

TSAWATAINEUK ARCHAEOLOGICAL OVERVIEW 2004:

INCLUDING KINGCOME RIVER & PORTIONS OF KINGCOME INLET



Gwa'yi Village, Kingcome River Valley

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FINAL REPORT

COAST INTERIOR ARCHAEOLOGY

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PROJECT DIRECTOR JIM STAFFORD

INTERVIEWER MIKE WILLIE

RESEARCH SHARON KEEN
 TINA CHRISTENSEN
 JIM STAFFORD

REPORT AUTHORS JIM STAFFORD
 TINA CHRISTENSEN

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Introduction and Background

During the winter of 2004, Ione Brown (Mill & Timber Ltd), contacted Jim Stafford of Coast Interior Archaeology to conduct an archaeological overview study of Tsawataineuk Traditional Territory, primarily Kingcome Inlet and watershed areas.

The following report provides the results of the overview study undertaken by *Coast Interior Archaeology* during February and March, 2004. This study was accomplished for Mill & Timber Products and the Tsawataineuk First Nation with Forest Investment Account (FIA) funds.

In principle and spirit, this overview study is not intended to be a static entity or final consideration but a living document to be refined as knowledge increases. To assist ongoing refinement of this knowledge, the current project relies on the flexibility of digital technology to form a base for the inclusion of additional information. In no way is this document intended to be an exhaustive or error-free account of Tsawataineuk culture or the archaeology of Kingcome Inlet and watershed.

PROJECT GOALS & DESCRIPTION

The primary goal of this project is to enhance the Archaeological Overview Assessment (AOA) data compiled previously by Golder & Associates (Bailey *et. al* 1999) for the Central Coast Land and Resource Management Plan (LRMP), and to provide more specific guidance in the management of archaeological resources within Tsawataineuk Traditional Territory.

It is anticipated that this study may be the first phase of a multi phase project that includes: 1) detailed background research and interviews; 2) archaeological inventory and; 3) the refining of the existing archaeological potential model. This phase will provide a clear understanding of the current state of archaeological information for the study area and will set the stage for collecting additional field data and for evaluating existing site prediction models.

This archaeological resource overview conforms to the standards set out by the BC Archaeology Branch and outlined in section 3.4 of the Archaeological Impact Assessment Guidelines (Apland & Kenny 1998)

The project encompasses the following tasks and deliverables:

- Detailed review and summary of available ethnographic, archaeological and historical documents pertinent to the study area;
- Interviews with elders and knowledgeable persons at the Tsawataineuk village of Gwa'yí, Kingcome Inlet, including meetings and field trips within the study area.
- Three GIS coverages. These include: 1) Known archaeological sites (from Provincial Heritage Registry); 2) Archaeologically Surveyed areas (level of effort described) and; 3) Placenames¹ derived from the interviews.
- A final report conforming in content and format to those specifications outlined in the BC Archaeology Branch overview reporting guidelines (Apland & Kenny 1998).

¹ The placename information is preliminary at this time and on file with the Tsawataineuk at Gwa'yí. Due to the time constraints, placename information that was gathered could not be cross checked with other knowledgeable Tsawataineuk elders and is thus not available for public consumption.

As per the Archaeological Impact Assessment (AIA) Guidelines for Overview report content (Apland & Kenny 1998), an evaluation of the archaeological resources in the study area is made. This includes a summary of the expected site types and their distribution as well as an indication of archaeological potential within the study area and of data gaps that may prevent proper evaluation. A summary of previous and potential impacts to archaeological resources is also provided.

At present there has been virtually no systematic survey within the study area and therefore a new predictive model is not deemed appropriate at this stage. However, the variables employed in the 1999 Golder predictive model are summarized and evaluated and suggestions are made to refine the existing model. Strategies for minimizing data gaps and options for further work are provided as recommendations.

THE PRESENT DAY TSAWATAINEUK

The Tsawataineuk are Kwakwaka'wakw people, speakers of the Kwakwala language and today are represented by the Musgamagw/Tsawataineuk Tribal Council which is an affiliation of the Tsawataineuk, Kwicksutaineuk-Ah-kwa-mish (Gilford Island) and Namgis (Alert Bay) peoples.

Tsawataineuk asserted traditional territory includes all of the Kingcome River watershed and much of Kingcome Inlet, as well as the land between Kingcome Inlet and Tribune Channel, and the Broughton Archipelago (North island – Central Coast Forest District 2004²).

The principal village of the Tsawataineuk is Gwa'yi, located near the mouth of the Kingcome River.

PREVIOUS OVERVIEW ASSESSMENTS & ARCHAEOLOGICAL POTENTIAL MAPPING

An Archaeological Overview Assessment (AOA) of the Central Coast Land and Resource Management Plan (LRMP) area has been conducted by Golder Associates (Bailey *et. al* 1999) and includes the Traditional Territory of the Tsawataineuk. The 1999 Golder AOA provides contextual information for the LRMP (potential impacts to archaeology resources, physical setting, ethnographic summary, history of archaeological research, previous archaeology and culture history) that will be referred to in this report in an attempt to avoid duplication.

In addition to providing contextual information (e.g. previous archaeology) for the Central Coast LRMP, the 1999 AOA resulted in the development of GIS based predictive models which were applied to the Central Coast LRMP area. The result of the predictive models are a set of 1:20 000 scale maps showing the predicted potential as colour coded polygons. The maps (dated Sept 10, 2002³) show the predicted “CMT Potential” and the “General Archaeological Potential”.

An overview of the Port McNeil Forest District, which includes Tsawataineuk Traditional Territory, was conducted by I.R. Wilson (1995) and includes an Appendix written by Randy Bouchard. Although the complete manuscript is not presently available at the Archaeology Branch or Forest Service library, applicable sections of Bouchard's Appendix were obtained for this report.

² Pdf Map found at MoF website: <http://www.for.gov.bc.ca/dic/FirstNations/fn.htm>

³ According to J. Bailey (pers. comm. 2003), the Sept 10, 2002 maps are associated with the 1999 AOA report.

WHAT IS ARCHAEOLOGY?

Archaeology is the study of past human cultures primarily through the physical evidence left behind. Beyond the act of discovery, archaeology encompasses a wide body of knowledge necessary to understanding what is discovered in a scientific, historical, cultural, and environmental setting.

As well as the physical evidence of human activity (e.g. sites, features, artifacts), archaeology relies upon the reconstruction of past environments, as well as the behaviour of known populations in the modern environment as analogy (or examples) of how and where people may have lived in the past. Knowledge of past environs enables archaeologists to better understand where sites may exist on the landscape, the most obvious example being the identification of dramatically changing sea-levels and the location of archaeological sites associated with those old shorelines. Archaeology does rely upon the oral histories of indigenous communities to indicate where and how people lived in the past. The oral histories are not only valuable for understanding relatively recent use of the landscape but many refer to events many thousands of years old, describing past environments, past glaciations, extinct animals and changing sea-levels.

Study Area

Kingcome Inlet is a fjord that bisects the Coast Mountains on the mainland side of Queen Charlotte Strait, approximately 60 km east of Northern Vancouver Island (Figure 1). The Kingcome River meanders in a low-lying glacially carved valley that extends southward from Hailtjuk (Silverthrone) Glacier to Kingcome Inlet for a distance of ~ 65 km. Geographically, this study area is in close proximity to the Broughton Archipelago and Queen Charlotte Strait to the west; Tribune Channel, Gilford Island and Knight Inlet to the south and east and; Owekino Lake and Rivers Inlet area to the north. The following discussion of the natural characteristics of the study area relies in part upon the 1999 Golder AOA (Bailey *et al.* 1999) and the recently released Coastal Watershed Assessment (CWAP) conducted by Madrone Environmental Services (Brayshaw & Weston 2003).

TERMS OF REFERENCE

The study area includes those portions of the traditional territory of the Tsawataineuk First Nation as found within nineteen 1:20 000 scale TRIM maps shown in Figure 2⁴. The TRIM maps included in this study are:

**92L 88, 89, 90, 98, 99, 100;
92M 09, 10, 19, 20, 29, 30, 39, 40, 49, 50;
92N 01, 11, 21**

In general, the study area includes all of the Kingcome River drainage and much of Kingcome Inlet. Within Kingcome Inlet the western boundary of the study area includes Moore Bay and Belle Isle Sound on the south side of the Inlet and Philadelphia Point and Charles Creek on the North side. In total, the study area encompasses 179,695 hectares⁵ and is found within the Central Coast LRMP and Port McNeil Forest District.

MODERN ENVIRONMENT

The study area may be separated into two distinct areas, Kingcome Inlet (Figure 3) and Kingcome watershed (Figure 4).

Kingcome Inlet

Kingcome Inlet is a steep sided fjord which extends ~35 km from the eastern side of Broughton Island to the mouth of Kingcome River. Wakeman Sound protrudes northwards from about the midpoint of the Inlet and is not in the study area. There are numerous small bays and streams.

Kingcome Inlet rises to mountain peaks over 1500 m in elevation on the north side of the Inlet with two relatively low-lying valleys (Charles Creek & Holden Creek) bisecting the mountains. On the south side of the Inlet a large peninsula separates Kingcome Inlet and Tribune Channel; in this area extreme slopes rise to a plateau feature and associated lakes and bogs located at ~ 1100 m asl (above modern sea-level). One major low lying river valley, Ahta valley, is located on the southeastern side of the Inlet and separates Kingcome Inlet from Bond Sound (Tribune Channel) by a distance of only 3.3 km. Belleilse Sound is another prominent feature on the south side of Kingcome Inlet that contains somewhat lesser slopes and is separated from Simoom Sound by a distance of only ~1.7 km.

⁴ This map was provided in the request for proposal as the study area term of reference and excludes those portions of Tsawataineuk territory which overlap with other first nations claims.

⁵ Compare this figure to the 4.78 million hectares included in the 1999 Golder AOA (Bailey *et al.* 1999:21)



Figure 1. Kingcome Inlet and river location on BC central coast. 1:2, 500 000 scale map.

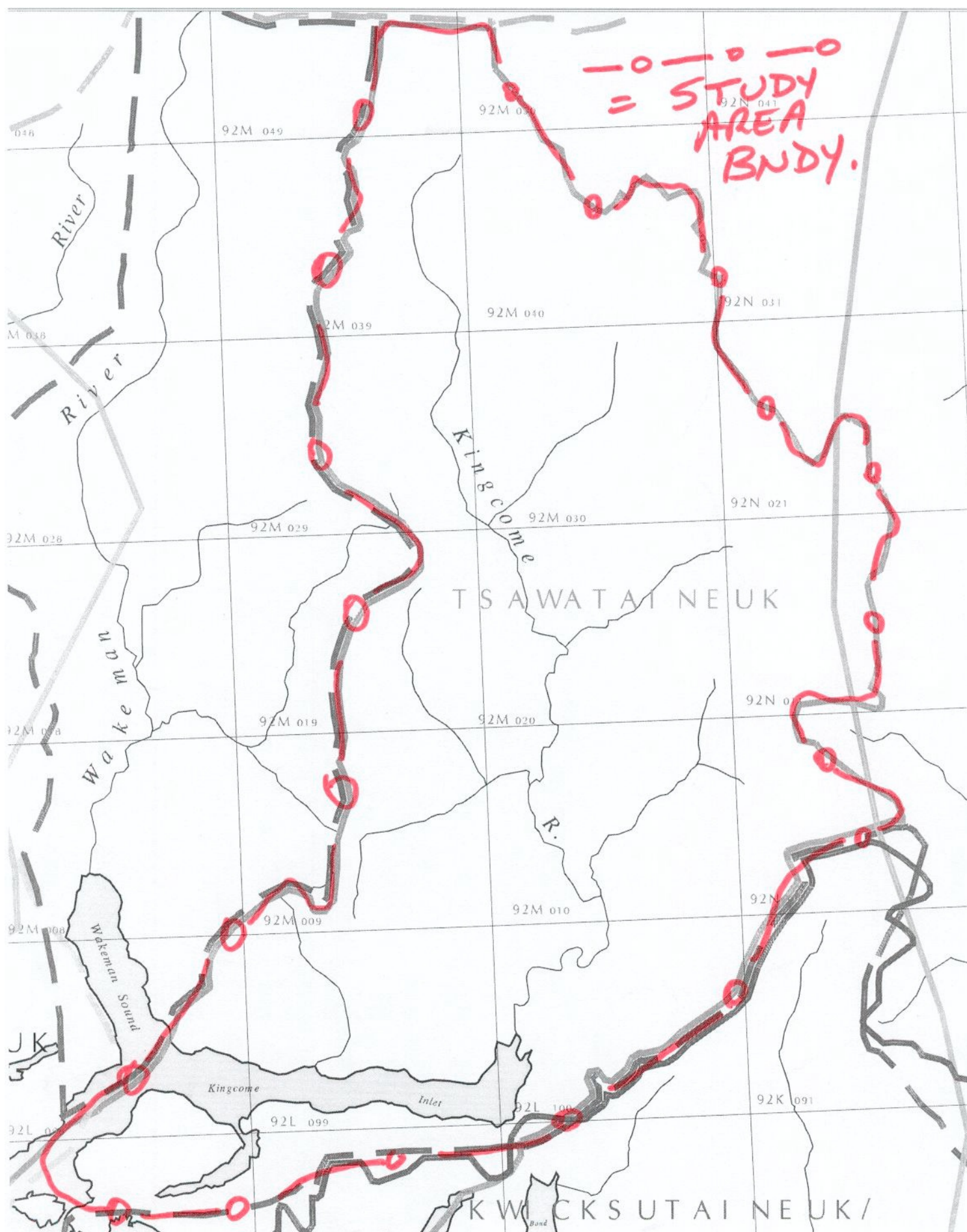


Figure 2. Study Area boundary as per terms of reference.

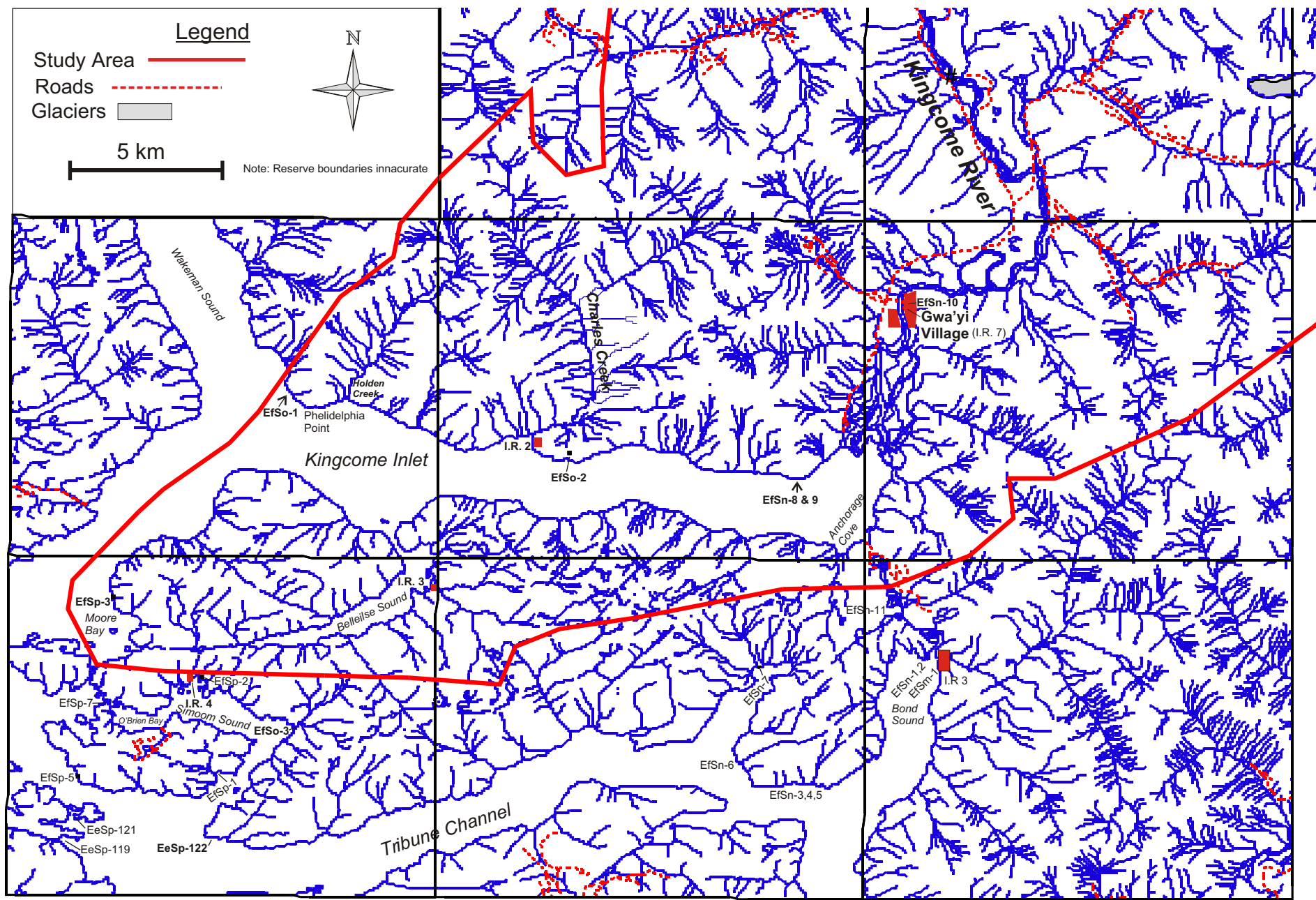


Figure 3. Kingcome Inlet Study Area.

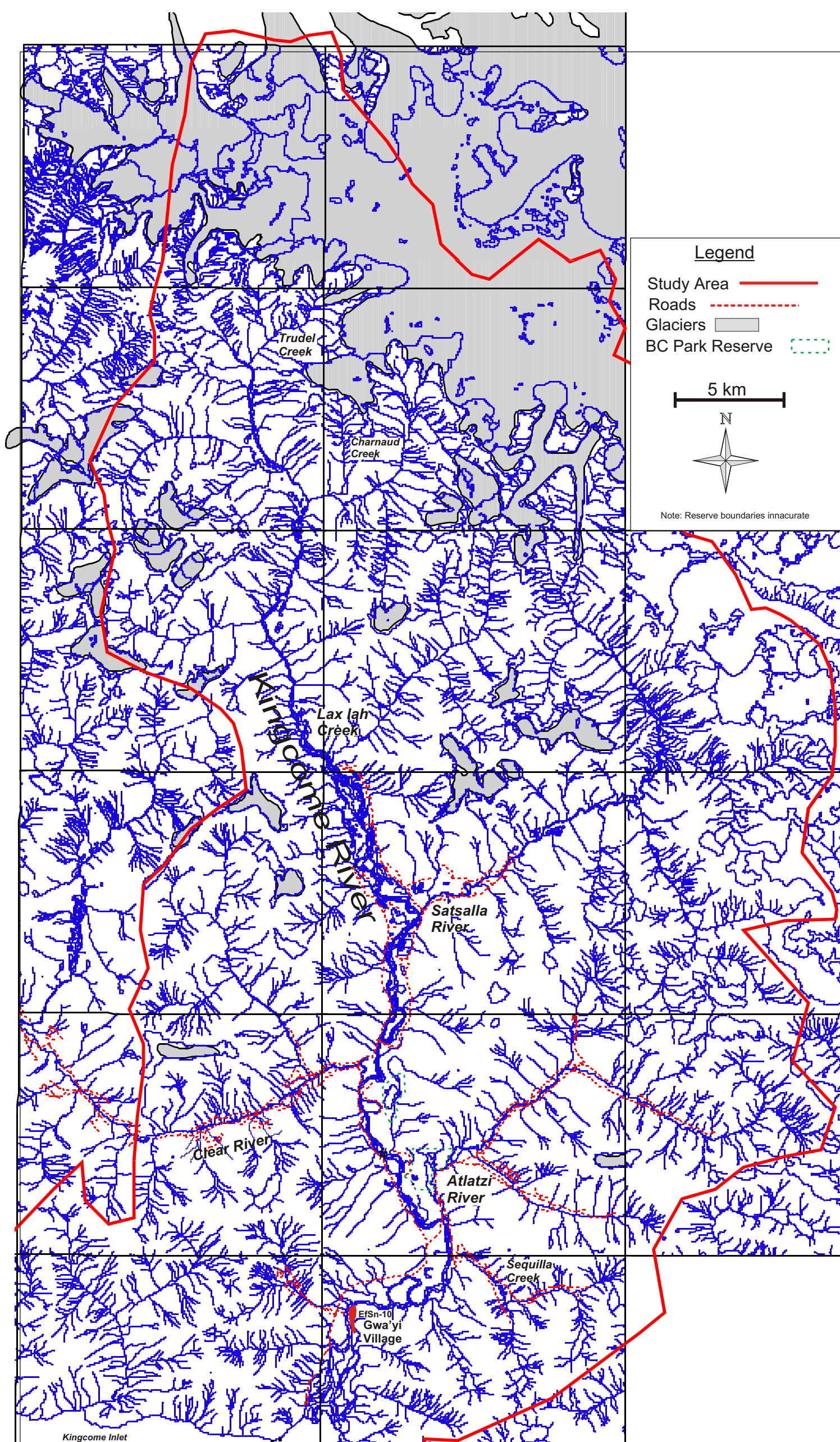


Figure 4. Kingcome River Watershed Study Area

Kingcome River Watershed

The Kingcome River is a S1-Large River⁶ which drains an area ~ 1300 km² in size and in addition to the main stem of the Kingcome River, includes 13 sub-basins (Brayshaw & Weston 2003). These are: Sequilla, Three Mile, Meers, Clear, Magson, Atlatzi, Satsalla, Lahlah, Charnoud, McFee, Trudel and the Upper Kingcome headwaters. Elevations within the Kingcome River extend from modern shoreline to ~ 2000 m asl.

The main stem of the Kingcome River flows along a flat and wide valley bottom with a low gradient for the majority of the rivers ~65 km length. At the confluence of the Kingcome and Satsalla River, 25 km inland, the elevation is only 40 m asl. The valley bottom remains flat and more than 1.5 km in width to ~35 km inland, just beyond the confluence with Lax Lah Creek at 120 m asl. From this point to the confluence with Trudel Creek, a distance of ~ 20 km, the valley bottom begins to gain greater elevation (300 m over 20 km) and reduce width.

The Satsalla River also meanders within a low lying valley bottom, extending from the Kingcome River some 25 km northeast and terminating at a glacial lake. The Satsalla cuts through a bench-like feature, possibly a moraine, at the confluence of the Kingcome and Satsalla. The bench sits at ~ 120 m asl.

The Kingcome River is in part fed by the Ha-Iltzuk (Silverthrone) glacier, “the largest glacial complex on the BC coast south of the Alaskan border” (Brayshaw & Weston 2003:12). The glacial complex is associated with Silverthrone Mountain, a volcano listed by the Geological Survey of Canada (GSC) as a caldera feature⁷ within the Garibaldi Volcanic Belt. A caldera is a large crater like depression that forms when a volcano erupts and the center subsequently collapses. The Silverthrone caldera is assumed to be buried under the glacial ice cap. Eroded (and exposed) volcanic outcrops are noted for both Trudel Creek and Charnoud Creek by the GSC. According to the digital 2003 geology maps produced by BC Energy and Mines⁸ these outcrops are associated with Garibaldi Group basaltic volcanic rocks described as:

Late Glacial to Early Post Glacial: olivine basalt flows, basaltic andesite flows and pyroclastic cones, rhyolite, dacite and andesite flows and domes; polymictic breccias and pyroclastics, minor intercalated sediments; includes Silverthrone Volcanics.

Modern Biogeoclimatic Zones

Three major biogeoclimatic zones (BGZs), Coastal Western Hemlock (CWH), Mountain Hemlock (MH) and Alpine Tundra (AT) are present in the study area. As classified in “Ecosystems of British Columbia” by Meidinger & Pojar (1991) these zones can be further divided into the six sub zones listed below. Climax vegetation, climate, altitude and topography are used to delineate these zones which include:

- Coastal Western Hemlock – Very Wet Hypermaritime (CWH vh2)
- Coastal Western Hemlock – Wet Hypermaritime – submontane (CWH wh1)
- Coastal Western Hemlock – Wet Hypermaritime – montane (CWH wh2)
- Mountain Hemlock – Wet Hypermaritime – windward (MH wh1)
- Mountain Hemlock – Wet Hypermaritime – leeward (MH wh2)
- Alpine Tundra - coastal (AT)

⁶ This is the same class as the Fraser River, *see* Glossary.

⁷ Information on volcanoes in Canada can be found at the natural Resources Canada website:
<http://www.nrcan.gc.ca/gsc/pacific/vancouver/volcanoes/>

⁸ *see* <http://www.em.gov.bc.ca/Mining/Geosurv/Publications/catalog/bcgeolmap.htm>

The relative percentages of the BGZs in the study area are provided in Table 1 and reveal the large amount of area included in the Alpine Tundra zone. Detailed summaries of typical plant and animal species found in each BGZ zone are provided in the 1999 Golder AOA (Bailey *et al.* 1999:29-31).

Table 1. Relative percentages of Biogeoclimatic zones in study area.

BGZ	ha	% of total
CWH vm1	45078	25.09%
CWH vm2	30318	16.87%
MH mm1	34534	19.22%
MH mm2	27	0.02%
AT	69738	38.81%
Total	179695	100.00%

Ecological Reserves

Two Ecological Reserves are located in the study area. The Kingcome & Atlatzi Reserves are located ~ 10 km up the Kingcome River and total ~414 ha. These reserves were established in 1972 to protect the unique lodgepole pine stands and associated bogs found there. At present, the cultural values within these ecological reserves is unknown⁹.

Modern Climate

A description of the modern climate and climate history spanning the last 50 years in the Kingcome watershed area is provided in Brayshaw & Weston (2003). Portions of that study are summarized here.

The upper glaciated portions of the Kingcome drainage transport large amounts of fine glacial and volcanic sediment through tributaries to the main stem of Kingcome River where the low gradient does not allow for easy transport of this material downstream. The main stem meanders along the floodplain, eroding the riverbanks, unable to cut through the coarser cobble material found in the riverbed except during the largest floods, which occur about every 10 years. The large estuary located at the river mouth is noted to be the most stable feature in the watershed (Brayshaw & Weston 2003).

Presently, the frost-free period at Gwa'yi is ~ 140 days (May to September). Temperatures and precipitation vary considerably throughout the watershed, with massive accumulations of snow occurring on the glaciers during the winter and snow persisting 30-40 km up the river through the winter. Rain on snow events, which occur during the fall, contribute to the worst flooding seen on the river. Fall floods are greater than spring floods and the melting of glaciers during the summer contribute to a daily rise in the river which begins about 5:00 pm. (Brayshaw & Weston 2003). River waters are lowest during the winter.

Amongst other things, the Brayshaw & Weston (2003) study looked at air photos of the Kingcome River taken ca 1950 and ca. 2000 in order to characterize the effects of climate change. Tsawataineuk Elders were also interviewed with regard to climate change. The study found that valley glaciers had receded dramatically; the Satsalla Glacier has retreated some 4 km in 50 years, leaving in its wake a large lake. Local testimony also confirms that the winters have been more mild during the past 50 years and that in the past the lower portion of the Kingcome fresh waters would freeze solid out into the inlet as far as Charles Creek (Brayshaw & Weston 2003).

⁹ see http://wlapwww.gov.bc.ca/bcparks/planning/mgmtplns/kingcome/kingcome_ps.pdf

PALEOENVIRONMENTAL AND PALEOGEOGRAPHIC REVIEW

The changing landscape through time on the Northwest coast has been the focus of many recent archaeological studies, the best examples being those concentrating on Haida Gwaii (e.g. Fladmark 1974, Fedje 1993, Fedje & Christensen 1999). As a result of these studies, which have located ancient archaeological sites in areas not typically surveyed, events mentioned in oral histories such as glaciations and floods have been accurately placed within geological contexts and time frames that extend to and beyond the last ice age (e.g. Fedje *et al.* 1996, McLaren 2003).

From a purely physical perspective both Kingcome Inlet and river owe their present physical attributes to current and past glacial activity (Holland 1976). Glaciations have been common during the Pleistocene period (2 million years to 12, 000 years ago). The Wisconsin Glaciation began ~100 000 years ago and like other glaciations during the Pleistocene, has been characterized by major and minor warming and cooling periods in which glaciers have receded and advanced. The most recent major advance of the Wisconsin Glaciation on the Northwest Coast is the Fraser advance or glaciation which lasted from ~29 000 years ago to ~10 000 years ago¹⁰.

During cooling trends, valley glaciers extended westward from the ice fields that exist on the Coast Mountain range. These glaciers travelled down the Kingcome valley and Inlet towards Vancouver Island where many valley glaciers coalesced. Advances such as these carved the troughs that characterize the central coast of BC and the study area. Both Kingcome Inlet and river valley bottom are noticeably similar with a width of about 1.7 km, being part of one trough created by glacial activity. According to Brayshaw & Weston (2003:14), ice thickness during the last ice age in the Kingcome valley was more than 1700 m.

The existing flat and broad Kingcome river valley has been formed by the in-filling of the trough with glacial sediments following deglaciation. During this recent Holocene period (~10,000 years to present) the study area has been mainly transformed by geological process such as sea-level rise and fall (see below), fluvial erosion, alluvial fan deposition and landslides.

The timing of deglaciation along the BC coast is not similar in all areas due to a variety of factors and in areas where paleoenvironmental studies have not been completed, these histories must be extrapolated from studies that have taken place nearby in similar environments. For the entire coast of BC some general trends in climate history can be noted. The 1999 Golder AOA summarizes data compiled by Hebda (1995):

Shore pine or lodgepole pine forests probably developed under cool and relatively dry conditions associated with deglaciation. Following this episode, a cool, moist period allowed the establishment of a mixed spruce-fir-hemlock-pine forest for a short time before about 10,000 BP. Sitka spruce and western hemlock became dominant during a warm period between about 10,000 and 9,000 years ago. As the climate became more moist, about 7,500 years ago, western hemlock became dominant over spruce. Beginning about 6,000 years ago, cedar began to become established (see below), apparently in response to a cooling episode that led to a moderate, moist climate similar to modern conditions between 6,000 and 4,000 BP. Minor glacial advances and lower tree lines were associated with this climate shift. Between about 4000 and 2000 years ago, the current vegetation regimes began to develop, and fully modern conditions were established by about 1000 years ago. (Bailey *et al.* 1999:27)

¹⁰ The Fraser advance followed a warming period that lasted ~25 000 years and began ~50 000 years ago.

Sea-level History

Sea-levels fell dramatically around the world during the late Pleistocene glaciations as water from the oceans fell as snow and formed large glaciers. As the glaciers expanded in height, width and weight, the load pushed the mainland section of coastal BC down, thus raising sea-levels near glaciers. The weight of the ice on the mainland created a bulge (imagine a waterbed) which exposed some near shore and offshore lands significantly. The processes involved in the rising and lowering of sea-levels during and after glaciation is complex and detailed sea-level histories can only be understood through regional studies.

At present, detailed sea-level histories have only been identified for the Queen Charlotte Islands, the lower mainland and sections of southern Vancouver Island although some data is available for northern Vancouver Island. A detailed account of sea-level research on the central coast is provided in the 1999 Golder AOA (Bailey *et al.* 1999:23-26). The following will attempt to describe potential sea-level changes and paleoshoreline locations within the study area.

During the onset of the Fraser Glaciation (29 000 ya) valley glaciers began to form along the coastal Inlets and by 20 000 ya, the Kingcome River valley and Inlet would have been partially or completely inundated with ice (Howes 1981a,b). During the formation of the valley glaciers (29 000 – 25 000 ya), sea-levels would have begun to fall to lower than present. As glaciation continued, areas near the Coast Mountains were depressed by ice weight while offshore areas, including those near northern Vancouver island, were exposed. By 15 000 ya, at the height of glaciation, the study area would have been covered with ice with the possible exception of exposed mountaintops and outer coast areas.

Deglaciation of the study area took place sometime after 13 000 years ago. This process is presently poorly understood locally as glaciers persisted in some areas longer than in others. It is clear that coastal areas were flooded as sea-levels rose due to the initial weighting of the ice and subsequent release of the water into the ocean during deglaciation. Marine maximums for this time period have been identified for other inland coastal locations, including 200 m asl Kitimat, 230 m asl at Dean Channel and 250 m asl at Bella Coola (Clague *et al.* 1982). The marine maximum for the Kingcome valley may not be as high due to the fact that a large glacier persists to this day and the rebound may not have been as dramatic as in other completely deglaciated areas.

Once the weight of the ice was released (~ 10 000 ya), this allowed the land to rapidly rebound and rise along the margins of the Coast Mountains. This resulted in a fall in sea-levels which was not constant but marked by a series of ‘still-stands’¹¹ evidenced by old beach terraces and bogs or estuaries.

Evidence at the Bear Cove site¹² (Carlson 1979b) suggests that one of the still stands was ~ 10 m above their present levels at 9 000 to 8 000 ya and that sea-levels then rose slightly (impacting the 8 000-9 000 year old deposits). Sea levels did fall to several meters below modern levels and were lower than present between ~ 7 000 and 5 000 years ago. Sea-levels reached near their modern levels in the study area by ~ 5 000 ya.

¹¹ Old shorelines are associated with ‘still stands’.

¹² Port Hardy, Vancouver Island.

In sum, some points are provided for the study area:

- Coastal habitation sites **predating 9000 years** are expected to be found far inland on raised landforms associated with higher sea-levels. These locations are poorly known but may exist as a series of locations associated with still stands. These sites may only be represented by lithic assemblages however the possibility for wet site deposits associated with stranded estuaries, now bogs, exists.
- Coastal habitation sites dating to ~ **8000-9000 ya** are expected to be found above present sea-levels on inland terraces. Ice weighting in the study area will have been different than at Bear Cove (Port Hardy) and it may be assumed sites dating this still stand may be found on terraces at or higher than 10 m asl. These sites will be represented by cultural matrices, lithic assemblages, some bone and possibly stone features. The possibility for wet site deposits also exists.
- Coastal habitation sites dating to **between ~ 8 000 and 5000 ya** are expected to be found in the modern intertidal zone as represented mainly by lithic assemblages and possibly stone features. There is also the potential for wet site deposits to be encountered in the intertidal area dating to this time period.
- Coastal habitation sites **post-dating 5000 ya** will be found on or near the modern shoreline.

Tsawataineuk Interviews & Archival Tape Review

As part of this study, interviews with Tsawataineuk elders were conducted and recorded. The resulting tapes were reviewed. Previously taped interviews with Tsawataineuk elders were also reviewed. The following section describes the methods and results of the interviews and reviews.

METHODS

Mike Willie conducted all interviews recorded during this project. These interviews focussed on the Kingcome River area and features that may correlate to archaeological features or matrices, such as smokehouses, trails, CMTs, caves, and placenames associated with the origin of the Tsawataineuk. Interviews with Tom Dawson took place in his house at Gwa'yi, March 14th, 2004. Interviews with Tom Smith took place in his house at Gwa'yi, March 12th. Mike Willie also reviewed a recording of Jack Henry, taped June 3, 1996. Review of the recorded material involved transcribing information onto forms as found in Appendix 1.

The following is a list of column headers from the forms which suggest the types of information collected from the interviews¹³: Date, Interviewee, Interviewer, Tape Start, Tape End, TRIM Map, Location, Placename/ English Name, Type of Use/ Event/ Feature, Possible Feature, Activity, Season / Months of Use, Date Info., Unique Id., and Comments.

RESULTS

The interviews and tape reviews resulted in the information listed in Appendix 1. These include 55 references applicable to the study and referred to in the sections below.

As a result of the interviews, a map was also produced showing 36 locations and names of places and smokehouses on the Kingcome River. At this stage, the placename list is not complete. As well, the mapped locations are considered preliminary prior to more interviews and tape reviews taking place. For this reason, no map is presented here. The information is however on file with the Tsawataineuk First Nation, Gwa'yi. Additional interviews with knowledgeable Tsawataineuk elders, possibly combined with fieldtrips and archaeological fieldwork, will provide a more complete and accurate indication of places and uses in Tsawataineuk Traditional Territory. A preliminary GIS coverage of the placenames was created and provided as a deliverable to the Tsawataineuk.

In sum, the interview component of this study provides a preliminary demonstration of how effective traditional use information can be in determining archaeological potential in the study area.

¹³ The Interviewer was asked to use the forms 'loosely' as an example of what kinds of information should be extracted from the interviews.

Documentary Research Review

Accounts describing the Tsawataineuk at contact and during the ethnographic period combined with oral histories can be used to describe the settlement patterns and land-use strategies in the study area. Further, historic period activities have had an effect on Tsawataineuk culture and the study area and need be reviewed.

This section describes the methods and findings of the document review which focused on compiling data regarding European contact, historic settlement and impacts within the study area as well as the land-use, physical remains of land-use, and seasonal movement of the Tsawataineuk.

METHODS

Historic and ethnographic sources referring specifically to the Tsawataineuk and generally to the 'Kwakiutl' are numerous. Although this study was undertaken in a limited space of time, a substantial¹⁴ number of sources were reviewed for references to: mappable cultural areas or sites (villages, camps, burials, resource extraction areas etc.); variables used in the location of specific site types, and; the seasonal use of resources.

Both published and unpublished sources were used in the documentary research review. In addition to manuscripts on file with the authors, source material was sought out by researcher Sharon Keen at the BC Archaeology Branch, Surveyors General, Victoria Public Library, UVIC Library and Forest Service Library. The search was by no means exhaustive and some valuable sources were not available (see Data Gaps Section below).

Ethnographies

Although Franz Boas, who has written a significant volume of material on the Kwakiutl, does not appear to have visited the Tsawataineuk, he refers to them in several of his publications (e.g. Boas 1909, 1910, 1921, 1966, 1969a [1934], 1969b) and provides references to settlement patterns and the use of resources for the Kwakiutl in general. Placenames and settlement locations were extracted from some of these publications, which include *Geographical names of the Kwakiutl Indians*, (Boas 1969a [1934], Map 13), *Kwakiutl Ethnography* (Boas 1966) and *The Kwakiutl of Vancouver Island* (Boas 1909).

With regard to mappable locations, Boas's *Geographical names of the Kwakiutl Indians* (1969a [1934]) is the best early source¹⁵ for placename information in the study area and includes 60 named places on the Kingcome River, extending from the mouth to the glacier. Another 20 placenames are found within the Kingcome Inlet portion of the study area¹⁶. Boas discusses the "meanings of names of places" in his manuscript (1969a [1934]: 9-13). Named places include habitations, camps, trails, lakes, mountains, burial locations, waterfalls, places where useful objects may be found or stored, places named in oral histories, and more.

With regard to material culture, Boas's *The Kwakiutl of Vancouver Island* (1909) is an invaluable source reference for woodworking, fibre technology, fishing, house construction, etc.. Only a portion of that large publication was reviewed for this project.

¹⁴ The present study attempted to quickly review the earliest and most substantial written material associated with the Tsawataineuk.

¹⁵ Boas began his work with George Hunt and the 'Kwakiutl' in 1886.

¹⁶ Map 13 (Boas 1969a [1934]) does not include the entire study area.

George Dawson, a geologist with the Geological Survey of Canada, due to his interest in the First Nations of British Columbia and his early work on the coast, provides many references to resource use and settlement on the coast of British Columbia. In 1885 Dawson undertook geological examinations of the northern part of Vancouver Island and adjacent coasts, the traditional territory of the Kwakiutl. Several of the publications and maps resulting from his 1885 work were reviewed during this study (Dawson 1887a, 1887b, 1888).

Wilson Duff produced an unpublished manuscript, *The Southern Kwakiutl* (1965) while working at the British Columbia Provincial Museum. Duff's manuscript praised by Galois (1994:20-21) and noted to rely heavily upon information provided by Mungo Martin was reviewed for this study.

The Tsawataineuk participated in an ethnographic study in 1997 called the *Galgalis* Project. Interviews were undertaken by Joseph (Mano) Taylor and Russel Matilpi of ten Tsawataineuk elders, including: Thomas Smith, Thomas Dawson, Dave Dawson, Frank Dawson, Gertrude Robertson, Evelyn Voyager, Patrick Joseph, Frank Willie, Dean Coon, and Billy Robertson. The focus of the project was to map resource extraction areas, placenames, and cultural sites. The interviews resulted in hundreds of pages of transcripts and a web site showing mapped locations. During this overview, only a portion (327 pages) of the transcripts was reviewed for site type, land-use, and resource use information due to time constraints. Reviewed interviews included: Thomas Smith, Thomas Dawson, Gertrude Robinson and Billy Robertson.

Although not an ethnographic study, Galois' *Kwakwaka'wakw Settlements 1775-1920: A geographical Analysis and Gazetteer* (1994), provides an excellent historic synthesis of the major ethnographic studies and includes geographic locations and information regarding settlement patterns following European contact.

Department of Indian Affairs

Documents produced by the Department of Indian Affairs (Indian Reserve Commission and McKenna-McBride Reserve Commission) were reviewed for information relating to the Tsawataineuk. This includes Sproat (IRC 1879) and O'Reily's (IRC 1886) reserve allotments and related documents. As well, the McKenna-McBride Royal Commission (MMRC) hearings transcripts (Canada and British Columbia 1913-1914, 1914a, 1914b, 1914-1916a, 1914-1916b) as well as the resulting official report (Canada and British Columbia 1916) were reviewed for land-use information. As well as specific reserve information, the MMRC files contain statements from Tsawataineuk Chief Cesaholis regarding Tsawataineuk use of lands alienated by settlers and logging.

Surveyor Generals, Victoria

The Kingcome Inlet and the Kingcome River area was visited by three surveyors from Public Lands and Works in 1894, 1895 and 1896 on behalf of the Province of British Columbia. Only the documents relating to the 1895 and 1896 surveys were located for this study. As well as mapping out lot boundaries, the maps resulting from these visits can show locations of "indian houses" (Fry 1897). Each surveyor also produced a short report discussing their observations while in the Kingcome area. These reports were also reviewed (Corrigan 1896, Fry 1897).

Historic Period Review

A detailed history of European contact and settlement in Kwakwaka'wakw territory is provided in Galois (1994)¹⁷. Such detailed studies are rare and provide insight into the changes that affected traditional northwest coast cultures during the contact period and subsequent settlement of British Columbia. It is necessary to understand this time period in order to properly evaluate the 'ethnographic record' as well as traditional use data collected in the latter half of the 20th Century.

In general, it should be observed that there was massive change to traditional Kwakwaka'wakw cultures starting at ca. 1750. This included a very significant population decline, amalgamations of remaining peoples, and alienation of these peoples from their traditional life ways and lands. These realities imply that ethnographic and traditional use data can be expected to be limited, however invaluable for predicting site locations.

The Historic Period also obviously includes the emerging histories of non-native populations in the 'new world'. The life ways and the sites associated with large and small scale resource extraction, and settlement, during the relatively recent past may one day be represented as a cultural layer on the landscape. Even though post-1846 sites are not generally protected under the *HCA*, it is standard practice to note sites and features older than ca. 50 years if it is considered part of a changing tradition¹⁸.

The European settlement of the Kingcome River watershed as well as the variety of commercial activities that occurred in the area are fairly well documented in three volumes and numerous articles (Williams 2001, Proctor and Maximchuk 2003, Taylor 1982, Morton and Proctor 1998, Anon 1918, Drushka 1992, Codere 1990). These and other sources (e.g. Tennant 1990, Ormsby 1958, Harris 2002, R. Mackie 1997, Suttles 1990) were reviewed and a short history of European contact and activity in the study area produced.

HISTORY OF EUROPEAN CONTACT & SETTLEMENT

Contact and trade with Europeans had devastating effects on the Tsawataineuk at the very outset of the contact period. In 1787, the Kitkatla Tsimshian first traded with Europeans and sometime soon after muskets made their way to a raiding party consisting of the Bella Bella, Kwakiutl, Tlatlasikwala, Mamalilikulla and Tlawitsis (Galois 1994:126; Duff 1965). As Duff relates from his informant Mungo Martin, sometime prior to 1820, likely in the 1790's (Galois 1994:126), this group attacked and 'decimated' the Tsawataineuk at Gwa'yi:

The Tswataineuk built a fortified house on a platform over the river. The attackers were able to bring their canoes under the house and fire up into it, killing many of the occupants. Most of the surviving young men and women were taken by the Mamalilikulla as slaves, and the Kwakiutl took the chief (whose wife was Kwakiutl) and his son. For three successive years raiders returned to the river to hunt for survivors, but these were successful in eluding them. Later, the slaves escaped and returned to Kingcome, where they were joined by the chief and the other survivors of the war, and the tribe began to recover. (Duff 1965:unpaginated)

¹⁷ Also see Codere (1990).

¹⁸ British Columbia Association of Professional Consulting Archaeologist Bylaws: see <http://www.bcapca.bc.ca/bylaws.htm>

Tom Smith (in Galgalis Interview M002-1) also relates that several tribes (including the Kwakiutl) attacked the Tsawataineuk “over three hundred years ago” but indicates that a siege took place and it has taken a week or two to cut down a tree to cross over a crab apple thicket that served as fortification¹⁹. The Tsawataineuk survivors, numbering 36 in total, fled to a cave up the Kingcome valley and stayed there for some time. Tom indicates the attack occurred because the attackers wanted the river resources but did not however end up staying on the Kingcome as they did not know how many people had survived.

It’s difficult to determine if this is the same attack related by Duff or another, however it does point out the hostile and dynamic conditions present in the area at the time of contact. Moreover, this demonstrates two important things. First, the Tsawataineuk population had been affected early on by the introduction of guns to the coast during a time of conflict. The exact effect is not known, as population estimates are fraught with inaccuracy but the regional population is considered to have been reduced by at least 50% prior to the first censuses in 1835 (Galois 1994:34). The Tsawataineuk are listed as having a population of 200 in 1835 (*Tolmie in* Galois 1994:99). The second important consideration involves population movements through time with the above revealing that Tsawataineuk (and other) population movement could be very dynamic and relatively large habitations may be expected to occur inland along the Kingcome river²⁰ and on the hillsides away from the river as well as inland of other ethnographically known villages.

Captain Vancouver visited the Gilford Island area in July and August 1792, stopped in Belle Isle sound, Kingcome Inlet, July 31, 1792 but did not make contact with the people seen there²¹. Menzies (Newcombe 1923:94 in Galois 1994:412) notes an encounter with native people, including a wounded chief, furthering the picture of conflict in this area at this time.

During the majority of the maritime fur trade (ca. 1770-1830) the Tsawataineuk would have enjoyed a peripheral relationship with Europeans, however European goods, including guns, disease and whiskey, steadily made their way into the villages (Galois 1994). In 1836, the steamship SS Beaver opened the inside waters between Port McNeil and Ft Langley, resulting in the Queen Charlotte Strait area becoming a major trading center. It was also at this time that the first well-documented small-pox epidemic occurred in the area and such epidemics (flu and measles included) continued throughout the 1800’s. Galois (1994) estimates a total Kwakwaka’wakw population declined by ~ 80 % between 1835 and 1881. The estimates also show the Gilford Island tribes suffered fewer losses during this time period for some unknown reason and an estimate total population loss of ~ 50 % for the area is provided (1994:98-99).

The Oregon Treaty of 1846 established British sovereignty over B.C. and is considered significant archaeologically²², indicating the main influx of non-aboriginal people & cultural items and traits into BC. In 1849, the first permanent white settlement near the study area was established at Fort Rupert and at this time flu and measles occurred in the study area. Galois (1994:57-58) notes that it is at this time that the contact process entered a new stage with significant aboriginal population movements intended to further secure trading relationships with the outsiders. This also may have exacerbated some existing conflicts in the area, resulting in the continued amalgamation of the Gilford Island populations as losses were suffered due to warfare and sickness.

¹⁹ He states the attackers possessed no axes or hammers which is interesting, as they possessed guns.

²⁰ John Maxwell (pers comm. 2004, *see also* Maxwell *et al.* 1997) suggests that during period of intensive raiding, village locations on rivers were moved inland to beyond the extent that war canoes (deep water canoes) could travel.

²¹ Not surprising given the hostile climate, the 10-12 people in canoes fled when Vancouver’s party ignited some “fowling pieces”.

²² Sites, features and objects older than 1846 are protected in BC under the *Heritage Conservation Act*.

In about 1856, the Bella Coola destroyed Gwayasdums, the origin and winter village of the Kwiksootainuk. As a result of this, the Tsawataineuk along with the Gwawaenuk and Hahuamis abandoned their own winter village locations and began to winter at Gwayasdums ca. 1870 (Galois 1994:97). British Columbia joined the confederation in 1871 and in 1876 a Joint commission for the settlement of Indian Reserves, the Indian Reserve Commission (IRC) was established. As well, 'Indian Agencies' and 'Indian Agents' were established in key areas of the Province, including the Kwawkewlth Agency in Fort Rupert 1881, which was later moved to Alert Bay in 1889.

The Kwakwaka'wakw were visited briefly by Reserve Commissioner Malcolm Sproat in 1879 (one year prior to his resigning) and a number of provisional reserves established. However the allotment for the Gilford Island groups indicates some high level of confusion that is not rectified here. Six provisional reserve sites were allocated to the 'Gilford Island Tribes' under the name of the 'Tsah-waw-ty-neuch Indians' (IRC 1879). These include: Gwayasdums; a burial ground associated with Gwayasdums; Keogh; Quae, and; Alalco. Only one of the locations, Quae (Gwa'yi), was actually owned by Tsawataineuk (Galois 1994:97-98). Reserve Commissioner O'Reily replaced Sproat and returned to Gilford Island area in 1886 and allotted 10 reserves²³ to the 'Gilford Island' people (IRC 1886), stating, "the Gilford Island Natives consisted of the Tsawataineuk together with 'remnants' of the Gwawaenuk and Hahuamis"²⁴.

By the end of the 18th century the Tsawataineuk are listed as having only Gwayasdums as their sole Indian Reserve and the Gwawaenuk are listed in association with IR 7, Quae, both sites allotted Sept 25, 1886, surveyed 1887 and confirmed in 1888. Further reserve allocations were decided following the McKenna-McBride Reserve Commission Hearings (see below).

In 1891, an Anglican school was opened in Gwayasdums and operated until 1912. As noted by Galois (1994:68), this school was moved to Gwa'yi during the summer months in order to take advantage of the moving population.

Resources such as lumber and minerals attracted non-native people and industry to the study area in greater numbers during the mid to late 1800's and the first non-native settlers began to explore the study area for places to farm and homestead in the 1880's and 90's. According to Chief Cesaholis's statement at the McKenna-McBride Royal Commission hearings, the first non-native to settle on the Kingcome River was named McKay²⁵:

Then a white man named McKay came and built his house at that place; as well as another white man who also built a house their later. McKay took for himself the land where the forefathers of these Indians always got their food. [RG 10, Vol. 11023, File AH6A]

The historical non-native settlement of the Kingcome River is outlined in Williams (2001). In 1893 Earnest Halliday, with Harry Kirby and Clifford Smith, rowed and sailed a small boat towards newly opened lands at Cape Scott. During their trip they met up with Kwagiulth Indian Agent Reginald Pidcock who persuaded them to travel to the Kingcome River as he felt the delta was prime farmland. These three settlers staked out their claims on the lower Kingcome River, May 1st, 1893 as did others during the same time:

²³ Only five of these were new reserves.

²⁴ Canada, land Survey Records, Vancouver Office, Vol 8., pp. 237-40, in Galois 1994:98.

²⁵ Alexander McKay pre-empted Lot 147, located adjacent to and south of Gwa'yi (IR 7), surveyed in 1895. It appears McKay settled in the Kingcome sometime before 1893, although the exact date was not determined.

On the return to Comox, Ernest staked claim # 142 and William # 141 downriver to the mouth. Since provincial authorities allowed possession first and the recording of preempted land when settled, William and Ernest were each ultimately granted slightly more than 160 Kingcome acres. Ernest's plot did not originally extend up the mountainside, but regulations forced him to take land that later proved to contain excellent saleable timber. Merle Halliday was across the river from his brothers. Next down was Harry Kirby. A Mr. McNaughton claimed Lot #146, never took it up, and Ernest bought it in his son Reg's name in 1906 and acquired Timber licence #14096 in 1910 for \$140. In the end the Halliday's owned 700 acres. Baron Greenville Lansdowne pre-empted land on the back slough on the east side of the delta. Alex McKay, Lot #147, moved away when the Inlet became "too crowded". Clifford Smith and his wife preempted #145 across river from Ernest, left in 1906, and their lot was sold to Lawrie Lansdowne, Grenville's brother. (Williams 2001:77-79)²⁶

In 1894-1896, land surveyors Cotton²⁷, Fry (1896) and Corrigan (1897) surveyed lots in the Kingcome valley up to beyond the Clear River. Most lots are larger than 100 acres. These include Lots 139 to 155 and 160 to 167 in Coast Range 1, and Lots 104 to 154 in Coast Range 2²⁸. A number of Lots were also laid out between the mouth of the Kingcome and Bond Sound, including Lots in Anchorage Cove and the Ahta valley. These include Lots 117 to 138, Coast Range 1.

As stated by Chief Cesaholis (Canada and British Columbia 1914a, 1914b) and related by Williams (2001), the initial settlement of the Kingcome River delta had immediate effects on the inhabitants (Williams 2001:105):

The Kingcome Preemptions alienated Dzawada'enuxw from traditional waterfowl, spring bank clover, and silverweed areas. Settlers cut down the native crab apple trees, sources of vitamin C and fructose, and turned a common orchard into cattle pastures. In 1894 a land surveyor at Gwa'yi received Dzawada'enuxw complaints that fields of tuksoos, pencil-sized roots resembling potatoes in flavour, at the mouth of the river had been disturbed by cattle, and a lesser amount of oolichan had arrived due to the cutting of certain trees by the settlers. The kleena Ernest had seen made from oolichan on his first trip figured prominently in the native diet and was a significant potlatch gift item. Such nutritional losses, repeated throughout the coast, are more significant than they might first seem. The abrupt switch from a diet high in fish protein to, unsaturated fats, and natural sugars to one increasingly dependent on refined carbohydrates caused significant health problems including a high incidence of diabetes. During early homesteading years, Pidcock tried to get the Dzawada'enuxw to winter at Kingcome, but their increasing difficulty obtaining native foods forced them to winter at Gwayasdums.

William Halliday became Justice of the peace of the Kingcome area in 1894 and replaced Pidcock as Indian Agent in Alert Bay in 1906. The Kingcome settlers farmed the land, diked the river and raised cattle. In 1896, the Halliday's opened a postal outlet and in the 1910's the family prospered by supplying farm goods and water to the logging camps.

Compounding this situation was the position of Mr. William Halliday as Indian Agent charged with the responsibility of assimilating Kwakwaka'wakw people into 'white' culture and prosecuting those who participated in traditional practices, including the potlatch (see Williams 2001). Section 140 of the Indian Act outlawed potlaching in 1884, however convictions were difficult and the Section was amended in 1914 and 1918 to increase the types of prohibited activities and make prosecution easier (Tennant 1990:101).

²⁶ A map of the preemptions is provided in Williams (2001:78).

²⁷ The initial survey of the valley was undertaken by Cotton in 1894, as noted by Galois (1994). Cotton's notes and maps were not obtained for this study. Fry's survey took place 1895, and Corrigan 1896.

²⁸ The boundary between Coast Range 1 and 2 is located below the Atlatzi River.

It was January 1920... Indian agents and police commenced the major wave of potlatch arrests, charges, prosecutions, convictions, and jailings in British Columbia. In some cases agents or missionaries were local justices of the peace and were able to expedite legal proceedings. The Kwagiulth, under the thumb of an especially zealous anti-potlatch Indian Agent, were at the forefront of the resistance to the law and its enforcement. (Tennant 1990:101).

It was about 1920 that the Tsawataineuk moved to the Kingcome River to live through the winter in order to escape Indian Agent William Halliday. At that time, the river and much of Kingcome Inlet to Charles Creek froze solid in the winter, preventing easy access to the village and allowing potlaching to continue.

McKENNA-McBRIDE ROYAL RESERVE ALLOCATION

Between 1913-1916, the McKenna-McBride Commission conducted hearings with First Nations throughout the province in regard to 'Indian Lands' and reserve allocations. Tsawataineuk Chief Cesaholis spoke at the hearings in 1914 and made claims to lands as outlined in detail in Galois (1994:126-131) and in the McKenna-McBride Royal Commission files (Canada & British Columbia 1913-1914, 1914a, 1914b, 1914-1916a, 1914-1916b, 1916). Indian Agent Halliday made recommendations to the Commission regarding the proposed reserves and unfortunately, by the time of the hearings much of the study area had been alienated by pre-emption and timber leases²⁹ and therefore the reserves were very limited. For this reason as well as the overall confusion with regard to the reserve allocations in the Gilford Island area, the reserve locations provide an unusually incomplete and inaccurate depiction of actual use and archaeological potential within the study area.

The Tsawataineuk were allotted six reserves within their traditional territory, three are located within the study area. Table 2 below lists the reserves established and denied by the MMRC.

Table 2. A list of established reserves and land applications denied by the Royal Commission.

Tsawataineuk Reserves				
Reserve	No.	Location	Use and remarks	Reference
Gwyasdums	1	Gilford Island	Winter village shared by the Tsawataineuk, Gwawaenuk and Hahuamis.	Royal Commission (Canada & British Columbia 1916:386)
Zakwai (<i>La kwa'i</i>)	2	On Charles Creek , Kingcombe Inlet, one square mile with the river	Timber supply and trapping, Chief Cesaholis describes as old village site without any houses.	Royal Commission (Canada & British Columbia 1916:411)
Bat-l-ki	3	Belle Isle Sound one mile square, north of TL ?	Old village site and gardens and fishing stations, hunting and trapping.	Royal Commission (Canada & British Columbia 1916:411)
Kawages (<i>Xawagis</i>)	4	On the north shore of Simoon Sound	Timber supply and trapping, village site with one house. May not be right location, may be head of O'Brien Bay (Galois 1994:128).	Royal Commission (Canada & British Columbia 1916:411; Galois 1994:126)
Kukwaps (<i>Xu xwapa</i>)	5	Fly Island of the Benjamin Group	Originally applied for Insect Island and all Benjamin Group , only got Fly Island on Halliday's recommendation.	Royal Commission (Canada & British Columbia 1916:411)
Quaee (<i>Gwa'yi</i>)	7	Kingcome River	Principal village	Royal Commission (Canada & British Columbia 1916:387)

²⁹ See Harris (2002) for a synthesis of the reserve allocation process in BC.

Land Applications Denied by MMRC			
Quaee (Gwa'yi)	additional 4 acres for Quaee I.R. No. 7, Kingcome River	Principal village	Royal Commission (Canada & British Columbia 1916:410)
	1/2 mile deep on each side of Kingcome River from its mouth to its source	fishing station, trapping base and timber supply, cemetery	Royal Commission (Canada & British Columbia 1916:410)
Waselas	on Wakeman Sound T.L. No K3477	hunting and trapping. Chief Cesaholis noted that their had been houses at this location but none existed in 1914 (ev. P. 218, app.#14 ex. J9).	Royal Commission (Canada & British Columbia 1916:411)
Awakglalaa	Moore Bay on T.L. No 18627 one square mile	Timber supply and trapping, old village site with two houses. Precise location uncertain.	Royal Commission (Canada & British Columbia 1916:411; Galois 1994:126)
Leik	on T.L No 21951 two square miles, Kingcome River	village site and trapping base, Chief Cesaholis siad it was an old village site with one house.	Royal Commission (Canada & British Columbia 1916:411)
Waluk	Lots 132, 135, 128, 129 Range 1 Coast District, Anchorage Cove	timber supply and trapping, fishing station	Royal Commission (Canada & British Columbia 1916:411)
Kukwapa (Xu xwapa)	Insect island , Fife Sound, Benjamin Group	Old village, clam beach, timber supply and trapping base.	Royal Commission (Canada & British Columbia 1916:411)
Gwayasdums	enlargement of I.R. No. 1, Gilford Island	general use	Royal Commission (Canada & British Columbia 1916:411)

History of Logging

The following summary of hand logging activities is summarized from Proctor & Maximchuk (2003:46-50). Hand loggers moved into the study area in the 1890's, focussing mainly on the steep Inlet:

In the beginning a hand logger would get six miles of shoreline to cut and could work right up to the top of the hill if the slope was right. A good claim needed a good steep grade, the steeper the better, with no benches or flat spots. If the slope was just right, the trees, when felled, would run or slide right down to the water. (Proctor & Maximchuk 2003:47)

Due to the excellent timber, hand logging also took place along the Kingcome River at this time as noted by surveyor Fry (1897):

Hand logging is being carried on along the shore of the inlet and for a considerable distance up the river.

Hand logging provided fewer impacts to the landscape and archaeological resources than later techniques as only the largest trees were selected for removal. A cabin or float house would be built and associated with each claim (licence) which could be logged for an average of ten years. Hand logging along the shoreline was soon replaced by A-Frame logging and then boat logging by the 1960's however by this time the claims were restricted to 1 mile of shoreline and 330 feet upslope (Proctor & Maximchuk 2003).

In 1901, the BC government amended the Lands Act to encourage pulp production in the province and by 1910, a large percentage of Crown land had been leased by local forest companies set up by American investors (Ormsby 1958:357). The largest pulp and paper company in the west, the Powel River Paper Co. (PRPC) was established at Powel River in 1909 and the same year a logging railway was built in the Kingcome River valley (Drushka 1992:78) to exploit the large spruce flats. By about this time, many of the remaining surveyed lots in the study area, as well as additional timber leases, were acquired by the PRPC. Pulp leases were also acquired by Pacific Coast Power Co. in the 1890's.

The logging railway supported the PRPC mills and operated in the Kingcome valley until 1932. In 1918, the railway and logging operations were featured in a three-page article in the *Western Lumberman* (Anon 1918) as follows:

Logging operations were started about four miles from the mouth of the river some seven years ago. At the present time the actual yarding and loading is taking place at a point approximately eleven miles up the valley...

The booming camp is located about four miles from the mouth of the river; at this point the company operates a general store and general woods office.

The main line of the railroad is at present about eleven miles long; the heaviest grade is less than one per cent., except on the approaches to the one bridge maintained across Kingcome River, where it was necessary to elevate, as the entire valley is flooded during freshets...

The bridge itself consists of a fifty-two sixteen-foot bent trestle on the north side, and a thirty-six sixteen-foot bent trestle on the south side, with two eighty-seven-foot Howe Truss spans in the centre. During the freshet season the Kingcome River rises very rapidly, and during its floods carries with it a great amount of driftwood; for this reason it was necessary to make extensive protection work for the bridge. The piers themselves are surrounded by pile and plank protection filled in with broken rock. In order to guide the driftwood through the spans, six hundred feet of planked sheer piling were driven, extending from the south river bank to the pier on the same side. The pier on the north bank is protected by planked sheer piling extending about two hundred feet up the river...

The railway equipment consists of two thirty-three ton straight connected locomotives, thirty-eight sets of logging trucks, two eighty-thousand capacity flat cars, and one one-hundred and twenty thousand capacity moving car. The logging trucks are equipped with standard wheels and automatic couplers.

Conventional Truck logging replaced rail logging in the Kingcome Valley and today the forest cover and logging roads indicate that the entire accessible valley bottom to above the Clear River had been logged during the first decades of the 20th Century. During the 1970's and 80's, the main tributaries of the Kingcome were cleared, including much of the Atlatzi, Clear and Satsalla Rivers. The majority of the Charles Creek valley was logged in the 1950's and 60s. The majority of the remaining study area shoreline, including Belle Isle Sound is relatively intact, however it is very steep and conventional logging has taken place in certain accessible areas.

Presently, Scott Paper owns and harvests TFL 43 which includes lands in the Kingcome valley bottom extending from about Atlatzi to the Satsalla River. The remaining lands are managed provincially as part the Kingcome Timber Sale Area and harvested by International Forest Products Limited. A Woodlot also exists in the Kingcome River valley, managed at least in part by the Tsawataineuk.

Charles Creek Cannery

Galois (1994:Appendix 4) provides a historical summary for each salmon cannery operating in Kwakwaka'wakw territory between 1881-1929. Original Vancouver Lands District records relating to this lease were also obtained for this study. The 1913 survey notes show the location of the cannery as well as 'Indian shacks', 'Chinese bunk house' and the main house and cookhouse. The salmon cannery was established at the mouth of Charles Creek in 1913 by Charles Francis Mills of the Gilford Fishing Company, on Lot 574³⁰, size totalling 43.2 acres. The cannery changed hands a few times before being destroyed by fire in 1931 (Galois 1994:Appendix 4).

³⁰ Coast Range 1, Vol. 1, Lots 1 to 1000

Ethnographic Settlement and Subsistence Review

A detailed summary of Kwakwaka'wakw culture as perceived at the time of European contact is provided in the 1999 Golder AOA (Bailey *et al.* 1999:47-56), mainly revised from the uniquely historical study accomplished by Galois (1994) and the summary of traditional culture published by Codere (1990). An immense amount of ethnographic and cultural anthropological study has focussed on the Kwakwaka'wakw people largely due to Franz Boas's interest and relationship with George Hunt (see Boas 1909, 1910, 1920, 1921, 1935, 1966, 1969a [1934], 1969b).

Two Appendices have been produced as a result of the document research review that focus on Tsawataineuk land-use and settlement observations applicable to archaeological site prediction. Appendix 2 lists mappable locations, extracted from the documentary and interview review, which refer to specific locations within the Tsawataineuk traditional territory. Appendix 3 provides a summary of variables that can be used to predict site locations within the Tsawataineuk traditional territory. See the Methods section above for a discussion of the sources used. Note that these lists are based upon only a brief review and not complete at this time.

CULTURE SETTING

The Tsawataineuk are Kwakwaka'wakw people, speakers of Kwakwala, a Wakashan language. More specifically, they are members of a collective known historically as the *Gilford Island Tribes* which included the Tsawataineuk, Hahuamis, Gwawaenuk, Kwiksootainuk and Dlidliget³¹ (Galois 1994, Bouchard 1995). These groups have been identified as being distinctly related through language³² and geography, known together as *qwi'kwasi'ki?las*, "living inside the mountains" (Charles Nowell 1953, cited in Galois 1994:89).

This description must relate to the fjord environments in which these people lived but also the large rivers which cut into the coast mountains and were a fundamental source of spiritual and economic importance. Boas's (1969 [1934]: Map 13) placename information for the Tsawataineuk, as well as the modern peoples, demonstrates this strong riverine adaptation and it may be suggested that the Tsawataineuk especially were more a riverine adapted coastal people than a marine adapted coastal people. This observation is necessary to highlight the skewed perceptions of ethnographers who tended to view all or most west coast peoples as living on large sandy beaches facing the ocean. This must be in part due to the generalizations made by observers, as well as the change in settlement patterns that occurred prior to the observations. As reflected below, information relating to riverine adaptations is not found in any of the large ethnographic synthesis reviewed for this study.

In recent historic times, the Gilford Island groups shared a winter village at Gwayasdums as well as oolachan rights at the mouth of Kingcome River. The Tsawataineuk are closely related to the Hahuamis as detailed in the origin story of the two brothers (Kawadilikala & Kwalili) who came down from the mountains to settle at the Kingcome and Wakeman Rivers (Williams 2001:9-14).

Each tribe is made up of numaym (similar to clans or kin groups) consisting of "one or more extended family groups, whose members claim descent from a common ancestor" (Galois 1994:22). Each numaym may be viewed as autonomous entities owning resource localities and traditions (oral histories & crests), which are passed down through generations. Boas (1966:42-43) suggests that individual numayms once formed the basic village or tribal unit³³:

³¹ The Dlidliget were absorbed by the Kwiksootainuk some time after 1865 (Galois 1994:89).

³² Boas (1966:37) suggests a southern dialect of Kwakwala was spoken by the 'eastern' tribes.

³³ The idea that coastal peoples once lived together in relatively small extended family units, forming the 'village' is born out through archaeological investigation. The larger village aggregates, typified by large

It cannot be proved that a long time ago every numaym lived at the place they claim as their ancient home, but there is little doubt in my mind that these localities are village sites they occupied at an early period. (Boas 1966:42-43)

During the historic period it is clear that villages and thus 'tribes' consisted of several numayms. The numayms that came together during the winter months to feast were and are considered the tribe. However, there was fluidity amongst neighbouring tribes and it appears that large winter village aggregations seen during the historic period are only partially indicative of prehistoric patterns. This is to say that the massive population declines of the historic period resulted in the amalgamation of several numayms into existing tribes. In the case of the Dlidliget, the entire tribe was absorbed by the Kwiksootainuk. The commonality of defensive sites in the region does suggest an unstable socio-political pre-historic environment as well. It may be suggested that warfare and conflict will have resulted in new family amalgamations or alliances through time to form the 'tribe' and that winter village locations will have changed to reflect new socio-political arrangements as needed.

Seven numayms are listed for the Tsawataineuk by Boas (1966, 1969a [1934]):

- *Le'le wag ila* (heaven makers, mythical name of raven)
- *Gi'g Egane* (chiefs)
- *Wi'ogame* (not to be looked at)
- *K !a'k !Elak !a* (those trying to strike)
- *Qeqadiliqala* (the Qa'wadiliqalas)
- *G I'g Elgam* (the first ones)
- *Dzawada'lalis* (unknown, Boas 1969a [1934] cited in Galois 1994:41)

The Tsawataineuk are most closely associated with the Kingcome (Gwa'yi) River and it's important salmon and oolichan runs. In the origin story related by Jim King (In Galois 1994:108-109), two brothers arrived on the upper Kingcome River and made their way down to the mouths of the Kingcome and Wakeman rivers where they settled and became the Tsawataineuk and Hahuamis peoples. The importance of the oolichan runs on the Kingcome River cannot be overstated, especially as this relates to historic perceptions. Although the river was the principle possession of the Tsawataineuk, all of the Gilford Island tribes owned oolichan fishing rights there and congregated at the mouth of the river in the spring.

The massacre of the Kwiksootainuk at Gwayasdums ca. 1856 resulted in that village site being inhabited by the Tsawataineuk, Gwawaenuk and Hahuamis during the winter. Prior to this, the Tsawataineuk are considered to have wintered at Okwunalis on the Kingcome River (Galois 1994:126; Duff 1965), however there is some possibility this may be inaccurate and the designation simply a reflection of the overall importance of this location to the Tsawataineuk.

The Tsawataineuk owned exclusive salmon fishing rights on the Kingcome River and owned other resource localities on Kingcome Inlet, including Charles Creek and Belle Isle Sound. Shared resources throughout the Gilford Island area would have been numerous. As stated in Galois (1994:126):

Tsawataineuk territory covered the area drained by the Kingcome River, most of the land around Kingcome Inlet, and some of the small islands between Gilford and Broughton Islands. In the historic period they added, or at least claimed, territory around Simoom Sound.

shell middens and house platforms, seen at the time of contact are considered typical of the last 2000 years only.

SEASONAL USE OF THE ENVIRONMENT

Understanding Tsawataineuk seasonal use of the environment is integral to understanding their movement over the landscape and where archaeological sites would be located: each resource collection activity would be associated with a particular type of settlement. The Kwakiutl, in general, are described as undertaking a “regular series of seasonal occupations during each of which some natural product was gathered and processed” (Galois 1994:26; *see also* Codere 1990). Galois (1994:26) describes the Kwakiutl annual round as follows:

It involved a sequence of three movements: from winter village to oolachan fisheries, thence to an array of other resource procurement sites, and completing the cycle, a return to winter villages.

In a more detailed accounting of the movements of the Kwakiutl, Galois (1994:26) writes that at the end of March the Kwakiutl moved to either Knight or Kingcome Inlets to gather and process oolachan. Following a two-month period at these locations people dispersed to a variety of resource procurement sites. At the summer camps they hunted, gathered and fished a variety of resources until the fall, one of the most important being the fishing and drying of salmon. In November the principal or ‘winter’ village was returned to for the winter ceremonial season which lasted until the next oolachan run. Codere (1990:365) states:

the winter months were free of the necessity of any important food getting activities and, except for ceremonial visits to other villages, the people were in permanent residence in their winter villages...

T. Dawson (1997 Galgalis Tape 6:96) provides a general description of a portion of the Tsawataineuk seasonal round³⁴. The Tsawataineuk would spend the spring near the mouth of the Kingcome River fishing and processing oolachan. Summer and fall would also be spent on the Kingcome, but at a variety of inland locations, catching and smoking salmon as well as hunting and trapping. The winter interval between the salmon and oolachan runs would be at least partially spent beyond the fjord lands where clam digging was an important activity³⁵.

The table on the following page provides some indication of seasonal activities as gleaned from the brief review undertaken for this study. This table can easily be expanded with more research.

³⁴ This brief and incomplete statement of the seasonal movements is intended to relate the relative importance of the Kingcome River for a variety of resource activities with the exception of shell fish gathering.

³⁵ T. Dawson (1997 Galgalis Tape 6:) relates that the fresh water from the Wakeman and Kingcome Rivers prevented good shell fish beds from forming in the study area. He indicates in the interview that good shellfish collecting areas are basically within the boundaries of the Broughton Archipelago Park.

Table 3. References to seasonal use of the environment.

food	season	month	reference
oolichan	spring		Thomas Dawson 1997 tape 7 June 19:96
oolachan	spring	March (end) to may (end)	Galois 1994:26
berries	spring	may	Gertrude Robertson 1997 March 15 tape 1:18
seaweed	spring	mid-april	Billy Robertson 1997 June 13 tape 1:9
Eel grass	spring		Billy Robertson 1997 June 13 tape 2:24
sockeye	Spring/ summer	Late spring to June	Billy Robertson 1997 June 13 tape 2:16
Dolly vardeen	spring	mid-april	Billy Robertson 1997 June 13 tape 4:43
rainbow	spring	mid-april	Billy Robertson 1997 June 13 tape 4:43
Flounder	spring	mid-april	Billy Robertson 1997 June 13 tape 4:44
black bear	spring	When meat is tender	Thomas Smith 1997 march 15 tape 3:67
herring	spring	april?	Thomas Smith 1997 march 15 tape 3:75
skunk cabbage	summer		Gertrude Robertson 1997 March 15 tape 1:11
berries	summer		Gertrude Robertson 1997 March 15 tape 1:11
Red cedar bark	summer	June	Stewart (1984:113)
blue backs	summer		Gertrude Robertson 1997 March 15 tape 1:5
coho	summer	mid-july	Billy Robertson 1997 June 13 tape 4:43
Yellow cedar bark	summer	Last week july	Boas (1909:369)
Nettles	fall	October	Boas (1909:370)
Dog salmon	fall	october	Billy Robertson 1997 June 13 tape 2:19
dog salmon	fall		Thomas Dawson 1997 tape 2 June 19:16
sour berries	fall	october	Thomas Smith 1997 march 15 tape 3:73
shellfish	winter	october to april	Billy Robertson 1997 June 13 tape
steelhead	winter	january	Billy Robertson 1997 June 13 tape 4:43
clams	winter		Flora Dawson in Williams (2001:145)
cedar branches	all		Billy Robertson 1997 June 13 tape 2:18
spruce roots	all		Billy Robertson 1997 June 13 tape 2:18

Villages and Camps

Kwakwaka'wakw villages usually consisted of a single row of houses, placed along the beach, facing the sea (Dawson 1888:346). According to Dawson, just prior to and during the contact period, villages were often placed in locations with the following features: a low shore for landing and beaching canoes (Dawson 1887a:4) and a rocky point or rock island nearby to go to in case of an attack (Dawson 1887a:4). In contrast Boas (1966:43) suggests that almost every habitable place near a salmon stream would have had a house or houses at some point in the past. Boas is most likely referring to family-owned (numaym) localities, which may be more often represented by camps as opposed to large structured villages.

Galois's (1994:126-131) list of settlements within Tsawataineuk traditional territory are mainly gleaned from Boas's Map 13 (1969a [1934])³⁶ and Duff (1965) as well as the Royal Commission on Indian Affairs reserve allotment material. As stated by Galois (1994:21):

For each of the Kwakwaka'wakw tribes, the gazetteer lists a selection of the more important settlements.

Galois (1994:126-131) lists 18 settlement localities for the Tsawataineuk. These are summarized below in Table 4 and include settlements referred to by Boas (1909) and Chief Cesaholis as well as locations referred to in Jim King's origin narrative (*in* Galois 1994).

Table 4. Tsawataineuk settlement localities from Galois (1994).

Locality Name	Location	Remarks
Awakglalaa	Moore bay, Kingcome Inlet	old village site with two houses
Batiki	Belleisle Sound	old village site
Kukwapa	Insect Island, Benjamin Group (includes Fly Island)	old village site
G o'g yewe	On Kingcome River, North of Clear River	Boas (1909, Map 13) "House in Middle". Galois (1994:103) states " This is a placename which suggests an old settlement site"
Gwayasdums	Gilford Island	Village site
Hata	Bond Sound	Dawson (1887: Map, site # 90)
Kawages	Simoom Sound	One house
Lakwai	Charles Creek	old village site, no houses (camp).
Leik	Clear River?	Old Village site. Near TL 21951, Galois unable to locate but suggests may Boas's # 17 (<i>Laxa</i> - 1909, Map 13)
Okwunalis	Kingcome River	Village
q'e'ltelik	Kingcome River	Old Village site, west side of river opposite Okwunalis, 2.5 miles up river.
Waluk	Anchorage Cove, Kingcome Inlet	Old village site
Waselas	Southeast shore of Wakeman sound?	Houses. Galois suggests the site may be in wrong location. May be Boas's # 74, Map 13 (1909).
A'wagawe'	Hidden Creek, Kingcome Inlet	Place where ancestral brothers met in origin story narrated by Jim King.
K'axsidza'yi	Kingcome River	Mountainous place where ancestral brothers took their families to escape flood
xwi'la'etlida	Kingcome River	Place upriver of Gwa'yi, referred to in origin story narrated by Jim King, prior to flood.

³⁶ Boas's 1969[1934] map 13 lists 109 placenames for the Kingcome Inlet and adjacent areas with no reference to ownership.

Although not fully substantiated, it may be the case that Tsawataineuk numayms commonly wintered outside of the fjord near the shellfish-rich areas of Broughton and Gilford Islands, including in Moore Bay and Simoom Sound. The data suggest that there were at least three relatively recent winter villages of the Tsawataineuk: Quae; Gwaysadums, and perhaps Kukwapa (Insect Island) as well as several older villages including Awakglalaa in Moore Bay, Batliki in Belleisle Sound, Kawages in Simoom Sound and Okwunalis. This incomplete list could be expanded significantly with further research.

It is probable that there are many lesser known villages of the Tsawataineuk given that movement of villages and the establishment of new villages was common for the Kwakiutl. Population movements from one village to another were due to both environmental and social factors. Dawson (1887a:4) was told that in times of crisis (calamity or sickness) the village medicine men would recommend that the village location be changed. Dawson (1887a:4) states that:

the sites of permanent villages appear to have been changed more frequently and easily by this people [Kwakiutl], than by the Haida or other areas of the coast with which I am acquainted.

T. Dawson (1997 tape 4 June 19:48) suggests that on the Kingcome River village locations were often moved due to river erosion. This is a factor that the Tsawataineuk at Gwa'yi are currently concerned about. Social factors also influenced village movement and the establishment of new villages. Boas (1966:46-7) suggests that communities could experience splits resulting in the establishment of new *numayma* or tribes and thus new villages.

The Tsawataineuk origin narrative also suggests that the ancestors of the Tsawataineuk, along with the Hahuamis came down over the mountains and stopped at several localities, including at a glacier area and near the Clear River, before residing at the mouths of the Kingcome and Wakeman rivers (Ernie Willie *in* Williams 2001:9-14). According to the origin narrative, the people inhabited the river mouths *prior* to the great flood, during which time they placed canoes on a mountain top. The flood came and the waters resided and the people rebuilt their villages. This incomplete account indicates that habitations did once exist in association with ancient landforms. Mike Willie (pers. comm. 2004) has indicated that four locations were inhabited as the Tsawataineuk came down the Kingcome river³⁷.

Resource camps consisted of temporary dwellings or more permanent structures such as smokehouses returned to seasonally. What could be interpreted as five “camps” (Kawages, Zakwai, Leik, Waluk, Ha-ta, and Wesalas) were noted during this literature review (Boas 1969a [1934], Galois 1994, Dawson 1887a). Extensive data on resource camps was collected during the 1997 Galgalis Project and through interviews undertaken as part of this project (Appendix 1). Maps of the Galgalis data show the section of river between Gwa'yi and the Lax lax River being dotted with smokehouse, trapping, and hunting camps. A description of the types of structures in these locations was not provided. The exact number of smokehouses and camps is difficult to discern from the multiple interviews but it is estimated that dozens of such locations existed along the river at any one time. Further, T. Smith (Appendix 1) relates that smokehouses extended further up the valley during times when there were “a lot more old people”, indicating that population fluctuations will have determined density of these temporary camps through time.

³⁷ A complete transcription and evaluation of the origin narrative was not available for this study.

T. Smith (1997 tape 2:26) also suggests that smokehouses were located where salmon were fished and notes:

all up and down the river they had smokehouses....And usually when they had a curve in the river the river would slow down...it would be shallow here because of the curve...Its deep on the one end...And then you can kind of fish there.

With regard to temporary shelters Boas (1909:417) relates the following:

The houses in Knight Inlet, which are occupied only during the olachen-fishing seasons, are built like winter houses, but they are only about two fathoms square and a fathom and a half high. The roof boards for these houses are brought along in the canoes of the fishermen. Often they travel on rafts made of two canoes tied together. Then these boards form the platform of the raft. The sides of the house are made of old mats...

...Houses of similar kind are used by clam diggers.

...In bad weather, hunters will sometimes build small houses for their protection. A framework is put up similar to that of the permanent house; the side-posts being about one metre high, the middle post about a metre and a half high, and the beams about three meters long. The width of the house is about the same. The pieces of cedar-bark are placed on the roof, the under row with the sap-side up. Then a fire is built under this shelter; and as soon as the cedar-bark becomes hot, it begins to curl, and the upper piece hooks firmly into the turned-up rim of the lower pieces...

...Another kind of shelter is built over a similar frame, only with a steeper roof-frame, which is covered with four or five layers of spruce branches....

...Women who go berrying, and hunters, may also protect themselves by building a lean-to. A number of poles are laid against a low horizontal branch of a tree, and are then covered with matting.

Mortuary Practices

Although mortuary practices will have differed amongst coastal groups, several burial types may be identified. These include: shell midden burials, cairn and mound burials, rockshelter and cave burials, and above ground tree and pole burials. Small islands and points are often used as locations to place the dead.

Dawson (1888:348-349), describing the ethnographic burial practices of the Kwakiutl in general, suggests that two types of burial practices were used: tree burials and above ground tombs. This suggests that other burial practices such as rockshelter and midden burials may be of greater antiquity.

Fir trees used for the "deposit of the dead" are usually located close to the village. Dawson (1888:348-349) observed "little scaffolds to which the coffin-box is lashed, high upon the branches of fir-trees." Chief Cesaholis (RCIA 1914 file AH6A:116) of the Tsawataineuk told the Royal Commission on Indian Affairs in 1914 that dead were placed in trees to protect them from flooding. As detailed in Williams (2001:117-118) Chief Cesaholis related how the logging railway had destroyed a primary Tsawataineuk burial site (located at the present day logging camp/landing just below Gwa'yi).

The second type of burial practice observed by Dawson consists of "tombs built of slabs of wood on the ground" which are usually placed on a rocky islet or insular rock insight of the village and T. Smith (1997:26), an elder of the Tsawataineuk, relates that burials are often found on river islands in the Kingcome Valley.

Dawson (1888:349) observed that following European influence the Kwakiutl on Vancouver Island; primarily Fort Rupert had adopted interring of the dead in 'cemeteries'.

With regard to cave and rockshelter burials, the 1999 Golder AOA notes (Bailey *et al.* 1999:105):

Burials in caves and rockshelters typically consist of several individuals placed in grave boxes. These boxes may be of traditional adzed cedar construction or they may show European influence in design and construction, such as the use of metal tools and nails.

The 1997 Galgalis interviews resulted in a number of burial locations being mapped for that study. These locations are not provided in this report however it is noted that the rockshelter burial locations along Kingcome Inlet are relatively frequent and are mainly associated with the steep bluffs on the northern shore of Kingcome Inlet between Charles Creek and Kingcome River, and between the Kingcome River and Anchorage cove. The Charles Creek area is also noted as having numerous burials and burials are noted in association with the few small islands in the study area.

Forts

Forts or defensive structures were used by the Tsawataineuk prior to European contact. Dawson (1887a:4) wrote that a prime village location would be one where there was a low shore located near a “rocky point or promontory or small high rocky island, which could be utilised as a fortification.” Dawson (1887a:4) elaborates by saying that “almost every suitable rock along the coast shows evidence of having, at one time, been inhabited as a fortified village...”

Thomas Smith (1997 tape 3:29) recounts the story of a fortified Tsawataineuk village called *Kalta likw* located on the west side of the Kingcome River from Gwa’yi occupied over three hundred years ago. Another group breached the fort by cutting down a large tree, which broke through the fortification. The use of stone “wedges” to kill the people suggests that it is an old story. Duff (1965) also mentions a fortification described by Mungo Martin; it included a platform over the river. This may be the same fortification mentioned by T. Smith (*see History of European Contact and Settlement* above).

A Quatsino man related to Dawson (1887a:6) that many of the old towns were fortified. The fort described above by Smith (1997) is very different than those described by Dawson in that it was a fortified village up river and was fortified using a palisade rather than a natural feature of the landscape.

Fish Weirs

Fish weirs were used ethnographically on the Kingcome River. T. Dawson (1997) describes one method of catching oolichan using a fish weir called *yowisa*:

They drove a whole pile of um stake poles T'suxwa?me as you call them. That's hemlock chips. Right clean across. Only room for canoe to go by on other side and they'd put um boughs through it.

The fish weir described by T. Dawson appears to be the same as the a trap described by Boas (1909:468) used by oolichan fishers in the river of Knight Inlet:

A long fence is built, extending from one bank down river at an angle of about 45 degrees to beyond the middle of the river. Starting at the opposite bank, another fence is made running downstream, and also forming an angle of 45 degrees with the bank. At the place where the two fences converge, an opening about two metres in width is left; and here four stout poles are driven into the river-bed, between which the canoe is fastened. A number of pairs of wing dams are built in this manner... These fences are made of hemlock, spruce, or alder trees, which are driven into the bed of the river and inter woven with wicker-work of hemlock and spruce branches. The stakes of the fence stand about one metre apart, and are about a metre and a half long.... This fish weir is used when the tide is running out strongly.

T. Smith (1997 tape 1:80) called another type of oolichan fish trap "*Ta_ga*". Boas (1909:468) describes these in his 1909 synthesis for rivers in Knight Inlet:

Another kind of oolichan fishing is done with the large net (ta'gal). In fishing with this net, a place is selected where the falling tide runs very strong. The canoe is anchored or tied to a stake about ten fathoms above the place selected, and is allowed to drift down with the tide. Two net-posts are driven into the river bed. These are generally driven two or three feet into the ground. The distance between the two net-posts equals the width of the mouth of the net....The strong tides take the net down river, and the fish drift in towards the tail of the net.

Ta_ga would leave archaeological evidence in the form of the stakes in the river bed at locations where the falling tide runs strong. No other information regarding fish traps, specific to the Tsawataineuk was located. Boas (1909) provides an extensive discussion of various fish traps and weirs for the Kwakiutl which can be referred to.

Hunting and Trapping Land Mammals (deadfall traps and drives)

The Tsawataineuk used deadfall traps for hunting as described by elders in the 1997 Galgalis Project interviews and in the 2004 interviews associated with this project. The traps were used to hunt bear, cougar, and sometimes wolves.

Boas (1909:507-510) provides a fairly extensive discussion of deadfall traps in his discussion of the Kwakiutl of Vancouver Island. He (Boas 1909:507) suggests that one of three principles of 'release' was used. In general the traps worked as follows (1909:509):

The deadfalls are either heavy roofs which fall down upon the animal and crush it, or they consist of a single beam which strikes a base beam. The animal is either strangled or crushed between these two heavy poles.

Several of Boas's drawings of deadfall traps show piles of boulders on top of wooden logs or platforms. This description coincides with T. Dawson's (1997 tape 4:44) account of the deadfall traps used by the Tsawataineuk:

I never really got to see the mechanics of it. All I did see was this thing with a whole bunch of boulders on top of it.

He (T. Dawson 1997 tape 4:45) also noted that they were used to hunt bears and that they were particularly close to spawning streams and were all on bear trails along the river bank. Stafford and Eldridge (1995) suggest that piles of rocks at the sides of trails can be considered the remains of bear traps. T. Dawson (2004 interviews) describes a place just past *Mudagwis*, on the Kingcome River, as having deadfall traps.

Another interesting method of hunting land mammals undertaken by the Tsawataineuk was the goat drive. T. Dawson (1997 tape 1 June 19:12) provides the following interesting description of one method of goat hunting:

See my dad told me before the advent of the rifle, there's ledges up here [on the glacier]....they would sneak up on this end and drive them off the other end

This activity should leave remains in the form of accumulations of goat skeletons and stone tools.

Hunting Birds

Tsawataineuk elders noted a variety of birds that were hunted but no hunting techniques used specifically by the Tsawataineuk were described. Birds hunted include: mallards, sawbills, goldeneyes, black ducks, grouse, sawbills, widgeons, and snow geese.

Boas (1909:516) provides a number of methods of bird hunting used by the Kwakiutl. Ducks were hunted by setting baited snares under water in duck feeding spots. The hunters would watch the snares from platforms erected on the beach. The platforms would probably leave post hole remnants that may be identified in the archaeological record. Other methods such as using a canoe and net during the night or bow and arrow with wooden arrow tips may not leave evidence in the archaeological record.

Use of the Forest

A variety of tree species were utilized everyday by the Kwakiutl (red-cedar, yellow cedar, hemlock, spruce, Douglas fir, balsam fir, yew, crab apple, alder, willow, and red pine). Western red cedar and yellow cedar were the most important tree species to northwest coast peoples given the ease with which it could be split and molded, and stripped as well as its light weight and ability to preserve in wet conditions (*see* Stewart 1984). A number of tree species used for material and medicinal purposes are discussed here but in most cases may not leave easily observable evidence in the form of scarred or felled trees. Boas (1909) describes which tree species were used for various means in great detail and should be referred to by the reader.

Western Red Cedar

The importance of cedar in the study area cannot be underestimated. Cedar was used for a large variety of purposes including permanent and temporary structures (all aspects), canoes, totem poles, clothing, utensils, rope, and boxes. Boas provides a detailed discussion of the techniques used in cedar harvesting by the Kwakiutl in his 1909 “The Kwakiutl of Vancouver Island.” A summary of Boas’s discussion will be provided here as it pertains to identifying archaeological features, well as cedar utilization specific to the Tsawataineuk.

More so than any other tree in the study, cedar will preserve a long time on the forest floor as a log, stump or detritus. Additionally, the ability for cedar to overcome stresses such as removal of bark, allows the bark strip features to preserve on the living tree in the form of a scar that can be partially or completely covered by tree growth.

Interestingly, Boas noted that instead of felling trees for cedar wood, driftwood was used “in olden times” (1909: 327). Obviously, in more recent times, trees were felled by way of stone or metal tools. Boas does also refer to the use of fire to cut both standing and fallen trees. After a tree was selected and before it is chopped down small trees are felled so the cedar will lie across them (Boas 1909:327). These are known as ‘cushion logs’ (Stryd 1997). Additional logs are employed under the tree once the branches have been removed; these are known as ‘lofting logs’ (Stryd 1997). With regard to falling the tree, Boas states (Boas 1909:328):

The cuts are always so placed that the weather side of the tree, which has no branches (the ‘belly’ of the tree), is on top.

Very specific trees were selected for posts, poles, and canoes. Boas (1909:327) writes:

When cedar trees are to be selected which are to be used for canoes or for rafters, or for posts of the house, a moss-covered trunk is selected, because this generally contains the best wood. The workman first tests the wood to see if it is sound by making a small hole in it with a long-handled chisel. This is called “feeling into the tree” (p!e’wil). For making boards for boxes, fallen trees are preferred, because it is said that the wood is softer and more easily split. Coarse-grained cedars are best for roof-beams because they do not easily catch fire.

Planks were taken from cedar trees and used for a range of purposes. Boas (1909:328) indicates that “in the olden days” planks were cut from standing trees.

In the butt-end of the tree, on the side that has no branches, a hole was cut, in which a fire was started, and carefully guarded, that it should not spread upwards... after the hole had been made...the workman would climb the tree to a height of about three or four fathoms. There he would work standing on the branches of a small tree that had been pulled over so that it leaned against the trunk of the large tree on which he was working. Two places about one cubit part were cut out of the trunk of the tree with stone axes, and the intervening wood was wedged out.

By the time Boas recorded these tree utilization practices planks were being removed from felled trees. Holes were not burned into the tree but planks were split off from the fallen tree with wedges inserted into the butt end (Boas 1909:328). Boas suggests that the longest planks removed from cedar trees were 31/2 fathoms long.

Cedar planks, six or eight feet in height, are used as partitions between families in village dwellings (Dawson 1888:346).

Canoe trees were selected on the basis of size and soundness. Small holes were cut into large cedar trees in order to check the soundness of the heartwood. When these trees are found in the forest today they are called ‘test-holes’. If the tree is sound it is cut down, the cut made into the branch side of the tree so it will fall on its branches (Boas 1909:344).

Boas (1909:344-369) provides a very long and detailed description of canoe making which can be referred to by the reader. Once the canoe has been formed:

The canoe builder takes his adze and makes a trail for the roadway of the canoe that he is making. He cuts thin young cedars and hemlock-trees and lays them down crossways over the trail. Two fathoms is the distance of the young cedars (Boas 1909:357).

Table 5 below lists specific areas where cedar harvesting occurred within the study area.

Table 5. Specific locations where the Tsawataineuk utilized cedar..

Reference	Use	Location	Comments
T. Dawson 2004 interview	Getting cedar poles	Yawadi	
T. Dawson 2004 interview	Bark stripping	Above Tsuxwala	
T. Dawson 2004 interview	Canoe logs	Hillside in Kingcome Valley	Higher the elevation the tighter the grain of wood
T. Dawson 2004 interview	Canoe logs	South side of Laxlax, half mile up eastern side in old setting	
T. Dawson 2004 interview	Bark stripping	Across river from Kingcome Village	
T. Smith 2004 interview	Planks	Penphrase Pass b/w Kingcome Inlet and Gilford Island	
RCIA 1914 RG10 Vol. 11025 file AH6A:121	Canoe making	Walak at Anchorage Cove	There were no houses at this place, to which the Indians went to make canoes, living while there in shacks; the place was wanted for the timber and for hunting and trapping

Boas (1909) also describes methods for splitting, bending, sewing, pegging, fitting boards together, and caulking. These techniques will not be described here in any detail here.

Although both red and yellow cedar bark was harvested, red cedar bark was the primary source for fibre material. Two types of bark-strips are noted by Boas (1909): rectangular and tapering. Boas (1909:338) provides a description of the removal of rectangular bark boards from cedar trees:

The bark is removed from the trees of a span or two in diameter. The bark is cut all around the tree near the bottom, and another cut is made a fathom or two higher up. Then the bark is slit open lengthwise down one side of the trunk, and it is either removed with the hands or pried off with levers made of hemlock or bone of whale.

According to Boas (1909:338) rectangular bark-strips removed from cedar trees were used as a substitute for planks (bark boards), for making the sides of boxes, for roofing, as well as for canoes and canoe bailers. Bailer scars would have originally measured 70 cm long by 40 cm wide.

Bark-stripping (other than the removal of rectangular bark slabs) was undertaken by women as described by Boas (1909:371):

They make a cut in the bark of a young tree, near the bottom, and make a split on each side extending some little distance upward. The bark is pried up with a large wedge made of hemlock or bone of whale. After it has been started, it is pulled off upward in a long strip, which finally tears off from the tree.

The cedar bark was further processed and used for making mats, ropes and basketry and for shredded cedar bark used to make towels, infants bedding, and ritual items (*see* Stewart 1984).

Yellow Cedar

Yellow cedar was used by the Kwakiutl for both material and medicinal purposes: the remains of some of these activities will be evident on living or dead but standing yellow cedar trees today.

Long strips of bark were removed from the yellow cedars in July (Boas 1909:369). These leave triangular bark strip scars which preserve in the archaeological record. The outer bark was removed and the bark was folded and left in salt water for up to a month until the bark gets spongy. The cedar bark would have been used to make baskets, clothing, diapers, and mats among a variety of other things. Yellow cedar bark and spruce gum were also used for caulking canoes and boxes (Boas 1909:331).

The roots of the yellow cedar tree were used to make bows (Boas 1909:331) and the leaves of the young yellow cedar were used along with spruce roots to make an acrid wash for sores (Boas 1969a [1934]:218). Activities using the roots and leaves of the yellow cedar probably would not leave a strong trace in the archaeological record.

Spruce

Spruce roots and spruce gum were used by the Kwakiutl. Spruce roots were dug up and used for the warp strands of baskets, for binding, for open work baskets, for tying the barb of the hook to the shank, and for strong twinings.

In witchcraft ceremonies meant to cause death to a particular individual, spruce gum was used in the following way (Dawson 1888:348):

A piece of the skin and flesh of a dead man, dried and roasted before the fire, and rubbed and pounded together. The mixture is then tied up in a piece of skin or cloth, which is covered over with spruce-gum.

The inner bark of the spruce trees was also used to fix knot holes in the side of a canoe (Boas 1909:327).

Fir

Dawson suggests that Douglas fir trees were the tree species used for tree burials (Dawson 1888) but it is possible that he was really referring to spruce trees. Douglas fir driftwood was used for making fish-hooks (Boas 1909:332).

Balsam fir trees were important to the Tsawataineuk as evidenced by a placename collected by Boas indicating the location of a stand of Balsam fir trees (Boas 1969a [1934] map 13 placename 39). Balsam fir blisters were cut open and the gum contained in them gathered in clam shells (Boas 1966:381). This gum was used for medicinal purposes.

Hemlock

Hemlock trees were used for both material and medicinal purposes. Hemlock trees were used to make a rough raft which transported cedar planks from the harvesting areas to habitation areas (Boas 1909:330). Small hemlock trees, 35 cm in diameter, were used for making digging sticks (Boas 1909:341). Hemlock poles were also used for poling canoes up and down the river (Mike Willie pers. Comm. 2004).

Hemlock roots were dug up and used in the healing of mouth sores and burns. The outer skin of the roots is peeled off and the inside of the roots is soaked in boiling water and left overnight. When the water has turned red the mixture is applied to the sore (Boas 1969a [1934]:214). Hemlock pitch was used to heal inflamed eyes (Boas 1966:384). Pitch collection could leave scars on the hemlock trees which may preserve in the archaeological record.

Other Trees

A variety of other trees were used for making specific utensils or for medicinal purposes. Yew and wild crab apple wood were used to make round spreading sticks (Boas 1909:329). These sticks were inserted into splits made in trees during plank removal. The spreading sticks were on average 6 inches thick. Yew trees were also used for wedges used in canoe making. Boas (1909:345) suggests that the whole yew tree was cut down to make as many as twelve wedges needed in canoe making.

Alder or willow trees were used to make netting-needles. A piece of the wood between two branches was removed and carved into needles (Boas 1909:399). Alder bark was also used for dyeing cedar-bark red (Boas 1909:404). Alder, yew or hemlock were used to make spoons (Boas 1909:420).

The red pine is listed by Boas as being used for making tongs. The wood was taken from fallen trees (Boas 1909:342).

Plant Gathering

A wide variety of plants were gathered by the Tsawataineuk, descriptions of which and where they were collected can be found in the 1997 Galgalis Project transcripts. Plant gathering areas are shown to exist in areas along the Kingcome River valley to beyond Satsalla. Large polygons are also shown high on the mountainsides along the lower portion of the Kingcome River in association with and near lakes. A partial list of utilized plants includes berries such as cranberries, blueberries, huckleberries, salal berries, thimbleberries, salmonberry, sour berries as well as wild currants and wild crab apples. Women also maintained gardens of clover root as indicated by the early settlers and gathered skunk cabbage (for drying berries on), Indian rice, bitterroot, seaweed, kelp, Indian tea, devil's club, and eel grass.

Collecting these plants and berries will have left evidence in the archaeological record. In addition to trails maintained to picking and gathering locations, overnight camping may also have been part of the plant gathering process.

Gardens and Cultivations

There is evidence in the literature that the Tsawataineuk cultivated plants and there are other references to the Kwakiutl in general growing potatoes and clover. Williams (2001:86) discusses the Tsawataineuk management of the land at the mouth of the Kingcome River:

Ethnobotanists suggest the openness that attracted the homesteaders had been enhanced over a long period of time by the Dzawada'enuxw [Tsawataineuk], who had used controlled burning to kill off unwanted plant species like alder. The resulting fields had been encouraged to produce berries, wild crab apples, rice root, silverweed, and spring bank clover roots.

During his speech to the McKenna-McBride Commission, Chief Cesaholis discusses a clover garden tended by the women of Gwa'yi located on Lot 147 bordering the southern boundary of the Gwa'yi Reserve. Chief Cesaholis (RCIA 1914 RG10 Vol. 11025 file AH6A:114) related the following in regard to the clover root gardens:

...the place where the indian women used to dig roots out of the ground, and where they had individual marks for each one and had put down stakes to mark the boundary lines for each one...

Boas (1969a [1934], Map 13) notes a place called *galbedis(?)* or fenced ground in lot 141 on the west side of the Kingcome near its mouth. Given the description this place was probably a garden of the Tsawataineuk as well.

It is evident from the testimony given by Chief Cesaholis that gardens were tended and patches owned by Tsawataineuk women. Clover was also cultivated at the head of Bond Sound by the neighbouring Kwiksootainuk (Boas 1969a [1934], Map 13). The Kwakiutl also cultivated potato gardens in small patches usually on old village sites (Dawson 1887a:5), but no direct evidence of the Tsawataineuk cultivating potatoes was located during this study.

Shellfish Harvesting

No shellfish harvesting areas were identified, for the study area, in the 1997 Galgalis study. As noted above, this is considered due to the study area boundaries which are limited to the fresh 'inner' coast waters. The nearest shellfish gathering area shown in the 1997 Galgalis study is within Simoom Sound. Other shellfish areas mentioned outside the study area include Gilford Island and Insect Island (Flora Dawson *in* Williams 2001).

Trails

Overland trail corridors appear to have been an important means of transportation for the Tsawataineuk. A wide variety of trails can be found in the transcripts of interviews with Tsawataineuk elders and from other sources including trails linking various water bodies, trails to resource locations and portage trails.

Trails between watersheds or Inlets were established by the Tsawataineuk. There was a trail from the Kingcome River to the traditional village in the Wakeman River watershed which T. Dawson (1997 tape 5:71) suggests followed the Clear River. The land surveyor Corrigan (1896:822) wrote that there was a trail from the Kingcome River to Wakeman Sound that followed the Lahaw³⁸ Creek. A trail to Owekino Lake/Rivers Inlet is described as following the Kingcome headwaters along a small valley beside the glacier (T. Dawson, Appendix 1).

³⁸ This must be 'Laxu' or Clear Creek.

Boas (1969a [1934], Map 13) describes a trail from Kingcome Inlet to Bond Sound called *ts!e qwe lax ha'da* [trail to Ha'da] and a trail across the peninsula from Bond sound to Kwatsi Bay.

Trails were also used to access resources within the Kingcome Watershed. There was a trail to the Kingcome estuary where hunting occurred, the trail up the Clear to Wakeman Sound was used for duck hunting (T. Dawson 1997 tape 5:70), there was a trail to a fish pool (T. Smith 2004), and a trail to the glacier (T. Smith 2004). Two trails are noted that were used as canoe portage routes. The trail to the glacier was quite substantial as it is described as having been cleared of trees so that canoes could be pulled up over a landslide (T. Dawson 2004). Corrigan (1896:822) describes the following portage route:

At about fifteen miles from the mouth the river branches into two, the one from the east [Atlatzi?] entering the main river through a narrow deep valley. Near the junction, on the branch, is a high fall of about thirty feet. Over this the Indians 'portage' their canoes when proceeding further up.

George Dawson (1887a:2) noted the following when discussing trails of the mainland Kwakiutl:

They possess no available or practicable route through the region of the Coast Mountains to the interior of the province. Between Bute Inlet and Bentick Arm they travel by lakes and rivers (which for the most part do not appear as yet on the maps) some distance into the mountain country.

Spiritual Places

There were a wide variety of spiritual places used by the Tsawataineuk. A lengthy discussion of one type of spiritual place that would leave remains in the archaeological record, places for hiding cedar bark bedding repeatedly, is provided by Dawson (1888:347) who describes how baby cradle bedding was deposited in a special place after a child grows too large for the cradle. He (Dawson 1888:347) notes how the bedding was carefully collected and taken to a "recognized place of deposit" and was told that:

Every village probably has such a place of deposit. That for the Ka-loo-kwis village is a sheltered recess in limestone cliffs at the western extreme of Harbledown Island....Another similar recess in a cliff... exists on the south side of Pearse Peninsula, east end of Broughton Island...At Mel-oopa, beneath logs, at the back of the village, and not on shore.

Boas (1969a [1934], Map 13) noted two places where cradle bedding was placed in Tsawataineuk territory; both are located in the Inlet on steep rocky shorelines.

Central Coast LRMP Data

Traditional Use information was also collected as part of the Central Coast LRMP review process and a GIS coverage created which shows large areas with lists of traditional resources within them. A GIS coverage which includes only the study area was obtained for this project from John Munro & Associates (curator of the data). As Munro states:

The data came primarily from a series of workshops for elders of the Nations in the South Forum area of the CCLRMP. Workshops were held in Comox and Alert Bay in both 2000 and 2002. There was also a workshop in Alert Bay in the summer of 2003. Additional information was collected over the same period of time from some individual interviews. (Munro, pers. comm.. 2004)

Although the GIS mapping is gross in scale, the list of resources that are included in the study area provide additional information regarding traditional resources in the area. These include:

Wolverine, black bears, beaver, berries, clams, cougar, crabs, deer, devil's club, dog salmon, ducks, geese, grouse, herring spawn, ling cod, mountain goats, oolichan, porcupine, rock crab, sea lion, seals (fat), T'aksus, trapping, trout, wolves, salal, salmonberries, blueberries, cod, medicinal plants, oolichan, prawns, salmon - humps, salmon - pinks, coho, chum, skunk cabbage, spiritual - grizzly bear, spruce root, wild carrots, wild cranberries, and wild rice.

Archaeology of the Kingcome Inlet and Watershed

Archaeology is the study of past human cultures primarily through the physical remains or evidence that may be located through survey. Many cultural activities result in little or no physical evidence that may preserve through time and therefore the *Existing Site Inventory* discussed below must be viewed as an incomplete and skewed record of the past. Further, it is important to recognize that methods and goals for surveys have changed historically and that northwest coast archaeology is mainly concerned with sites and features older than ~ 150 years³⁹. With regard to traditional use of the landscape by indigenous peoples, archaeological studies are unable to identify or document many of the Traditional Use activities that have taken place in the recent or distant past and it should be cautioned archaeological studies are not traditional use studies.

The existing site inventory (a.k.a. the '*archaeological record*') is essentially the sites *known* to researchers. The location and description of known sites, as found in the BC provincial registry⁴⁰, forms the core of the *existing site inventory*. When an archaeological site has been identified during archaeological survey, siteforms are submitted to the BC Archaeology Branch and these records are kept and maintained for future reference.

The *existing site inventory* is directly associated with archaeological survey and surveyors, reports and report writers. While sites reflect the use of a specific area for a short or long period of time, their 'discovery' is dependent upon the ability for cultural materials and features to build up and preserve through time, as well as the ability of the surveyor to identify, interpret and document the site. In many areas that have been used in the past, archaeological sites will not be present or be easily located due to preservation and/or surveyor bias and it should be strongly cautioned that in many instances an absence of evidence should not be considered evidence of absence.

The following provides a description of the Culture History Sequence of the central coast region as well as some indication of survey biases and the results of previous studies in similar environments. This is followed by a detailed summary of specific archaeological studies that have taken place within the study area. Finally, the existing site inventory is described and a discussion of the expected site types in the study area is provided.

REGIONAL CULTURE HISTORY SEQUENCE

Cultural sequences provide a guide or summary for placing sites within a temporal and spatial framework and for evaluating the similarities and differences that a site may have with other sites through time. These sequences are determined by the dating of archaeological materials and/or cultural matrices, generally from shell midden excavations.

Excavations near the study area which provide the data for a cultural sequence have taken place at Bear Cove (C. Carlson 1979a, 1979b), the O'Connor Site (Chapman 1982) and Hopetown Village (Mitchell 1979). A detailed culture history sequence is provided in the 1999 Golder AOA and repeated below for reference (Bailey *et al.* 1999:91-98).

Early Period (ca.10,000 - 5,500 B.P.)

Deglaciation of the Central Coast area began about 13,000 years ago (Clague *et al.* 1982, Josenhans *et al.* 1995), resulting in newly accessible travel routes and habitable areas. Based on current archaeological evidence, it seems likely that the initial settlement of the Northwest Coast occurred between 13,000 and 10,000 B.P. As a result of fluctuating sea-

³⁹ The Heritage Conservation Act protects sites older than 1846.

⁴⁰ Siteforms are the primary source document.

levels, poor preservation factors and possibly low population densities, few archaeological remains predating 5,000 years B.P. have been identified on the Central Coast (Carlson 1990; Hobler 1990b).

Our limited knowledge of Early Period cultures is based on archaeological material culture (mostly stone tools) and a general understanding of subsistence systems, and is verified by fragments of native oral traditions, some of which appear to extend back 10,000 years (Hobler pers. comm. 1996). Fladmark (1974) and Borden (1975) proposed that the Early Period was characterized by different technological assemblages to the north and south of Queen Charlotte Strait. Carlson (1983) suggests that such regional variations in material culture became less distinct by about 5,500 B.P., as a result of social interaction through trade and the reduction of localized biogeoclimatic differences.

Pebble Tool Tradition (ca. 10,000 - 8,000 B.P.)

The earliest known Central Coast archaeological complex is the Pebble Tool Tradition, also called the Old Cordilleran tradition (Matson 1996). The earliest unequivocal dates for Pebble Tool assemblages are between 10,000 and 8,000 years ago (Carlson 1983). While this complex seemingly centres around southwestern British Columbia, it has been identified as far north as the Queen Charlotte Islands, and as far south as the Oregon Coast (Carlson 1996).

The Pebble Tool Tradition is characteristic of coastal areas and the lower reaches of coastal rivers, suggesting a subsistence strategy based on fishing and sea mammal hunting (Carlson 1983). Artifacts associated with the Pebble Tool Tradition include leaf-shaped bifacial points and knives which lack stems and fluting, and unifacial cobble (or "pebble") choppers and scrapers (Carlson 1996, Matson 1996). These cobble tools are thought to be partly indicative of woodworking, representing an adaptation to the forest environment that emerged following the disappearance of glacial ice (Carlson 1983). Bone and antler tools, including antler hammers for working stone, antler wedges for woodworking, bone awls, bone hooks, notched elk teeth, and small unilaterally barbed projectile points, were preserved at a Pebble Tool Tradition site on the Columbia River (Carlson 1983). If such tools were once part of Central Coast assemblages of the same age, they have not survived due to acidic soil conditions.

Pebble Tool Tradition assemblages have been recovered from the **Bear Cove site** in Hardy Bay on the south side of Queen Charlotte Strait and have been radiocarbon dated to approximately 8,000 years B.P. (C. Carlson 1979a, 1979b). The oldest cultural strata of the site were characterized by cobble tools, large leaf-shaped bifaces, and crude primary flake tools. A marine adaptation is clearly indicated by the presence of bones of rockfish, salmon and sea mammals in the uppermost part of the earliest cultural stratum of the site.

Although not yet dated, the early component at the Tsini Tsini site (FcSm-II) in the upper Bella Coola valley may belong to the Pebble Tool Tradition and predate microblade technology (Hobler 1997 pers. comm.). The site has been attributed to the early Holocene period (ca. 10,000+ B.P.), when the sea flooded the valley virtually to its head, as a result of post-glacial flooding (Hobler 1995b).

Microblade Tradition (ca. 9,200-4,500 B.P.)

The Pebble Tool Tradition was followed by the Microblade Tradition, characterized by a technological shift toward the use of microblades and microcores. Microblades are small, parallel-sided stone flakes removed from small prepared cores. Artifacts recovered in Siberia and Alaska indicate that the edges of microblades were inset into wood, bone or antler hafts and used for many of the same cutting purposes as bifaces (Carlson 1983). Microblade technology appears to have been introduced early in the Early Period. At Namu, it is evident before 9,000 B.P. (Carlson 1997 pers. comm.). Microblade technology is typically associated with quantities of large flakes of andesite debitage.

Early Period assemblages recovered from site EISx-I at Namu are considered to represent an interface between the Pebble Tool and Microblade Traditions (Carlson 1983). Occupation of the Namu site began around 9,800 years ago; however, no bone was preserved in site deposits older than 6,000 B.P. due to the acidity of the soil (Carlson 1983).

Using data from Namu, Cannon (1991) reasoned that Early Period aboriginal economies on the Central Coast were characterized by a long-term pattern of marine resource utilization, in which changes in the availability of salmon played a key role in the scale of site settlement and cultural activity. Cannon was also able to monitor long-term changes in minor resource utilization using faunal data. The subsistence pattern clearly suggests a marine orientation focused on salmon throughout the Early Period at Namu (Carlson 1983). The rugged terrain around the site (which is only easily accessible by water) and faunal evidence of a diet rich in marine resources indicate that water craft were used extensively at this time (Carlson 1983).

Shell middens, common in later period sites, are not typically found at early sites, and they did not occur at Namu until the end of the Early Period. Evidence from other Pebble Tool Tradition sites further south suggest that land mammals, including deer and elk, were also important animal resources at the time (Newman 1966). The later component at the Tsini Tsini site in the Upper Bella Coola Valley, contains microblades and quantities of flaked debitage. As with other undated microblade assemblages, this component is believed to date to after about 9,000 B.P. Hobler (1997 pers. comm.) suggests that the assemblage dates to the early part of this time range.

Apland (1982) analyzed chipped stone material from 38 sites in Kwatna Inlet, Quatsino Sound and Bella Bella. He noted that chipped stone has been recovered in virtually all parts of the Central Coast. The first recorded evidence of chipped stone artifacts in the Central Coast was described by Harlan Smith, who saw these projectile points as indicating trade with people from the Interior Plateau, and not as an indigenous stone industry (Smith 1909a). A number of authors conceptualized such chipped stone assemblages as belonging to the "Cathedral Phase".

Retherford's (1972) thesis suggested that these assemblages dated to a period of lower sea-levels approximately 3,000 years B.P.; however, subsequent investigations of the Early Period components at the Namu and Tsini Tsini sites have suggested that Cathedral Phase technology occurs much earlier, and possibly dates to the beginning of the Early Period on the Central Coast (Hobler 1997 pers. comm.). It appears that the reduced sea-levels associated with this phase may in fact represent the last of the rising post-glacial sea-levels, suggesting that these assemblages may date to the beginning of the Early Period. Excavations at the Joashila site (FaSu-19) in Kwatna Inlet revealed in situ chipped stone assemblages underlying a hearth feature which has been radiocarbon dated to ca. 6,000 B.P. (Hobler 1997 pers. comm.).

There is some evidence that the extensive exchange systems known ethnographically for the Central Coast may have originated during the Early Period. X-ray fluorescence analysis of obsidian found at Namu indicates that this material originated from Anahim Peak and Mackenzie Pass, located about 120 km east of the site (Carlson 1979b).

Middle Period (ca. 5,500-2,000 B.P.)

The onset of the Middle Period (ca. 5,500-4,500 B.P.) is marked by significant changes in the archaeological record (Hobler 1990b). In terms of lithic technology, stone flaking gradually declined in importance, while grinding, pecking and polishing techniques slowly increased. Microblade and microcore technology disappeared by about 4,500 B.P. The frequency of shell middens appears to have increased significantly. As a result of the preservation conditions characteristic of shell deposits, bone tools are more frequently represented in artifact assemblages found in Middle Period contexts than in those from the Early Period.

Obsidian Culture Type (5,000 to 2,500-2,000 B.P.)

The Obsidian culture type is characteristic of the southern portion of the Central Coast between approximately 5,000 and 2,500-2,000 years B.P., when bone, antler and ground stone artifacts became more common (Mitchell 1990). This archaeological complex is defined by the distinctive presence of flaked obsidian characterized by evidence of bipolar percussion (Mitchell 1988). Other tools include rare leaf-shaped stone points, numerous obsidian microflakes, hammerstones, irregular abrader stones, bone composite toggling harpoon valves, bone bipoints, ulna tools, mussel shell celts and knives (Mitchell 1990). Faunal remains suggest that a wide range of resources was harvested, including shellfish; a variety of fish species, especially salmon and herring; a number of mammal species, including deer and harbour seal; and a variety of birds such as ducks, gulls, crows, and loons (Mitchell 1990).

Archaeological evidence from the Middle Period indicates a subsistence system based on marine resources (particularly salmon and shellfish), evidence for a highly developed woodworking technology, ceremonialism and ceremonial art, and indications of status and wealth distinctions. Fladmark (1974) suggests that gradient maturation of many coastal rivers related to the stabilization of sea-levels around 5,000 years ago led to the establishment of the large, predictable salmon runs which contributed to the growth of the large, semi-permanent settlements known ethnographically for the Northwest Coast, and the production of large shell midden deposits.

Another environmental factor that may be related to growing population sizes is the establishment of redcedar forests along the coast at this time (Hebda and Mathewes 1984). Cedar provided many of the raw materials central to the complex ethnographically documented cultural systems along the coast. For example, cedar provided raw materials for the construction of large plank houses able to accommodate large family groups, for storage boxes that allowed the preservation of food surpluses, and for clothing, baskets, and other utilitarian and ceremonial items.

Late Period (ca. 2,000 B.P.-European Contact)

The Late Period is generally reported to begin about between 2,000 and 1,500 B.P. (Carlson 1983). However, Maxwell *et al.* (1996) suggest that artifact assemblages attributable to the Late Period began to appear on the outer coast by about 2,800 B.P. The majority of recorded archaeological sites on the Central Coast presumably date to within the last 2,000 years, and archaeological evidence suggests that populations continued to grow throughout this period (Hobler 1983b). An increasing specialization of subsistence techniques may have produced higher food yields which in turn appear to have had a positive effect on population size (Hobler 1983b).

The abundant archaeological evidence for the Late Period indicates general continuity with the cultural patterns established in the Middle Period. The well-established marine orientation, emphasizing salmon resources, has continued into modern times. If the sea-level changes proposed by Retherford (1972) are correct, then many of the undated stone wall fish traps in the Bella Bella area must have been constructed during the Late Period (Mitchell 1988). Cultural features of the Late Period include plank houses, ceremonial art, pecked and ground stone implements, and bone tools. A unique sample of normally perishable artifacts such as basketry, hats, mats, rope and wooden items was recovered from site FaSu-1 at Kwatna (Hobler 1976).

The increase in site numbers seems to correspond with the shift from a flaked stone technology to a more diverse tool kit employing pecking, grinding and polishing of stone as well as the manufacture of bone, wood and shell implements (Hobler 1983b). Archaeological assemblages are characterized by the virtual absence of flaked stone, except for occasional use of obsidian and small basalt triangular notched points (Apland 1982; Chapman 1982). Ground and pecked lithic technology predominates Late Period assemblages (Matson and Coupland 1995), and diagnostic artifacts include perforated and

unperforated circular stone disks, greenstone adze blades and hammerstone grinders (Hobler 1990b). Bone and antler artifacts used in fishing and other activities are also preserved in quantity from this period (Carlson 1983).

Anutcix and Kwatna Phases

Two regional Late Period phases have been defined on the Central Coast: the Anutcix Phase (ca. 1,800-500 B.P.) and the Kwatna Phase (ca. 500 B.P. to contact) (Carlson 1971; Hobler, pers. comm. 1997). The Anutcix Phase is characterized by ground and pecked stone technology, bone and antler tools, and occasional flaked stone tools (Matson and Coupland 1995). The two phases are primarily distinguished by the presence of "hammerstone-grinders" and, in the case of the Kwatna Phase, circular stones (these latter items are not present in Anutcix phase assemblages) (Carlson 1971). The large numbers of pecked, ground and polished stone artifacts that characterize Kwatna Phase material culture have been interpreted as woodworking implements (Hobler 1976).

The "hammerstone-grinder", found in the Bella Coola area, is considered a typical horizon marker of the Kwatna phase. This artifact type has recently been reinterpreted as a piece from a traditional Nuxalk game known as Sksta (Crompton).

Queen Charlotte Strait Complex

On the southern Central Coast, the Queen Charlotte Strait cultural complex, dated from 1,600 years B.P. to the historic period (Mitchell 1988), typifies Late Period assemblages. This artifact class is characterized by large quantities of ground bone artifacts and a small proportion of flaked stone (Mitchell 1990). Diagnostic artifacts include flat-topped hand mauls, stone discs, irregular and shaped abrasive stones, ground stone celts, unilaterally barbed bone points, unilaterally barbed non-toggling bone harpoon points, bone composite toggling harpoon valves, bone points and bipoints, bone splinter awls, ulna tools, whalebone bark beaters, bone spindle whorls, bone blanket or hair pins and muss shell celts and knives (Mitchell 1990).

Faunal remains suggest continuity in the range of species utilized during the Middle Period, with an increased dependence on salmon and harbour seal over time (Mitchell 1990). Shellfish were also gathered in great quantity. Burial remains suggest the presence of an ascribed social ranking, and inter-group conflict is indicated by fortified village locations. The great number of these defensive sites suggest fighting and raiding were commonplace (Mitchell 1990).

A possible variant of the Queen Charlotte Strait culture type has been proposed for the Hopetown II component at Hopetown village (a distinctive burial complex dating to about 1,600 B.P.) and the later part of the O'Connor II component (Mitchell 1990). Both sites resemble Marpole culture type assemblages from the Strait of Georgia Salish region dating to the same time period. The Hopetown burials contain many artifacts - predominantly clam shell beads - and the O'Connor II component contains unilaterally barbed points and non-toggling harpoons similar to those found in Marpole sites (Mitchell 1990).

Historic Period

In addition to the three pre-contact periods discussed above, archaeological evidence has been used to study the more recent historic period following European contact with First Nations. Historical archaeologists study both early Euro-American activities and the effects of cultural contact on aboriginal lifeways. The material record indicates that aboriginal material culture was gradually replaced by manufactured European goods (Hobler 1992). Hobler (1984) used data from eight Native settlements occupied during the historic period to create a quantitative seriation of historic components in an attempt to find patterns in the process of material acculturation.

Prince (1992) studied the process of acculturation among the Kimsquit Nuxalk using both written documents and archaeological evidence. Written records show that direct contact

with Europeans was infrequent and had little impact on cultural patterns or values until the 1860s. The material assemblage shows the gradual incorporation of European items into the indigenous culture. By the late nineteenth century, Euro-American goods almost completely replaced indigenous materials. This process reflects the adoption of certain Euro-American practices and the loss of traditional craft skills such as lithic technology. However, many trade goods were adapted to fit First Nations uses, indicating a persistence of aboriginal lifeways well after contact. Many traditional activities and beliefs remain today, though often in modified forms. [Bailey *et al.* 1999:91-98]

REGIONAL ARCHAEOLOGY SUMMARY

The regional history of archaeological research within the Queen Charlotte Strait and Johnstone Strait as well as nearby areas has been adequately summarized in the 1999 Golder Overview (Bailey *et al.* 1999:83-90) and this work will not be repeated here. The following provides a description of historical biases and surveys pertinent to the study area, based mainly on Bailey *et al.* (1999:83-90).

The 1999 Golder AOA describes the various archaeological studies that have taken place in the Central Coast LRMP, separating the northern LRMP from the southern LRMP. The Kingcome Inlet and watershed is located within the southern LRMP but is also at least geographically associated with the Owekino lake and Rivers Inlet area due to a known travel route over the headlands between Kingcome River and Owekino lake.

Archaeological survey goals and techniques have changed through time and with this change came an ability to identify new site types as well as new appreciation for site types previously ignored as ‘insignificant’ or simply noted as interesting facts. Archaeological studies of the central coast flourished in the 1960’s and 70’s with research conducted by Simon Fraser University and the University of Victoria. However, at this time studies focussed mainly on regional inventories and excavation of ethnographically known coastal sites with little if any inland survey.

During the 1980’s, archaeological studies of inland forested environments began due to the recognition that perishable items such as cedar wood and bark comprised the bulk of material used by northwest coast peoples⁴¹. Studies that focussed on the importance of cedar in the form of culturally modified trees (CMTs) had begun at Meares Island (Mackie 1983; Arcas 1984, 1986) and on Haida Gwaii (Nicoll 1981; Bernick 1984) and this led to some level of survey being integrated into the forest industry.

During the late 1980’s and early 1990’s CMTs were often noted but not recorded as sites (e.g. Wilson 1988, 1991). By the mid-1990’s, the improved management and protection of cultural heritage resources in BC was enabled by the revised *Heritage Conservation Act* as well as the *Forest Act* and the *Forest Practices Code Act of BC*. In 1994, a protocol agreement was established between the Archaeology Branch (Ministry of Small Business, Tourism and Culture) and the Ministry of Forests, which more fully integrated the inventory and protection of cultural heritage resources into the forest industry.

Survey data gaps can be derived from the 1999 Golder AOA review of previous archaeology and need be repeated here. The report notes that comparatively little archaeological survey has taken in the southern CC LRMP as compared to areas both to the north and south. Inland lakes and alpine areas have also received little archaeological attention.

⁴¹ According to A Mackie (pers. comm. 2002) the new focus on perishable materials in archaeology stemmed from studies at wet sites in the 1970’s including the spectacular wet site deposits at the Hoko River wet site (Croes 1976) and Ozette village in Washington state (Samuels 1991, 1994). At the village of Ozette, a very small proportion of the material was made of stone.

The historic bias with regard to CMTs in mentioned above. As the majority of the archaeological data comes from the northern CC LRMP, the summary of that research is applicable to this studies results and recommendations:

The vast majority of detailed archaeological work, particularly excavation, in the northern LRMP unit has been conducted along the coastline. It is only relatively recently that inland areas have been investigated, typically in response to proposed forestry developments. A focus on locating and recording CMT sites is also a recent development in British Columbia. Many recent archaeological impact assessments have shown that these features are widely distributed and they may be found well inland. Little work has been done to study the correlation of CMTs with other site types, such as hearths and temporary camps.

Archaeological investigations of high elevation areas have been conducted only sporadically, and have been limited to specific sites and locales, such as Anahim Peak. Similarly, few archaeological studies have focussed on mid-elevation lakes, a factor that has probably understated their importance. The presently known site distribution is likely fairly representative of major locations at the time of contact, but it is unlikely to reflect the full range of aboriginal land use at the time, and it is unclear how far back in time this pattern can be extended. (Bailey *et al.* 1999: 81)

PREVIOUS ARCHAEOLOGY AND THE EXISTING SITE INVENTORY

A review of the previous archaeology of the study area resulted in the descriptive review found below as well as the creation of two GIS coverages⁴²:

- 1) **Sites** - locations of known archaeological sites in the study area;
- 2) **Survey** - locations of previous surveys in the study area.

A summary of the mapped sites is provided in Table 6. and a summary of the mapped surveys is provided in Appendix 4. Sites found in and near the study area are shown (bolded) in Figure 3. Mapped surveys are found in Figure 5 and Figure 6. Eighteen Borden Blocks are included within the study area: EfSl, EfSm, EfSn, EfSo, EfSp, EgSl, EgSm, EgSn, EgSo, EhSl, EhSm, EhSn, EhSo, EiSl, EiSm, EiSn, EiSo, EjSn.

A small amount of archaeological research has occurred in the study area resulting in a total of only **six** archaeological sites being recorded⁴³ which fell within Borden Blocks EfSn, EfSo and EfSp. These sites are summarized in Table 6. and include: five rock art sites (pictographs and petroglyphs) and one CMT site. The following provides a summary of the available archaeological survey accomplished to date and the existing site inventory.

According to the 1999 Golder AOA (Bailey *et. al* 1999), only one archaeological survey had taken place in the current study area prior to the writing of that report. The 1991 I.R. Wilson (Wilson 1991) project included inventory survey of a proposed MacMillan Bloedel logging road (4 km in length) and log dump located just south of the Kingcome River estuary and extending towards Anchorage Cove. Along the shoreline, the proposed road was located within 100 m of the shore. The study area was judgementslly surveyed and no sites recorded although CMTs were noted to exist at the proposed log dump location. Survey coverage is not shown in the report or detailed for each area and it may be the case that only a portion of the road and the proposed log dump area was visited⁴⁴. The complete results of the survey are provided here:

⁴² These are shapefiles created in Arcview, BC Albers nad 83 standard projection.

⁴³ Determined through query of the RAAD (Remote Access to Archaeological Data) system maintained by the Ministry of Sustainable Resource Management as well as a search of the 1:50 000 scale NTS maps on file at the Archaeology Branch, Victoria. All six original hard copy siteforms were obtained and are on file with authors.

⁴⁴ For this reason, there is no survey coverage included in the GIS survey coverage layer for this work.

No sites have been recorded in this area. The shoreline adjacent to the proposed haul road is very steep, backed by a precipitous cliff and evidencing a rocky foreshore. The ocean floor also drops off very rapidly and the development area has low potential. However, on the small point proposed for equipment drop-off, a number of culturally modified trees are present (Figure 6). These rectangular stripped trees are all very recent, having been modified in the past few years with exception of a single stripped cedar which is obviously much older (Plate 8). This area will likely be cleared. (Wilson 1991:15)

Another survey is noted in nearby Wakeman Sound, undertaken by IR Wilson (1988); that survey resulted in the location of 27 CMTs but as in the case of the 1991 survey, siteforms were not submitted as CMTs were not typically recognized as archaeological sites prior to 1994.

Other surveys located nearby the Kingcome Inlet area include the University of Victoria's three-year inventory of the Johnstone Strait area (Mitchell 1968, 1969a, 1969b). The survey appears to have been limited to the islands and near shore areas in Johnstone Strait and resulted in the location of three sites near the western extent of the study area and one rock art site, **EfSo-1** (Table 6), within the study area⁴⁵.

Several rock art sites have been recorded and investigated in the study area by independent researchers⁴⁶. These include two well-known pictographs (**EfSn-8 & 9**, Table 6; Williams 2001) found on the north shore of Kingcome Inlet at the present day government dock and another pictograph found at the western extent of the study area in Moore Bay (**EfSp-3**, Table 6).

Within the Kingcome watershed, one site (**EfSn-10**, Table 6) has been recorded by an independent researcher. The site includes two petroglyph boulders located in a house at the present day Tsawataineuk village of Gwa'yi. One of these petroglyph boulders is shown in William's (2001:54), described as a "stone head", shown with carver Dick Hawkins, ca. 1950's. The siteform indicates the petroglyphs were reported by Dick Hawkins and Ed Meade of Alert Bay with the following remarks in 1971:

Two petroglyph rocks had been in the village since prehistoric times; one has been gone for a long time and the other which was observed in the last few years, has since disappeared.

According to a limited search done at the BC Archaeology Branch with assistance of Project Officer Jim Spafford⁴⁷, no formal archaeological survey has taken place within the Kingcome Inlet watershed.

Post 1999 survey

Archaeological survey has taken place in the Kingcome Inlet portion of the study area following the completion of the 1999 AOA; these are listed below.

Survey of forestry developments has taken place by Arcas (Fedema & Pratt 2001) at the western extent of the study area between Simoom Sound, Bellisle Sound and Moore Bay. Survey coverage as mapped in the GIS survey layer is shown in Figure 5. During that survey, a preliminary field reconnaissance (PFR) of four proposed cut blocks (8801, 8803, 8805E & 8807) totalling ~ 140 ha resulted in no archaeological sites or features being observed or recorded (Arcas 2001). The cut blocks were located between ~ 0 and 1500 m from shore and included areas of old growth cedar forest. Two of the blocks were also located near a lake.

⁴⁵ As it is impossible to determine where survey took place, the survey for this work is not included in the GIS survey coverage.

⁴⁶ This includes Doris Lundy (1974) who visited the area and completed an M.A. thesis at Simon Fraser University on Coastal Rock art sites.

⁴⁷ Not to be confused with report author Jim Spafford.

Survey took place over a three day period and included one judgemental traverse through portions of the proposed block areas. One proposed block, 8805, included five separate sections (A, B, C, D, E). The interim report (Fedema & Pratt 2001) notes that although one section had been logged previously and contained only second growth forest, it was concluded that the absence of CMTs was an indication that CMTs may not be present in the block sections located in old growth forest higher up the slope:

Field survey was carried out only in Patch E. Based upon the results of this survey, and the assessment of very low archaeological potential, it was decided that additional field survey of patches A, B, C and D was not required, since they are situated further inland and upslope, on extremely steep and broken terrain [Fedema & Pratt 2001]

Another preliminary field reconnaissance (PFR) was undertaken by IR Wilson in 2000 of three proposed cut blocks (CC04, CC05, CC06) in the Charles Creek area and resulted in the initial location of two CMT sites, one (**EfSn-12**) associated with proposed cut block CC04 (Hewer 2000) and one site (**EfS0-2**) found outside development boundaries. Survey coverage as mapped in the GIS survey layer is shown in Figure 6. Site **EfSn-2** includes four taper bark-stripped cedar trees determined to predate 1846 based upon lobe development. Site **EfSn-12** included one confirmed CMT found in block CC04 and was returned to for AIA level survey in 2002 due to the location of the CMT and other possible CMT features nearby associated with a ridge overlooking both Charles Creek and Kingcome Inlet. As stated in the AIA report (Mathews 2002:4):

It was determined that an archaeological impact assessment was required, based on the identification of a single culturally modified tree, site EfSn 012, and several other possible CMTs in the southeast corner of the block. Additionally, the initial reconnaissance of Block CC04 noted the potential for subsurface archaeological deposits along a flat-topped ridgeline in the southeast corner of the project area.

During the 2002 AIA of block CC04 (Mathews 2002), the previously recorded CMT and surrounding scarred trees were reassessed and determined to all be of natural origin⁴⁸ (Mathews 2002). Subsurface testing along the ridge feature resulted in no cultural matrices being found. The scarred cedar trees were considered to be naturally produced by “blowdown, poor soil conditions and potentially other agents” (Mathews 2002:13). Further, the author states “there appears to be no cultural patterning to the distribution of scarred trees either, other than being a discrete stand of red cedar on the windward edge of a ridge top” (Mathews 2002:13). CMT site **EfS0-2**, recorded during the PFR conducted by IR Wilson in 2000 (Hewer 2000), was found outside of proposed developments and was not re-evaluated during the 2002 AIA.

Sites Located Near Study Area

Several archaeological sites have been located in Simoom Sound. This includes two shell middens (**EfS0-3**, **EfSp-7**) recorded by Sources Archaeology and Heritage Consultants in 2002 as part of forestry surveys undertaken for Weyerhaeuser. The final report for these surveys had not been completed and therefore was not available for review (Hartley Odwack, *Sources*, pers. comm. 2004). Three additional shell middens (**EfSp-1**⁴⁹, **EfSp-2**, **EeSp-122**) were also located previously in Simoom Sound by Mitchell (1968).

A total of nine sites (**EfSn-1 to 7**, **EfSn-11**, **EfSm-1**) have been recorded between Kwatsi Bay and Bond Sound, Tribune Channel. These include five shell middens, three pictographs and one CMT site. All of these sites were recorded by Mitchell (1968) with exception of the CMT site, which was recorded by a MOF forester in 1998 and includes only one CMT feature.

⁴⁸ This resulted in the site number, EfSn-12, being cancelled.

⁴⁹ A pictograph is also associated with this site.

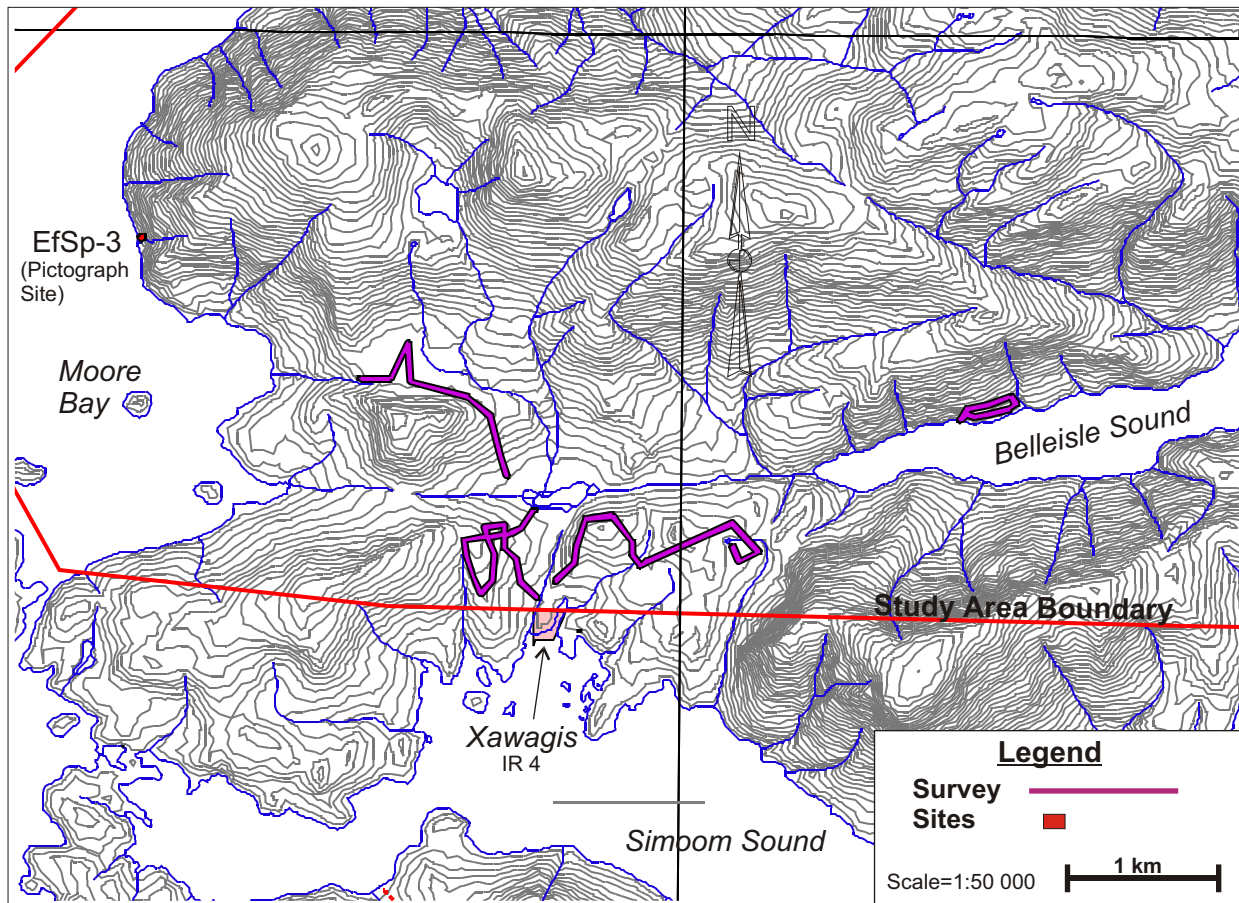


Figure 5. Permit 2000-052 (Fedema & Pratt 2001) survey coverage.

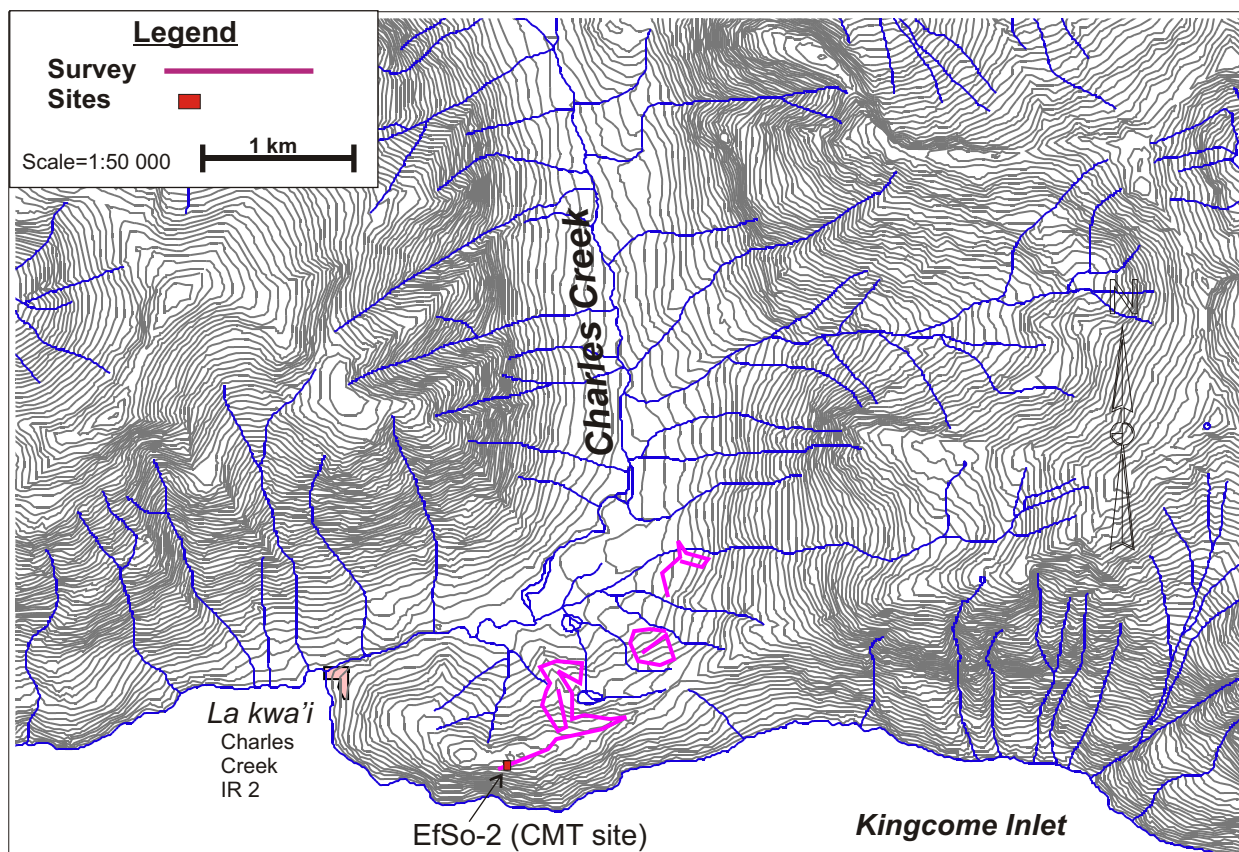


Figure 6. Permit 2000-293 (Hewer 2000), 2002-095 (Mathews 2002) survey coverage.

Table 6. Summary of archaeological sites in the study area.

Site Number	Site Type	Initial recording	Location	Comments
EfSn-8	Pictograph	1/1/1933	North side Kingcome Inlet	Originally recorded by Independent researcher, F.J. Barrow. Site revisited in 2001.
EfSn-9	Pictograph	1/1/1933	North side Kingcome Inlet	Originally reported by Independent researcher, F.J. Barrow. Site recorded in 1968, revisited in 1974, 2001.
EfSn-10	Petroglyph	12/1/1971	3.3 Km from mouth of Kingcome R. mouth, IR 7.	Originally recorded by Independent researcher. Site revisited in 1974.
EfSo-1	Pictograph	6/16/1968	Philadelphia Point, entrance to Wakeman Sound	Recorded during UVIC inventory led by D. Mitchell.
EfSo-2	CMT	6/19/2000	North side Kingcome Inlet, near Charles Creek.	4 taper bark-stripped trees recorded outside proposed Interfor cutblock CC04 during IR Wilson forestry survey - permit 2000-293.
EfSp-3	Pictograph	1/1/1974	Moore bay, Kingcome Inlet	Originally recorded by independent researcher.

Fieldwork Results

One site was located during a fieldtrip up the Kingcome River. At the suggestion of Mike Willie, we decided to stop at a location just above *Tsu'xwala*⁵⁰ which is a large creek⁵¹ with a prominent waterfall located ~1.7 km below the Atlatzi River. The location we stopped at is essentially a forested sand and gravel bar bounded by a stream channel to the east and the Kingcome River to the west. This place, possibly named *Madzis* based on the map created by Mike Willie (see above) is located just above the falls. The same general location is noted in the Galgalis TUS as having smokehouses. Mike Willie thought this place had potential for old habitations.

The landform was traversed judgementally and no subsurface testing took place. Some locations along the exposed riverbank were inspected. The landform contains a mix of deciduous (mainly alder) and coniferous forest. Several bark-stripped cedar CMTs were located in the area forested by cedar (Figure 7). These did not appear to pre-date 1846 and it was estimated, based upon lobe growth and tree size, that the trees had been modified between 25 and 100 years ago. Forest cover suggests an age of ~100 years and cedar content is listed as being nil (species listed included alder and Sitka spruce). Several of the bark-stripped trees had died or were in poor health and had stopped growing. The bark-strips were definite, many displaying a clearly cut base and cut marks.

⁵⁰ *Tsexu'la* is shown on Boas (1969: Map 13) as #33 (translated as “cascade”), shown located at the mouth of the Atlatzi River.

⁵¹ Unnamed on TRIM map, shown as Sequilla in Brayshaw & Weston 2003

In addition to the taper bark stripped trees one small rectangular bark strip was located at the base of a cedar tree (fairly unusual). As well, several pole sized cedar trees had been cut down by saw and it is assumed these are associated with the bark-stripped CMTs.

The site is bounded by the presence of cedar and cover an area ~ 300 m north-south by 100 m east-west. The presence of logged cedar poles may indicate a temporary shelter was constructed or some other structure. Subsurface testing at the site would reveal if subsurface deposits occur. No cultural matrices, artifacts or structural features were observed during the brief inspection of exposures.

A siteform will be submitted to the Archaeology Branch even though there is currently no evidence to suggest the site predates 1846. Siteforms for post-1846 CMT sites are still accepted by the Archaeology Branch and housed separately from the protected pre-1846 site records.

Some points can be made regarding the results of this brief non-systematic survey within the Kingcome watershed. First, the 1:20 000 scale forest cover cannot be relied upon to indicate the presence of cedar and thus the potential for CMTs. Second, the TUS data may be used to locate cultural features.



Figure 7. Bark-stripped cedar tree found near *Tsu'xwala*.

Impacts to Archaeological Resources

Section 3.5.2.3 of the *B.C. Archaeological Impact Assessment Guidelines* (1998:14) generally describes what defines an impact to an archaeological site:

An archaeological resource impact may be broadly defined as the net change between the integrity of an archaeological site with and without the proposed development.

And more specifically,

Adverse impacts occur under conditions that include:

1. destruction or alteration of all or part of an archaeological site;
2. isolation of a site from its natural setting, and;
3. introduction of physical, chemical or visual elements that are out-of-character with the archaeological resource and its setting.

Potential impacts to archaeological resources have been summarized in the 1999 Golder AOA (Bailey *et al.* 1999:13-16). Specific historic impacts that may have impacted archaeological sites are important to consider when determining expected site types and need be discussed briefly. This is followed by a discussion of potential impacts that may result from the forest industry.

Natural Impacts

Natural impacts include the effects of glacial activity, the rise and fall of sea-levels, slides, slumps, wind, natural shoreline erosion, bioturbation from trees, fire, plants and rodents, and erosion due to the soil chemistry amongst others.

Receding and advancing glaciers result in the removal of previous glacial and interglacial (warm period) deposits and mass deposition of new glacial deposits. This implies that any archaeological deposits pre-dating the last major glaciation (Fraser Glaciation 25 000 to 10 000 years ago) may have been completely destroyed. Smaller scale glacial advances and retreats during the Fraser Glaciation will have destroyed, buried or transported archaeological remains in localized areas.

Although rapidly receding glaciers may cause damage to sites, the erosion may also expose sites near the glacier and downstream. Perishable items such as wood, bone and skin may be preserved in frozen glaciers and exposed during glacial retreat as recently found during research in the Yukon and elsewhere.

Slides and slumps, which are common in the study area, may also impact sites but once again these occurrences may also expose sites or create a waterlogged environment in which perishable materials will be preserved (see Wet Sites below)

Cultural Impacts

Cultural activities in the latter half of the 18th century and the 19th century associated with increased settlement and resource extraction would have impacted archaeological sites.

The railway construction along the Kingcome River, including the bridge, will have impacted archaeological sites. This includes the known destruction of a burial ground at the start of the railway. The railway logging would have contributed to the destruction of certain CMTs and possibly contributed to erosion of habitation sites.

Although early logging practices may have contributed to site destruction, cedar was not often targeted until the clear cutting of the 1970's. This means that potential for cedar CMTs still exists in older settings. Along the same vein, the valley bottoms were prized for their stands of spruce, hemlock and fir.

The cannery at Charles Creek will probably have impacted archaeological sites to some degree. Settlement in the area will have contributed to the impact of sites, due to clearing of the land and construction of buildings as well as increased passage near sensitive sites such as burials.

Potential Impacts - The Forest Industry

Impacts to archaeological sites as a result of the forest industry have also been detailed previously by Eldridge (1990) and Mackie & Eldridge (1992). Since that time forest practices have changed somewhat but many of the impacts remain.

The harvesting of CMTs due to clear cutting, selective harvest or road building, will completely destroy the feature(s). Harvesting near CMT sites and features may directly impact the features if a sufficient wind firm buffer is not prescribed. Wind firm buffers should be determined on a case by case basis (Guujaaw & Wanagun 1991). Sun and rain exposure due to harvesting near CMT features may contribute to decay of the feature due to increased exposure. Additionally, harvesting near CMT features may dramatically change the forest habitat and possibly lead to impacts to the CMT feature. Destroying the "integrity" of a CMT site by harvesting between CMT features may be considered an impact according to the *Archaeology Branch AIA Guidelines* (1998:14).

Forestry roads are particularly harmful to archaeological sites due to the severity of the damage to the immediate road area as well as the placement of roads along natural corridors that may have been used as trails prehistorically. Bridges are often in conflict with archaeological site locations due to their location along access routes and association with creeks and rivers. Log sorts, log dumps, landings, - not unlike roads - severely damage the immediate area and are often placed in areas that contain archaeological sites.

Archaeological Potential & Expected Site Types

A total of 1,751 archaeological sites were identified as being located in the Central Coast LRMP in 1999 (Bailey *et al.* 1999:98). The site types and relative frequency are listed in Table 7, followed by a discussion of the potential modelling and a list of expected site types and the potential to find these within the study area.

Table 7. 1999 Golder AOA Relative Site types (taken from Bailey *et al.* 1999:100)

Site Type	Frequency	Relative frequency
Coastal and Riverine Habitation (e.g. midden, structural remains, housepits)	996	57%
Rock Art (Petroglyphs and Pictographs)	294	17%
Fish Traps	218	12%
CMTs	194	11%
Burials	108	6%
Lithic Sites (scatter, quarries)	84	5%
Canoe Runs	38	2%

POTENTIAL MODELLING DISCUSSION

The 1999 Golder AOA resulted in statistical models which were applied to the Central Coast LRMP area using a GIS. The result of the predictive models are a set of 1:20 000 scale maps showing the predicted archaeological potential as colour coded polygons. The maps (dated Sept 10, 2002⁵²) show the predicted “CMT Potential” and the “General Archaeological Potential⁵³”.

The 1999 Golder potential models are flawed in a number of ways:

- The non-CMT model relied on the results of previous surveys and thus *known* sites to test the model and in some cases relies on these previous site locations to determine potential.
- The non-CMT potential model does not account for sites associated with changing landscapes very well.
- The CMT model relies heavily on forest cover data which is susceptible to error.
- The CMT model underestimates the inland distance that CMTs may be located.
- Both models have not included an adequate amount of traditional or local knowledge.

⁵² According to J. Bailey (pers. comm. 2003), the Sept 10, 2002 maps are associated with the 1999 AOA report.

⁵³ Referred to here as “non-CMT” potential.

Non-CMT Model

The GIS modelling relied heavily upon the known locations of sites to indicate the effectiveness of the model. As stated in the report, “previous archaeological research has tended to focus on shoreline contexts where sites are often highly visible, larger and rich in artifacts” resulting in a “skewed view of the pre-contact history of the Central Coast” (Bailey *et al.* 1999:98).

Previously recorded sites used to model are also often found in areas containing low slopes due to the nature of previous surveys mentioned. The model appears to reflect this bias with the vast majority of high and moderate non-CMT potential being located on flat areas near the modern shore and large rivers. The presumption that distance to large bodies of water and slope are the main determining factors in site location has guided many archaeological potential assessments, both on paper and in the field, on the coast of BC. The reality is that some resources *are only* found a great distance inland and that these resources were sought out on a regular basis. Features commonly associated with such inland activities will include CMTs, camps and trails.

With regard to inland habitations or camps, the Golder model relies upon known sites and known trails as well as slope and distance to water bodies to indicate potential. Unfortunately in areas with no known trails or sites, the potential will be lowered.

Due to combined effects of changing environment, population movement and change, as well as cultural change, locations for specific site types may change through time and their use may change through time. The Golder model relies upon current landscape to indicate potential. As demonstrated here, habitation sites are expected to be located on old shorelines and river mouths as well as on old river banks. Once raised shorelines have been identified in an area, this information can be used to further assess archaeological potential in inland areas (e.g. Fedje 1993, Fedje & Christensen 1999).

As indicated by the ethnographic and historic research, there is potential for habitation sites to be found in less obvious locations ‘hidden’ from potential enemies. Any such sites will be difficult to locate using the Golder model.

CMT Model

Certain environmental variables used in coastal predictive models may not be adequate for modelling or are not being used adequately for modelling specific site types. CMT features generally comprise the majority of the features found inland. Forest type, slope, and distance to water and *known* cultural features are the primary variables employed to determine CMT potential in coastal models.

Forest type is usually determined from 1:20 000 scale forest cover derived from air photos. This scale of forest cover, used to determine cedar content and potential for CMTs to exist within the stand, is susceptible to gross error in predictions of potential. 1:20 000 scale forest cover often does not provide enough detail to account for small extant stands of old growth cedar that can be found within previously cut areas (with low age class) or within areas dominated by hemlock and other non-cedar species.

Distance to shore and the importance of lakes is also commonly underestimated in many coastal CMT models. The 1999 AOA model requires a distance no more than 300 m and 1000 m from the coast to establish high and medium potential respectively. CMT studies in coastal environments have found CMTs to be found in areas where cedar is present regardless of distance to shore and *high elevation yellow cedar sites* have been found more commonly as more survey is being completed at higher elevations away from the shore and near inland lakes (e.g. McLaren *et al.* 1999, Stafford *et al.* 2003, Stafford & Christensen 2003, McLaren *et al.*, 2004).

With regard to the inland area of the Kingcome River (> 1000 m) as well as other inland fresh water bodies (lakes), the CMT model requires a distance of 200 to 300 m to establish CMT potential⁵⁴. This appears to be an error as forests near large fresh water bodies are sometimes comprised mainly of Sitka spruce and western hemlock as well as relatively non-productive wetlands. As noted by Corrigan (1896:821) the Kingcome valley was “heavily timbered with good spruce, alder, hemlock and cottonwood”. Fry (1897) indicates “the best timber is growing on a narrow strip of land adjacent to the river, while towards the foothills open swamp and beaver meadows are found, growing scrub cedar and pine...”.

EXPECTED SITE TYPES

A total of six archaeological sites have been recorded within the study area and do not represent the wide range of sites that may be expected. Therefore, for the purposes of this study the site types found on the Central Coast are used as analogy to determine expected site types and their distribution. Additional expected site types, mostly related to changing landforms, are derived from the authors experience in coastal archaeology.

The following site types, listed and discussed in detail in the 1999 Golder AOA (Bailey *et al.* 1999:101-109), are discussed here with additional site types added and an indication of where they may be found within the study area. These expected site types and the potential assessments are based upon the data compiled for this report (see above sections and appendices).

Habitation Sites

This category includes any location where permanent or semi-permanent occupation has resulted in features or matrices to occur.

Kingcome River

Known habitations within the Kingcome watershed are reported in high densities near the river margins to beyond Lax lah Creek, ~ 40 km up the river. These include recent and old village locations, smokehouses and overnight camps. Smokehouses have also been identified at lower reaches of the Lax lah, Atlatzi and Clear drainages. An old village is reportedly associated with the Satsalla Valley as are camps and smokehouses. A location up the Kingcome River shown by Boas (1969a [1934], Map 13) as being located between the Clear and Satsalla Rivers was claimed as a reserve associated with a house site (gugo'yawe', site tw4 in Galois 1994:96, 127).

Many of the habitation locations near the river will have persisted through time as revealed by successive occupations or layering evident in subsurface matrices. These places may be rare and found in only areas that have remained relatively stable through time (e.g. on or near a bedrock bench above river flood levels). Other habitation areas may be relatively short-lived and completely or partially destroyed by river movement or landslide.

As stated by Fry (1897:808):

It is respectfully suggested that in the survey of valleys like the Kingcome and Wakeman, where the river runs through low flat land, consisting of sandy loam with gravel subsoil, that it would be better not to make the banks the boundaries; the accumulation of drift timber may, at any time, change a channel, in fact, the valleys above mentioned show many such changes; some of recent date, varying from a hundred yards to a quarter of a mile.

⁵⁴ The model also requires a certain forest type, slope and elevation.

Evidence of habitations will also be found on old river terraces now abandoned by a change in the river. Due to this, the entire Kingcome River flood plain to beyond Lax lah contains high potential for evidence of habitations such as structural features and cultural matrices.

Paleogeographic information indicates sea-levels have changed through time. There is potential for habitation sites associated with the post-glacial marine maximum to be found above 100 m asl. Clam shells reported at an old village site (*Xwulkw*) near Satsalla by Jack Henry (Appendix 1) are intriguing and may be associated with higher sea-levels. However, it may be more probable that these are associated with a more recent shell midden, which would still be very significant.

Sea-level fall was not steady and it may be expected that a series of old river mouth terraces would have formed during periods of sea-level stability. In addition, the continued sedimentation of the river delta and in-filling of the valley will have resulted in the mouth of the river expanding sea-wards through time. Successive Tsawataineuk habitations moving down the river through time are part of the traditional origin narrative (M. Willie pers comm. 2004) and evidence of habitation would be expected in association with any old terrace/river mouth features.

Cave habitations are common on the coast in areas where caves exist. Rock shelters occur commonly as well and may be used regularly by hunters and trappers as convenient temporary shelters. Tsawataineuk oral histories indicate the use of caves and rock shelters as semi-permanent and temporary shelters/habitations up the Kingcome Valley (Appendix 1, Galgalis Interviews 1997). Any cave or dry rockshelter locations contain high potential for significant archaeological sites. There is moderate/high potential for caves and dry rockshelters to be found throughout the Kingcome valley along the steep valley sides. The oral history and interview information suggests caves may occur in higher frequencies above the Clear River.

Kingcome Inlet

There is relatively less potential for habitation sites to be located all along the steep sided shorelines of Kingcome Inlet within the study area. However there is moderate potential for evidence of habitation to be found near all streams and rivers, in any protected water body and in association with any beaches or shoreline that can be accessed by canoe. There is high potential for habitations to be found in Moore Bay, Belle Isle sound, and Anchorage Cove as well as near Charles Creek and Holden Creek. There is also potential for defensive sites to be found and these will be located on steep-sided islands or peninsulas, commonly in association with the high potential habitation locations.

Habitations associated with higher sea-levels may be found from just above the modern shoreline to over 100 m asl. A high correlation was discovered between sites found on the modern shoreline and sites found inland on raised beach terraces on Haida Gwaii (Christensen 1996; Stafford & Christensen 2000). This would indicate a higher potential for inland raised beach sites to be found near those areas containing high potential at the modern shore (see above). As well, evidence of habitation associated with lower sea-levels may be found in the intertidal area fronting high potential areas noted above and be evidenced by lithic scatters and wet site deposits.

Caves and dry rockshelters also contain potential for habitations. These may be located near the shoreline or high up the mountains, the latter being used by hunters and trappers as convenient temporary camps.

Wet Sites

Organic cultural material such as bark, wood and grasses may be found trapped in waterlogged deposits most commonly found in riverine and lake environments or associated with catastrophic landslide events. Wet sites also occur below modern sea-level in association with drowned estuaries.

Kingcome River

The intensive use of the Kingcome River indicates a high potential for wet sites to occur either a secondary deposits or primary deposits. Landslides are common in the valley and there is moderate potential for sites to have been buried in a catastrophic landslide event and preserved in a waterlogged environment. This type of site is highly significant as perishable materials, typically not found in most prehistoric archaeological sites, would be preserved. There is higher potential for organic materials to have been washed out of site locations, redeposited downstream and preserved in a waterlogged environment. Such items may include basketry, clothing, planks, wood chips and canoes. Wooden stake fish weirs are also commonly found preserved in rivers (see below). The entire Kingcome River flood plain to beyond Lax lah contains high potential for wet site deposits.

Kingcome Inlet

There is moderate potential for wet site deposits to be located in the Kingcome Inlet area. Such sites would be associated with the high potential areas noted for habitations.

Shell Middens

Due to the high calcium carbonate content, shell will preserve itself and other organic materials if deposited in significant amounts. Shell middens are typically found in association with good shellfish harvesting areas. Within Tsawataineuk territory these areas are mainly found on the islands near Queen Charlotte Strait and it is those areas one would be expected to find high densities of shell middens. Shell middens occur less frequently in the inner coast fjord areas, likely due to the combined effects of having fewer shell beds and poor preservation resulting from steeper gradients and higher water flow. Seasonal use of the inner fjord areas must also have an effect on the accumulation of shell middens. This being said, midden accumulations of varying amounts can be expected to occur in association with the habitation areas listed above. Any fragmented marine shell found on land may be cultural in origin.

Rock Art sites

Rock art sites, particularly pictographs, are common on the central coast and due to the steep rocky nature of the study area, may be found in near major travel routes (the Inlet included). By far the majority of known sites in the study area are rock art sites (see above). Rock art sites are more easily identified in highly visible locations but can also be found obscured by brush or trees, in caves and rockshelters, and on boulders in the modern intertidal area. The steep walled fjords are ideal locations for pictographs. Moderate to high potential for rock art sites exists along, and near, all prominent rock outcrops found throughout the study area.

Burials

Burials and human remains will be found near habitation areas, on small islands and in caves and dry rockshelters, points and in trees. Burials may also be found in shell middens.

Kingcome River

The potential for burials to be encountered in the Kingcome River basin is greatest near the village locations where above ground structures and tree burials were located and along the lower portion of the adjacent hillsides. Although the potential for finding intact burials in trees and structures is low near the river due to historic destruction, there is moderate potential for these human remains to have preserved in the ground as secondary archaeological deposits evidenced by a few human elements (e.g. finger bone, vertebrae). Above ground burial locations are known on the river near the present day village of Gwa'yi (Appendix 2) and high potential for burials exists within the valley bottom of the lower Kingcome River near and below Gwa'yi. In this same area, at the base of the steep sided valley margins, there is also high potential for burials in association with dry rockshelters; burials in these locations may be very old and related to times of higher sea-levels and old river mouths (i.e. when the area was an Inlet).

There is little evidence to suggest burials will be found far inland on the Kingcome River however the high density of habitations, including mention of inland villages and cave habitations, suggests there will be potential to encounter human remains near the river and intact burials in rockshelters and caves near the river valley margins and to a lesser degree high on the valley sides.

Kingcome Inlet

The steep rock sides of the Kingcome Inlet contain high potential for burials as do all small islets. A high density of burials are noted to exist from the south side of the Kingcome River mouth to Anchorage cove. These may be located a few meters from shore or 500 m inland at the base of the rock cliffs. A number of burial locations (high density) are also noted on the north side of the Kingcome between the Kingcome River mouth and Charles Creek. While many of these may be a short distance from shore, others may be found farther inland and many in difficult to reach places. High potential for burials exists along any section of steep shoreline in the Kingcome Inlet area. This potential rating may be adjusted to include only certain sections of shorelines such as those already mentioned or to include some distance inland. Until further work is conducted in the area, the potential is high or unknown.

Burials are noted to exist in areas with lesser degree of slope as well, such as at the mouth of Charles Creek and on islets in the study area.

Fish Traps & Weirs

Fish traps will be present in the study area and may include both stone and wooden alignments.

Kingcome River

Although salmon may not be present today in great numbers, prior ca. 1900 they were. Evidence of wooden fish weirs are expected on the Kingcome River to past Lax lah. This is due to the high density of smokehouses to that distance. It may be the case that fish weirs will be found more frequently at or near the mouths of tributaries and in association with bends in the river that create shallow water and deep pools. Fish weirs are also expected to be found in significant numbers on the Clear, Satsalla and Atlatzi rivers. Wooden stakes, from fish weirs, are expected in old river channels as well throughout the valley bottoms. Although rock alignments associated with fish traps may be found in the Kingcome River valley, these are expected less frequently, if at all.

Kingcome Inlet

Fish weirs are expected in association with lower gradient rivers and creeks in the Inlet. There is high potential for rock walled fish traps (rock alignments) to be found in association with smaller creeks that have alluvial fans exposed at lower tides. Such rock alignments are also expected to be located along any beaches or intertidal areas exposed during lower tides throughout the study area.

Deadfall traps

Deadfall traps are known to have been used by the Kwakwaka'wakw and specifically by the Tsawataineuk to obtain cougar and bears. These will be found on or next to trails and near water courses in the study area. There is high potential for this site type to be encountered within the Kingcome River Valley bottom as well as along the Lax lah, Clear, Atlatzi and Satsalla waterways.

Canoe Runs

Canoe runs are expected near village locations located in Kingcome Inlet as well as at the head of trails or in areas frequently visited. As canoe runs are simply rocks moved to sides of a patch in the intertidal area, by definition these will be found in areas where there is an exposable and rocky intertidal area.

Lithic Sites

Lithic sites are those which contain stone tools and therefore can be included in other site types discussed here including: habitations, shell middens, quarries, canoe runs and fish traps. Lithic assemblages can be found in association with any site type but may be differentiated when found in certain contexts. It is important to distinguish the various lithic site types as these should occur frequently in study area.

Intertidal Lithic sites

Lithic scatters are expected to be found in the modern intertidal area in those areas identified as having high potential for evidence of habitation and in areas where alluvial deposits occur. Such lithic artifacts may show signs of water rolling however recently exposed deposits in the intertidal will not. Intertidal lithics found at the mouth of water course may be evidence of an eroding site upstream. Similarly, lithics found scattered along a river or stream may indicate these are being redeposited from primary cultural matrices upstream.

Raised Beach Lithics

In areas containing potential for habitations associated with higher sea-levels, lithics are expected to be found. The greatest potential for these sites will be found on old alluvial terraces and point bars associated with stable bedrock landforms. In the Kingcome River valley, these sites may be found as secondary deposits (isolated lithics or lithic scatters) found along the course of the river and indicating a destroyed or eroding primary deposit. Although raised beach lithics can be associated with shell midden matrices or thick black charcoal-stained deposits, at times these will only be found in concentrations with no apparent cultural matrices.

Inland Lithic Scatters and Isolated Lithics

There is relatively unknown potential for lithic scatters and isolated lithics to be found in inland locations away from the ocean, rivers, streams and raised beach terraces. Such sites will be associated with higher elevation forest harvesting, berry picking, hunting and trapping activities. Such sites may include a scatter of lithic debitage, created by a hunter curating (repairing) his stone tool near a trail, look out, or in a rockshelter. Look out points on the valley sides contain potential for lithics and camps to exist. Stone projectile points and associated lithic debitage are expected to be found in greater numbers near lakes and wetlands, where the potential for losing such items in tall grasses is greatest.

Quarries

The occurrence of volcanic basalts exposed at the upper end of Trudel and Charnaud creeks suggests a moderate to high potential for quarries to be found in these areas. Such quarries would be evidenced by large lithic scatters near the source as well as downstream. If this site type exists in the upper reaches of the Kingcome watershed, the implications with regard to regional archaeology and trade are significant as chipped stone tool use was an important facet of Kwakwaka'wakw cultures prior to ~ 2000 years ago and quarries containing good stone rare.

Trails

In addition to the water routes, inland travel was a necessary part of obtaining resources and maintaining trade relationships with nearby villages. Although aboriginal trails have not commonly been identified and recorded as archaeological sites on the coast of BC⁵⁵, they do exist as shown on old surveyors maps and as related in oral histories and ethnographies. At present there are no criteria available to properly identify a cultural trail in coastal environments and in many cases it will be difficult to discern between a bear trail and a human trail (or a trail used by both).

Trails may be best identified by the presence of a well-established trail bed, evidence of maintenance (clearing fallen trees, bridges) and association with other cultural features and resource acquisition areas. Cultural features that may be associated with trails include habitations, quarries, cave and rockshelters, and CMTs. Trails may be marked in a variety of ways; Tom Smith (pers. comm. 2004) indicates that trails were sometimes marked by tying a knot in a tree and that such trees have been found near the study area.

Kingcome River

Although the Kingcome River is a major travel route itself, trails may be expected to occur alongside the river throughout the valley bottom as well as up the major tributaries. A trail is known to extend from the Kingcome valley to Wakeman sound via the Clear River and trail is noted to exist at the headwaters of the Kingcome River extending towards Owekino Lake. Trails are also expected to be found leading to high elevation features such as caves, lakes and mountain tops.

Kingcome Inlet

Throughout the Inlet and coastal areas of the study area, trails may be expected to occur in between areas where an overland route would be as efficient as travelling by boat. Therefore high potential for trails is expected between Anchorage Cove and Bond Sound, Belle Isle Sound and Simoom Sound and between Belle Isle Sound and Moore Bay. Lesser potential for well-defined trails exists through the study area in association with habitations and resource collection localities.

⁵⁵ Trails are commonly recorded as archaeological sites in the Interior of BC.

Culturally Modified Trees

As defined in the Culturally Modified Tree Handbook (Stryd 2001:1), a culturally modified tree (CMT) is “a tree that has been altered by aboriginal people as part of their traditional use of the forest”. As with other archaeological sites, CMTs must predate A.D. 1846 to be protected under the *HCA*. Culturally modified trees may represent the most visible above ground archaeological feature type in BC; there is potential to find them located throughout the study area. Cedar trees are the most common type of CMT although other species were also used on the coast including “western hemlock, Sitka spruce, Douglas-fir, spruce, western yew, and some deciduous species, such as cottonwood, red alder, cascara, wild crabapple, and wild cherry” (Stryd 2001:33). A description of the types of features and aboriginal uses along the coast of BC is found in Stryd (2001)⁵⁶.

CMT sites may be represented by clusters of features found in areas sought out on a regular basis for the sole purpose of obtaining the bark or wood. These relatively large and dense sites are generally associated with stands of trees displaying a certain quality or bark or wood that was valued, or found in areas where access from a nearby camp or village was relatively convenient. Sites may include areas known to have red cedar trees suitable for canoes at the shore or even-aged stands of yellow cedar found at high elevations and many kilometres inland.

Other CMT sites will be represented by fewer numbers of features and may be associated with more opportunistic collection. In these cases, the CMTs will generally be associated with other activities such as travelling (trails), berry picking, hunting and spiritual phenomena.

As described in the ethnographic section above, a variety of tree species were utilized everyday by the Kwakiutl (red-cedar, yellow cedar, hemlock, spruce, Douglas fir, balsam fir, yew, crab apple, alder, willow, and red pine).

Cedar CMTs are expected to be the most common CMT type found and there is potential within the study area for these features to exist in any stand of forest containing cedar. Generally, higher densities of these features are expected in the following areas:

- near the mouth of the Kingcome River
- along the margins and hillsides of the Kingcome River Valley and major tributaries
- in cedar forests association with areas containing potential for habitations sites such as Charles Creek, Belleisle Sound, Hidden Creek and Moore Bay
- in yellow cedar stands found at high elevations
- in hillsides near lakes

Historic Sites

Due to the frequency of non-native historic activity in the study area, a moderately high number of historic sites may be expected. These will include features and deposits associated with hand logging including camps⁵⁷ and logged trees (stumps and detritus). Historic stumps cut by axe should not be confused with aboriginal stumps as historic stumps will have ‘springboard’ notches⁵⁸. Other features associated with more large scale logging will be present in the study area. This will include features associated with the railway constructed and operated in the Kingcome Valley.

⁵⁶ An exhaustive list of the uses of plants and trees on the coast was not possible for this study. See U'mista Cultural Society (1998) for more complete information.

⁵⁷ Historic camps will differ from pre-historic camps by the type of debris.

⁵⁸ Aboriginal stumps may also have notches on the sides associated with platforms, etc. but these will differ from springboard notches which should show evidence (in the notch) of the square metal clip used on the springboard.

Features associated with early surveyors in the area are also expected. These include camps, boundary trees with inscriptions and stone cairns (associated with boundary lines). Trees will also have been modified during survey and features will include logged trees (small diameter stumps and possibly poles) and trees which have been fallen or notched in order to gain a clear line of site.

Features associated with mining may also be found. These may include claim stakes, camps and possibly sluice boxes.

Historic features are expected in association with the cannery at Charles Creek. These include the cannery, pilings, habitations and historic debris.

All of the non-historic site types and features associated with aboriginal use of the area are also expected to be found as historic period sites.

Conclusions

The Kingcome Inlet and watershed areas have not been the subjects of systematic or comprehensive archaeological investigation. This has resulted in a very low number of archaeological sites being known in the area and may contribute to a misunderstanding of the archaeological potential and traditional use of the area. To date, only one AIA has been undertaken in the Kingcome Inlet area west of Wakeman Sound (Hewer 2000; Mathews 2002). No archaeological survey has taken place in the Kingcome watershed. An archaeological inventory of the Kingcome Inlet and watershed area is necessary to provide data useful for refining the 1999 AOA predictive model. An inventory would also enable resource managers to make informed decisions regarding the need for impact assessments in areas subject to proposed developments.

Known archaeological sites are on file with the Archaeological Registry Section of the BC Archaeology Branch. The known sites in a given area generally reflect the amount of survey that has taken place in that area. In the Kingcome Inlet and watershed area, very little archaeological survey has taken place and this has resulted in a low number of sites being recorded in the area. The low number of *known* sites in the Kingcome Inlet and watershed areas is *not* an indication of archaeological potential in the area but an indication of the need for further survey.

As noted in the 1999 AOA (Bailey *et al.* 1999:9-12), the AOA study included a vast area with great environmental and cultural differences. In addition, the 1999 AOA authors note the study was limited by the lack of traditional use data (none) and the lack of probabilistic surveys (none), which aid in modelling archaeological potential. Further, the 1999 AOA predictive model was untested ‘on the ground’ and it is suggested in the report that field inventories take place to “ground truth the baseline data, model assumptions, and the archaeological potential ratings” (Bailey *et al.* 1999:11). With regard to the 1999 AOA CMT model, it is recommended “a field inventory of Class II lands [i.e. moderate potential areas] could be undertaken to allow reassessment of the relative CMT potential...” (Bailey *et al.* 1999:181).

Archaeological Inventory Surveys (AIS) are ideal and necessary in areas where there is not enough data to adequately determine archaeological potential (BC Archaeology Branch 2000). Section 2.3 of the BC Archaeological Inventory Guidelines (BC Archaeology Branch 2000) states:

Large scale archaeological inventories... usually fall into one of three categories:

1. gathering baseline data on archaeological site locations in areas where no regional inventory exists;
2. investigating environmental variables and values which may aid in the development of a predictive model for archaeological site locations within an archaeological overview assessment;
3. testing the results of an existing archaeological overview assessment.

It is clear that an inventory of the Kingcome Inlet and watershed areas would fall into all three categories listed above.

Study Limitations and Suggestions for Future Actions

The study was primarily limited by the length of time allotted (1.5 month). This affected the ability of the project to adequately input data into the results. For example, this did not allow enough time to review the gads of ethnographic and ethnohistoric data associated with the study area nor did it permit enough time to obtain a GIS coverage of the Galgalis data. Further, this did not allow enough time to establish a complete traditional use database for the study area. Suggestions for further actions are as follows:

- Inventory study area using a stratified sampling strategy, employing transects in areas considered to potential for particular site types as well as in a variety of natural settings.
- Establish a Tsawataineuk referral process (e.g. Heritage Program) for proposed developments. Maintain a GIS database of source material kept on file at Gwa'yi and one other location. Identify and employ local individuals capable of performing basic non-permit cultural resource management survey. Establish protocol agreements with forest companies regarding Heritage Management practices.
- Review Galgalis interviews not reviewed for this study (i.e. Dave Dawson, Frank Dawson, Evelyn Voyager, Patrick Joseph, Frank Willie, Dean Coon) using same methods as employed for this study.
- Expand the traditional use knowledgebase. Conduct further Interviews with elders of community.
- Conduct further paper research and include data pertinent to study area.
- Obtain GIS Galgalis data and incorporate into GIS database.
- Determine sea-level history
- Contact licensees to see if they have any unpublished survey reports

Glossary

Aboriginal logging feature: any tree which has been tested, felled, cut, or otherwise modified by native people as part of the traditional procurement of logs, posts, planks and other pieces of wood (Ministry of Forests 1997).

Abrader: a flat stone, often made of sandstone or another abrasive rock, which is used to grind and polish bone and lithic artifacts.

Adze: a stone tool, usually made of a fine grained igneous rock, ground to form a wedge-shaped tool used for woodworking.

Annual Allowable Cut (AAC): the amount of area that the government allows a forest company to harvest in a year.

Archaeology: the science concerned with the recovery, analysis, description, and explanation of the remains of past human cultures (Fladmark 1978).

Archaeological correlate: an observed relationship between a geographical or topographical feature and type of archaeological site.

Archaeological Impact Assessment: “Archaeological impact assessment studies are initiated in response to development proposals which will potentially disturb or alter the landscape, thereby endangering archaeological sites. The archaeological assessment process is composed of two principal components: assessment and impact management. Assessment is primarily concerned with the inventory and evaluation of archaeological resources, and the assessment of impacts during the initial stages of project planning. Impact management follows directly from assessment and is primarily concerned with managing unavoidable adverse impacts as well as unanticipated impacts” (Archaeology Branch 1998)

Archaeological inventory Survey (AIS): “Inventory studies involve the in-field survey and recording of archaeological resources within a proposed development area. The nature and scope of this type of study is defined primarily by the results of the overview study. In the case of site-specific developments, direct implementation of an inventory study may preclude the need for an overview” (Archaeology Branch 1998)..

Archaeological overview assessment (AOA): “The archaeological resource overview is intended to identify and assess archaeological resource potential or sensitivity within a proposed study area. Recommendations concerning the appropriate methodology and scope of work for subsequent inventory and/or impact assessment studies are also expected” (Archaeology Branch “Archaeological Impact Assessment Guidelines” 1998).

Artifact: anything made by humans that is portable.

A.S.L.: this stands for “above sea-level” and refers to the elevation above the mean sea-level of today.

Aspect: the compass direction that any point on the landscape faces based on slope and elevation.

B.P.: stands for years “before present”.

Bark stripped tree: a tree from which bark has been partially removed by aboriginal people (Ministry of Forests 1997).

Biface: a stone artifact which has had flakes removed from both faces to create a sharp sinuous edge.

Biogeoclimatic zone:

Bipolar percussion: a means of manufacturing chipped stone artifacts by placing a pebble or cobble on a large rock and hitting it with a hammer stone from above (Fladmark 1978).

Blazed tree: a tree that has had bark removed to mark a specific location. These are often associated with trails or with early land surveys.

Borden Block/Borden Numbering System (aka Site Number): Based upon a grid layout, Borden numbers include a code of 4 letters and sequential numbers used to designate archaeological sites in Canada, (e.g. FhUb-1, GaTx-45.) (Fladmark 1978)

Burial: refers to the method of the placement of the dead. It is important to note that burial refers to all types of interment which do not necessarily involve the “burial” of an individual. Burial practices may include pole burials, tree burials, mortuary house burials etc.

Cache: a deliberate store of equipment, food, furs or other resources placed in, or on the ground, or raised above the ground on a platform (Fladmark 1978).

Camp: a habitation location temporary in nature or returned to on a seasonal basis.

Canoe blank: a canoe perform

Canoe run: a cultural feature consisting of the removal of cobbles and boulders on a section of beach to allow for the landing of canoes without damage.

Canoe Tree: a log or log section partially shaped into a canoe (a canoe blank) but was not completed (Ministry of Forests 1997).

Cave: A natural recess formed in bedrock that extends beyond the opening into subterranean passageways and chambers.

Ceremonial site: a cultural location where ceremonial activities are undertaken.

CMT: a tree that has been altered by aboriginal people as part of their traditional use of the forest (Stryd 1997).

Complex: a consistently recurring assemblage of artifacts or traits which may be indicative of a specific set of activities, or a common cultural tradition (Fladmark 1978).

Core: a nodule of stone from which stone flakes are removed for raw material for stone tool manufacture.

Culturally modified tree (CMT): a tree that has been altered by native people as part of their traditional use of the forest (Ministry of Forests 1997).

Culture: a human populations non-biological characteristics.

Culture history: the identification and classification of cultural change through time (Fladmark 1978).

Cultural material: a surface or subsurface occurrence of cultural or natural materials occurring as a by-product of human activity." Examples include shell middens, wet sites, lithics, culturally modified trees (British Columbia 1995).

Cut block: Forestry term used to describe a specific area of land identified in a forest development plan, or in a licence to cut, road permit, within which timber is to be or has been harvested (Forest Practices Code).

Cutting Permit (C.P.): a legal document that authorizes the holder to harvest trees under a licence issued under the Forest Act.

Dendrochronology: a dating technique performed on live and dead trees which uses yearly tree ring growth.

Depression: a large indentation in the ground left by human activity.

Gridded Digital Elevation Model (D.E.M.): an evenly distributed grid of points with values representing elevation for the earth's surface. A 25m gridded D.E.M. product produced from the triangulated irregular network (TIN) D.E.M., which is, in turn, produced from the irregular point and breakline product (which is part of the TRIM product).

Earthwork: a special purpose cultural feature, archaeologically manifested in earth mounding or other modification of the earth's surface (British Columbia 1995)

Ethnography: the study of contemporary cultures through first hand observation (Renfrew and Bahn 1991).

Ethnohistory: the study of ethnographic cultures through historical records.

Excavation: the controlled and systematic removal of cultural and non-cultural sediments from a defined area by archaeologists.

Faunal Remains: bones and other animal parts found in archaeological sites. Important in the reconstruction of past ecosystems and cultural subsistence patterns (Fladmark 1978).

Feature: a product of human workmanship that is non-portable (e.g. hearth, house, cache pit) (Fladmark 1978).

Felled Tree: trees of usually large diameter that were completely felled, using traditional felling techniques (Ministry of Forests 1997).

Fire-cracked rock: rock exhibiting the characteristics of being altered by heat. These characteristics include cracking, breaking, crazing, and discoloration.

Fish trap: a complex alignment of stones or stakes and baskets which trap fish in a certain area where they are then easily harvestable.

Forest development plan (FDP): an operational plan guided by the principles of integrated resource management (the consideration of timber and non timber values), which details the logistics of timber development over a period of usually five years. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource are set out to enable site-specific operations to proceed.

Forest licence: a forest licence allows orderly timber harvest over a portion of a sustained yield management unit, and the timely reforestation of harvested areas according to a strategic resource management plan prepared by the Forest Service for each timber supply area. The licence has a term of 15 to 20 years, generally replaceable every five years (some are non-replaceable) and operating areas that shift over time. Once an area is harvested and reforested the licensee moves to another part of the timber supply area. A forest licence specifies an annual allowable cut, requires a management and working plan, and specified management activities.

Forts/Taodjjs: areas used for defensive purposes. They are usually either placed on difficult to access areas such as promontories or small islands or they are made inaccessible through ditching or fencing.

Geographic Information System (GIS): An organized collection of computer hardware & software designed to efficiently capture, store, update, manipulate, analyze and display all forms of geographically referenced information. Certain complex spatial operations are possible with a GIS that would be very difficult, time consuming or impracticable otherwise (ESRI 1995).

Ground stone: stone blanks or flakes that have been modified, formed, and polished into tools by grinding rather than flaking.

Habitation: a physical feature of cultural or natural origin utilized on a temporary or permanent basis for shelter or other significant social or ceremonial activity." In this discussion usually clear when a village or town is being discussed versus a temporary or seasonal camp. Habitation is used as a site type if it is not clear if it is a village or camp that is being referred to (British Columbia 1995).

Hammer stone: a natural rounded, largely unmodified pebble used as an un-hafted hammer (Fladmark 1978).

Hearth: a fireplace, often circular and may be unlined, rock, or clay-lined, or rock filled (Fladmark 1978).

Historic site: usually defined as cultural material post-dating contact with Europeans in North America.

Holocene: The post-glacial period, beginning about 10,000 B.P. (Fladmark 1978).

In situ: a site, artifact, or feature found in its original location.

Karst: areas with many sinkholes and cave systems beneath the land surface.

Kindling scar: scars in the form of chop marks and missing narrow pieces of wood on a number of different types of trees. The missing material was probably used for kindling (Ministry of Forests 1997).

Lithic scatter: a deposit of stone tools and/or stone tool manufacturing waste.

LUCO: Land Use Coordination Office, The Land Use Coordination Office is custodian of several datasets pertaining to land use planning in BC. They include: Strategic Regional Land Use Plans, Land & Resource Management Plans (LRMP), and Protected Area Strategy (PAS).

Metadata: defined as information about data. A simple analogy is a library catalogue contains the location, author, subject, title, summary of books in the library- each book contains its own unique set of information. The catalogue contains the metadata, the books contain the data or information. It is important that the LandData BC metadata be current, complete and correct.

Microblade Technology: a system of flake production in which small parallel sided blade like flakes are removed from a prepared core.

Midden: a deposit of refuse produced by human activity. On the northwest coast middens usually have a high shell content but shell-free middens have also been recorded.

NTS: National Topographic System. A system of geographic map indexing which contains 16 map sheets in a standard 1 degree latitude by 2 degree longitude area.

Notched trees: these are standing, wind fallen, or felled trees in to which one or more notches have been chopped (Ministry of Forests 1997).

Oral history: the history, myths, and traditions of a culture which are passed down orally from one generation to another. Some of these histories were later written down by ethnographers.

Paleoenvironment: past environmental/climatic conditions (Fladmark 1978).

Petroglyph: pictures, symbols, or other art work pecked, carved or incised on boulders or bedrock surfaces.

Petroform: any artificial arrangements of rocks or boulders into rows or other patterns (Fladmark 1978).

PHRD: Provincial Heritage Registry Data Base. The Archaeology Branch of the Ministry of Small Business, Tourism and Culture maintains several data registers which comprise the Provincial Heritage Register Database. These registers include: Archaeology Sites, Designated Sites and Objects, Local and Regional Sites, Traditional Use Sites, Culturally Modified Tree Sites and Shipwrecks. Archaeological Potential Maps are also available.

Pictograph: aboriginally painted designs on natural rock surfaces. Red ochre is the most frequently used pigment and natural or abstract motifs may be represented (Fladmark 1978).

Pitch Collection Scar: a scar resulting from a cut made into the wood of a pine or spruce tree. This pitch was used for waterproofing, glue, caulking, scents, medicines, and other purposes (Ministry of Forests 1997).

Planked Tree: these are standing or non-standing (wind fallen or intentionally felled) trees from which planks were detached (Ministry of Forests 1997).

Playgrounds: areas specifically used by children.

Polygon: A GIS feature that has an area (e.g. circle, square), as opposed to a point or a line which contain no area.

Post-contact: the period of time following First Nations contact with Europeans.

Pre-contact: the period of time preceding contact with Europeans. Written documentation of this period on the Northwest Coast is not available.

Predictive model: a way of predicting where archaeological sites will be found based on observed common characteristics of site placement.

Prehistoric: the period prior to written records for any given area. In North America synonymous with pre-contact (Fladmark 1978).

Probabilistic survey: probabilistic survey is undertaken to get a potentially objective view of the distribution of archaeological sites. In probabilistic studies areas of survey are randomly selected rather than being chosen for potential for archaeological sites to be located.

Quarry: a site where lithic raw materials have been mined (Fladmark 1978).

Radiocarbon Dating: an absolute dating method based on the radioactive decay of Carbon-14 contained in organic materials (Fladmark 1978).

Reconnaissance: a non-systematic, non-intensive archaeological field survey to assess the potential for archaeological sites in a study area. A reconnaissance survey is upgraded to an archaeological impact assessment if potential for archaeological sites is considered to be high. This usually involves the addition of subsurface testing.

Rectangular bark strip: scars resulting from the removal of large slabs of outer bark used for roofing material for temporary shelters and over canoes under construction in the forest (Ministry of Forests 1997). These scars are usually rectangular or square. They are also known as bark boards.

Refugia: areas that were free of ice and habitable during periods of glaciation.

Regression: the term used to describe falling sea-levels.

Roasting pit: pits dig into the ground for roasting food. These holes are lined with rocks a fire is built on top of the rocks, food is placed inside and it is covered over.

Rockshelter: A dry shelter created by overhanging rock. Not to be confused with 'cave'.

Rockshelter Burial: A burial placed in a shelter created by a rock overhang.

S1-Large River: A category of the S1 stream riparian class designated as a 'large river' that has, on average, over a 1 km length of a stream: an average channel width of 100 m or greater, and; an active floodplain width (on one or both sides of the river combined) of 100 m or greater (Riparian Management Area Guidebook, see <http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/riparian/rip-toc.htm>).

Sectioned tree: trees where the stem (log) has been cut into two or more sections. The log sections show no signs of further modification though some sections might have been removed (Ministry of Forests 1997).

Settlement pattern: the spatial distribution of cultural activities across a landscape at a given moment in time (Fladmark 1978).

Shell midden: a varied mix of shell, bone, organic-rich silts, gravels, fire altered rock, ash, and charcoal (Acheson, 1991).

Site: a physical location where evidence of past human activity has preserved.

Slope: the rate of vertical change over a horizontal distance measured in degrees.

Subsistence features: a cultural feature related to the collection, processing, or storage of food. Examples include caches, traps, roasting pit, fences, traps and deadfall traps (British Columbia 1995).

Test hole tree: a standing tree with one or more rectangular holes chopped into its trunk. It is thought that these holes were made to determine the soundness of the heartwood of the tree (Ministry of Forest 1997).

Timber licence (TL): area-based tenures which revert to the government when merchantable timber on the area has been harvested and the land reforested. Many of these licences have been incorporated into tree farm licences.

Timber Sale Licence (TSL): an agreement entered into under Part 3, Division (3) of the *Forest Act*. A timber sale licence usually defines a specific volume of timber to be harvested from a specific area. In special circumstances, an allowable annual cut (AAC) is specified. Allows the orderly harvest of relatively small volumes of timber by operators with small cuts; operators registered under the Small Business Forest Enterprise Program or others with temporary cutting rights; and holders of pulpwood agreements.

Timber Supply Area (TSA): An integrated resource management unit established in accordance with Section 6 of the *Forest Act*. TSA's were originally defined by an established pattern of wood flow from management units to the primary timber-using industries.

Tradition: A continuum of gradational culture-change through time representing the unbroken development of a single culture (Fladmark 1978).

Trail: a linear modification of the earth's surface used for human travel from one geographic location to another (British Columbia 1995).

Transect: a linear sampling area. Traverse.

Transgression: a term used to describe rising sea-levels over the landscape.

Tree Farm Licence (TFL): TFL's are privately managed Sustained Yield Units. TFL's are designed to enable owners of Crown-granted forest lands and old temporary tenures or the timber licences which replace them, to combine these with enough unencumbered Crown land to form self-contained sustained yield management units. These licences commit the licensee to manage the entire area under the general supervision of the Forest Service. Cutting from all lands requires Forest Service approval through the issuance of cutting permits. TFL's should not be confused with Certified Tree Farms under the Taxation Act, though some Certified Tree Farm land (Crown-granted) may comprise a part of the TFL. A TFL has a term of 25 years.

Triangular bark strip (BST): also called tapered bark strips. These are relatively long and narrow scars, wider at the base and narrowing at the top to form a triangle, found on red cedar and yellow cedar.

TRIM: Terrain Resource Information Management system. This Ministry of Environment, Lands and Parks database is the Government standard base map upon which all spatial data analysis is performed. The Planimetric, Topographic, and Digital Elevation Information data is spatially georeferenced. The entire Province is covered at a scale of 1:20 000.

Undercut: a standing tree which has an area of missing wood and bark that was removed as part of the initial stage of felling a tree (Ministry of Forests 1997).

Weir: an aboriginal fish-trap based on a fence or barrier of stakes or rocks built across a stream (Fladmark 1978).

Wet site: Wet sites are found in areas with a permanent high water table such as intertidal zones (especially estuary areas), wetlands, rivers, lakes, and the ocean. Organic materials such as wood and plant fibre preserve in anaerobic environments (oxygen-free environments) which occur in waterlogged areas. "Wet site" refers to how the site was preserved rather than the actual site type in terms of function or content. Many wet sites likely represent camps, villages, or caches of material.

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Appendix 1. Kingcome Interview and Media Review Results.

Appendix 1. Tsawataineuk Interview and Media Review Results

Date	Interviewee	Interviewer	Tape Start	Tape End	TRIM Map	Location	Placename/ English Name	Type of Use/ Event/ Feature	Possible Feature	Activity	Season / Months of Use	Date Info.	Unique Id.	Comments
14-Mar-04	Tom Dawson	Mike Willie	31:04	31:30	92 M10	Where Atlatzi river meets Kingcome	Atlatzi	smoke house	smoke house	fishing, preparing fish				
14-Mar-04	Tom Dawson	Mike Willie	31:31	31:49	92 M10	Up from Atlatzi in Kingcome valley		smoke house	smoke house	fishing, preparing fish				
14-Mar-04	Tom Dawson	Mike Willie	32:44	33:21	92 M10	across from K'axsidze In Kingcome valely	Mooya'as	smoke house	smoke house	fishing, preparing fish				Went there when he was young
14-Mar-04	Tom Dawson	Mike Willie	33:22	33:55	92 M10	Between Atlatzi and K'axidze in Kingcome Valley		3 smoke houses	smoke house	fishing, preparing fish				Not sure who owned them or name
14-Mar-04	Tom Dawson	Mike Willie	34:39	34:53	92 M10	above Clear River In Kingcome Valley	Gildala	smoke house	smoke house	fishing, preparing fish				
14-Mar-04	Tom Dawson	Mike Willie	35:08	35:19	92 M10	Clear water in Kingcome valley	Clear River	smoke house	smoke house	fishing, preparing fish				fishing
14-Mar-04	Tom Dawson	Mike Willie	35:20	35:28	92 M20	above Gildala in Kingcome valley		smoke house	smoke house	fishing, preparing fish				Not sure the name
14-Mar-04	Tom Dawson	Mike Willie	36:06	37:07	92 M20	Kingcome Valley		fishing	fish traps, weirs					Pi xwa means hooking fish

Appendix 1. Tsawataineuk Interview and Media Review Results

Date	Interviewee	Interviewer	Tape Start	Tape End	TRIM Map	Location	Placename/ English Name	Type of Use/ Event/ Feature	Possible Feature	Activity	Season / Months of Use	Date Info.	Unique Id.	Comments
14-Mar-04	Tom Dawson	Mike Willie	39:04	39:34	92 M20	yawadi, Kingcome valley	Yawadi	getting cedar poles	CMTs	getting cedar poles				meadow
14-Mar-04	Tom Dawson	Mike Willie	39:37	40:25	92 M20	meadow / lake in Kingcome valley								meadow/lake "Sacred Place"
14-Mar-04	Tom Dawson	Mike Willie	48:54	49:33	92 M20	Galuda in Kingcome Valley	Galuda	place of origin						Galuda is a mountain
14-Mar-04	Tom Dawson	Mike Willie	1:30	2:44	92 M20	just belwo Satsalla river, across river	Kawadi	smokehouse	smokehouse	fishing, preparing fish				Kawadi is a place used for fishing and smoking
14-Mar-04	Tom Dawson	Mike Willie	2:44	3:10	92 M20	yawadi, above kawadi	Yawadi	meadow, poles, berries	CMTs					meadow
14-Mar-04	Tom Dawson	Mike Willie	6:25	7:00	92 M20	Kingcome valley, just above Tsuxwala		cedarbark	CMTs					
14-Mar-04	Tom Dawson	Mike Willie	7:31	7:51	92 M20	Hillside in Kingcome valley		canoe logs	CMTs					good logs for canoes are up on hillside higher elavation tighter grained wood.
14-Mar-04	Tom Dawson	Mike Willie	7:51	8:21	92 M20	Rivers Inlet		canoe logs	CMTs					log for canoe "quite a way in"

Appendix 1. Tsawataineuk Interview and Media Review Results

Date	Interviewee	Interviewer	Tape Start	Tape End	TRIM Map	Location	Placename/ English Name	Type of Use/ Event/ Feature	Possible Feature	Activity	Season / Months of Use	Date Info.	Unique Id.	Comments
14-Mar-04	Tom Dawson	Mike Willie	8:21	9:55	92 M20	South of Laxlax, half mile up eastern side in old setting		canoe logs	CMTs					half mile from river in old logged setting, maybe the canoe is stil there
14-Mar-04	Tom Dawson	Mike Willie	11:15	12:00	92 M20	trails to Kingcome flats (estuary)		trail to flats	trails	hunting, travelling				trail to flats (hunting ground)
14-Mar-04	Tom Dawson	Mike Willie	13:20	13:45	92 M20	trail to wakeman		trail to wakeman village	trail, camps	travelling				trail to Wakeman traditional territory village
14-Mar-04	Tom Dawson	Mike Willie	15:16	15:45	92 M20	Trail to Rivers Inlet		trail to village	trail, camps	travelling				trail over Kingcome headwaters along small valley beside glacier
14-Mar-04	Tom Dawson	Mike Willie	22:18	23:09	92 M20	Clear River		cave dwelling	cave, habitation					cave dwelling after war 1790, probably trail leading there. May be on right or left side of Kingcome, can see sandbar past Mudekwis from cave. Many people have tried to find the cave.
14-Mar-04	Tom Dawson	Mike Willie	23:14	24:38	92 M20	past Mudekwis, Kingcome valley	U'maxsdalis	smokehouse	smokehouse	fishing, preparing fish				smoke fish, trap cougars

Appendix 1. Tsawataineuk Interview and Media Review Results

Date	Interviewee	Interviewer	Tape Start	Tape End	TRIM Map	Location	Placename/ English Name	Type of Use/ Event/ Feature	Possible Feature	Activity	Season / Months of Use	Date Info.	Unique Id.	Comments
14-Mar-04	Tom Dawson	Mike Willie	26:57	28:03	92 M20	past Mudekwis, Kingcome valley	U'maxsdalis	deadfall traps	deadfall traps	trapping				trap cougars, bear, wolves
12-Mar-04	Tom Smith	Mike Willie	2:30	3:27	92L 100	across the river form Kingcome village		get cedar bark	CMTs					get roots for basket making
12-Mar-04	Tom Smith	Mike Willie	4:48	5:26	92L 99	maybe around mouth of Kingcome river		get canoe logs	CMTs					wasn't sure where to get the Logs
12-Mar-04	Tom Smith	Mike Willie	6:47	7:20	92L 88	Penphrase Pass between K.I. and Gilford Island		stripped planks	CMTs					loggin camp picked people up to go look at CMT way up the hill
12-Mar-04	Tom Smith	Mike Willie	8:21	8:57	92L 100	across from the old bighouse in Kingcome Valley		trail to fish pool						
12-Mar-04	Tom Smith	Mike Willie	8:58	9:52	92M 39	up at the glacier in the Kingcome Valley		trail to glacier	felled sapling trees, CMTs					felled trees so they could pull canoes over landslide

Appendix 1. Tsawataineuk Interview and Media Review Results

Date	Interviewee	Interviewer	Tape Start	Tape End	TRIM Map	Location	Placename/ English Name	Type of Use/ Event/ Feature	Possible Feature	Activity	Season / Months of Use	Date Info.	Unique Id.	Comments
12-Mar-04	Tom Smith	Mike Willie	11:21	11:59	92M 10, 20	Kingcome Valley	Atlatzi, Mudekwis, K'awadi		smokehouses					places up river where smokehouses were
12-Mar-04	Tom Smith	Mike Willie	12:04	12:37	92M 30	above Atlatzi, Kingcome	Pe K'lala Wi'xlikla Klasbalis	Smokehouse, meadow	smokehouse	fishing, preparing fish				Klasbalis is a meadow
12-Mar-04	Tom Smith	Mike Willie	15:35	15:46		all the way up Kingcome Valley		smokehouses	smokehouses	fishing, preparing fish				he heard a story that there were smokehouses all the way up the valley because there were a lot more old people.
12-Mar-04	Tom Smith	Mike Willie	16:16	16:47	92M 10	below Clear River in Kingcome	Gildala	smokehouse						
12-Mar-04	Tom Smith	Mike Willie	17:23	17:42		Viner Sound		trail, smokehouse						smoke fish
12-Mar-04	Tom Smith	Mike Willie	19:09	20:15	92M.10 92M20	meadows in Kingcome valley		hunt for bears						hunt for bears in any meadow
12-Mar-04	Tom Smith	Mike Willie	20:30	20:45	92L 99, 88	Petty point, Moore Bay		rock paintings						little paintings in Moore Bay
12-Mar-04	Tom Smith	Mike Willie	25:18		92M 39	Kingcome Glacier in Kingcome Valley		travel	Trail					Poled canoe right up to the glacier

Appendix 1. Tsawataineuk Interview and Media Review Results

Date	Interviewee	Interviewer	Tape Start	Tape End	TRIM Map	Location	Placename/ English Name	Type of Use/ Event/ Feature	Possible Feature	Activity	Season / Months of Use	Date Info.	Unique Id.	Comments
3-Jun-96	Jack Henry	Mike Willie	1:50	3:05		Kingcome River, whole valley		smokehouses			summer / fall			a dozen smokehouses along river starting at village going north 25 miles
3-Jun-96	Jack Henry	Mike Willie	3:05	3:51	92M 20	Kingcome River, 25 miles up river	K'awadi	smokhouse			summer / fall			K'awadi means "shallow"
3-Jun-96	Jack Henry	Mike Willie	3:51	5:00	92M 20	just below Kawadi	Aliwasdaxstuls	smokehouse			summer / fall			Chief Dick Webber's smokehouse, a lot of spruce trees there
3-Jun-96	Jack Henry	Mike Willie	5:40	6:00	92M 20	below Gildala	Laxu (Clear River)	smokehouse			summer / fall			
3-Jun-96	Jack Henry	Mike Willie	6:56	7:30	92M 20	Below Laxu, Kingcome valley		Smith smokehouse			summer / fall			
3-Jun-96	Jack Henry	Mike Willie	7:30	8:00	92M 20	along Kingcome River	next river down	2 smokehouses			summer / fall			Charlie and Peter Moon's smokehouses
3-Jun-96	Jack Henry	Mike Willie	8:00	8:30	92M 20	Kingcome R.	next river down, Tli tsa'i	smokehouses			summer / fall			Dan Willies smokhouse, 4 smokehouses there
3-Jun-96	Jack Henry	Mike Willie	9:30	10:00	92M 20	Kingcome R.		smokehouses			summer / fall			Peter Scow
3-Jun-96	Jack Henry	Mike Willie	10:00	10:20	92M 20	Kingcome R.					summer / fall			Bertie Robertson
3-Jun-96	Jack Henry	Mike Willie	10:20	10:30	92M 20	Kingcome R.					summer / fall			Same Webber, close to bridge

Appendix 1. Tsawataineuk Interview and Media Review Results

Date	Interviewee	Interviewer	Tape Start	Tape End	TRIM Map	Location	Placename/ English Name	Type of Use/ Event/ Feature	Possible Feature	Activity	Season / Months of Use	Date Info.	Unique Id.	Comments
3-Jun-96	Jack Henry	Mike Willie	10:30	10:40	92M 20	Kingcome R.					summer / fall			Ned Coon
3-Jun-96	Jack Henry	Mike Willie	10:40	11:00	92L 100	Kingcome R.	U'maxdalis	smokehouses			late summer into fall			William Johnson's smokehouse
3-Jun-96	Jack Henry	Mike Willie	13:40	14:10	92L 100	Kingcome R.	U'maxdalis	smokehouse			late summer into fall			William Johnson's smokehouse
3-Jun-96	Jack Henry	Mike Willie	15:02	15:29	92L 100	Kingcome R.	Wa wen k'es	smokehouse			late summer into fall			Ned Coons smokehouse
3-Jun-96	Jack Henry	Mike Willie	31:01	32:73	92M 10	Below satsalla in a lake	K'unk'ala nux	harvest goose eggs	CMT, canoe					Have canoe there
3-Jun-96	Jack Henry	Mike Willie	38:30	38:53	92M 30	Lax lax, Kingcome R.	Lax lax	habitation	log house					Frank Dawson and Jack Nun came from there.
3-Jun-96	Jack Henry	Mike Willie	38:29	39:00	92M 30	Lax lax, Kingcome R.	Lax lax	cave	trail to cave possible					
3-Jun-96	Jack Henry	Mike Willie	39:36	40:50	92M 20	Xwulkw in Kingcome valley	Xwulkw	village site						Across from Satsalla clam shells found at old village site

Appendix 2. Mappable locations from source documents.

Appendix 2. Mappable Locations From Source Documents

reference	use type	variables	description
Flora Dawson in Williams (2001:145)	clam gathering	<i>Gwayasdums</i>	"excellent clams"
Flora Dawson in Williams (2001:145)	clam gathering	<i>Kuk-wa-pa</i>	Insect Island. "best clams.. At Insect Island"
Boas 1969 [1934]:map 13	?	<i>deqwell'a</i>	stakes driven in on rock (#47 on map)
Boas 1969 [1934]:map 13	?	<i>k a'dxek!waas</i>	place of shredding cedar bark on rock (#86 on map)
Boas 1969 [1934]:map 13	berry picking	<i>q!walemdxade</i>	having salmon berry bushes (#32 on map)
Boas 1969 [1934]:map 13	berry picking	<i>ha'mademis</i>	berry picking site on beach (#57 on map)
Boas 1969 [1934]:map 13	berry picking	<i>ha'myade</i>	having berry picking (#65 on map)
Boas 1969 [1934]:map 13	burial	<i>dek!es</i>	grave on ground (#51 on map)
Fry 1897 map of the Ah-ta Valley Range 1	burial		"Grave islands", three unnamed islands just north of Anchorage Cove, and west of Lot 134.
Boas 1969 [1934]:map 13	camp	<i>g eg ok!wade</i>	having a hunter's shed (#28 on map)
Boas 1969 [1934]:map 13	camp	<i>leqwe</i>	fire (camping ground) (#67 on map), corresponds with Zakwai I.R. #2.
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A:121	camp	<i>Awakj-gla-laa</i>	Thomas Point. Two Indian houses there.
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A:121	camp	<i>Kawages</i>	North shore of Simoon Bay. There was an Indian house there
Fry 1897 map of the Kingcome Valley	camp		Indian house shown on the north side of the Kingcome River, north of Atlatzi River (approximate location UTM Nad 83 699100.3 5658341.3) in lot 131
Fry 1897 map of the Kingcome Valley	camp		Indian house shown on the north side of the Kingcome River, north of Atlatzi River, approximately 600 m north of (UTM Nad 83 699100.3 565341.3) in lot 137
Boas 1969 [1934]:map 13	camp	<i>gogyewe</i>	Galois suggests this is a place-name indicating a house site. Boas translates gogyewe as "house in middle" (Boas 1969 map #13). Shown on the west side of the Kingcome north of the Clear River. Galois (1994:103) states "This is a placename which suggests an old settlement site".

Appendix 2. Mappable Locations From Source Documents

reference	use type	variables	description
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A:121	CMT	<i>Walak</i>	There were no houses at this place, to which the Indians went to make canoes, living while there in shacks; the place was wanted for the timber and for hunting and trapping.
Thomas Smith 1997 tape 1 March 17 transcript:82	fishing station		"This is another fishing station?" "Yeah well because of the stumps hey we can't make a whole long drag"
Boas 1969 [1934]:map 13	fishing station	<i>waselas</i>	place for making (gathering) herring spawn (#24 on map)
Boas 1969 [1934]:map 13	garden	<i>t!e t!ek I lak</i>	clover gardens (#106 on maps)
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A:114	garden		"the place where the Indian women used to dig roots out of the ground, and where they had individual marks for each one and had put down stakes to mark the boundary lines for each one" [Lot 147 where A. McKay settled]
Boas 1969 [1934]:map 13	goat hunting	<i>lewe nas</i>	place of mountain goat hunting (#73 on map)
Boas 1969 [1934]:map 13	lithic quarry	<i>xwe laes</i>	"quartz on beach" (#8 on map)
Boas 1969 [1934]:map 13	lithic quarry	<i>xex de ma'</i>	rocky site for gathering stones (for cooking) (#59 on map)
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A:120	old camp	<i>Lak-wai</i>	At Charles Creek. "There were a number of Indian houses there; it was and old camping place of the Indians."
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A:121	old village	<i>Batl-ki</i>	Belle Isle Sound. Old village site.
RCIA 1914 RG10 Vol. 11025 file AH6A:121	old village	<i>Leik</i>	Old village site with one house remaining
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A:121	old village	<i>Kuk-wa-pa</i>	Insect Island. Large old village site.
Duff papers, file 122, 131	old village	<i>q'e ltelik</i>	old village site across the river from Quae, Duff locates it on the west side opposite Quae.
Boas 1969 [1934]:map 13	root collection	<i>ts'o yade</i>	having root digging (#90 on map)
Thomas Dawson 1997 tape 3 June 19:35	spiritual place	<i>usher k'asidze</i>	"And this Kawadila_kala_ during the flood was supposed to have put his regalia there. There's a box, looks like a box" (in mountain Usher K'asidze)
Boas 1969 [1934]:map 13	spiritual place	<i>q!we qwa laxa's</i>	places of hiding repeatedly the cedar bark bedding of cradles (#62 on map)

Appendix 2. Mappable Locations From Source Documents

reference	use type	variables	description
Boas 1969 [1934]:map 13	spiritual place	<i>q!we qwa laxa's</i>	places of hiding repeatedly the cedar bark bedding of cradles (#85 on map)
Galois 1994:131, Boas 1969 map 13 #40	spiritual place	<i>a!wagawe'</i>	Hidden Creek, Kingcome Inlet, place where the ancestral brothers of the Hahuamis and Tsawataineuk met. Boas located at the mouth of Holden Creek (corresponds with Boas 1969 map 13 #40 q!a'zsidze.
Thomas Dawson 1997 tape 5 June 19:70	trail		"Just hunting yeah, yeah they have a trail according to my dad, trail right from, right over hunting ducks (trail Kingcome to Wakeman)
Thomas Dawson 1997 tape 5 June 19:71	trail		"there was one [trail] up at Clearwater that went to Wakeman"
Corrigan 1896:822	trail		"About ten miles from the mouth [Kingcome River] a stream called by the Indians the "Lahaw" comes in on the west side. The Indians at times follow up this stream and cross the divide when en route to the Wakeman River"
Corrigan 1896:822	trail		"At about fifteen miles from the mouth the river branches into two, the one from the east [Atlatzi?] entering the main river through a narrow deep valley. Near the junction, on the branch, is a high fall of about thirty feet. Over this the Indians 'portage' their canoes when proceeding further up."
Boas 1969 [1934]:map 13	trail	<i>ts!e qwe lax ha'da</i>	trail to Ha'da (#88 on map)
Boas 1969 [1934]:map 13	trail	<i>ts!e qwe</i>	trail across peninsula from Bond Sound to Kwatsi Bay (#91 on map)
Dawson 1887a:11	village	<i>Kwa-us-tums</i>	Tsawatainuk, A-kwi-amish and Kwi-wa-a-nuk "in winter, come together in a rather large village on the west coast of Gilford Island, just north of Heath Bay, named Kwa-us-tums
Galois 1994:128/Dawson map 1887 #90	village	<i>Hata</i>	Hata, Bond Sound, Dawson (1887:73; Dawson map 1887 #90) identified this as a Tsawataineuk site; other sources indicate that it belonged to the Kwiksootainuk
Dawson 1887a:11	village/camp	<i>Ha-ta</i>	"they [Tsawataineuk] go, in summer, in part to Ha-ta at the head of Bond Sound"
Dawson 1887a:11	village/camp	<i>Kwa'e</i>	they go in part to "Kwa'e at the head of Kingcome Inlet" in summer
Dawson 1887a:11	village/camp		"the detachment going to the last named place [Kwa'e] lives first, during the salmon season, at the west angle of the inlet and subsequently moves over to the east angle to gather "clover root."

Appendix 2. Mappable Locations From Source Documents

reference	use type	variables	description
Wilson 1991	Bark-stripping		"on the small point proposed for equipment drop-off, a numberof culturally modified trees are present. These rectangularr trees are all very recent, having been modified in the past few years with exception of a single stripped cedar which is obviously much older"
(Canada & BC 1914b) RCIA 1914 RG10 Vol. 11025 file AH6A	Burials	<i>dek'es</i>	Cesaholis stated "Burying place is an old one". Impacted by railway logging camp, start of railway. Boas 1909, Mpa 13, place # 51 is <i>dek'es</i> (burial on ground).
T. Smith (pers. Comm. 2004)	Burials	<i>Gwa'yi</i>	Platform burials gathered together and placed in communal burial at Gwa'yi in the 20th century.
T. Smith 2004 March 12	trail		There is a trail in Viner Sound
Galois 1994:131	habitation	<i>K'axsidza'yi</i>	"A mountain, located up the Kingcome River, referred to in the narrative by Jim King. Boas (1969 [1934]:map 13) places it on the west side, just south of Clear River. None of the peaks in this area have English -language names"
Galgalis interview, T. Dawson M-006	CMT	<i>Xaxwadama</i>	Bark taken from Anchorage Cove.

Appendix 3. Archaeological correlates from source documents.

Appendix 3. Archaeological Correlates From Source Documents

reference	use type	variables	description
Flora Dawson in Williams (2001:145)	clam gathering	outer islands, Gwayasums	"excellent clams"
Flora Dawson in Williams (2001:145)	clam gathering	outer islands, Insect Island	"best clams.. At Insect Island"
Billy Robertson 1997 Galgalis interview	clam gathering	Simoom Sound	Butter clams in Obrien Bay, whole Simoom sound to Pollard Point
Gertrude Robertson 1997 tape 2 March 15:16	berry picking	high elevations	"it's [cranberries] way up the river and up the mountain, like you have to go up higher higher"
Thomas Dawson 1997 tape 1 June 19:9	berry picking	meadows	
Dawson 1888:348-349	burial	fir trees near village	one type of grave of the Kwakwaka'wakw consists of "little scaffolds to which the coffin-box is lashed, high upon the branches of fir-trees." "The trees used for the deposit of the dead are often quite close to the village."
Thomas Smith 1997 tape 3 transcript:26	burial	on river islands	
Dawson 1888:348-349	burial	rocky islet/insular rock	one type of grave of the Kwakwaka'wakw consists of "tombs built of slabs of wood on the ground." "when a tomb is placed upon the ground, it is generally on some rocky islet or insular rock, which may be farther away but is still in sight from the village."
Thomas Dawson 1997 tape 4 June 19:44	deadfall trap	cluster of boulders	"well I saw it but I never really got to see ah, the mechanics of it. All I did see was this thing with a whole bunch of boulders on top of it"
Thomas Dawson 1997 tape 4 June 19:45	deadfall trap	near spawning streams	You probably won't see it there but farther up particularly close to spawning streams..."
Thomas Dawson 1997 tape 4 June 19:45	deadfall trap	on trails	"All his deadfalls were on trails, like bear trails along these banks.."
Thomas Smith 1997 tape 3 March 15 transcript:69	duck hunting	near slew	"behind the village...there is a little slew there"
Thomas Dawson 1997 tape 4 June 19:49	fish weir	stakes in river	"the other method is what they call yowisa_. They drove a whole pile of um stakes poles T'suxwa?me is as you call them. That's hemlock chips. Right clean across. Only room for canoe to go by on other side and they'd put um boughs through it."
Dawson 1887a:5	garden	old village sites	potato gardens were cultivated "in very small patches in a number of places, generally on cleared spots which have, at one time, been village sites" (Klaso-ki-no people).
Thomas Smith 1997 tape 2 March 15 transcript:65	geese hunting	at lakes	"there is a lake here...where the boys go hunting for geese"
Thomas Dawson 1997 tape 1 June 19:12	goat drive	ledges on glacier	"See my dad told me before the advent of the rifle, there's ledges up here....they would sneak up on this end and drive them off the other end"

Appendix 3. Archaeological Correlates From Source Documents

reference	use type	variables	description
Thomas Dawson 1997 tape 4 June 19:55	grease reduction places	close to the river	There was one along the side there and one on the other side of the stream" "they're all close to the river".
Dawson 1888:349	hearth	hearth indicating burial locations	"After the body has been deposited in the grave, a fire is made near it."
Thomas Smith 1997 tape 1 March 17 transcript:85	hunting areas (deer and bear)	meadows	"they just be meadows they used to be hunting places for our boys"
Thomas Smith 1997 tape 2 transcript:26	smokehouses	curve in river where it would slow down	"all up and down the river they had smokehouses" "And usually when they had a curve in the river the river would slow down" "It would be shallow here because of the curve" "Its deep on the one end" "And then you can kind of fish there
Dawson 1888:347	spiritual	cliffs	Baby cradle and bedding are deposited in a special place after baby grows out of cradle. The bedding is "carefully collected and carried to a recognized place of deposit". "Every village probably has such a place of deposit. That for the Ka-loo-kwis village is a sheltered recess in limestone cliffs at the western extreme of Harbledown Island....Another similar recess in a cliff... exists on the south side of Pearse Peninsula, east end of Broughton Island...At Mel-oopa..beneath logs, at the back of the village, and not on shore."
Dawson 1888:346	village	edge of beach facing sea	village consist usually of a single row of houses ranged along the edge of the beach and facing the sea
Dawson 1887a:4	village	low shore	"low shores well adapted for the landing and beaching of canoes have usually been selected for the more important villages."
Dawson 1887a:4	village	near rocky point, high rocky island	low shores near a "rocky point or promontory or small high rocky island which could be utilised as a fortification" were desired for villages
Dawson 1887a:11	village	on point	Kwa-us-tums was built on a point the houses facing two ways which was unusual
Dawson 1887a:4	village	near rocky point or island	"almost every suitable rock along the coast shows evidence of having, at one time, been inhabited as a fortified village..."
Boas 1966:43	village	near salmon streams	"many of the places claimed as original village sites give evidence of early habitation by the presence of shell mounds, but these are so numerous along the coast that probably no habitable place near the mouth of a salmon stream can be found that would not have been a house site at sometime"

Appendix 3. Archaeological Correlates From Source Documents

reference	use type	variables	description
Billy Robertson 1997 Galgalis interview	Burials	Kingcome Inlet	His father said "burials were all along", either meaning all along the north side of Kingcome Inlet or all of Kingcome Inlet.

Appendix 4. Mapped Survey Coverage.

Appendix 4. Mapped Survey Coverage

Survey table from GIS layer

PERMIT NUMBER	DEVELOPMENT ID	SURVEY TYPE	SOURCE
2000-052	BLK 8805E	JS, RC	Permit 2000-052 report, Fedema & Pratt 2001
2000-052	BLK 8807	RC	Permit 2000-052 report, Fedema & Pratt 2001
2000-052	BLK 8801	RC	Permit 2000-052 report, Fedema & Pratt 2001
2000-052	BLK 8803	RC	Permit 2000-052 report, Fedema & Pratt 2001
2002-95	BLK CC04	RC, SC, JSS	Permit 2002-095 report, Mathews 2002. Also PFR survey results in Permit report 2000-293, Hewer 2001
2000-293	BLK CC05	RC	Permit 2000-293 report, Hewer 2001
2000-293	BLK CC06	RC	Permit 2000-293 report, Hewer 2001

Survey Type Definitions

Type Abbrev.	Survey Type	Survey Type Definition
JSS	Judgemental Subsurface	Judgemental subsurface testing at minimum in areas noted in the field as containing high or medium potential.
ISS	Intensive Subsurface	Subsurface testing at regular intervals no more than 25 m apart.
JS	Judgemental Shoreline	Surface inspection of shoreline areas thought to contain medium to high potential.
SS	Systematic Shoreline	Thorough surface inspection of shoreline
RC	Reconnaissance CMT	Partial surface coverage (at least 30 % of polygon) with no subsurface testing.
SC	Systematic CMT	Surface inspection (80-100% of polygon) with no subsurface testing.
CC	Check CMT	The area has been previously surveyed and the survey results are being checked and/or CMTs are being buffered.
JI	Judgemental Intertidal	Surface inspection of general area noted in report or shown on map
SI	Systematic Intertidal	Complete surface inspection coverage of specific area.
JSI	Judgemental surface inspection	Inspection of a study area, not including subsurface testing, in locations deemed to have potential for archaeological remains.
SSI	Systematic Surface Inspection	Survey of a study area using transects spaced at regular intervals or based on thorough coverage of the study area. Areas for survey are not selected based on potential but on checking a significant portion of the study area
E	Excavation	Areas that have been systematically excavated by permit.
O	Other	This includes studies that do not discuss the methodology employed during the investigation or where the study or survey area is not clearly defined. It also includes permitted studies which do not include survey such as burial studies.