

## **PRELIMINARY ARTIFACT AND FAUNAL ANALYSIS OF DISd-6: YEAR 1 (2008)**

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As part of the Tla'amin First Nation-Simon Fraser University archaeology field school, material culture was collected by students from the excavation site *Kleh Kwa Num* or Scuttle Bay (DISd-6). The site is located in Tla'amin (Sliammon) First Nation Territory between Powell River and Lund, British Columbia. Following the field school, I identified and analyzed a sample of the recovered artifacts and faunal remains from DISd-6. The recognition of natural and cultural changes throughout the past 100-150 years at the site, as reflected in the archaeological record, was the focus of this analysis. The purpose of this study was to contribute to the understanding of this site in relation to the last century or so of Tla'amin history. It is clear, from the results of this analysis, that human/cultural activities played a major role in the range, distribution, and condition of the artifacts and faunal species at *Kleh Kwa Num*.

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This report presents the results of the artifact identification and faunal analysis of a sample of cultural material recovered from *Kleh Kwa Num* (DISd-6) during the 2008 field school season. A visible change in technology and subsistence at this site and perhaps the larger nearby area over the past century is seen in the archaeological record. This change may have been at least partially the result of the growing non-Native settlements in the vicinity (Lund and Powell River). An increased demand on natural resources and greater quantities of industrially manufactured goods in the area shows up in the archaeological record through a change from traditionally manufactured First Nations artifacts to mass-produced industrial artifacts as well as a decrease in the number of Pacific Herring (*Cupea harengus*) and salmon (*Oncorhynchus sp.*).

The significance of this study is to be able to show that Tla'amin territory and people have been influenced by and impacted by the changes mentioned above. Even with a small sample of cultural material, as was used in my study, it is easy to see a distinct transformation in the material in the archaeological record at *Kleh Kwa Num*. For the purposes of this study, I asked questions relating to resource use, butchering patterns, the abundance of species in relation to other similar sites, seasonality of the site, and general site use in order to better understand *Kleh Kwa Num*. My main research goal was to determine whether there was any cultural or ecological change at *Kleh Kwa Num* that could be seen in the archaeological record, and the extent of that change.

Using texts and comparative collections, I identified the artifacts and faunal remains from my sample. I used the artifacts as a means of relative dating since some are specific to a certain time period. This allowed me to relate the faunal remains found in association with these artifacts to different times throughout the past 100-150 years at *Kleh Kwa Num*. To analyze the faunal remains, I used the method of number of identifiable specimens (NISP) and through this analysis I was able to gain some understanding of the site.

## **Background to Research**

The fieldwork aspect of this project took place from the beginning of June to the end of July of 2008 as an archaeology field school. The location was Scuttle Bay or *Kleh Kwa Num* on the Tla'amin reserve, just north of Powell River, BC (Johnson et al. 2008 and Lepofsky et al. 2008).

*Kleh Kwa Num* was chosen as an excavation spot because of its proximity to the main Tla'amin Nation Reserve (Sliammon) and Powell River. Tla'amin community members recommended this particular spot because it is a place important to their people and it was a known herring processing site (Fig. 1).

We aligned the six excavation units along the flattest portion of what was once an island at *Kleh Kwa Num* (Scuttle Bay), since flat areas are the most likely to have been utilized by people. The units were also aligned with the UTM grid to make it easier to map (see Appendix 1).



**Figure 1-** Excavation at Kleh Kwa Num or Scuttle Bay (DISd-6)

We then employed the following general excavation methods: the site was excavated in 10 cm arbitrary levels in case changes in cultural or natural layers were not visibly apparent as we excavated horizontally. When there was a distinct change in the matrix within the 10 cm levels, the material from it was bagged and recorded separately. We screened the recovered sediment using 1/8<sup>th</sup> inch screen. This method, in particular, allowed us to collect small faunal remains, especially herring (*Clupea pallasii*) and salmon (*Oncorhynchus sp.*) bone. In addition, we used floatation methods to collect material, including fish bone from the heavy fraction. We mapped the entire site using a total station, which was also used to record the location of artifacts found in-situ.

During the seven weeks we spent excavating, several cultural layers were uncovered. The material associated with those layers has been brought back to Simon Fraser University in order to be examined. By the end of the field season's work on 2m x 2m units, we had reached an average depth of only 20 cm; however, a substantial amount of material was recovered from each of the six units.

Of the six excavated units, I examined two as representative samples from the

site. The units I looked at specifically are 114E 9754N and 112E 9750N. I chose unit 114E 9754N because it was the unit that I excavated over the summer and was therefore most familiar with its contents. The second unit I chose to use for my research is unit 112E 9750N since it is not touching unit 114E 9754N on any side and is removed by one unit from the unit I excavated; I hoped this would provide unique information and give a better representative sample than if the two chosen units were side-by-side. In addition, I used unit 112E 9750N because it was level and would not have been affected as much by the slump coming from the rock outcrop to the east or the loss of material over the hill to the ground below (off the west side).

*Kleh Kwa Num* is a significant site in the history of Tla'amin First Nation. Uncovering data about occupation and use of the area is important to both the current band members living in the area and to others affected by or interested in this research. Although *Kleh Kwa Num* has been and will be used as a teaching location for archaeology students, invaluable information has been gained from this site and the region that surrounds it.

Previous research in the surrounding region (Northwest Coast) that is relevant to my study consists of research of fish trap and weir use in the Comox area and their respective application to resource use (Caldwell 2008). Iain McKechnie's (2005) research delves into the history of fishing (for the past 5000 years), as can be seen in the archaeological record in nearby Barkley Sound. Diane Hanson (1991) analysed faunal remains found in the southern Gulf of Georgia region and compared the findings to ethnographic data. Aubrey Cannon (2000) assesses the variability in salmon and herring fisheries on the Northwest Coast. These and other studies were used to identify the research questions for this study and the methods I am interested in using to answer the questions.

## **Research Questions**

In order to better understand the history of the site and of Tla'amin people, I attempted to answer several questions:

- Which animals were being procured for food? Are there indications of the use of local and non-local resources?

- How do the material remains reflect of butchering patterns? Do the butchering patterns show selectivity for certain parts of the animal and/or indicate any possible past uses of the site itself?
- Are there any remnants of animals not likely to have been used for food?
- What was the overall abundance of animal species present at the site in comparison to other similar sites in the region (Northwest Coast) (Caldwell 2008, Cannon 2000, Coupland 1991, Gay and Crockford 2005, McKechnie 2005, Monks 1987, Trost 2005)?
- Can seasonal use of *Kleh Kwa Num* be inferred from the archaeological record using faunal remains from the site?
- Can the range of activities/use of the site be determined from the material remains gathered?

The following table (Table 1) illustrates the data collected and needed to answer these questions and for further future research.

	<b><i>What was found?</i></b>	<b><i>Data needs?</i></b>	<b><i>Activities Performed?</i></b>	<b><i>Future data needs?</i></b>
<b><i>Construction/ Demolition of Structures</i></b>	Wire nails, roofing nails, charred and un-charred wooden planks and beams (in regular patterns), slate roofing tiles	Size and orientation of structures, dates and types of hardware used, post-holes/ orientation of structures prior to demolition, date and type of demolition	Original function of structure, how many people needed to build, any changes in function and placement of structures	Exposure of occupation surface and/or profiles of structures and distinct bounties of structures; location(s) of heat sources, drying racks, storage areas, etc., ethnographic data on past site use

<b><i>Food Procurement</i></b>	Fishing implements, bone and stone points, bullets, fish, faunal, and plant species	Identification of species present, NISP, recovery of food procuring materials	Hunting and/or collecting/ gathering and/or management of resources, making of and/or trade for materials needed to procure resources, terrestrial vs. marine species, seasonality	Recovery of faunal remains and procurement materials from lower layers and from the rest of the site, comparison of species and material to similar sites, ethnographic data on food procurement
<b><i>Food Processing</i></b>	Charred and un-charred fish bone and other faunal bone, marrow-extracting tool, possible cut marks on bones, plant seeds and other parts	Evidence of alteration of faunal remains (e.g. charred) and/or selectivity of certain parts (e.g. salmon heads are removed), processing materials (marrow removing tools, drying racks)	Cleaning, filleting, and drying or smoking fish and other meat; drying and/or storage of plants and other food	Recovery of remains altered or selected for from lower layers and from the rest of the site; comparison of species and methods used to similar sites, ethnographic data on food processing
<b><i>Food Consumption</i></b>	Fish bone and other unaltered faunal bone (i.e. not tools), inedible plant parts, discard patterning	Faunal and inedible plant remains with non-random patterning of discard, evidence of extraction of edible parts (e.g. marrow)	Consumption of plant and animal foods, extraction of all edible parts (e.g. marrow, "meat" of the plant, disposal of inedible remains in pits or away from living areas	Excavation of lower layers in units and the rest of the site to recover remains and observe any discard patterns, exposure of trash pits in profiles; comparison of species consumed and patterning to similar sites

<b><i>Other Resource Procurement/ Processing/ Consumption</i></b>	Bear phalanges and meta-carples/tarsals, slate with cut edges, non-traditional material (nails, files, etc.), structural materials, bone and stone for tools	Collection of materials not traditionally used for food, provenience of materials (to observe patterns)	Skinning of animals by a taxidermy, collection of material and construction of structures, finding materials and making of tools and non-utilitarian objects, trade for non-traditional materials	Exposure of profiles and structure floors, excavation of non-food resources in lower layers and in throughout the rest of the site, gathering ethnographic data of traditional use of these materials
<b><i>Discard Behaviour</i></b>	Faunal remains, FCR, refuse (historical and non-historical materials), shell midden, trash pits	Observable patterning throughout the site of specific materials, collection/ recording of these materials	Discard of used material, debris, and food remains in specific or random places throughout the site	Exposure of living floors and profiles for pits, examination of banks and slopes for debris, excavation of mounds or irregular landforms for midden
<b><i>Exchange</i></b>	Metals (nails, file, etc.), beads, buttons, bullets, china, dimes, glass, battery, crucifix	Evidence of non-local and/or non-traditional materials at site,	Local and/or long distance trade with other First Nations and Europeans, production of materials specifically produced for the purpose of trade	Evidence for the mass production on site (or nearby) of certain items/materials by Tla'amin people, ethnographic data detailing trade networks and trade materials

<p><b><i>Change in Resource Use/ Seasonality</i></b></p>	<p>Fish, faunal, and plant remains, tools for procuring/ processing of resources</p>	<p>Increase or decrease in certain resources in the archaeological record, material remains of resources only procured in specific seasons</p>	<p>Focus on other resources due to the loss or decreased presence on one or more traditional resources, hunting/gathering of food only in certain seasons (e.g. fall salmon run, summer berry picking)</p>	<p>Recovery of faunal and plant remains from lower layers in the units and from the rest of the site, comparison of species to similar sites, ethnographic and current data on resource change and seasonality of resources</p>
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**Table 1-** Data needed in order to answer current and future research questions.

**Methods**

*Research Questions*

To address the first question, “which animals were being procured for food?” I examined the collected faunal remains from units 114E 9754N and 112E 9750N. This material consisted of fish, land mammal, and avian remains. Using zooarchaeological literature and Simon Fraser University’s zooarchaeological collection, I determined the species present as best I could (many of the remains were very fragmented). Following this, I examined literature detailing the species of animals present in the area (southern Northwest Coast of British Columbia) to determine which were considered sources of food.

The next question, “how do the material remains reflect on butchering patterns? Do the possible butchering patterns reflect selectivity for certain parts of the animal and/or indicate any possible past uses of the site itself?” was answered by examining the skeletal remains at the site. The processing of fish and other animals was demonstrated by the presence or absence of certain remains. With the aid of zooarchaeological texts and the SFU zooarchaeology collection, I identified which parts of the animal were found

at the site and determined the patterning in the recovered remains.

This question relates to the previous two: “are there any remnants of animals of which the primary use was not for food, present at the site?”. To answer this question, I examined the presence or absence of skeletal remains and their respective distribution throughout the site, with the aid of literature detailing the uses of animals, zooarchaeological texts, and the collections.

“What was the overall abundance of animal species present at the site in comparison to other similar sites in the region (Northwest Coast)?”. This question was important in showing the possible uses of the site as well as showing how resources changed over time from cultural or natural happenings. It shows which animals were most important to the Tla’amin people in the past and will demonstrate the abundance of particular species (i.e.- herring and salmon). I answered this question by examining the faunal remains from the site and determined which were most commonly found in comparison to other species at the site from the same cultural layers. My examination was aided by both the zooarchaeology literature and the collection at SFU. Following an intra-site comparison, I reviewed the literature to determine if there are any significant differences or parallels from other Northwest Coast sites.

Building upon knowledge of abundance, the next question is, “can seasonal use of *Kleh Kwa Num* be inferred from the archaeological record using faunal remains from the site?”. This was an important question for determining the past of the site. Seasonal use indicators may also suggest whether the site had specific purpose(s), and whether these changed through time. This examination showed which animals were focused on during a particular season for primary food sources. To answer this question I consulted literature detailing the animals in the area that are seasonal inhabitants (i.e.- birds and fish).

The last research question I addressed is, “can the range of activities at the site be determined from the material remains gathered by the members of the field school?”. This involved both the faunal remains as well as the artifacts collected from the site. Both of these types of material remains tell a story of the site’s recent past and its main uses. The artifacts change over time and space as the use of the site itself changes. Using zooarchaeological and Northwest Coast artifact literature, the SFU collections, and any ethnographic literature or First Nations accounts of the history of the site, I

determined the possible uses and activities the site has experienced over time.

### *Sampling*

Of the six excavated units, I examined two as representative samples from the site. The units I looked at specifically are 114E 9754N and 112E 9750N. I chose unit 114E 9754N because it was the unit that I excavated over the summer and was therefore most familiar with its contents. The second unit I chose to use for my research is unit 112E 9750N since it is not touching unit 114E 9754N on any side and is removed by one unit from the unit I excavated; I hoped this would provide unique information and give a better representative sample than if the two chosen units were side-by-side. In addition, I used unit 112E 9750N because it was level and would not have been affected as much by the slump coming from the rock outcrop to the east or the loss of material over the hill to the ground below (off the west side).

All the artifacts, both traditionally manufactured and industrially manufactured, were collected, recorded, bagged, and labelled on site. Each artifact from the two units was later identified, to at least a type or material, and used for this study.

Floatation samples were taken from both of the units above with one sample from each of the different layers and levels of the excavation unit. These samples were used to collect fish bone from the heavy fraction portion. Instead of using the fish bone collected from the screens, I decided to use the floatation samples since all the faunal remains collected in the sediment would be deposited in the heavy fraction of the floatation sample; whereas, with using ¼ inch screens, many small bones fall through and are not collected. Five samples were taken from unit 114E 9754N and four from unit 112E 9750N (Table 2).

<b>UNIT 114E 9754N</b>				
<b>Floatation Sample</b>	<b>Layer/Level</b>	<b>Sample Type</b>	<b>Amount Collected</b>	<b>Notes</b>

# 3	I/1 (0-10 cm)	Fill	2 L	Layer I is the top layer-somewhat disturbed
# 9	IV/2 (10-20 cm)	Fill	2 L	Layer IV is between Layers I and II in soil composition
# 18	I/2-3 (10-25 cm)	Feature Fill Strata	2 L	Feature 4
# 29	IV/2 (10-20 cm)	Fill	2 L	
# 31	IV/2 (10-20 cm)	Undesignated Feature Fill Strata	2 L	Undesignated Feature (hearth) in SE corner of unit
<b>UNIT 112E 9750N</b>				
<b>Floataction Sample</b>	<b>Layer/Level</b>	<b>Sample Type</b>	<b>Amount Collected</b>	<b>Notes</b>
# 4	I/1 (0-10 cm)	Fill	2 L	
# 11	II/1 (0-10 cm)	Fill	2 L	Ash layer
# 20	II/2 (10-20 cm)	Fill	2 L	
# 22	V/2 (10-20 cm)	Fill	2 L	Midden layer

**Table 2-** Units 114E 9754E and 112E 9750N- Floataction Samples

The remaining faunal materials from units 114E 9754N and 112E 9750N were collected using screening methods instead of floatation since there were much less non-fish faunal remains and using floatation methods would not have given a very accurate picture of other animals present at *Kleh Kwa Num*. Sediment from the units was removed and put through ¼ inch screens. The faunal material found in these screens was collected, recorded, bagged, and labelled on site; at least one “level bag” containing the faunal remains was collected from each layer and level of the excavation units. All the remains found so far in these two units has been identified and analyzed for this study.

**Unit 114E 9754N****Layers/Levels Where Bone is Present**

I/1 (0-10 cm)

I/1 (0-10 cm) - Feature 1

IV/2 (10-20 cm)

I/2-3 (10-25 cm) - Feature 4

VII/2 (10-20 cm)

**Unit 112E 9750N****Layers/Levels Where Bone is Present**

I/1 (0-10 cm)

II/1 (0-10 cm)

II/2 (10-20 cm)

V/2 (10-20 cm)

**Notes**

Mainly large fragments of bone; *Odocoileus hemionus* (mule deer), *Ursus americanus* (black bear) are known as well as some unknown

species; charring, discolouration, small amounts of root etching and animal gnawing, spiral fractures, general wear are present on some of the bones; a few long bones, cranial, costal and vertebrae as well as many other types of bone.

**Notes**

\*See notes above

**Table 3-** Units 114E 9754N and 112E 9750N- Faunal Remains (other than fish)

*Identification*

To identify both the artifacts and faunal remains found at the site, I used texts detailing Northwest Coast artifacts and animals. In addition, to identify the faunal remains, I used the zooarchaeological collections at Simon Fraser University for comparison. Based on the comparison of faunal material, I assigned many of the remains, both fish and other animals, to a genus and species.

*Analysis*

Following the identification of the faunal remains, I used the number of identifiable specimens (NISP) to analyze/quantify the remains. NISP is the method of counting each individual specimen that can be identified and using this infer the relative abundance of species. The drawbacks of this method are such that NISP can sometimes

overestimate the abundance of species at a site by counting multiple elements of the same animal, each as a separate animal. Although, if the faunal remains to be analyzed are very fragmented, it is easy to underestimate the abundance of species at a site using NISP, due to the inability to identify the remains (Grayson 1984). The results from this analysis were then put into databases, which accompany this report.

## Results

In this section, I present the findings of my research.

I identified the artifacts collected from the excavation at *Kleh Kwa Num* using books written by Hilary Stewart on Northwest Coast First Nations goods (Stewart 1977 and 1973) and through internet sources specializing on industrially manufactured goods. Table 3 shows the findings from my research on the artifacts.

<b>ARTIFACT TYPES</b>	<b>INDIVIDUAL ARTIFACTS</b>
<b>Traditionally Manufactured Artifacts</b>	
Slate	174 pieces of worked slate and slate fragments (probably roof tiles)
Non-Slate Stone	1 unfinished stone wedge or adze, 1 flake
Worked Bone	Worked bone (probably fishing tools: 1 barbed harpoon point, 1 large fish gorge or marrow removing tool, 2 gorges, 1 barb, 1 valve, and 1 unidentified piece of worked antler)
<b>Industrially Manufactured Artifacts</b>	
Beads/Pendants	3 small clear glass beads
Ceramics	1 white china fragment (probably a saucer)
Nails	14 roofing nails and 25 wire nails of various sizes
Bullets/Casings	2 22-calibre bullets (one long and one short)
Coins	2 1929 dimes and 1 1930 dime
Glass	8 fragments of clear glass and 1 small fragment of amber coloured glass
Historical Artifacts	1 black glass pipe stem, 2 pieces of miscellaneous metal fragments, 1 pin, 1 German crucifix, 1 battery cell, 1 fastener, 1 fishing swivel, 1 segment of a metal file, and 1 unidentified metal artifact

**Table 4-** Units 114E 9754N and 112E 9750N- Artifacts

The results of the identification and analysis of the fish bone and other faunal remains collected from Kleh Kwa Num are detailed in databases created by Microsoft Excel (see accompanying documents *Tla'amin Fish Database* and *Tla'amin Faunal Database- other than fish*).

## **Discussion of Results**

### *Artifacts*

Beginning with the traditionally or non-industrially produced artifacts found in unit 114E 9754N: slate, non-slate stone, and worked bone. The slate artifacts consist of 174 fragments of gray slate, one of which has a cut edge. The high durability and relative fireproof quality of slate makes it an ideal material to use on structures and it had been used for roofing tile for more than a thousand years. The use of slate for roofing tiles was introduced to North America by European settlers (The Durable Restoration Company 2008), however it did not become commonplace in the west until the mid-1800s (Levine 1997). To attach slate roofing tiles to a structure, roofing nails are used. Both slate and roofing nails were found together in layer I, level 1 and layer IV, levels 1 and 2, indicating the use of slate as a roofing material for structures at *Kleh Kwa Num*. Several people have suggested that a smokehouse for processing fish or herring drying racks are the structures that were once in use at the site.

Of the non-slate stone, a flake of dacite or a basalt-like material with a clear striking platform was found at layer I, level 1- the layer nearest the surface. This may indicate continued practice of traditional manufacturing techniques or soil disturbance at the site. The second non-slate stone tool found at *Kleh Kwa Num* is an unfinished unifacially bevelled adze bit that could be used for woodworking (Stewart 1973) found at layer VII, level 2. At this depth, there were few industrially manufactured goods.

The last of the traditionally manufactured goods consist of bone tools, including: one barbed harpoon point (usually used to hunt sea mammals), one large fishing gorge (one Tla'amin member also suggested that it may have been used as a marrow extracting tool), two fishing gorges, one barb used in fishing, one fishing valve, and one piece of

worked antler (Stewart 1977 and 1973). The majority of these tools were used for fishing, indicating a specialization of fish and were uncovered from layer IV, level 2, the deepest and oldest, excavated layer.

The industrially manufactured artifacts recovered from the site includes: glass beads, a china fragment, roofing and wire nails, bullets, Canadian dimes, glass fragments, a ceramic pipe stem, a pin, a German crucifix, a battery cell, a brass fishing swivel, a segment of a metal file, and a few unidentified metal pieces.

The proximity of the glass beads to the German crucifix leads me to think that they were part of the same object, probably a rosary. The crucifix has images of a skull and crossbones on it and was probably made in the late 1800s to early 1900s (The Rosary Workshop, date unknown). This artifact assigns the lower reaches of layer I, level 1 to around this time.

Another distinctive artifact type is that of the Canadian dimes. There are two 1929 dimes and one 1930 dime. They were in circulation up until 1936, at which time they were replaced by a new coin design (Polsson 2007-2008). The dimes were found in layer I, level 1, near the surface. This gives the top part of this layer a relative date of the mid- to late- 1930s.

The carbon battery cell found at the site was introduced to the public in 1881 and was used into the 1900s (About.com 2008). The cell, found in layer I, level 1 suggests an early date for the lower reaches of this layer.

The other industrially manufactured artifacts, while not as time specific as the crucifix and dimes, give an indication of some possible uses of the site. The roofing and wire nails suggest the presence of at least two buildings (indicated by the presence of building materials in two different layers: layer I, level 1 and layer IV, level 2; and, therefore, two different time periods), parts of which lay within units 114E 9754N and 112E 9750N. Wire nails became common for building construction around 1870 (Dames & Moore, Inc. 1997) and allow for a base date of 1870 to be set for the two identified structures found at the site.

The china fragment, glass fragments, pipe stem, pin, crucifix, battery cell, and file imply the use of the site as a residential place or workshop since many of these are commonly used items around or nearby to a household.

The brass fishing swivel indicates continued fishing at the site, albeit using different technology, into the early or mid-1900s (layer I, level 1).

The change from traditionally manufactured artifacts found in the deepest layers to industrially manufactured artifacts found in the layers nearer the surface show a general change in technology as the mass-production of goods and machine made items became more common in the area (Northwest Coast near Powell River).

### *Faunal Remains*

The faunal remains at *Kleh Kwa Num* consist of fish, mammal, and bird (the quantification of their genus and species can be seen in the accompanying databases).

The fish remains collected from the site using floatation methods indicate Pacific Herring (*Cupea harengus*) and salmon (*Oncorhynchus sp.*) were the most commonly fished species at *Kleh Kwa Num*. My results are similar to the results of Caldwell (2008), McKechnie (2005), Hanson (1991), Trost (2005), and Coupland (1991), in which herring and salmon were prominent species. The results of my analysis, although somewhat limited since only a small sample of the total fish remains gathered from the site were used for analysis, indicate a reduction in the abundance of both herring and salmon in the two units examined: 114E 9754N and 112E 9750N. Overall, in unit 114E 9754N, there was a reduction of approximately 35% in the abundance of herring from the deepest layers excavated (VII, 2) to the most recent layer (I, 1). In salmon, the reduction in this unit was 97.5%. Unit 112E 9750N saw a reduction of 97.5% in herring and a fluctuating rate of change in salmon. This shows a general trend over time of a reduction in the two main species of fish used by Tla'amin people.

This change in abundance of herring and salmon can be explained by overfishing and, therefore, a reduction in fish stock or by a subsistence change to another type of food source. However, there was not a significant increase in any other animal remains found at the site that might indicate a change in subsistence. It is most likely that as populations grew and demand for fish increased, herring and salmon stock became depleted.

Overfishing was one of the main concerns put forth by Tla'amin community members.

The fish species represented in the archaeological record at *Kleh Kwa Num*: dogfish, herring, salmon, skate, and greenling, are all local (Pacific Northwest) species.

With this sample of faunal remains, there is no indication of trade in food resources, although perhaps with further study more information on this subject will come to light.

The fish remains identified consisted mainly of post-cranial elements; however, this is not indicative of the absence of heads through butchering or preparation. Rather, the ability to recover cranial remains decreases over time due to reduced density of cranial remains (Banning 2007). Also, many of the cranial remains were more fragmented than the post-cranial remains which made it difficult to identify them. Numerous unidentifiable remains were unknown fish cranial elements.

Specialization in fish species can also be seen in the archaeological record. Herring makes up 74.5% of the total number of identifiable specimens in unit 114E 9754N and 89.3% of the total sample in unit 112E 9750N. According to Trost (2005), a species that represents more than 60% of the total sample signifies resource specialization. This abundance of fish in the archaeological record may be a sign that the site was used as a fish procuring or processing place.

Finally, the fish remains, specifically the presence of salmon, show some seasonality at *Kleh Kwa Num*. If the procurement of fish is an indication of this, then the site may not have been used while the salmon were in deeper waters and not spawning (i.e., winter). Normally, salmon come into the shallows to go inland during the spring, summer, and fall months to spawn, which is when it would be easiest to harvest them for food (Trost 2005).

The non-fish faunal remains found at the site consist of black bear, (*Ursus americanus*), black-tailed deer (*Odocoileus hemionus*), dabbling duck (*Anas sp.*), domestic dog (*Canis lupus familiaris*), human (*Homo Sapiens*), gull (*Larus sp.*), and skunk (*Spilogale sp.*). All of the species identified are species native to the Northwest Coast.

Although black bear (*Ursus americanus*) and dog (*Canis lupus familiaris*) are present at the site, it is not likely they were food sources. Through conversations with community members during the 2008 field season, it was thought that the bear bones were probably from a pet. In addition, dogs have been used traditionally by Tla'amin Nation for wool and hunting.

The most common non-fish species at *Kleh Kwa Num* was the black-tailed deer (*Odocoileus hemionus*) at 65.96% in unit 114E 9754N and 40% in unit 112E 9750N. However, the quantitative method used to get these numbers, NISP, counts each specimen individually, which may represent several elements of the same animal (Grayson 1984).

In Coupland's study (1991), the most common faunal remains were black-tailed deer (*Odocoileus hemionus*), for mammals and ducks and gulls, for birds. This reflects similarly on my findings. Trost (2005) found a high concentration of domestic dog (*Canis lupus familiaris*) in her research; I also found some elements of dog in the remains collected at *Kleh Kwa Num*.

Upon examination of the non-fish faunal remains, it became apparent that a large portion of them were highly fragmented and therefore unidentifiable to species or element. I noticed spiral fractures on some of the long bones indicating the removal of marrow for consumption. However, many of the remains appeared crushed or broken without the presence of spiral fractures. An explanation for this fragmentation is perhaps trampling from people walking on the bones or, dogs or other animals chewing and splintering the bones (Trost 2005).

While other animals besides fish were processed and/or consumed at *Kleh Kwa Num*, it seems that fish were dominant and perhaps the specialization at this site.

## **Conclusion**

This research into the material collected from the first field school in Tla'amin territory has give some insight into cultural and ecological change at *Kleh Kwa Num* through the identification and analysis of artifacts and faunal remains. By examining the results of this study, I see that there was a change in artifact type over time, from traditionally manufactured to industrially made goods. This change was probably the result of an increase in manufactured goods in the area around the turn of the century (19<sup>th</sup> to 20<sup>th</sup>). There is also a noticeable difference in the abundance of herring and salmon in the archaeological record, which reflects a change in past use of the resource. The reduction in the abundance of these fish could be the result of overfishing or a

change in resource specialization, however, overfishing is more likely given the evidence. The results of my analysis showed a specialization on herring at this site that was not found in any other animal species to the same extent, indicating that this site was probably used mainly for procuring and/or processing herring. The other faunal remains collected from the site show a wide use of animal resources with little specialization.

This study only tested a small sample of the data collected from *Kleh Kwa Num* in 2008, in the future, as more work is done, the archaeological record from this site will become more complete. Increasing the excavation both in depth and spatially would provide more information of site use. Future research of more in-depth faunal and artifact analysis would be beneficial for the understanding of the history of the site, as would ethnobotanical, ethnographic, and land-use studies. Mapping of the uncovered structures would be useful to show the layout of the site and how the structures were situated in relation to the recovered material. To achieve more concrete data, radiocarbon dates would be helpful as well.

In conclusion, my study is just the beginning many more years of research to come. It can be used as a starting point to better understand the history of *Kleh Kwa Num* and of Tla'amin territory.

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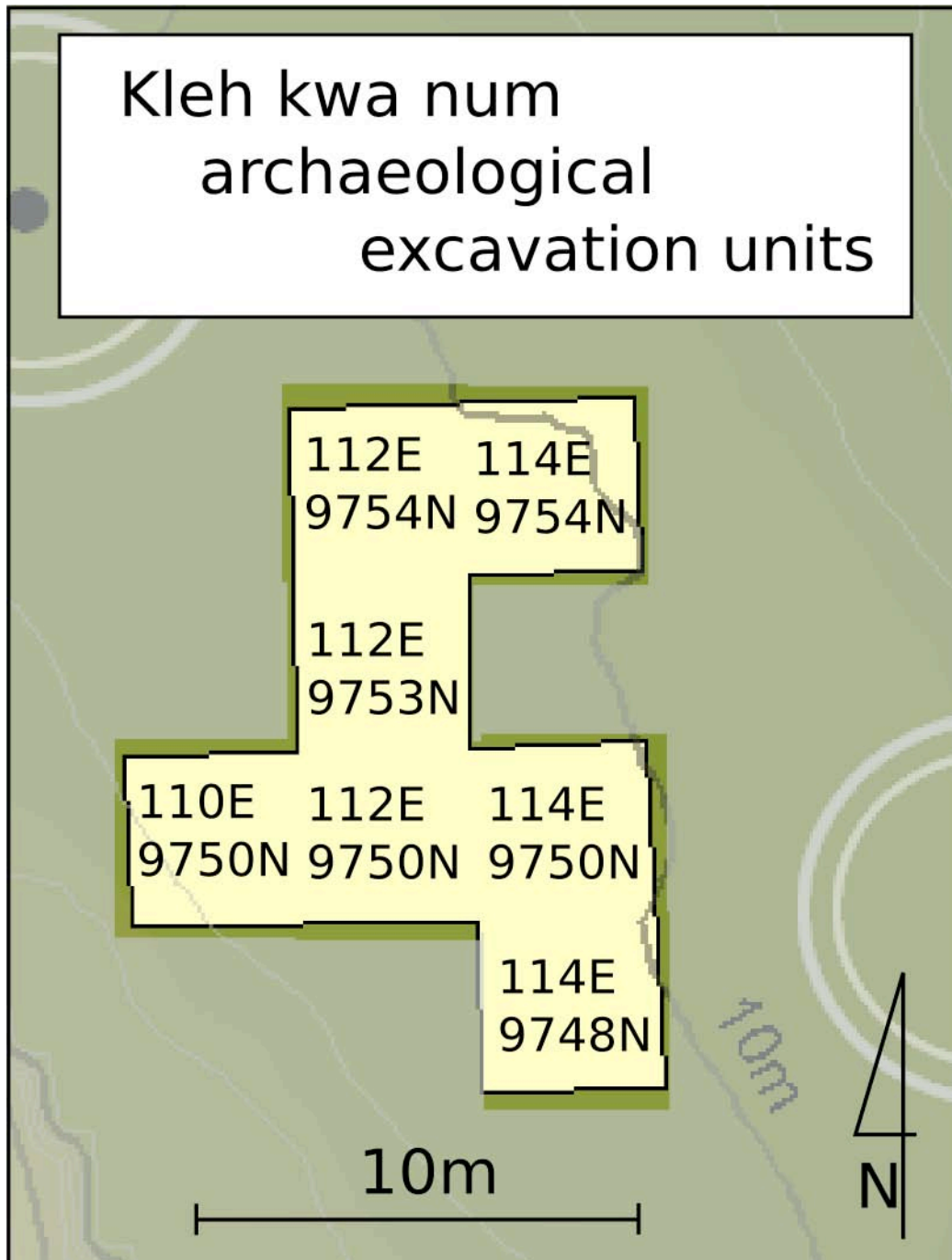
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**Appendices**

*Appendix 1*



**Map of the 2008 excavation units at Kleh Kwa Num (Scuttle Bay) (Courtesy of Craig Rust)**

