Heiltsuk and Wuikinuxv Rock Art: Applying DStretch to Reveal a Layered Landscape, a Case Study on the Central Coast, British Columbia, Canada

by

Aurora Anne Skala
B.A., University of Victoria, 2013

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTER OF ARTS

in the Department of Anthropology

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University of Victoria

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Supervisory Committee

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Dr. Duncan Stewart McLaren (Department of Anthropology)
Supervisor

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Co-Supervisor
Abstract

This archaeological community-engaged research focuses on locating, recording, photographing, and classifying, rock art (pictographs and petroglyphs) designs within Heiltsuk and Wuikinuxv Nations’ territories. The two areas are on the Central Coast of British Columbia, Canada: River’s Inlet/Owikeno Lake (Wuikinuxv Territory, near Oweekeno village), and Roscoe Inlet (Heiltsuk Territory, near Bella Bella). By listening to stories and visiting rock art locations its deep history and significance can begin to be comprehended. Throughout this research 58 rock art sites were visited and over 900 designs were categorized into nine types. Within this context I consider the feasibility and benefits of digital contrast adjustment of photographs using DStretch, a plugin created for ImageJ, that renders visible faint traces of pigment which can not be seen with the naked eye. Additionally, the potential of underwater archaeology (scuba diving) for the discovery and recording of rock art sites is explored.
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Dedication

I want to thank my family, most particularly my Grandmothers. My Grandmother Olga Skala completed her MA at age 75 at Mundelein College. She has caused me to check the thought “I am too old” more than once. My Grandma Irene Dabrowski placed a high value on education, and enabled numerous students to fulfill their goals. Both these women have been a real source of inspiration for me, and I am very grateful for their influence on my life.
Chapter 1: Introduction

1.1 Overview of thesis

North American Northwest Coast Indigenous rock paintings and carvings have captured the imagination of researchers worldwide. They are evocative of the careful preparation of materials and tools, the journey to often precarious locations in coastal rainforest high above deep fjords, and the layered meanings of the images themselves. Archaeologists are known for digging deep beneath the earth, but studying something within view is a constant reminder to all of the deep history of people on landscapes. In this way, rock art tangibly connects people to place.

Although there is an abundance of pictographs and some petroglyphs in the Wukinuxv and Heiltsuk territories a concerted study of rock art was never thoroughly conducted in this area until now. In this study, the rock art discussed refers to both pictographs made with red ochre and other materials (possibly charcoal, and binders such as animal fats), and petroglyphs made by repeatedly pecking with a hard piece of stone onto softer rock faces. The rock faces which are painted on, in this area, are usually, but not always, granite. I have visited over 80 different rock art sites since 2013, when I first visited Wukinuxv and Helitsuk territories, 58 rock art sites are included in this thesis. Fieldwork trips were based out of the communities of Bella Bella and Rivers Inlet. A benefit of this project was being able to participate in a community-engaged research project where I worked with members of both nations in designing this research and formally and informally learning about the culture of the area.
1.2 Primary research questions

Rock art sites in this region have been reported by archaeologists and visitors since the 1930s, with the majority of sites being recorded in the late 1960s and early 1970s. However, many of these sites have not been reported since that time and frequently have no metadata associated with them (such as what the design depicts, or how well preserved they are). For this reason, five primary research questions will be examined in this study:

1. Can the existing record of rock art sites be verified?

By attempting to revisit these sites recorded previously it will be possible to record or refute the sometimes unclear or incomplete information about their location.

2. Are there additional, previously unrecorded-by-archaeologists, rock art sites within the study area to be recorded during this study?

Community members have retained knowledge of sites which have not been visited by archaeologists. During previous time spent on the Central Coast I have recorded rock art in locations where it had not been reported and was found because we were in areas not frequently visited.

3. How can DStretch best be applied to the study of pictographs in Heiltsuk and Wuikinuxv territories?

Innovative new techniques are available to rock art researchers which were not when rock art in this area was last studied. By using digital contrast-adjustment software (DStretch), new information regarding these sites is anticipated. DStretch was specifically developed in 2005 by Jon Harmon for rock art research (Le Quellec et al. 2013:178). It is akin to programs such as Adobe Lightroom used to manipulate images.
4. By revisiting recorded and previously unrecorded rock art sites can the current typology of rock art in this area be expanded?

Some typological groupings have been proposed for coastal BC rock art, but specific concentrated research on rock art has not been done for the two locations in this study.

5. Can the application of underwater research techniques be of benefit in studying rock art in this area?

Some rock art in the area is not visible because it is covered by water (i.e., seasonal changes, or because of sea level change).

1.3 Chapter outline

In Chapter 2 I will describe the geography of the research area and research parameters as well as past ethnographic and archaeological research which has taken place on the Central Coast. In Chapter 3 the meaning of specific designs as they relate to portable art and other cultural practices, and the nature of materials and techniques used to create rock art, will be considered in order to provide background on the topic. Furthermore, I consider how information remembered by descendant communities, as well as past ethnographic research, informs an understanding of the rock art designs in this location. A literature review of oral histories which were recorded in the last 120 years, and knowledge learned from working with community members during stages of this research project, are included in this chapter. Looking to other locations where rock art has been studied can support the selection of the techniques of considering oral histories and descendant community input. For example, studies where ethnographic information and oral histories have added significantly to an informed interpretation of Zuni rock art are discussed by Schafsma (2013:16). A direct
historical approach can be of benefit for understanding Zuni rock art (Stevenson 1970:34-43; Young 1988:1-6). While changes and outside influences have affected how Zuni descendant communities have interpreted their rock art, there is enough continuity to use this approach. Some symbols are no longer remembered; however, a “fundamentally constant” (Young 1988:6-7) dialogue continuously occurred between the Zuni, their oral-histories, their spiritual landscape, and their rock art. This is in some ways similar to understandings of rock art in the Wuikinux and the Heiltsuk communities, where a continuity of remembered and lived traditions, stories and significance of place continue, although some symbolic meanings of rock art imagery are not remembered, or at least not shared with outsiders. In addition, some sources, about First Nations culture from outside the BC Central Coast literature are reviewed, in the absence of abundant writing from these communities, which suggest alternate ways of considering past material culture.

Chapter 4 outlines the methods used in this research. The methods used in this study have shaped the research questions I propose to answer in this thesis. As this is a methods-based thesis, this chapter demonstrates the importance of thorough research practices in contributing to a global body of knowledge on how to approach this type of archaeological data. With increasingly available innovative techniques for studying rock art, such as digital photo manipulation (DStretch) and underwater archaeology, sites in my study areas were recorded in ways not previously possible to archaeologists. Ground-truthing techniques in a region with abundant rock art showcases the techniques themselves and documents their feasibility. In Chapter 5 the results of this research will be presented and discussed. Finally, Chapter 6 suggests
some directions for future research not covered by this thesis.
Chapter 2: Location, Archaeological Context, Research Parameters

2.1 Study area

Wuikinuxv Nation and Heiltsuk Nation territories are situated on the Central Coast of British Columbia, Canada. This area is also included in the Northwest Coast culture area (Suttles 1990). The two project areas were selected from within the territories in consultation with both Nations.

2.1.1 Visual of the area

A Google Earth map was used as a base of the maps created below (Figures 1 and 2).

2.1.2 Description of Rivers Inlet/Owikeno Lake study area

Access to Rivers Inlet (Wuikinuxv project area) is via Fitz Hugh Sound. Rivers Inlet is a 45 km (28 mile) long saltwater inlet, with numerous freshwater tributaries which enter into it. The largest of these is the Wannock River which connects Owikeno Lake to the east, the main part of the Wuikinuxv project area, with the saltwater inlet. The Wannock River’s water level drops significantly in the winter making it impossible to enter upper Owikeno Lake by motorboat for many months of the year. There are no roads into this area, so transportation is either via boat or floatplane. Rocky cliffs tower over the freshwater lake (see Figures 3 and 4). The forest is dense, and in areas of previous logging operations, landslides leave barren scars.
Figure 1: Map of the Northwest Coast where the two non-contiguous project areas are located. Locations referred to in this thesis are marked with red dots.
Figure 2: Close up of research area showing Roscoe Inlet and Rivers Inlet/Owikenô Lake. Locations referred to in this research are marked with red dots.
down mountainsides. The region is mountainous, including nearby Mount Silverthrone which is 2,864 m (9,396 ft) high.

2.1.3 Description of Roscoe Inlet study area

Seventy-six km (47 miles), minimum Euclidean distance (MED or as-the-crow-flies), to the north, from the mouth of Rivers Inlet lies the mouth of Roscoe Inlet which is in Heiltsuk Territory. Like Rivers Inlet, Roscoe Inlet is accessible only by boat or floatplane. In spite of its being saltwater, it is warm at the head of the inlet in summer rendering it comfortable to wade to rock art sites while doing surveys. Hilly terrain at the mouth of Roscoe Inlet gives way to dramatic cliffs, over 100 m (328 ft), in height. There is evidence of springboard-style logging, but since 1987 Roscoe Inlet has been situated in the Fjordland Conservancy and much of the forest is old-growth. Small islands are abundant in Rivers Inlet, and present, though decreasing in frequency, in Owikeno Lake and Roscoe Inlet. Both areas are currently not populated year-round by humans, though a deep history exists in both places, and evidence of villages are still visible on the landscape.
Figure 3: The mountainous terrain in the region around Rivers Inlet.

Figure 4: The sheer cliffs of Roscoe Inlet (Elroy White, circled, in lower right corner as scale).
2.1.4 Biogeoclimatic zones

The biogeoclimatic zone of the study area is primarily Coastal Western Hemlock (CWH) zone, with some slight overlap, in the higher elevation and more eastern areas, with the Mountain Hemlock (MH) zone. The study area consists of high-humidity (Hypermaritime) rainforest (Meidinger and Pojar 1991:52). Most of the study area is located within the highest, and second-highest, annual precipitation categories for BC, with 243-325 cm (96-128 in) of precipitation per year. The study area has approximately 180 frost-free days annually (Suttles 1990:18-19).

Multiple distinct ecotones exist within the study area. Rocky, rough coastline with numerous small islands and large rock bluffs transition into deep inland fjords and forests with massive conifer trees. These habitats have been described as three distinct physiographic environmental zones: the inner channel and fjord zone (where this research took place), the inner waterway zone, and the outer coast (or outer island) zone (Maxwell, et al. 1997). Rock art appears to occur more commonly in the fjord environment than the other zones.

Maritime and land-based resources were utilized by both the Wuikinuxv and Heiltsuk extensively (Heiltsuk College 1997; Hilton 1990). The Wuikinuxv, in particular, made use of land-based resources, for example hunting land mammals using traps (Hilton 1990). Based on the abundant variety of faunal remains from Namu (see Figure 2), a landmark archaeological site situated between the two non-contiguous study areas, it is evident that people had developed a wide array of techniques for hunting and food collection more generally. For example, the faunal remains include harbour seals, dolphins, porpoises, sea lions, northern fur seals, sea otters, minks,
martins, river otters, porcupines, beavers, black bears, deer, raccoons, mountain goats, whales, herring, flatfish, rockfish, cod, greenlings, sablefish, sculpins, dogfish, ratfish, skates, bluefin tuna, clams, whelks, mussels, loons, geese, ducks, cormorants, grebes, auks, murres, gulls, ravens, crows, steller’s jays, and bald eagles (Cannon 1991:11-22).

2.1.5 Ethnographic overview

The Wuikinuxv and Heitsuk are distinct Nations located on the Central Coast of British Columbia. “Heiltsuk” and even “Northern Kwakiutl” (a misnomer) have sometimes been used incorrectly, to describe both of these groups. The confusion over these groupings is likely due, in large part, to the opening of Fort McLoughlin (on Campbell Island). Many people not traditionally from this location congregated at the fort, established in 1833, during the fur trade, and their families continue to reside there. Additionally, the historic town of Old Bella Bella on Campbell Island has since become Bella Bella and has moved a few km north since the closure of the Fort (http://www.qqsprojects.org/multimedia/maps/bella_bella.html#zoom). The groups which gathered at the fort included Heiltsuk (a.k.a Bella Bella and the four sub-tribes: K!o‘kwae’dox, Uwi’tlidox, O’yalidox, E’stedox) and Wuikinuxv, sometimes spelled Oowekeeno, Wuikenukv, Wikeno, Owikeno, Oweekano, or Awikenox, (Hilton 1990:321, drawing on Boas 1928). It is debatable exactly how many tribes and sub-tribes existed prior to European contact. In addition to the four Heiltsuk sub-tribes listed above, Olson refers to the Yalaklai and Uwi’galidox, suggesting at least six groups (1954:320).

Haihilhazaqvaka is traditionally spoken by the Heiltsuk and Oowekeyla is traditionally spoken by the Wuikinuxv. These have been considered dialects, part of
the Wakashan language family (Thompson and Kinkade 1990). Intermarriage was common between these groups and some villages were bilingual (Hilton 1990; McIlwraith 1948:19).

At present, there are approximately 1,450 (2000-2014 census) people in Bella Bella (a.k.a. Waglisla, the largest community on the Central Coast), and approximately 100 residents (2014 census) in River’s Inlet. As mentioned above, the creation of Fort McLoughlin at the Old Bella Bella site and the congregating of people from various nations has meant that residents do not absolutely reflect ancestry of the nation whose traditional territory is occupied. However, Bella Bella is primarily identified as a Heiltsuk community and Oweekeno Village is primarily Wuikinuxv.

2.2 Archaeological context

Rock art cannot be divorced from its archaeological/cultural context. The villages, burials, and other types of evidence of past human presence on the landscape are part of an entire system of lifeways of which rock art is a part. Archaeology which has been done on the Central Coast of BC includes cultural resource management based research (e.g., Maxwell et al. 1997) and academic research (notably Cannon 2000; Cannon 2002; Carlson 2003; Drucker 1943; Hester and Nelson 1978; Hobler 1990; McLaren 2013; Pomeroy 1980).

Both of the project areas have abundant rock art (between the two of them 51 carved or painted rock locations are recorded as archaeological sites), and there are numerous places where community members have suggested there are previously unrecorded-by-archaeologists rock art. In addition to these leads, early historical texts
and archaeological reports have mentioned rock art in passing (Rollins and Blake 1975; Tolmie 1963).

Other recorded site types include burials, canoe skids, depressions/platforms, fish traps, land-mammal traps, lithic sites, CMTs (culturally modified trees), pit cook and hearth sites, rock shelters, shell middens and shell-less middens (Pomeroy 1980; Stafford 2009). Orchards, berry patches, clam gardens and root gardens are beginning to be recognized in the area as well (Jackley et al. 2014).

2.2.1 History of archaeology in Rivers Inlet and Owikeno Lake

Much of what is known about the archaeology in Owikeno Lake and Rivers Inlet is gleaned from AIA reports and demonstrates the abundance of CMTs in the area, as much of this research was undertaken in association with logging operations (Russell et al. 2004:5). Individual archaeologists’ recording of sites make up much of the documentation of archaeology in this area (see Chapter 5). Among others, Bjorn Simonsen and Brian Seymour have worked extensively recording sites in this area. Seymour excavated at Owikeno Lake in 1975 (a burial site, EkSp-13) (Seymour 1978 see also Cybulski 1975). This excavation was initiated by the Wuikinuxv band (Seymour 1978:1). Millenia Research Ltd. (McLaren, et al. 1999) also conducted surveys of the Doos and Dallery Creek watersheds in this area.

2.2.2 History of archaeology in Roscoe Inlet

During logging impact assessments conducted in Roscoe Inlet individual archaeologists recorded sites. In addition, rock art sites in Roscoe Inlet were reported by non-archaeologists (see Chapter 5). Academic research included two weeks of trench excavations at three different sites near Roscoe Inlet, conducted by Drucker and
Beardsley in 1938 (Drucker 1943). One of these sites, FbSx-6, is within the Roscoe Inlet project area. Hester and Nelson also conducted excavations at FbSx-6 which is a village and midden site (Hester 1969; Hester and Nelson 1978) and near one of the petroglyph sites, FbSx-10, revisited during this MA research. The excavators hoped to get comparative data for their excavations at Namu (Hester and Nelson 1978:11). In addition, Rollins and Blake conducted surveys in this Inlet (Rollins and Blake 1975), as did Millenia Research Ltd. (McLaren, et al. 1999). All of these studies looked at overall habititation of the Inlet. It has been suggested that Rocoe Inlet was a seasonally-occupied area (Rollins and Blake 1975) though information from elders suggests that some people stayed there all year (McLaren, et al. 1999:8, quoting pers. comm. Jennifer Carpenter).

2.2.1 History of rock art research on the Northwest and Central Coast
This study, conducted between 2013 and 2015, is the first of its kind by an archaeologist that involved visiting these sites and undertaking an academic study specifically of the rock art of the Central Coast. Amongst the archaeologists and anthropologists who first visited the research area, Franz Boas, Philip Drucker, and Ronald Olson, mention of rock art is made only in passing in their published works. Drucker, whose field notes I was able to look at HIRMD office in Bella Bella, did spend time photographing rock art in this region. Many of the people who later formally recorded rock art sites on BC Site Inventory Forms, similarly did not publish specifically on rock art. One of the researchers, Ruth Smelser, was reachable by phone during this project and was able to share her useful background knowledge on early (1960s and 70s) recording of rock art.
The two most significant sources of published documentation on rock art for this location (and the Northwest Coast in general) are Doris Lundy’s MA thesis on rock art of the Northwest Coast (in which she compiles information recorded in publications and BC Archaeology Branch Site Inventory Forms) and Beth and Ray Hill’s book, *Indian Petroglyphs of the Pacific Northwest*, recording Northwest Coast petroglyph sites. Though not trained as archaeologists, their book is one of the only publically available sources of coast-wide photographs of Northwest Coast petroglyphs.

Lundy (1974) examined the frequency of motif selection at archaeological rock art sites throughout the Northwest Coast, acknowledging that over 600 sites have been recorded. Lundy’s research proposed stylistic groupings among rock art which suggest temporal associations. The basis of the groupings was the recurrence of traits (e.g., eye designs, head size, ornateness). The styles (i.e., co-occurrence of specific traits) were then linked with dated portable art pieces. Her study area included Wuikinuxv and Heiltsuk territories, where my thesis’s research was conducted. However, she did not visit this area personally, but rather relied on drawings by others. Although Lundy’s study (1974) included this area (and is the only source on many of the sites visited during this research), its broad geographic scope and her reliance on other researchers’ recording techniques has meant that there is a discrepancy in how thoroughly this area’s rock art has been recorded.

Hill and Hill (1974) compiled images of regional petroglyph sites into a single volume, providing a starting place for a useful typology of Northwest Coast petroglyphs. Their book is documentation (in the form of direct rubbings) of
petroglyphs around coastal BC and into Washington and Alaska in the U.S. The petroglyphs near Bella Bella and in Return Channel, near Roscoe Inlet, are documented in this volume (Hill and Hill 1974:161-62).

There is a body of research on Heiltsuk art designs and motifs (Black 1997; Carlson 1983; Harkin 1997; Malin 1999) but none that is specific to Wuikinuxv art. Unfortunately, few of the sites visited during this study are included in the Hills’ book and the few that are, are all in Heiltsuk Territory. This is probably because rock art in the chosen study area mostly consists of pictographs, and the Hills were only recording petroglyphs. Additionally, many of the petroglyphs are unrecorded (sometimes due to their being covered by water at the time of year during which fieldwork is generally conducted, this is especially true in Wuikinuxv Territory), something, it is hoped, that this study will begin to rectify.

Adams (2003) focused her attention on one island to the south of the Central Coast study area (Gabriola Island). Like Lundy, Adams linked rock art temporally to dated portable art items. She also suggested that phase groupings were useful in stylistic dating for the Gabriola rock art. She highlights the need for such small-scale studies on the Northwest Coast. Her work demonstrates that accurate and thorough typologies, and associated stories, are fundamental to the analysis of rock art. Adams makes a compelling argument, supported with interviews, that the rock art of Gabriola Island represents private art created during vision quests.

A review of significant sources on archaeological sites was compiled, for the Heiltsuk portion of this study area, by Maxwell et al. (1997). This report indicates that rock art is the third most common type of recorded site and that pictographs are more
common than petroglyphs (Maxwell et al. 1997:47, citing Hobler 1990). The report also makes reference to some researchers associating pictographs with village sites (Maxwell et al. 1997:47, quoting McIlwraith 1992[1948]) but the conclusion reached by the report is that petroglyphs are more often in close proximity to villages, while pictographs are further away from them (Maxwell et al. 1997:48). Pictographs tend to occur on the coast; however, some unrecorded lakeside pictographs are referred to in the ethnographic literature (Maxwell et al. 1997:47, quoting Boas 1973[1932]:45, and the late Cyril Carpenter [pers. comm. 1995]).

Florence Bell’s Ph.D. thesis (Bell 1982), which focuses on motifs used in petroglyphs in Coast Salish (Salishan language speakers) territories (just to the south of this Central Coast research area), included the use of the photographic technique known as ‘Night-Light Photography’. Bell describes how she adapted her skillset to each specific study situation and archaeological site (Bell 1982:172-189). Her thesis serves as a guide for applying this technique, which basically involves shooting at night in order to control all light sources. She discovered hidden images not visible with the naked eye during daylight, but which were visible in her photographs. These previously unrecorded aspects included historic sailing vessels (Bell 1982:179). This may be thought of as a precursor to the digital enhancement software used during this research to make invisible elements visible.

Bell’s (1982:129-130, 139-140) analysis of eight distinct styles refers to Bella Bella rock art as analogous to her other examples of styles along the coast. She attempts to consider rock art from the point of view of its creators (Bell 1982:1) in her analysis of 35 sites using over 150 comparative stylistic/artistic aspects. The
importance of the rock art’s location and material nature was emphasized and; as Bell states, often reflected a being, transformed to stone with an addition of eyes by the artist to illustrate the significance of the rock (Bell 1982:101).

Teit (1918) was another early rock art researcher, who, although he did not visit the Central Coast area, did write about what he had heard about the area. His contributions to rock art site documentation are from the interior of the BC.

The above authors have proposed or compiled different hypotheses regarding rock art locations and density. For example, one hypothesis is that the typical location of pictographs is away from village sites, along well-used water routes (visible from the water) or sometimes in hidden “what must have been removed places” (an idea reported on by Lundy 1974:251-252). Another example is the hypothesis that petroglyphs are most often located in close walking distance to village sites (Lundy 1974:254-255). Also reported, salmon streams have an abundance of petroglyphs, in equal distribution to the abundance of salmon (Lundy 1974:298). Finally, on the topic of meaning, images of personal dreams or protections against evil, were put near camps in the form of rock art (Teit 1918:3-4). Teit states that rock paintings were rare on the coast North of the Gulf Islands. This has not been my experience. Importantly, neither Lundy nor Teit visited the Central Coast, but were reporting generally on things which were observed in other parts of BC. These ideas for the most part may be considered impressions and have not been tested, and in the case of Lundy (1974) were complied from various sources and do not reflect her own opinion of rock art situation.
2.2.2 Existing typologies

The most significant scientific documentation of rock art in this location is the typology created by Doris Lundy (1974). She proposes five stylistic groupings (basic conventionalized, classic conventionalized, Columbia River conventionalized, abstract curvilinear, interior intrusive). In a later paper, she expanded her initial typology to encompass six styles (i.e., 1. basic conventionalized, 2. classic [or traditional] conventionalized, 3. Columbia River conventionalized, 4. abstract curvilinear, 5. abstract rectilinear, 6. naturalistic), (Lundy 1983:88). These groupings are based on Grant’s 1967 typology which identified three styles (naturalistic, conventionalized, abstract) (Lundy 1974:259). In addition, Lundy tabulated motif types, such as eagle, copper, etc., so that rare or singly-occurring motifs easily emerged from the dataset (Lundy 1974). Her MA research has been described as a “watershed work” (Adams 2003:6) because it compiled the work of many researchers, allowing for an analysis of the entire Northwest Coast. The Central Coast typology proposed in this thesis will provide a closer and more thorough look at one small section of Lundy’s research area, Heiltsuk and Wuikinuxv territories.

2.3 Identification of research limitations and opportunities

2.3.1 Duration and scheduling of this research

A total of more than eighteen days of fieldwork over a two-year period as well as additional trips for meetings, were conducted in order to examine the above research questions.

2.3.2 Scheduling

Scheduling was an important variable when planning this research. For example, it was not always possible to get out of the boat at rock art sites because of seasonal
grizzly bear activity during salmon runs. The fishing season, when many people are too busy to participate in research projects and most boats are not available as the boat owners are busy fishing, constrained when it was possible to undertake fieldwork. In addition, weather and site access (due to water level and animal activities) are highly seasonal. All of these aspects affected fieldwork planning. Some days it was simply too windy or snowy to take the boat out.

Conducting research in a remote area created additional time considerations (for example, computer-based communications didn’t work, so meetings had to be conducted in-person and required float plane or boat transportation, in some cases, and considerable time). However, the remote location also created opportunities. For example, meetings could be conducted in-person in more culturally-appropriate ways than always having to sit down at a board room table or conduct interactions over e-mail.

2.3.3 Working with people with a deep connection to the study area

The research agreements created with each Nation (see Appendices B and C) stipulate that community members were to be hired for this research. The ability to hire people with a connection to the landscape (descended from Roscoe Inlet hereditary line for example, and sometimes with a lifetime of knowledge gained from hunting in the area) meant that the team in both fieldwork settings was made up of people with intimate knowledge and connection to the landscapes.

Community meetings and engagement, as stated above, are a major asset of this project. Not only was it possible to hear from community members about areas of unrecorded-by-archaeologists rock art sites, and insights about design interpretation, it
was also possible to show people the results of the photography which sometimes led to changes in fieldwork planning for the next day.

2.3.4 Publication restrictions

Publication restrictions exist for this project. For example, mapping was conducted according to the BC Archaeology Branch requirements and to assist both Wuikinuxv and Heiltsuk Nations in adding to databases of their archaeological sites. However, a limitation of this thesis is that it does not reflect all of the work done on this project, such as the making of maps, which cannot be made available to the public. Similarly, locations and place name associations to culturally-sensitive sites are deliberately kept vague for this reason.

2.3.5 Boat survey

Surveys for this project were conducted almost exclusively by boat and this means that a great number of sites and data which could exist if land surveys were included are absent. This limitation of the research is due to wildlife and time constraints, lack of roads, and difficulty of the terrain. When it was possible to get off the boat and visit a site by foot, invariably more was learned about the site and sometimes additional rock art which was not visible from the water was discovered. By traveling slowly in a small boat past areas where archaeologists and community members previously reported rock art, a thorough survey of the coastline from the water could be made. Additionally, it was possible to look for rock bluffs which could have unreported rock art.
2.4 Summary of Chapter 2

Past archaeological research conducted on the Central Coast has contributed in situating the rock art sites studied in the thesis in a framework of other practices and lifeways. Past researchers of rock art have similarly proposed how rock art fits into ontological frameworks, what a culture believes to be animate, and suggests ways in which to consider these locations on the landscape.

The involvement of the descendant communities of the rock art creators invariably leads to a broader understanding of the rock art sites. This understanding will be further explored in Chapter 3, when considering the rock art motifs and their meaning. Chapter 3 will also consider the significance of the materials used in the creation of rock art.
Chapter 3: Art, Meaning and Motifs

3.1 Examining rock art holistically

Rock art can be conceptualized as a conversation between the artist and those who witness it, taking place in a charged venue on the landscape. The nature of the conversation and what occurs for the human participants, varies depending on what each of us brings to the encounter. Our knowledge, or lack of knowledge, of the stories from the culture which gave rise to the rock art, the history of the location on the landscape, and any prior experience we have with the imagery depicted, will serve to mediate our experience with the rock art.

In this chapter, I explore how archaeology can be correlated with the descendant community of those who created the rock art, and how oral-historical texts can inform analysis. In addition to the specific meanings, where rock art designs may stand as symbols which would be understood and could be “read,” a more complete understanding is required to comprehend rock art as a feature on the landscape, born from the culture which gave rise to this practice.

More than other types of material culture studied by archaeologists, the question of what the rock art means is never far away. Positionality is relevant here. In Wickwire’s and M’Gonigle’s critique (1995:83) of the interpretation of rock art they state that: “The act of interpretation is unavoidably and necessarily a cultural act. Carrying such interpretation to the level of a whole new explanatory ‘theory’ is a cultural act on a grand scale”. I am not of the culture which gave rise to this rock art. Therefore, it behooves me to be careful when exploring the topic of interpretation. As rock art researchers have identified, rock art can have an ambiguous nature which
leads to its “multivocality” (Young 1988:195). “Rock art presents a kaleidoscope of meanings that shift through time depending on the viewer.” yet “…ascribing meaning is not a Rorschach test.” (Schaafsma 2013:1).

Until this project, my experience of recording rock art had been limited to inventory and site form filing. While my thesis research focuses on recording and typologising Central Coast rock art, I have attempted to do this in such a way that it provides a more thorough, community-involved approach than is possible when required to fit rock art into preconceived categories of site types for recording in a government database. This research considers the role of descendant community perspectives and recorded ethnography of this region. While partnerships with descendant communities are critical, the dangers of presenting information in a decontextualized state are discussed in contemporary anthropological writing (Nicholas and Bannister 2004:337). I intend to illustrate that while a specific meaning of rock art is not always possible for archaeologists to ascertain, rock art can be considered from a more holistic perspective. Related cultural practices and stories can at least point to some indirect meanings or topics of significance.

When considering aspects of meaning, I identified five topics which can inform the analysis of rock art, and which speak to a more holistic appreciation than looking at sites separated from their context. These five topics are: 1) oral history; 2) landscape, including location significance and analysis of place names; 3) portable art and linkages with other cultural practices; 4) symbology; and 5) materiality and meaning associated with the practice of creating rock art. In this chapter each of these contextualizing elements will be considered in turn. While the topic of landscape
significance is discussed, the topic of traditional place names is identified as a future research consideration and is not covered in this research.

3.2 Oral history

While there are ethnographic data on the Wuikinuxv Nation and the Heiltsuk Nation (Boas 1928; 1973; Olson 1955; Drucker 1940) that have informed my understanding of the rock art, there is limited published writing generated from within the study communities. Nor is there an abundance of writing by people outside the community which is contemporary with this MA thesis. Some notable exceptions include oral-historical texts which were translated and/or transcribed by community members for the Wuikinuxv (Walkus et al. 1982), and Heiltsuk (Storie and Gould 1973). To ignore ethnographic and oral-historical information is to risk making the past in our own image as researchers, and thus it “…becomes a mirror of ourselves.” (Schaafsma 2013:25).

Though archaeological research may be strengthened by its relationship to oral histories, recorded stories may have been misinterpreted by the recorders of the stories (Kii7iljuus Wilson and Harris 2005:122). In the oral histories recorded for this area, Boas himself explains that he did not always have access to adequate translators (Boas 1928:IX). Many of the sources listed in this section can be thought of as collaborations between the ethnographer and the community member sharing the story.

Heiltsuk viewpoints have been considered concerning ideas of landscape by past ethnographers. For example, Heiltsuk perspectives offer insight on place as an enduring concept, outside of time (Harkin 2000). In addition, the work of one member of the Heiltsuk Nation, Elroy White, was consulted because it offers insight
on rock art from within the culture. His master’s research documenting stone fish traps (White 2006) and his community-involved approach speak to the exciting possibilities available to indigenous archaeologists who can directly access both spheres of academia and cultural knowledge. He has shared his opinions about an analysis of the rock art sites in his territory, many of which I visited in his company. During a potlatch he explained what was taking place, and shared his insights about the linkages between potlatching and rock art iconography. This is an example of an indigenous archaeologist who, alongside the other members of the field crew who worked on this project, is redefining the complex relationships between communities and archaeologists. This represents a post-colonial turning point in archaeological practices (Murray 2011:365).

Schaafsma (2013:22) states that there is an “ethical imperative” to consult with the descendant community regarding the meaning of their rock art, though at times oral historical literature may be at odds with descendant communities’ interpretations and leaves archaeologists with a potential ethical dilemma when considering which literature to support. In fact, no such conflicting narratives between the oral-historical literature and what members of the two communities have said about interpreting their rock art were found in this current study.

The nature of community-engaged research has given me some opportunity to discuss the meaning and culture surrounding the rock art with members of the Heiltsuk and Wuikinuxv Nations. First Nations are increasingly developing their own permitting and controls on their cultural heritage (Nicholas 2006:367). Archaeology is no longer about studying a people, but rather, studying with people. It was not
uncommon during the fieldwork for this project for the Heiltsuk and Wuikinuxv to share stories from their lifetime and before, about the places we visited and their reactions to the designs. I have been made deeply aware of the relatedness between potlatching and rock art designs.

In order to understand the relatedness of cultural practices, the activity of potlatching will briefly be defined for those unfamiliar with this tradition. The etymology of potlatch is from Chinook trade jargon *patshatl*, “to give” (Harkin 2001:11885). This term is now applied to events which take place in Northwest Coast indigenous societies, although practices differ within each nation. Potlatches usually include at least one feast, but “…a feast could be given without a potlatch.” (Jonaitis 1991:104). Salient aspects of potlatching on the Central Coast include a gathering of the community and guests, providing an opportunity to redistribute wealth from the Chief or wealthy patron of the potlatch to guests (members of the same nation as well as members of other nations). This can also be described as payment of the witnessing of events such as: “…naming heirs, contracting marriages, conducting funerals, proclaiming new titles and privileges.” (Harkin 2001:11887). In other words: “It is a mechanism by which claims to rank status are validated or challenged, and changes to social status are communicated to the larger community.” (Harkin 2001:11887). The economic aspect of potlatching has also been described as a loan. It has been written about as an event where the potlatching goods and feast were eventually repaid with “…100 percent interest” when others held potlatches and the original host was invited to attend (Boas 1897:342). Interest could be gained on coppers (which are further discussed in the section on portable art 3.4) and prestige was gained by the number of
potlatches held by an individual and the value of the gifts given. Boas described the importance of potlatching as being that of acquiring rank “The underlying principle is that of the interest-bearing investment of property” (Boas 1897:341). In 1884 a law was passed in Canada making potlatching illegal (Bracken 1997:1). This was not overturned until 1951. This law sweepingly outlawed all forms of property exchange between indigenous people on the BC coast which could be construed as potlatching, and contributed to the very general term being applied to multiple different types of gatherings (Bracken 1997:120).

The oral-historical accounts of these two areas often speak to explanations of specific rights, titles, and connectedness to landscape (for a definition of this term see Appendix A). For example, the story of the rising house in Roscoe, told by Beatrice Brown (Storie and Gould 1973:32-34), explains the supernatural origin of the Roscoe Inlet potlatching goods and regalia. The story tells of a couple and their daughter, who, from their canoe, witness a house rising out of the water on a big rock, a “Bighouse” with whale totem poles. The box that the couple takes from the house is full of the goods they then use during potlatches (including rattles, masks, bowls, spoons and knives). The place where these potlatch goods were obtained is near rock art. This further encodes the landscape with meaning, where significant rock art occurs, and where important stories took place.

Clan crests are an example of the characters which occur in the oral history. A recent translation of Boas’ oral-historical work draws out salient themes in the oral history of both nations and how frequently particular animals appear (Boas 2002). It may be best not to think of stories as isolated events but ones that build on each other
and create (literally in some stories) the landscape and seascape. These stories can also explain the placement of habitation or harvesting sites. For example, one story about Eagle (told by Johnny Humchitt) explains the origin of “…the first village in Roscoe Inlet after the flood.” (Storie and Gould 1973:39). The characters in the story are a sort of pantheon. Stories do not appear to stand on their own but are, rather, generated by culturally-understood collections of individuals and cultural taboos and behaviours.

Crests are claimed at two different social levels: "clan" and nuym. The clan crest groups have also been described as the “sept” (Olson 1955), or the “clans” (Hilton 1990:317 quoting Boas 1924). Clan crests figure prominently in the published stories, contemporary culture, potlatch ceremony and art, and potentially in the rock art. Additionally, these stories of crests (which are frequently represented by animals) relate to specific characters tied to stories and places. An explanation of the clan by Olson (1955: 320) is that the Heiltsuk clan/septs are made up of Raven (crests: Raven and a human face on human hand), Eagle (crests: Eagle), Blackfish [killer whale] (crests: Blackfish, sea monster with human face, grizzly bear, the “half man”), and Wolf (crests: wolf). The wolf crest is unique, only the Uyalit (wuyalitxv) people from the area of what is now Bella Bella have the wolf crest, whereas the other three crest groups occur nearby (Hilton 1990:317).

Different ethnographers have attempted to describe clan affiliation in different ways, for example, in Wuikiunxv culture someone could belong to more than one crest group or choose which crest group to be part of (Hilton 1990:317). There are four Heiltsuk crest groups in a ranked order of Raven, Eagle, Killer Whale, and Wolf (Hilton 1990:317; White 2006:53). Olson admitted that the list of crests used by these
groups which he compiled is incomplete (1955: 320). This corroborates the fact that additional crests are in use in contemporary culture.

The village or descent group system of crests is related through “nuym” or stories which derive from the original ancestors of the land. Nuym can describe the origin and events of a village or tribe. For example, the White family (Heiltsuk) claims the moon crest, from Yisdaitxva Territory, from a particular story (pers. comm. Elroy White, April 2015). “The ranking system per tribe depends on their nuyms, place of origins and encounters with supernatural beings, and these are validated in the potlatches during the Mask dance series called the Peace Dance series, the oldest of our dance series” and, these rankings can vary between different geographic areas (pers. comm. Elroy White, April 2015). See the glossary in Appendix A for a more detailed description.

While the ethnographic record can assist in understanding and revitalizing these social systems, an inside perspective is required to fully understand and probe their meanings (White 2006:53 quoting David Gladstone). Some of these same animals mentioned above appear regularly in the published oral histories (Boas 1928:107, 121) and the rock art, though whether they reference the individuals from the nuym, clan crest, or a generic animal goes beyond my knowledge. There is also reference in both the oral history and the rock art to prey animals which are frequent subjects (possibly mountain goats, certainly quadrupeds).

3.3 Landscape (including seascape)

In a consideration of what it means to be indigenous, one author put it like this: “Most compelling is their sense of place” (Lee 2006:460). As another researcher
states: “Rock art is inextricably linked to landscape, but landscape itself is layered with numerous cognitive maps regarding space, time, and events by the cultures engaged with it and who left their art on rocks in it over the millennia” (Schaafsma 2013:9). Although descendant communities and archaeologists may be sharing one of those layers, getting at the other layers is difficult.

There are physical layers to the landscape which we all share. Additionally, the concept of imagining layers on the landscape such as temporal, political, spiritual, and moral is useful as at any given location these layers are operating on many different levels regardless of all parties being aware of them. The rock art, which may be extrinsically linked with these categories, is itself, visible to varying degrees on the landscape.

3.3.1 Physical landscapes

It is possible that certain physical characteristics on the landscape can lead to particular associations with a place, and even to different types of designs being created in the rock art. In two separate locations of fieldwork, one story recorded by Boas (Boas 1928:68) was told to me about two specific rock art sites (EkSr-2 and FbSx-10). In addition, a variation of this story is recorded in the oral histories of the nearby Nuxhalk (previously referred to as the Bella Coola) (Storie 1973:9-16). Rather than diluting the importance of this story or suggesting confusion (by its association with multiple locations), this illustrates the type of elemental importance of features on the landscape described by Harkin (2000). This story concerns a boquis (similar to a sasquatch or wild man) who kidnaps people. Boquis (variable spellings) are recurring characters of the oral histories from this area.
Like the characters which recur in oral histories, the significance of landscape features like caves, lakes, springs or beaches could be an understood element on the landscape (Harkin 2000:59) which connotes particular types of stories. These landscape features could, in turn, encourage particular types of rock art to be created (i.e., public as opposed to private as discussed below in the Smith Inlet and Nass River examples). For example, large easily-seen cliff faces with rock art could be territorial or chiefly status markers, while out-of-the-way more remote rock art sites and caves might be associated with private ceremonies. Additionally, there may be a spectrum of varying degrees of rock art visibility desired, rather than only visible vs. private.

Visibility can also be a seasonal characteristic of rock art sites. There is a rock art site which I had been told about by members of the Wuikinuxv Nation which had never been recorded by an archaeologist. Its accessible and remembered location, made me ponder why it had not been recorded previously. Then I realized it is covered most of the year by water. All the archaeological site forms reviewed took place between June-November. This site is not viewable during those months. It is only viewable when the water (Wannock River) drops in the winter. It was possible to walk to it in March. It depicts three faces which represent three children who drowned there (pers. comm. Johnny Johnson, March, 2014). While it is possible some of the petroglyphs in this region were created when sea levels were lower, this particular example may represent a deliberate engagement with the landscape/seascape to be visible only during the winter. Winter is also a time of ceremonial activity. It is also possible that this site’s association as a mortuary marker could record an element of the season when the children died.
Most of the rock art recorded during this project could be considered the public type because it is often painted on large rock bluffs visible from the water. However, this says more about this sample and the recording techniques (boat surveys) than about the possible totality of Heiltsuk and Wuikinuxv rock art. Doubtless the rock art intended to be private is still so. One rock art site, which depicts 14 dots, recorded for the first time during this project would never have been visible if the boat had not been landed for a different reason. An argument has been made for the rock art of Gabriola Island being intended for private ceremony rather than public proclamation because of its location and other factors such as engagement with the descendant community and the information retained in oral histories, and the varying quality of the rock art which could indicate it was the first time someone had made a petroglyph rather than a highly skilled artist (Adams 2003).

The rock art recorded in this thesis may represent a bias toward recording rock art sites that are intended for public viewing, because by definition it is intended to be more visible. In turn, more public types of imagery might get conveyed, for example, crest or territorial markers, motifs of high-ranking chiefs or the types of moral reminders evident in the oral-histories. To test this, a sample of more hidden rock art would need to be compared, and perhaps might result in different imagery being identified. The one site which seemed hidden all year, was of the enigmatic dots (which are a major element of many of the rock art sites that are highly visible from the water in this area too). The symbology within the oral-historical stories corresponds with many of the motifs utilized in the rock art of both petroglyphs and
pictographs. For example, the depiction of crests on the landscape may be deliberately intended to be seen and linked with hereditary stories and rights.

### 3.3.2 Temporal landscapes

Harkin (2000:64) explains that for the Heiltsuk, physical and linguistic events mean that the landscape encodes memory: “…landscape is the central means of connecting with the past.” Drawing on the work of landscape archaeologists, and my observations (that individual cultural practices are never divorced from one another), it is productive to consider landscape within a broader context without solely relying on academic understandings stemming from techniques such as GIS. To do this, it is important to take into account the co-occurring reminders of linear time (when mountains were formed, when rock art was created, the effects of recent logging) and what the temporal layers of landscape represent for people connected to the rock art as well as aspects which may transcend time, such as oral histories. This can represent a challenge conceptually for archaeologists. They may have difficulty understanding events in a non-linear temporal scheme where co-occurring layers of the landscape could be thought of as taking place continually by a member of the community familiar with the oral-historical narrative. For example, creation stories may be identified foremost with a place on the landscape, rather than first conceptualized as in the distant past. This idea is expanded from writing about concepts of indigenous landscapes (Harkin 2000:49). Returning to one place to repaint or overwrite a painting suggests that a site is continually important, even if it does not explain what that importance is.
Fowles (2010), drawing on ideas from Young’s example of the Zuni (Young 1987:11), and Gell (1998) speak to this, noting that because myth relates to the time of the ancestors, invoking these myths can cause the present and the past to coexist and provides the opportunity for the ancestors to communicate with the living through their legacy of rock art (Fowles 2010:460).

### 3.3.3 Political landscapes

In Heiltsuk oral history, there is mention of one island’s petroglyphs. In the rock, on the island, there is a depression which is a chief’s carved bowl for eating out of, with petroglyphs next to it. The petroglyphs "tell the chief’s story" told by Johnny Humchitt (Storie and Gould 1973:41). The right to feast on this island and have a story associated with it can be thought of as a political act.

There are also some references near the study area which relate specifically to pictograph imagery meaning on the landscape. For example:

Chief Moody Humchitt has many crests, many (rights to) title-name. His grandfather's grandfather married a Smith's[sic] Inlet Woman, and the name Wa'wiyyala or Wo'yilah was given to him as part of the dowry. Also given to him was the name Toxce'h, from a lake in Smith’s[sic] Inlet. The man made a petroglyph on a cliff near Smith’s[sic] Inlet which pictures a canoe, the men in it, the paddles, and the four coppers he was using as the bride-price... [Olson 1955:331].

Smith Inlet is located approximately 124 km (77 miles) minimum euclidean distance (MED) from Roscoe Inlet and 44 km (27 miles) MED from Rivers Inlet, see Figure 2. This quote relates to a political sphere where marriages and wealth were recorded by elites.

Another example of a direct reference to the political significance of pictograph imagery, relates to the area just north of this study area, the Nass River (approximately 317 km [197 miles] MED from Roscoe Inlet and 403 km [250 miles] MED from
Rivers Inlet, see Figure 2). Again, as with Smith Inlet, the pictograph on a bluff near the mouth of the river commemorates a specific important person (Chief Legaik) who commissioned it and who wanted to commemorate himself, indicate his trade monopoly (Lundy 1974:329), and be remembered by future generations. This is one of at least two pictographs (another famous one at Tyee at the Skeena River) commissioned for this reason by Legaik. It is recorded how the high cliff on which the painting occurs was accessed: with rope and a basket made of strong roots (Martindale 2006:175, see also MacDonald and Cove 1987:122 who quote Matthew Johnson [Laknits, Gipaklo'ots]). Besides pointing to meanings of specific paintings, I think these examples illustrate that rock art can aid in producing cultural norms and maintaining a hierarchy. It is a reminder to people of the marriage and power relationships of individuals, as well as economy and appropriate displays of status and protocols associated with naming and marriage. The above examples appear to represent publicly-performed rock art, which was intended to be viewed by a broader audience.

3.3.4 Spiritual and moral landscapes

Rock art can act as a visual reminder of the spiritual and moral landscapes within which people live. It is important to consider how it might have been “‘at work’ to sanctify cultural premises and beliefs” (Conkey 2009:189). Australian rock art has been described as specific points on the landscape where power is concentrated and specific spiritual beings incarnate. These places are linked with specific stories which remind people of those stories, creation, and how to behave (Flood 1983). By drawing in the last example of landscape I do not mean to imply that rock art on the Northwest Coast of North America has the same function as Australian rock art, only
that in both examples the spiritual landscape overlays all interactions and someone cognizant of the names and stories associated with the places and rock art imagery is constantly reminded of their significance. Similarly, place names on the Apache landscape (Basso 1996:128) and motif-covered blankets amongst the Tlingit, can be moral touchstones or texts acting as a reminder of the moral teachings and wisdom encoded in them (Thornton 2007:107). In this sense rock art can act as this type of moral touchstone also.

Many of the oral-historical stories which have been recorded for this research area are moralizing, and speak to the dangers of desecrating cultural norms and the breaking of taboos, for example, not listening to one’s elders (Boas 1928:47-68), lying (Walkus, et al. 1982:35), not treating animals with respect, such as not returning the bones of the first salmon of the season to the water so they can be reborn (Boas 1928:27). One story about marriage to a frog where the human grandparents do not recognize their grandchildren (Walkus, et al. 1982:135-142), reminds people that when you see an animal it could be a relative so this behooves one to be careful and kind. A variation of this story is also told in the oral history of nearby Nuxalk (Storie 1973:23-24). Rock art which depicts beings who are linked with these moral teachings can act as reminder to those culturally-initiated in the teachings and stories. In the same way, the spiritual beliefs of a culture overlay aspects of the landscape.

3.4 Portable art

The description of totem poles in Northwest Coast Archaeology as Deep History (Moss 2011) presents a nuanced understanding of material culture which is sometimes lacking when focusing on visual material culture in a lab or curated setting,
As with rock art, the meaning of portable or monumental art, such as totem poles, is not fixed to the people and context who first created them. Rather, meanings can change through time and the context of a descendant community and the stories they tell. Another example of this sort of understanding, where material culture must be considered in association with other cultural practices in order to grapple with its meaning, is the description of Blackfoot Teepee paintings being contextualized with the owner’s stories’ and a framework of other cultural practices (Noble 2007:339). Portable art is significant when considering rock art designs, as it frequently depict the same motifs. For example, one of the first conversations I had with someone about the meaning of Heiltsuk rock art which featured dots was with Heiltsuk hereditary chief Harvey Humchitt, about the dots on a specific cedar blanket depicting a beaver (pers. comm. Humchitt, September, 2013). Portable art can inform the study of parietal art and aid in the recognition of motifs. The creation of regalia and potlatching goods, is, in turn, linked with numerous other cultural practices such as names, titles, marriage practices, ceremonial dances, territory, and rock art designs.

It is important to identify designs used in Heiltsuk and Wuikinuxv art, so they will be recognized when they occur in rock art, and thereby to contextualize rock art within broader cultural practices as much as is possible. Rock art researchers are cautioned that a literal interpretation of designs does not take into account the possible metaphoric level of rock art (Schaafsma 2013:22). So, as well as identifying the links between rock art and cultural practices the metaphoric meanings of theses designs must be considered too.
Coppers are one such piece of portable art which recurs throughout this study area’s rock art designs. Coppers are shaped and ornamented sheets of copper which may be richly decorated with hammered designs and are sometimes painted. They are made in a distinctive trapezoidal shape, and are an important part of economic and ceremonial life in Central Coast societies. They are used in potlatching and sometimes represent individual chiefs, who had the right to own them. Coppers carry individual names and values. For example, a list published by Boas of names and values of individual coppers in Fort Rupert in 1893 provides an idea of how highly valued coppers were as a potlatching good (Boas 1897:344).

Each copper has a name of its own, and from the following list of coppers, which were in Fort Rupert in 1893, the values attached to some of them may be seen:

Ma'xts'olem ("all other coppers are ashamed to look at it"), 7500 blankets.
L'a'xolamas ("steel-head salmon," i.e., it glides out of one's hands like a salmon), 6000 blankets.
Lo'peLila ("making the house empty of blankets"), 5000 blankets. De'nt'alayo ("about whose possession all are quarrelling").
Mau'ak'a ("sea-lion"). Qau'lo'ma ("beaver face").
Le'ita ("looking below"; namely, in order to find blankets with which to buy it).
Nu'se ("moon"; its engraving represents the half-moon, in which a man is sitting).
G'a'waqa ("a spirit." He'iltsuq dialect, corresponding to the Kwakiutl Ts'o'noqoa).
Ne'lqEmala ("dry face"). Ne'nqEmala ("bear face"). K"a'na ("crow"; He'iltsuq dialect).
Qoayi'm ("whale"). Ma'xenox ("killer whale"). Qoayl'mk.in ("too great a whale").
Wi'na ("war," against the blankets of the purchaser).

As with depicting portable art such as coppers within the rock art, canoes are another example of a portable art object which is depicted in the rock art of Northwest
Coast. In addition, canoes may use the same motifs of rock art in their decoration.

Though the location of rock art is not always remembered (or possibly is remembered but is not shared) there is a connection to rock art and portable art. In 2013, when I visited a rock art site in Wuikinuxv Territory which depicts an eagle, Johnny Johnson (part of the team) recognized the design although he had never seen the pictograph before. He recognized the design from the 1994 Commonwealth Games canoe he had paddled to Victoria (pers. comm. Johnny Johnson, August, 2013). This illustrates both the connection between portable art and rock art, and additionally the continuity of practice. Although the pictograph may not have been seen by the creators of the canoe, the design was still in use in the community. Just as coppers had individual names and histories, which determined their value, canoes had individual names too as is illustrated in the oral history: “Speaking-sides was the name of her canoe” (Boas 1928:111). Canoes were also used as a potlatch good and so their depiction in rock art might also link them to this practice. Published stories can also assist in suggesting practices observed in the rock art. Designs of a row of vertical lines with a curved line below them, depicted in Northwest Coast rock art, are often considered to represent canoes with the paddles raised (pers. comm. Quentin Mackie, May 9th 2013). This practice, which has to do with honouring or celebration and greeting protocol (the below excerpt indicates a breaking of protocol), can be verified in such examples as (Boas 1928:95-97):

He came in sight at the point of the village. Then Wā’walis paddled strongly. He raised his paddles high. He was seen by his tribe. “Do not raise your paddles Wā’walis. The child of Me’q’lunts is gone.” Wā’walis did not obey and raised his paddles.
Masks, sometimes specific ones, are related to dances performed at potlatches. Masks are mentioned in oral history and song (Walkus, et al. 1982:193). The dances are often retelling stories from the oral history of the Wuikinuxv and the Heiltsuk. The rock art appears to depict masks, and certainly frequently depicts faces which could represent masks, and additionally squatting figures who might be represented in the act of dancing. Documentation by Boas of nearby Nuxhalk masks shows some overlap between the types of faces depicted in the rock art and the designs in the masks (Boas 1898: plates VII-XII). The masks are easily recognizable as depicting a specific being to those familiar with the stories.
The rock art frequently depicts ambiguous figures where it is unclear if they are meant to represent a human or an animal. Here it is relevant to consider what Viveros de Castro had to say on the topic of donning masks and regalia.

To put on mask-clothing is not so much to conceal a human essence beneath an animal appearance, but rather to activate the powers of a different body. The animal clothes that shamans use to travel the cosmos are not fantasies but instruments: they are akin to diving equipment, or space suits, and not to carnival masks. The intention when donning a wet suit is to be able to function like a fish, to breathe underwater, not to conceal oneself under a strange covering. In the same way, the 'clothing' which, amongst animals, covers an internal 'essence' of a human type, is not a mere disguise but their distinctive equipment, endowed with the affects and capacities which define each animal’ [Viveiros de Castro 1998:482].

Although he was writing about Amerindian culture in general, his points may be relevant as they offer some insight when reading the oral texts of the Wuikinuxv and Helitsuk. Themes which include transformation, unions between humans and animals (Boas 1928:37, 137; Walkus, et al. 1982:135), and the shedding of animal clothing to appear human are present in both communities’ narratives (Boas 1928:39, 47; Walkus, et al. 1982:86). The animals which occur are not merely representative of the animals in the region, nor do they seem to represent only the animals which were utilized for food, though many of the stories do include references to hunting.

3.5 Symbology

While more information appears to be accessible if the content is representational or at least partly so, interpretation of content or understanding intentionality is particularly difficult when the rock art under study is abstract or geometric in nature [Schaafsma 2013:22].

The interpretation of symbols can be personal but in some instance it can also be a system of understood meaning and referents as with written language. In one example of rock art interpretation, an elder member of the Spuzzum Nation was interviewed repeatedly regarding her interpretations of rock art (York, et al. 1993).
Although she had never been to the rock art sites, Annie York’s, of the Nlaka’pamux people, commentary about the photographs she was shown of the Stein Valley rock art suggested that rock art could be read by those properly initiated in the culture (York, et al. 1993). Though this has been criticized by other researchers because of the suggestion that a single person’s interpretation does not reflect a theory of understanding rock art and the methods used, which could have involved leading questions, are not always transparent (Wickwire and M'Gonigle 1995). This work (York, et al. 1993) does demonstrate how publishing interpretations of rock art by descendant community members alongside archaeological interpretation can be approached.

Von Petzinger has done relevant work on the topic of non-figurative images and symbols, stating that non-figurative rock art designs are often overlooked, while identifiable figurative rock art (which could still include symbols) is focused upon (Von Petzinger 2009). This is an important observation, as much of the rock art within the Roscoe Inlet and Rivers Inlet study areas is the non-figurative type. It is easy to focus on the drawings of figurative rock art, in spite of the fact that statistically dots and lines make up much of the rock art from these regions.

In addition to symbols which may have an interpretable meaning, there are symbols which transcend cultural contextualization and have a universal effect on human populations. For example, the concentric-ringed eyes in rock art which appear around the world, including in this study area, have been shown to have the cross-cultural effect of making people want to look away when they witness them (Watson 2011:92). Patterns which researchers identify based on their own interpretations and
categorizations almost certainly were not the ones which were meaningful in the past, but patterns of practice, such as frequency of a motif, or materials and places selected, do emerge.

A category identified in a previous publication on rock art of the Northwest Coast was “heads with rays, halos or projections.” (Hill and Hill 1974). While I agree that this is a repeated pattern which deserves attention, I do not agree with the authors’ cross-cultural comparison that halos and rays represent trance and Christian religious experience and therefore, they write “…it is quite likely that the heads with rays are associated with Northwest Coast shamanism.” (Hill and Hill 1974:266). I think these lines coming up from the heads may represent feathered headdresses or something else, but this is similarly a subjective observation. For this reason, I cannot agree with the statement: “There can be little doubt that the heads with rays represent a figure seen in a visionary experience.” (Hill and Hill 1974:266). However, it is possible that these sites do relate to shamanism.

Entoptics (cross-cultural visual phenomena caused by neuro-disturbances, caused by the eye rather than an interpretation by the brain as is the case with hallucinations, where spirals, grids and concentric circles are seen) have been written about as possible interpretations for rock art (Lewis-Williams and Dowson 1988; but see Bahn 2010), and this may have been what the Hills were arguing. Entoptics can be brought on by drugs, trance, damage to the head (literally “seeing stars”), migraines, etc. Like the concentric circles within rock art cross-culturally making people want to look away (Watson 2011:92), entoptic designs are not phenomena based on
connotations attached to them, though they may also have connections to cultural practices, such as the designs seen when fasting or taking ceremonial substances.

3.6 Materiality

One aspect of cultivating a holistic understanding of place, symbols, and practices, is to consider the meaning of materials and significance. This is identified in discussions of traditional knowledge and the symbols within petroglyphs, that they are a form of traditional knowledge (Howell and Roch 2009:225). The stone and paints used to create rock art were meaningful to the people who created the designs. In a discussion of French rock art, Conkey (1993:106) identifies that specific materials, as well as specific forms which occur at specific places and times are all relevant to considering the rock art, and in that way, removing it from grand narratives which gloss over what materiality meant to the creators of rock art.

3.6.1 Stone

Kii7iljuus Wilson and Harris (2005:123) observe that “Most indigenous people believe that stones have life force.” This comment was made in the context of linking archaeology to oral histories. While this statement seems highly generalized, it is actually quite a plausible belief framework which would explain the mention of rocks in oral histories of these regions, many of which include stories of transformation to stone.

A film which documents the repatriation of a stone ancestor, T'xecolitsa, (SRRMC 2007), though taking place between the Stó:lō Nation of the Fraser Valley (see Figure 2) and the Nooksack just south of the Canadian/U.S border, presents relevant ideas about conceptualization of materials, stone, and perspectives on kinship,
namely, that stone carvings and petroglyphs, are sometimes conceptualized as individuals who lived and were later transformed to stone. Just over the U.S. border, in Willapa Bay (see Figure 2), the idea that stone fish traps may have been considered animate by their creators was demonstrated by one archaeologist (Losey 2010), which indicates an entry point for a discussion of rock art and transformer sites. Transformer sites are places on the landscape where an ancestor is either turned to stone, or through the process of creating the landscape turns something into its present form (Carlson 2009:14-15). Stone on the landscape may sometimes be explained in this way by the oral history of a region. For example, stories from Central Coast of BC where a whetstone is thrown and turns into a mountain (Walkus, et al. 1982:51), or the actions of a character leave holes in the stone (Boas 1928:103), illustrates how the landscape both actively creates the oral histories, as do the oral histories create the landscape. In one story, *Roscoe and Hunter Island Mountains During the Flood* (told by Willie Gladstone) (Storie and Gould 1973:82-83), the mountains interact and create the landscape. The mountains (Hunter Island Mt. and Roscoe Mt.) talk to each other during the flood. As the people climb up Roscoe Mt. to get away from the flood, Hunter Island Mt. throws a piece of itself onto Roscoe Mt., leaving a hole in it and a piece with a different origin on the other mountain. The people are saved as they are able to get away from the rising tide.

Naturally-occurring rock formations which suggest recognizable forms sometimes led to the creation of rock art sites. The psychological term for seeing this type of imagery in rock formations is called pareidolia, which can be a form of apophenia (http://www.merriam-webster.com), when one sees patterns in random data;
a classic example of this is the man in the moon. These suggestive stones, which resemble recognized designs, sometimes attract people to places, which later become culturally significant. In addition to rock art created by modifications such as painting or carving, natural rock formations may become identified as rock art because it is culturally-significant. Petroforms, formations of rock created by humans provides a third category of what could be considered rock art (see Appendix A for a further description). At times in this study it was not always clear whether some sites represent petroforms, petroglyphs, or culturally-significant natural rock formations.

3.6.2 Paint

In addition to the stone itself, the paint has associated meanings. The animal fats which might have been used as binders in the paint (e.g., salmon eggs, bear fat) would have associated meaning depending on what that animal represented to people. However, this research did not test the paint or specifically question what the recipes consisted of, so this is conjuncture. Studies testing for organic material in the paint mixtures have not, to my knowledge, been done in BC. The paint appears to be primarily red ochre. Red ochre is a composite of two types of hydrated iron oxide (MacDonald 2008:1) which naturally occurs on the Central Coast and though I have only seen one ochre source on the Central Coast and it is outside the area of this study, the location of this important material could aid in interpreting the significance of the rock art. One community member told me of a place where he has found red ochre while hunting (pers. comm. Johnny Johnson, March 2013) within the Wuikinuxv portion of this study area. Red ochre, like obsidian or basalt has a distinct geochemical signature and can, in theory, be sourced.
One study in BC (Velliky 2013), to the south of this study area, indicates the differences between two Squamish (Skwxwu7mesh) Nation (see Figure 1) ochre sources, and that the paint on their rock art sites can be identified using portable X-ray fluorescence spectrometry (pXRF). Further, the author suggests that the meaning of these ochre sites and consequently the meaning of the painted sites is slightly different because one ochre site is extremely difficult to reach whereas the other is readily available (Velliky 2013:iv). This is supported by the research done by MacDonald (2008) whose research on sourcing ochre using instrumental neutron activation analysis (INAA) within this research area (Katit, Namu [see Figures 1 and 2], and Cockmi) and suggests repeated and long term use of nearby ochre sources. She notes, “There would have been no desire to get or use ochre from a different source, as it would not have carried the same symbols, meanings, ideas and stories associated with the more often used and desired source” (MacDonald 2008:55). In addition to ochre-sourcing pXRF has been applied to other aspects of studying rock art (Undem and Johnson 2015) including dating (see section 6.3.3).

Ochre has an extensive and global precedent of use both functionally and symbolically (MacDonald 2008:5). Ochre continues to be applied to the body and used by BC First Nations (this example is drawn from Vancouver Island to the south of the study area) as a means of protection from supernatural forces and the dead (McLay et al. 2004:169). Within Heiltsuk culture ochre has been described as being applied to the face in the form of paint to purify one to enter the spirit world (pers. comm. Elroy White, April 2015).
Although there is direct mention of petroglyphs only, not pictographs, in one of the published oral histories of the area reviewed for this paper (Storie and Gould 1973:41), there is mention of ochre-use in the ethnographic record (Olson 1954:234) and the published oral-historical stories (Boas 1928:37). One story suggests the ochre’s ability to transcend supernatural transformation. When the person is marked with red ochre they are recognized even after they turn into a dog, because the ochre remains on them (Boas 1928:37). There is also mention of Wuikinuxv ochre-use to paint symbolic potlatch items (MacDonald 2008:16 quoting Olson 1954:234). Therefore the significance of ochre as a painting material, and one which perhaps had to travel a great distance and could have been difficult to procure, speaks to its significance, as does stone as a potentially-perceived-as-animate material, and one which may have been shaped by supernatural beings.

3.6.3 Copper

It may be important too, when considering materiality, to consider the material of what the designs depict. For example, the meaning of copper itself and its uses is considered by Jopling (1989) on the Northwest Coast. He outlines what copper has been used for in different time periods, suggesting the material itself had an association with protection and supernatural power even before the introduction of the sheet metal which gave rise to the trapezoidal coppers used during potlatches. The sheet copper was used to cover the bottoms of European boats and became popular as a trade good (Jopling 1989:127). One problem with considering the significance of the material copper linked with the rock art of that design, is that it discounts the possibility that both portable art coppers and trapezoidal rock art motifs are referencing something
else of that same shape. Initially, I thought it might be possible to minimum-date the rock art which was depicting coppers because there is evidence that the portable art did not occur before European contact (Jopling 1989; Moss 2011). It was pointed out to me that this doesn’t work as the design could have been referring to an earlier method of producing the shape (pers. comm. Quentin Mackie, Fall 2013). Coppers could reflect a change in material (sheet copper) from some other substance. In one oral-historical account of how the Nuxhalk (just east of the research area) came to possess coppers, Beatrice Brown tells a story of a Sasquatch, who leaves a copper, which is then broken and distributed at a potlatch to other villages (Storie and Gould 1973:30-31).

3.7 Summary of Chapter 3

The identification of significance may be more relevant, or at the very least, more doable, than grappling with exact meaning of rock art. Meaning is complex, and varies through time and the perspective each individual brings. Materials (e.g., ochre, stone, copper), specific symbols, cultural practices (e.g., potlatching, making portable art), and landscape situation, are all interconnected with rock art. Considering rock art alongside the insights of living populations as well as oral-historical sources, can at least point to areas relevant to meaning. A careful examination of the published oral histories of the area can speak to overarching themes which can at least inform rock art interpretations and the identification of designs as significant in the landscape, and thus the rock art. Ways of contextualizing topics significant to the interpretation of rock art (e.g., oral history, landscape, portable art, symbology, materiality) which descendant communities and archaeologists are aware of can be expanded with the
above techniques. In Chapter 4, the permissions obtained for this research, and the selection of methodology to answer the research questions will be outlined. How techniques for studying this rock art were implemented will be explained.
Chapter 4: Methods

The methods of this project are twofold as they include both on-the-ground surveying and recording of sites, as well as laboratory methods. In this research two main laboratory methods were used: digital contrast enhancement of photographs and the building of an inductive typology. This research is epistemologically framed within the concept of community engagement. The research is not merely concerned with studying a culture as one would dissect a specimen, but rather to explore rock art together in partnership with the Wuikinuxv and Heiltsuk community members. Themes which are relevant to meaning emerged from taking a community-engaged direct historical approach for understanding rock art.

4.1 Permissions obtained for this project

In order to do community-engaged academic research, as well as research which used the technique of scuba diving, a number of different types of permissions needed to be obtained. Agreements were required for this research to take place with Hereditary chiefs and band councils, University of Victoria Ethics Review Board, Workers Compensation Board, University of Victoria Occupational Health and Safety Department, and the BC Archaeology Branch.

4.1.1 Hereditary chiefs and research liaisons

Hereditary chiefs were met with and consulted throughout this project. In some instances, this was part of a committee meeting, in other instances individuals were met with privately and photographs and stories were casually shared about the locations of the research. These meetings included meeting with Chief Wilfred Humchitt, a hereditary chief of the Heiltsuk, whose particular origins and jurisdiction
are in Roscoe Inlet. I also met with Chief Harvey Humchitt (Chief Wiqvilba Wakas [Eagle Nose - Great River], Heiltsuk) who is also the Research Liaison Coordinator for the HIRMD office (Heiltsuk Integrated Resource Management Department) and Peter Johnson of Rivers Inlet (Wuikinuxv) who is the liaison with the Wuikinuxv Band Office.

4.1.2 First Nations bands
In Bella Bella, I was required to fill out a research form outlining the proposed research and research registration. In consultation with the HIRMD office the research agreement was rewritten after receiving feedback. Phone conferencing and in-person meetings occurred to discuss the research agreement over a period of several months in the winter of 2013 and 2014. See Appendix B for the first page of this agreement (the other pages are not included as they contain maps and personal contact information).

In Rivers Inlet no such form exists, so a proposal was drafted, and submitted to the Wuikinuxv Band office for approval. See Appendix C for the first page of this agreement (the other page is not included as it contains personal contact information). Aspects of this project were revised since this initial research agreement, based on continued community consultation (e.g., participation in focus groups, applicability of underwater techniques).

4.1.3 Ethics Review Board
When this research first began, formal focus groups with artists from each community had been proposed. In addition, information shared while at sites by community members was informative and some of it has been referenced in this thesis. Therefore, consent forms and invitation-to-participate scripts were designed and
submitted as part of a research proposal to a University of Victoria ethics review board for approval. This project was approved under the protocol number 13-526.

4.1.4 WCB (Workers Compensation Board)

The use of scuba diving during this project required additional permissions. When this preliminary research was first undertaken to gage the feasibility of using scuba diving as a tool for this master’s research, I was working as a Research Assistant at University of Victoria. The scuba diving I did at rock art sites required WCB approval as it was during my working hours.

4.1.5 UVic Diving proposal

University of Victoria also has its own procedure for approving research which involves activities with inherent risks, such as scuba diving. It was required that extensive paperwork and a risk-management plan be approved for this project.

4.1.5 BC Archaeology Branch

In BC, recording “new” sites (i.e., sites never visited by an archaeologist before) requires that GIS maps are created based on GPS waypoints recorded during surveying. Most of the sites visited had been previously recorded. The RAAD website which the BC Archaeology Branch maintains, was used to obtain approximate locations of the previously-recorded sites. This website is only made available to researchers, archaeologists, and First Nations bands.

4.1.6 Mapping

As a requirement of the BC Archaeology Branch, all rock art sites were recorded using GPS. Due to the sensitive nature of these sites, this information was provided to the Heiltsuk Nation and Wuikinuxv Nations for use in their databases, and
given to the BC Archaeology Branch. It was not otherwise distributed, and is therefore not included in this manuscript. Furthermore, while approach photos and video were taken of each site, these are not included in this thesis in order to keep locations private.

4.2 Presentations
In addition to formal permissions, there were impromptu presentations and informal sharing of information. Presentations during this project, where community members were present, were held at The Hakai Research Exchange (UBC Vancouver 2013, Mary Winspear Centre, Sidney, 2014), Bella Bella Community School, Wuikinuxv Elementary School, HIRMD office, and the Wuikinuxv Band Office. In addition, this research was presented at several academic conferences during the research period (IFRAO [International Federation of Rock Art Organizations] 2014, NWAC [Northwest Anthropological Conference] 2015, Hakai Research Exchange 2013 and 2014). It was also presented in both communities prior to defence at University of Victoria.

4.3 Sites
According to the RAAD database, there are 34 rock art sites recorded in Wuikinuxv Territory and 142 rock art sites recorded in Heiltsuk Territory.

4.3.1 Selection of study area
The two project areas were selected during community consultations. They are a subset of a larger research area which was initially considered for inclusion in this research.
4.3.2 Provincial archaeological database

The BC Archaeology Branch’s online database (RAAD website) was used to determine how many existing rock art sites had been recorded within the project areas as of 2014. Fifty-one sites had been previously recorded, 23 for the Wuikinuxv project area and 28 for the Heiltsuk project area. Almost all of these sites were recorded prior to 1971. In addition, library archival research regarding these sites was done at the Branch’s hard-copy library, located in Victoria and the Royal BC Museum (where original rubbings of the petroglyph sites and the original site forms are housed in the archives). Review of the available government site reports for mention of additional rock art sites in this area, was also undertaken. It was anticipated that more sites, which were not previously inventoried by the BC Archaeology Branch, would be recorded during this research. Members of the Heiltsuk and Wuikinuxv communities often provided location information regarding rock art sites and some sites were likely to be found simply by examining the coastline.

4.4 Field methods

The surveys took place by boat. Every attempt was made to get off the boat at a rock art site whenever possible. Inland sites, if they exist, were not included in this survey. The rock bluffs with no recorded rock art were examined for pigment, as were the areas of coastline with no prominent rock bluffs (this meant hours spent cruising past coastline looking for faint traces of pigment or carving). It was not possible to visit all areas at low tide, so intertidal rock art may exist, in particular petroglyphs not previously recorded by archaeologists, could not be investigated

Based on increased information gleaned from traditional land-use studies, predictions of high and low probability areas for archaeological sites are frequently
incorrect and are general models (Nicholas 2006). According to the Nicola Tribal Association (NTA, a member of the Nlaka’pamux Nation of the southern interior of BC) all areas are important when conducting a thorough survey, even low probability areas need to be checked (Nicholas 2006:368). I agree with this perception based on my fieldwork experience on the BC Central Coast. Large highly-visible rock faces in both the project areas frequently have rock art on them. Nonetheless, we surveyed areas that did not have visible rock bluffs and found unrecorded rock art. For example, during this research some sites low to the water and only visible close to the shore were recorded. These would not have been found if only the rock bluffs and not the treed areas of coastline, were examined. In addition, one site was found accidentally and was not visible from the water. We were not able to search all areas during this project.

4.4.1 Fieldwork

Initial surveys, which assisted in planning for the rest of this research, were undertaken in the summer of 2013 as part of the Hakai Ancient Landscapes Archaeology project, a collaboration between the Hakai Institute and the University of Victoria. This project took place near the research areas and provided the opportunity to visit and record rock art. The later fieldwork in the winter of 2014, fall of 2014, and summer of 2014, was all undertaken exclusively for this research. Additional trips took place for community meetings and presentations. The table below indicates that 10 days were spent in the Heiltsuk project area and 17 days in the Wuikinuxv project area. However, the reality of doing fieldwork is that not every day is a productive field day. For example, October and March are not conducive for recording rock art on the Central Coast due to weather, the reason for selecting these months was due to lower
water levels. Productive fieldwork days actually totalled 9 days in the Heiltsuk project area and 11 days in the Wuikinuxv project area. The entire project areas within Roscoe Inlet and Rivers Inlet/Owikeno Lake were surveyed.

Table 1: Fieldwork summary.

<table>
<thead>
<tr>
<th>Date:</th>
<th>Day:</th>
<th>Location:</th>
<th>Activity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>April/May 2013</td>
<td>2 days</td>
<td>Research area in general, including Rivers Inlet</td>
<td>Scuba diving rock art</td>
</tr>
<tr>
<td>August 2013</td>
<td>5 days</td>
<td>Rivers Inlet/Owikeno Lake</td>
<td>Documenting rock art sites</td>
</tr>
<tr>
<td>March 2014</td>
<td>3 days</td>
<td>Rivers Inlet/Owikeno Lake</td>
<td>Documenting rock art sites</td>
</tr>
<tr>
<td>August 2014</td>
<td>10 days</td>
<td>Roscoe Inlet</td>
<td>Documenting rock art sites</td>
</tr>
<tr>
<td>October 2014</td>
<td>3 days</td>
<td>Rivers Inlet/Owikeno Lake</td>
<td>Documenting rock art sites</td>
</tr>
<tr>
<td>May 2015</td>
<td>5 days</td>
<td>Rivers Inlet/Owikeno Lake</td>
<td>Documenting rock art sites</td>
</tr>
</tbody>
</table>

4.4.2 Scuba and sea level

Initially I scuba dived to see if intertidal rock art sites continued below the surface. However, this was undertaken within the research area at large and only one submerged site eventually ended up in the selected project areas. Hakai Institute dive boats and staff assisted with this part of the preliminary research. Five intertidal rock art sites (one of which is included in this analysis) were scuba-dived. One additional site was searched for within the Wuikinuxv project area.

Within the Wuikinuxv project area, some rock art is only visible when lake level drops in the fall and winter. The significance of winter as a time of winter ceremonies, initiations, and potlatching, might suggest that this rock art was intentionally made to be visible at certain times of the year only. In both project areas
intertidal rock art could also have been made deliberately to be visible only during
daily low tide, or negative tides (which occur in spring or summer only a few days out
of the year). Potentially, intertidal rock art was made during times of lower sea level.
Petroglyphs which are underwater now, suggest that they were made when sea levels
were lower. Much of the rock art in this research is near, or sometimes below, the
water’s surface. This means that it is vulnerable to sea level rise and, as Nilsson (2010)
notes regarding his study of Swedish rock art, to climate change. One way in which
sea level changes may be of relevance in the study of rock art, is the possibility of
minimum-dating submerged rock art. A sea level curve was published for this research
area, for which I assisted in collecting field data (McLaren, et al. 2014).

4.4.3 Photography

Photography was the main field technique used in this research. It presents a
unique opportunity of minimum impact when compared with other archaeological
survey methods which involve destruction of the record, for example excavation.
Every attempt was made to put a scale in the photograph. In some instances this was
not possible as the rock art was high above the water level and it would have been
unsafe and time-consuming to attempt to reach it. A two-metre (3.28 feet) long
collapsible stadia rod is, at least partially, visible in most of the photographs. In the
photos which do not have a scale, a verbal description of the approximate size of the
rock art is in the comments on that site.

During the course of this study, I learned more about photography as I went
along and the need to increase the pixel count of the photographs in order to use
DStretch effectively. The rock art recorded in 2013 was photographed with a variety of
cameras. By 2014, the photographic technique had become streamlined and only one camera, the Olympus OM-D E-M5, was primarily used, which was able to shoot .ORF (Olympic specific .RAW files) and fine definition photos. The Olympus fine definition photos are the majority of the ones reproduced in this thesis. The photos illustrate that DStretch works better with increased numbers of pixels per image. Some of the earlier images were taken with a point-and-shoot camera and it was not possible to revisit all of the sites later to re-photograph sites with the better camera (see Appendix D for a table of which camera was used, who the photographer was, and who, if anyone, is pictured in the photo).

In order to photograph the petroglyphs, the rock was first dampend, then a polarizing filter was used so the light reflected off the rock. It was possible in some instances to revisit faint petroglyphs at different times of day. Inevitably, some which had been visible at one time of day were not at another time, and more than once additional carvings were observed which had not been visible earlier. No artificial lighting was used in any of the photos. The photos were taken during the day, and whenever possible, when the sky was overcast. DStretch generally works best when light is not mottled, so this sometimes meant staying at a site until the sun went behind a cloud, or returning to the site on a different day when the lighting and shadows were more favourable.

4.4.4 Video

At every site visited a 360-degree video was recorded. This was primarily to help recall the site’s situation on the landscape and to aid in remembering details later upon return to Victoria. Additionally, though, this process aids in thinking about rock
art from a landscape archaeology perspective. Darcy Mathews (pers. comm. August 15, 2013) encouraged the taking of a 360-degree video at a site to help contextualize its situation on the landscape.

While videography ended up being a small part of the analyzable data collected, it situates this research within a particular theoretical body of knowledge. This idea is supported by research around the world where researchers have documented that the significance of rock art is linked to its location arguing that much is lost when rock art is removed (sometimes in an attempt to protect it from vandalism) from its original environment (Clottes 2008:2). At a lecture I attended it was proposed that: “The painting/carving is the least important part of a [rock art] site” (Chris Arnett, CAA presentation, May 2013). He encouraged researchers to turn their back to a pictograph and consider what it would “see.”

4.4.5 Data form

Over the last few years I developed a form to use when arriving at a rock art site to record it and insure that information was not missed. Initially I had thought that preservation differences or dating might play a part in this analysis so I was interested in recording aspects such as overhang, preservation, and the possibility of stratigraphy. I did not collect all the data indicated on this form at every site, but used the form to organize the photographs and GPS information. Included on the back of the form was graph and blank paper to be used for sketches. See Appendix E for a copy of this form.

4.5 Analytical methods

4.5.1 DStretch

Decorralation stretch (DStretch), is a plugin which was created by Jon Harmon specifically for examining ancient paintings on rock (Harmon 2013; Quellec, et al.)
2013). It enhances the colour/contrast within an image to the point that something barely detectable is made vivid and viewable with the naked eye. For a complete explanation of the algorithms involved in creating DStretch, see Jon Harmon’s DStretch website (Harmon 2013). DStretch was created for the opensource program ImageJ.

Photographs of pictographs which appear to be portraying a particular motif can sometimes change dramatically when the contrast is digitally adjusted with this computer software. New designs can emerge and existing design’s interpretation may change once the rest of the painting is made visible. Also, examples of overmarked sites may become more discernable when using this program. DStretch works well on photographs of pictographs, but is less useful for recording petroglyph. DStretch was applied to all pictograph photographs. I had not intended to apply DStretch to the petroglyph photographs. After an unexpected success applying DStretch to a photo of a petroglyph site, which turned out to have pigment as well as carvings, I also tried applying DStretch to the petroglyph photographs. Not all of the DStretched petroglyph photos are included in this thesis because some did not increase the contrast of the image.

4.5.2 Typology

Multiple researchers have considered the possibility of being able to date BC’s rock art stylistically (Adams 2003; Holm 1990; Lundy 1974). Typologies based on style can assist with this. However, the typology in this thesis is based on relatively few sites and it is possible that significant styles and time periods are not represented. In order for an inductive typology of rock art motifs to emerge, the rock art was not characterized as representing
particular categories of designs until all the data had been collected. However, the order in which categories are placed in a typology can subtly suggest hierarchical groupings. For example, petroglyph and pictograph reflect two very distinct categories, but the possibility must be considered that the significance is not, primarily, in the medium/method of the art piece, but rather in the content. Perhaps the sex of the motif or some sort of ranking between animals could be thought of as more significant than whether the art was painted or pecked. That petroglyphs represent different designs as well as different methods has been identified by earlier researchers (Gjessing 1952:66). However, within this thesis’s dataset there are only eight petroglyph sites, therefore the sample size did not warrant separating them into their own typology and differentiating them from pictograph designs. A typology which visually did not place one category above another might be a preferable way to illustrate the groupings. Additionally, significant information, such as whether the individual rock art site marked or commemorated a burial or some other associated meaning, might well be the most important aspect of a rock art site. Unfortunately, this is a difficult or impossible piece of information to obtain for all the rock art sites, so it is rarely possible to include that as a first stage grouping for a typology.

Banning’s (2000) work on how to develop typologies, which are inductive rather than deductive, has served as a guide for this proposed typology. He defines typology as “a classification or grouping that has explanatory (or meaningful) relationships with attributes that are not intrinsic to the classification or grouping itself” (Banning 2000:53). He differentiates groupings and classifications from typologies and suggests that most archaeologists’ groupings are arbitrary, while typology should only refer to an argument which goes beyond a perceived trait (Banning 2000:52). The extrinsic aspects of the
typology in this thesis may only emerge once more fieldwork occurs, and may never emerge for some sites. For example, these extrinsic aspects could include what is known about the location in the oral history, or what the place name associated with the location pertains to. Banning states that “...it is impractical to elaborate a typology until there are thousands of types.” (Banning 2000:56). With this in mind, this research’s typology will suggest some initial groupings which Banning would likely deem “classifications” rather than typological groupings (Banning 2000:52). The visual attributes of a design or motif are the aspect which can be worked with at this time. As this is a small sample size some designs will invariably stand alone, whereas other designs will be lumped together as being visually related.

Initially, visual traits were used to create groupings and associations between the images. With such a small sample size, this left many designs out of the groupings. For example, some detailed designs appear to stand alone. In the future, more fieldwork could add additional sites to this typology and eliminate or reduce categories such as geometric. For the present some designs have been lumped together thematically, rather than by visual traits. For example, animals which have been identified, often do not resemble each other, but have been thematically grouped due to their low numbers in this typology. In the future these categories may be reorganized once more sites are recorded in the region. Also, as has been identified earlier, the category of geometrics very likely includes some designs where only the base geometric shape is now recognizable, but at one time represented a more elaborate design. In other words, I agree with Banning that attempting a typology without more designs is a preliminary exercise, rather than a typology. I have labelled it as such anyway, and it should be thought of as a precursor to a typology. I also agree with Lundy’s categorizations, that rock art may be divided by stylistic groupings. Stylistic, visual trait-
based, and thematic groupings can all provide insight regarding the designs. In all categories, salient designs should emerge based on frequency.

**Summary of Chapter 4**

The permissions outlined above and the selection of project areas illustrate community involvement in this research. The selection of appropriate research methods in order to add to a typology of rock art for the Central Coast also considered in Chapter 4. In Chapter 5 the results obtained using these methods are presented.
Chapter 5: Results

5.1 Field results
The BC archaeological site inventory database (accessed online through the RAAD system) provided approximate locations of rock art sites searched for during this study. Unfortunately, the conversion of paper maps plotted with a compass to a GIS system has meant that only one of the sites visited during this project was easily located. As a result of this considerable time was spent ground-truthing site locations obtained from RAAD, and then cruising the coastline looking for rock art. Some sites had cursory sketches of the designs available for them, which helped considerably. Other sites had not been sketched. In most instances there were written descriptions of where the site was located and this also assisted in locating them.

Forty-seven of the 52 sites which had been recorded in RAAD were located. Additionally, three sites were located based on community members’ descriptions of eight orally-transmitted sites. Eight sites were found without prior information. The photographs included in this thesis illustrate these 58 sites visited.

5.2 Photos and photos DStretched
For 46 of the sites only one photograph (and sometimes an additional DStretched image of the same photograph) is included per site. This sometimes means that there are additional panels of rock art outside the frame of the photograph. The photos selected have the most discernable designs, or show the most novel of the designs at a particular site. For example, if a site had to be photographed in three different frames (but was not so spread out that it required moving the boat) and one frame showed a face and dots, while the other two frames showed dots, then the frame
with all the designs (face and dots) was chosen to include rather than the other two. For 12 sites multiple photographs are included because the site was geographically spread out, or the clarity of the designs or the increased discernable imagery after DStretch was applied to the design adds to the typology. In section 5.3 (Rivers Inlet/Owiken Lake), there is a discussion of recurring designs (e.g., dots and coppers) which also occur in section 5.4 (Roscoe Inlet). The earlier section covers them in more depth. The images are grouped by sites which have similar types of motifs. This does not necessarily mean that the sites reflect the same purpose of the painter. Additionally, many of the sites fit into a number of groups. Petroglyphs are included in the same section as pictographs although they may represent different types of sites. The Borden grid system has been used to reference the results. It would be more appropriate in this research to use the traditional place names to denote the sites; however, that would identify specifically where they are located. Furthermore, not all the place names are known for each site. The Borden grid system provides general information about location without being specific, see Figure 6 and Figure 7. The two study areas are considered separately below beginning with Rivers Inlet and Owiken Lake and followed by Roscoe Inlet.
Figure 6: Rivers Inlet and Owikeno Lake with the Borden grid overlaid on top of them.
Figure 7: Roscoe Inlet with the Borden grid overlaid on top of it.
5.3 Rivers Inlet and Owikeno Lake

Rivers Inlet and Owikeno Lake make up the Wuikinuxv project area. The sites have been grouped by themes in the rock art: dots, coppers, eyes and faces, anthropomorphic and zoomorphic figures, vertical lines, and geometrics. These groupings are subjective, and simply draw out frequent motifs. Many of the rock art sites discussed below could fall under multiple categories. Twenty sites previously recorded by archaeologists were visited in this area as well as six newly recorded as archaeological sites.

5.3.1 Dots

Dots often appear in lines or series, sometimes in rectangular arrangements. In general, the dots are large ~8 cm (~3.1 in). Most of the sites have dots present as a design element. This section is intended to be separate from dots used incidentally (e.g., as eyes in anthropomorphic figures). One problem with this grouping is that sometimes a faint dot may be the only discernable element left of a pictograph, so the site might, in fact, have been a more elaborate design. It is not known what the significance of dots was to the painters of these sites. Possibly they represent some sort of tally system. Boas suggested they record events (1973[1932]:44, quoted by Maxwell et al. 1997:47) and McDonald and Cove purposed “…a reckoning system, territorial markers and trade route ownership indicators” (1983, quoted by Maxwell et al. 1997:47). In some instances they appear to have been added later to an existing painting as they are a frequent motif at overmarked sites.
EkSr-3

Site EkSr-3 has 18 prominent dots, a row of 11 dots with a row of seven more dots below (though when it was first recorded it was recorded as having 13 and 12 dots). It also depicts a possible anthropomorphic figure and some unidentifiable designs which emerged with DStretch (pictured below). There are also two possible quadrupeds (not pictured below). This site was first recorded by an archaeologist in 1970 (Bjorn Simonsen and D. Walkus). A drawing exists on the original site form. It is highly visible from the water, but weathering in the last 43 years has resulted in there being fewer visible dots now than were initially recorded. It was impossible to land the boat at this site, so we were not able to place a scale in the photo. The possible anthropomorphic figure pictured below measures approximately 15 cm, (6 in). DStretch makes more pigment visible, but it is open to interpretation what this panel depicts.
Figure 8: Pictograph of unidentified designs (EkSr-3).

Figure 9: DStretched pictograph unidentified designs (EkSr-3).

EkSr-1

Site EkSr-1 (Figure 10, Figure 11, and Figure 12) was observed/recorded in 1970 by Bjorn Simonsen and D. H. (initials on the original site form). It is most likely
an example of one which now falls under the category of dots only because all that we were able to locate were the dots. Based on the drawing on the original site form, there was an anthropomorphic figure (which appears to be holding something, possibly a dip net) and another design (possibly another anthropomorphic figure drawn horizontally below the first one) 91 m (100 yds) away from the dots. I looked for these two figures but was unable to locate them. The site is visible from the water, but it was impossible to land at this site, so no scale was placed in the photo. The dots pictured below measure approximately 5 cm (2 in) each, based on an estimate made close to shore. Other areas with pigment are visible but due to exfoliation the designs are no longer discernable.

Figure 10: Drawing on the original site form of EkSr-1 (Royal BC Museum).
Figure 11: Pictograph of dots (EkSr-1).

Figure 12: D-stretched pictograph of dots (EkSr-1).
EkSt-8, panel #1

Site EkSt-8 was observed/recorded by Ruth Smelser and Bjorn Simonsen in 1970. Unfortunately, no drawings or photographs were located, and only the description “Pictographs” was given on the original site form. During the 2013 fieldwork, two sets of pictographs were found approximately where EkSt-8 was apparently located according to notes on the original site form. It cannot be absolutely verified that this is the same site as originally recorded in 1970. It is likely that these two paintings represent two panels of a single site. They are located 28 m (92 ft) apart. I will present panel #2 in Figure 37 and Figure 38 below. Panel #1 is pictured below in Figure 13, Figure 14, Figure 15, and Figure 16. It could depict an eagle in profile (with a downward curved beak) and dots above its head. The pigmented area measures ~2 m (6.5 ft) in width and ~ 0.5 m (1.5 ft) in height. Panel #1, was initially identified because of a blurry ochre-coloured patch. After applying DStretch, some sort of design (possibly a bird) was made visible. For the first time in this study an image (a rectangle of dots) was made visible on a section of rock where previously no trace of pigment had been seen. Because of the dots made visible with DStretch I have included this panel in the section titled dots. Note: Prior to beginning this research project, when I first began working with DStretch I tried applying it to photographs of what appeared to be blank rock faces. I never had success with this, so the rectangle below of 21 or more dots is an anomaly.
Figure 13: Pictograph of birdlike figure (EkSt-8, panel #1).

Figure 14: DStretched pictograph of birdlike figure (EkSt-8, panel #1).
Figure 15: Pictograph of rectangle of dots (EkSt-8, panel #1).

Figure 16: DSTretched pictograph of rectangle of dots, arrow points to it (EkSt-8, panel #1).
Site EkSt-4 (Figure 17 and Figure 18) was observed/recorded by Bjorn Simonsen, Linda Simonsen, and D. Walkus in 1970. A drawing exists from that time, of a face with five rays coming off the head, a copper, a square face, and two images which were suggested to possibly be birds (on the original site form). The drawing was cursory, but based on a written description of the location, the site pictured below is probably the one recorded in 1970. Very little of the site is discernable, and the dots observable today (A and B) are most likely part of the two faces and possible birds recorded in the 1970s. The copper (C) is approximately 25 cm (10 inches) tall.
Figure 17: Pictograph of copper and dots (EkSt-4).

Figure 18: DSretched pictograph of dots (A, B) and copper (C) (EkSt-4).
**EkSr-10**

Site EkSr-10 (Figure 19 and Figure 20) recorded during this survey, was observed while briefly on shore. This illustrates how many sites are probably missed using the boat survey method, and how much rock art was not made to be seen, but may have been made for more private purposes. This site is unique in the Wuikinuxv project area analysis as it is the only one painted flat against the ceiling of a rock overhang. It is approximately 100 m (328 ft), from a different rock art site (EkSr-3, Figure 8 and Figure 9). It is possible it was more accessible in the past before there was drift wood piled in front of it. It depicts 14 dots. It is sheltered from the weather, unlike most of the paintings in this analysis. The small space under the overhang did not allow for a photograph which included the entire pictograph.
Figure 19: Pictograph dots (EkSr-10), (section of rock art panel).

Figure 20: DSTretched pictograph of dots (EkSr-10), (section of rock art panel).
5.3.2 Coppers

A deliberate effort has been made to avoid attempting to identify rock art motifs from a culture of which I am not part. I have only recently begun to learn about the meaning of motifs in portable art. Therefore, I made the groupings or types general so as to be less subjective. However, coppers are grouped here because of their rich history and unique shape which makes them apparently easy to identify in the rock art.

EkSs-5

Site EkSs-5 (Figure 21 and Figure 22) was recorded by Bjorn Simenson in 1970. It may be a candidate for considering sea level change, as a means of dating the rock art because the pecked stone continues underwater. The first year, in August 2013, this site was looked for, but was unable to be located. It is one of the only sites for which a photograph, in an unpublished archaeological report (McLaren, et al. 1999:73), was obtainable prior to visiting the site. It was located the second year in October 2014. This panel is unusual in this sample as it is of both pecked copper designs and painted copper and geometric designs. Only one other site in this sample has a panel where both these techniques have been employed. Prior to DStretch being applied, coppers appeared to be the primary design; after DStretch was applied more designs became visible including at least 18 coppers, an asterisk, a series of lines, dots, a circle with lines across it, and some unidentifiable images. This site is approximately 40 m (131 ft) in length. Two additional panels, not pictured in the photograph below were noted, although they are less well preserved.
Figure 21, Pictograph/petroglyph of coppers (EkSs-5).
Figure 22, DStretched pictograph/petroglyph of coppers (EkSs-5).
EkSs-4

Site EkSs-4 (Figure 23 and Figure 24) could easily be placed under a different heading. The reason for discussing it with other sites depicting coppers, is that although there is a prominent image of an eagle (recorded as such on the original site form by Bjorn Simonsen and D. Walkus in 1970), DStretch made visible two coppers which had not been visible before (they may have crest symbols within them, but this is not conclusive). The coppers are a slightly different hue and may have been painted at a different time. They are also less detailed and could suggest a different artist. The eagle measures approximately 1.4 m (4.5 ft). It was possible to land the boat at this site. There is a semicircle of ochre to the right outside the frame of this photo. The eagle in profile has a Northwest Coast style of eye, and skeletal interior. The curlicues on its back may represent eagle down which is an important ceremonial material at potlatches.
Figure 23: Pictograph of Eagle with coppers (EkSs-4).

Figure 24: DStretched pictograph of Eagle with coppers (EkSs-4).
EjSu-1

Site EjSu-1 (Figure 25 and Figure 26) was observed/recorded by Bjorn and Linda Simonsen in 1970. An image of this site was published (Williams 2001), and because of this it is probably one of the few examples of a pictograph from this area seen by many outside of the community. As with the above site, EkSs-4, this site has multiple images including two coppers which could not be fully seen prior to applying DStretch. The image depicts three figures, one holding a copper in its hand, a bird (probably a raven) with a human hand and a copper body which could represent a masked figure, and a final figure, much like the first one, but very faded and with exaggerated eyebrows and no enclosing circle around the facial figures. The figures, one of which is graphically male, appear to be squatting, possibly dancing, with arms raised. The third figure is only partially visible and appears to have large eyes and eyebrows and is somewhat similar to the design at EkSr-2 (see Figure 48 and Figure 49). This site has been overmarked with the raven/copper design which has been painted on top of the two figures. The open hand on the bird, but not on the figures, also indicates a difference in style.
Figure 25: Pictograph of two figures, and a bird with a copper body (EjSu-1).

Figure 26: DStretched pictograph of two figures, and a bird with a copper body (EjSu-1).
EkSp-1

Site EkSp-1 (Figure 27 and Figure 28) was observed/recorded by Bjorn Simenson and D. Walkus in 1970. We searched for it several times, and finally located it in May 2015. It is barely visible from the water. The original drawing depicts six coppers. In 2015 we recorded eight coppers (seven of which are visible in the photo below), eight dots, and some unidentified pigment. The application of DStretch suggested that there might be an additional two coppers but this is not conclusive.
Figure 27: pictograph of coppers (EkSp-1).

Figure 28: DSTretched pictograph of coppers (EkSp-1).
EjSu-10

The next site EjSu-10 (Figure 29 and Figure 30) was not previously recorded by an archaeologist until this research. It was revealed to me by Johnny Johnson in 2013 and I was able to get out of the boat and take high resolution photos in 2014. It depicts three horizontal coppers. Initially I did not use DStretch on petroglyphs, unless there was evidence of pigment. Pigment was not noticed when this site was photographed, although months after taking this photo I wondered whether there might actually be pigment or possibly coloured lichen inside the pecked lines. The photo was DStretched and nine ochre-pigmented circles became visible. This led to a change in my methodology.
Figure 29: Petroglyph of horizontal coppers (EjSu-10).

Figure 30: DStretched petroglyph of horizontal coppers (EjSu-10).
5.3.3 Eyes and faces

Circular faces, with eyes, eyebrows, noses and mouths, as well as images with fewer design elements such as only concentric-ringed circles, which may represent eyes, are common in the rock art of this area.

EkSt-7

An example of a site which depicts three prominent face designs is the Biscuit Man site, EkSt-7 (Figure 31, Figure 32, Figure 33, and Figure 34). In addition to the three faces faintly visible prior to applying DStretch, the site also has a single dot, and another image which is possibly a type of quadruped or possibly an additional face, and two facing figures. The two facing figures may be an example of a split figure as described by Boas (1955:226-229) where the design is actually of one single animal but is depicted in such a way as to show both sides simultaneously. This is the only example in my sample of a possible split image.

This site is also unique in that it represents a location where offerings were known to be made. EkSt-7 was recorded as a site in 1970 by Bjorn and Linda Simonsen. In the remarks section of the BC Archaeology Branch site form it noted that the “Pictographs are weathered beyond recognition. Rock form is known as the ‘Biscuit Man’.” Initially I was unable to locate the pictographs at this site. A rock in that area which vaguely resembled a face was in approximately the same location. Johnny Johnson, who was present, identified the rock as Biscuit Man. He said he had not heard anyone mention Biscuit Man in many years. He then told me how his grandfather would leave offerings of biscuits on this particular rock to ensure safe travels when heading out to fish in the ocean. This practice was passed down through
many generations (pers. comm. Johnny Johnson, August 2013). The second time the site was visited, in October 2014, the paintings were located.
Figure 31: Pictograph of faces (EkSt-7).

Figure 32: DSretched pictograph of faces, arrow indicating split imagery (EkSt-7).
Figure 33: Pictograph of face with split imagery above it (EkSt-7).

Figure 34: DSretched pictograph of face and split imagery above it (EkSt-7).
**EkSt-15**

Site EkSt-15 (Figure 35 and Figure 36) was recorded as a site during this research. It is near several previously recorded sites where the original site form says only “pictograph”. Therefore, it is possible that this site was visited by an earlier archaeologist. However, there are fewer sites recorded along this area of shoreline than I located, so based on location information I think this may represent one previously unrecorded by an archaeologist. This pigment at this site was so faint that the first two trips in 2013 and 2014 I did not see this pictograph.
Figure 35: Pictograph of anthropomorphic face (EkSt-15).

Figure 36: DStretched pictograph of anthropomorphic face (EkSt-15).
**EkSt-8, panel #2**

Site EkSt-8 (Figure 37 and Figure 38) was observed/recorded by Ruth Smelser and Bjorn Simonsen in 1970. As mentioned above, two sets of pictographs were found approximately where EkSt-8 was located according to notes on the original site form. I have designated these two paintings as representing two panels of the site, 28 m (92 ft) apart (for panel #1 see Figure 13, Figure 14, Figure 15, and Figure 16. Panel #2 is pictured below.) Panel #2 depicts a three-fingered figure, with some type of horn, hat or possibly mask. There may also be upright ears. There are two pigmented areas one on either side of the figure. The figure is approximately 1 m (3.2 ft) tall.
Figure 37: Pictograph of anthropomorphic figure (EkSt-8, panel #2).

Figure 38: DStretched pictograph of anthropomorphic figure (EkSt-8, panel #2).
EkSt-1

The petroglyph at site EkSt-1 (Figure 39) was not recorded by an archaeologist prior to this research. It is visible only during part of the year, because it is covered by water during the summer and fall. Although I attempted to visit this site in August, October, and March, it was only viewable in March. The petroglyph is of three faces (two of which have enclosing lines). Associated with this site is a story of three children who drowned at this location (pers. comm. Johnny Johnson, March 2014). Note: there is a Canadian dime for scale in this photograph. Also at this site are multiple burials and an old village, recorded as an archaeological site by Bjorn Simenson and D.H. in 1970.

Figure 39: Petroglyph of three faces (EkSt-1).
5.3.4 Vertical lines

EkSr-5

Site EkSr-5 (Figure 40 and Figure 41) was first recorded by Bjorn Simonsen and D. Walkus in 1970. It is unique, as it is the only design made in black paint rather than ochre in the entire Wuikinuxv project area, and only one of two in my entire sample. This could be a design made with charcoal or some other substance. It is reminiscent of bird designs found in the interior of BC, for example site EbRk-10 (York, et al. 1993:176). It is not clear whether it is one or three separate images. DStretch has had the effect of making the black image disappear.
Figure 40: Pictograph vertical lines (EkSr-5).

Figure 41: DStretched pictograph vertical lines (EkSr-5).
5.3.5 Anthropomorphic and zoomorphic figures

EkSq-1

Site EkSq-1 (Figure 42 and Figure 43) was recorded in 1970 by Bjorn Simonsen and D. Walkus. The image may be of a figure with three-fingered hands, but unfortunately so little of the design is visible it is difficult to say what this image once represented. There is more pigment to the left as well as below the visible design. It is approximately 15 cm (6 in) tall.

Figure 42: Pictograph of figure (EkSq-1).

Figure 43: DSTretched pictograph of figure (EkSq-1).
EkSr-11

Site EkSr-11 (Figure 44 and Figure 45) was recorded as an archaeological site during the survey. The single anthropomorphic figure has a square body, which is unique in this sample. It was barely visible without the application of DStretch. It measures approximately 15 cm in height. As with other images already discussed, it appears to be squatting, and possibly even dancing.

Figure 44: Pictograph of anthropomorphic figure (EkSr-11).

Figure 45: DStretched pictograph of anthropomorphic figure (EkSr-11).
EjSq-1

Site EjSq-1 (Figure 46 and Figure 47) was recorded by Bjorn Simonsen and D. Walkus in 1970. It is particularly challenging to interpret because so much of the design has exfoliated off the rock face. It depicts a possible anthropomorphic figure inside a canoe (Figure 44 A). A face with eyebrows was discernable (Figure 44 B). Additionally, there are six dots (not pictured below), a possible quadruped, and an unidentifiable image.
Figure 46: Pictograph of possible human figure (EjSq-1).

Figure 47: DStretched pictograph of possible human figure (A) and face (B) (EjSq-1).
EkSr-2

Site EkSr-2 (Figure 48 and Figure 49) was recorded by Bjorn Simonsen and D. Walkus in 1970. It suggests a squatting figure, a kneeling figure, eyes above the figures (not visible prior to applying DStretch), as well as at least five dots and some unidentifiable designs. It is associated with a story of a Sasquatch (pers. comm. Johnny Johnson, August 2013). The large eyebrows and unenclosed facial features are similar to one of the designs at site EjSu-1 Figure 25 and Figure 26).
Figure 48: Pictograph of figures (EkSr-2).

Figure 49: DStretched pictograph of figures (EkSr-2).
EkSt-11

Site EkSt-11 (Figure 50 and Figure 51) was observed/recorded in 1979 by William Harris Walkus and Brian Seymour. The two observers did not agree about whether this site is a natural rock formation or a human-produced petroglyph of a whale. Its great size, approximately 30 m in length (98 ft) and the depth of some of the carvings led Seymour to conclude that it might not be anthropogenic. It is remembered as a petroglyph and has significance within the community. In 2013, I was able to scuba dive this site, which is only visible at low tide. The site is next to the opening of a river. Because of the thermocline of fresh and saltwater mixing near the surface, the area where the possible petroglyph is was not visible. By feeling the carving it appears to be a detailed petroglyph, probably created by adding to a natural waterworn feature. A drawing from the original site form is included (Figure 50).
Figure 50: Drawing from site form of whale petroglyph (EkSt-11).

Figure 51: Petroglyph of a whale (EkSt-11).
EkSq-30
As with the previous site, the next site discussed, EkSq-30 (Figure 52 and Figure 53), probably represents a place where a natural rock formation was enhanced. Regardless of its origins, this is a site of importance to the Wuikinuxv people. Johnny Johnson of Rivers Inlet remembers being shown this site as a young man (pers. comm. Johnny Johnson, August, 2013). Viewed at a distance, a rock formation in the shape of a snake is visible. Apparently there is also a petroglyph at the water level. We searched for this petroglyph and think we located it, although it was so worn it is hard to be certain.

![Snake Mountain, arrow points the head of the snake petroform (EkSq-30).](image)

**Figure 52: Snake Mountain, arrow points the head of the snake petroform (EkSq-30).**
Figure 53: Possible petroglyph of snake (EkSq-30).

5.3.6 Quadrupeds

EkSr-4

Site EkSr-4 (Figure 54, Figure 55, Figure 56, and Figure 57) was recorded by Bjorn Simonsen and D. Walkus in 1970. It depicts a male anthropomorphic figure with widespread arms, possibly running, towards a quadruped, possibly a mountain goat or some other creature with a rack or horns. In addition, there is a second quadruped, and a possible bird (not pictured). This pictograph does not appear to be stylized in a northwest coast traditional style but is more of a stick figure type of design. (The water was very rough on the day this site was photographed, therefore the photograph is blurry.)
Figure 54: Pictograph of quadruped and male figure (EkSr-4).

Figure 55: DStretched pictograph of quadruped and male figure (EkSr-4).
EkSs-2

Site EkSs-2 (Figure 58 and Figure 59) was recorded by Bjorn Simonsen and D. Walkus in 1970 who made a cursory sketch of this site’s imagery. The sketch showed a quadruped and a dot on the lower of two rock faces. After applying DStretch this image appears to depict three (or possibly four) anthropomorphic figures, not a quadruped and dot.
Figure 58: Pictograph of an apparent quadruped (EkSs-2).

Figure 59: DStretchd pictograph of three figures (EkSs-2).
5.3.7 Geometrics

This category includes interpretable images where the only visible aspects of the design are geometric. The importance of figurative geometric shapes is often overlooked by researchers (Von Petzinger 2009).

EkSr-8

Site EkSr-8 (Figure 60 and Figure 61) was recorded by Bjorn Simonsen and D. Walkus in 1970. The design suggests two anthropomorphic figures (stick figures), with a circle or other roundish design. Distance made it impossible to precisely determine the size of these designs. DStretch made visible a third figure overlapping one of the original two.
Figure 60: Pictograph of two figures (EkSr-8).

Figure 61: DStretcheg pictograph of three figures indicated by arrows (EkSr-8).
EkSt-3

Site EkSt-3 (Figure 62, Figure 63, Figure 64, and Figure 65) was observed/recorded by Bjorn and Linda Simonsen, and D. Walkus in 1970. No drawing of this site was found. Based on a written description of the location, this pictograph probably represents the same site. There are two open circles beside each other. The total design is approximately 20 cm (8 in) wide.
Figure 62: Pictograph of circles (EkSt-3) indicated by rectangle.

Figure 63: Distretched pictograph of circles (EkSt-3) indicated by rectangle.
5.3.8 Unidentifiable

This category of sites includes some sites which were recorded by earlier archaeologists but are not conclusively cultural (i.e., pigment testing would be required to verify if there is pigment other than natural staining of the rocks). These sites which were found do not have discernable designs and may be an example of a natural red pigment in the rock or in one case a red lichen. Since sampling pigment is outside the
goals of this research, this section reports my observations at these sites although I am not certain if they are anthropogenic.

**EkSp-2**

Site EkSp-2 (Figure 66 and Figure 67) was recorded in 1970 by Bjorn Simonsen and D. Walkus. The site represents dancing figures. Unfortunately, the location was not recorded precisely. It was looked for and recorded again during a logging impact assessment in 1994. It could be natural staining and is partly submerged in the water and possibly is not the one recorded by Simonsen and Walkus.
Figure 66: Unidentifiable pictograph (EkSp-2).

Figure 67: DSTretched unidentifiable pictograph (EkSp-2).
Site EkSs-3 (Figure 68 and Figure 69) was observed/recorded by D. Walkus and Bjorn Simonsen in 1970. Based on a drawing of a blocky ovoid, this site was likely located correctly. Thick lichen of the same colour made it difficult to be certain about the pigmentation at this site, and it was not possible to land the boat and examine the site at close range. It is approximately 0.5 m (1.6 ft) wide, and appears to follow a natural curve in the rock.
5.4 Unlocated sites in Wuikinuxv project area

Some sites which were remembered by community members or which had been previously recorded by archaeologists, I was unable to verify. For example, of the archaeological sites in the Rivers Inlet/Owikeno Lake project area, EkSp-3 was not located, and no drawing of it exists. EkSr-6 was not located. A drawing of this site
from 1970 shows three curved shapes and two lines one of which has a curlicue on the end. EjSq-2 was not located, no drawing exists. Finally, EkSt-9 was not located, a drawing of this whale pictograph exists.

5.5 Roscoe Inlet

Roscoe Inlet is in Heiltsuk Territory to the north of the project area just discussed. The rock art considered below has been grouped under the broad categories of dots, coppers, eyes and faces, anthropomorphic and zoomorphic figures, and geometric designs. Twenty-seven rock art sites previously recorded by archaeologists were visited during this survey, and an additional five archaeological sites were newly recorded.

5.5.1 Dots

Sites where only dots are visible, or where dots are a dominant element of the image, make up the most significant number of sites examined in this project area.

FbSx-7

Site FbSx-7 (Figure 70 and .

Figure 71) was recorded/observed by J. Anthony Pomeroy and M. Truell in 1970. There are at least 44 dots still discernable with the naked eye and over 108 when DStretch is applied (some of which are indicated by arrows in Figure 71). This may be an example of differential preservation at a pictograph site, or perhaps a revisited site which has been repeatedly painted. Nowhere is there definite pigment on top of other pigment, but there is a difference in the clarity of elements in this pictograph. The site is clearly visible from the water and is in close proximity, (2.5 km [1.5 miles]) to a village and a midden site, 3 km (1.8 miles) to a defensive site, and CMTs of all types.
Figure 70: Pictograph of dots (FbSx-7).

Figure 71: DStretchted pictograph of dots, some of which are indicated by arrows (FbSx-7).
Site FcSx-69 (Figure 72 and Figure 73) was recorded as an archaeological site during this research. It is extremely faded and all that is visible, even after applying DStretch, are dots and an unidentifiable design.
Figure 72: Pictograph of dots (FcSx-69).

Figure 73: DSTretched pictograph of dots (FcSx-69).
**FcSw-7**

Site FcSw-7 (Figure 74 and Figure 75) was observed/recorded by J. Anthony Pomeroy and Ruth Smelser in 1970. Seven distinct dots are visible, with some other faint ones possibly completing an elongated oval. The rock itself has a considerable amount of ochre-coloured natural staining, which is visible below the rock painting.
Figure 74: Pictograph of dots (FeSw-7).

Figure 75: DStretched pictograph of dots (FeSw-7).
**FcSw-8**

Site FcSw-8 (Figure 76 and Figure 77) was recorded by Ruth Smelser in 1970 as having 25 dots and two amorphous areas of pigment. It is approximately 15-18 m (50-60 ft) above water and now has trees blocking part of it so it was difficult to verify exactly what the design is. However, two lines of dots are clearly visible. The total painted area is approximately 2 m long (6.5 ft).
Figure 76: Pictograph of dots (FcSw-8).

Figure 77: DSTretched pictograph of dots (FcSw-8).
Site FcSw-11 (Figure 78 and Figure 79) was recorded in 1975 by Rick Rollins and Michael Blake as having 39 dots. Not all the dots are still visible. This site is only visible at low tide and had to be waded to in order to reach it. It is on the ceiling of an overhang. Pigmentation of the rock suggests possible additional designs, but this is inconclusive. This site is not far, ~200 m (656 ft), from a fish trap complex.
Figure 78: Pictograph of dots (FcSw-11).

Figure 79: DStretched pictograph of dots, indicated by arrows (FcSw-11).
**FcSx-12**

Site FcSx-12 (Figure 80 and Figure 81) was reported in 1970 and formally observed/recorded in 1975 by Michael Blake and Rick Rollins. Though only eight dots were visible in 2014, 12 dots, in an oval shape, were originally recorded for this site. It has a backward C-shaped design visible now reminiscent of FcSw-7 (Figure 74 and Figure 75) which is also an oval shape made up of 12 dots.
Figure 80: Pictograph of dots (FcSx-12).

Figure 81: DSTretched pictograph of dots (FcSx-12).
FdSx-13

Site FdSx-13 (Figure 82 and Figure 83) was observed/recorded in 1975 by R. Hall, Michael Blake and Rick Rollins. Their drawing suggests that it is a wide-mouthed face with 10 additional dots and two lines, one of which is connected to the oval “mouth” and that there are additional dots on the far left of this photo. Very little of this design is currently discernable, although the pigment is still quite visible approximately 30 m (98 ft) above the water. The entire area which includes pigment is approximately 12 m (39 ft) in width.
Figure 82: Pictograph of dots (FdSx-13).

Figure 83: DSstroched pictograph of dots, arrows point to pigment (FdSx-13).
Site FcSw-14 (Figure 84 and Figure 85) was recorded as an archaeological site during this project. It is extremely faint, and only two dots and three lines are discernable. It seems probable this was part of a more elaborate design. It is one of three sites in this sample, along with an additional one in Roscoe Inlet project area and one in Rivers Inlet/Owiken Lake project area, which are painted on the ceiling of an overhang. The design is approximately 40 cm (16 in) in total.
Figure 84: Pictograph of dots (FcSw-14).

Figure 85: DSstretched pictograph of dots, indicated by an arrow (FcSw-14).
FcSx-70

Site FcSx-70 (Figure 86 and Figure 87) was recorded as an archaeological site during this project. There are at least seven dots, but the design is so faded there could have been more at one time. Branches now cover most of the painting.
Figure 86: Pictograph of dots (FcSx-70).

Figure 87: DStretched pictograph of dots (FcSx-70).
Site FcSx-71 (Figure 88 and Figure 89) was recorded as an archaeological site during this survey. It would not have been found without cruising slowly along the coastline. It is not on a prominent bluff and is barely discernable. It quite probably represents a design which was once more elaborate than the 17 dots which are currently visible.
Figure 88: Pictograph of dots (FcSx-71).

Figure 89: DSTretched pictograph of dots (FcSx-71).
5.5.2 Coppers

As was discussed in Chapter 3, coppers can represent the commemoration of individuals and events. They are strongly linked with potlatching and were owned by chiefs and spiritual leaders. They are a motif which recurs in this area.

FcSw-15

Site FcSw-15 (Figure 90 and Figure 91) was recorded as an archaeological site during this project. It depicts 15 dots as well as a copper. The pigment in the image below measures approximately 1 m (3 ft) high. In addition, outside the frame of this photograph, there are 22 additional dots. The pigment appears quite bright, probably due in part to the rock overhang which protects it from weathering.
Figure 90: Pictograph of dots and coppers (FcSw-15).

Figure 91: DSstretched pictograph of dots and coppers (FcSw-15).
**FcSx-5 grouping #2**

Site FcSx-5 grouping #2 (Figure 92 and Figure 93) was observed/recorded in 1969 by J. Stoutamire, J. Anthony Pomeroy, K. Conover, and M. Finnegan (see also Figure 115, Figure 116, Figure 117, Figure 118, Figure 137, Figure 138, Figure 139, and Figure 140, for grouping #1 and #3). It may best be thought of as three separate sites, as the distance between the three groupings of paintings is as great as many others which were recorded as separate sites. The original recording by archaeologists was somewhat arbitrary, in that the procedures followed by different archaeologists were not consistent. For example, no other sites within this sample were described as groupings #1-#3, so that reflects an individual recording choice. There is no published Heiltsuk cultural reason which suggests these three locations are any more related than any other three sites which are situated next to each other in the Inlet.

This site depicts at least two coppers and a third shape, which could represent a copper, but is also similar to the triangular shape at FdSx-7 (Figure 148). There is also a triangular-bodied figure with a gaping mouth and a three-fingered hand. Additionally, a five-fingered hand on the other end of the panel could be part of another faded figure. There were 11 dots originally recorded at the top of this panel (they have now blurred together somewhat). There are also eight dots outside the frame of this photograph.
Figure 92: Pictograph of coppers, figure, and dots (FcSx-5 grouping #2).

Figure 93: DStretched pictograph of coppers, figure and dots (FcSx-5 grouping #2).
FdSx-8

Site FdSx-8 (Figure 94, Figure 95, Figure 96 and Figure 97) was observed/recorded by J. Anthony Pomeroy and Ruth Smelser in 1970 as depicting three coppers and a face. Since that time, the design has degraded to the point that only two of the coppers are recognizable (though pigmentation readily suggests where the third one was). As well as the square face (which could represent a box), there is what appears to be a figure with a hand, though it could be a gaping mouth or something else, barely visible above the square face.
Figure 94: Pictograph of coppers and square face or box (FdSx-8).

Figure 95: DSTretched pictograph of coppers and square face or box (a close up within the white rectangle is pictured below) (FdSx-8).
Figure 96: Possible anthropomorphic figure, close up (FdSx-8).

Figure 97: DStretched possible anthropomorphic figure, close up (FdSx-8).
FbSx-1

Site FbSx-1 (Figure 98, Figure 99, Figure 100, Figure 101, and Figure 102) is a petroglyph site which depicts four coppers, with a fifth inside one of the four grouped together. In addition, on a separate stone, there is a single copper by itself. There are also two circles, and what may be the depiction of a killer whale.

This site was reported in 1936 by Captain L.A. Peck who also reported that at this time the remains of wooden defensive structures were seen at this place. Beth and Ray Hill visited this site in 1973 and recorded that the remains of these structures could be seen in the 70s. This structure was not visible in 2014. A rubbing was done of this site by the Hills in 1973 and more figures were visible than were found in 2014. The site is covered at high tide. The Hills noted that tidal action was eroding the site and that the designs were very faint. They were able to additionally record a copper below the whale, and also an oval, two additional circles and a curved line (Hill and Hill 1974:160). There is a drawing of this site in Lundy’s typology (Lundy 1974:201).
Figure 98: A petroglyph recorded by the Hills at FbSx-1 which was not located in 2014 (photograph courtesy of the Royal BC Museum).
Figure 99: An overview of FbSx-1 when the Hills recorded it in 1973. More designs were visible than in 2014, and they stand out because the Hills have chalked the design. (photograph courtesy of the Royal BC Museum).
Figure 100: Petroglyph of coppers (FbSx-1).
Figure 101: Petroglyph of killer whale (FbSx-1).

Figure 102: Image of the rubbing made in 1973 by the Hills of the killer whale petroglyph at site FbSx-1 (photograph courtesy of the Royal BC Museum).
5.5.3 Eyes and faces

Square faces, wide-mouthed (possibly frog-faced) faces, and sometimes only eyes, are frequent designs in Roscoe Inlet rock art.

FcSx-13

Site FcSx-13 (Figure 103 and Figure 104) was recorded by Rick Rollins in 1975. It appears to be a circled face which has a wide mouth and concentric-ringed eyes. It may support the idea that the other images which have been referred to as wide-mouthed faces are, in fact, such because this seems to be even more face-like. It also has a dot and circle above it. Additionally, three lines and 11 dots on separate panels occur nearby which are not pictured here.
Figure 103: Pictograph of face (FcSx-13).

Figure 104: DSTretched pictograph of face (FcSx-13).
Site FcSx-8 (Figure 105 and Figure 106) was observed/recorded in 1970 by Ruth Smelser and M. Truell. They wrote that there were six very faded panels of figures made of dots unlikely to last many more years. They drew a picture which includes what appears to be a single, wide-mouthed face. Upon applying DStretch to this design, a second wide-mouthed face was made visible. In addition to what is visible in the photograph below, there are additional panels with pigment, with only dots discernable.
Figure 105: Pictograph of dots (FcSx-8).

Figure 106: DStretched pictograph of dots, an arrow points to a second wide-mouthed face made visible after applying DStretch (FcSx-8).
Site FcSw-4 (Figure 107 and Figure 108) was observed/recorded by J. Anthony Pomeroy and Ruth Smelser in 1970. It is not visible from the water and was difficult to climb up to. The design, after applying DStretch, clearly depicts a face with three dots above it. The other geometric design could be an additional face with a beak. There is additional pigment of an unidentified design to the left of the main two.
Figure 107: Pictograph of face and dots (FcSw-4).

Figure 108: DSTretched pictograph of face and dots (FcSw-4).
FcSw-10

Site FcSw-10 (Figure 109 and Figure 110) was reported/recorded in 1975 by Samson Hunt, Michael Blake, and Rick Rollins. The petroglyph is on boulder in the intertidal zone. Due to the portable nature of smaller boulder sites, as opposed to cliff faces, there is an increased risk of looting. This was our concern when we were initially unable to locate the petroglyph. Fortunately, we were able to find it on the second day. It is only visible at low tides, as can be seen by the barnacle line. It is associated with a stone fish trap complex. There is one distinct face which utilizes the curve of the rock. There are also three other circles which are possibly faces on the other side, one with rays extending around it (Figure 110).

Figure 109: Petroglyph of faces (FcSw-10).
Figure 110: Petroglyph of faces (FcSw-10).

**FcSx-11**

Site FcSx-11 Figure 111 and Figure 112 was observed/recorded by Ruth Smelser and M. Truell in 1970. It has two concentric-ringed designs which probably represent eyes.
Figure 111: Pictograph of concentric-ringed eyes (FeSx-11).

Figure 112: DStretched pictograph of concentric ringed eyes, arrow points to it (FeSx-11).
FcSw-2

Site FcSw-2 (Figure 113 and Figure 114) was observed/recorded by J. Anthony Pomeroy and Ruth Smelser in 1970. They recorded 21 dots and what appears to be a wide-mouthed face. In 2014 only 16 dots (probably the rest have become covered with lichen), and the wide-mouthed face were observed. Two other panels with pigmentation were observed, which can be seen in the below photo, one of which had two dots rendered visible with DStretch. These unidentifiable pictographs on the two panels not previously observed are probably very faded or covered by lichen or mineral. Elroy White and Wesley Vickers commented that the wide-mouthed face design resembles a frog face (pers. comm. August 4th, 2014). The wide-mouthed face is a frequently occurring design in Roscoe Inlet.
Figure 113: Pictograph of dots and wide-mouthed face (FcSw-2).

Figure 114: DStretched pictograph of dots and wide-mouthed face, arrow indicates dots made visible with DStretch (FcSw-2).
**FcSx-5 grouping #3**

Site FcSx-5 grouping #3 (Figure 115, Figure 116, Figure 117, and Figure 118) was observed/recorded in 1969 by J. Stoutamire, J. Anthony Pomeroy, K. Conover, and M. Finnegan. (For other images of this site see Figure 92, Figure 93, Figure 137, Figure 138, Figure 139, and Figure 140.) FcSx-5 grouping #3, depicts a face arched by dots which is visible before the application of DStretch. An additional wide-mouthed face design became visible after applying DStretch. There may also be a five-fingered hand but this is not conclusive. The arched face is reminiscent of FbSx-8 (Figure 119 and Figure 120) and FcSx-5 grouping #1 (Figure 139 and Figure 140). There is also a circle and two rows of dots as well as a partial anthropomorphic figure which may be obliterated by lichen or a mineral in the rock. The entire pigmented area is approximately 3 m (10 ft) wide. This design was not recognized as being a partial figure when it was first recorded. In addition, not pictured, there is a V-shape of 44 dots, four lines of dots totalling 20 dots, and a circle with nine lines below it.
Figure 115: Pictograph of dots and arched face (FcSx-5 grouping #3).

Figure 116: DStretched pictograph of dots and arched face (FcSx-5 grouping #3).
Figure 117: Pictograph of partial anthropomorphic figure, circle and dots (FcSx-5 grouping #3).

Figure 118: DStretched pictograph of partial anthropomorphic figure (A), circle and dots (B) (FcSx-5 grouping #3).
FbSx-8

Site FbSx-8 (Figure 119 and Figure 120) was observed/recorded by M. Truell and J. Anthony Pomeroy in 1970. Although the design is hard to distinguish it could represent an arched face as seen in the design of FcSx-5 grouping #1 (Figure 139 and Figure 140) and grouping #3 (Figure 115 and Figure 116). In addition there appears to be a wide-mouthed face just below the arched face as well as numerous dots.
Figure 119: Pictograph of dots, wide-mouthed face, and arched face (FbSx-8).

Figure 120: DStretch pictograph of dots, wide-mouthed face (A), and arched face (B) (FbSx-8).
5.5.4 Vertical lines and canoes

FbSx-5

Site FbSx-5 (Figure 121 and Figure 122) was recorded in 1969 by J. Stoutamire and K. Conover. The designs are difficult to distinguish. There appears to be a series of four lines and a possible wide-mouthed face and a dot, additionally there is a kidney-shaped oval outside the frame of this photo.
Figure 121: Pictograph of lines and dots (FbSx-5).

Figure 122: DStretched pictograph of lines and dots, indicated by a circle (FbSx-5).
FcSx-7

Site FcSx-7 (Figure 123 and Figure 124) was recorded by Ruth Smelser in 1970. It seems to depict a series of 17 dots, a face, a canoe with a figurehead, a quadruped (possibly a wolf), a geometric shape which could represent a beak, a U-shape, and an unidentifiable image. The upright lines within the canoe could represent occupants but could also represent raised canoe paddles (as discussed in chapter 3). One of the vertical lines emanating from the canoe is taller than the other lines and could represent an important figure or possibly a mast, as canoes were sometimes sailed. This design also has characteristics similar to those on a rattle (Harvey Humchitt, pers. comm., May 13th, 2015). The dots and unidentified image appear to have been overmarked on top of the other designs. The dots are much more vibrant than the pigment beneath the dots. This painted panel is approximately 4 m (13 ft) in width.
Figure 123: Pictograph of dots, canoe, quadruped, and face (FcSx-7).

Figure 124: DStretched pictograph of dots, canoe, quadruped, and face (FcSx-7).
5.5.5 Anthropomorphic and zoomorphic figures

FcSw-3

Site FcSw-3 (Figure 125, Figure 126, Figure 127, Figure 128, Figure 129, and Figure 130) was observed/recorded by J. Anthony Pomeroy and Ruth Smelser in 1970. It is an example of where overmarking appears to occur. As mentioned previously, the return to a specific place to paint a site suggests the enduring significance of the location. On the main panel of rock art (pictured in Figure 125 and Figure 126), two dorsal-finned creatures (A and B), two anthropomorphic figures (C and D) which may be wearing masks (for example one appears to be wearing a rayed sun mask), some type of fish (E), at least 30 dots, and numerous vertical lines are identifiable. On the same panel (to the east) (Figure 127 and Figure 128) is a possible anthropomorphic figure, a curved line with vertical lines reminiscent of the canoe at site FcSx-7 (Figure 123 and Figure 124) and something with an ‘X’ which may be the top portion of a copper (similar to site FcSx-5 grouping #2 Figure 92, Figure 93). Flanking the main panel which is approximately 3.5 m (11 ft wide), two smaller panels, of approximately 1 m (3.2 ft) wide each. To the left (not pictured) is an unidentifiable design which can only be determined as having 10 dots. To the right of the main panel (Figure 129 and Figure 130) is an anthropomorphic face, which prior to applying DStretch was not discernible except as two dots and some unidentifiable pigment. The entire site measures approximately 30 m (98 ft) in length.
Figure 125: Pictograph of dorsal-finned creatures, anthropomorphic figures, fish, dots, and lines (FcSw-3).
Figure 126: DStretch plectograph with arrows indicating A/B (dorsal-finned creatures), C/D (anthropomorphic figures), and E (fish) (FcSw-3).
Figure 127: Pictograph of possible figure, canoe, and ‘X’ (FcSw-3).

Figure 128: DStretch pictograph of possible figure (A), canoe (B), and ‘X’ (C) (FcSw-3).
Figure 129: Pictograph of face (FcSw-3).

Figure 130: DStretched pictograph of face (FcSw-3).
Site FcSx-10 (Figure 131 and Figure 132) was observed/recorded in 1970 by J. Anthony Pomeroy, Ruth Smelser, and M. Truell. The design is a figure, with a six-fingered hand, surrounded by 32 dots. It is greatly enhanced by applying DStretch. Although it appears to be a painting in profile, it is also possible that it is facing frontwards and the other arm and eye have deteriorated or become covered. Additionally, there is another panel of 12 dots not included.
Figure 131: Pictograph of dots and figure (FcSx-10).

Figure 132: DStretched pictograph of dots and anthropomorphic figure (FcSx-10).
Site FcSw-6 (Figure 133, Figure 134, Figure 135, and Figure 136) was recorded by Rick Rollins and Michael Blake in 1975. The site inventory states that Hanna Hall (who likely lived in Bella Bella at the time) interpreted the images as a grizzly bear and a fish. The grizzly bear image could represent a seated figure but interpretation is difficult as not all of the image may be visible.
Figure 133: Pictograph of “grizzly bear” (FcSw-6).

Figure 134: DStretched pictograph of “grizzly bear” (FcSw-6).
Figure 135: Pictograph of “fish” (FcSw-6).

Figure 136: DStretch pictograph of “fish” indicated by an arrow (FcSw-6).
Site FcSx-5 grouping #1 (Figure 137, Figure 138, Figure 139, and Figure 140) was observed/recorded in 1969 by J. Stoutamire, J. Anthony Pomeroy, K. Conover, and M. Finnegan (see Figure 115, Figure 116, Figure 117, Figure 118, Figure 137, Figure 138, Figure 139 and Figure 140, for other images of this site). In addition to two male figures, dots, an ovoid, and semicircles pictured below, it has two series of dots and a face with an arch of dots above it. Some of the dots appear to have been painted at a different time. This face, pictured below, appears to have two U-shapes painted in a different colour of paint mixture below the face. This paint could be made of charcoal or a darker colour of ochre or something else. This is the only site in the Roscoe Inlet project area which has dark coloured paint. As with the Rivers Inlet project area, these paintings which are not of red ochre are rare. There is only one dark painting in each project area. The arched face is reminiscent of the designs at FbSx-8 (Figure 119 and Figure 120, and FcSx-5 grouping #3, Figure 115 and Figure 116).
Figure 137: Pictograph of male figures and dots (FcSx-5 grouping #1).

Figure 138: DStretch pictograph of male figures (indicated by arrow) and dots (FcSx-5 grouping #1).
Figure 139: Pictograph of face and long row of dots, arrow points to dark pigment below ochre paint (FcSx-5 grouping #1).

Figure 140: DStretch pictograph of face and long row of dots (FcSx-5 grouping #1).
Site FdSx-7 (Figure 141, Figure 142, Figure 143, Figure 144, Figure 145, Figure 146, Figure 147, and Figure 148) depicts dots, three possible zoomorphic creatures (including a possible whale), a square face, an asterisk enclosed in a circle, and a triangular shape. Photographs of this site were published in a report (McLaren et al. 1999:42-44) which aimed to refine predictive models of archaeological site location in the area. The site was first observed/recorded by an archaeologist in 1975 by Michael Blake and Rick Rollins. In addition to the five main designs pictured below, there is additional pigment, but even after the application of DStretch, no recognizable image emerged. The story of the Rising House of Roscoe (Storie and Gould 1973:32-34) mentions a whirlpool and the asterisk design pictured in Figure 147 could be interpreted as such.
Figure 141: Pictograph of zoomorphic figure (right), DS-stretched version (left), (FdSx-7).
Figure 142: Pictograph of dots (left), DStretched version (right), (FdSx-7).
Figure 143: Pictograph of zoomorphic figure, ~1 m (3 ft), (FdSx-7).

Figure 144: DStretched of zoomorphic figure, ~1 m (3 ft), (FdSx-7).
Figure 145: Pictograph of face with arm and dots (FdSx-7).

Figure 146: DStretched pictograph of face with arm and dots (FdSx-7).
Figure 147: Pictograph of face and asterisk shape (right), DStretched version (left), (FdSx-7).
The next design at FdSx-7 is reminiscent of the pictograph at FdSx-14 (Figure 153 and Figure 154) which also shows a rounded triangular shape with an elongated U-shape in the middle. This design could represent female genitalia; however, as Lundy, in her analysis of the BC Coast has described, grouping these images as geometric is best as there is too much uncertainty in their meaning. Additionally, the bisected circle she describes as representing genitalia does not match the rounded triangles seen in this survey.

The female sex sign would seem to be a bisected circle or oval sometimes placed outside the body outline. A few such designs occur alone and it is questionable if their meaning can still be considered similar. Because of this uncertainty such isolated bisected circles or ovals are considered as geometric designs (Lundy 1974:153).
Figure 148: Pictograph of triangular shape (right), DStretched version (left), (FdSx-7).
FbSx-10

Site FbSx-10 (recorded by Hills as FhSx-10, probably a typographical error) (Figure 149, Figure 150, Figure 151, and Figure 152) was reported in 1970 by J. Stoutamire and K. Conover. It was also later observed by Beth and Ray Hill and recorded by Doris Lundy in 1973. In 1973 the Hills made a rubbing of this petroglyph site. They saw a person with a “top hat” and a pipe, a bird, a circle with a line attached to it, and a face (Hill and Hill 1974:161), none of which were locatable in 2014. This survey did record a very worn copper which had not previously been recorded by an archaeologist. Additionally, in 2014, two anthropomorphic figures (one only a partial figure), and a circle, which the Hills had also recorded, were located. This site was visited at three different times of day and only at one time of day from one direction could the copper be seen. This illustrates how much is probably overlooked based on the time of year, or even time of day, at which a survey is conducted.

The unlocatable images also illustrates that this site, which is submerged at high tide, is extremely vulnerable to erosion. In 40 years most of the site, which was faint in the 1970s, has become invisible. The Hills supposed that the partial figure in the image below was made more recently than the faintly visible images of the bird and the figure with the pipe and the top hat. This would support the idea that many of the painted sites were repeatedly returned to and new designs are made on top of or alongside existing designs. This site is ~30 m (98 ft) from a midden and village site. A drawing of designs from this site is included in Lundy’s typology (Lundy 1974:172).
Figure 149: Designs visible (chalked) in 1973 to the Hills at FbSx-10. (Royal BC Museum). Arrows, pointing to the petroglyphs, have been added to this image.
Figure 150: The figure with pipe and top hat recorded by the Hills in 1973, which was not visible in 2014. (Royal BC Museum).
Figure 151: Petroglyph of ovoid-headed partial anthropomorphic figure (FbSx-10).

Figure 152: Petroglyph (FbSx-10), Andrea Walkus points out a previously unrecorded-by-archaeologists copper.
5.5.6 Geometric shapes

As mentioned previously, geometric designs, as well as the separate category of dots, sometimes represent merely the last visible aspect of a more complex design. Unfortunately, like the dot category, geometric shapes can become a catch-all for paintings which are not preserved well enough for archaeologists to discern their original design.

FdSx-14

Site FdSx-14 (Figure 153 and Figure 154) was first observed/recorded by Michael Blake and Rick Rollins in 1975 and may have been viewable from the water at that time. It was not visible from the water in 2014 and was treacherous to reach. The design is reminiscent of the design at site FcSw-4 (Figure 107, Figure 108, FdSx-7, and Figure 148). It depicts a circle with a rounded square and an elongated U-shape within. The wider red circle could have been a later addition to this site as it is more darkly pigmented than the thinner lines within it.
Figure 153: Pictograph of triangular shape (FdSx-14).

Figure 154: DSTretched pictograph of triangular shape (FdSx-14).
FdSx-9

Site FdSx-9 (Figure 155 and Figure 156) was recorded by J. Anthony Pomeroy in 1970. Even with the application of DStretch, there likely was more to this design than is now currently visible, for example, an anthropomorphic figure or a partial copper. When it was initially recorded the comment on the site form reads “pictograph, copper a figure.” The shape is somewhat reminiscent of the zoomorphic figure in the pictograph at FcSx-5 grouping #2 (Figure 92, Figure 93).
Figure 155: Pictograph of triangular shapes (FdSx-9).

Figure 156: DStretched pictograph of triangular shape (FdSx-9).
Site FcSx-9 (Figure 157 and Figure 158) was observed/recorded by Ruth Smelser and M. Truell in 1970. This site might be more appropriately considered within the category of dots, as DStretch suggests the bottom part of the design is a series of dots. This painting is extremely faded however, thus what the image initially looked like is impossible to determine. In addition, there is what appears to be a small copper design outside the frame of this photo which was partially covered by plants. This painted panel is approximately 3.5 m (11 ft) high.
Figure 157: Pictograph of geometric shape (FcSx-9).

Figure 158: DStretched pictograph of a geometric shape (FcSx-9).
FcSw-5

Site FcSw-5 (Figure 159 and Figure 160) was first observed/recorded in 1970 by J. Anthony Pomeroy and Ruth Smelser. Locating it was difficult, as the paintings are extremely hard to see and are approximately 21 m (70 ft) above water level. An attempt to reach the site by climbing up to it was made, but previous landslides meant that we had to give up this up because of safety issues. On the original site form it was written that there was an indistinct copper and 30 ft away 13 dots. In 2014, it was not possible to locate the copper or the 13 dots with certainty, though that could be what the pigment represents.
Figure 159: Pictograph of an unidentified design (FcSw-5).

Figure 160: DStretched pictograph of an unidentified design, circled (FcSw-5).
5.6 Unlocated sites in Heiltsuk project area
   As with the Wuikinuxv project area, some sites which are remembered by community members, or which had been previously recorded by archaeologists we were unable to verify during this study. For example, Roscoe Inlet project area FdSx-10, of “a blob and four dots,” (inventory site form) observed/recorded by J. Anthony Pomeroy and Ruth Smelser in 1970, was not located.

5.7 Motif typologies
   While every site is unique, with no site exactly replicating the designs of any other site, themes in the designs did emerge. The project areas have been combined for the visual depiction of categories (Figure 161), but will be separated from each other when considering the frequency of designs (Figure 163 and Figure 164). The nine groupings used in this research have been divided as: dots, coppers, faces and eyes, anthropomorphic and zoomorphic figures, quadrupeds, sea creatures, birds, canoes, and geometrics. Not every design is pictured in the visual thematic typology, but at least two examples of every type are illustrated. Most sites have multiple types of designs. Each design is given a value of one not matter what category the site was listed under.

5.8 Summary of Chapter 5
   The drawing showing typological groupings and the photographs in Chapter 5 showcase the use of DStretch in examining Central Coast rock art sites. In Chapter 6 I shall explain how these results have addressed the five initial research questions proposed in Chapter 1.
Figure 161: Visual and thematic typological groupings of Rivers Inlet/Owikenno Lake and Roscoe Inlet rock art.
Chapter 6: Discussion and Conclusions

6.1 How have the initial research questions been addressed?

I now return to the five questions posed at the beginning of the thesis.

6.1.1 Can the existing record of rock art sites be verified?

The record can be verified to some extent; however, there are some problems with the existing site record database. First, the site inventory forms for previously-recorded sites may say only “pictographs” and have longitude and latitude, based on a survey done before GPS was in use, with no images, drawings, reports or other documentation. Even working with longitude and latitude the sites were not usually locatable based solely on their coordinates. It is possible that this has to do with a projection issue or because early use of GPS was too gross a scale. GPS has been refined because of additional satellites, so the accuracy is greatly improved since the longitude/latitude information was first converted. Of all the sites revisited in this survey only one, recorded in 1994, was able to be located based solely on previously-recorded coordinates data. The archaeologists who revisited sites recorded previously by other archaeologists or told about by community members faced the same challenges faced during this research, regarding whether or not they had located the originally-recorded/remembered site. Therefore, it is not possible to say with certainty if some of the sites recorded in this survey are the same ones previous archaeologists recorded.

Having said that, during this study 52 previously-recorded sites were searched for. This work was aided by sketches (which existed for some of the sites) and written descriptions of the locations. Forty-seven previously-recorded sites were located, but
five of the sites we looked for could not be found. Also, eight sites known to community members were searched for which were not recorded in RAAD (obviously the majority of sites recorded in RAAD were also known to some community members), and of these eight, three were found.

6.1.2 Are there additional, previously unrecorded, rock art sites within the study area to be recorded during this study?

Yes, a total of 11 rock art sites were newly inventoried. Eight rock art sites were found by going to potential rock faces and searching the coastline even where large rock bluffs did not occur. Three other sites were found based on information orally-retained within the communities. Also, nine sites had additional painting, not previously recorded, which was found near existing sites, either by using DStretch or seeing additional pigment while in the field. There are likely more rock art sites in the areas that remain unrecorded as they are not near, or at least not visible from, the waters edge.

6.1.3 How can DStretch best be applied to the study of pictographs in Heiltsuk and Wuikinuxv territories?

The benefit of applying DStretch lies in its ability to expand our understanding of identified rock art sites by showing additional designs, and potentially changing the meaning of designs (e.g., the introduction of a copper not visible before and the associated meaning of this image). DStretch can also be employed to “find” new rock art sites where only a faint trace of pigment was visible. In one case, where pigment existed nearby, a bare-looking area was revealed to have a design after DStretch was applied. Using DStretch in the field, so places which show high potential can be revisited the next day or later the same day, is one way in which DStretch proved helpful. An unexpected result was that applying DStretch to petroglyphs sometimes
reveals that the rock art is both a petroglyph and a pictograph. DStretch also helps to enhance examples of overmarked rock art, so it can be thought of as enabling relative dating so that locations which have been returned to, to create art, are able to be identified. Finally, sharing results back with the community, or in publications, can provide a greatly enhanced experience, as DStretch can reduce noise in photos and highlight the rock art.

A graph (Figure 162) shows how much more was visible at all site using DStretch than with the naked eye. The data have been tabulated in three categories. This graph illustrates, how site forms recorded earlier (usually around 40 years earlier) sometimes show more, or more often less, information than what was recorded in 2013-15. The archival material (AM) category is based on drawings and written information which had to be subjectively classified from the BC Archaeological Site Inventory Forms, or “site forms,” as well as material from the Royal BC Museum. For example one site form said “dancing figures” so it was given a value of 2 anthropomorphistic figures for the archival material (AM) category. The pigment at this same site did not have a recognizable design according to the report on the 1994 site form, or the 2013 field visit (FV), even after the photographs had DStretch (DS) applied to them, thus receiving a zero in the field visit and DStretch categories. Which categories a site’s designs were grouped into are recorded in Appendix F. In most cases where DStretch was applied to a photo of a petroglyph it did not provide further information. Therefore, removing petroglyphs from the sample would have shown an even more dramatic increase in the data when using DStretch; however, I chose to include petroglyph sites because, to my surprise, DStretch does sometimes provide
additional information at these sites. The bars in the graph are ordered temporally by the earliest archival material (AM), field visits conducted during this research (FV), and DStretch which was applied after the fieldwork (DS). Overall DStretch enhanced visibility of the rock art elements compared with what was visible during the field visits for this project or relying on the original site forms and archival material. These increases are illustrated by design type categories. When these categories were combined this totalled a 44% increase in designs between the field visits and DStretch and a 92% increase in designs between the archival material and DStretch.

Figure 162: Comparison of design types identified in archival material (AM), during site visits (SV) in 2013-15, and looking at photographs after DStretch (DS) was applied.
In Lundy’s typology of the entire BC Coast, she identified the most frequent designs depicted, with dots (counted individually), pits, circle faces, and coppers being the top four most frequent design categories (Lundy 1974:236). Lundy’s analysis of the entire coast is not dissimilar from the findings of this research. In the Wuikinuxv project area, dots (counted individually), geometrics (counted as complete images, so multiple geometric shapes within a single rock art image are not counted separately), anthropomorphic figures, faces (not just circle faces but also faces with no outline), and coppers are the most frequent designs (see Figure 163). In the Heiltsuk project area, dots (counted individually), geometrics, faces (not only circle faces but also faces with no outline), anthropomorphic figures and coppers are the most frequent design, see Figure 164. These designs were counted when they appeared to be entire designs, not merely design elements, therefore if a design contained elements which were dots (such as depicting eyes) they were not counted in the dot category. Similarly geometric shapes occur in every category as a design element, only when they were designs not represented in a different category were they counted as geometric.
Figure 163: Graph depicting the frequency of rock art types in Rivers Inlet/Owikenno Lake, data is listed in Appendix G
Figure 164: Graph depicting the frequency of rock art types in Roscoe Inlet, data is listed in Appendix H.

Figure 163 and Figure 164 do not reflect data from drawings or writing on the original site forms or other archival material (which do sometimes record more designs, or suggest an interpretation of designs). At some sites it was not possible to count all the designs, because of deteriorating weather conditions, or plant life covering the rock surface, so these numbers should be thought of as a minimum of images for each site.
6.1.4 By revisiting recorded and previously unrecorded rock art sites can the current typology of rock art in this area be expanded?

The addition of rock art sites which were previously unrecorded-by-archaeologists provided additional motifs to the existing typology of designs for this area. During this study a total of 11 additional rock art sites were inventoried as archaeological sites. Some sites, which had been recorded previously, were only identified as “pictograph” or “petroglyph” on the Archaeology Branch site forms, with no associated drawings, photos, or written description. By revisiting sites identified only as pictographs, the designs were, in some cases, able to be identified. The additional use of DStretch to adjust the contrast in the photos further enabled the expansion of this typology. This research has identified the need for additional fieldwork in the region, which would assist in making these groupings (based on 58 sites) into a typology based on a larger number of sites. Ideally, a future typology would also go beyond thematic or morphological groupings and be additionally based on extrinsic factors. The inductive typological groupings (dots, coppers, eyes and faces, anthropomorphic figures, zoomorphic figures [i.e., birds, sea creatures, and quadrupeds], and geometric designs), which have been identified as recurring types in the rock art of this region, have allowed me to expand upon the typology of known designs of this area. Furthermore, this research has refined the frequency of recurring types identified by Lundy (1974), for the entire Northwest Coast, to the more localized level specific to the area of the Central Coast of BC.

By dividing the designs into nine groupings, recurring patterns of practice emerged. The meaning of the designs would add to the creation of the typology, but the meanings become increasingly varied with the passage of time. What the original
artists intended is unknown but information is still available for analysis. For example, dots, by far the most frequent design in both project areas, frequently occurred as overmarking, painted on top of previously painted sites. They could represent some sort of tally. Coppers, as was identified earlier, are likely closely linked with the portable art which is intimately linked with names, title, and potlatching. Faces and eyes might be linked to specific individuals. Anthropomorphic and zoomorphic figures could represent characters in the oral history or masked dancers, which in themselves reference the oral history. Animals (here divided as quadrupeds, sea creatures, and birds) may reference clan crests, and characters in oral history. Canoes, while not a frequent design within this sample, are a recurring design I have seen on the Central Coast, perhaps referencing specific encounters and events. During a community presentation, one slide I showed of what I had interpreted as a canoe, it was pointed out that it also resembles a rattle. Community knowledge is vital when exploring the idea of meaning. Finally, geometrics as discussed previously often represent designs which have faded leaving only the basic shapes left. At other times geometric shapes appear to be entire designs. While meaning is exciting and compelling to consider it is difficult to confirm with any certainty.

6.1.5 Can the application of underwater research techniques be of benefit in studying rock art in this area?  

Underwater research techniques may be of benefit in the broader research area. However, the two specific project areas eventually selected for this research were, with one exception of a reported site (which I was not able to locate), not areas known to have completely submerged rock art. The technique of scuba diving could be of use in areas such as Link Lake, which is not part of the research area, but is a region where
underwater rock art is anticipated, as the lake has been artificially raised by a dam. With the exception of the whale petroglyph in the Wuikinuxv project area, EkSt-11, which is partially submerged, the eventual selection of the study area did not allow for the use of scuba diving as a primary recording technique. When the initial possibility of doing research in this area began, I thought it might be possible to visit areas known to have considerable sea level change or known deliberate flooding (as in the case of dams). As a result of this the benefits of using underwater archaeology on this project has not been thoroughly investigated.

Based on this pilot study of underwater rock art it is clear that there is potential for using scuba in this way. For example, sea level histories could be drawn from in areas of the Central Coast as well as other parts of the world, to predict where rock art might occur. In Sweden underwater rock art research is already underway (Nilsson 2010). Some petroglyphs are underwater now, suggesting that they may have been made when sea levels were lower. This means that they are vulnerable to sea level rise, and thus to climate change (Chezine 2013, Nilsson 2010) and scuba diving offers a means of recording these places before they disappear.

There are places with underwater rock art known to the First Nations communities on the Central Coast; the selected project areas did not include most of these locations. In the Rivers Inlet/Owikeno Lake project area there are four underwater sites. Three of these sites are partially or completely visible at certain times of year, making only one of these a candidate for the technique of minimum dating based on sea level curve. Unfortunately the one example of rock art which is submerged all year has not been recorded by an archaeologist. Though it has been
witnessed by living members of the community, it was not located during this study. Locating this site would allow archaeologists to minimum-date the rock art were there a published relative sea level curve for this area.

Sites EkSt-11 (Figure 50 and Figure 51) and EkSt-1 (Figure 39) are partially visible at low tide/low lake level. In 2013, I, along with three other divers, from the Hakai Institute, dove at site EkSt-11 and verified by touch its continuation underwater. For EkSt-1 it was not necessary to scuba dive as it is uncovered part of the year and can be walked to. Finally, site EkSs-5 (Figure 21 and Figure 22) visibly continues underwater, but no diving was attempted because the scuba diving took place only in 2013 and this site was not located until 2014. In the Roscoe Inlet project area FbSx-1 (Figure 98, Figure 99, Figure 100, Figure 101, and Figure 102), FcSw-10 (Figure 109 and Figure 110), and FbSx-10 (Figure 149, Figure 150, Figure 151, and Figure 152), all of which are petroglyph sites, are visible at low tide only. No scuba diving was attempted in this project area.

Within Canada, I found only one team of researchers who referred to documenting rock art by scuba diving it (Tassé 1974; Tassé and Dewdney 1977). Their work, at Diamond Lake, Temagami Lake, and Lady Evelyn Lake, Ontario, is to my knowledge, the only publication prior to this thesis which documents the use of this technique. Interestingly, this documentation included pictographs which had been submerged, one of which they found unexpectedly while looking for a different site (Tassé 1974:17; Tassé and Dewdney 1977:18-19). This differs from my experience that paintings are not visible underwater on the Central Coast, and only petroglyphs lend themselves to underwater techniques.
6.2 Comparison of contiguous areas

The rock art within the two different project areas showed differences. With such a small sample size it would be difficult to quantify this with certainty. Overmarking was present in both project areas, but to a greater extent in Roscoe Inlet. Rivers Inlet/Owikeeno Lake contained more stick figure type rock art than did Roscoe Inlet. The sheer cliffs of the Heiltsuk project area and the large freshwater lake within the Wuikinuxv project area, which varies the landscape, did not make for substantially different fieldwork experiences. The two areas are roughly comparable in terms of the environment, high cliffs and dense forested coastline.

6.2.1 Fieldwork comparisons

Both similarities and differences exist between the Rivers Inlet fieldwork and Roscoe Inlet fieldwork. The 5-day rock art survey conducted in Rivers Inlet in the summer of 2013 assisted in designing a fieldwork plan for the following season. During that summer I did not have access to a camera which took high resolution photos, so the equipment was improved in the summer of 2014 when fieldwork was conducted in Roscoe Inlet and all subsequent fieldwork in Rivers Inlet. Also, the fieldwork in Roscoe Inlet was less rushed and there was one additional person on the team. In Rivers Inlet the team consisted of two to three people, and in Roscoe Inlet three to four people. Because this included responsibility of a boat, it meant that in Rivers Inlet notes and photos sometimes were taken exclusively by me. For a full list of photo credits which include myself, Johnny Jonson, Andrea Walkus, Duncan McLaren, and Wesley Vickers, please see Appendix D.

Perhaps the biggest factor between the fieldwork experiences was that I was more familiar with identifying rock art and had honed my skills in recording it when I
went to Roscoe Inlet, compared with the first time I recorded rock art in Rivers Inlet. When I returned to Rivers Inlet in the winter and fall of 2014, I found rock art in places I had previously looked, but had not found any. This was partly due to the time of year (lighting conditions and water level) but also I had a much larger body of experience recording and identifying rock art. I made a greater attempt to get out of the boat at a site, or when searching for a site in Roscoe Inlet (partly because I had more time) and I have found this to be a valuable exercise, either because I found more rock art not visible from the water or because I gained some new insight about the site and how feasible it would be to imagine someone standing at the site and pecking or painting. Therefore I think the Roscoe Inlet survey was initially slightly more thorough (more time, more people, better equipment, more familiarity with identifying rock art and recording it). Therefore, to rectify this discrepancy between the two areas’ initial fieldwork, additional fieldwork was conducted in May 2015 in order to revisit and obtain high-resolution photos of selected sites in Rivers Inlet and Owikeno Lake.

6.3 Future research considerations

During this research a number of other topics of interest for studying rock art were generated, either by members of the two communities, through the literature review, or during the fieldwork itself. For example, focus groups with community members, developing strategies regarding intellectual property, dating of sites, scuba at submerged sites, land surveys, alternative recording techniques such as RTI (Reflectance Transformation Imaging) or infrared, historical literature review, the use of GIS and predictive models.
6.3.1 Community knowledge of designs and place names

Probably one of the most relevant future research considerations on this particular topic would be to hold the community focus groups initially proposed and interview members of the descendant communities as to the meaning of designs. Contemporary artists in the communities use traditional designs, some of which are also visible in the rock art from earlier times. It is hoped that having this document may serve as a catalogue of the rock art. Some of the rock art included in this sample is physically difficult, time-consuming and expensive to reach. Therefore, providing opportunities for people to have conversations about these places, by making photographs of the rock art accessible for elders and artists, is a benefit of this project. Sometimes the rock art depicts beings from Heiltsuk or Wuikinuxv oral history. Place names, and the oral-historical knowledge regarding rock art locations is also an important topic for consideration. Community focus groups or interviews on place name associations would be an important contribution to future research.

6.3.2 Intellectual property and protection of sites

Protection of rock art sites is ever a pressing issue worldwide. Protection may not equate to enduring preservation, particularly where sites are overmarked and there is a history of covering the previous rock art with new paintings and allowing it to follow a natural “life course,” eventually disappearing from view, or returning to the earth, or completely eroding. Protection may, in this context, be primarily concerned with protecting the entire site from destruction as opposed to merely preventing the painting from weathering or decay. It is to be hoped that by recording previously-unrecorded-by-archaeologists sites within the government and First Nations databases, the buffers from logging and other types of destruction will be observed for at least the
physical aspect of protecting the rock art sites. The remoteness of the locations showcased in this research certainly lowers the risk of certain types of vandalism associated with public rock art near large population bases. The care and concern which the descendant communities express regarding places of cultural significance is a manner of protection in itself. In addition, the Coastal Guardian Watchmen, who are made up of coastal First Nations, have geographic data to help monitor these sites.

However, issues of intellectual property rights and copyright issues for rock art are of concern, particularly in a context where images move easily across the internet in a matter of seconds. This topic was broached as being of concern by members of HIRMD and also Wuikinuxv when discussions originally began regarding this research. A future research consideration would be to examine this topic from a broad international perspective, which could benefit the Nations involved in protection of cultural property. For example, IPinCH (Intellectual Property Issues in Cultural Heritage http://www.sfu.ca/ipinch/) is an initiative at Simon Fraser University which has successfully created a network of indigenous groups and researchers concerned with this topic.

George Nicholas (current director of IPinCH), and Kelly Bannister have written on the topic of how copyright laws affect indigenous communities who try to protect their cultural heritage. Their work highlights that there has been little focus on how the results of archaeology could contribute to the topic of intellectual property rights in BC (Nicholas and Bannister 2004:329). They further encourage researchers to work with communities to help enable this protection, and note that petroglyphs have been trademarked in BC (Nicholas and Bannister 2004).
Adams, in her discussion of Nanaimo’s Petroglyph Park, states that these petroglyphs are copyrighted with the federal government (2003:47). Furthermore, her research, which centred on Gabriola Island, illustrates what can happen when petroglyph designs become commodified (i.e. tourist souvenirs being produced and persons profiting who are not of the descendant communities who made the rock art). She notes that the Snuneymuxw Nation successfully trademarked ten of the Gabriola Island petroglyph images and asked people to stop using these images illegally (Adams 2003:1). This effort has decreased the unauthorized usage (Howell and Roch 2009:234). However, commercial use of images and the perception of rock art sites as valuable art, can sometimes lead to rock art being physically removed from its location (Heyd 2003:41). In his discussion, Heyd considers the multiple ways in which cultural appropriation can occur in rock art context (2003:38).

This is not intended to be a complete review of the topic as it could be a thesis unto itself. This research identifies copyrighting as a topic of importance when making images of rock art available to a wider audience than the communities of their creation.

6.3.3 Dating rock art

Dating of rock art may be done by either directly dating the art (if organic material remains), or indirectly dating the accumulation of minerals or plants on top of the art, or stratigraphic layers covering it. In addition, relative dating of portable art which shows similar styles as the rock art is sometimes attempted. Dating is of interest whenever a study of rock art is undertaken. This needs to be approached carefully as many methods of dating rock art are destructive by nature. Pettitt and Pike (2007), in their discussion of dating European Paleolithic rock art, divide dating into the
categories of relative dating, direct dating, indirect stratigraphic dating, indirect associative dating, and indirect architectural dating (such as dating when a cave site became closed and providing a minimum date for the rock art inside it).

None of the sites in this study lend themselves to stratigraphic dating of associated material, as they are generally on bare exposed rock faces and have no associated sediment. Nor are there any cave sites in this sample which have been closed and could be indirectly architecturally dated. Stylistic dating, while subjective, still provides an opportunity for relative dating, and in some cases stylistic dating is the only option currently available to researchers. Within BC several researchers have attempted stylistic dating of rock art (Adams 2003; Holm 1990; Lundy 1974). For example, EjSu-1 Figure 25 and Figure 26) is an example of a rock art site within this sample where stylistic dating could be applied. It depicts a figure with a copper body and a human hand (possibly Raven transforming [pers. comm. Alan McMillan June 23rd, 2015]). Within Lundy’s research (1974:260) this would fall under the style of “Basic Coast Conventionalized Rock Art Style”. Beneath the design are two figures which appear to have been made at an earlier time. DStretch assists in identifying the overmarking at this site. These earlier figures can be considered a different style. Unfortunately, most of the sites in this sample which are clearly overmarked are designs with dots on top of them; the dots are less easy to identify as a specific style.

Direct dating, using $^{14}$C dating of fat or other organic material included in the paint mixture is a possibility for this sample, but would require multiple samples of paint to be scraped from a single pictograph, as well as scraping “bare” rock as a control to account for dust and intrusive particles (pers. comm. John Southon, W.M.)
Keck Carbon Cycle Accelerator Mass Spectrometry Laboratory, University of California, Irvine, December 5\textsuperscript{th}, 2014). Though the sample size for this is generally invisible to the naked eye, permission to scrape paintings would have to be carefully considered by Wuikinuxv Nation and Heiltsuk Nation, and there is no guarantee that organic material is even still viable in the paint mixture.

Exfoliated rock with paint on it is sometimes noted below some panels and could be used for direct-dating purposes or for indirect dating stratigraphically if it were found during excavation (ochre has been found when screened for beneath rock paintings in BC, pers. comm. Chris Arnett, May 2013).

Single-spectrum luminescence dating (which dates the last time there was light on sand or rock) might be an option at one sand-covered pictograph on the Central Coast; however this site was eventually not included in the study area. Single-spectrum luminescence dating has not, to my knowledge, been tested at a rock art site. This idea could be of interest to researchers working at sites where sand or stone covers the rock art, in these situations it may be possible to minimally date rock art based on the last time the sand was exposed to light.

Some paintings in this sample are covered by, or in some cases painted on top of, lichen. Lichenometry could be a possibility for dating rock art in this area if an abundance of lichen were all that was required. A control of datable lichen (e.g., a graveyard with dated tombstones in Europe, where these grave markers may record periods of more than 1000 years BCE) would likely need to exist to make this feasible. This can be attempted by measuring lichen on gravestones and comparing it to the size of lichen on petroglyphs. Developing a dating curve for lichen is hindered by the fact
that growth rates can vary greatly between microclimates even at a single site (Bradwell 2009:66).

Lundy outlines 15 ideas (some theoretical) for dating rock art 40 years earlier (Lundy 1974:318). Unfortunately, many of these ideas are no closer to being feasible within the research area than they were previously. Of these 15 ideas mineral build-up, which may lead to the incorrect impression that rock art is fading when it is actually being covered with a protective layer (Lundy 1974:249-250), is one of the most intriguing. Recent research done at a petroglyph site in Oregon, USA, used pXRF to relative-date the rock art on a boulder (Undem and Johnson 2015). This research suggests that an accumulation of manganese patination (on the petroglyphs) can be measured and a chronological order of when the petroglyphs were made at a particular site which has multiple petroglyphs can be obtained. This could be effectively used as a compliment to stylistic dating. I spoke with Undem about her research and unfortunately no such stylistic dating has been proposed for her study area. This technique offers an exciting possibility in areas, such as the Central Coast, where stylistic dating (Lundy 1974) has been attempted. This technique could be employed at sites which have multiple petroglyphs, and might indicate if they were created at the same time or during multiple visits, depending on the similarity between the amount of manganese patination. The accumulation of minerals, such as flowstone, where European Paleolithic rock art is sandwiched between layers of mineral may also be dated using Uranium series disequilibrium methods (Pettitt and Pike 2007:40, see also Richards and Dorale 2003).
6.3.4 Sourcing of pigment

Sourcing of ochre has been done in Skwxwu7mesh Territory using pXRF (Velliky 2013) and some work has been undertaken on the BC Central Coast using INAA (MacDonald 2008). These studies suggest methods which could be implemented in this study area. This could provide a broader understanding of the material itself, its movement and significance.

6.3.5 Underwater archaeology in the broader research area

Access to known submerged rock art sites (i.e., Link Lake) would better showcase the possibility of scuba as a tool for rock art research, than this MA thesis has been able to do. Areas such as Link Lake and Ellerslie Lake, within the Heiltsuk Territory, have great potential in this regard. Sea level history of the fjord areas on the Central Coast shows that there has been significant sea level variation within the broad research area (McLaren, et al. 2014). Outer coastal areas had a lower sea level in post-glacial times. Combining the research of sea level history with that of the study of submerged rock art could be an area of future research consideration. Biological growth (e.g., barnacles, and seaweed) particularly at the intertidal area can make documentation, such as underwater photography, difficult.

6.3.6 Recording rock art using RTI (Reflectance Transformation Imaging) or infrared photography.

In 2014, I attended a workshop/colloquium at Simon Fraser University (April 15th, 2014). The presenters Nicole Beale, Gareth Beale, Eleonora Gandolfi and Yvonne Marshall (researchers from the University of Southampton and the University of York, UK) presented on the use of innovative photographic techniques to record rock art including RTI use. I was able to try using RTI, which requires taking over 70
photographs of the object (e.g., rock art, or a tombstone) and moving the artificial light source so that shadows are created in each photograph. After loading these images into the computer software a digital model is created and the light can be moved over the digital object. While the principle is entirely different from using DStretch, the results are similar in that something invisible to the naked eye becomes visible. Unlike DStretch, RTI works on petroglyphs rather than pictographs, and multiple shadows created by the depressions in the pecked stone cause invisible elements to become visible within the digital model. It involves a minimum of equipment but is more time-consuming than using DStretch. RTI would be challenging to implement at sites where it is not possible to get off of a boat, although all of the petroglyphs in this sample had shore access.

Infrared photography was not attempted during this research. The use of this type of film at Central Coast rock art sites in the past has produced disappointing results (Duncan McLaren pers. comm. December 2013). Bill McLennan, who also tried this technique photographing a pictograph, similarly, did not have success. He encouraged me to experiment with it anyway but stated that: “Infrared works well on boxes, chests, masks, etc. because there is a mineral paint on wood and they have different heat absorbing and reflecting characteristics. The mineral paint is absorbing the heat and the wood reflecting it even if there is a layer of patina covering the painting. The resulting differential is captured on the infrared film and so you can see the obscured painting…” (Bill McLennan pers. comm. August 22nd, 2014).
6.3.7 Compiling historical information on rock art
During this research I was able to speak directly to some of the researchers who were initially involved in recording and visiting the rock art sites. One at least, expressed concern about what would happen to their collection of rock art data. As researchers age, unpublished work, retained in researchers’ private collections, becomes vulnerable to being unarchived and thus lost. Original notes and photos which are unavailable for descendant communities and future researchers are sometimes discarded or forgotten. A potential future research project would be to obtain and organize earlier researchers’ notes, if they were willing to donate them, in order for an archive to be set up of rock art information for the Central Coast.

6.3.7 Surveying other areas of the Central Coast region
The two project areas selected for this research represent only a fraction of the rock art on the Central Coast. Access to other locations within the broader research area of the Central Coast would lead to more sites being considered in the typology and databases, and expand the ability of this dataset to be used as a reference, reflective of the entire Wuikinuxv and Heiltsuk territories. Furthermore, conducting research and surveys of rock art sites in nearby Nations’ territories (i.e., Nuxalk, Dzawada’enuxw, and Kitasoo/Xais Xais) would further expand it to represent the entire Central Coast. Differences between areas’ rock art on the Central Coast could also become more salient.

6.3.8 Land-based surveys
Surveying rock art by boat potentially omits sites from this typology. A dataset of sites not visible from the water would provide an opportunity for comparison and further expansion of this typology. Land surveying, while time-consuming, would be a
worthy undertaking, judging by the success of discovering, where there was no known rock art, a previously-unrecorded-by-archaeologists pictograph on one of the only occasions when we did get off the boat during this research.

6.3.9 GIS and predictive models

GIS can be used to observe geographic relationships between rock art and natural and cultural features such as mapped geographic and archaeological site types such as villages, burials, salmon spawning streams, headlands, and caves. Perhaps this is most feasible using the digital traditional use databases of the First Nations. The larger the dataset of rock art sites the more comprehensive this type of research can be, therefore one contribution of this research is to enable this sort of potential future analysis.

GIS and the use of digital elevation models of the landscape can assist in the development of a predictive model for finding unrecorded rock art sites. Once again, the more complete and large the dataset the more feasible this becomes. One analysis, by Phil Hobler (Maxwell et al. 1997:47), suggests that pictograph sites in Heiltsuk Territory have the greatest mean distance to other types of archaeological sites. In addition, researchers may be able to make such a predictive model based on in-the-field observations. For example, in West Papua it was recognized that three out of four identified factors “a large and rather high cliff; a cavity, cave, overhang or hole around the foot of the cliff; a main coloured (red-yellow to red-brown) wide strip pouring out, or reaching down to the cavity; a (facultative) step-bank (coral or karst platform) at the foot” occurred at 11 (out of 13) rock art sites (Chazine 2013:1). This sort of model may be used in the future to locate rock art. For example, such a model could be
created for the area of the Central Coast if these types of geographic elements were identified for rock art sites.

6.4 Summary of thesis

This research contributes to the study of Heiltsuk and Wuikinuxv rock art by focusing on two areas on the Central Coast of BC: River’s Inlet/Owikenno Lake (Wuikinuxv Territory, near Oweekeno village), and Roscoe Inlet (Heiltsuk Territory, near Bella Bella). By recording and verifying rock art sites, how best to apply technologies to them can begin to emerge. The recording of rock art using photography and the subsequent application of DStretch has demonstrated the value in revisiting areas where rock art is known to exist. The use of underwater techniques for recording rock art, while not used extensively within this study, has demonstrated that it can be done in areas with submerged rock art sites. The typology of designs known to occur on the Central Coast of BC was able to be expanded. This was due, in part, to the use of DStretch, and by surveying sites not previously recorded. Thematic category types were identified as dots, coppers, eyes and faces, anthropomorphic figures, zoomorphic figures (i.e., birds, sea creatures, and quadrupeds), and geometric designs. In Wuikinuxv Territory 20 sites previously recorded by archaeologists were visited; additionally six rock art sites were newly recorded during this research. In Heiltsuk Territory 27 rock art sites, previously recorded by archaeologists, were visited, and an additional five were recorded as archaeological sites. Over 900 designs were recorded at the 58 rock art sites visited. This research adds to the body of knowledge concerning this important Heiltsuk and Wuikinuxv cultural legacy of rock art.
I have had the privilege of working on this project with the committed members of the field teams (Johnny Johnson, Cecilia Porter, Wesley Vickers, Andrea Walkus, and Elroy White) surrounded by the rich cultural heritage present within the Wuikinuxv and Heiltsuk Nations.
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Appendices

Appendix A: Glossary

Copper - large ornamented sheets of copper richly decorated in a distinctive trapezoidal shape. They are an important part of economic and ceremonial life on the Central Coast of British Columbia. They are used in potlatching and sometimes represent individual chiefs, who had the right to own them. Sometimes they carry clan crests on them, and could be considered similar to a financial instrument which increases with value through a systematic process linked with the potlatch whereby they gain equity.

Landscape – both a naturalistic aspect of an environment, but also a “dwelling perspective” that the term landscape also encompasses human traces within it. (Ingold 1993:152). Seascape and the waterways of this area are included within the term landscape. Landscape may also include a spiritual context.

Nuym or Nuuyum or Nuyem – can be traced back to specific supernatural ancestors. Inherited rights are validated by their association with the ancestor and origin story. Referring to the Kwakiutl, property rights, claims to clan crests, rights to designs, feast dishes, marriage betrothal ceremonies and potlatching positions, are examples of such rights (Codere 1990:366). This term is used by other nearby Indigenous Nations, besides the Wuikinuxv and Heiltsuk and “Translates into Haisla way of life and laws.” (Green 2013:3). Referring to the Heiltsuk it translates as “Story” (White 2006:20).

Parietal art – art painted, fixed, not portable, on cave walls, ceilings, floors, or otherwise created, inside a cave or cavity or on a rock face.
**Petroform** – refers to human-created arrangements of rocks. In this thesis the word is additionally used to provide a third category for the working definition of rock art. It may or may not be a human-produced feature, but it arguably fills the same cultural niche and is recognized by the community as akin to other types of rock art.

**Petroglyph** - made by pecking with a hard piece of stone onto softer rock faces to make rock art.

**Pictograph** - made by painting or daubing a rock surface with a separate substance or paint recipe (e.g., ochre, charcoal, fish eggs, saliva, bear fat) to make rock art.

**Potlatch** – an economic and ceremonial event which occurs on the Northwest Coast of North America. It provides an opportunity for the redistribution of wealth, the witnessing of events such as name giving, and enactment of dances, and validation of title and authority. It is related to the idea of reciprocity. Gifts received may also be considered payment for witnessing events or as loans to be repaid when someone else holds a potlatch.

**Portable art (a.k.a. mobiliary art)** – usually used to refer to prehistoric rock art, which is not parietal art, which can be moved. In this case I also use the term to include historic art (e.g., masks, blankets, coppers) which may include repeated motifs identified in the rock art.

**Rock art** – typically describes a human-produced deliberate altering of a rock’s surface (i.e., pictographs and petroglyphs), but here, the definition is expanded to include petroforms. Other aspects such as for aesthetic effect, using paint or pecking, for reasons beyond utilitarian concerns, may be added to this working definition. However, rock art may be made for personal-practice oriented reasons (not directly
aesthetic reasons), and it could be imagined it might require a technique which was not painting or pecking (for example, *inuksuk* and *inunnguaq*, involve balancing other rocks, and it might be argued they should be included in a definition of rock art), utility might take lithics out of a definition of rock art, but things like South American eccentrics are incredibly art-like. The terms portable and parietal get around the issue of including lithics. In the past, other researchers have considered the use of such terms as “incised rock figures” to be a distinct group, different from “petroglyphs” (Smith 1946:308).
Appendix B: First page of Initial Research Agreement with Heiltsuk Nation.

HEILTSUK TRIBAL COUNCIL RESEARCH REGISTRATION FORM

Name: Aurora Skala
Address: 974 Milner Ave., Victoria, BC, V8X 3N4
Telephone, Fax, email: 778 433 1182, askala@uvic.ca
Title of Research Project: Rock Art Archaeological Research in Heiltsuk Territory

Detailed project/product description:

The research I propose to undertake will lead to the completion of an MA thesis under the co-supervision of Dr. Duncan McLaren and Dr. April Nowell, Dept. of Anthropology, University of Victoria. This will include a literature review of the following topics: rock art studies within BC, innovative global techniques for studying rock art (e.g. dating, underwater studies, pigment sourcing, photography, and copyright issues), and ethnographic sources regarding motif meaning. The funding for this field work will be provided by an external research grant from the Tula Foundation which is held by Duncan McLaren.

The field work for this project will take place during the 2014 and possibly 2015 field seasons. Field work will involve boating to known rock art sites, and areas of high potential for rock art sites, within Heiltsuk territory to record or rerecord rock art site information. The field methods will include: digital photography, scuba diving sites which are submerged or intertidal, literature review, ethnographic forums with community members, and dating methods.

The laboratory aspect of this project will include digital modification of photographs, GIS mapping (and possible analysis), and may include pigment dating or dating of associated materials. Following field work and analysis I propose to hold a community forum on the meaning of rock art. The ethnographic component of this project will be community forums on the topic of the meaning of rock art. These will take place in Bella Bella. Potential participants in community focus groups will be persons with knowledge of art and/or landscape and cultural knowledge pertaining to rock art sites. For example these participants may be, but will not be limited to, Guardian Watchmen and contemporary Heiltsuk artists.

Deliverables to the community will include a copy of this thesis, GPS location information and maps for all Heiltsuk territory rock art sites visited during this study, and community presentations about this project (in Bella Bella, and to Heiltsuk living outside of Bella Bella in Vancouver). Heiltsuk community members will be employed during all field work for this project. Photographs resulting from my research (both originals and D-Stretched photographs) will be included in the thesis. I will copyright any publications, including this MA thesis. Permission for republication of any documents which include Heiltsuk rock art images will not be granted without permission from the HIRMD office. The specific locations of sites recorded during this research will not be published for the public, rather they will be reported to the HIRMD office for use in databases or management of rock art sites, and the BC Archaeology Branch database.

Purpose of the project:

Primary Research Goal
The primary goal of this research project is to increase the inventory of rock art archaeological sites (petroglyphs and pictographs) on the Central Coast of BC and discern motifs in weathered and possibly submerged rock art sites. The study area will include a selected area of Heiltsuk territory (i.e. Roscoe Inlet). See Figure 1 (the final page of this document), which illustrates known rock art sites within Heiltsuk territory (reprinted from Heiltsuk Traditional Territory Archaeological Overview Assessment, Vol. 1, Millenium Research Ltd., 1997:86). An attempt will be made to reach every rock art site in a contiguous area and survey or resurvey them. The study area for the Heiltsuk component of this MA research will be limited to Roscoe Inlet (as requested)

Secondary Research Goals
The following lists the types of activities which may be undertaken:

- Dating of rock art sites (pending literature review of appropriate methods)
- Recording meaning associated with rock art and art motifs

Research results will be presented in public lectures in Bella Bella and at the University of Victoria, and Vancouver (e.g. could be conducted at Vancouver Aboriginal Friendship Centre, or SFU). Research results will be presented in Bella Bella before final defense to UVic MA committee, so that any changes can be addressed before production of the thesis. It is intended that peer-reviewed publications will result from this research and that other presentations (e.g. academic conferences, including the 2014 International Federation of Rock Art Organizations Congress) will result. This research will take place under the BC Ministry of Archaeology permit held by Duncan McLaren #2011-171.
Appendix C: First Page of Initial Research Agreement With Wuikinuxv Nation.

Proposal:
Wuikinuxv Ethnographic Component of Rock Art Study

Aurora Skala, February 4, 2014

Ethnographic focus group: I propose to hold community forums on the meaning of rock art (see a list of sample questions at the end of this document). These forums would be audio recorded and the information would be used in publication. Potential participants in the community focus groups would be persons with knowledge of art and/or landscape or cultural knowledge pertaining to rock art sites. For example, these participants may be, but will not be limited to, Guardian Watchmen or contemporary Wuikinuxv artists. The focus groups could be held at the Band office and also at rock art sites when appropriate (e.g. if Guardian Watchmen were interested in participating we could simply travel to the site and record observations at the site, whereas it might be more accessible for other community members to participate in town).

The study in general: The research I propose to undertake will lead to the completion of an MA thesis under the co-supervision of Dr. Duncan McLaren and Dr. April Nowell, Dept. of Anthropology, University of Victoria. This will include a literature review of the following topics: rock art studies within BC, innovative global techniques for studying rock art (e.g. dating, underwater studies, pigment sourcing, photography), and ethnographic sources regarding motif meaning.

Deliverables to the community will include: A copy of this thesis, GPS location information and maps for all Wuikinuxv territory rock art sites visited during this study, and community presentations about this project. The specific locations recorded during this research will not be published for the public, rather they will be reported to the Band office for use in databases or management of rock art sites, and the BC Ministry of Archaeology database. Further, any publications including the MA thesis which includes photographs of Wuikinuxv rock art will be copywrited by Aurora Skala and permission for republication will not be granted without permission from the Wuikinuxv Band Office. The field work for this project will take place during the 2014 and possibly 2015 field seasons. Field work will involve boating to different areas within Wuikinuxv territory to record or rerecord rock art site information. Wuikinuxv community members will be employed during all field work in Wuikinuxv territory. Research results will be presented in public lectures in River’s Inlet and at the University of Victoria. It is intended that peer-reviewed publications will result from this research and that other presentations (e.g. academic conferences, including the 2014 International Federation of Rock Art Organizations Congress) will result. This research will take place under the BC Ministry of Archaeology permit held by Duncan McLaren #2011-171.

The laboratory aspect of this project will include digital modification of photographs, GIS mapping and analysis, and may include pigment dating or dating of associated materials. The methods will include: digital photography and enhancement using D-Stretch, may include scuba diving sites which are submerged or intertidal, literature review, ethnographic forums with community members, and dating methods.
## Appendix D: Photo and camera credits

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<tr>
<th>Site by Borden #</th>
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<th>Camera used</th>
<th>Photographer</th>
<th>People pictured in the photo</th>
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Appendix E: Form used for recording rock art

Way point: Site #: ___________ Pictograph [ ] Petroglyph [ ] both [ ] Date: ___________ Time: ___________

Easting: ___________ Northing: ___________ Lat.: ___________ Long.: ___________

Team (initials): ___________ UTM Zone: 9 GPS Owner: ___________ Other site features (i.e., CMTs, lithics, burials, etc.): ___________

# of designs?: ___________ # of panels?: ___________

Rock surface type: ___________ Cultural?: definite [ ] probable [ ] possible [ ]

colour: red [ ] black [ ] other [ ] Pres revision: 4-clear, 3-faded, 2-very faded, 1-barely visible

Panel #, design # ___________

Preservation scale ___________

Superimposition? ___________

I.e., Zoomorph, geometric, anthroporph ___________

Motif description: __________________________

Video taken? [ ] video #: ___________ Camera owner’s initials: ___________ Number of Photos taken: ___________

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<tr>
<th>Camera</th>
<th>Direction</th>
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<th>Panel #</th>
<th>Description</th>
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<td>Approach</td>
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<td>Rock art in relation to sea level (if applicable)</td>
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<td>Close-up of surface, lichen?</td>
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<td>Photo of area angle was taken from</td>
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<td>View facing away from rock face</td>
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Painted surface angle: ___________

Direction of painted surface (facing it): ___________

Other? (Painter’s location?): ___________

Overhand?: ___________ met. Height above barnacle line: ___________ met. exact: [ ] estimate: [ ] Rock face size: height ___________ met. width ___________ met. exact: [ ] estimate: [ ]

Design # ___________

Panel # ___________

Height ___________

Width ___________

Other ___________

Possibility of future excavation? (camping, stratified deposits): ___________

Extends below ground level? [ ] n [ ] Dating potential? ___________

Charcoal? [ ] n [ ]

Ethnographic comments at the time: __________________________

Ethnographic comments, later date: __________________________

Date: ___________ Name: __________________________
### Appendix F: The difference between the archival material (AM), 2013-15 site visits (SV), and DStretch (DS).

<table>
<thead>
<tr>
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Appendix G: Frequency of rock art types in Rivers Inlet/Owiken Lake based on 2013-15 observations and DStretch images.

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