the sites examined by me contain any surficial evidence of actual fortifications, however.

Lookout Stations

The Gitksan manned watch and signal camps when attacks were expected. These camps were situated on high bluffs and enjoyed a clear view of the expected attack route. A series of these might be used so that news of the impending attack could be passed from one station to the next. It is said that in this way a message could be spread from Kitselas to Kispiox in one day (Robinson n.d.: 160 - 161), a distance of about 100 miles. As facilities these camps probably did not represent any major labour investment, and, their archaeological visibility is likely to be low. Even so, a number of signal stations were recorded during site surveys of the Babine Lake area lying just outside Gitksan territory (Mohs 1974). This identification appears to have been based largely on the unsuitability of such locations to have served in any other capacity. It is

conceivable, however, that in some instances watch camps may resemble hunting stands (see Binford 1978).

Weapons Caches

Oral histories which document various Gitksan battles contain frequent references to weaponry stockpiles and caches. One such cache, a collection of 35 stone clubs, was discovered in Hagwilget Canyon near the present day village of Hazelton (Duff 1962). Duff (1962: 29) indicates that while some of the clubs were obviously weapons, others "would be very inefficient as weapons". The latter may well have functioned as battlefield insignia. Although such weapons caches undoubtedly represent a considerable outlay of time and energy, they are likely to be poorly represented in the archaeological record.

Chilcotin defensive strategies:

Unlike the specialized, high investment defensive strategies of the Gitksan, Chilcotin defense was largely "embedded" in the subsistence-settlement system. Lane (1981: 408) remarks that the Chilcotin "gained security from being dispersed in small groups that were physically apart but close enough to communicate readily. This made it difficult for an enemy to surprise a whole community." In the event that an attack did occur, the rest of the community could either hide or rally to the defense. At other times of the year security was derived from aggregation. Trips to alpine root harvesting grounds were made in large groups to discourage attacks from non-Chilcotin parties, who also exploited the alpine areas (Lane 1981:406).

The Chilcotin used bows and arrows, spears, daggers and clubs for fighting (Lane 1981: 408) but did not invest in fixed defensive facilities like fortifications (Morice 1892: 35; Teit 1909: 785). According to Morice (1893: 35),

Throughout the whole extent of their territory, no mounds, enclosures, fortifications of a permanent character, or any earthen work suggesting

human agency are to be found, nor is their existence, past or present even so much as suspected by any Carrier, Tsékehne or Tsijkoh'tin.

Discussion

Initially it was assumed that the Gitksan and Chilcotin evidence fully supported the proposed correlation between territorial perimeter defense requirements and the construction of high investment, fixed defensive facilities. As predicted, such features were common among the Gitksan and absent among the Chilcotin. A closer examination of the ethnographic data, however, reveals that the presumed relationship between Gitksan fortification structures and territorial defense is, in fact, invalid.

As mentioned above, the social unit associated with Gitksan fortifications only occasionally corresponded to the territorial social unit. More often fortifications were associated with aggregations of territorial groups. Admittedly, this in itself does not suggest that the forts were not oriented toward territorial defense. It is quite possible for a village community consisting of several independent territorial social groups, to function as a unified defense unit, protecting their territories jointly. House groups associated with Gitksan fortifications were not always from the same village, however. The Kitwanga fort provides an example of this. Oral history indicates that the Kitwanga fort was originally established by a single House group which feared retaliation for a series of raids they had conducted on neighbouring (non Gitksan) populations. Independent House groups from several villages (one of these from outside Gitksan territory) later joined them at the site. Through time there appears to have been a considerable turnover in the territorial social groups residing at the fort (Barbeau-Benyon n. d., MacDonald 1984).

If Gitksan fortresses were constructed in order to defend highly productive resource areas, one would expect them to be positioned near these locations, or in such a way as to inhibit access to them. Analysis of fortress locations and the territories of groups associated with those fortifications reveals that the defensive sites are, more often than not, miles away from the territories they are supposedly protecting. In no way could

these strongholds have impeded access to the territories.

I think it is particularly revealing that Gitksan fortifications so often related to aggregated House groups. Within Gitksan territory, alliances were formed and conflict waged along House group rather than village lines. In such instances aggregation does not provide a defensive advantage, since aggressors focus their efforts on a specific target, and since the support of neighbouring Houses is dependent upon details of the triggering incident. When aggression comes from outside the socio-cultural system, however, such norms of conflict are unlikely to be adhered to. In these instances, aggregation becomes a viable defensive response.

Territorial expansion by foreign aggressors is most likely along external borders, since alien colonists living in isolated enclaves are particularly vulnerable to attack. None of the documented Gitksan fortifications are located in such border areas.

Oral history further suggests that Gitksan fortifications were a response to foreign aggression, and that motives for this foreign aggression did not include territorial expansion. Accounts which describe the construction and occupation of Gitksan forts clearly identify non-Gitksan raiding parties intent on vengeance and/or wealth acquisition as the motivating force.

Vengeance and wealth acquisition were also major causes of aggression among the Chilcotin (Lane 1981: 408), yet the defensive responses of the Chilcotin were quite different. As discussed earlier, territoriality, by fixing resource exploitation patterns restricts population movement, rendering groups more vulnerable to attack. Lane (1981: 408) has commented on this phenomenon with regard to the Chilcotin:

The people surrounding the Chilcotin, except for some of the Carrier, lived in sedentary or semisedentary communities that were known to the Chilcotin and vulnerable to attack. The Chilcotin were capable of devastating attacks against more "powerful" but less mobile enemies.

Not only does sedentism provide a motive for increasing investment in defensive facilities it also provides the means, for permanent fortifications are only viable in situations of low mobility. The evidence suggests that the correlation between territoriality and permanent

defensive facilities relates as much to the reduced mobility of territorial hunters and gatherers as it does to territorial defense.

The Gitksan example highlights a need for criteria which aid in the archaeological identification of fortification function (i.e., social defense vs. territorial defense). It suggests that three kinds of evidence may be useful:

- 1) Locational information. If it can be shown that a particular fortification is not near or does not impede access to resource areas, it may be presumed that territorial defense is not the function of that facility.
- 2) Identification of the social unit associated with a particular fortification. In comparison to agriculturalists, hunter-gatherers require a large per capita land base. It is unlikely that a single defensive facility could adequately defend the territorial claims of multiple landholding groups. If the social unit associated with a particular fortification does not correspond to the territorial social unit (i.e., if multiple territorial groups are represented) social defense rather than territorial defense is the more likely function.
- 3) Evidence of subsistence stress. Territorial aggression should increase under conditions of resource stress. When land and resources are abundant, colonization of unoccupied areas rather than territorial conquest is expected. Territorial expansion implies that a group has sufficient manpower to occupy and exploit the additional landbase. If manpower is limited, raiding for plunder will be a far more profitable exercise.

The fact that Gitksan defensive facilities were not oriented toward the defense of territory does not negate the possibility of such occurrences elsewhere, of course. It does demonstrate that aggressive perimeter defense is not a necessary correlate of territoriality, and may, in fact, be far more unusual among territorial hunters and gatherers than current cost benefit models of territoriality imply.

Residential site positioning

Proposition 2 In territorial situations residential site positioning will be used as a 'passive' form of overt defense. In this case, primary residential sites will be tied to critical resource areas in order to impede access of other groups to these locations, though this may increase the exploitation costs of secondary resources. The category of nonterritorial hunters and gatherers encompasses a wide variety of settlement systems and strategies. It is expected that in general, residential site positioning among these latter groups will be more sensitive to resource exploitation costs.

Discussion:

It is best to define at the outset what is met by 'critical resources' and 'primary residential sites'. As used here, critical resources refer to those which play a paramount role in meeting the annual caloric and protein requirements of a population. Secondary resources, while perhaps equally crucial to survival, are likely to make a qualitative rather than a quantitative dietary contribution.

There are a number of criteria which identify primary residential sites: a) they are generally occupied for a longer portion of the year than other residential sites; b) they are likely to be inhabited by the largest integrated social unit; c) they have a greater tendency toward permanence, i. e., they are reoccupied year after year. It is expected that each of these factors will contribute to a greater archaeological visibility of primary residential sites.

Archaeologists frequently assume that in territorial situations, residential sites must be positioned on or near critical resource areas so as to prevent others from exploiting these resources (Coupland 1985: 46, 48; Flannery 1972: 28; Matson 1985: 246). Critical resources, being the most abundant, are expected to be stored in greater quantities than other resources, thus producing high bulk accumulations at these locations. The high cost of transporting consumers and large quantities of stored goods should favour a situation in which task groups procure secondary resources and transport them back to the primary residential site (Binford 1980: 17). While intuitively

satisfying, the relationship between critical resource areas and residential site locations has rarely been tested.

The posited correlation has a number of implications for the archaeolgocial identification of territoriality. If, for example, archaeological evidence indicates that primary residences are not located near the procurement locations of critical resources, it may be presumed that the group in question was not territorial. The following discussion examines the relationship between residential site locations and critical resources among the Chilcotin and the Gitksan.

Test application – The Chilcotin

A desire to minimize exploitation costs by minimizing travel to and from exploitation areas appears to have been the primary factor influencing Chilcotin residential site placement. It is clear from Lane's (1953: 171 – 173) discussion of the Chilcotin seasonal round that residential sites were relocated throughout the year to facilitate access to seasonally important resources. Chilcotin subsistence–settlement strategies were discussed in Chapter 3 and so are only summarized here.

The primary residential sites among the Chilcotin were the winter camps. These were occupied for longer than any of the other residential sites, and their membership constituted the largest integrated unit of Chilcotin society. Winter camps were situated near lakes with reliable ice fishing – this being the dominant subsistence activity at this time of year. In spring, when the ice became thin and food was scarce, these camps broke up and individual family units hunted independently. Camps were very temporary and the search for game dictated their location. Later in the season, when runs of trout, whitefish and suckers were the focus of subsistence, residential bases were established near productive spawning lakes and streams. Following the spring lake fishing, alpine resources became harvestable and residential bases were shifted again, up into the alpine. In the summer, when the salmon began running, large camps were established at productive river fishing sites. After the salmon season families again dispersed. Camp

locations during this period were dependent on the target resource. The yearly cycle began again in November with the re-establishment of the winter lake fishing camps.

In the last chapter both root and salmon resources were identified as providing a potential focus for the development of territoriality. Had the Chilcotin been territorial we might expect to find that primary residential sites were tied to highly productive salmon fishing sites (since the alpine root harvesting grounds are rather inhospitable for much of the year and since salmon are a higher bulk resource). The above data indicate this was not the case. Instead, Chilcotin winter residences were placed so as to minimize the exploitation cost of secondary winter resources.

Archaeological evidence does suggest that sometime prior to the Chilcotin occupation, the area was inhabited by peoples who did exhibit this settlement pattern. Large house pit sites have been recorded at a number of locations along the Chilko River. Many of these locations are still used as salmon fishing sites today due to the productivity of the fishing stations in their immediate vicinity. Since pit houses were primarily winter residences, it is evident that the occupation of these locations was not restricted to the salmon fishing season as it was in Chilcotin times. The riverside location of winter residences also suggests that lake ice fishing, if it was engaged in at all by these earlier peoples, was carried out by logistically organized task groups. This, too, is what we would expect of a territorial land use strategy.

The Chilcotin deny that the large housepit sites are theirs although they do claim parentage of other sites in the area (Lane 1953: 275). Preliminary archaeological investigation of a few of the large housepit sites also suggests that they are non-Chilcotin in origin (Magne and Matson 1984). If placement of primary residential sites on or near primary resources is indeed indicative of a territorial adaptation, such a system may well have been in place prior to the Chilcotin arrival in the area.

Test application – The Gitksan

Salmon was by far the single most important resource utilized by the Gitksan. It is

therefore predicted that primary Gitksan residential sites will be tied to critical salmon areas. Preliminary examination of the ethnographically documented village distribution pattern tends to confirm this expectation. Of the seven ethnographic villages, all except two are situated along the main stream of the Skeena rather than along the smaller tributary streams. Since the salmon population of a tributary is invariably less than that of the primary stream, this main-stream orientation is suggestive of a conscious attempt to occupy and thereby defend areas of maximum salmon productivity.

Two villages deviate from this pattern – Kitwancool and Gisgegas (see figure 4.3). Kitwancool is exceptional in that its territories provide access to Nass River salmon in addition to the Skeena River runs. Kitwancool's position on a tributary midway between these two rivers ensures easy access to both areas. Exceptional circumstances also account for Gisgegas's apparently anomalous position. Gisgegas is situated on the Babine River – one of the most productive tributaries in the Skeena watershed. The Babine system alone accounts for 89% of the total Skeena sockeye population (Aro and Shephard 1967: 243).

All seven villages are situated in the downstream reaches of the Gitksan portion of the Skeena watershed (see figure 4.3). A decline in salmon productivity associated with increasing distance from a river mouth has been well documented (Kew 1976; Sneed 1971). The downstream positioning of Gitksan villages is therefore suggestive of an attempt to control access to highly productive salmon procurement sites. Surprisingly, a comparison of Gitksan salmon fishing sites with village locations reveals that salmon procurement sites are frequently a considerable distance away from the village sites. Figure 4.4 is a map of fishing sites belonging to the various Kispiox Village House groups. The map is based on one drawn in 1911 by an early surveyor in the area (Green 1911) and is incomplete in that it does not show all of the Kispiox River sites, some of which are located more than 50 miles upstream. Those sites which are plotted however, sufficiently illustrate the weakness of arguments which assert that Gitksan village locations served to restrict access to fishing sites. Given the dispersal of fishing sites,

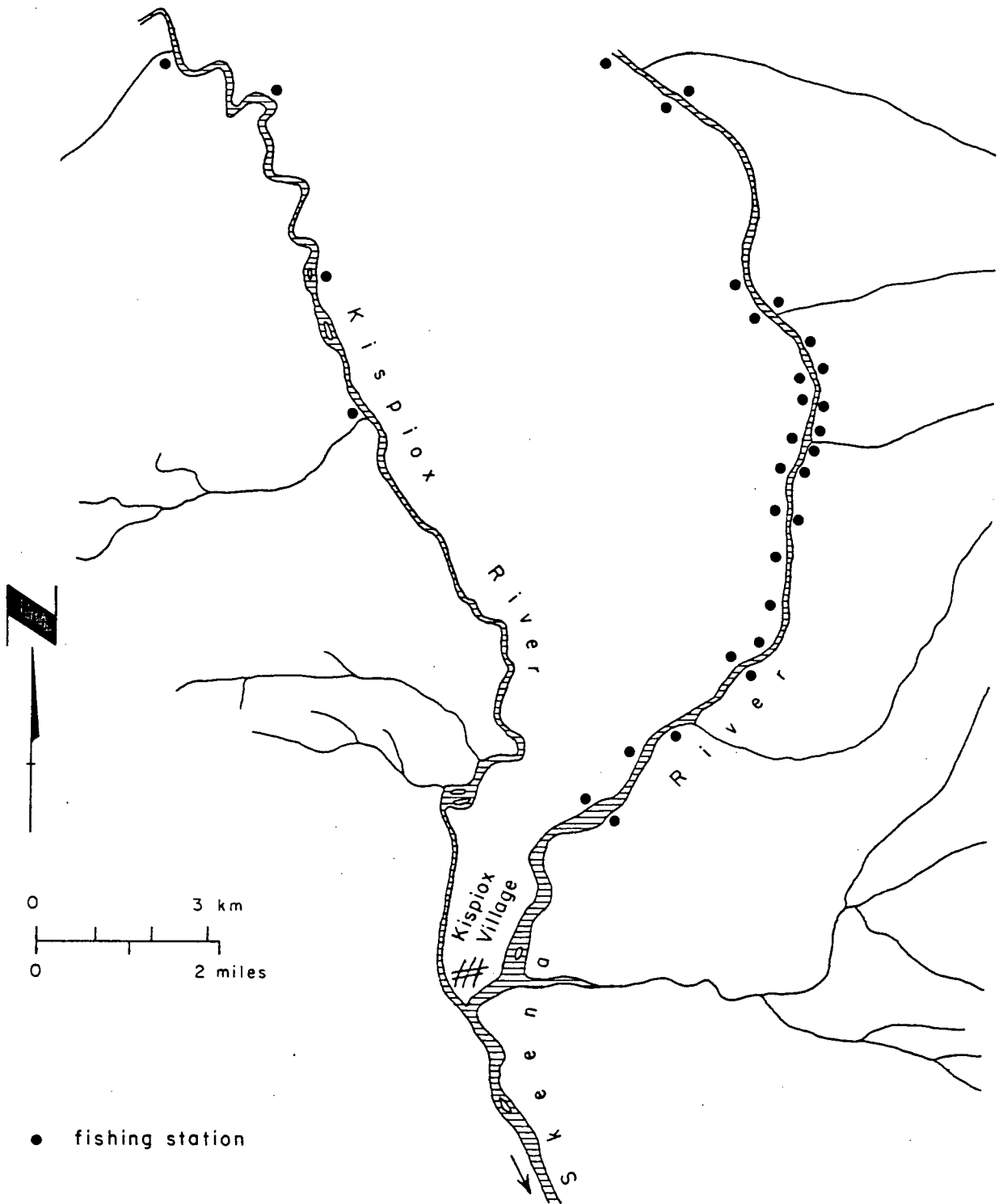


Figure 4.4. Fishing sites belonging to Kispiox Village house groups.

one would expect to find a similar dispersal of primary residential bases rather than the village aggregations characteristic of the Gitksan.

It might be argued that resource areas only need to be defended, i. e. , physically occupied, during their season of productivity, and that during the salmon season the Gitksan did exhibit the expected pattern of dispersal. As mentioned earlier, however, fishing sites were the scene of high bulk accumulations of processed resources. Since winter subsistence was dependent on these resources, the positioning of winter residences away from the procurement and processing sites is puzzling. Had the winter village locations facilitated access, i. e. , minimized travel costs to winter resources, as was the case in the Chilcotin, then the argument might hold. Examination of the relationship between other resource areas and winter village locations , however, does not support this thesis. Figure 4. 5 is a map of territories belonging to Kitwanga Village House groups as recorded in the Barbeau files. The boundaries, as they appear on the map, are not exact, nevertheless, it is clear that dispersal of residential bases would have been more efficient in terms of exploitation costs.

In the case of Kitwanga, there is some evidence to suggest that residential locations may have been more sensitive to exploitation costs and resource defense in the past. Figure 4. 6 shows the ancestral villages of Kitwanga House groups as recorded in Gitksan oral history. These are plotted against the territorial holdings of those groups. In every instance the ancestral village appears to be centrally located within the group's territories.

Although residential site positioning may be used by some territorial societies as a means of restricting access to highly productive resource areas, the Gitksan evidence shows that hunter-gatherer territoriality does not require such strategies.

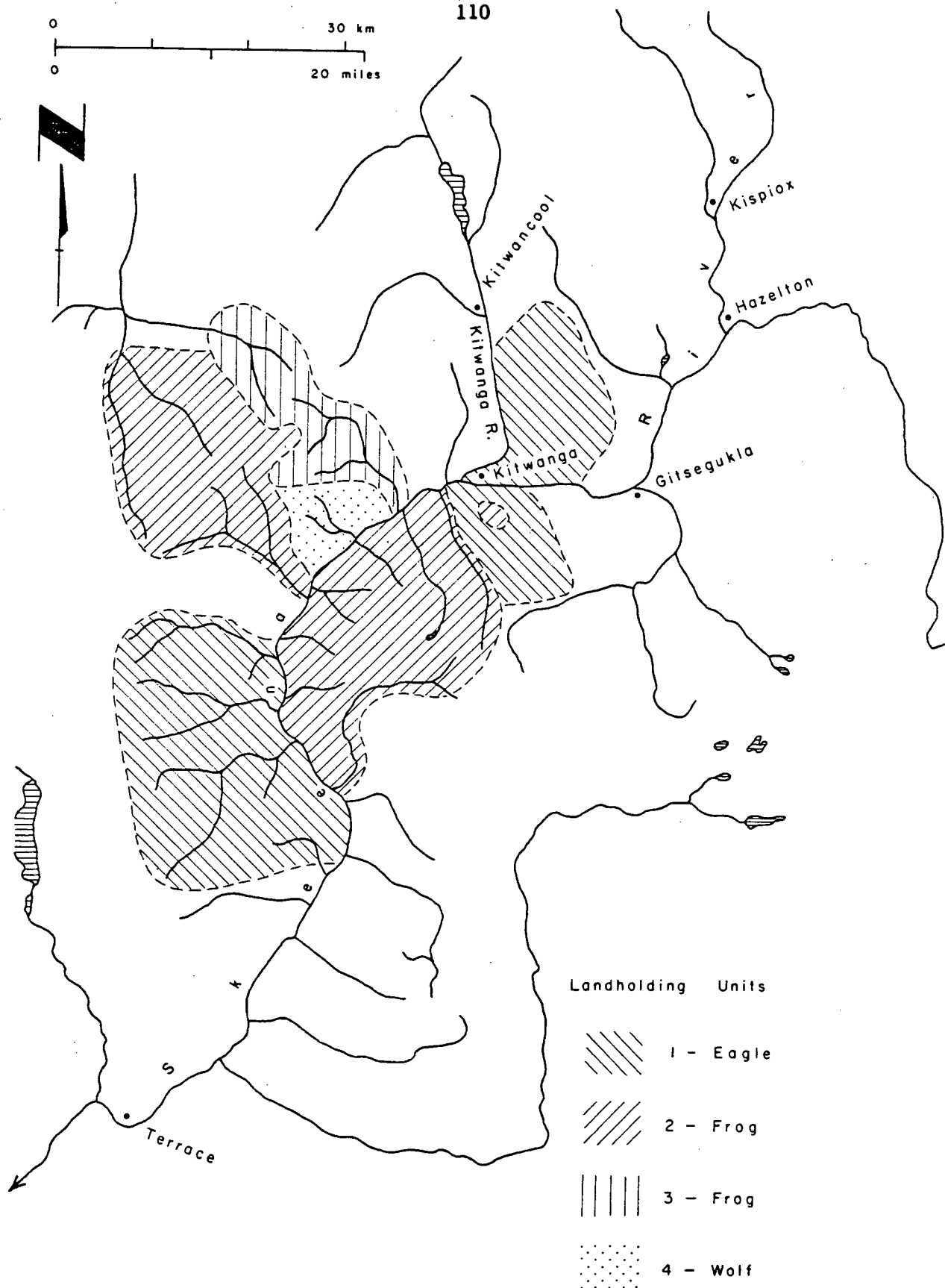


Figure 4.5. Territories belonging to Kitwanga Village house groups as recorded in the Barbeau files.

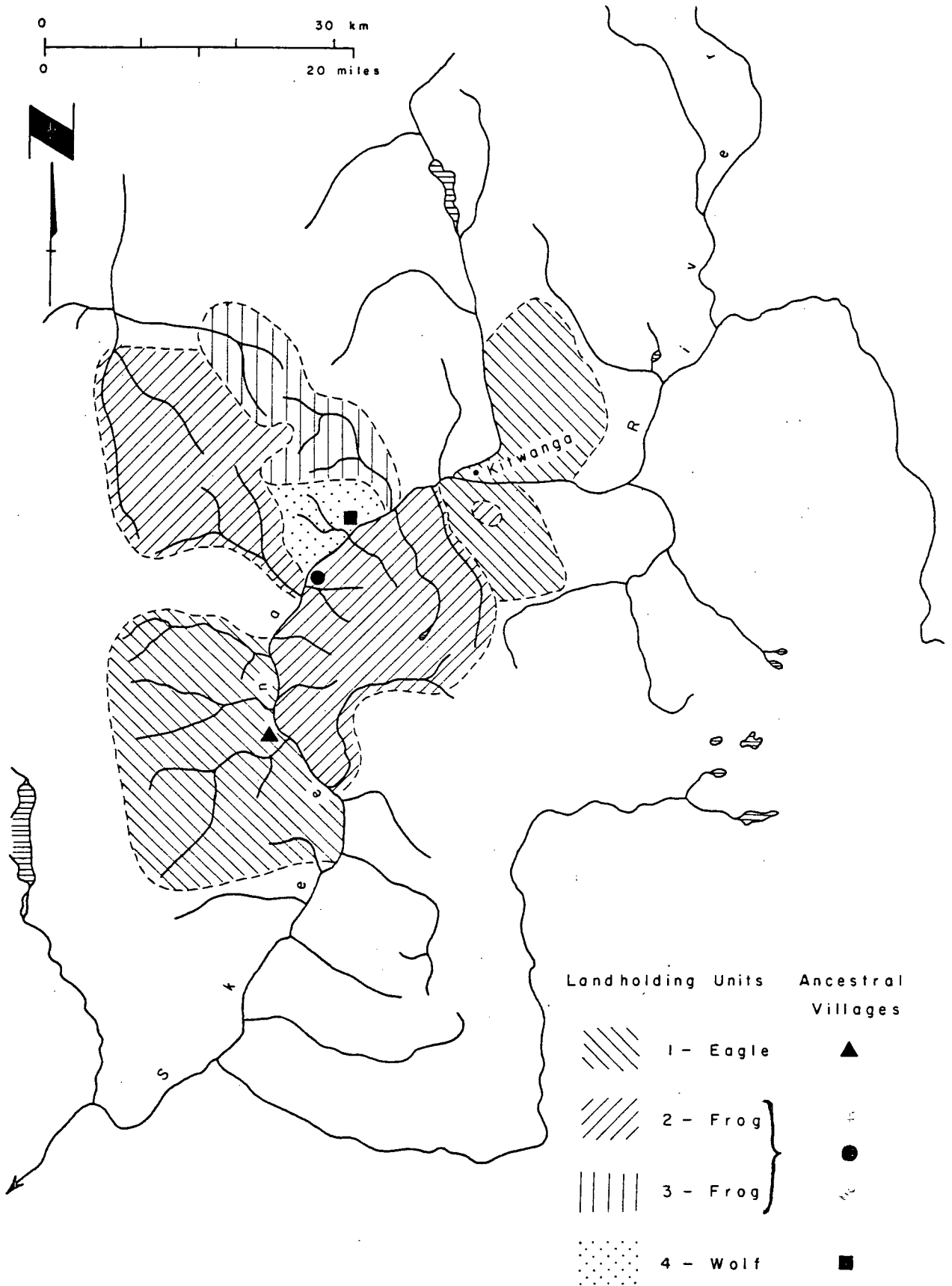


Figure 4.6. Ancestral villages of Kitwanga House groups.

Symbolic Strategies of Territorial Maintenance

Students of animal behaviour have long recognized the role of communication and advertising in nonaggressive territorial maintenance. Visual displays, olfactory marking, landscape alteration and vocalization are a few of the more commonly cited advertising technique animals use to promote and maintain territorial integrity. While humans are also asserted to employ communication and advertising in territorial maintenance (Dyson-Hudson and Smith 1978: 22; Cashdan 1983: 49), the nature and context of territorial advertising in human societies has rarely been considered worthy of discussion. Given that humans possess a unique capacity for communication through the use of symbols (White 1959), it is reasonable to expect that advertising strategies employed by human populations will differ from those of other animals, who do not possess the conceptual capacity for symbolic communication. Since such differences are likely to have important consequences for the archaeological record, some consideration of the potential effect of human conceptual abilities on territorial communication and advertising is in order.

Conkey (1978: 67) discusses the role of symbolic communication in the evolution of 'identity conscious social groups'. I propose that identity consciousness can be expected to affect the message content, function, form and cost of human territorial advertising.

Among nonhuman groups which lack identity consciousness, territorial advertising functions primarily to delineate perimeters and to maintain the spatial segregation of territorial groups, rather than to identify or discriminate between these groups. In this context advertising behavior is stereo-typed for a particular species as a whole, although the degree of territorial behavior may vary with resource availability and other factors. Unlike other animals, humans have the ability to arbitrarily assign meaning to particular actions or features, and homogeneity of territorial advertising behavior between populations is unlikely.

The development of identity consciousness creates an inherent need for mechanisms

which promote internal integration and external differentiation. In these circumstances territorial boundary markers may serve not only to circumscribe territorial units, but also to identify each unit as distinct from all others. Human territorial advertising is therefore expected to exhibit uniformity within the territorial unit and diversity between units in a region. In order for territorial advertising to function effectively, however, the message must be understood by the surrounding population. This implies that some degree of regional uniformity must exist. I expect that within a particular interaction sphere or socio-cultural system, territorial advertising strategies will share a common format, and that pattern diversity within this common format will relate to individual territorial units.

Among nonhuman species territorial advertising is inextricably tied to the physical space being claimed. When it becomes possible to separate the concept of territory from the place itself, no such association is necessary. According to Wilmsen (1973: 5), the key elements of nonaggressive territorial maintenance are 1) the identification of individuals with isolatable segments of space and 2) a means of communicating this identification to others. Among nonhuman populations the spatial and social components are interdependent, each being defined in terms of the other. With the ability to conceptualize and differentiate between group identity and group property, territorial advertising can proceed along two lines: identification of the territorial social unit and identification of the spatial unit.

Advertising modes:

Advertising strategies can employ both material and nonmaterial or sensory modes of message transmission. As Wobst (1977: 322 – 323) explains, distinctive features of material or artifactual modes of communication render it useful for a relatively narrow range of information content. Only those messages that are simple, unchanging and repetitive are suited for transmission in artifact mode. Wobst believes that such messages are likely to be rare in hunting and gathering societies. I suggest that territorial hunters and gatherers provide an exception to this generalization, and that the

artifact mode of communication has certain advantages which make it more useful than other forms of communication in territorial situations. Nonartifactual modes of communication require the presence of a human communicator. Once a message is translated into a material form (i.e., the artifact mode of communication), information can be transmitted independently of a human communicator (Wobst 1977: 322). This characteristic of artifactual communication is likely to be of particular significance in territorial situations. Artifactual boundary markers have the potential to significantly reduce the time and energy which territory owners must devote to monitoring borders and communicating territory perimeters. This is frequently cited as one of the major costs of a territorial system (Cashdan 1983: 49; Dyson-Hudson and Smith 1978: 24).

While the initial cost of producing artifactual messages is higher than for other forms of communication, the longer use life of such messages tends to reduce their long term cost relative to other forms. Larger target populations also reduce the relative cost of artifactual messages. (Wobst 1977: 322 - 323). Both of these characteristics are likely to be of some significance in territorial situations.

One of the limiting factors inherent in a territorial system is the problem of differentiating between members and nonmembers of the territorial unit (Hamilton & Watt 1970: 272). The potential for overt aggression increases dramatically "as the number of participating individuals increases beyond the capacity of each to recall the identity and status of every other individual in the groups with which it interacts" (Hamilton & Watt 1970: 272). This problem is further intensified when social networks are extended outward to include other territorial groups in various reciprocal relationships. Not only must individuals recognize members of their own social unit, but they must also be able to identify other territorial groups with whom they are bound in some formalized relationship. Artifactual symbols of territorial identification provide a possible solution. By broadcasting the identity of the territorial groups, such symbols permit individuals to assess the probable nature of their reception before an encounter has taken place (see Wobst 1977: 327). Artifactual strategies of communication and advertising thus

facilitate conflict avoidance.

Proposition 3: I postulate that territorial hunters and gatherers will use artifactual, as opposed to behavioral modes of communication, to identify both the social unit and the territorial spatial unit. In the absence of territoriality, socio-spatial units are expected to be transient and ill defined, and concrete manifestations of such relationships absent.

Artifactual communication:

Artifacts can be invested with information content in a number of ways. Most discussion of this subject has focused on stylistic information exchange (Conkey 1978; Weissner 1983; Wobst 1977). Style refers to formal variability within a particular class of material culture which informs on various aspects of social identity (Weissner 1983: 256). Recent discussions have distinguished a number of different levels of stylistic behavior. At its most inclusive level, style refers to "specific patterns of isochrestic (equivalent in use) variation that are socially bounded and that therefore may be regarded as idiomatic or diagnostic of ethnicity" (Sackett 1985: 157). 'Style' has also been used in a narrower sense to refer to formal variation within a particular class of material culture "that has a distinct referent and transmits a clear message to a defined target population about conscious affiliation or identity" (Weissner 1983: 257). Sackett (1982) refers to this latter type of style as iconological style, Weissner (1983) calls it emblematic style. In this paper I use the term emblematic to refer to a distinct kind of artifactual communication in which the symbol or emblem, rather than the artifact, is the message bearer. This is significant because it means that the same emblematic message can be displayed on any number of artifact classes. In contrast, stylistic messages are generally an integral part of an artifact's form and structure, and cannot be transferred to other artifact classes.

This distinction has important distributional implications. Wobst (1977: 326 - 327), Weissner (1983: 257) and Conkey (1978) suggest that stylistic messaging tends to be an all or nothing phenomenon, since artifacts which are members of a

particular category of material culture lose their 'signalling neutrality' when some members of a particular class are used to transmit messages. With emblematic messages it is quite possible for some members of a particular class to contain messages without affecting the signalling neutrality of others. Both iconological style and emblematic communication may be used to convey information about territorial boundaries.

Identifying territorial advertising:

From an archaeological perspective, the use of artifacts in territorial boundary maintenance increases the likelihood that archaeologists will be able to recover evidence of such strategies in the archaeological record. Unfortunately, the artifactual mode of communication is not restricted to the transmission of territorial information. Wealth differences, ethnic affiliation and social class distinctions may all be expressed materially. Moreover, it seems unlikely that these other types of artifactual boundary markers will be restricted to territorial societies. Some thought must therefore be given to identifying ways in which territorial symbols may be distinguished from the others.

Identification of the target population for a particular class of artifactual message may be one way of differentiating indicators of territorial affiliations from variables which reflect other social dimensions like rank, class, and wealth distinctions (Wobst 1977: 328-330).

In Chapter 2 I argued that the territorial social unit among hunters and gatherers would also be a residential unit. Given this situation it should be possible to predict how the distribution of territorial indicators differs from indicators of rank, wealth etc. . Since they function to differentiate between individual territorial units, symbols of territorial identity should exhibit uniformity within the residential group and diversity between residential groups. In contrast, the target population for material symbols of wealth and class is distributed both within and between territorial units. Archaeologically they should be represented by stylistic or emblematic diversity within the residential group

and uniformity between such groups. That is, each territorial unit should exhibit the same range of variability.

The target population for material symbols of individual ownership is society at large. Individual ownership should therefore be expressed by idiosyncratic variation within a particular artifact class or design element. Finally, supra-territorial groupings consisting of alliances of territorial units should be represented by symbols or stylistic variables which are shared by more than one residential group.

Where and when boundary marking symbols are displayed is expected to provide further clues as to the intended target population and therefore the function of the symbol. Wobst (1977: 335), in his study of Yugoslavian folk dress, found that the most visible messages symbolized more inclusive groups, while at close range visibility the messages shifted from identifying social groups to messages which expressed an individual's position along a ranked scale, such as wealth, status, or age. In other words, material symbols which operate at the level of intergroup relations should be more highly visible than those which operate at the level of interpersonal relations. The contexts in which territorial indicators are used and displayed are therefore likely to be more visible than those of rank, wealth, or ownership.

Since they operate at the level of intergroup relations, symbols which represent the territorial social unit will probably be most common at those sites where representatives from a number of different territorial social units come together, and absent or rare at those sites which are frequented only by members of a single territorial unit. Given restricted access to resource exploitation sites, there is likely to be only a limited number of site classes where members of several different territorial social groups come into regular association with each other. Territorial symbols are therefore expected to be present within a rather narrow range of sites. In contrast, since differences in wealth, rank, or ownership continue to operate within the territorial group context, we may expect their indicators to occur within a much wider range of contexts.

To recapitulate expectations for the archaeological record:

1. Territorial advertising may have as its referent either the territorial corporate group, or the territorial spatial unit.
2. Territorial boundaries may be expressed through symbolic objectification of the territorial unit (emblematic messages) displayed on various classes of material culture or through stylistic variation within a particular class of material culture.
3. The distributional context of territorial indicators will differ from indicators of rank, wealth, etc. Specifically the following relationships are expected to hold:
 - A) Territorial indicators will exhibit uniformity within the territorial unit and diversity between territorial units.
 - B) Territorial indicators will occur only in boundary maintenance situations, that is in situations where two or more territorial units come into contact, thus creating a need, or at least an audience, for mechanisms of identification.
 - C) Territorial indicators will be affixed to those surfaces which ensure maximum visibility to individuals outside the territorial unit.

Ethnographic Test Applications

In order to evaluate the utility of the proposition that territorial hunting and gathering systems can be distinguished archaeologically from nonterritorial systems by the presence of stylistic or emblematic variables which serve to communicate information about the social and spatial boundaries of the territorial units, ethnographic data were collected on indicators of socio-spatial identity among the Gitksan and Chilcotin.

The Gitksan

Among the Gitksan, each territorial group (House) owns a number of crests which are regarded as the exclusive and unique property of that House (Cove 1982: 9). These emblematic symbols, which the Gitksan refer to as *ayuuks*, are displayed on various items of House property. Crests function both directly and indirectly in territorial

maintenance. Darling (1955: 255) has noted that buildings bearing House crests on land no longer occupied by House members provide visible evidence of a group's intention to retain a site. Such statements provide a clear illustration of the mechanics of nonaggressive territorial maintenance strategies and the role of material culture.

Among the Gitksan, spatial or territorial integrity was/is preserved by maintaining and demonstrating social integrity. So long as the corporate group remains a vital functioning entity its territorial claims are socially sanctioned and respected. If a House group ceases to demonstrate its corporate identity, claims to its territories might be made.

A House demonstrates its vitality in many ways, but particularly important are the ceremonial feasts which mark most significant events in Gitksan social life. On these occasions unrelated House groups are invited as witnesses; the host group's crests are displayed, their territories described, and their histories (*adaawk*), which explain how the crests and territories were acquired, related. Each food course served during the feast is supposed to represent one or more of the House territories. A spokesman explains their association to the guests (Garfield 1939: 213; Darling 1955: 252).

In addition, the feast serves as a forum of informed consent and thereby functions to validate territorial ownership. From a territorial maintenance perspective, the feast is the mechanism by which the relationship between crests, House groups and House territories is communicated to society at large, thus facilitating the role of the crests as territorial indicators (Halpin 1973:123-125). Many of the crests have obvious territorial referents since they symbolize incidents which occurred on specific House territories. In at least one instance the territory itself is considered a crest (Barbeau-Benyon n.d.). In other instances, however, the association is much more indirect and largely dependent on their mutual association with a particular House group.

To the Gitksan, crests are not simply symbols of ownership, they are concrete manifestations of "powers" which serve not only to identify ownership, but also to legitimize it. This legitimizing role is particularly clear with regard to the totem pole.

Totem poles have been variously portrayed as commemorative monuments, as visual records of House histories, and as vehicles of personal aggrandizement. Among the Gitksan, however, the totem pole serves in an additional, explicitly territorial capacity which has sometimes been overlooked in the literature. The Gitksan have expressed the relationship between crests, territories and totem poles as follows:

When a clan raises a totem pole and puts their rightful crests on the pole, it means a great deal to them as every pole has a hunting ground.

(Duff 1959: 37)

Elsewhere they state:

The poles gave them their power or coat of arms and gave them the right of ownership of all the lands, mountains, lakes and streams they had passed through or over and camped or built villages in. The power of these poles goes into the lands they had discovered and taken as their own.

(Duff 1959: 24)

Duff (1959: 12) has likened the totem pole to a legal deed to the territories concerned. It is said that a House without territory would not erect totem poles (Cove 1982: 9)

It is significant in terms of this discussion that totem poles were almost always erected at village sites rather than at the secondary residences and/or resource procurement sites. Other crest display media were also village oriented. Both findings make sense in terms of the prediction that territorial advertising occurs only in boundary maintenance situations, i. e. , where two or more territorial units come into contact. Gitksan villages, being composed of multiple independent territorial groups, provide an obvious focus for territorial advertising strategies. In the same vein, the House specific resource exploitation sites are not prime candidates for crest display activities since a receiver group for such messages is lacking at these sites. (There may have been exceptions to this rule, particularly with regard to the salmon fishing sites. These were situated along rivers which served as major thoroughfares and in many instances would have been highly visible to other territorial groups.) The use of feasts as a forum for

crest display (Halpin 1973: 123-125) also makes sense in terms of this prediction since these occasions brought independent territorial units into formal juxtaposition with each other.

It was further predicted that emblems which served to differentiate between territorial units would be affixed to surfaces which assured maximum visibility to members of outside territorial groups. In other words, territorial indicators were expected to be externally directed in their display. The outer surfaces of buildings, as highly visible, externally directed localities, are obvious places for such elements. Crest symbols painted on external house surfaces are common throughout the Northwest Coast, as well as in the Gitksan area. Invariably it is the surface which faces the major access route which is so treated.

Totem poles epitomize the principle that territorial advertising should be directed toward members of outside groups and that localities which ensure maximum visibility should be utilized. The poles were placed in front of the residential structures, facing outward toward the river, thus maximizing their visibility to approaching groups though restricting their visibility to House members.

The display of crests on the interior surfaces of house structures might initially be seen as problematic in terms of the expectations outlined above. Among the Gitksan, however, houses functioned in a dual capacity – both as residential structures and as ceremonial structures. By way of emphasizing their ceremonial function, Gitksan residences were sometimes referred to as Feast Houses. Crest displays on house interiors were directed toward this ceremonial context. Many, though not all, of the interior crest representations were portable objects which were only used on ceremonial occasions. These included items such as painted screens used in dramatic performances, ceremonial entrances which were boarded up or removed after a feast, and ceremonial seats decorated with family crests. Permanent fixtures like corner posts and rafters might also be painted or carved to represent crest designs.

The presence of crest designs on household implements (serving trays, spoons, ladles

etc.) which would normally be relatively invisible to individuals outside of the territorial social unit can also be understood in a ceremonial context. The importance of crest bearing utensils was such that their use was restricted and regarded as a special ceremonial privilege (Halpin 1973: 126, 171-178). A number even came to be considered as crests themselves (e.g., Barbeau 1929: 61) and were represented on totem poles.

In short, the functional context of crest bearing objects among the Gitksan supports the proposition that territorial advertising is directed toward an audience which lies outside the territorial social unit, in this case, the House group.

I predicted that territorial indicators would exhibit uniformity within the territorial social unit and diversity between such units. This proposition was examined using data on 20 Gitksan totem poles belonging to five different Houses in a single village. Following Barbeau's (1929) totem pole descriptions, each pole was broken down into its component crests. The poles were then compared to determine whether those belonging to the same House shared more elements with each other, than with poles belonging to other Houses in the village. The results are tabulated in Table 4.1. Of the 43 crests distributed among 5 Houses only 3 are not exclusive to one House. These are shared by Houses 2 and 3 which were formerly amalgamated (Barbeau 1929: 65). The evidence clearly suggests that within this class of material culture there is a recognizable degree of homogeneity within the territorial social unit and considerable diversity between social units. Exceptions to this rule are likely to be Houses that are closely related or in the process of merging or dividing (e.g., Houses 2 and 3).

While strong support for this proposition is indicated, it should be noted that correct identification of common elements is often difficult in practice. The same crest may be represented in a number of different ways. While distinguishing features of each crest aid in identification, without the translative context provided by the feast, these might be difficult to recognize.

Surprisingly, the Gitksan do not appear to have made extensive use of boundary

p o l e s																				
	House 1								House 2			House 3		House 4				House 5		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	*		?					*												
2	*							*												
3	*	*		*																
4	*																			
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6	*																			
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39																		*	*	*
40																		*	*	*
41																		*	*	*
42																		*	*	*
43																		*	*	*

Source: Barbeau 1929: 28-31, 59-61, 64-65, 108-109, 117-118.

Table 4.1. Comparison of crest figures on totem poles belonging to five houses from the Gitksan village of Kitwancool.

markers to delineate territory perimeters. This may have been due in part to the physical nature of the territorial units. Among the Gitksan, territorial boundaries conform to natural physiographic features. Borders between territories usually follow stream channels or run along the tops of mountain ranges which separate the various streams. The need for manufactured boundary markers is thus minimized. Feasts, by publicizing the location and extent of territorial holdings also reduced the need for manufactured boundary markers.

There were exceptions to this rule. A number of border areas within Gitksan territory are said to have been marked by tree glyphs, cairns, or carved posts. I suspect that these occurred where natural features did not provide an obvious boundary line. There are also references to boundary markers along external borders, specifically the Gitksan/Kitselas, Gitksan/Nishga and Gitksan/Tsetsaut borders (Robinson 1962: 45; Barbeau-Benyon n.d.). Spatial boundary markers were probably more common along external borders since social mechanisms for publicizing and legitimizing territorial boundaries were not as operative across external boundaries. In this context, Barbeau's account (Barbeau-Benyon n.d.) of a Gitksan/Tsetsaut border dispute is particularly interesting. According to this account, one of the conditions of the dispute settlement was the incorporation of the Tsetsaut as clan brothers, in effect bringing them into the social-territorial system of the Gitksan.

The Chilcotin

If territorial affiliations were reflected in Chilcotin material culture, we might expect such boundary marking variables to have been operative at either the band or the local group level. Such does not appear to have been the case, however. The existing ethnographies do not mention any stylistic or emblematic variables which might be related to local groups or bands. This may simply reflect the inadequacies of the ethnographic record. Nonetheless, it is suggestive, particularly since stylistic and emblematic indicators of other, nonterritorial levels of social identity were recorded.

Material symbols of individual identity for example, appear to have been particularly common. Some basket weavers had private "maker's marks" which they wove into their baskets (Teit 1909: 775). Shamans wore insignia, usually consisting of "some distinctive mark of his [their] protector, such as teeth, claws, wings, feathers, etc." (Farrand 1898: 646). Face painting and tattooing provided a further medium for the expression of individual identity. Such designs seem to have varied idiosyncratically (Teit 1909: 778 & 779; Farrand 1898: 647). Stylistic variables reflecting wealth differences are also mentioned in the ethnographies. It is said, for example, that wealthy individuals were distinguished by buckskin shirts, often dyed red (Lane 1953: 48; Teit: 1909: 777).

Larger social groupings are also reflected in the material record. Ethnic affiliations (i.e., Chilcotin vs. nonChilcotin), for example, are discernable in the arrangement of ornamental fields on Chilcotin baskets (Teit 1909: 765), and Magne has recently demonstrated that Chilcotin projectile point styles and lithic assemblages reflect Chilcotin membership in the more inclusive Athabaskan ethnic unit (Magne 1985; Magne and Matson 1982; 1984).

Thus, although Chilcotin material culture did transmit messages about personal identity, wealth differences, and ethnic affiliations, reflectors of territorial associations, if present at all, were not well developed. That is, Chilcotin bands and local groups do not appear to have developed distinctive styles or emblems.

Discussion

I have argued that territorial systems may be distinguished from nonterritorial systems by the presence of material traits which serve to identify individuals who are associated with a defined segment of space and to communicate that association to others (cf. Wilmsen 1973: 5). It was suggested that such traits would conform to characteristic distribution patterns. Data pertaining to the Gitksan and Chilcotin were examined by way of evaluating the test expectations. The results are encouraging in that

among the Gitksan, symbols which identify the territorial social unit are present and do exhibit the predicted patterns of distribution. As predicted, the nonterritorial Chilcotin lacked such symbols.

Archaeological identification of these patterns is, of course, dependent on their preservation in the archaeological record. In the case of the Gitksan, few of the materials that carry territorial information are likely to be preserved archaeologically. This does not, however, preclude the possibility that in other cultures more durable media will be used.

A more serious difficulty relates to the problem of identifying the functional context of territorial indicators. Most of the identified distribution patterns pertain to the context of use for a particular artifact class. The degree to which the context of use is related to the context of discard is open to question. In the case of crests displayed on architectural features there is likely to be a fairly close correspondence, but again there is the problem of preservation.

Conclusion:

The utility of overt defense and symbolic communication as territorial maintenance strategies is dependent upon certain preconditions which limit their range of effectiveness. Symbolic boundary markers, for example, are only effective if the surrounding population 1) is able to correctly interpret the message being transmitted and 2) accepts and respects the validity of that message. Thus symbolic maintenance strategies presuppose the social legitimization and entrenchment of territorial land use. Such strategies also require that challenges to territorial privileges come primarily from within the socio-cultural system of the territorial social group, since "foreign" aggressors are unlikely to understand or respect symbolic messages.

Overt strategies of territorial defense, on the other hand, are advantageous, and probably necessary, where territorial land tenure is not institutionalized. Overt defense does not require that the surrounding population accept the validity of territorial claims

and is effective regardless of the cultural milieu of the territorial aggressor. Strategies of overt defense are limited by their cost, however, and are only viable where resource distribution patterns minimize the size of the area which needs to be defended (Cashdan 1983: 49; Dyson-Hudson & Smith 1978: 23-25; Peterson 1975: 60). Overt defense of territorial holdings as large and as widely scattered as those associated with many Gitksan Houses would be logistically impossible.

Where exclusive land use is socially condoned, territorial maintenance costs are unrelated to resource distribution patterns and territory size. It is clear that among the Gitksan, the extension of territorial restrictions to include low productivity resources and resource areas was dependent upon the development of social mechanisms for settling disputes, publicizing territorial boundaries, and validating territorial rights and privileges. I suspect that similar mechanisms, which render more expensive and aggressive forms of territorial maintenance unnecessary, will be characteristic of all territorial societies.

Selection of one maintenance strategy over another probably reflects, at least in part, the developmental maturity of a territorial system. Overt defense is likely to be typical of incipient territoriality since social mechanisms for validating territorial claims take time to develop, and since the initiation of territorial claims necessarily restricts the subsistence alternatives of the surrounding population. Once territorial land use patterns are well established and widespread in an area, mutual acceptance of neighbouring groups' claims becomes a viable and economical alternative to overt defense. At this point, territorial concepts can be extended to include less productive resource areas.

Chapter 5: Territoriality and Site Furniture

Proposition: The quality and permanence of structures and facilities constructed under territorial conditions will be greater than that of those constructed under nonterritorial conditions.

This proposition is based on my assumption that the amount of time, energy and capital invested in non-portable site fixtures like structures and facilities, will be directly proportional to the anticipated benefit derived from these investments. I further assume that in most situations, and for most structures and facilities, there are a number of possible design alternatives (cf. Bleed 1986: 738-739). By fixing the structure of man-land relations, territoriality secures the possibility of long term benefits from site improvements and substantially increases the benefits which can potentially be derived from site fixtures. Such circumstances should encourage and permit high investment designs. The quality and permanence of these fixtures will reflect the scope of this investment.

It might be argued that any investment in non-portable site fixtures (i.e., site furniture, see Binford 1979: 263-264) is evidence of anticipated reuse of that location. Ethnographic observations reveal, however, that the construction of structures and facilities is frequently situationally provoked. Situational site furniture like hearths, tent anchors etc., is constructed in response to immediate needs. The proposition predicts that such site furniture will be of low cost, expedient construction and design, since inputs aimed at increasing the quality and permanence of situationally required site furniture make little sense when future access to these improvements is uncertain.

The following variables are identified as indicators of quality and permanence:

a) Building materials: Site furniture which incorporates valuable, exotic or highly processed building materials is assumed to be of higher quality than functionally equivalent structures which use only abundant, locally available or slightly processed

building materials.

b) Attachments: Fixed and fitted elements require a greater energy investment and suggest that a certain degree of structural permanence is intended.

c) Variety of component parts: Site furniture which has a greater variety of components than functionally equivalent structures is considered to be more elaborate. Similarly, a site which has a greater variety of site furnishings than other functionally equivalent sites is considered to be more elaborate.

Ethnographic accounts rarely provide comprehensive lists or descriptions of the complete range of structures and facilities characteristic of any particular site class. The Gitksan and Chilcotin ethnographies are no exceptions. For this reason, data on contemporary Chilcotin and Gitksan salmon fishing camps were gathered to test this proposition.

Notions of site ownership and use in both the Chilcotin and Gitksan areas appear to have changed little from earlier ethnographic times. Gitksan fishing camps are still regarded as the exclusive property of particular House groups, and use of these areas is still carefully monitored and regulated. Among the Chilcotin, although there is a tendency to return to the same campsite year after year, no strong rules exist concerning site ownership. When queried on the subject, Chilcotin individuals said they preferred to return to the same campsite, but if another group preceded them to that location, they simply camped someplace else. Of a sample of twelve Chilcotin camps recorded in 1983 (including some that were not salmon fishing camps), three were established in locations used previously by the same group, two camps were new, three camps were in locations used earlier by other groups and four former campsites were not reoccupied at all during the period of fieldwork.

Two distinct approaches to data collection were employed during the study. Qualitative data were sought through informal discussion with local residents and, whenever possible, through observation and participation in contemporary resource procurement strategies. Quantitative data on camp structure and organization were

acquired separately, during periods of site abandonment. Recording procedures included the drawing of detailed layout maps showing facilities, site furniture and activity areas. Structural details were measured, sketched, and/or photographed, with particular attention being paid to the types of material used in construction.

A total of fourteen salmon fishing camps (eight Chilcotin, and six Gitksan) were included in the sample. Descriptions of the structures and facilities recorded at these contemporary camps are presented below. I suspect that a number of structure classes resemble their prehistoric counterparts quite closely. For this reason, in aid of the Direct Historic Approach, descriptive details are presented. At another level, however, as an illustration of behavioral principles reflected in a set of material remains, the resemblance or lack of resemblance of these camps to their archaeological precursors is inconsequential.

The discussion is divided into two sections. The first section describes structures and facilities which function in the context of procurement and processing activities. The second section contrasts maintenance furniture in the two areas.

Procurement and processing structures and facilities

Boats:

The Gitksan use boats in setting and retrieving salmon nets. Similar net fishing techniques are not permitted on the Chilko River at present due to government regulation, and boats were not recorded at any of the Chilcotin camps.

A total of five dinghies were recorded in the sample of Gitksan salmon fishing camps. These were distributed between only two sites, however, three at one site, two at the other. Three of the dinghies were constructed of wood (see figure 5.1); the other two were aluminum.

Fish Tables:

Special filleting boards and work benches used to prepare salmon for drying were



Figure 5.1 Wooden dinghy at Gitksan fish camp.

recorded at most Gitksan fish camps. Specialized fish tables did not occur in Chilcotin site furniture inventories although general all-purpose tables were present and are described later under maintenance furniture. All fish tables recorded were constructed of milled lumber and nails. Filleting boards (see Figure 5.2), resemble sawhorses with boards nailed to the sides to create an A-frame. Fish, with heads and tails cut off and backbones removed, are draped over the peaked surface of the boards for filleting.

Wooden fish tables or work benches are small in size and varied in construction (see Figure 5.2). Their specialized function is signalled by a narrow board nailed across the working surface of the table, that serves to stabilize the fish for easier handling. A second board is often fixed in an upright position along one edge of the table creating a sort of backstop. The tables are portable, and during the fishing season are often moved down to the water's edge where most of the cleaning is done. When the season is over they are moved to higher ground in or near the smokehouse where they will not be threatened by rising river levels.

Fish drying structures: drying racks and smokehouses

Although functionally identical, Chilcotin fish drying racks and Gitksan smokehouses differ considerably in structural elaboration and permanence.

Drying racks (see Figure 5.3) are the most numerous and complex of all structures in the Chilcotin sample. While they encompass a considerable degree of structural variability, most of this variability is attributable to local site conditions. Wherever possible, living trees are used as supports for horizontally suspended poles, which form a rack upon which a number of spanning stakes might be rested. Where living trees in the necessary configuration are not available, cut poles, tied at crossed ends, are the alternate form of support. A number of drying racks exhibited structural modifications (e.g., brush windbreaks and tarp supports) to deal with inclement weather conditions.

Poles used in drying rack frameworks are most commonly lodgepole pine,



Figure 5.2 Top: Gitksan filleting board. Bottom: Wooden work bench.



Figure 5.3 Chilcotin drying rack.

although the occasional aspen pole might be used if pine is in short supply. Spruce is avoided, even where trees of suitable size are abundant. One individual explained that spruce is undesirable because it is so sticky.

In my sample none of the poles used in the framework of the racks were peeled. This was in contrast to spanning stakes, which were almost always peeled. Spanning stakes were sometimes left on the drying rack or piled nearby, but often they were missing entirely. Whether they had been destroyed after use, recycled in other structures or curated is not known. In one instance a cache of spanning poles was discovered some distance back in the bush, away from the campsite. This may well have been the case in other instances as well.

Where branches were not available on which to rest structural poles, a range of materials was used to fasten the drying rack together. This included wire, bailing twine, strips of rawhide and willow bark. In one case, lengths of electrical cord were used. Nails or spikes were present in only two out of nineteen drying racks.

Drying rack dimensions (see Table 5.1) varied from 3.0 m. to over 5.0 m. in length (average 4.0 m.) and from .7 m. to 2.0 m. in width (average 1.5 m.). Height was the least variable dimension. All but three of the 16 salmon drying racks measured for height fell between 1.5 m. and 1.7 m. in height. (The remaining three were below this range.) Often this range of variation was encompassed within a single structure as a result of undulations in the ground surface.

One or more hearths were associated with every drying rack. These were small in size, ranging from .21 sq.m. to 1.69 sq.m. and averaging .74 sq.m. (see Table 5.2 for comparison with other hearth types). Although drying rack hearths usually lacked boulder perimeters there were exceptions, and 14 out of fifty-three recorded drying rack hearths had at least a partial boulder perimeters. Very few of the constituent rocks were fire cracked. The main purpose of a drying rack hearth is to produce smoke rather than heat. Temperatures sufficient to cause fire fracturing in rocks, therefore, rarely occur. Rotten or punky wood and green poplar were the most commonly used

fuels, although informants say that alder wood is preferred when available. Alder was not abundant in the study area.

Rack	Length	Average Width	Average Height	Rack Supports
1	3.3 m	1.7 m.	1.7 m.	4 living trees
2	--	--	1.6 m.	4 living trees
3	--	1.2 m.	1.5 m.	2 living trees, 2 cut poles
4	3.3 m.	1.6 m.	1.6 m.	4 cut poles
5	4.4 m.	--	1.6 m.	2 living trees, 2 cut poles
6	3.8 m.	1.4 m.	1.3 m.	1 living tree, 2 cut poles
7	4.5 m.	1.8 m.	1.5 m.	2 living trees, 2 cut poles
8	--	--	1.7 m.	3 living trees, 1 cut pole
9	4.6 m.	--	1.6 m.	2 living trees, 2 cut poles
10	5.1 m.	1.7 m.	1.6 m.	2 living trees, 2 cut poles
11	3.0 m.	2.0 m.	1.6 m.	2 living trees, 2 cut poles
12	--	--	1.6 m.	3 living trees, 1 cut pole
13	--	--	1.5 m.	3 living trees, 1 cut pole
14	4.2 m.	.9 m.	1.5 m.	1 living tree, 3 cut poles
15	3.9 m.	.7 m.	1.2 m.	2 living trees, 2 cut poles
16	3.6 m.	1.6 m.	1.4 m.	2 living trees, 2 cut poles

Table 5. 1 Chilcotin drying racks

Hearth Function	No. in Sample	Size Range*	Average Size*	Partial or Complete Boulder Perimeter	Preferred Fuel
Drying Rack	53	.21 to 1.69	.74	26%	Punky wood or Green poplar
Kitchen	13	.78 to 1.97	1.34	92%	Pine
Sweat Lodge	2	2.51 to 3.45	2.98	Disorganized Concentration of rock	?

Table 5.2: Comparison of Chilcotin hearth types

*measurements in square meters

As mentioned above, the Gitksan equivalent of the Chilcotin drying rack is the smokehouse. Contemporary smokehouses include both shed-roofed (Figure 5.4) and gable-roofed structures (Figure 5.5). In design the shed-roofed structures resemble a gable-roofed smokehouse that has been divided down the middle.

The Gitksan smokehouses are built around a framework of log posts (ca. 20 to 25 cm. in diameter) sunk an undetermined distance into the ground. The gable-roofed structures generally have four corner posts with two pairs of slightly taller central posts in the front and back. These posts are notched to receive roof beams, which sometimes extend several feet beyond the walls of the house. Three to six pairs of smaller rafter poles run from the central ridge poles to the side beams. A second set of rafter poles, to which the roof boards are attached, is placed at right angles to these.

Considerable variation in wall construction materials and techniques was noted. Most frequently, walls were made of milled boards attached either vertically or horizontally to the frame. However, several of the recorded smokehouses had walls of scrap plywood, and in one case, poles of varying thickness, (ca. 9 – 15 cm. in diameter) were placed vertically into the ground to form the walls.

Doorways were small, and their positioning varied. In the gable-roofed structures they were invariably placed at one of the gabled ends. In the shed-roofed smokehouses

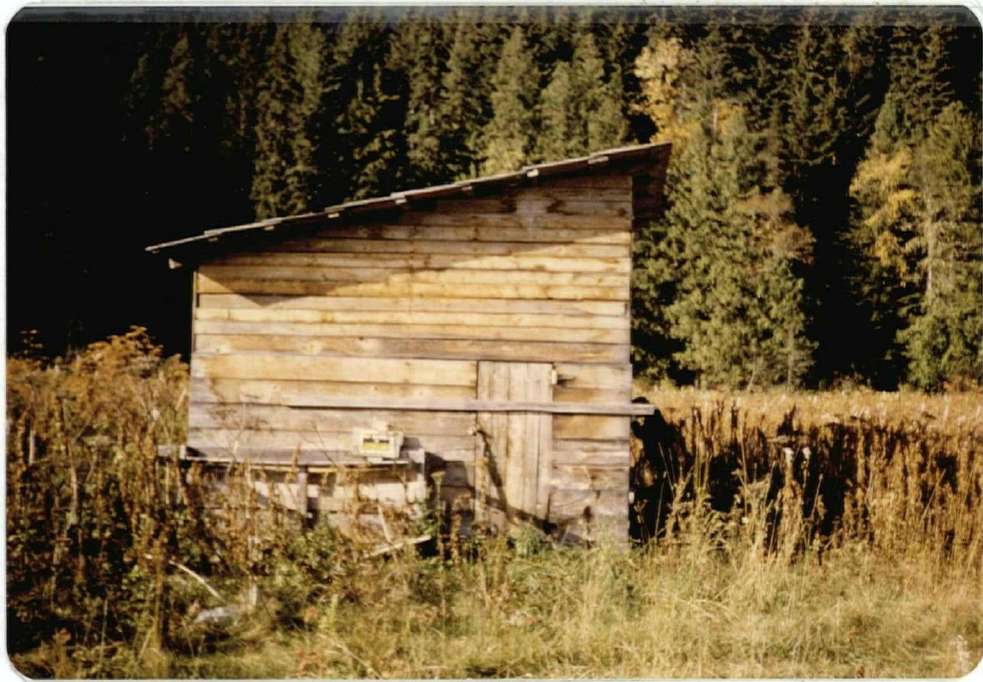


Figure 5.4 Shed roofed smokehouse.

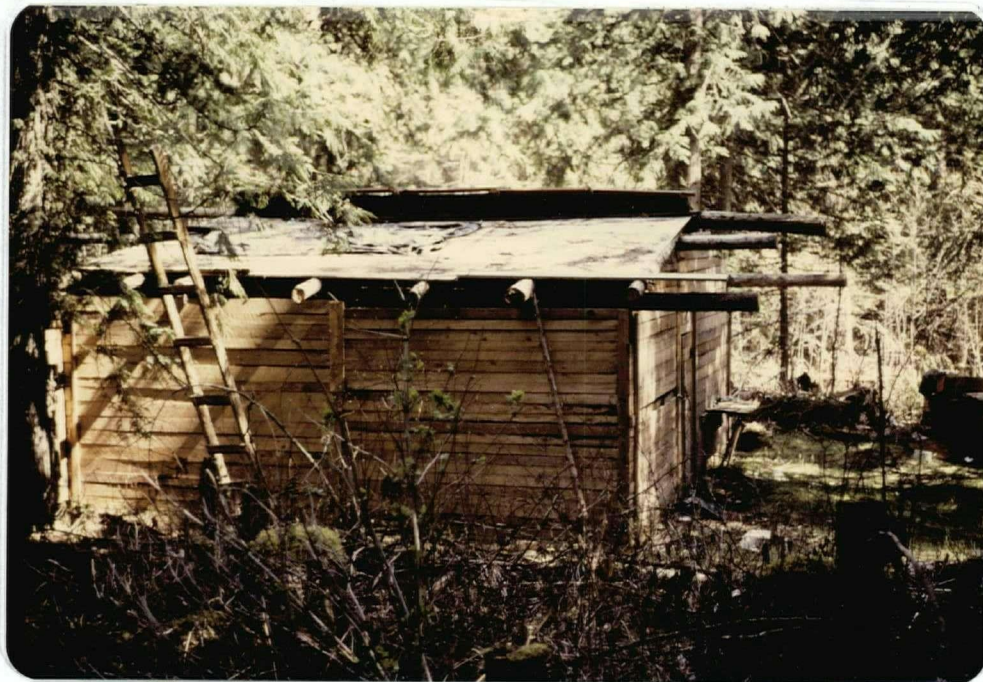


Figure 5.5 Gable-roofed smokehouse.

the doorway was usually along the side with the tallest wall, although it was sometimes placed along one of the side walls. Doors were made of milled lumber and were often locked when the structure was not in use.

Around the interior walls of the smokehouse, additional posts supported crossbeams which formed a framework for the drying rack spanning poles. Alternatively, the crossbeams were attached to the posts that formed the wall framework. The drying rack crossbeams were placed at just about head height, 1.5 – 2 m. above the ground. Peeled spanning poles were left in place on the support frame. Other rack poles were suspended from the roof at varying levels. Within the smokehouses one or two hearth areas were usually evident, although these were rarely well defined and appeared to shift a good deal. Boulder perimeters were not present. Dry cottonwood appeared to be the preferred fuel, although poplar was also used.

Naturally level building sites were usually selected. In one instance where this was not the case, the floor was excavated and boulders piled around the perimeter. The resulting floor surface would be readily detectable in an archaeological context. Smokehouses were usually placed in well-shaded locations, as exposure to sun is said to sour the fish.

Hide Processing Structures:

Chilcotin salmon fishing camps contained a number of classes of processing furniture not related to fishing activities and not present at any of the Gitksan camps. All of these were related to hide processing activities:

Dehairing/defleshing poles

Dehairing/defleshing poles (see Figure 5.6) were present at several of the fish camps. Made of aspen, these poles were approximately 25 cm. in circumference and were sharpened to a point at one end. During the dehairing process the pointed end was leaned against a tree and the hide draped over the peeled, upward facing surface of the



Figure 5.6 Dehairing/defleshing pole and hide stretching frame.

pole. In the course of use the base of the dehairing poles invariably sank a short distance into the ground, but the resulting surface disturbance would be neither sufficient nor distinctive enough to permit archaeological detection.

Hide-smoking frames

Only two hide-smoking frames were recorded at the Chilcotin fish camps although hide-smoking smudge pits were noted at a number of other camps where frames were not found. Both of the frames were in a disassembled state when observed and were only identified with the assistance of a Chilcotin friend. The remains consisted of 5 to 6 peeled willow stakes. I was told that these stakes were assembled in a "teepee-like" arrangement around which the hide was wrapped for smoking. The thinness of the stakes (less than 2 cm. in diameter), the brittleness of the wood when dry, together with the casual manner in which the structures were disposed of, suggest these were temporary, single use structures.

Associated smudge pits were small, usually about 45 cm. in diameter, and about 40 cm. deep. Although pits were sometimes cleaned out after use, discoloured walls and traces of charred pine cones (the preferred smudge fuel) continue to provide visible evidence of burning.

Hide stretching frames

Rectangular frames for stretching hides (see figure 5.6) were also present at a number of Chilcotin fish camps. These were constructed of unpeeled pine poles between 5 and 6 cm. in diameter and from 1.5 m. to 2.5 m. in length. The structural poles were notched at each end, fitted together log cabin style, and nailed at the corners. All frames had been left in their position of use, upright and resting at an angle against two trees or horizontal support poles erected for that purpose.

Maintenance Structures and Facilities

Shelters

The standard shelter used at contemporary Chilcotin fishing camps is the canvas wall tent. While the tent itself is transported after use, presumably back to the residential base, the ridge poles, crossed uprights, side poles and pegs or anchor stones are usually left behind. The remains of mat flooring constructed of evergreen boughs also serve to distinguish tenting areas. While spruce is the preferred material for this, pine boughs are also used. The charred remains of a mat floor recovered during the 1983 excavations at the Bear Lake site (Magne and Matson 1984) suggests that this practice, at least, has considerable antiquity. No particular arrangement of tenting areas relative to other activity areas was discerned, nor were the same locations necessarily reserved for tents on successive occupations.

A variety of shelter types were recorded at contemporary Gitksan fishing camps. Although surficial remains suggest that some form of permanent shelter was present at all six of the recorded camps in the not too distant past, permanent cabins (see figure 5.7) are standing at only three of these locations today. The charred remains of several residential structures are still clearly visible at a fourth camp, and possible house floors were located at a number of the other sites.

Three of the four surviving cabins are log buildings; the fourth is a frame structure made of milled lumber. Plank floors are present in three of the cabins while the nature of the floor in the fourth cabin is unknown. Roofs are constructed of planks and covered with tarpaper or shingles.

All of the cabins are small, one room affairs. Although strictly functional in their design and construction, the cabins nevertheless represent a considerable investment in terms of time, energy, and for the frame structure in particular, capital. As they are generally equipped with assorted household utensils, and as theft has become a problem in recent years due to increased public access, the cabins are usually kept padlocked when not in use.

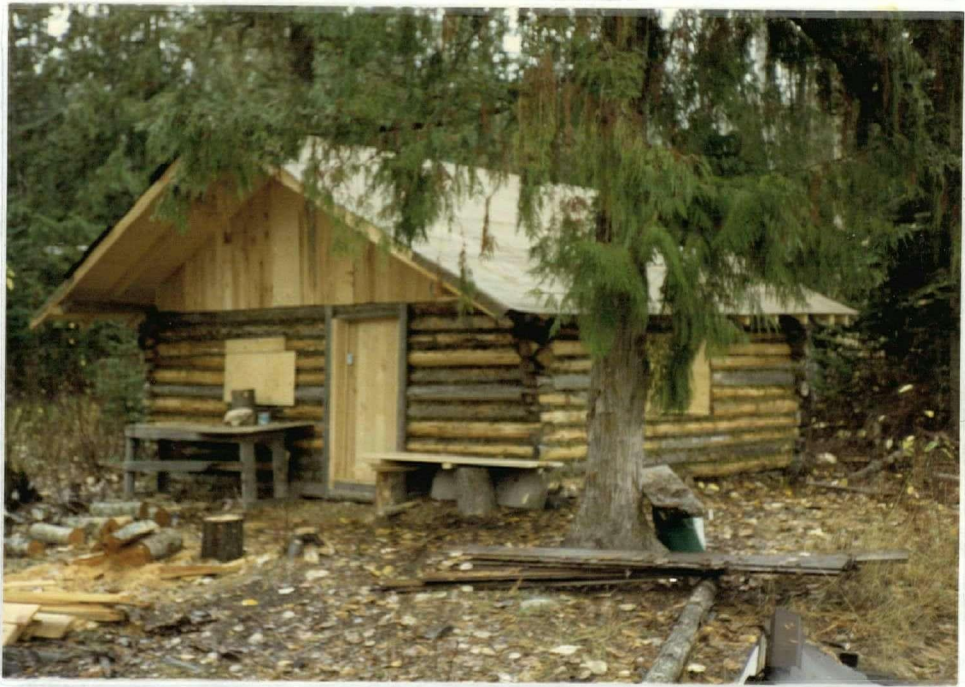


Figure 5.7 Cabins at Gitksan fish camp.

Both camper trucks and tents were also observed at Gitksan fish camps. These are used in lieu of, or as supplements to the cabins. Unlike the Chilcotin, the Gitksan sometimes leave their tents at the fish camps when the season is over.

Tables:

Table/benches are a common feature of most Chilcotin and Gitksan campsites. The Chilcotin tables usually consist of a plywood or board surface supported on four sapling posts hammered into the ground until their tops are level. Table surfaces are sometimes curated, in which case only the support posts remain as part of the site furniture. Whenever possible, living trees are incorporated into the design, reducing the number of support posts needed.

The specialized fish tables of the Gitksan were described above. In addition to these, all Gitksan camps had one or more general purpose tables/work benches. These exhibited considerable variation in manufacturing techniques and materials.

Commercially manufactured kitchen tables were recorded at a number of camps. In each case they were supplemented by one or more homemade tables. Some of the homemade tables resembled those of the Chilcotin in that living trees were used as structural supports. A common Gitksan variation on this theme involved the use of cabin or smokehouse walls as table supports. Other tables were portable free standing structures with plank or plywood working surfaces supported on legs of raw lumber. Two of the homemade tables followed a picnic table design in which benches were incorporated as part of the structure of the table.

Chairs:

A variety of chairs/benches were recorded at the Gitksan camps. These included commercially manufactured kitchen chairs, folding lawn chairs, and homemade wooden benches constructed of milled lumber. Less commonly, sawed sections of logs (firewood

rounds) were used for seating purposes. In contrast, commercially manufactured chairs were not present at any of the Chilcotin sites and firewood rounds were the most commonly recorded seating structure.

Beds:

Commercially manufactured bed frames were present as site furniture at three of the six recorded Gitksan camps. One homemade wooden bedframe was also recorded.

Bed structures were not present at any of the Chilcotin camps.

Food preparation facilities

Hearths were present at all Chilcotin and Gitksan camps. In the Chilcotin, however, the hearths function in the context of food preparation as well as a focus for socializing. Ranging in size from .78 sq. m. to 1.97 sq. m. and averaging 1.3 sq. m., twelve out of thirteen Chilcotin kitchen/general purpose hearths had boulder perimeters. A high proportion of the constituent rocks in these perimeters were firecracked. Where the fuel source was determinable it was generally pine.

Hearths, while present, were not as central to subsistence activities in the Gitksan area. Here, one or more woodburning cook stoves were usually included in the site furnishings. At one camp two coleman stoves were among the household gear left at the site.

Caches

Caches (see figures 5.8 and 5.9) were recorded at two Gitksan camps. Similar structures were not present at any of the contemporary Chilcotin sites.

The Gitksan caches are of two kinds, both of which have considerable antiquity in the Gitksan area. One of the recorded structures was a raised wooden cache. This consisted of four support posts averaging 11 cm. in diameter. The posts, placed about 1.5 m. apart and firmly imbedded in the ground, formed the four corners of the structure. At

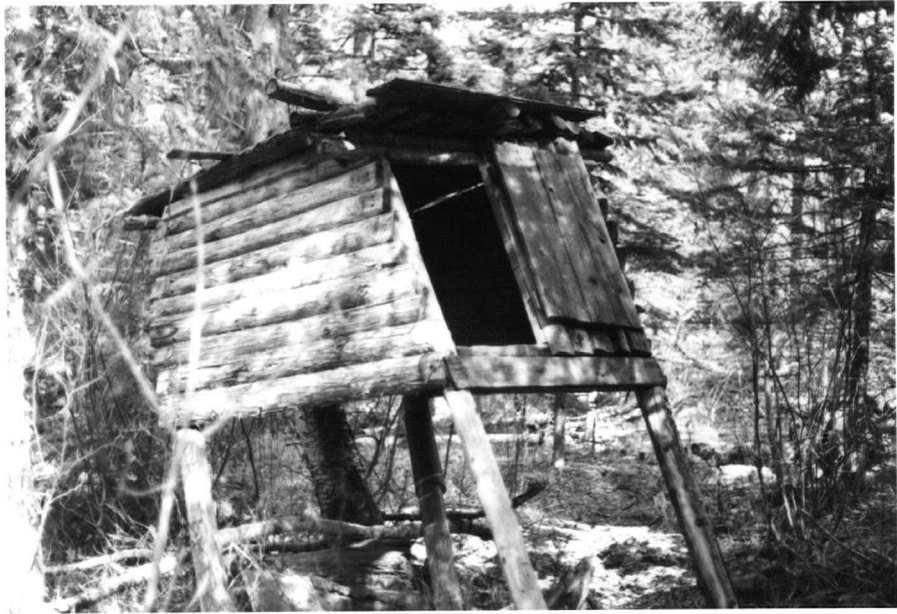


Figure 5.8 Raised cache at Gitksan fish camp.



Figure 5.9 Sidehill cache at Gitksan fish camp.

1.80 m. above the ground surface, a pole platform was constructed. The platform was surmounted by walls of unpeeled split cedar poles nailed horizontally along three sides. On the fourth side, the split poles were placed vertically over half the distance and the remaining space was filled by a plank door. The cache was topped with a shed roof also constructed of unpeeled poles. The outer surface of the roof was covered with tarpaper. Measuring ca. 1.5 m. square by 3.3 m. high, the structure was situated some 23 m. back in the trees behind the fish camp cabins.

The second cache took the form of a sidehill cellar. In a serious state of disrepair, its structural details were difficult to discern. It appeared that a floor had been excavated into the slightly sloping hillside. Low boulder walls, constructed along two parallel sides of the floor, supported a roof made of split poles and planks. The poles and planks had been covered with earth so that, from the back, the whole structure resembled a low mound.

Outhouses

Outhouse structures were noted at five of the six recorded Gitksan fish camps. These were invariably constructed of milled lumber. Outhouses were not recorded at any of the Chilcotin camps.

Sweat Lodges

Sweat lodge structures (figure 5.10) were recorded at only one Chilcotin site. Although the remains of several older sweat lodges were present at this particular camp, only one was operational at the time of observation. It consisted of a framework of unpeeled willow wands covered by a canvas tent, the sides of which were rolled up to permit air circulation when not in use. The framework stood 1.42 m. high, and was constructed of 16 lengths of willow fashioned into eight arches and placed in a nested, dome-shaped arrangement. These enclosed an area of 1.36 by 1.62 m., the distance between individual wands at the base ranging from 50 to 63 cm. The willow wands



Figure 5.10 Chilcotin sweat lodge.

(2.3 to 3 cm. thick at their bases), were sunk into the ground to a depth of about 7 cm. . Pebbles had been wedged around the base of a number of these to further secure them.

The floor of the sweat lodge was covered with a mat of willow leaves and clover flowers. A rockpit about 60 cm. in diameter and 25 cm. deep was situated inside the structure close to the north wall. At one end of this pit, aligned with the support poles, a peeled stake 1.0 m. long and 3.5 cm. in diameter, was embedded in the ground at an inward-leaning angle. At the other end of the pit was a small hole, suggesting the former presence of another such stake. A likely candidate lay on the ground outside.

The sweat lodge was situated about 12 m. from the Chilko River. The main camp area was at least 100 m. away, back from the river. It seems likely that a desire for ready access to water following the sweat bath was the primary reason for the physical separation of the two areas. The remains of two other sweat lodges were found nearby.

Almost all of the cobbles used to heat the sweat lodges were of a vesicular basalt. While this material is not uncommon in the area, it is by no means the most readily attainable stone. Informants later explained that this type of rock was preferable because it held the heat better. Informal experiments conducted during the summer tended to support this statement and also demonstrated that the porous basalt resisted fracture better than other rock types. Hearths used to heat the sweat lodge rocks were situated nearby, some 3 to 9 m. distant. Only two sweat lodge hearths were recorded in my sample, 2.51 sq.m. and 3.45 sq.m. in size, these were considerably larger than any of the kitchen or drying rack hearths. Unlike kitchen hearths, which usually had well defined boulder perimeters, and drying rack hearths, which frequently lacked hearth stones entirely, the two sweat lodge hearths were distinguished by disorganized concentrations of boulders, many of which were vesicular basalt.

Sweat lodge facilities were not present at any of the Gitksan camps.

Discussion

Maintenance structures and facilities constructed at Gitksan and Chilcotin salmon fishing camps can be used to test the proposition that territoriality is associated with an increase in the quality and permanence of site furniture. Building materials, the degree of reliance on fixed and fitted elements, and the variety of component parts are identified as indices of permanence and elaborateness. Applying these indices to the Gitksan and Chilcotin structures clearly reveals a differing emphasis on expedient low investment and inexpedient high investment furniture between the two areas.

Gitksan and Chilcotin drying structures provide a good illustration of the scope of these differences. As described above, Chilcotin drying racks consist of little more than the pole framework needed to support the drying salmon. Gitksan smokehouses have a similar pole framework, but this is contained within permanent roof and wall components. Functionally identical, Gitksan drying facilities are clearly more structurally elaborate than those of the Chilcotin.

Construction materials used in Chilcotin drying racks were largely local in origin. The pine and aspen poles contrast sharply with the milled lumber which was so evident in most Gitksan smokehouses. The few nonlocal materials which were used in the Chilcotin structures, e. g., bailing twine and wire, were usually recycled materials which were continually being brought into the system and therefore were replaceable at little or no expense. While the Chilcotin drying racks cost little but time and energy to build, the commercially manufactured building materials used in the Gitksan structures (e. g., milled lumber or plywood, nails, etc.), in many instances, represented a considerable capital investment.

Anchored structural components were minimized in the Chilcotin structures. Drying rack support poles rested on the ground surface rather than being embedded in post holes which would have offered greater long term stability. Fixed attachments in the rack framework were also minimized, and wherever possible, elements were simply rested on a

supporting surface. While structures were often used for a number of successive seasons, extra effort was rarely invested to extend their useful life by fastening component parts together. In contrast, elements of the Gitksan smoke houses were securely anchored, and support posts were deeply embedded in the ground.

If building materials, the degree of reliance on fixed and fitted elements, and the variety of component parts are used as measures of permanence and elaboration, the Gitksan drying structures are clearly more permanent and elaborate than those of the Chilcotin.

Earlier I proposed that given functionally equivalent sites, those with the greatest variety of structures could be considered the most elaborate. Table 5.3 summarizes the various maintenance facilities recorded in the Chilcotin and Gitksan areas. While only four facility classes were recorded at the Chilcotin sites, nine classes were present in the Gitksan site inventories. Many of the structures recorded at the Gitksan sites related to activities known to have been performed at the Chilcotin sites, without the benefit of specialized structures. This suggests that the incidence of nonessential, specialized maintenance structures will increase with territorial site use.

Table 5.4 lists the various procurement and processing facilities recorded in the two study areas. Here the results appear to be reversed, with the Chilcotin sites exhibiting the greater number of structure classes. If only those structures relating to salmon harvesting activities are considered, however, the Gitksan sites again exhibit greater structural variety by a ratio of 3 to 1. The construction of specialized tables to aid in the cleaning and filleting of salmon at Gitksan sites, and the absence of such specialized structures at functionally equivalent Chilcotin sites, further supports the above proposition that the incidence of nonessential, specialized structures is greater in territorial situations. The Gitksan fish tables also suggest that in territorial systems we may expect a tendency toward maximum compatibility of structural design with function, while in nonterritorial systems structural designs are more likely to be generalized, or functionally expedient (cf. Binford 1979: 267).

	Chilcotin	Gitksan
Tents	-	x
Cabins	-	x
Table structures	x	x
Seating structures	x	x
Bed structures	-	x
Hearths	x	x
Stoves	-	x
Caches	-	x
Sweat lodges	x	-
Outhouses	-	x

Table 5.3 : Maintenance related structures and facilities at Gitksan and Chilcotin Salmon fishing camps.

(x) = present at all or some camps. (-) = absent.

	Chilcotin	Gitksan
Boats		x
Fish tables		x
Fish drying structures	x	x
Dehairing/defleshing poles	x	
Hide stretching racks	x	
Hide smoking frames	x	

Table 5.4 Procurement and processing facilities at Gitksan and Chilcotin salmon fishing sites.

The significance of the Chilcotin hide processing structures and their absence at the Gitksan sites is difficult to assess. It may be that similar structures were present at Gitksan fish camps in the past and that the Chilcotin economy remains more traditional in this respect. Certainly the ethnographic record indicates that hide processing was part of the Gitksan cultural repertoire. Whether these activities were carried out in conjunction with fishing activities, as in the Chilcotin, remains unclear.

Alternatively, environmental differences may be responsible. In both instances where the processed hides could be identified they were of deer. While deer are abundant in the area of the Chilcotin fish camps, this is not presently the case in the Skeena River study areas. Thus the absence of hide processing structures at the Gitksan area salmon fishing sites may simply reflect areal differences in the distribution of game animals.

A third possibility is that the Chilcotin hide processing structures reflect a more generalized economic base and that this generalized economy is typical of nonterritorial adaptations in general. If so, then the degree of functionally specialized furniture may be a useful criterion for distinguishing between territorial and nonterritorial adaptations.

Shelter strategies recorded at the Gitksan and Chilcotin camps are particularly interesting. The presence of permanent residential structures at the Gitksan sites and the use of portable or temporary structures (i. e. , tents) at the Chilcotin sites is clearly compatible with the predicted pattern for territorial and nonterritorial sites. As mentioned earlier, tents were also used at a number of Gitksan sites. Differences were apparent here as well, however, not in the permanence or elaborateness of the tent structures used in each area, but in the curation behavior associated with these structures. In the Chilcotin, tents were always transported, presumably back to the home base, while among the Gitksan these items were sometimes left as site furniture at the fish camps. This observation suggests that differences in the organization of technology within territorial and nonterritorial systems can be expected to affect not only the quality, but also the content of site assemblages.

Data on Gitksan and Chilcotin site furniture suggest that site abandonment behavior

including the organization of site furniture, storage precautions (i.e., the placement of vulnerable site furniture in locations or positions which offer protection from the elements), cleanup and trash disposal patterns may also reflect differing proprietary attitudes. Differences in storage behavior were particularly evident. In the Chilcotin, portable site furniture was usually left where it was last used. At the Gitksan sites, portable site furniture was frequently stored in the smokehouses or cabins. Similarly, Gitksan fish tables were moved from their position of use near the water's edge, to above the high water mark.

Caching behavior may also relate to site abandonment. The Gitksan cache structures offer insights into territorial caching strategies. Traditionally, caches of the kind recorded at the two Gitksan fish camps functioned primarily to protect food and equipment from animals and/or the elements. They were never locked (People of K'san 1980: 25). From a territorial perspective specialized cache structures are interesting because they indicate a definite intention to return to a site. The fact that the Gitksan caches were not locked or hidden suggests that they were products of a system that socially sanctioned site ownership.

No special cache structures were recorded at the Chilcotin fish camps, but Morice (1893: 197) comments that Chilcotin caches were formerly located away from the habitation sites. Such a strategy may have been a response to frequent raiding from neighbouring groups. Alternatively, and more significantly from the perspective of this paper, it may reflect a lack of long term commitment to these locations.

Additional factors affecting site investment

I have argued that anticipated long term site use will facilitate investment in permanent and elaborate site fixtures; the rationale being that where long term site use is a given, the increased use-life of permanent site fixtures will lower their cost relative to more temporary facilities which have to be replaced frequently. Flannery points out that the reverse may also be true. He posits that:

... the origins of "sedentary" life had more to do with the installation and maintenance of permanent facilities, and the establishment and maintenance of hereditary ownership of limited areas of high resource potential, than it did with agriculture per se.

Flannery 1972: 28

In other words, the use of high investment facilities may give rise to long term site use (sedentism). Given this developmental scenario we are left to identify those conditions which favour investment in non-portable, non-expedient technologies. Two come immediately to mind:

- 1) environmental conditions which render portable or expedient technologies ineffective.
- 2) design accommodations which make a permanent facility significantly more efficient or productive than expedient or portable functionally equivalent technologies.

The possible effect of these factors on Gitksan and Chilcotin salmon procurement and processing technologies is examined below.

Ethnographic descriptions of Gitksan and Chilcotin salmon procurement systems indicate that the same basic technologies were utilized in both areas. These included portable implements like spears, dip-nets and gaffs, and fixed facilities like fish wiers and various forms of basket traps. Some procurement strategies combined both fixed facilities and portable implements, e.g., dip-netting and gaffing sites with fishing platforms, which permitted access to a greater expanse of river. The procurement technologies varied as to their effectiveness under different natural conditions, e.g., water turbidity and turbulence (see Kew 1976), and their potential productivity given ideal conditions. In general the portable technologies were less productive (Morice 1893: 91).

Although the inventories of Gitksan and Chilcotin procurement technologies are

similar, ethnographic evidence suggests that the emphasis on portable vs. fixed salmon procurement strategies varied considerably between the two areas. Teit (1909: 40) specifies that among the Chilcotin weirs and traps for salmon were used at the mouth of the Chilko River. In contrast, weirs and traps were widely used by the Gitksan. I suspect that this variation was related, at least in part, to the differing characteristics of the primary salmon rivers within Gitksan and Chilcotin territories. Kew (1976: 12), in discussing fish weirs states:

These devices obstructed only a small inshore portion of the total portion of the total width of the river. Essential conditions for successful operation must have been the turbidity of the water (in clear streams salmon easily dodge around such obstructions) plus the tendency for salmon to avoid the heavier current in the centre of the stream.

Presumably, where the water was slow and shallow enough for weirs to span the entire channel, turbidity would not be important. Even then, however, the man-power requirements to build a stream spanning weir are likely to have been prohibitive to small groups.

Within Chilcotin territory only a comparatively small section of the Chilko-Chilcotin River is turbid enough to have been suitable for weir construction: the Chilcotin River upstream from Hanceville and downstream from the Chilko River confluence, and the Chilko River downstream from its confluence with the Taseko. Teit's (1909: 779) statement that weirs and traps were used at the mouth of the Chilko River is in line with this postulated distribution.

Unlike the Chilko-Chilcotin Rivers, that section of the Skeena River lying within Gitksan territory is turbid throughout (Farley 1979: 40), and well suited to weir construction. Table 5.5 summarizes information from Duff's Barbeau file on procurement technologies utilized by House groups from the Gitksan village of Gitsegukla. It is evident that fixed facilities like weirs and basket traps played an important role in Gitksan salmon procurement strategies.

Phratry	House	Number of Salmon Sites	Salmon Procurement Technology Used at Site(s)
Gisgast (Fireweed)	1	2	Site 1 fishing platform Site 2 ?
	2	4	Site 1 fish weir Site 2-4 fishing platforms "to fish with poles"
	3	4	Site 1 fish weir 2 kinds of basket traps 2 fishing platforms Site 2 4 fish weirs Site 3 2 basket traps Site 4 fishing platform (for dip-netting)
	4 & 6	1	Site 1 fishing platform "to fish with poles"
			Site 1 fish weir basket trap 2 fishing platforms Site 2 2 fishing platforms
Larsail (Frog)	1 & 2	1	Site 1 fish weir basket trap fishing platform (for dip-netting)
	3 & 4	1	Site 1 fish weir basket trap fishing platform
	5	1	Site 1 3 fishing platforms

Source: Duff n.d.

Table 5.5. Salmon procurement technologies used by Gitsegukla House groups.

Differences in Gitksan and Chilcotin fish drying facilities may also be related to environmental factors. As described above, Gitksan smokehouses and Chilcotin drying racks are/were functional equivalents, though they vary considerably in terms of structural elaboration and permanence. A smokehouse is simply a drying rack enclosed within a roof and walls. It is my impression that the Gitksan smokehouses are no more efficient than the Chilcotin drying racks since the actual salmon drying components are basically the same. Comparison of rainfall figures for the two areas suggest that the roof and wall components of the Gitksan smokehouses may be necessitated by the greater precipitation along the Skeena. Optimal fish drying areas within Gitksan territory have a mean annual precipitation rate of 40 – 50 cm. , while optimal fish drying areas in the Chilcotin receive less than 30 cm. annually (Farley 1979: 42).

In summary, the evidence presented here suggests, though it does not conclusively demonstrate, that the selection of high cost, non-expedient salmon procurement and processing technologies was related, at least in part, to environmental factors. Differing turbidity levels in the major Gitksan and Chilcotin salmon streams rendered highly productive but expensive procurement technologies viable along the Skeena, and impractical (except in a small area) in the Chilcotin. I have similarly suggested that differing rainfall rates made expensive and elaborate salmon drying structures a necessity in the Gitksan area, and unnecessary in the Chilcotin. If Flannery's (1972: 28) argument that investment in high cost, non-expedient facilities can lead to increased sedentism and the privatization of resource areas, then these environmental characteristics may have been instrumental in the development of Gitksan territoriality. At present, however, the data do no more than demonstrate the feasibility of such a causal sequence.

CHAPTER 6: Conclusion

The primary aim of this thesis was to facilitate the development of an archaeologically operational definition of hunter-gatherer territoriality. I believe that efforts in this direction have been successful in so far as they have provided an interpretive framework for the archaeological examination of Gitksan territoriality.

MATERIAL REFLECTORS OF GITKSAN TERRITORIALITY

A methodology involving two analytical stages was employed in this investigation. The first stage was concerned with isolating the operational, environmental and organizational components of hunter-gatherer territoriality which distinguish this land use strategy from other, nonterritorial land use strategies. The second stage focused on the identification of those aspects of material culture which inform on each component. Ethnographic and ethnoarchaeological data on the Gitksan and Chilcotin were used to evaluate both first and second stage propositions.

All three components (operational, environmental and organizational) of Gitksan territoriality were found to be reflected in the material record. The nature of the material patterning associated with each is briefly summarized below:

The organizational component:

It has been argued in this paper that the organizational demands inherent within a territorial land use system impose certain requirements on the organizational character of society. Chief among these organizational demands is the need to regulate, define and transmit to future generations, rights of access to defined resource areas. In the absence of centralized political control, generally considered to be absent among hunter-gatherers, it was asserted that these functions would be performed by land based corporate groups which exhibited a recognizable degree of residential coherence. Such stable and cohesive units differ sharply with the noncorporate, loosely integrated and

transient social groups characteristic of most hunter-gatherers.

Among the Gitksan, the presence of land based corporate groups was materially reflected in the organization and planning of community layouts, in the permanence, elaborateness and communal nature of the residential structures, and in the symbolic objectification of each landholding group. This symbolic objectification took the form of corporately owned crests which were carved and painted on numerous manufactured objects. Mortuary customs also provided a forum for the physical expression of group corporateness. In contrast, the Chilcotin, who lacked land based corporate groups, had settlement plans which reflected little organizational planning, and residential structures which were utilitarian and less permanent. Symbolic objectification of the economic social unit was lacking and Chilcotin mortuary customs did not reflect any social group affiliation.

The Environmental Component:

The currently accepted cost/benefit model of hunter-gatherer territoriality predicts that territoriality will occur when and where resources are dense and predictable, for under these conditions the costs of exclusive use and defense of an area are expected to be outweighed by the benefits. The model also asserts that resource categories which are not dense and predictable will not be subject to territorial restrictions as the cost of defending such resources will be prohibitive. Finally, the model predicts that territorial adaptations will conform to a characteristic pattern of settlement mobility and dispersal. Since information on the resource base and settlement mobility is frequently available in the archaeological record, this model has important implications for the identification of territoriality among prehistoric hunters and gatherers.

Application of the model's expectations to Gitksan and Chilcotin data reveals that the first stage proposition is invalid, that territoriality is not a necessary response to dense and reliable resources and further, that territorial exploitation strategies may not be restricted to dense and reliable resource categories. Among the Gitksan, the extension

of territorial concepts to include low defensibility resource categories is materially reflected in the redundant use of base camps associated with secondary resources, and in the construction of permanent structures and facilities at these locations.

The operational component:

Two aspects of the day to day operation of territorial land use strategies were explored: 1. the effect of long term stability of resource exploitation patterns on site formation processes, and 2. the physical manifestation of territorial maintenance strategies.

Stability of resource exploitation patterns is one of the definitional characteristics of a territorial adaptation. Among the Gitksan, this stability is reflected by the quality and quantity of Gitksan site furniture, by a high degree of sedentism, and by an associated emphasis on logistical mobility. The available data suggested that the nonterritorial Chilcotin differed in each of these respects.

Previous investigations of hunter-gatherer territoriality have identified overt defense and advertising or communication as the means by which territorial integrity is preserved. The results of this research suggest that with regard to human populations, a third territorial maintenance strategy must be considered – this being the institutionalization of territorial land tenure. The institutionalization of Gitksan territoriality is associated with the ritual and ceremonial legitimization of territorial ownership, accompanied by formalized mechanisms for settling disputes and punishing violations of territorial rights and privileges.

A number of lines of material evidence reflect the presence of socially institutionalized territoriality among the Gitksan. As discussed in chapter 4, when territoriality is socially sanctioned, defense costs are no longer related to territory size thus permitting territorial concepts to be extended to low defensibility resource areas. Among the Gitksan, the extension of territorial rights and privileges to include secondary resource areas resulted in the establishment of permanent base camps associated with

these resources and the construction of permanent structures and facilities. In contrast, ethnographic descriptions of Chilcotin land use patterns indicate that scarce or unpredictable resource categories were exploited from temporary base camps with situationally constructed facilities.

It was suggested that storage facilities would provide further evidence of the social entrenchment of territorial ownership. The Gitksan practiced a high degree of social storage (storage in excess of consumption requirements). This social storage was largely motivated by a well-developed feasting and wealth distribution complex which provided the forum for publicizing and legitimizing territorial claims. I argued that the need to legitimize territorial claims provided the incentive, and corporate organization the organizational capacity, for Gitksan social storage. Ethnographic evidence was presented which suggested that the Chilcotin had neither the incentive nor the organizational capacity to engage in social storage on a scale comparable to that of the Gitksan. Though conclusive evidence was lacking, I further posited that an analysis of storage facilities in each area would reveal that per capita storage space among the Gitksan was higher, and variations in individual storage capacity greater, than those of the Chilcotin.

As a consequence of their institutionalized property concepts, the Gitksan placed little emphasis on high investment anticipatory strategies of overt territorial defense. Fortification locations and residential site placement reflect this fact. Advertising strategies did, however, play an important role in territorial maintenance. Artifactual as well as behavioral media of territorial message transmission conformed to specific distributional criteria (see chapter 4).

This research has identified a number of kinds of material patterning which are related to Gitksan territorial land use strategies. Whether the kinds of patterning discussed here can successfully be recovered and interpreted in an archaeological context, awaits the application of these findings to an archaeological data base. The degree to which Gitksan expressions of territoriality are typical of territorial hunters

and gatherers in general, also needs to be demonstrated. Evidence presented here suggests that it is unreasonable to expect uniformity among all territorial hunters and gatherers. Models which attempt to reduce hunter-gatherer territoriality to a static set of responses to a limited set of external influences are inadequate because they fail to acknowledge the cultural component of human adaptation. In portraying hunter-gatherer territoriality as an environmentally determined phenomenon, such models fail to recognize the creative potential of cultural mechanisms of adaptation. This creative potential makes possible a variety of solutions to a given adaptational problem.

I believe that this research has helped to clarify the organizational, operational, and environmental parameters of hunter-gatherer territoriality. The range of variability which may occur within these parameters still needs to be defined through a cross-cultural survey of hunters-gatherers.

FURTHER IMPLICATIONS

As well as providing a number of useful insights into the nature of hunter-gatherer territoriality, this research has highlighted inherent problems in the application of cost/benefit models of nonhuman territoriality to hunter-gatherer societies. As discussed above, existing cost/benefit models portray territoriality as a uniformly expressed, externally regulated phenomenon. They argue that for every pattern of resource distribution there is a best possible foraging solution and assume that, all things being equal, the best possible solution will be adopted. In other words, for any given situation, it is expected that there will be one and only one response.

The Gitksan and Chilcotin data reveal that such models obscure the developmental potential inherent within human territorial systems. Contrary to cost/benefit model assumptions it is apparent that territorial behavior in human societies is not uniform and may vary in its response to different resource distribution patterns.

As discussed earlier, the model assumes that territoriality will occur when and

where resource distribution patterns make it economical to defend an area. Resource distribution is said to determine defense costs by determining the amount of territory needed for subsistence. The smaller the required subsistence area, the lower the defense costs. Existing models do not consider that the method of territorial defense may influence economic defensibility in a given situation. Overt defense and advertising are identified as the primary means by which humans and nonhumans alike ensure exclusive access to defined resource areas. The cost of both strategies is considered to be determined by territory size. This may be a legitimate assumption with regard to nonhuman species, where advertising and overt defense are inextricably tied to the physical space being claimed, and where the particular strategy employed is uniform for a species as a whole. Human societies differ from animal populations in a number of important respects, however. Overt defense and advertising strategies are not identical from one group to the next, and the human capacity for symbolic communication makes it possible for territorial advertising to be physically disassociated with the space being claimed. Where this occurs advertising costs need no longer be related to territory size or resource abundance and predictability, and territorial concepts may be extended to include low defensibility resource areas.

It was further suggested in this paper that the use of symbolic communication (advertising) in territory maintenance implies the social entrenchment of territorial land use strategies. The legitimization of territoriality is important because it renders strategies of overt territorial defense largely unnecessary. It was noted in chapter 4 that the different strengths and limitations of overt defense and social entrenchment as strategies of territorial maintenance are suggestive of territorial systems at varying levels of maturity. Based on these differences the following developmental framework is offered:

Formative stage:

Isolated local groups claim exclusive rights to particularly favoured resource locales (characterized by dense and predictable resources). Since other groups in the area do not immediately accept such a restriction of their foraging options, these claims are enforced by strategies of overt and aggressive defense.

Developmental stage:

In response to their diminished foraging options, neighbouring groups lay claim to other productive resource locales until exclusive access to high productivity resource areas becomes a regional phenomenon. At this point mutual recognition and acceptance of neighbouring groups' claims becomes a more viable and economic strategy of territorial maintenance than overt defense.

Established stage:

Territorial rights and privileges having become socially entrenched, these concepts are extended to include other, less productive resource areas in the vicinity of the original claims.

The implications of such a developmental scenario for patterning in the archaeological record have not been adequately explored in this paper. It is clear, however, that the archaeological manifestation of a formative territorial system should differ from that of a developmental or a mature territorial system.

The potential of institutionalized territorial land tenure to promote further culture change is also worthy of further investigation. Socially entrenched territoriality poses certain administrative challenges and costs. I have postulated that among hunters & gatherers, feasting and wealth distribution complexes will play an integral role in this process. Participation in such complexes demands a high degree of surplus production. Discussion of the relationship between surplus production and cultural complexity is beyond the scope of this paper, but the developmental implications are obvious.

REFERENCES

- Adams, J.
 1973 The Gitksan potlatch: population flux, resource ownership and reciprocity. Holt, Rinehart and Winston, Toronto.
- Albright, S. L.
 1982 An ethnoarchaeological study of Tahltan subsistence and settlement patterns. MA. Thesis, Department of Archeology, Simon Fraser University, Burnaby.
- Alexander, D., R. Tyhurst, L. Burnard-Hogarth, R. G. Matson
 1985 A preliminary ethnoarchaeological investigation of the Potato Mountain Range and the Eagle Lake area. Report prepared for the Heritage Conservation Branch of British Columbia, Victoria.
- Alexander, D. and R. G. Matson
 1986 Preliminary report on the Potato Mountain Archaeological Project 1985. Laboratory of Archaeology, University of British Columbia, Vancouver.
- Ames, K. M.
 1972 a) Preliminary report of excavations at GhSv:2, Hagwilget, B. C. Unpublished manuscript on file at the National Museum of Man, Ottawa.
 1972 b) Site survey of the middle Skeena Valley. Manuscript #702, Archives, Archaeological Survey of Canada, National Museum of Man, Ottawa.
 1973 Recent archaeological research in the middle Skeena Valley, B. C. . The Midden 1: 3 - 9.
 1979 a) Report of excavations at GhSv: 2, Hagwilget Canyon. In Skeena River prehistory, edited by R. Inglis and G. MacDonald, pp. 181 - 218. National Museum of Man Mercury Series, Archaeological Survey of Canada, Paper no. 87.
 1979 b) Stable and resilient systems along the Skeena River: the Gitksan/Carrier boundary. In Skeena River prehistory, edited by R. Inglis and G. MacDonald, pp. 219 - 239. National Museum of Man Mercury Series, Archaeological Survey of Canada, Paper no. 87.

Ames, K. and A. Marshall

- 1980 Villages, demography and subsistence intensification on the Southern Columbia Plateau. North American Anthropologist 2: 25 - 51.

Anderson, J. N.

- 1968 Analysis of group composition. In Man the hunter, edited by R. B. Lee and I. Devore, pp. 153 - 155. Aldine, New York.

Ardrey, Robert

- 1966 The territorial imperative. Atheneum, New York.

Aro, K. and M. Shepard

- 1967 Pacific salmon in Canada. Spawning populations of North Pacific salmon. International North Pacific Fisheries Commission, Vancouver.

Barbeau, M.

- 1929 Totem Poles of the Gitksan. National Museums of Canada Bulletin 174. Queen's Printer, Ottawa.

Barbeau, M. and W. Benyon

- n. d. Unpublished field notes on file at the National Museum of Canada, Ottawa.

Befu, H. and L. Plotnicov

- 1962 Types of corporate unilineal descent groups. American Anthropologist 64: 313 - 327.

Bettinger, R. L.

- 1980 Explanatory/predictive models of hunter-gatherer adaptation,. In Advances in Archaeological Method and Theory (Volume 3) edited by M. B. Schiffer, 189 - 255. Academic Press, New York.
- 1982 Aboriginal exchange and territoriality in Owens Valley, California. In Contexts for prehistoric exchange, edited by J. Ericson and T. Earle, pp. 103 - 126. Academic Press, New York.
- 1983 Aboriginal sociopolitical organization in Owens Valley: beyond the family band. In The development of political organization in native North America. 1979 Proceedings of the American Ethnological Society, edited by E. Tooker, pp. 45 - 58. American Ethnological Society, Washington.

Binford, L. R.

- 1964 A consideration of archaeological research design. American Antiquity 29: 425 - 441.

- 1968 Methodological considerations of the archaeological use of ethnographic data. In Man the hunter, edited by R. B. Lee and I. Devore, pp. 268 - 273. Aldine, New York.

- 1971 Mortuary practices: Their study and their potential. In Approaches to the social dimensions of mortuary practices, edited by J. A. Brown. Memoirs of the Society for American Archaeology, 25.

- 1977 a) General introduction. In For theory building in archaeology, edited by L. R. Binford, pp. 1 - 10. Academic Press, New York.

- 1977 b) Forty-seven trips: a case study in the character of archaeological formation process. In Stone tools as cultural markers: change, evolution and complexity, edited by R. V. S. Wright. Australian Institute of Aboriginal Studies, Canberra.

- 1978 Dimensional analysis of behavior and site structure: learning from an Eskimo hunting stand. American Antiquity 43: 330 - 361.

- 1979 Organization and formation processes: looking at curated technologies. Journal of Anthropological Research 35: 255 - 279.

- 1980 Willow smoke and dogs' tails: hunter-gatherer settlement systems and archaeological site formation. American Antiquity 45: 4 - 20.

- 1982 The archaeology of place. Journal of Anthropological Archaeology 1: 5 - 31.

Bishop, C. A.

- 1983 Comments. Territoriality among human foragers. Current Anthropology 24: 47 - 66.

Bleed, P.

- 1986 The optimal design of hunting weapons: maintainability or reliability. American Antiquity 51: 737 - 747.

Boas, F.

- 1890 The Indians of B. C. Tlingit, Haida, Tsimshian, Kotomoqa. Report of the British Association for the Advancement of Science 1889, fifth report of the northwestern tribes of Canada, pp. 797 - 893. London.
- 1916 Tsimshian mythology. Thirty- first Annual Report of the Bureau of American Ethnology. Washington.

Cashdan, Elizabeth

- 1983 Territoriality among human foragers: ecological models and an application to four bushman groups. Current Anthropology 24: 47-65.

Cassidy, M.

- 1984 From mountain to mountain. A history of the Gitksan village of Ans'pa yaxw. Ans'pa yaxw School Society. Kispiox.

Chang, Kwang-chi

- 1958 Study of the Neolithic social groupings; examples from the New World. American Anthropologist 60: 298 - 334.
- 1962 A typology of settlement and community patterns in some circumpolar societies. Arctic Anthropology 1: 28 - 41.

Chismore, George

- 1885 From the Nass to the Skeena. Overland Monthly. Second series 6: 449-458.

Cochrane, Glynn

- 1971 Use of the concept of the 'corporation': a choice between colloquialism or distortion. American Anthropologist 73 - 1144 - 1150.

Collier, G. A.

- 1975 Fields of the Tzotzil. The ecological bases of tradition in Highland Chiapas. University of Texas Press, Austin.

Collison, W. H.

- 1981 In the wake of the war canoe, edited by C. Lillard. Sono Nis Press, Victoria.

Conkey, M. W.

- 1978 Style and information in cultural evolution: toward a predictive model for the paleolithic. In Social Archaeology, edited by C. L. Redman et. al., pp. 61- 85. Academic Press, New York.

Coupland, G.

- 1985 Prehistoric culture change at Kitselas Canyon. PhD. dissertation, Department of Anthropology, University of British Columbia, Vancouver.

n.d. Aggression, aggregation and abandonment in Southwestern Prehistory. Unpublished manuscript on file at the University of British Columbia.

Cove, J. J.

- 1982 The Gitksan traditional concept of land ownership. Anthropologica 24: 3-17.

- 1985 A detailed inventory of the Barbeau Northwest Coast files. National Museum of Man Mercury Series, Canadian Centre for Folk Culture Studies, Paper No. 54, Ottawa.

Crocombe, R.

- 1974 An approach to the analysis of land tenure systems. In Land tenure in Oceania, edited by H. Lundsgaarde. University of Hawaii Press, Honolulu.

Crook, J. H.

- 1968 The nature and function of territorial aggression. In Man and aggression, edited by Ashley Montague. Oxford University Press, New York.

Darling, J. D.

- 1955 The effects of culture contact on the Tsimshian system of land tenure during the 18th century. Unpublished M. A. Thesis, Department of Anthropology. University of British Columbia, Vancouver.

Dorsey, A.

- 1898 Up the Skeena River to the home of the Tsimshians. Popular Science Monthly 181: 182.

Duff, W.

- 1959 Histories, territories and laws of the Kitwancool. Anthropology in B. C. Memoir No. 4. Provincial Museum.

- 1962 Stone clubs from the Skeena River area. Report of the Provincial Museum for 1962. pp. 27 - 38. British Columbia Provincial Museum, Victoria.
- n. d. Barbeau-Beynon file. Unpublished transcription of the Barbeau-Beynon field notes on file at the Museum of Anthropology. University of British Columbia, Vancouver.
- Dyen, I. and D. F. Aberle
 1974 Lexical reconstruction: the case of the Proto-Athapaskan kinship system. Cambridge University Press, London.
- Dyson-Hudson, R. and E. Smith
 1978 Human territoriality: an ecological reassessment. American Anthropologist 80: 21-40.
- Ember, C. R., M. Ember, and B. Pasternak
 1974 On the development of unilineal descent. Journal of Anthropological Research 30: 69 - 94.
- Emmons, G. T.
 n. d. Unpublished field notebooks, Xerox copy in Document Resource Centre, Land Claims Office, Gitksan-Wet'suwet'en Tribal Council. Hazelton.
- 1925 The Kitikshan and their totem poles. Natural History 33 - 48.
- Farely, A. L.
 1979 Atlas of British Columbia. People, environment and resource use. The University of British Columbia Press, Vancouver.
- Farrand, L.
 1898 The Chilcotin. In Report of the 68th Meeting of the British Association for the Advancement of Science, 1898, pp. 645 - 647. London.
- 1900 Traditions of the Chilcotin Indians. American Museum of Natural History Memoir 4: Anthropology Vol. 3 part 1. Jesup North Pacific Expedition, Vol. 2, part 7.
- Flannery, K. V.
 1972 The origins of the village as a settlement type in Mesoamerica and the Near East. In Man, settlement and urbanism, edited by P. Ucko, R. Tringham and G. Dimbleby, pp. 23 - 53. Duckworth, London.

Garfield, V.

- 1939 Tsimshian clan and society. University of Washington Publications in Anthropology 7: 167 - 340.

Garfield, Viola and P. Wingert

- 1979 The Tsimshian Indians and their arts. Douglas and McIntyre Ltd., Vancouver.

Gitsegukla Band,

- 1979 Adawkh! Gitsegukla. Gitsegukla History and Development Project. Gitsegukla Band, Gitsegukla

Goldman, I.

- 1940 The Alkatcho Carrier of British Columbia. In Acculturation in seven American Indian tribes, edited by R. Linton. D. Appleton-Century. New York.

- 1941 The Alkatcho Carrier: historical background of crest prerogatives. American Anthropologist 43: 396 - 418.

Green, A. H.

- 1911 Unpublished report submitted to the department of Indian Affairs, November, 1911. Manuscript copy on file at the Gitksan-Wet'suweten'en Tribal Council Offices, Hazelton.

Grossman, Daniel

- 1965 The nature of descent groups of some tribes in the interior of Northwestern America. Anthropologica 7: 249 - 262.

Halpin, Marjorie M.

- 1973 The Tsimshian Crest System: A Study Based on Museum Specimens and the Marius Barbeau and William Benyon Field Notes. Ph.D. diss., Dept. of Sociology and Anthropology, University of British Columbia, Vancouver.

Hamilton, W. J. and K. E. F. Watt

- 1970 Refuging. Annual Review of Ecology and Systematics. 1: 263-286.

Hayden, B.

- 1977 Corporate groups and the late Ontario Iroquoian longhouse. Ontario Archaeological Society 28.

- 1981 Subsistence and ecological adaptations of modern hunter/gatherers. In Omnivorous primates. Gathering and hunting in human evolution, edited by R. S. O. Harding and G. Teleki, pp. 344 - 421. Columbia University Press, New York.
- Hayden, B. and A. Cannon
 1982 The corporate group as an archaeological unit. Journal of Anthropological Archaeology 1: 132 - 158.
- Heffley, S.
 1981 The relationship between northern Athapaskan settlement patterns and resource distribution: an application of Horn's model. In Hunter-gatherer foraging strategies. Ethnographic and archaeological analysis, edited by B. Winterhalder and E. A. Smith, pp. 126 - 147. University of Chicago Press, Chicago.
- Heinz, H. J.
 1972 Territoriality among the Bushmen in general and the !ko in particular. Anthropos 67: 405 - 416.
- Hiatt, L. R.
 1962 Local organization among the Australian Aborigines. Oceania 32: 276 - 286.
- 1968 Ownership and use of land among the Australian aborigines. In Man the hunter, edited by R. B. Lee and I. Devore, pp. 99 - 102. Aldine, New York.
- Horetzky, Charles
 1874 Canada on the Pacific. Montreal.
- Inglis, R. and G. MacDonald
 1979 Skeena River prehistory. National Museum of Man Mercury Series Archaeological Survey of Canada Paper No. 87. Ottawa.
- Jorgensen, J.
 1980 Western Indians. W. H. Freeman, San Francisco.

- Keene, A. S.
 1981 Optimal foraging in a nonmarginal environment: a model of prehistoric subsistence strategies in Michigan. In Hunter-gatherer foraging strategies. Ethnographic and archaeological analyses, edited by B. Winterhalder and E. A. Smith, pp. 171 - 193. University of Chicago Press, Chicago.
- Kelly, R.
 1983 Hunter-gatherer mobility strategies. Journal of Anthropological Research. 39: 277 - 306.
- Kew, M.
 1976 Salmon abundance, technology and human populations on the Fraser River watershed. Paper presented at the 29th Northwest Anthropological Conference, Simon Fraser University, Burnaby.
- King, Glen E.
 1975 Socioterritorial units among carnivores and early hominids. Journal of Anthropological Research 31: 69 - 87.
- King, Thomas
 1978 Don't that beat the band? Nonegalitarian political organization in prehistoric central California. In Social archaeology: beyond subsistence and dating, edited by C. Redman, M. Berman, E. Curtin et. al, pp. 225 - 248. Academic Press. New York.
- Kobrinisky, Vernon
 1977 The Tsimshianization of the Carrier Indians. In Problems in the prehistory of the North American Subarctic: The Athapaskan question, edited by J. W. Helmer, S. VanDyke, and F. J. Kense, pp. 201 - 210. University of Calgary Archaeological Association, Calgary.
- Lane, R.
 1953 Cultural relations of the Chilcotin Indians of west Central British Columbia. Unpublished Ph. D. dissertation, University of Washington.
- 1981 Chilcotin. In Handbook of North American Indians Vol. 6, Subartic. Edited by J. Helm, pp. 402 - 412. Smithsonian Institute, Washington.
- Layton, R.
 1986 Political and territorial structures among hunter-gatherers. Man (N. S.) 21: 18 - 33.

- Lee, R. B.
 1979 The !Kung San. Men, women and work in a foraging society. Cambridge University Press, Cambridge.
- Lee, R. B. and I. DeVore (editors)
 1968 Man the hunter. Aldine Publishing Company, New York.
- MacDonald, G.
 1976 Prehistoric art of the northern Northwest Coast. In Indian art traditions of the Northwest Coast, edited by R. L. Carlson, pp. 99 - 120. Archaeology Press, Simon Fraser University, Burnaby.
- 1979 Kitwanga Fort-National Historic Site, Skeena River B. C., Parks Canada Manuscript Report No. 341. Calgary.
- 1984 a) The epic of Nekt: The archaeology of metaphor. In The Tsimshian. Images of the past: views for the present, edited by M. Sequin. University of British Columbia Press, Vancouver.
- 1984 b) The totem poles and monuments of Gitwangak village, Studies in Archaeology, Architecture and History. National Historic Parks and Sites Branch. Parks Canada.
- MacDonald, Joanne
 1984 Gitwangak village life. A museum collection. Studies in Archaeology, Architecture and History. National Historic Parks and Sites Branch. Parks Canada.
- McNeary, S.
 1976 Where fire came down from: social economic life of the Niska. Unpublished PhD. dissertation, Dept. of Anthropology, Bryn Mawr College.
- Magne, M.
 1985 Regression and scaling models of projectile point and stone tool ethnicity. Paper presented at the 18th Annual Meeting of the Canadian Archeological Association, Winnipeg.

Magne, M. and R. G. Matson

- 1982 Identification of "Salish" and "Athapaskan" side-notched projectile points from the Interior Plateau of British Columbia. In Approaches to Algonquian archaeology, edited by M. Hanna and B. Kooyman, pp. 57 - 79. University of Calgary Archaeological Association, Calgary.
- 1984 Athapaskan and earlier archaeology at Big Eagle Lake, British Columbia. Archaeology Lab, University of British Columbia. Report to Social Sciences and Humanities Research Council of Canada.
- 1985 A preliminary model of Athapaskan movements on the Interior Plateau of British Columbia. Paper presented at the Annual Meeting of the Canadian Archaeological Association, Winnipeg.

Matson, R. G.

- 1981 Intensification and the development of cultural complexity: the Northwest versus the Northeast Coast. Paper presented to the 14th Annual Meeting of the Canadian Archaeological Association.
- 1983 Intensification and the development of cultural complexity: the Northwest versus the Northeast Coast. In The evolution of maritime Cultures on the Northeast and Northwest Coast of America, edited by R. J. Nash, pp. 122 - 149. Department of Archaeology, Simon Fraser University, Burnaby.
- 1985a The relationship between sedentism and status inequalities among hunters and gatherers, in Status, structure and stratification: current archaeological reconstructions, edited by M. Thompson, M. T. Garcia, F. Kense, pp. 245 - 252. University of Calgary Archaeological Association, Calgary.
- 1985b Overview of the Eagle Lake Project, 1979-1984. Paper presented at the 18th Annual Meeting of the Canadian Archaeological Association, Winnipeg.

Matson, R. G., M. Magne, D. Ludowicz and D. Pokotylo.

- 1980 The Eagle Lake Project: report on the 1979 season. Report to the Social Sciences and Humanities Research Council of Canada. Archaeology Laboratory, University of British Columbia.

Mohs, G.

- 1974 Babine Lake: archaeological survey project site typology and vegetation analysis. Unpublished manuscript on file at the Heritage Conservation Branch, Victoria.

Morgan, L. H.

- 1963 Ancient society. World Publishing Co., New York.

Morice, A.

- 1893 Notes archaeological, industrial, and sociological on the Western Denes. Transactions of the Royal Society of Canada, 1892 - 1892.

- 1906 The history of the Northern Interior of British Columbia. William Briggs, Toronto.

Oberg, K.

- 1980 The social economy of the Tlingit Indians. Douglas and McIntyre, Vancouver.

Pierce, W. H.

- 1933 From potlatch to pulpit, edited by Rev. J. P. Hicks. Vancouver Bindery Ltd., Vancouver.

People of 'Ksan

- 1980 Gathering what the Great Nature provided. Food traditions of the Gitksan. Douglas & McIntyre Ltd. Vancouver.

Peterson, N.

- 1975 Hunter-gatherer territoriality: the perspective from Australia. American Anthropologist 77: 53-68.

Plog, F. and S. Upham

- 1983 The analysis of prehistoric political organization. In The development of political organization in native North America, edited by E. Tooker, pp. 199 - 214. American Ethnological Society, Washington.

Pokotylo, D. and C Hanks

- 1985 Mountain Dene ethnoarchaeology: Some preliminary perspectives. Paper presented at the 50th Annual Meeting of the Society for American Archaeology, Denver.

Ray, V. F.

- 1942 Culture element distributions XX11: Plateau. University of California, Anthropological Records 8: 99 - 257.

Reynolds, V.

- 1966 Open groups in hominid evolution. Man 1: 441 - 452.

Richardson, A.

- 1982 The control of productive resources on the Northwest Coast of North America, in Resource managers: North American and Australian hunter-gatherers, edited by N. Williams and E. Hunn, pp 93 - 112. AAAS Selected Symposium 67.

Riches, D.

- 1982 Northern nomadic hunter-gatherers. A humanistic approach. Academic Press, New York.

Robinson, W.

- 1962 Men of Medeek. Northern Sentinel Press.

n.d. Wars of Medeek. Unpublished manuscript on file at the Gitksan Carrier Tribal Council Office, Hazelton.

Sackett, J. R.

- 1982 Approaches to style in lithic archaeology. Journal of Anthropological Archaeology 1: 59 - 112.
- 1985 Style and ethnicity in the Kalahari: a reply to Weissner. American Antiquity 50: 154 - 159.

Sahlins, M.

- 1965 On the ideology and composition of descent groups. Man (old series) 65: 104 - 107.

Sahlins, M. D. and E. R. Service, editors.

- 1973 Evolution and culture. University of Michigan Press, Ann Arbor.

Schoenwetter, J. and A. E. Dittert

- 1968 An ecological interpretation of Anasazi settlement patterns. In Anthropological archaeology in the Americas, edited by B. Meggars. Anthropological Society of Washington, Washington.

Seguin, M. editor

- 1984 The Tsimshian. Images of the past views for the present. University of British Columbia Press, Vancouver.

Service, E. R.

- 1966 The hunters, Prentice-Hall, New Jersey.

- Sharp, R.
1968 Hunter social organization: some problems of method. In Man the hunter, edited by R. B. Lee and I DeVore, pp. 158 - 161. Aldine, New York.
- Smith, E.
1981 The application of optimal foraging theory to the analysis of hunter-gatherer group size. In Hunter-gatherer foraging strategies: Ethnographic and archaeological analysis, edited by B. Winterhalder and E. A. Smith, pp. 36 - 35. University of Chicago Press, Chicago.
- 1983 Comments. In Territoriality among human foragers. Current Anthropology 24: 47 - 66.
- Sneed, P.
1971 Of salmon and men: an investigation of ecological determinants and aboriginal man in the Canadian Plateau. In Aboriginal man and environments on the Plateau of northwest North America, edited by A. Stryd and R. Smith, pp. 229 - 242. University of Calgary Press, Calgary.
- Stanner, W.
1965 Aboriginal territorial organization: estate, range, domain and regime. Oceania 36: 1 - 26.
- Steward, J.
1968 Causal factors and processes in the evolution of pre-farming societies. In Man the hunter, edited by R. B. Lee and I. DeVore, pp. 321 - 334. Aldine, New York.
- Strong, W. D.
1929 Aboriginal society in Southern California. University of California Publications in American Archaeology and Ethnology, Vol. 26
- Teit, J.
1909 Notes on the Chilcotin Indians. In The Shuswap. American Museum of Natural History, Jesup North Pacific Expedition, Memoirs Vol 2, Part 7: 758 - 789.

- Testart, A.
1982 The significance of food storage among hunter-gatherers: residence patterns, population densities, and social inequalities. Current Anthropology 23: 253 - 537.
- Tyhurst, R.
n.d. The Chilcotin: an ethnographic history. Unpublished manuscript on file at the University of British Columbia, Vancouver.
- Tyhurst, R. and D. Beggs
1983 Unpublished field notes, 1983 season. Manuscript copy in author's possession.
- Weissner, Polly
1983 Style and social information in Kalihari San projectile points. American Antiquity 48: 253-276.
- Williams, B. J.
1974 A model of band society. Memoirs of the Society for American Archaeology, 29.
- Wilmsen, E. N.
1973 Interaction, spacing behavior, and the organization of hunting bands. Journal of Anthropological Research 29: 1-31.
- Wilmeth, R.
1977 Chilcotin archaeology. In Prehistory of the North American subarctic. The Athapaskan question, edited by J. W. Helmer, S. VanDyke, F. J. Kense, pp. 97-101. Proceedings of the 9th Annual Chacmool Conference, Calgary.

1978 Anaheim Lake archaeology and the early historic Chilcotin Indians. National Museum of Man Mercury Series. Archaeological Survey of Canada Paper No. 82.
- White, L. A.
1959 The evolution of culture. The development of civilization to the fall of Rome. McGraw-Hill Book Company, Inc., Toronto.

Winterhalder, B.

- 1981 Optimal foraging strategies and hunter-gatherer research in anthropology: theory and models, in Hunter-gatherer foraging strategy. Ethnographic and archaeological analysis, edited by B. Winterhalder and E. A. Smith. pp. 13 - 35. University of Chicago Press, Chicago.

Wobst, H. Martin

- 1977 Stylistic behavior and information exchange. In For the director. Research essays in honor of James B. Griffin, edited by C. Cleland, pp. 317-342. University of Michigan, Museum of Anthropology, Anthropological Papers 61. Ann Arbor.

Woodburn, James

- 1968 Stability and flexibility in Hadza residential groupings. In Man the hunter, edited by R. B. Lee and I. DeVore, pp. 103 - 110. Aldine, New York.
- 1980 Hunters and gatherers today and reconstruction of the past. In Soviet and Western anthropology, edited by E. Gellner, pp. 95 - 117. Duckworth, London.