Encoded Knowledge in Oral Traditions: Sḵwx̱wú7mesh Transformer Sites and their Relationship with Landscape Perception and Use

by

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Abstract

This research studies the characteristics and roles of Transformer sites in daily life of people journeying through Sḵwx̱wú7mesh territory and the transmission of environmental knowledge through the Sḵwx̱wú7mesh oral tradition. Transformer sites are culturally significant places for numerous Indigenous groups in the Pacific Northwest and are so named for their narrative association with supernatural figures from the culture's oral traditions that could transform themselves and the landscape. Sḵwx̱wú7mesh Transformer sites are associated with the journey of four brothers, Xaay Xays, and are located throughout Sḵwx̱wú7mesh territory. Many Transformer sites are important for their history and place within a community's cultural landscape even without human modification. While archaeological sites generally refer to locations where there are material signs of past human activity, that definition does not include places where ephemeral activities took place, or places of cultural significance that were not directly modified by human behavior. Approaches within landscape archaeology provide a lens through which to effectively view and study places where the archaeological record is silent. Visibility, proximity to recorded archaeological sites, and ethnographic analysis, when taken together, can make a strong intersecting argument for how people in the past interacted with specific places and the landscape as a whole. This thesis recorded the physical characteristics of Sḵwx̱wú7mesh Transformer sites associated with Xaay Xays, evaluated the visibility of Sḵwx̱wú7mesh Transformer sites from water routes through Sḵwx̱wú7mesh territory, and compared the environmental and land use messaging from the names and stories of each site to the archaeological, ecological, and ethnographic information of that location. The results showed that the majority of Transformer sites were locations either used directly for resources described in the Xaay Xays narrative or were associated with active archaeological areas, suggesting that Transformer sites were an ever present part of daily life, and that the stories that describe and connect these locations hold information about the environment that was transmitted through generations by telling and retelling these stories. Despite the cultural significance of Transformer sites to Indigenous communities and their potential for archaeological investigation, they are not guaranteed protection under provincial or federal heritage legislation. There is much more that can be learned from Transformer sites and other natural places about people's interactions with the landscape through time, but first those places must be acknowledged and protected for generations to come.

Keywords: Pacific Northwest Coast archaeology; landscape archaeology; oral traditions; spiritual sites; visibility

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Table of Contents

List of Tables

List of Figures

Preface

Big rock there once a man. He hear that great man was coming. Indian start to prepare to strike Great Man. He get ready to make big wind blow Great Man away. While he was working to make the big wind, the great man come. When the great man comes he says ‘What are you working at?’. Indian says ‘Great Man coming. I blow him away, making great big wind to blow Great Man away. ’Didn’t know he was talking to the great man himself. The great man told the Indian he would have to stay there, forever, so that to the last generation it should be known that he had tried to strike a Great Man. Then he turn him into stone and he been there ever since.” “It is the biggest rock on the Point Grey shore.”

August Jack Khatsahlano (Matthews 1955: 394)

Present day photo of ch'ech'el-hí7kw, the rock referenced in the quote above

1. Introduction to Transformer Sites

In the beginning, the world was raw, dynamic, and dangerous. The boundaries between humans and animals were thin, so that some changed their shape like donning a new set of clothes. Cruel men and monsters walked the land, and people did not have the knowledge to thrive on the land, or the wisdom to treat each other correctly. This was the time of *sxwexwiyam*, the mythic age of supernatural beings and monsters (Reimer 2012:51). The Creator looked down on the chaos of the world, decided that something had to be done, and sent down four brothers who had great power, with directions to make the world right. Their coming heralded the dawn of a new age, an age of transformation named after the brothers: *Xaay Xays* (Reimer 2012:46). The brothers possessed great power to change themselves and the world around them. Many powerful beings defied them or raised arms against them, but each was turned to stone or into an animal with a touch. The brothers transformed the violent and the wicked and taught the remaining people how to live together and survive off the land -- often using resources from the transformed evils that had tormented them before. The youngest brother transformed himself into a canoe while they travelled, and in this way *Xaay Xays* journeyed across the land, visiting people and villages by sea and rivers. Once their work was complete, and the world in balance, it was time for them to leave. They arrived in the south by the sea, but left up the rivers to the north, passing into far off lands and wild spirit places (Sḵwx̱wú7mesh Nation Land and Resources Committee 2001). The actions and lessons of the Transformer brothers were never forgotten because the land itself was changed, molded, and transformed by their passing.

The story of the *Xaay Xays* – the Transformer brothers – is an important part of the Sḵwx̱wú7mesh oral tradition (McLaren 2003:189; Reimer 2012). It manifests in ceremonies and traditions such as the First Salmon Ceremony that originated as a lesson taught to people by the Transformers in order to maintain good relations with the Salmon People on whom they relied for food (Hill-Tout 1900:521-522; Reimer 2018b). The first ancestors of some communities had the Transformers attend and assist in their birth and were blessed with fortune because of it (Khahtsahlahno and Charlie 1966:16). Many parts

of the landscape are named for the transformations that *Xaay Xays* stories tell occurred there. The Transformers and their actions are woven intrinsically into the traditional spiritual belief system of the Sḵwx̱wú7mesh people and their relationship with their environment.

This thesis follows the travels of the *Xaay Xays* and is an analysis of Sḵwx̱wú7mesh Transformer sites, I consider how they fit into the existing physical environment and the pre-contact cultural landscape throughout their territory. Furthermore, I explore the impact these had on the dwelling experiences of past peoples, and work to show how the encoded knowledge of landscape and culture that is woven into the stories of those places. I study the characteristics of this type of site, as well as the distribution of them across the landscape and will identify common features in the physical and cultural contexts, that shed light on the perceived narrative connection between these places. With this research I evaluate the visibility of these sites from a phenomenological perspective in order to model the visual impact these sites had on the people who viewed them, and whose cultural landscape was given history and meaning because they understood what each site represented. Finally, I will discuss the management and limited protection of Transformer sites from developments and natural degradation and emphasize the importance of preserving culturally significant places.

In many cases within the Sḵwx̱wú7mesh ontology, a Transformer site is the physical being of a person transformed long ago still present in the form of a landscape feature (Mohs 1986:56). In other cases, the site may also be important because it is where a transformation took place. These latter places may not have a specific landscape feature identifiable as transformed beings, but they are still connected to the Transformer figures through their names, stories, or the activities associated with that location. All Transformer sites are understood as parts of the landscape that came to be from ancestral events and are treated with the respect due to living beings.

Transformer sites and their names have been passed down through many generations and have had significance to the lives and activities of Sḵwx̱wú7mesh people for many years. Within Sḵwx̱wú7mesh ontology, each place is different from its

surroundings, and has both material and supernatural characteristics that make each it so. While these are not usually archaeological sites in the traditional sense – locations where there are material remains of past human activities – Transformer sites are culturally important sites that influenced past behaviours in different ways (Bouchard and Kennedy 2010:64). The Sḵwx̱wú7mesh people had ephemeral interactions with the sites themselves and conducted activities around the sites that connected with the story of each site. The visible presence of the sites – individually and as a connected narrative – was and still is important to people moving through the landscape.

In the past, many culture's interactions with the landscape did not correspond to the distinctions between archaeological and natural sites that we apply today (Bradley 2000:33). Sites that feature heavily in oral traditions of communities would almost certainly have tangible and intangible roles in people's lives. To understand these interactions, one must study the cultural and environmental contexts of these sites. By viewing them simultaneously through the lenses of archaeology, ecology, geology and Indigenous knowledge, it becomes clear where these perspectives converge to demarcate and explain environmental phenomena in meaningful ways.

Assessing the visibility of sites is another effective way of studying place, especially on a landscape scale, which allows the spatial relationships between sites to be seen and studied (Ogburn 2006; Supernant 2011). Many Transformer sites are not only prominent up close, but they also dominate the horizon and can be seen from distant places on the landscape: they are situated in a way that establishes distinct views from perspective places within Sḵwx̱wú7mesh territory. Prominent features on the landscape act as landmarks for navigation but are also loci for cultural meaning, connecting those who share that range of vision, or *viewshed*. The *Xaay Xays* narrative moves through the landscape in a specific route, as they travel by canoe and pass by each Transformer site. The route *Xaay Xays* took was one that many Sḵwx̱wú7mesh people would have travelled as well, passing within view of each site along the way. The Transformer narrative connects the sites referred to in the *Xaay Xays* history, but they are not the only places with supernatural origins. These locations are associated with those specific figures because of common characteristics between those sites, or it may also be that an

uninterrupted chain of visibility links the landmarks to people travelling that route. The relationship of visibility and between Transformer sites is worthy of investigation.

The area for this project begins in Burrard Inlet, flows across modern-day Vancouver, heads north up Howe Sound, and extends into the Sḵwx̱wú7mesh Valley. Burrard Inlet is part of the Indian Arm fjord and runs parallel to the Fraser River, but on the north side of Vancouver instead of the south. It opens west to the Strait of Georgia, which angles southeast to northwest between mainland British Columbia and Vancouver Island. The western tip of the Vancouver area, Point Grey, creates the protective harbor that is Burrard Inlet. Howe Sound is northwest of Burrard Inlet, a roughly triangular sound connected with a network of fjords and flanked by swiftly rising mountains. North of that is the Squamish Valley and Upper Squamish, starting at the mouth of the Squamish River and following that and the Cheakmus up into the mountains.

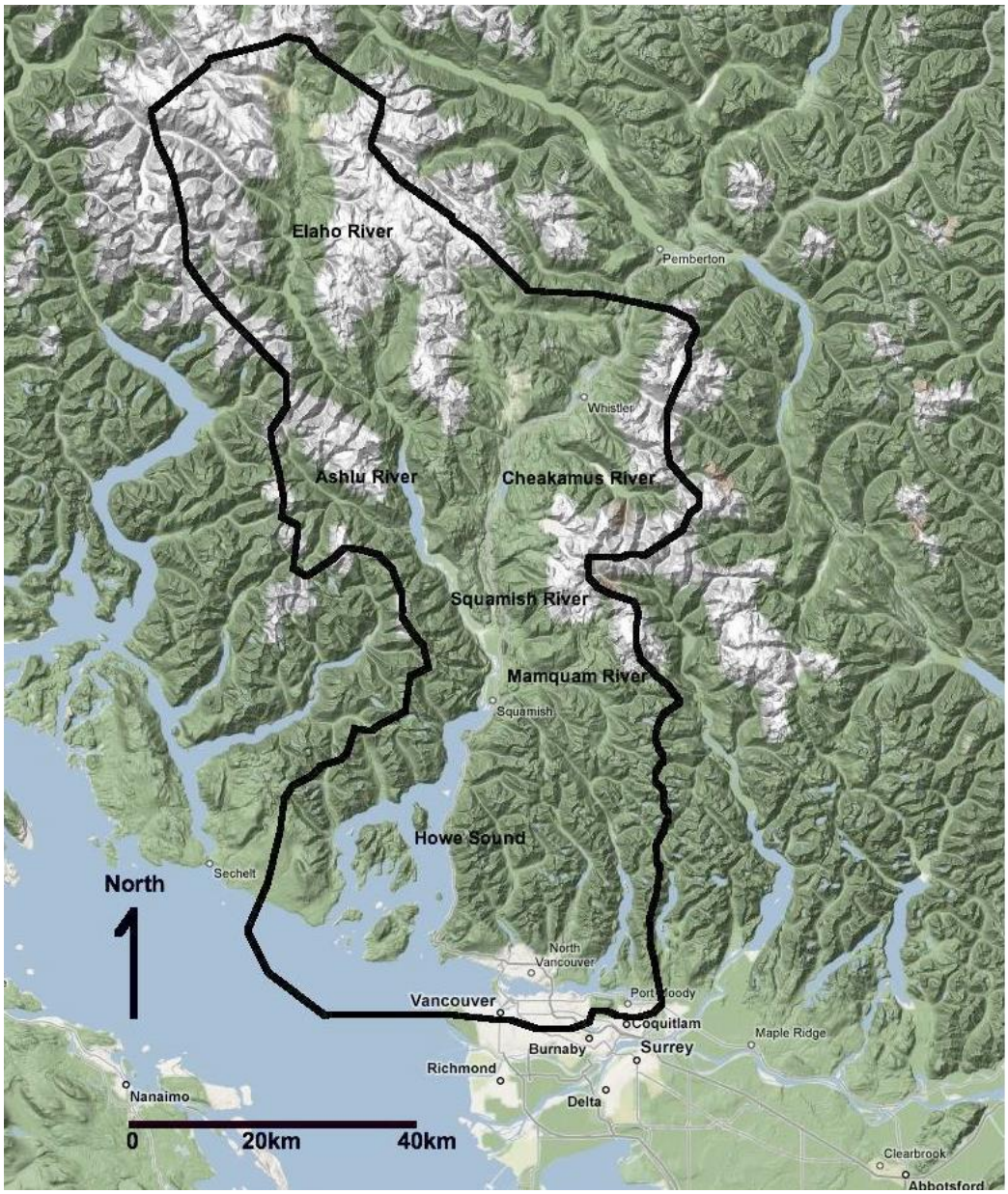

Figure 1. Map of research area (based on map from Reimer (2012:34))

Considering the landscape relevance of Transformer sites and their role in the lives of past peoples the focus of my research is to study and understand their physical and cultural context. What can one say about the physical characteristics of the sites? How do these characteristics provide information about the relationship past peoples had with those places and their environment? These questions lead me to develop a thesis that would explore the following three research questions,

1. What are the physical characteristics and contexts of Transformer sites?

2. To what extent are Transformer sites visible along the water routes through Sḵwx̱wú7mesh territory?

3. To what extent do the names and stories associated with Transformer sites convey – directly or indirectly – knowledge about anthropogenic activity and natural phenomena across the landscape?

To address these questions, I will use the following methods.

What are the physical characteristics and contexts of Transformer sites? It is important to investigate each site and take note of both the site itself and its surroundings. This first inquiry is to establish of baseline of what features are present at and around each site. Further, examination of the sites may identify physical characteristics common among Transformer sites that distinguish them from their surrounding environment, but also establish a narrative connection with other sites.

In addition to providing a context for historical and cultural elements of the sites, considering their physical characteristics will provide information about their current condition – assessing and recording any previous impacts – in order to recommend measures to reduce future ones. This is not strictly speaking part of the research focus here, but in establishing the cultural significance of these sites, it is important also to consider how to protect them for future generations.

To what extent are Transformer sites visible along the water routes through Sḵwx̱wú7mesh territory? Xaay Xays themselves were leaders and teachers, but also notably travellers. They canoed and walked through the landscape, facing challenges and meeting new people at established settlements. The sites they left behind are presumably meant to be public and visible, because of the cultural significance of *Xaay Xays* themselves, and because the narrative connection to the transformed beings were explicitly meant as lessons to future generations. *Xaay Xays* are important figures within Sḵwx̱wú7mesh culture, and the results of their actions should be prominent as well. They are narratively connected with canoeing, which was – and still sometimes is – the most efficient means of transportation through much of Sḵwx̱wú7mesh territory. Qualifying

the accessibility and visibility of Transformer sites from water routes in Sḵwx̱wú7mesh territory puts that theory to the test. The intervisibility of Transformer sites evaluates to what extent the narrative connection between these sites would be perceived by a traveller across the landscape.

To what extent do the names and stories associated with Transformer sites convey – directly or indirectly – knowledge about anthropogenic activity and natural phenomena across the landscape? This section requires more interpretation and inference than the previous goals of this study, but it is the best way of going past physical descriptions of Transformer sites and on to understanding the meanings they have for the Sḵwx̱wú7mesh people, and their relationship with the landscape, through time. Oral traditions are powerful means of transmitting both cultural lessons and practical information, and because Transformer stories have a physical setting for their events, these have potential as sources of information for how people interacted with those places in the past. When each site is put in its material and cultural context, the events and stories that line up with the observable environment and the Indigenous land use at those places can tell us something about how past peoples understood the environment there.

This thesis has been researched with the support of the Sḵwx̱wú7mesh Nation, as *Xaay Xays* is an important part of their heritage. The research complies with heritage policies and permits of the Sḵwx̱wú7mesh Nation: no excavations or site alterations took place but working with culturally sensitive topics required a culture heritage permit.

It is important for me as the primary researcher to be clear on my background and position in relation to the heritage discussed in this research. I am a non-Indigenous resident of Vancouver. I am not a member of the Sḵwx̱wú7mesh Nation, nor do I speak for them, but I am deeply interested in Sḵwx̱wú7mesh heritage and have tried to learn from it and the knowledge holders in that community. The history of Vancouver that most of its residents hear and absorb is brief and whitewashed, especially regarding the ancient and ongoing Indigenous history in the area. These types of accounts acknowledge a general presence of First Nations peoples in the Lower Mainland, but with limited references to specific community identities or place connected activities. The academic

goal of this research is to study Transformer sites and their narratives for their potential to tell us about cultural interactions with their environment in the archaeological past. The foundational goal of this project has been to demonstrate the important and precarious legal position of this part of Sḵwx̱wú7mesh heritage.

The story of the Sḵwx̱wú7mesh people's archaeological and cultural history with the landscape is not one that can be cleanly told in the space of one master's thesis. There is a case to be made that it could never be properly told in a written form that loses the emphasis and intimate narrator connection afforded to it be the spoken retellings that have preserved it through centuries and generations. I hope to bring understanding and some reverence to readers who look out on the land and feel its history and narratives that resonate within them.

It is also important to acknowledge that none of this work exists within a vacuum, and the many failures of the Canadian government (Burnett, Hay, and Chambers 2016; Castellano, Archibald, and DeGagné 2008; Chartrand 2019; Kennedy-Kish et al. 2017; Miller 2017; Razack 2016), anthropological and archaeological professions, and the academic community in respecting the rights of Indigenous peoples are a constant backdrop to this study. The land, resources, and sites discussed here were known and sustainably managed for many generations before they were taken without permission or treaty. That many important places are now at risk from development or neglect is an indicator that recent stewardship has been inadequate. Recognizing these issues and considering how to address them is an important step on this and many other fronts working towards reconciliation.

In this thesis I study the many aspects of Transformer sites that must be considered to fully understand them. This begins by laying out the geological, archaeological, and ethnographic history of the Central Pacific Coast in order to show the physical and cultural context within which this research is taking place. I then describe the theoretical concepts of landscape archaeology and the study of natural places. After that, I lay out the methods, observations, and results of this research and discuss the broader context of how Transformer sites have been understood in the past and need for

protection in the present. In the final section I reflect on the applications of methods to other contexts, further work that can be done looking at different aspects of Transformer sites and farther afield, and how the dividing lines we draw between different kinds of heritage and archaeological sites affect our relationship with the landscape as a whole.

2. Background

2.1. Geological History

The Coast Mountains that run from Vancouver to the Yukon are a defining characteristic of the landscape in the Vancouver Sḵwx̱wú7mesh area (Armstrong 1990:12; Cannings, Nelson, and Cannings 2011; Mathews and Monger 2010). They are composed of granite and other igneous rocks formed in underground lava flows 140 million years ago in this tectonically active area (Mathews and Monger 2010:163); they rose to the surface through uplift from below and erosion of the softer rock above them. Streams and rivers eroded the rising granitic mountains, but more slowly than the rate of uplift so, instead of grinding them down, the water cut deep canyons and valleys between the peaks. Sediments accumulated in valleys and areas between the mountains, but the bedrock of the coast is plutonic granite.

The geology of the Pacific Northwest Coast was most recently shaped by glaciation. Between 100,000 and 11,000 years ago, snow and ice covered much of the northern half of the continent (Armstrong 1990:12). On the Northwest Coast, ice sheets topped the mountains, spilling into the lowland valleys and out onto the ocean. The only exposed ground was further south and in uplifted islands along the coast that were refugia from the glaciers. The accumulation and eventual retreat of glaciers to the high, north places of the continent left marks on the landscape as well: valleys widened; landforms like drumlins, moraines, and cirques appeared all around; and when sea levels rose from the melting ice, they submerged many of the coastal valleys and created fjords (Armstrong 1990:13; Cannings, Neslon, and Cannings 2011 2011: 54).

Glacial sediments line the floor of the north section of the sound, left there by a retreating glacier that once covered the whole valley. It is dotted with islands of varying sizes and terminates its north end at the mouth of Sḵwx̱wú7mesh River, where the Sḵwx̱wú7mesh Valley begins. The valley is flattened on its floor where the Sḵwx̱wú7mesh and Cheakamus Rivers snake down to Howe Sound. They are merged at the mouth of the river but split to either side of Cloudburst Mountain, and trace back to

runoff sources at higher elevations further north. Sḵwx̱wú7mesh territory ends where the Sḵwx̱wú7mesh and Cheakamus Rivers curve northwest and northeast respectively out of the valley, and so there too are the spatial limits of this study.

The geological history of this area is tied to the way people have described and interacted with it. The signs of its formation are visible as striations, glacial erratics, and other phenomena that stand out from their surroundings and require explanations. The oral traditions that describe how parts of the world came to be were how such places are marked and recognized. The geological history of these sites does not contradict the oral traditions that explain their transformation, as both lenses recognize the atypical events that were required for these places 'formation. While the details and frame of reference from which one observes the natural world differ, the emphasis on place and history is consistent.

2.2. History of Archaeological and Ethnographic Work in the Pacific Central Coast concerning the Sḵwx̱wú7mesh People

The Pacific Northwest Coast (PNWC) has a rich and well-studied cultural history, with archaeological sites on the Northwest Coast dating back 14,000 years (Braje et al. 2008:8; Fedje et al. 2018; Gauvreau and McLaren 2017; McLaren 2017). It has some of the earliest sites of occupation in the Americas because of its proximity to coastal migration routes (Braje et al. 2020; Gustas and Supernant 2019). The initial use of water transportation and marine subsistence has continued throughout the northwest coast cultural historical sequence, as groups along the coast settled into seasonal migrations within their respective territories.

The cultural historical sequence of this region has been extensively studied (e.g., Ames and Maschner 1999; Fladmark 1982) and there are clear indications of the complex traditions and practices that make up important parts of daily life within these cultures There is evidence of land and resource management, especially to avoid or in response to environmental stresses (Armstrong and Anderson 2020). For example, ritual artifacts associated with "feeding the dead" by placing ornate spoons in the mouths of deceased individuals appears as early as 4000 cal BP (Carlson, Szpak, and Richards 2017). Many

of these more abstract or ephemeral practices cannot be reliably or fully understood through archaeology alone, but fortunately there are strong oral traditions in this part of the world that provide an emic perspective to the archaeological past (Gauvreau and McLaren 2016; McLaren 2003). Ethnographic modelling is helpful for interpreting these societies through the last 5000 years (Martindale 2006:173; McLaren 2003:201; Mitchell 1990), and oral traditions would have preserved information in at least some form through much of that. This helps archaeologists greatly in understanding both the spiritual beliefs and relationships to the land of the Sḵwx̱wú7mesh people and their neighbouring Indigenous communities around the Salish Sea.

The Sḵwx̱wú7mesh people are the northernmost of the five ethnolinguistic groups that are the Central Coast Salish group (Suttles 1990). The Central Coast Salish peoples have lived in territories around the southern end of the Salish Sea for millennia. Historically, most Sḵwx̱wú7mesh villages were within 25 kilometers of the mouth of the Sḵwx̱wú7mesh River, but their territory stretched north to the ends of the Sḵwx̱wú7mesh valley, and they also had settlements in Howe Sound and Burrard Inlet (Suttles 1990:453). Their neighbours were the *Halq̓eméylem* to the south and east – specifically the *xʷməθkʷəy̓əm* (Musqueam) and *sə̓lilwətaʔɬ* (Tsleil-Waututh) peoples – the Lilèwat7ul (Lil'wat) to the north, and the *shíshálh* (Sechelt) to the west. Boundaries of territory and land use overlapped, and groups were interconnected based on kin relationships and obligations (Thom 2009).

The first Europeans came to the Central Salish Coast in the late 18th century, fur traders in 1787 and then explorers – most notably George Vancouver – in 1792 (Suttles 1990). The Central Salish had already experienced some of the effects of European contact: they traded for European goods from Indigenous middlemen who traded with the settlers and lost much of their population in the subsequent smallpox epidemics as a result of that contact (Bouchard and Kennedy 1986:25). The Hudson's Bay Company soon followed in 1872, and its outposts such as Fort Langley became centers for trade throughout the region. In 1846, the Treaty of Washington split the Central Coast Salish territory into British and American sections, and settlers from those nations soon arrived – especially after gold was found in 1858. Catholic missionaries and Protestant churches

made many converts from the Indigenous populations and religious institutions played a large role in the cultural genocide of Indigenous peoples in the form of residential schools. The government policy of Indigenous assimilation through residential schools continued from 1828 to 1996 and is responsible for deaths, intergenerational trauma, and damage to language and culture of Indigenous people in Canada (Castellano, Archibald and Gagné 2008; Macdonald 2019; National Centre for Truth and Reconciliation 2015). These institutions used inhumane methods and conditions to attempt to remove the Indigenous identity from First Nations people entirely. This led to intergenerational trauma, and a profound loss of Indigenous language and cultural knowledge.

Ethnographic accounts of Sḵwx̱wú7mesh-Settler interactions start with George Vancouver in 1792. In 1886, anthropologist Franz Boas visited Sḵwx̱wú7mesh and collected linguistic data from a Sḵwx̱wú7mesh man. He returned two years later in 1888 and met with Chief Joseph as well as a one-armed linguistic informant believed to be Dick Isaacs. Boas' work focused on the names of Sḵwx̱wú7mesh villages, first ancestors, and mythology (Boas 1916,1917; Bouchard and Kennedy 2006).

Amateur ethnographer Charles Hill-Tout worked with Sḵwx̱wú7mesh informants and added to the growing ethnographic record of Sḵwx̱wú7mesh oral history. Hill-Tout once met with a Sḵwx̱wú7mesh elder who recounted a multigenerational story of Sḵwx̱wú7mesh origins and the many tragedies that befell their people, only part of which Hill-Tout was able to translate. He did additional ethnographic and linguistic work with based on the contributions of numerous informants published in 1900 (Maud 1978a, 1978b, 1978c).

Of the large body of anthropological work done later in the 20th century, Homer Barnett (1955), and amateur ethnographer Major J.S. Matthews (1955) were the next to focus specifically on the Sḵwx̱wú7mesh, interviewing Jimmy Frank and August Jack Khahtsahlano respectively. In the years since, there have been many anthropological works on the Sḵwx̱wú7mesh and their neighbours (Drucker 1955; Duff 1952; Kew 1970; Schaepe 2009; Wells 1987). Wayne Suttles did anthropological and linguistic work with members of the Sḵwx̱wú7mesh community outside of his work with neighbouring

nations (Suttles 1987, 1955). Randy Bouchard and Dorothy Kennedy (1986) conducted interviews with many Sḵwx̱wú7mesh people in the 1980s and consolidated a vast amount of ethnographic and place name information (Bouchard and Turner 1976).

Today there are roughly 4,000 ethnic Sḵwx̱wú7mesh people. They have reserves totalling 28.28 km^2 throughout their 6,732 km^2 ancestral territory. They are in the process of negotiating a treaty with the provincial government of BC and the federal government of Canada for compensation and sovereignty.

The relationship that Sḵwx̱wú7mesh people and their ancestors have had with the land in this part of the world is ancient and ongoing. Cities grow and population demographics change, but there is a continuity that the same people have had with the same landscape, still seeing natural landmarks, and retaining their names and stories even as roads have been built and the names of the mountains changed. For the generations of people who have since settled on this land, it is worth knowing its history to properly understand and manage the unique heritage issues they are facing there today.

2.3. Transformer Sites

Transformers and Transformer sites appear in many oral traditions and mythologies in around the Salish Sea and beyond. The Sḵwx̱wú7mesh, Lil'wat, Halkomelem, Hunqumenum, Nlaka'pamux, Secwepemc, Sliomman, and Lummi ethnolinguistic groups have stories about beings known as Transformers (Bouchard and Kennedy 2010, 2006, 1983; Ignace and Ignace 2017; Jenness 1955; Khahtsahlano and Charlie 1966; Richling 2016; Thompson and Egesdal 2008). They are powerful supernatural beings that changed the world into the shape that it mostly resembles today – by transforming people, animals, and monsters into geological or ecological parts of the landscape. The places where these transformations occurred or where stories say their deeds took place are called Transformer sites. They range in size and type, from small boulders to large hills or mountain peaks. A site may be a directly transformed feature, so that what is present today is the original being in a different form; for example, *slhxí'7elsh* – also known as Siwash Rock, a major landmark on the Stanley Park sea wall in Vancouver (Figure 2)

looks somewhat like a man, with head, shoulders, and tree representing a brush used to clean and cleanse himself.

Figure 2. Historic photo of slhxí'7elsh, 1889 or 1890 (photo accessed from the City of Vancouver Archives)

At other sites, the connection between the site and story may be more indirect, such as a pictograph with images of the transformation event at that location: the *xwmiltm* pictograph shows a bird in the area where crane was created, though there is no corresponding landmark representing that transformation. There may also be no physical signs of the transformation event, and the knowledge of the event and location are preserved only in the oral tradition of the people who tell the story. For instance, at *nepitl*, Buck Mountain, a deer was created, and there are deer there commonly now, but there are no physical cultural indicators of the transformation event.

Transformers and their stories are foundational to many Northwest Coast cultures (Mohs 1987; Thom 2005). They are considered culture heroes who imparted knowledge, traditions, and safety on their ancestors. Their stories are reflecting culturally significant events in the cultural identity and faiths of these Indigenous cultures (Mohs 1987:105). The transformed ancestors in many stories connect Indigenous people with the natural

world through familial language of kinship (Thom 1997) and viewing the world through that relationship lens shapes how people interact with their environment.

The characters have different names and appearances in different versions of the stories. In one Stó:lō narrative there is only one humanoid called *Xals*, but in another the Transformers are black bears, the children of Black Bear and Red-Headed Woodpecker and are called *Xexá:ls* (Carlson and McHalsie 2001:6). Likewise, in Sḵwx̱wú7mesh and Lil'wat stories the Transformers are a set of 4 siblings; all brothers in the Sḵwx̱wú7mesh version, and three brothers and one sister in the Lil'wat version. Other beings like Mink and Raven also transform themselves and others in their stories, but they play more minor roles as tricksters, rather than as serious beings concerned for human welfare (Suttles 1990:466).

Transformer stories are integral to understanding Coast Salish ontologies (Thom 2005:55) and the spiritual significance of Transformer sites (Mohs 1987:60). Thom's study of Island Hul'qumi'num oral traditions describes how Transformer stories strengthen the relationship of people to the land they and their ancestors have lived on (Thom 2005:134). A rock sticking out of the water northeast of Gabriola Island is described as once being a seal before the Transformer who they call *Xeels* came and turned it to stone (Thom 2005:121-122). The rock marks that area as a special case for the communities around it and shows where the best seaweed can be harvested. Stories such as these memorialize locations on the landscape, and some are treated and interacted with as living beings (Thom 2005:132).

The Stó:lō people, cousins of the Island Hul'qumi'num, know of over 70 Transformer sites in their traditional territory, mostly along the Fraser River (Mohs 1987:74-75). Like the sites affiliated with other groups, these places are said to have residual spiritual power (Mohs 1987:78), and represent a shared history and spiritual tradition, with some variation, across ethnolinguistic groups. Transformer stories strengthen the relationships each community has with the land, both as a whole and in specific important locations. These stories connect to conceptions of territory. The Lil'wat, Secwepemc, Sḵwx̱wú7mesh, and Stó:lō all have stories of Transformers, and

boundaries form between them where the narratives of how the land was shaped intersect. Examples of ingroup preference and territory boundaries are notable in stories where the Transformers punish people from neighbouring communities for trespassing (Bouchard and Kennedy 1977:16; Bouchard and Kennedy 1986:261-262).

The stories associated with Transformers and Transformer sites have significance and longevity throughout the history of the cultures in which they appear. Though a precise date for how long these stories have been told is hard to model, there are strong signs within the Sḵwx̱wú7mesh culture and across other Salish groups that they have been part of their cultures for a very long time. From the Sḵwx̱wú7mesh perspective, there are three very general periods of time: *Sxwexwiyam* (mythical time), *Xaay Xays* (time of transformation) and *Syets* (recent time and memories) (Reimer 2012:46-47) (Table 1). Many transformation stories involved the first ancestors of Sḵwx̱wú7mesh communities, which would suggest that Transformer stories have been told amongst the Sḵwx̱wú7mesh for at least as long as their lineages track. McLaren (2003:201, 2006) has also done work comparing the sequences of oral traditions across Salish cultures, and found that they tend to line up consistently and sequentially across cultures and in line with known geologic, archaeological, and paleoenvironmental changes. This makes sense for people explaining geological events and changes to the landscape, as the Transformers are known and even named for the changes that they enacted on the environment.

Sḵwx̱wú7mesh Chronologies			
Age BP (approximate)	Cultural Timeframe	Geological Timeframe	Archaeological Timeframe
2000 – Present	Syets (Recent Time)	Late Holocene	Gulf of Georgia, Historic
3000 – 6000	Xaay Xays (Age of Transformation)	Middle to Late Holocene	Marpole, Locarno, Charles
6000 – 12000+	Sxwexwiyam (Mythic Time)	Early Holocene to late Pleistocene	Old Cordillerean

Table 1. Compared chronologies of Sḵwx̱wú7mesh culture and landscape

Throughout the time when people were telling those stories, they would have interacted with Transformer sites in their daily lives, during various activities. Some sites are clearly associated with valuable resources while others are marked by rock art or long-standing spiritual traditions (Arnett 2017). Certain sites were said to have strong spirit power that could be based on the cultural meaning they held for the observer.

There are many potential archaeological implications for Transformer sites. Some sites are associated with resources such as lithic sources (Reimer 2012:51), fishing spots (Bouchard and Kennedy 1986:51), or hunting grounds, referencing the environmental phenomena within the story of Transformer actions there. The routes that the Transformers travel, in the Sḵwx̱wú7mesh narrative and others, tend to be along rivers and water routes that flowed through that group's territory. These routes would have been the most efficient ways to travel for the people in those communities and the descriptions of such travel corridors are interesting accounts of what it was like to move through the landscape.

When viewed as a connected narrative of the *Xaay Xays'* actions on their journey – with a starting point, many episodes and events along the way, and an endpoint when they left Sḵwx̱wú7mesh territory – we learn the direction and extent of the *Xaay Xays'* travel, and the distribution of sites that were likely a way to demarcate notable landmarks and apparently unnatural environmental phenomena. On another level, they were likely also a way to explain and describe environmental phenomena within a reliable mnemonic system. It is a fundamental tenet of this research that studying Transformer sites as a network and type of site, can help us learn more about daily life of Indigenous people in the past and their relationship with culturally significant places on the landscape.

Unfortunately, the legal status and protection of Transformer sites is not assured, as many are not associated with material remains of human activity, and therefore do not fit the criteria of archaeological sites in British Columbia by their status as Transformer sites alone. Some are classified and protected, not based on the significance they hold to the Sḵwx̱wú7mesh people, but by the material remains associated with them. This means that some sites are protected by BC's heritage legislation; others have been impacted or

destroyed because they do not fit the legal definition of an archaeological site; and yet others have only survived because of the tireless work of archaeologists and Indigenous peoples who raise the standard of investigation and insist on protecting sites that have no legal recognition.

The Transformer sites are vitally important to Sḵwx̱wú7mesh culture. In a culture whose history is transmitted orally, histories are a way to store knowledge and pass it from one generation to the next. They represent some of the original names and associated history of the Lower Mainland landscape that are unknown or unfamiliar to present day residents of this region. Transformer sites exist as both physical sites and as places that have inspired histories that hold the cultural information about the sites and the people who used them. Both the physical and the cultural aspects of the sites must be considered in order to fully understand them -- but neither is fully appreciated, and both are at risk of being ignored. These are proxies for cultural and environmental knowledge that can elucidate the relationship between people and the landscape in the past and contribute to studies of paleoenvironments. Sadly, they are not guaranteed protection from development, and have so far been the subject of only very limited study. This research investigates their role in past peoples lives and hopes to do a small part in giving Transformer sites the legal and academic recognition they warrant.

3. Theory of Landscape Archaeology and the Study of Natural Places

3.1. Landscape Archaeology

Archaeologists have always been interested in how people in the past interacted with their environment (Casey 2008; David and Thomas 2008). There is an inherently geographic basis to the investigation of archaeological sites since they are generally situated at stationary locations on the landscape; however, when the material remains of human activity are not enough to paint a full picture of the past other sources of information are required.

Though there are a variety of different approaches (Anschuetz, Wilshusen and Scheick 2001; Ashmore and Knapp 1999; David 2008), landscape archaeology is generally defined as the study of how people in the past constructed and used the environment around them (Thomas 2008). What became the field of landscape archaeology had its roots in the ecological archaeology of the 1950s (Patterson 2008:77-78) and research expanded in the 1970s and 1980s (Darvill 2008; David and Thomas 2008:28). The term "landscape" did not have a universally understood meaning within the discipline, but "environmental" or "ecological" factors on human activity were of great interest, as were the patterns in the distribution of archaeological sites and the types of those sites across the physical landscape (David and Thomas 2008:28; Anschuetz, Wilshusen and Scheick 2001). As processual researchers refined the techniques and methods to study the past in that way, a postprocessual critique throughout the discipline raised an interest in the social understanding and meaning of past human behaviour, beyond adaptive responses to environment (David and Thomas 2008:32). When landscape archaeology began, its practitioners became interested in both the material characteristics of the *physical landscape* and the perceived names and meanings of past people's *cultural landscape* (Strang 2008).

The physical landscape is the material setting that a geologist or ecologist considers, but for an archaeologist it is always through the lens of its relationship with

humans. For landscape archaeologists, the most fundamental questions are where past peoples lived, what resources they exploited, and what static or fluctuating environmental conditions they had to contend with. Paleoenvironmental analysis through the study of fauna (Mainland 2008), microbotanical remains (Fairbairn 2008; Rowe and Kershaw 2008), geoarchaeology (Denham 2008), and straightforward stratigraphic profiling (Stern 2008) reconstruct the past environment, as any changes between the present and the time of study leave traces behind. Chemical sourcing of lithics is another way of showing the movement of archaeological materials, and therefore the movement or exchange networks of people, across the landscape (Reimer 2018a; Summerhayes 2008). In the last few decades, advances in remote sensing and Geographical Information Systems (GIS) have unlocked more potential avenues of research. Least cost route analysis, site distribution, and investigation of environmental modification can reveal what technologies and behaviour people used to adapt to their environment (Connolly 2008).

The cultural landscape is invisible to the naked eye but exists in place names and the meaning that places have for people (Strang 2008:51). It goes beyond describing the adaptive or survival behaviour of people, but it is not universal and must be viewed within the context of any given culture or community. The interactions between humans and their environment cause us to assign meaning to our surroundings. Every place given a name and every story about it is passed down within a culture, thus adding to the cultural meaning and memory of the landscape (Kunzler 2019; Van Dyke 2008). Archaeologists investigating cultural landscapes can try to learn about the symbolic behaviour of past peoples in relation to specific places. Ethnographic or other cultural context of the people using that landscape is necessary for this approach (Lane 2008).

Meaning is hard to access in the archaeological record unless communicated directly through texts or oral traditions, but there are some material signs that indicate the significance of places. The choices made in constructing monuments that align with celestial phenomena or landscape features was widely practiced across many cultures (Fountain 2005). Symbolic media – such as art, writings, and oral traditions – that depict or describe landscape features is another indication of their significance. Even the choice of extracting tool stone from specific sources when it is no easier or higher quality than

the stone from other places nearby shows that it is the place that is important, not necessarily the material (Bradley 2000:81). The study of the cultural landscape is still an emerging field in archaeology, and different approaches have yielded interesting results or proven to be unreliable or unreproducible because of the abstract nature of the topic. However, by proceeding with a strong chain of inferences and maintaining academic rigor, there is potential to study places of clear academic and cultural value that do not conform to the traditional definition of an archaeological site.

3.2. Natural places

In many societies both past and present, people have relationships with the landscape. Structures, monuments, and areas built by human activity are frequently important places, but they are not necessarily the only places of cultural significance. The emphasis on researching such sites reflects a bias that shows in the archaeological record: it is difficult to qualify or quantify the human activity in places without clear archaeological remains, and such sites are often not considered by archaeologists researching past societies (Bradley 2000:36-37). Consequently, the map of activity we make is covered in separate dots that represent sites, but this is almost certainly not how people understood their environment in the past, that is, by separating naturally and culturally significant places (Bradley 2000:33).

Many natural places – locations or features not directly shaped or classified by human activity, such as mountains, lakes, caves, boulders, or rock faces – are significant to the cultures around them (Bradley 2000:33-34). Many of these places have been important for the spirituality or cultures of past societies. Indigenous communities 'anthropomorphized' places on the landscape, treating them as living beings with agency that should be respected and related to (Boillat et al. 2013:665; Bernard, Rosenmeier, and Farrell 2011). When specific places become important, they were frequently marked by human behaviour, such as votive deposits, rock art, or names that evoke certain meanings or stories within their culture (Bradley 2000). It is therefore important for archaeologists to understand the ephemeral and abstract interactions people had with natural places and the landscape if we want a create an accurate picture of the cultures being studied.

The study of rock art is an excellent example of the importance of place when studying cultural features on the landscape. Any form of rock art is by its nature stationary, and so is a way of marking sacred places with meaning (Gillette et al 2014; Smith et al. 2012; Steberglokken et al. 2015; York, Daly, and Arnett 1993). The way to study rock art is not simply by the scale of panels, but also by considering the scale of the landscape (Bradley 2000:39). Why an image is depicted on a certain location can be an important aspect of understanding such images. Arnett and Morin (2018:122) show how Tsleil-Waututh rock art marks geological formations and *sxwoxwiyam* (origin stories and places).

Oetelaar and Meyer's (2006) work on mapping Indigenous travel routes and place names in the northwest Plains was foundational for building this research. They demonstrated how oral traditions and mythology describe the relationships people had with the landscape, and some of the specific environmental challenges and landmarks they encountered on their seasonal migrations (Oetelaar and Meyer 2006:358). This strongly suggests that stories in oral traditions that play out across the landscape represent knowledge of the environment passed down through generations. The story acts as both a map, and as a guide to the landscape and the hazards one may face in it when following a specific route (Oetelaar and Meyer 2006:355). This is an excellent example of how practical environmental knowledge becomes encoded into stories. Although stories appear to be narratives with mythic elements, there is often also specific information useful to people within the culture and to archaeologists studying the culture.

Bradley (2000) studies the potential avenues of research for natural sites in central to northern Europe that date back to the Neolithic period. He covers a large geographical area and a variety of site types, generally emphasizing the importance that specific places had to peoples in the past, and how they would use material culture to mark and acknowledge the significance of those places – votive deposits, rock art, monuments, and lithic sources (Bradley 2000:36). While acknowledging that it is still an emerging field, with varying methodologies and success, Bradley shows the potential for research that studies the relationships between past peoples and their conceptualized landscapes in order to understand how they used the environment in the past (Bradley 2000:147).

Because of the small amount of direct evidence for these interpretations, archaeologists must limit their study and speculation to subjects anchored in physical evidence and the archaeological record, or else they will create subjective and unreproducible results.

Oral traditions and cultural knowledge can also be an excellent way to anchor the study of the landscape. Basso (1996) studied Apache linguistics and stories connected to the landscape and found that places bear significance not just for the activities and abstract power associated with them, but also for the specific meanings and cultural memories associated with them. Apache stories associated with specific locations often end in lessons that are meant to teach or condemn a certain type of behaviour (Basso 1996:55). The stories and the places become so entwined that the place is synonymous with the lesson, and every time an individual who has heard the story views the place associated with it, they are reminded of their lesson and it is thus reinforced. In this way, places act as a mnemonic that subtly encourages social norms and good behaviour within that culture (Basso 1996:41). This certainly applies in other oral traditions outside the Southwest. Along the Northwest Coast, the Transformers are clearly figures that punish bad behaviour and reward good behaviour (Mohs 1987: 60; Reimer 2012:61), so their stories likely served a similar function.

Some landscape archaeologists trying to bridge the interpretation gap between present and past landscapes, and the meanings of cultural landscape features, use a phenomenological approach (Ingold 1997, 2007; Tilley 1994, 1996, 2008). Phenomenology refers to the study of structures of consciousness experienced from the first-person point of view (Brücke 2005:46). This type of approach in archaeology looks at the ephemeral factors of daily life in the past, such as the effects of lighting, the visibility of landscape features, or the differences of weight and feel of tools made from different materials (Brücke 2005:47-50).

While phenomenology certainly has potential as a source of information in some circumstances, the biggest challenge it has is producing results that are consistent with other lines of evidence. Tilley has tried to draw associations between monuments and landscape features throughout the UK (Tilley 1996, 1994, Tilley and Bennet 2001), but

many of the claims he has made are not well supported or possible to disprove (Bradley 2000:42). Because they are not testable and rely very much on his individual experience and experiences, Tilley's interpretations are not as strong as they could be. Ingold (2007a, 2011) uses an experiential approach as a lens to support his interpretations. He argues that the meaning that people assign to the landscape is only decipherable within it's physical and temporal contexts, that is, what people experienced in the time they were present, at a location (Ingold 2000, 1993, 1986). Instead of simply being present in a location, people dwelling in and through landscape had many concerns based on what they saw and experienced, and those with greater cultural meaning were emphasized (Thomas 2008:300). While different scholars argue against (Fleming 2006) and for (Ingold 2007b) this approach, the key to using the phenomenological approach successfully is to qualify the expectations of the research being performed so that there are answers to the questions set. This type of approach is still in a grey area between processual science and postprocessual social questions, but the former applies to the methods, while the latter applies to the interpretations.

3.3. Visibility

Visibility is a viable proxy approach for studying conceptions of natural places in a grounded and measurable way. One of its strengths is that we can still see many of the views that people experienced in the past, and we can measure visibility with GIS software (Connolly and Lake 2006; Lake and Woodman 2003; Llobera 2007, 2003, 2001; Ogburn 2006). Visibility matters in archaeology, not for its own sake, but because archaeologists who study and understand what people routinely saw and considered important in their culture can access more meaningful information about Indigenous knowledge, landscape association, and cultural beliefs (Lake and Woodman 2003). Day to day exposure to visible or prominent landscape features encourages people to form boundaries and cognitive maps based on both what is readily visible and familiar, and what is more distant or novel (Bernardini and Peeples 2015:216-217). Because landscape visibility is consistent through time it is straightforward to view places on the landscape as people saw them in the past, and when it is not, it is possible to reconstruct and account for change with geological analyses. The challenge for archaeologists – and for

Indigenous communities working on revitalization – is seeing these features through the eyes of past peoples – with the names, lessons, and stories that populate their cultural landscape.

There is research connecting shared visibility with shared senses of community (Bernardini and Peeples 2015), as people may feel kinship when they have common landscape focal points and connecting stories built around them. Visual prominence can be measured based on the size, relief, and distance of a feature from one or more reference points, and there are specific algorithms to calculate the visual prominence of features on the horizon (Bernardini et al. 2013). Prominence is a useful quality to quantify, but the impact a feature had on the culture of people who viewed it also depends on the frequency of exposure and the populations exposed to it (Bernardini and Peeples 2015:219). A mountain that was viewed infrequently by a few hunters on a seasonal trek may have less connection to the community than the mountain directly in view of a community throughout the entire year.

Researchers are already using visibility-informed research across the world. Bernardini and Peeples (2015) employed measures of prominence on mountain peaks in the American Southwest to see whether neighboring communities that all could see the same peaks – which they refer to as "sight communities" – shared similar cognitive maps of the landscape. Kim, Bone, and Lee (2020) also studied shared viewscapes, but their work on the Songgruki settlements in Korea measured to what extent neighboring communities were consistently in sight of one another: they argued such connections would promote social cohesion and a sense of cultural belonging (Kim, Bone, and Lee 2020: 42). Supernant's work (2011, 2014) was conceptually and geographically similar to this research, as she studied the intervisibility and intravisiblity of rock feature sites in the Lower Fraser River Canyon, some 100 km from Burrard Inlet (Supernant 2011). Whether built rock features were more readily visible when travelling up or down the Fraser River would indicate whether their presence and construction represented social signals to their own community or outside ones (Supernant 2014:509).

3.4. Oral Traditions

Another valuable source of information for studying culturally significant natural places is oral tradition (Miller 2012). When oral traditions are available and reliable, emic perspectives and stories in oral traditions provide cultural context for the beliefs and customs of cultures with ancient archaeological records, and how that behaviour manifested in, or influenced peoples 'relationship with their environment (McMillan and Hutchinson 2002).

There is some debate among academics about the reliability and accuracy of oral traditions over the time scale of centuries or millennia. Some scholars are concerned those oral histories are susceptible to variation and fluctuation through time and across regions (Henige 2000, Mason 2006), and that archaeologists should stick to hard evidence of the material culture and the written historical record. While it is wise to consider the cultural biases of both creator and researcher when dealing with any source of information, and certainly it is important to recognize that Indigenous knowledge must be understood within its cultural context rather than superimposing the conceptions and format of western scholastic traditions on a wildly different medium, it is unreasonable to ignore oral traditions as a source of knowledge because they require a certain level of interpretation and symbolic understanding – much like many parts of the material archaeological record. What is more, it is frankly irresponsible to perpetuate colonial practices of disconnecting the archaeological past from inherited Indigenous knowledge and perspectives today.

The strength of oral traditions as media for transmitting and preserving Indigenous knowledge and history has been acknowledged in academia and in Canadian law (Angelbeck 2016; Angelbeck and McLay 2011; Cairns and Ferguson 2012; Cruikshank 1990; 1994, 2002, Delgamuukw 1997 Knickerbocker 2013; Nicholas and Markey 2014; Zedeño 2008). Oral traditions must be studied carefully (Echo-Hawk 2000; Martindale 2006; Thom 2003), with sequencing and structure in mind (Gauvreau and McLaren 2016; McLaren 2003), but they do open up avenues of research that would be infeasible with only the archaeological record as a source of information. Of course,

any research done involving the material or intangible heritage of existing Indigenous groups should be done with their full consent and should strive to work towards their heritage goals (McHalsie 2007; Miller 2007; Schaepe 2006; Smith 2005).

Many cultures of the Northwest Coast have a strong oral tradition that archaeologists have used to study their relationship with the landscape (McMillan and Hutchinson 2002). These tend to be specifically strong and consistent because the stories are tied to specific geographical locations. Geological shifts and catastrophic environmental events appear in the oral traditions of cultures all around the world. Legends of floods or supernatural creatures causing these events can compliment archaeological and geological research into the timing and impacts of real-world human-environment relations (Budhwa 2002; McMillan and Hutchinson 2002). Lithic quarries and sacred alpine places are also spatially stationary locations whose impact can be traced across the landscape, using sourcing methods and by consulting the oral traditions that give those specific places spiritual or political significance (Reimer 2003, 2007, 2012, 2018b). This research is also not the first one to study Transformer sites in the Central Salish area, as they have been important parts of research into Halkomelem spiritual sites in the Fraser Valley (Mohs 1987) and Hunqumenum oral traditions on the east coast of Vancouver Island (Thom 2005, 2009). Suffice to say, oral traditions are in important part of many forms of landscape research.

Natural places are a challenge to study because of the limited archaeological materials present but provide unique insights into ancient cultures. Any analysis of these places requires context in order to understand cultural meaning of those places. Much of the draw of landscape archaeology is that it is a useful tool for studying sites and features on a larger scale than site-focused archaeology. It can capture the context of sites and resources that are associated with other landscape features and evaluate cultural or mobility networks across a large geographical area. Based on the work of other researchers, it is not only a viable lens of study, it is often able to produce fruitful results about the meaning of places and the landscape to past peoples and their descendants.

4. Methods and Results

4.1. Methods

The Sḵwx̱wú7mesh people accessed many resource sites across the landscape, and some communities moved between summer and winter villages so that whether on a daily or seasonal basis, people passed by many Transformer sites in their travels. The impact of viewing these sites passively must be added to the direct use of the landscape at and around many Transformer sites. The sum of these interactions – passive and direct, fleeting and persistent, intentional and incidental – all have the same environmental and cultural backdrop of the peoples living at and around Transformer sites.

To answer the questions set out in chapter 1, this research did site survey to map and research every Transformer site associated with *Xaay Xays* in the Sḵwx̱wú7mesh oral traditions. The data set includes 26 sites and place names that were tied to the Transformers (Table 2). There are many other sites associated with transformation events, such as several places where *sínulh̲kaý,* the two headed serpent, became part of the landscape after it was defeated by a hero (Bouchard and Kennedy 1986:117), or *stá'p'as,* where an overhanging rock represents a whale that was stuck and transformed to stone during a potlatch (Bouchard and Kennedy 1986:290), but to follow a single coherent journey and narrative, site selection was limited to those places associated with *Xaay Xays*. The one seeming geographic outlier is *stsatskwim,* which lies northeast of traditional Sḵwx̱wú7mesh territory and into Lil'wat territory. This plays into the story of the site, as the rocks here were once Sḵwx̱wú7mesh people who had strayed to the boundary of their territory and were turned to stone by *Xaay Xays* as a reminder to people in the future to respect those boundaries. Even though the narrative comes from a Lil'wat oral tradition (Bouchard and Kennedy 1977), the location of the site along the boundary between Sḵwx̱wú7mesh and Lil'wat territories, so for that reason and because of the Sḵwx̱wú7mesh association of the story events this site has been included in the data set.

The methods for this project involve surveying each site in the field, performing a viewshed analysis between all sites, and researching ethnographic and archaeological

sources for information of Indigenous land use and encoded environmental knowledge in Transformer oral traditions.

Sḵwx̱wú7mesh Transformer Sites		
Site Name	**Location**	**Description**
elksn	Point Grey	Area of land where Xaay Xays first came to earth and trained for power
ch'ech'el-hí7kw	Point Grey	Once a man with power to control winds, turned into the large rock at the tip of the point for challenging Xaay Xaays
slhxí'7elsh	NW Stanley Park	Once a man training for power in water, turned to stone by Xaay Xays
ch'á'7ens	NW Stanley Park	Rocks and hole in cliff that once were slhxí'7elsh's fishing line and tackle
s7ens	N Stanley Park	Wife of slhxí'7elsh
sch'eĺ'k's	N of Point Atkinson	Boulder slung by Xaay Xays from elksn that lodged in a cleft of rock
ch'ich'iyu'y elxwi'kn	“The Lions” mountain peaks	Sisters transformed by Xaay Xays with a mountain goat wool blanket of snow
tl'etl'ch'áĺkm	N of Porteau	Two boys and their canoe transformed to stones for sneaking up on and scaring a girl
xel'xeĺú's	Furry Creek	Pictographs showing Xaay Xays and other figures
yiyk'm	N of Furry Creek	Rock with filings on it where a man was sharpening his weapon to fight Xaay Xaays, before he himself was turned to stone
lexwlúxwels	Watt’s Point	Mount Currie (Lil'wat) people turned to stones at the water's edge for eating taboo food (sea urchins) and being in the wrong place
quin-ace	W side of Howe Sound across from Furry Creek	Whale turned to part of the landscape
skaĺáw'	Below Stawamus Chief Mountain	Place where beaver met Xaay Xays. Also shaped like a beaver with it's sloping flat tail

Sḵwx̱wú7mesh Transformer Sites		
Site Name	**Location**	**Description**
stá'mes	Mountain at mouth of Sḵwx̱wú7mesh River	Place where beaver met Xaay Xays. Also shaped like a beaver with it's sloping flat tail
st'et'e7ímin	3 rocky peaks across from Stawamus	Berry pickers with bags on their shoulders turned to mountain peaks
wáwnti	Rock bluff east of Cheakamus River	Transformed longhouse or face of a Transformer brother turned into a rocky face above the river
st'áwekw'	Lake near Cheakamus station	Rock woman who controls the fish in her stream
si'ýám	Cheakamus River canyon	Transformer brother now a rock in the middle of the river
k'ák'p'nech	Sḵwx̱wú7mesh River near confluence with Cheakamus	Two rocks that can be seen at low water that once were canoes before being transformed
nexwyúxm	Omega Mountain	Hunter as mountain peak with their dog as foothills beneath them
kiyáýakep	Alpha Mountain	Hunter as mountain peak with their dog as foothills beneath them
tsewiĺx	Tantalus Mountain	Hunter as mountain peak with their dog as foothills beneath them
xwmitl'm	Base of Cloudburst Mountain	Pictograph site, and where crane was created
nepítl'	Buck Mountain	Where deer was created
nkwú'7say	Shovelnose Creek	Where Xaay Xays taught people to fish salmon, and the First Salmon Ceremony
stsatskwim	NE side of Green Lake	Sḵwx̱wú7mesh people transformed to stones in Lil'wat territory

Table 2. Transformer sites associatd with Xaay Xays, shaded by territory zone (Burrard Inlet, then Howe Sound, then Squamish Valley)

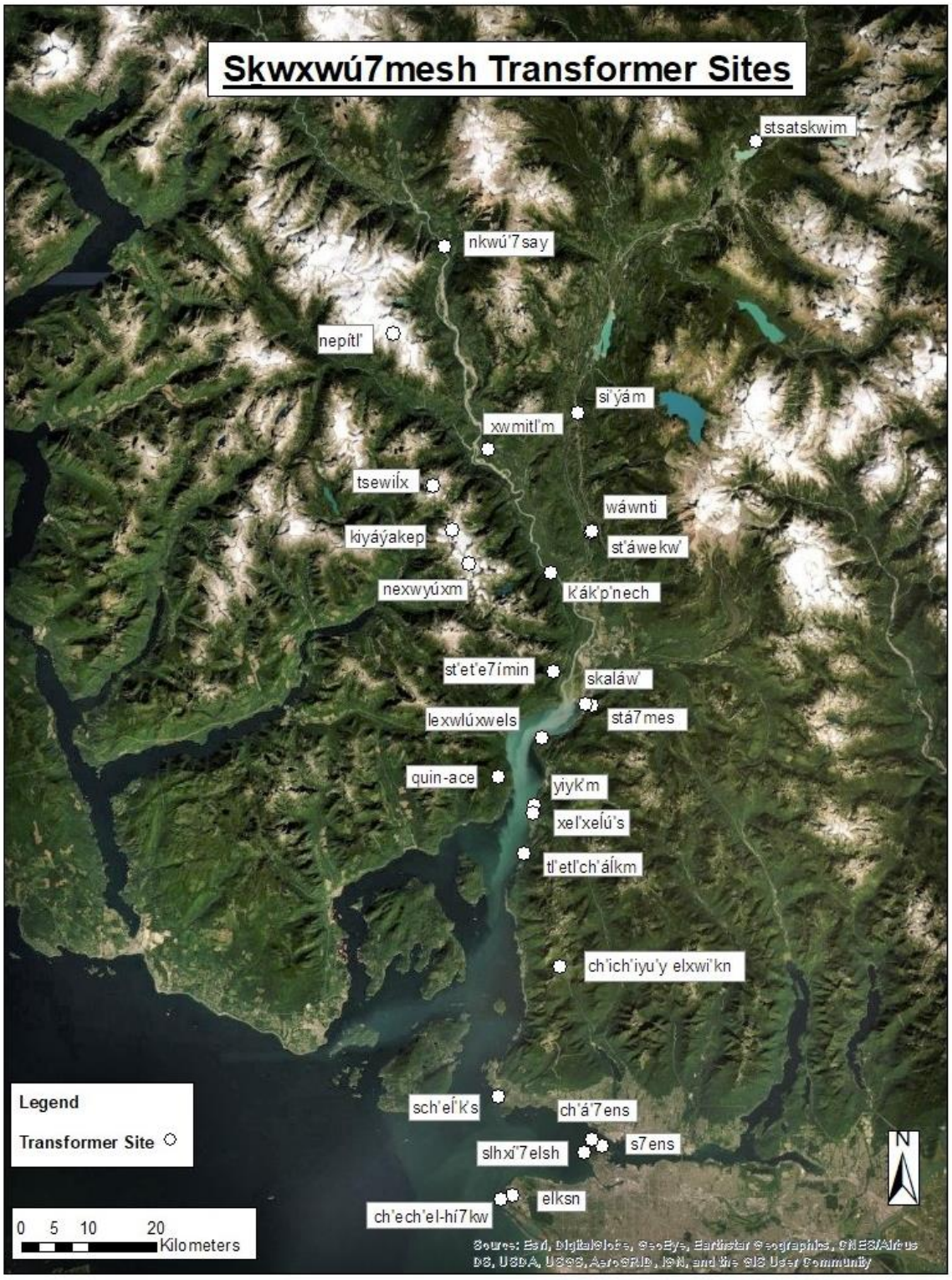

Figure 3. Transformer site names and locations throughout Sḵwx̱wú7mesh traditional territory.

An initial hypothesis of these inquiries was that most sites would be distinctly visible from water routes through Sḵwx̱wú7mesh territory. Because part of the process of marking places with meaning and establishing them as important places within a culture is to make them visually accessible and significant, survey work examined characteristics such as size, relief, or colour to distinguish Transformer sites from their surroundings. This research anticipated that the majority of Transformer sites would be associated with notable landmarks and environmental phenomena, and with archaeological and ethnographic use of the landscape. As Transformer sites are anchored in space, they would act as indicators of significant locations that are quickly recognizable from their distinctive appearance and the associated stories.

4.1.1. Survey

Standard methods for identifying, recording, and classifying archaeological sites rely heavily on the archaeological record and the material culture associated with the site. Because the Transformer sites in for this study seldom have associated archaeological deposits, this study drew on the methods of rock art researchers to supplement surveying and recording notes. Interactions with Transformer sites are like those with rock art. They are landscape markers that are seen and visited but are not necessarily places where people would have performed activities that leave material remains in the archaeological record. Where natural places are an intrinsic and important part of the lives and cultural landscape of past peoples, there must be ways to describe those places and make inferences about their cultural roles in the past. The research methods used to research rock art consider the spatial association with powerful landscape features (Whitley 2011:118-119), visibility of site from a distance, and ease of detection (Whitley 2011:160): these techniques were employed in this Transformer site survey.

For the survey, the focus was on characterizing the materiality and physical context of each site, while also recording any features or factors that would influence peoples ’experience travelling to or past that area. The survey of physical aspects of the sites recorded the location, size, colour, and geological composition of each site, as well as its surrounding geology, vegetation, and any nearby natural features. While other

material characteristics may not be as obvious, they are important, so any ephemeral environmental factors that are not static and visible were also noted: the range of tidal movement, the openness and strength of wind in a location, or any noise or light effects that would alter a person's experience on the site could influence how people interacted with it. To record the range of visibility for each site, survey work also noted the visibility of the site from a distance, as well as when and where on the approach it became a salient object. What is visible from the site, or the nearest accessible locations for viewing the site, provides insight into other landscape connections and influences present at that location.

In addition to a physical assessment of each site, other factors were considered as each site was surveyed. Because there is a connecting narrative between all the Sḵwx̱wú7mesh Transformer sites, the presence of nearby or associated Transformer sites that could be accessed or seen at each location was noted. The connection of each site to other known cultural sites was part of the assessment of each site. Any ethnographic information relevant to the landscape and ecology around each site was noted – in addition to the general impressions made as a visitor while doing survey work at each location. In the interest of identifying issues of conservation, the condition of the sites was also assessed: the physical survey looked for any signs of erosion or alteration by natural or human produced sources such as rock blasting, chemical erosion, or vandalism.

Sḵwx̱wú7mesh Transformer sites appear across an area over 100 kilometers north to south, through the Sḵwx̱wú7mesh traditional territory and sometimes even to areas strongly associated with the Lil'wat and Musqueam ethnolinguistic groups (Bouchard and Kennedy 1977:17, 1987; Reimer 2012:51). They were approached generally from a south to north route, starting in Burrard Inlet, then travelling up Howe Sound and along the Sḵwx̱wú7mesh and Cheakamus rivers to the northern edges of traditional Sḵwx̱wú7mesh territory. In the *Xaay Xays* narrative, the brothers came down from the sky by *elksn,* at Point Grey, at the southern end of Sḵwx̱wú7mesh territory, and their travel took them from south to north via canoe. Directionality matters for the purposes of interpreting experiential and landscape knowledge encoded into this narrative and, while

the water routes through Sḵwx̱wú7mesh territory have had travellers moving in both directions, travelling south to north would be to follow in the footsteps of *Xaay Xays*.

For both the survey and viewshed in this analysis, a large-scale approach was used for the final comparison and analysis but focused in to three smaller sections of the research area for a more meaningful and experiential analysis. The research area covers over 100km from south to north and up to 20km from east to west at some points, and the presence of mountains and curves in water routes means that visibility is interrupted several times if one is travelling from the starting point of the *Xaay Xays* journey its end. The landscape along this route separates the Transformers 'journey into three sections or chapters, separated by natural boundaries, based on visibility and characteristics of landscape, and taking into consideration the mode of travel. First, Burrard Inlet is the area between Point Grey to the south and Point Atkinson in the north. Second, Howe Sound is the sheltered area from Point Atkinson in the south to the mouth of the Sḵwx̱wú7mesh river in the north. Finally, the Sḵwx̱wú7mesh Valley starts at the mouth of the Sḵwx̱wú7mesh River in the south and follows the Sḵwx̱wú7mesh River to the northwest where the Transformer taught people how to fish for salmon at Shovelnose Creek – *nkwú7say* – then follows the Cheakamus River to the northeast until it stops north of Whistler, at the border of Lil'wat territory. Sḵwx̱wú7mesh territory and place names extend beyond some of the points described above. For example, north of *nkwú7say* there are few settlements, but there are many place names, and the boundaries of their understood territory are at landmarks further into the highlands and "Wild Spirit Places" (Xay Temixw 2001). The Transformers passed out of Sḵwx̱wú7mesh territory travelling north up the Cheakamus River valley to Whistler, into Lil'wat territory.

Of the 26 sites visited in the survey, 11 were approached solely on foot, 10 were approached by boat, and 5 were approached both ways. This was to recreate as closely as possible the methods of travel used by both the Transformers in the Sḵwx̱wú7mesh stories, and those of the Sḵwx̱wú7mesh people who would have travelled by sea and river through their territory and to other places. Because of budget, time, and safety restrictions, only sites located around Burrard Inlet and Howe Sound were approached by boat, while the sites in the Sḵwx̱wú7mesh valley were travelled to by car and accessed on

foot – even the ones in the Sḵwx̱wú7mesh and Cheakamus Rivers. While people in the past would certainly have canoed upriver and seen each site around a new bend in the stream, the practicality of recreating historical context for this project was limited. The highways in Sḵwx̱wú7mesh tend to follow the rivers and make access to water and water sites much more possible without make the hard and dangerous journey upriver by boat.

As noted earlier, this survey also assessed the condition of each Transformer sites visited. At each site the condition of the site itself was checked and evaluated for potential risks and their impacts: the impacts to the physical integrity of each site from both natural and synthetic factors, were noted. The results reflect on the current heritage policies managing, or not managing, Transformer sites. The majority of Transformer sites do not have official protected status and are therefore not frequently monitored for damage. It is not necessarily clear what should be done on each site or, indeed, whether conservation or protection measures should be taken. There is a balance that can be argued between protecting these sites and leaving them as much as possible in their original context without interference – but to have that discussion the condition of sites under current policies must be known. It is for this reason that an assessment of impact was incorporated into the survey.

Not all Transformer sites are accessible for surveying. Some lie on private property and others are deep in the woods and up the mountains around Sḵwx̱wú7mesh. When possible, the sites were approached and photographed as close as possible to the sites, but when direct access was impossible, the focus was on recording the general environmental features of the area, sightlines from the area, and other characteristics specific to that location – if not to the site itself.

It is also important to remember that the survey is meant to focus on the facility of access/viewing and impressions made by Transformer sites on an individual travelling along Sḵwx̱wú7mesh water routes. In-depth study of each Transformer site would be a worthy endeavor to investigate direct archaeological activities associated with this type of site, but it is also beyond the scope of this research. What we seek is the passive experiential role these sites have had in the daily life and travel of people moving through

the landscape, and that is better served by using methods that facilitate larger scale analysis across the landscape research area.

4.1.2. Viewshed

While field surveys give a good sense of individual site characteristics, more technical methods are necessary to study visibility and site relationships over such a large area. In person, it is difficult to evaluate site relationships outside of line of sight. One can only ever be in one place at a time, and while following the routes taken through landscape in the past is useful on an experiential level, it is important to use all the tools at our disposal to study the presence of Transformer sites in the physical landscape. A viewshed demonstrates the visibility of Transformer sites from Sḵwx̱wú7mesh water routes, so that visibility in turn can be used to study the more complex relationship people have had with these sites (Tschan et al. 2000).

Viewsheds are GIS-generated maps that use elevation data to show the line of sight from a specific location (Sander 2010). These are often used to predict the visibility from fire towers and condominiums but have recently seen more application in archaeology and heritage conservation (Stubbs and McKee 2007), especially for studying the visual relationships between sites. Viewsheds have already been created to study the landscapes of past peoples close to our study area on the northwest coast. Ritchie (2010: 90) modelled the visibility of lookout sites on islands around Harrison Lake to show the visual relationships between archaeological sites important to the Sts'ailes people within the greater scope of traditional land use (Mohs and Ritchie 2009). In another project analysing visibility from the waterline, Supernant inferred whether rock features along the Fraser River were intended for internal or external signalling, by using multiple viewsheds to establish the points from which the features were most visible (Supernant 2014). While Transformer sites differ from the above examples in that they are not part of a built environment – like lookouts, archaeological sites, or rock features – they do represent intentionality in their names, locations, and associations: there is a constructed cultural landscape that has meaning to be inferred by the correct type of analysis.

Data for archaeological sites was collected from the Remote Access to Archaeological Data (RAAD), the Provincial Archaeology Report Library (PARL), and the Sḵwx̱wú7mesh Atlas website. Data for elevation of the Lower Mainland and Sḵwx̱wú7mesh was acquired from the Province of British Columbia.

The ancient Sḵwx̱wú7mesh people and the Transformers travelled by dugout canoe and because it was easily the most efficient and common form of travel in the Salish Sea area (Suttles 1990:462): therefore, the perspective points for the viewshed were placed in the waters of Burrard Inlet, Howe Sound, and Sḵwx̱wú7mesh and Cheakamus Rivers. The elevation of the perspective points was between one and two meters – the average height for an individual sitting or standing in a canoe (Supernant 2014:502-503). The type of canoe the Sḵwx̱wú7mesh used was similar to the general Coast Salish canoe type used for hunting and fishing in saltwater areas, except that it had a less sheer and a vertical cutwater, which made it easier to handle in rivers than saltwater (Suttles 1990:462). The routes themselves were drawn using multi-point lines along the paths through Sḵwx̱wú7mesh territory by water, approximating the route that the *Xaay Xays* would have taken. The route snakes east by the Transformer sites in Burrard Inlet – to *s7ens* – but otherwise follows the east coast of Howe Sound, and then diverges to follow the two major river routes of the Sḵwx̱wú7mesh Valley.

While viewsheds were taken from all through the research area, projecting all the information onto one map loses some precision as the viewsheds overlap on different angles. It also would not convey the boundaries of visibility through these areas, as the journey follows many twists and turns through the geography of fjords and rivers. To address these challenges, this research set up three viewsheds for four visually separated areas of Sḵwx̱wú7mesh traditional territory. The three areas are Burrard Inlet, Howe Sound, and the routes of two rivers through the Sḵwx̱wú7mesh Valley – the Sḵwx̱wú7mesh and the Cheakamus. Each represents a separate visual route through a different environmental setting.

There are some limitations to viewshed analyses. Unlike more sophisticated LIDAR techniques, they do not account for vegetation that might obscure vision at

ground level. The analysis was also limited by the data set available to me. The precision of the digital elevation models (DEMs) used in this projection was 25m per pixel, and so does not capture small elevation changes that would be noticed in person. The data is only representative of modern elevations and water levels and does not account for geomorphological changes in the past several thousand years, so the river routes may have been different in some areas.

Despite its limitations, a viewshed is still the best available method to map out the visibility and intervisibility of Transformer sites across the landscape through Sḵwx̱wú7mesh traditional territory. If we know what can be seen from the water level when travelling through this area, we are able to better interpret the impressions these sites would have on observers and understand the relationships between each narratively connected site.

Another factor to consider in the landscape network of Transformer sites is the relationship of visibility between sites connected in the Sḵwx̱wú7mesh oral tradition. Certain locations are connected in this narrative, and it stands to reason that there be some facility of connecting them visually from a study of the area. On a grand scale, all Transformer sites are within the same narrative, but there would presumably be a local visible relationship between sites that are part of the same characters or narrative event. One would assume that these locations are intervisible, so that people viewing them would have been able to more easily connect them.

The three most easily testable examples are the sites connected to the story of *slhxí'7elsh*, *elksn* and *sch'eĺ'k's*, and *ch'ich'iyu'y elxwi'kn* and *tsitsusm.* The first is straight-forward: *slhxí'7elsh* was a powerful man who fished at the northwest end of Stanley Park. He challenged *Xaay Xays* and was transformed into a large standing rock. The nearby feature *ch'á'7ens* was described as his fishing tackle, and the stone *s7ens* was his wife, both transformed to stone alongside *slhxí'7elsh*. The connection of the next set of sites is described in this story, recounted by…

> The xaays [Transformers] were travelling around. They camped at point grey [*elksn*]. The younger of the three brothers, who was quite mischievous,

> looked south and saw a very high mountain peak. This was Mount Baker. Stating that he was going to shorten this mountain, he took his sling, which was called *sch'eĺ'k's*, put a rock in it and swung it around his head. The rock knocked the top off Mount Baker. Then the brother next to him looked up Howe Sound and saw another high mountain peak. This was Mount Garibaldi. He said he was going to shorten it, so he put a rock in his sling and swung it around his head. But his brother nudged him somehow and the rock slipped. Instead of knocking the top of Mount Garibaldi, this rock landed on the other side of Burrard Inlet. The rock is still there today, and the place where it landed is called *sch'eĺ'k's.* – Louis Miranda (Bouchard and Kennedy 1986:238-239)

There are other accounts about the details of who slung the rock and whether it was aimed there or not, but the visual relationship between the throwing at *elksn* and the rock landing at *sch'eĺ'k's* is established in these narratives. Finally, *ch'ich'iyu'y elxwi'kn* refers to two sisters who were transformed into the Lions, the mountain peaks on the east side of Howe Sound. Pauline Johnson's romanticized retelling of this story as she had heard it from Joe Capilano says that before their transformation, the sisters had convinced their father, the chief, to stop the war with a northern people, and the peace potlatch was held to commemorate the occasion (Johnson 1911). Warfare and the peacemaking are part of the archaeology and ethnohistory of the Pacific Northwest Coast (Angelbeck 2009), and *tsitsusm*, also known as Potlatch Creek (ARCAS Consulting Archaeologists Limited 1999) is on the western side of Howe Sound, across the bay from *ch'ich'iyu'y elxwi'kn*, and is where the Sḵwx̱wú7mesh and Lekwiltok met to end their cycle of conflict and raiding. The similar narrative elements that appear in the stories of each of these sites may have sprung from their intervisibility and perceived connections by people viewing them on the landscape.

4.1.3. Landscape Associations

The field survey and viewshed mapping described above are effective to study and characterize the material nature of and visual relationships between Sḵwx̱wú7mesh Transformer sites, but for a meaningful analysis of their role in people's lives in the past the sites need to be put in their cultural and archaeological context. What activities have been associated with these sites in the past, and what roles have they had in the lives of people who interacted with them? To answer that question, it is necessary to review the

archaeological and ethnographic literature referring to these sites and the areas around them – especially those referring to *Xaay Xays* specifically. To this end, this study noted archaeological sites, ethnographic activities, and references to environmental phenomena around each Transformer site.

The assessment of each site also considered the presence of archaeological sites that were either near a Transformer site or had a strong association to the site based on visibility or the nature of the sites. For example, a lithic source or scatter near a Transformer site characterized for the nature of its geology indicates that people were aware of the utility of that lithic source and the knowledge of that environmental characteristic was woven into and passed on through the Transformer story of the associated site. The same approach was applied to the ethnographic literature: this research looked at documentation of associated activities and land use that were geographically or culturally very close to the Transformer site in question. Finally, the Transformer stories themselves were studied on a site-by-site basis and note taken when either the name of the site, or the story related to it, referred to specific environmental features or phenomena. The nature of Transformers changing the landscape and the significance of *Xaay Xays* within Sḵwx̱wú7mesh culture both contribute to the spatial and mnemonic markers of the stories. A pattern of environmental references that Transformer stories served the additional purpose of marking notable places and encoding environmental knowledge into stories so that it could be known and remembered.

Sources that consider the cultural history and past ecology of the Central Coast Salish culture area establish a foundational understanding of the archaeology in the region, but the focus for this review was on Transformer oral traditions and the land use of Sḵwx̱wú7mesh Nation and its neighbours. The most relevant recent research on that topic came from the report written for the Sḵwx̱wú7mesh Nation by Bouchard and Kennedy (1986), that engaged extensively with Sḵwx̱wú7mesh mythology and oral traditions, and provided detailed information on every Sḵwx̱wú7mesh place name. This report, along other relatively recent accounts of interviews (Bouchard and Kennedy 1977; Matthews 1955) and reports from earlier ethnographic field trips (Boas 1916) were

invaluable for this literature review: these include a plethora of useful information relating to *Xaay Xays* and other Transformer narratives from neighbouring nations.

British Columbia's archaeological databases were another important source of information about Transformer sites. The Provincial Archaeological Report Library (PARL) is a database of professional archaeologist reports from 1960 to the present day and Remote Access to Archaeological Data (RAAD) contains the locations and site data of all officially recorded archaeological and historical sites in BC. These databases provide information on archaeological sites and reports associated with Transformer sites and were useful resources for the spatial analysis in this research. They also show how Transformer sites are recorded and referred to by the government and archaeologists responsible for managing BC's heritage, which is important to assess if Transformer sites are being properly managed and how that process can be improved.

No formal interviews or present-day accounts of Sḵwx̱wú7mesh oral traditions were incorporated into this research, primarily because of pragmatic limitations to the scope of this project. Field work and GIS were both time-consuming methods of research, and the information of oral traditions related to Transformers is already in various ethnographic accounts (Boas 1894, 1916, 1917; Hill Tout 1900; Teit 1912). Rather than doing ethnographic research that has already been done, spreading this study too thin, it focused more heavily on how a materialist and archaeological approach compliments the information in oral traditions. Nonetheless, this study supports the belief that the understanding and revitalization of Transformer oral traditions is an important part of reconciliation in British Columbia today, and that seeing the stories of *Xaays* written across the landscape is an excellent reminder to all who live and move through this space that this land has an ancient and rich history of Indigenous occupation, despite its seemingly pristine and natural appearance.

4.2. Results

4.2.1. Site Characteristics and Context

The survey of 26 listed Transformer sites and a comparison of their physical characteristics, revealed no universal rules for their makeup or context, but there were certain patterns of distinctiveness in shape, appearance, relief, and size. Not every site was accessible up close; some were only accessible through private property, while others were too distant from the water and required more time to hike to than was warranted for their survey. Information on those sites was supplemented with site notes and ethnographic sources.

The first aspect identified at each location was the type of physical site. The majority of sites are mountains, hills, or cliff faces that are part of the land, but have a particular shape, size, or prominence that makes them visually notable. The second most frequent type of site was a distinct rock or boulder. The third and most abstract type of sites were those that referred to an area or location – often where land and water meet – where transformations or other acts of *Xaays* took place. Not all of these could be evaluated on the same variables, but by aggregating the characteristics of each for a general level of distinctiveness, we learn more.

Most sites surveyed have odd quirks or characteristics that make them stand out from the rest of the landscape, even without viewing them with the Transformer stories in mind (Table 3). Size and relief are obvious traits that make the sites that have them notable, and especially when the mountains and hills are covered in snow, they appear even more visually striking. Some of the boulders stood out because they were the largest rocks in the area. But in other cases, shape and context played more of a role. The two peaks of *ch ̓ich ̓iyu ̓y elxwi ̓kn* are begging to have an intuitive nickname or story connected to them – most Vancouverites today know them as the Lions, because they have a loose resemblance to cat ears (Armstrong 1990:32-33; Johnson 1911).

Geological Site Type Classification				
Site Name	**Boulder**	**Mountain/ Rock Face**	**Land Area**	**Description**
elksn			x	Refers to "point of land" at Point Grey
ch'ech'el-hí7kw	x			Largest boulder at tip of beach
slhxí'7elsh	x			Large basalt pillar
ch'á'7ens			x	Some fish weirs in area, but generally just refers to location
s7ens	x			Boulder with cupules and tree
sch'eĺ'k's	x			Rounded boulder lodged in cleft just above the tide line
ch'ich'iyu'y elxwi'kn		x		Twin peaked mountains
tl'etl'ch'áĺkm	x			Were rocks in the water before being blasted by railway
xel'xeĺú's		x		Pictographs on sheltered rock face
yiyk'm	x			Rock with "filing" markings on it
lexwlúxwels			x	Story refers to specific rock formations that occur around that point
quin-ace			x	Landform resembling the tail of a whale when viewed from north
skaĺáw'	x			Rounded rock hill by water associated with and resembling a beaver
stá'mes		x		Mountain with massive solid rock face rising dramatically
st'et'e7ímin		x		3 rocky peaks on side of mountain representing berry pickers with packs on their backs
wáwnti		x		Rock face above river resembling the face of a Transformer itself

Geological Site Type Classification				
Site Name	**Boulder**	**Mountain/ Rock Face**	**Land Area**	**Description**
st'áwekw'	x			Large boulder in stream that held power over surrounding fish
si'ýám	x			Boulder in the middle of the river at the north end of canyon
k'ák'p'nech	x			Two boulders presumably located near shore in river
nexwyúxm		x		Omega Mountain peak
kiyáýakep		x		Alpha Mountain peak
tsewiĺx			x	Mount Tantalus, but refers to the entire Tantalus Range
xwmitl'm	x			Pale boulder where pictographs are drawn and crane was created
nepítl'		x		Refers to Buck Mountain, where deer was created
nkwú'7say			x	Creek with lithic source and Transformers taught the first salmon ceremony
stsatskwim		x		Rock faces and rock features formed from Transformed Sk̲wx̲wú7mesh figures
Total	10	10	6	

Table 3. Transformer sites organized by geological type

Sites with Distinctive Appearance					
Site Name	**Distinctive Shape**	**Distinctive Geology**	**Distinctive Size/Relief**	**Indistinctive**	**Reasoning**
elksn			x		Point of land jutting out into water
ch'ech'el-hí7kw			x		Largest boulder on the beach
slhxí'7elsh	x	x	x		Large pillar, basalt material, separate from nearby cliff
ch'á'7ens	x				Network of angular rocks in shape of fish weirs
s7ens	x				Rounded boulder standing upright on beach
sch'eĺ'k's	x				Rounded boulder lodged in a cleft of rock
ch'ich'iyu'y elxwi'kn	x		x		Twin mountain peaks
tl'etl'ch'áĺkm		x			Rocks close to shore by Porteau, with glacial striations on nearby bluff
xel'xeĺú's	x				Sheltered rock face with pictographs on them
yiyk'm	x	x		x	Large boulder by the shore with "filing" markings on them
lexwlúxwels		x			Andesite columnar rock formations exposed on side of quarry
quin-ace	x				Rocky ridge in the shape of a whale's tail
skaĺáw'	x		x		Rounded hill shaped like a beaver, beside mouth of Sḵwx̱wú7mesh river
stá7mes	x	x	x		Mountain with large exposed granite face
st'et'e7ímin	x				Three rocky peaks rising from foothills
wáwnti			x		Exposed rock face above Cheakamus River

Sites with Distinctive Appearance					
Site Name	**Distinctive Shape**	**Distinctive Geology**	**Distinctive Size/Relief**	**Indistinctive**	**Reasoning**
st'áwekw'			x		Large rectangular boulder embedded in ground and overhanging part way into adjacent creek
si'ýám			x		Boulder sticking out from the middle of river
k'ák'p'nech			x	x	Two rocks sticking out of river
nexwyúxm			x		Omega Mountain peak
kiyáýakep			x		Alpha Mountain peak
tsewiĺx			x		Mount Tantalus and Tantalus range
xwmitl'm	x	x			Exposed boulder and Cloudburst Mountain
nepítl'			x		Buck Mountain, and rockshelter on north slope
nkwú'7say		x			Shovelnose creek with running into Sḵwx̱wú7mesh River
stsatskwim			x		Rock outcrop with pictographs on base beside the shore of Green Lake
Total	12/26	7/26	15/26	2/26	

Table 4. Transformer sites organized by type of visual distinctiveness

In cases where there are distinctive aspects of a site's composition or geological history, the idea of transformation or an otherwise supernatural explanation is even more compelling. *Slhxi 7elsh* is likely the most accessible and prominent Transformer site in Burrard inlet, likely because the pillar is standing in the water, free from the nearby cliff, and it is composed of metamorphized basalt rather than sandstone of the surrounding beach (Figure 4). The geological man being turned to stone captures the essence of the geological history, acknowledging that this location has been altered or is different from its immediate surroundings. It is the only sea stack in the Lower Mainland area so marking geologically different places such as this with spiritual or cultural meaning is an

effective way of navigating and explaining one's surroundings and transmitting that knowledge to future generations. Stories directly explaining odd or notable geological events occur at several other sites in this survey, notable *sch'el'k's* and *lexwlu'xwls*.

Figure 4. Photos of slhxi'7elsh, historic photo from 1905 (left, accessed from the City of Vancouver Archives) and present (right).

As part of the physical survey of the sites, their current condition was also noted (Table 4). Though the preservation and integrity of these sites has been shown to be a priority both historically and today – moving a bridge to avoid *s7ens* (Bouchard and Kennedy 1986:56), or Stó:lō reports that emphasize the importance of Transformer sites (Sto:lō Nation 2003:15) – more than a quarter of the sites surveyed have had their physical integrity and immediate context impacted by developments. Three have been destroyed entirely, while five more have notable signs of erosion or vandalism. The problems with how Transformer sites have been managed and protected, as well as ways to more fully protect parts of BC's heritage that do not fit into the protected category of archaeological sites will be discussed in the next chapter.

Condition of Transformer Sites				
Site Name	**Intact**	**Impacted**	**Destroyed**	**Description of condition**
elksn	x			Beach area is intact. Harbour nearby and large sandstone exposure at point (but that may have been there in the past as well).
ch'ech'el-hí7kw		x		Graffiti and burn marks on surface of rock
slhxí'7elsh	x			Close to seawall and context altered. No clear impacts on rock itself.
ch'á'7ens			x	Fish weirs are still present, but the sandstone rock sticking out from the shore that was slhxí'7elsh's transformed fishing tackle, and the hole in the cliff where he stored them are both gone, likely from seawall construction.
s7ens		x		Physical and chemical erosion on the rock itself. Tree is absent and cupules are faded. Part of rock is under seawall
sch'eĺ'k's		x		Site context is compromised, sitting within 6 feet of domestic yard and sculptures
ch'ich'iyu'y elxwi'kn	x			Mountains do not have structures on them and have no signs of natural erosion. Rock climbing has impacted cliff faces and pictograph sites in the region, but no sensitive areas on these peaks.
tl'etl'ch'áĺkm			x	Highway goes right through site area. Some boulders visible at base of railroad, and striated bluffs still show above, but original site is all but gone
xel'xeĺú's	x			Pictographs still seem brightly coloured, no signs of dramatic fading
yiyk'm			x	Large boulder described is absent and is directly where railroad is now. Was destroyed by development
lexwlúxwels		x		Rocks by water may still be intact, but industrial quarry is removing material from site context
quin-ace	x			Slope and outcrop have powerline towers above them, but no substantial impact on site
skaĺáw'	x			Sits beside harbour but no damage on it
stá7mes	x			Mountain climbing and hiking trails mean that some physical erosion and alteration are inevitable, but the sheer scale of the site means that any manual human impact is negligible

Condition of Transformer Sites				
Site Name	**Intact**	**Impacted**	**Destroyed**	**Description of condition**
st'et'e7ímin	x			Some hikers climb these rock spires, but no signs of erosion on them
wáwnti	x			Hiking trails pass by it, but the rock face is intact
st'áwekw'	x			Small trail goes adjacent to it, but the boulder is large and sturdy and shows no signs of erosion
si'ýám	x			Boulder seems to be resisting erosion from the river. Highway within 100m, so there is always some noise, but the physical integrity I intact
k'ák'p'nech	x			Could not locate rocks themselves, but area around is quite quiet, with reserve camping properties. No signs of significant erosion in that area
nexwyúxm	x			Mountain does not have structures on them and have no signs of natural erosion
kiyáýakep	x			Mountain does not have structures on them and have no signs of natural erosion
tsewiĺx	x			Mountain does not have structures on them and have no signs of natural erosion
xwmitl'm	x			Pictographs are faded, but the boulder the panels are on is intact
nepítl'	x			Mountain does not have structures on them and have no signs of natural erosion
nkwú'7say	x			Logging bridge goes over creek, but no impact on creek or beach itself. Creek is still flowing and so does not seem to be naturally eroding or changing course
stsatskwim		x		Bluffs are right beside highway, and pictographs are accessible and somewhat faded at the base of rocks
Total	18	5	3	

Table 5. Condition of Transformer sites

4.2.2. Visibility and Viewshed

The results of both site surveys and viewsheds show a high degree of visibility for Transformer sites from water routes. Every single Transformer site is visible at some point from the water and could have been seen when travelling through this area by canoe. During the survey, each site was visited or accounted for, either by accessing it by boat or by walking along roads within 100m from the water.

Viewsheds establish much the same story. From the height of an individual sitting or standing in a canoe, every site is visible at some point while travelling through the water routes that past peoples would have used. This data also revealed some visual connections not seen in the survey. For instance, the Sisters become visible going into Burrard Inlet past Stanley Park, and in Howe Sound as boats travel through the straight between Gambier and Bowen Island. Overall, Burrard Inlet and Howe Sound have a greater range of visibility because they are on open water, while the visibility range in the Sḵwx̱wú7mesh Valley often constrained by riverside foliage or canyon slopes, with windows of greater visibility appearing sporadically throughout the journey.

The intervisibility of the sites was less conclusive. While many sites have another Transformer site within view from their location – or immediately in front of it in the water – there are some that are so far removed from the rest that they cannot be seen; are in view but not at an angle or backdrop that makes them salient; or, have their sightlines obstructed by other features and curves in the landscape. This last factor is more frequently the case in the Sḵwx̱wú7mesh Valley leg of the journey, as many of the sites in this area are visible as mountain peaks in the distance, and the river routes have many more twists and turns that limit the range of view compared to that in open marine areas. Along the route through Sḵwx̱wú7mesh territory, there were very few locations where one site or site area was not visible, barring sharp bends in the water routes if travelling close to the shore. At prominent points along the shoreline and in the viewsheds of high mountain peaks, the presence of these places would be evident.

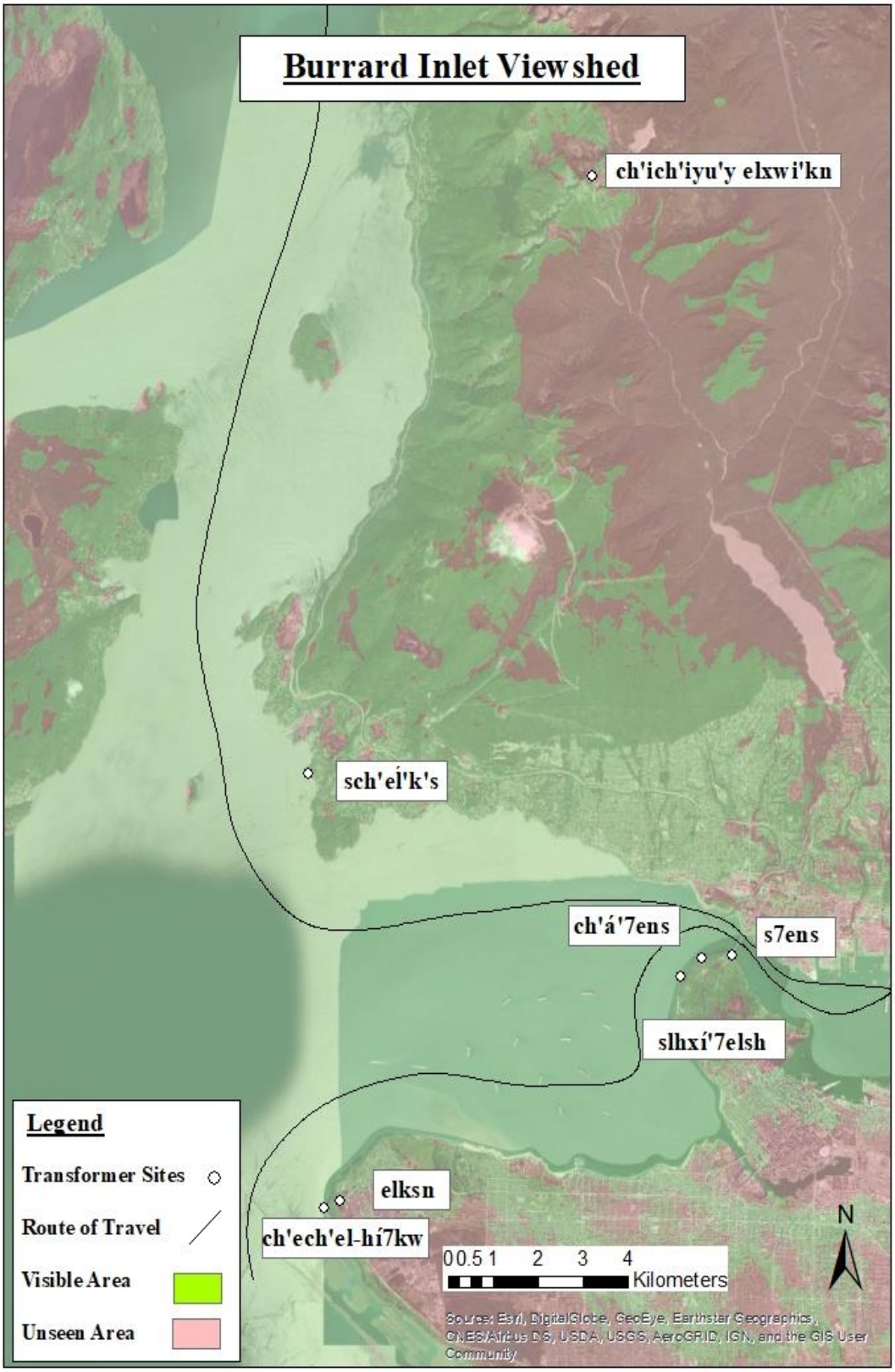

Figure 5. Burrard inlet travel viewshed

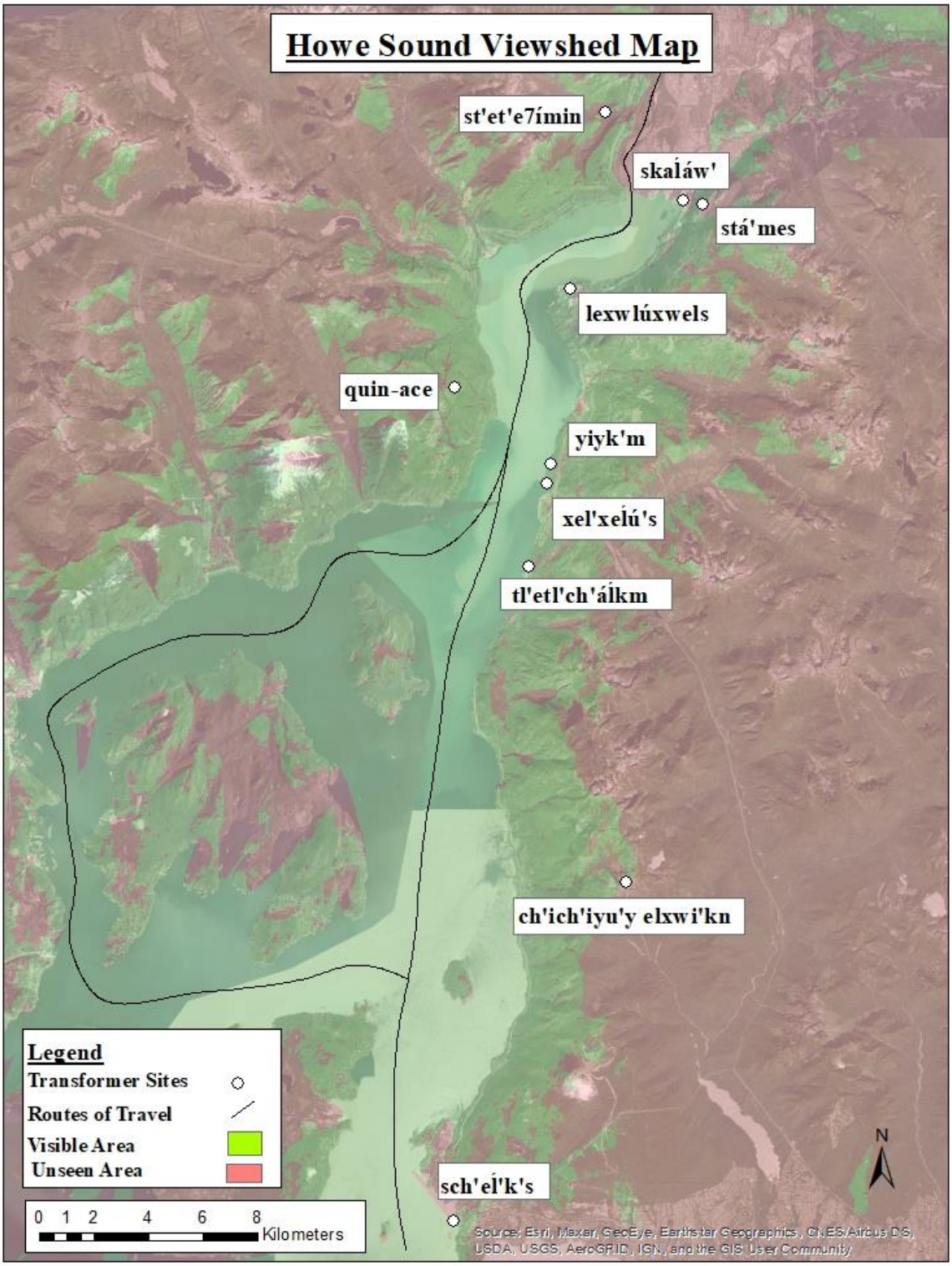

Figure 6. Howe Sound travel viewshed

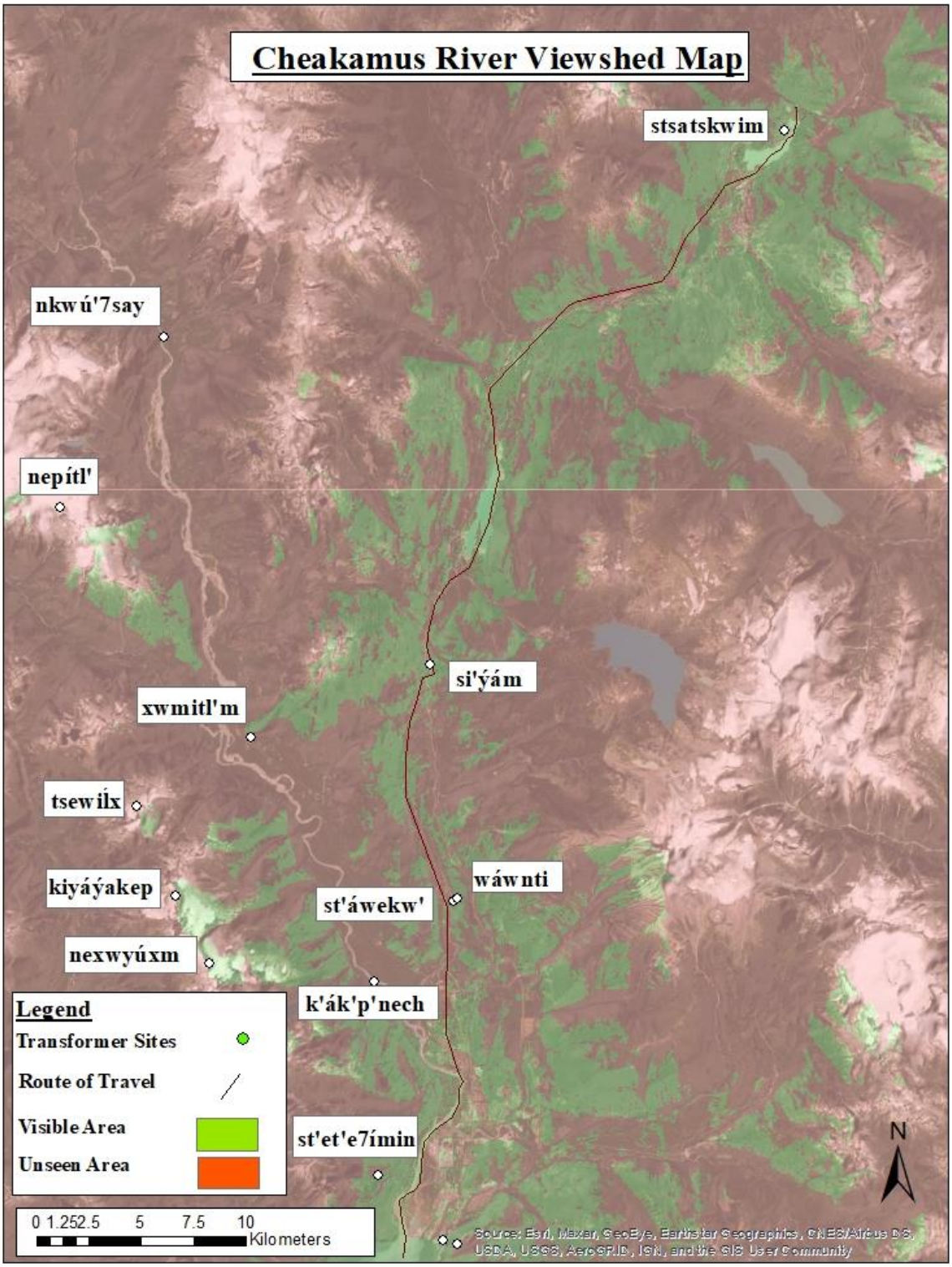

Figure 7. Cheakamus River travel viewshed

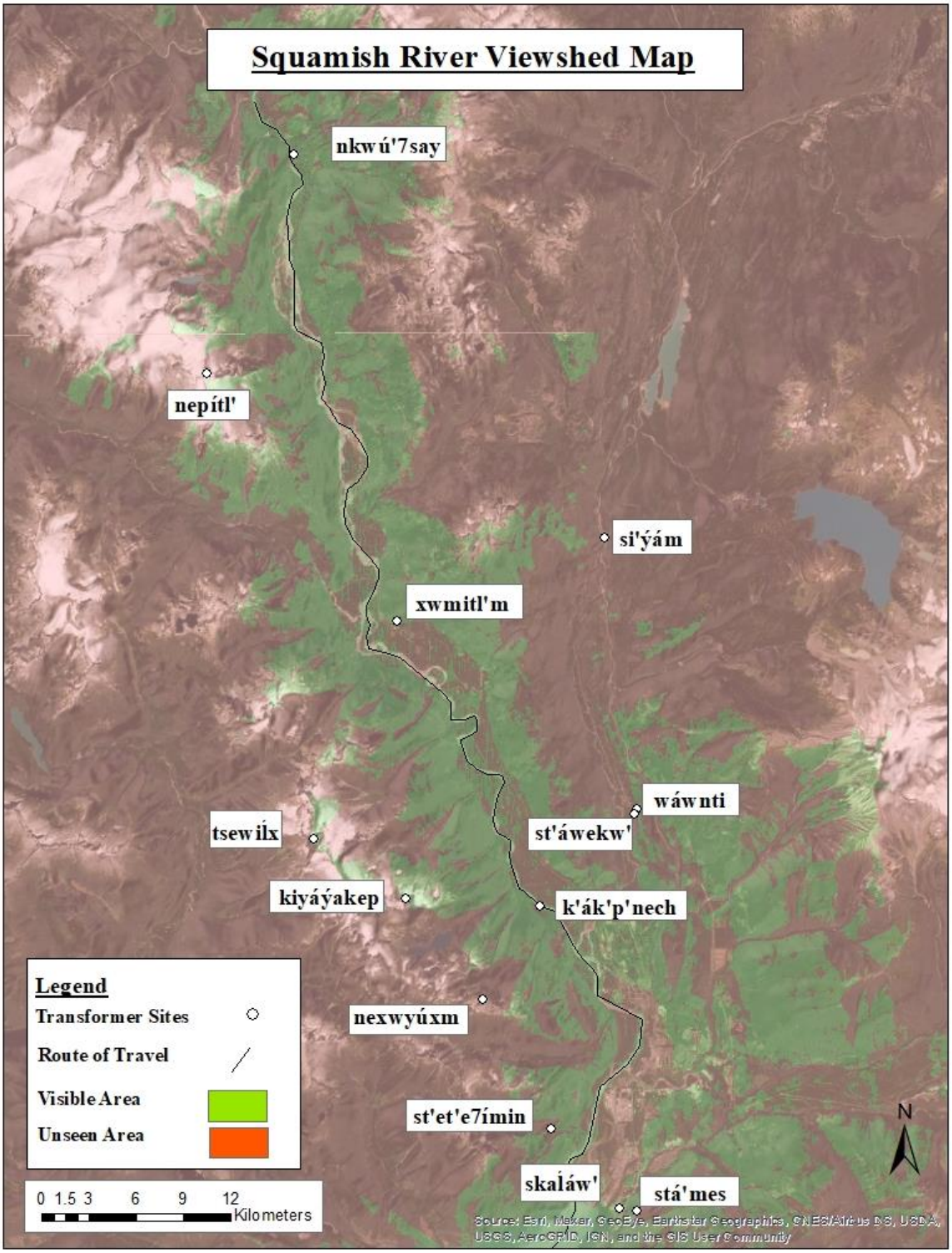

Figure 8. Squamish River travel viewshed

As for the intervisibility of narratively connected sites, the results were mixed. From the water by *slhxí'7elsh*, *ch̓a̓7ens* is just visible around the bend, while *s7ens* is out of sight around the point. All three are only visible at one time if the perspective point was from the north shore. The summer village of *xwmelch'stn* is close to that point, near the mouth of the Capilano River, and travellers moving west to east through the inlet would see each feature on their path through. From *elksn*, *sch̓el̓k̓s* is hard to make out from the rest of the coastline. Although *sch̓el̓k̓s* is on a point that juts out west into Howe Sound, it simply is not a salient, discernible feature from that distance. However, from the water around *sch̓el̓k̓s*, *elksn* is visible in good weather, and the point is discernible as there are no other landmasses in that area. This makes sense in that one first noting the presence of this precariously placed boulder would look around for where it would have come from – as the point is by the water and a good distance from the nearest hill or mountain. The visible connection between these sites comes from the smaller local landmark that is *sch̓el̓k̓s* to the well-known regional landmark of *elksn*.

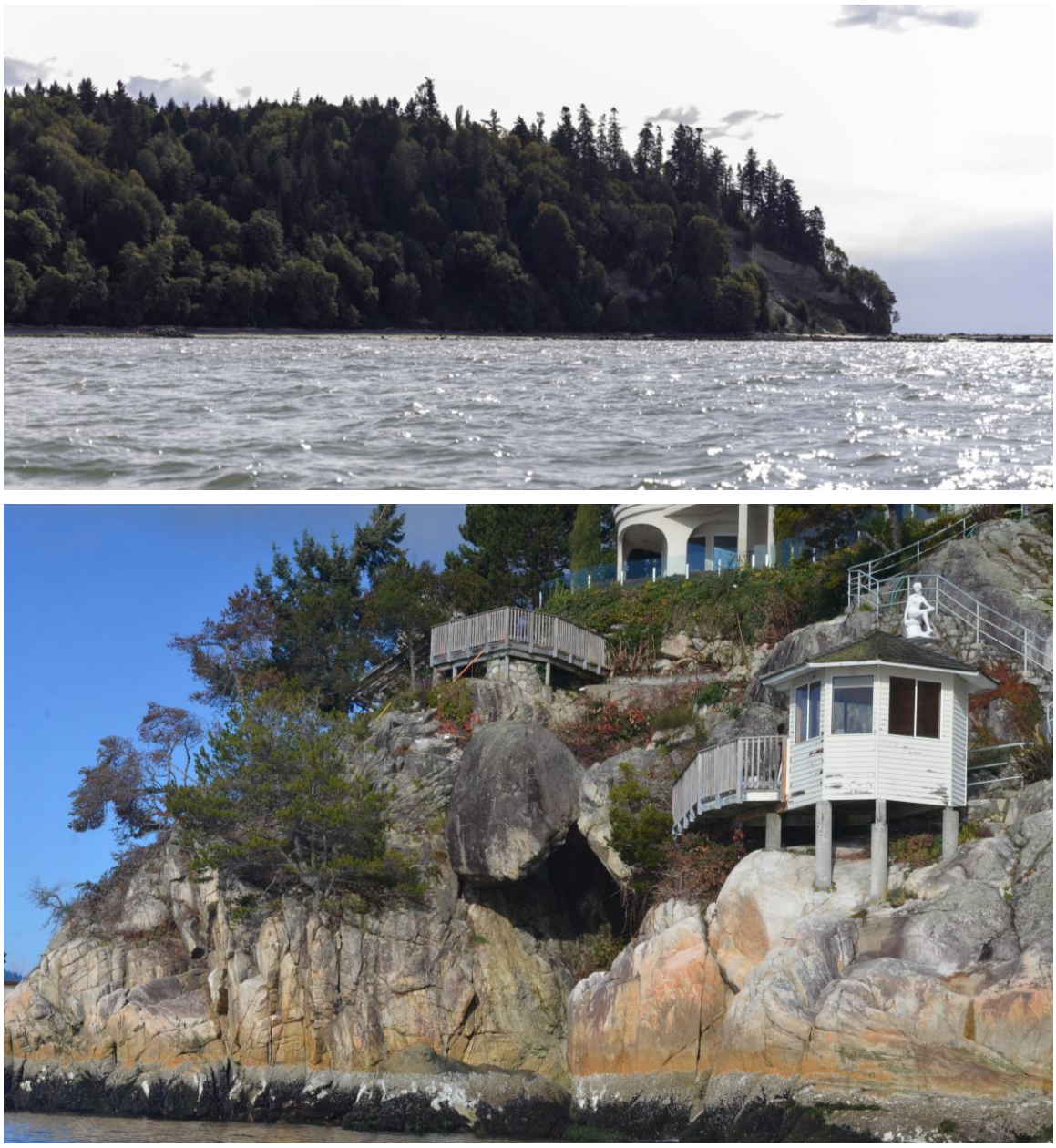

Figure 9. The sites elksn (above), and schelks (below).

Finally, there is no intervisibility between *ch'ich'iyu'y elxwi'kn* and *tsitsusm*. The view of the Sisters in Howe Sound is blocked by the coastal mountain range except through the straight further South between Gambier Island and Bowen Island. However, an interesting aspect of *ch'ich'iyu'y elxwi'kn* is their window of visibility in eastern Burrard Inlet. This is further east than any other Transformer sites, but between Stanley Park and the Ironworker's memorial bridge there were several Sḵwx̱wú7mesh summer villages that would have had a clear view of *ch'ich'iyu'y elxwi'kn*. The view of the

mountains ends abruptly after the Ironworker's Memorial Bridge – corresponding to Sḵwx̱wú7mesh settlement *ch'ich elxwi7kw* – at the same place Sḵwx̱wú7mesh use of the north shore of Burrard Inlet ended and Tsleil-Waututh territory began.

While there is no clear visible connection between *ch'ich'iyu'y elxwi'kn* and a potlatch site, there is a relationship between the visibility of this Sḵwx̱wú7mesh landmark and Sḵwx̱wú7mesh settlement patterns in Burrard Inlet.

4.2.3. Landscape Associations

There is a strong theme of Transformer sites appearing to be associated with archaeological sites, ethnographic activities, and environmental phenomena. Most Transformer sites surveyed align with at least one of these, and many are in all three categories.

Sites associated with archaeological material give some insight into the activities occurring at or near the Transformer site in question. These tend to be by the water; partly because of the dependence past peoples had on the rivers and seascape for their subsistence and transportation, but also because more developments, and consequently archaeological investigations, occur along the shoreline. Still, the proximity and frequency of archaeological material close to Transformer sites clearly shows that people were dwelling close to them at least in certain times of the year. Even more sites had ethnographic activities and landscape use associated with them. Many were tied to spatially specific information, such as good fishing spots or sources of lithic material. That the strongest association is with ethnographically reported activities may be because archaeological work, and therefore archaeological reporting, has been limited in currently non-residential and remote areas where many of these sites tend to be. The established ethnographic connections are also limited to the ethnographic reports taken from Sḵwx̱wú7mesh informants, which in turn have been limited by the loss of cultural knowledge during periods of disease and colonial cultural repression. Still, the areas around these sites are familiar and understood by people, and that they fit into their cultural landscape.

Transformer Sites Associated with Recorded Archaeological Sites		
Site Name	**Association**	**Description**
elksn	x	DhRt -138: shell middens and canoe skid right at end of Point. DhRt-13: canoe runways just SE of Point. DhRt-32: shell midden inland (bulldozed). DhRt 65: pocket midden. DhRt-66: pocket midden. DhRt-67: CMTs and pocket midden. Point Grey village around the point to the northeast. Fish traps south of the point. More sites to the south close to the mouth of the Fraser
ch'ech'el-hí7kw	x	DhRt -138: shell middens and canoe skid right at end of Point. DhRt-13: canoe runways just SE of Point. DhRt-32: shell midden inland from shore (bulldozed by construction). DhRt 65: pocket midden. DhRt-66: pocket midden. DhRt-67: CMTs and pocket midden. Point Grey village around the point to the north and east. Fish traps south of the point. More sites to the south.
slhxí'7elsh	x	DhRs-6: shell midden by Second Beach. DhRs-7: shell midden by Third Beach parking lot. DhRs-79: Schi'lhus, burials and midden, mausoleum and structure. DhRs-275: Ci'7us, trail, hearth, surface lithics, unidentified cultural depressions. DhRs-304: midden. DhRs-676: CMT and burial cairn. DhRs-678: Fish traps and canoe skid around Cha7ens. DhRs-693: CMTs. DhRs-311, 679, 692, 694, 695, 696, 697, 698, 699,700, 701: CMTs. DhRs-883: lithic scatter.
ch'á'7ens	x	DhRs-6: shell midden. DhRs-7: shell midden. DhRs-79: Schi'lhus, burials and midden. DhRs-275: Ci'7us, trail, hearth, surface lithics, unidentified cultural depressions. DhRs-304: midden. DhRs-676: CMT and burial cairn. DhRs-678: Fish traps and canoe skid. DhRs-693: CMTs. DhRs-311, 679, 692, 694, 695, 696, 697, 698, 699,700, 701: CMTs. DhRs-883: lithic scatter.

Transformer Sites Associated with Recorded Archaeological Sites		
Site Name	**Association**	**Description**
s7ens	x	DhRs-6: shell midden by Second Beach. DhRs-7: shell midden by Third Beach parking lot. DhRs-79: Schi'lhus, burials and midden, mausoleum and structure. DhRs-275: Ci'7us, trail, hearth, surface lithics, unidentified cultural depressions. DhRs-304: midden. DhRs-676: CMT and burial cairn. DhRs-678: Fish traps and canoe skid around Cha7ens. DhRs-693: CMTs. DhRs-311, 679, 692, 694, 695, 696, 697, 698, 699,700, 701: CMTs. DhRs-883: lithic scatter. Xway-Xway (Lumberman's Arch) and Xwmelch'stn (Capilano River) are either within view or just down the coast.
sch'eĺ'k's	x	DiRt-6: subsurface lithics on Eagle Harbor. DiRt-7: shell midden in Fisherman's Cove. No signs of activity at the point itself, but seems like harbor nearby would be a good place to stop between Howe Sound and Burrard Inlet
ch'ich'iyu'y elxwi'kn		No archaeological sites near the actual mountains. Some sites lie right in the visibility range for the Sisters when in Burrard Inlet.
tl'etl'ch'áĺkm	x	DjRt-9: lithic scatter over beach to the south.
xel'xeĺú's	x	No associated sites, but pictographs are sign of activity
yiyk'm	x	Very close to xel'xeĺú's
lexwlúxwels	x	Whole hills of lithic source. DjRt- 10: Browning Lake pictograph is inland from this area
quin-ace		Tsitusm is right around the bend, and Defence Island is close by, but the slope is very steep, and no sites are recorded around this point of land
skaĺáw'	x	DkRs-6, midden and village site
stá7mes	x	DkRs-2 (cultural parcel, exact location unknown), DkRs-6 (Sta’amus village and shell midden), DkRs-10 (Rock shelter behind the mountain), DkRs-16 (lithics and rock shelter to the NE)

Transformer Sites Associated with Recorded Archaeological Sites		
Site Name	**Association**	**Description**
st'et'e7ímin		Stawamus village is directly across the river, but no others in that area
wáwnti		Stewekw is the only recorded archaeological site in that area, and there is a fair distance between it and wáwnti
st'áwekw'		This site has Borden number DkRs-1. Wáwnti has Borden number DkRs-3. The lake itself is known as a late season fishing spot
si'ýám		No sites recorded
k'ák'p'nech	x	No archaeological sites recorded nearby. Village of Tekutakwemay (means "place of the thimbleberries), located at the confluence of the Sḵwx̱wú7mesh and Ch'iyakmesh rivers.
nexwyúxm		No sites yet recorded in the mountain range itself.
kiyáýakep		No sites yet recorded in the mountain range itself.
tsewiĺx		No sites yet recorded in the mountain range itself.
xwmitl'm	x	Pictographs are DlRt-1. Graveyard up the road to the north.
nepítl'	x	DlRt-9: Nepitl Yelhi'xw (Ashlu) rockshelter on side of Buck Mountain. Directly across from reserve and cemetery (Skawshn)
nkwú'7say	x	EaRu-2: Depression + lithic scatter recorded archaeological site. EaRu-7: CMTs just south of creek.
stsatskwim	x	EaRr-2: Pictographs on cliff at farthest east portion of north side of Green Lake
Total	17/26	

Table 6. Association between Transformer sites and archaeological sites

Transformer Sites Associated with Recorded Ethnographic Land Use		
Site Name	**Association**	**Description**
elksn	x	Known as a place where Sḵwx̱wú7mesh people went for the summer (Bouchard and Kennedy 1986:1-2).
ch'ech'el-hí7kw	x	Known as a place where Sḵwx̱wú7mesh people went for the summer. Also, whoever touched the rock with their paddle would have whatever breeze needed to carry them home (Bouchard and Kennedy 1986:3) (so associated with canoeing and travel)
slhxí'7elsh	x	Reports of gifts given, of the site being stl'alkm, and there was a fishing spot nearby (Bouchard and Kennedy 1986:51). Close settlement at unnamed midden camp halfway between site and Ferguson Point. Established tradition of Sḵwx̱wú7mesh people travelling from the Sḵwx̱wú7mesh Valley to Burrard inlet in the summer to harvest marine resources.
ch'á'7ens	x	Fish weir connections, and some of the oral accounts mention sturgeon fishermen coming to rub their faces in the hole for spiritual help (Bouchard and Kennedy 1986:54).
s7ens	x	Lots of reports of good fishing nearby, and a good place to get cedar trees and training for power by climbing the cliffs (Bouchard and Kennedy 1986:56).
sch'eĺ'k's		No mention of land use around site, just story of Transformer sling (Bouchard and Kennedy 1986:237; Mathews 1955:237).
ch'ich'iyu'y elxwi'kn	x	Reports of mountain goat hunting reported there (Bouchard and Kennedy 1986:248).
tl'etl'ch'áĺkm		No reports of ethnographic activities in this area (Bouchard and Kennedy 1986:256).
xel'xeĺú's	x	Reports of pictographs marking a good fishing spot and marking where the sea level used to be (Bouchard and Kennedy 1986:257).

Transformer Sites Associated with Recorded Ethnographic Land Use		
Site Name	**Association**	**Description**
yiyk'm		No reports of ethnographic activities in this area (Bouchard and Kennedy 1986:258).
lexwlúxwels	x	Accounts of collecting andesite from lithic sources at this site (Bouchard and Kennedy 1986:261).
quin-ace		No reports of ethnographic activities in this area (Bouchard and Kennedy 1986:302).
skaĺáw'		Description of beaver activity, but no human activity (Bouchard and Kennedy 1986:307).
stá7mes	x	Well established village at the base of the mountain with lots of activities (Bouchard and Kennedy 1986:307-312).
st'et'e7ímin	x	Reports of people camping in the grassy flats below the peaks (Bouchard and Kennedy 1986:326).
wáwnti	x	Reports of canoeing past rock, and large salmon runs by rock (Bouchard and Kennedy 1986:367).
st'áwekw'	x	Reports of fishing at and around site, even during the winter (Bouchard and Kennedy 1986:368).
si'ýám		Reports of good fishing at site and the pools around it (Bouchard and Kennedy 1986:373).
k'ák'p'nech		No mention of land use at site, just story of men in canoes turned to stone (Bouchard and Kennedy 1986:388).
nexwyúxm	x	Accounts of hunting mountain goats and berry gathering (Bouchard and Kennedy 1986:384).
kiyáýakep	x	Accounts of hunting mountain goats and berry gathering (Bouchard and Kennedy 1986:386).
tsewiĺx	x	Accounts of hunting mountain goats and berry gathering (Bouchard and Kennedy 1986:389).
xwmitl'm	x	Accounts of fishing for Coho salmon in Cloudburst creek near to the site (Bouchard and Kennedy 1986:395).

Transformer Sites Associated with Recorded Ethnographic Land Use		
Site Name	**Association**	**Description**
nepítl'	x	Reportedly a good hunting spot (Bouchard and Kennedy 1986:400).
nkwú'7say	x	Accounts of Ch'ekch'eks village at the mouth of the creek, where lots of meat smoking occurred (Bouchard and Kennedy 1986:409).
stsatskwim		No Sḵwx̱wú7mesh ethnographic accounts associated with this site.
Total	19/26	

Table 7. Transformer sites with ethnographic reported activity in those areas

Transformer Sites Associated with Environmental Messaging		
Site Name	**Association**	**Description**
elksn		No description of environmental details at this site
ch'ech'el-hí7kw	x	Transformed builder is a specific feature, and associated story about homeward bound winds when you touch your paddle to it shows an understanding of the wind and currents around this point
slhxí'7elsh	x	Pillar is of a distinct geological material compared to the surrounding sedimentary rock
ch'á'7ens	x	Fish trap rocks only become relevant with the changing tide, so the encoded knowledge of this is notable
s7ens	x	Transformed boulder is a specific feature on landscape
sch'eĺ'k's	x	Boulder lodged in the cleft is a different shape and colour from the surrounding geology, indicating it likely rolled or dropped into it's current resting place
ch'ich'iyu'y elxwi'kn	x	Connection of mountain goat blanket in the Transformer story relates to the seasonal activities of mountain goats in these mountains
tl'etl'ch'áĺkm	x	Glacial striations make bluff above these rocks geologically distinct
xel'xeĺú's	x	Some of the lines drawn on the pictographs said to indicate ancient sea levels
yiyk'm	x	Markings on stone may have been some notable type of erosion
lexwlúxwels	x	Transformed rocks have a different geology than the surrounding material (andesite as opposed to granite)
quin-ace	x	Whale tail corresponds with a marine terminal moraine, so the sea floor of Howe Sound is different and more geologically and ecologically diverse after this point

Transformer Sites Associated with Environmental Messaging		
Site Name	**Association**	**Description**
skaĺáw'	x	Story and ethnographies describe beaver activity at this site
stá7mes	x	Mountain is the second largest solid granite rock in the world, a distinctive geological feature that can be seen from across the landscape
st'et'e7ímin		Potential reference to berry picking, but to this date there is no confirmation that that area had berry picking activity
wáwnti	x	Large rock face above the river, with legends that the transformed individual would recoil backwards when there was a particularly heavy salmon run. Shows that area of river was observed for salmon activity
st'áwekw'	x	Boulder partially covering the creek creates an eddy where fish dive deep behind and rest from the current. Observation of this activity is likely what the rock's power overfishing success represents
si'ýám		Boulder in the middle of the creek creates an eddy where fish dive deep behind and rest from the current. Observation of this activity is likely what the rock's power overfishing success represents
k'ák'p'nech	x	Rocks sticking out of water could be a measure for river flow (at higher water levels they would be under water)
nexwyúxm		No description of environmental details at this site
kiyáýakep		No description of environmental details at this site
tsewiĺx		No description of environmental details at this site
xwmitl'm	x	Story describes the creation of crane here, but cranes only live in brackish water. However, this area used to be connected to the sea several thousand years ago, and cranes would likely have nested around here, so this story shows an ecological snapshot in time

Transformer Sites Associated with Environmental Messaging		
Site Name	**Association**	**Description**
nepítl'	x	Story of deer's creation also connects to ethnographic activity of good hunting
nkwú'7say	x	Lithic source and salmon moving through here for the first salmon ceremony
stsatskwim	x	Pictographs have bird footprints, and separate outcrops of rock represent separate transformed individuals
Total	17/26	

Table 8. Transformer sites with narrative environmental associations

As mentioned in the results for the survey, several sites were notable for their marking of geological phenomena. When looking for references to both geological and ecological phenomena, the number of sites greatly increases. The names and stories of those places are interwoven with knowledge of the landscape, and can be accurately referred to as toponyms, names that refer to topographical features (Turner 2014). In those forms that knowledge also has the capacity to pass be passed on – even to people who have never been to those particular locations – simply through cultural references to the place in question.

It was particularly interesting that at several sites, ecological patterns referenced in the oral traditions associated with those sites are still plainly visible today. For example, *st'áwekw'* is a large boulder partly in Tenderfoot Creek that is understood to be a powerful rock woman who could affect the success of people fishing in that lake and stream. If she is not respected or is otherwise offended, all the fish hide beneath the rock, and in more extreme cases, offenders are afflicted with temporary madness (Bouchard and Kennedy 1986:367-368). While there were no episodes of insanity during the survey, fish were observed congregating in the deep waters just below *st'áwekw'*. The ecological explanation could be that the increased depth around the rock, and the rock itself, disrupt stream flow and create an eddy where the fish can rest and hide from fishers. The observable events are recorded in the oral tradition of a Transformer site. This

phenomenon was also observed at *siyam* a large rock in the middle of the Cheakamus River further north that is in fact one of the Xaays brothers. The ethnographic background of both sites references fishing in those specific areas.

Figure 10. Siyam rock in river

Figure 11. Photo of stewekw over stream (left) and fish "hiding" in eddy (right)

Overall, the results of this research show that Transformer sites have common but not universal characteristics that influence how past peoples perceive and interact with

them. All can be seen at certain points along the water routes through Sḵwx̱wú7mesh territory, and many share common physical characteristics. The names and stories associated with them frequently convey how people interacted with the site itself, and how they used the land around it. They tend to be associated with archaeological and ethnographic activity, which was influenced by seasonality and ephemeral environmental factors.

5. Discussion

5.1. Archaeological Interpretations: The importance of stories

Based on the results of this research, it is reasonable to surmise that Transformer sites were part of the daily and seasonal lives of the Sḵwx̱wú7mesh people. Simply living in, or moving through, their territory, they would frequently see or have a close encounter with them. Their villages, hunting grounds, lithic sources, and travel routes brought them close to those sites (Reimer 2012). The familiarity and importance of these places to both spiritual and pragmatic parts of life meant that knowledge about them was enshrined in oral traditions for future generations.

Transformer sites are a very public form of spirituality and culture (Thom 2005:122). As opposed to remote or private rock art that would only be seen by the artist on shamanistic journeys or by others with in group knowledge (Whitley 2011:160), Transformer sites are all either landmarks that are visible from a great distance – often mountain peaks – or features that were very accessible – boulders and areas by the water that could be passed or reached by canoe. Reimer (2012) found that lithic sources associated with Transformers were much more public and accessible than those associated with other mythical beings. It could be that Transformer sites and their spiritual power were strongly associated with their role as agents of the creator to help humanity, while other spiritual beings held a more wild, dangerous, and independent power – such as the *Smaylilh* wild people (Reimer 2007). Even though there are examples of Transformer sites requiring respect when in their presence – it is traditional to avoid pointing at the mountain by *sta7mes*, or to leave offerings at *slhxí'7elsh*, acting right around *siyam* and *st'áwekw'* – they are not portrayed as places where bad or rude behaviour is restricted to access important resources, and are not as inherently dangerous as other places of power where mythical beings dwell.

Some Transformer sites have specific associations with the activities of people at those places. Some are clearly associated with the formation and subsequent acquisition of lithic materials. At *lexwlúxwels* the transformed Lil'wat people formed vertical

columnar structures of dacite (Figure 12), and *lexwlúxwels* was a major lithic source for nearby sites and villages dated to 4000 years BP (Reimer 2018a:504). At *nkwú'7say* – a site known more for being where *Xaay Xays* taught people how to fish for and respect salmon with the first Salmon ceremony – the banks of this creek have many cobbles that were used for lithics as well (Reimer 2012:67). Other sites are strongly connected to fishing; in addition to *nkwú'7say*, other sites are *slhxí'7elsh*, *ch'á'7ens*, *wáwnti*, *st'áwekw'*, and *si'ýám*. Some sites refer to fishing in their formation – *slhxí'7elsh* was a fisherman who was very powerful in that area. At others, the characteristics of the transformed sites respond to fish and fishing – *wáwnti*'s face was said to recoil when there was a large salmon run to avoid the splashing of the many fish, and *st'áwekw'* and *si'ýám* both hinder disrespectful people's fishing by hiding fish under their rocks (Bouchard and Kennedy 1987:367,368,374).

Figure 12. The Transformer site lexwlúxwels, at Watt's point

Other Transformer sites have different specific associations with the environment connected to the site. Mountain Transformer sites tend to be associated with hunting or hunted animals. *Nexwyúxm, kiyáýakep,* and *tsewiĺx* are hunters transformed into mountain peaks, with their dogs transformed into foothills beneath them (Figure 13). *Nepítl'* is

where deer was created – the English name, Buck Mountain, still reflects its origin – and so was likely understood to have plentiful game. The creation of deer by *Xaays* was meant to provide the Sḵwx̱wú7mesh people with food, so hunting would likely be in this area. Because of the focus on the coast, not many archaeological sites are recorded in these alpine areas, but mountain climbing has been an important part of Sḵwx̱wú7mesh culture, and signs of activity are present in these places (Reimer 2003).

Figure 13. The mountain peaks are nexwyúxm, kiyáẏakep, and tsewiĺx, the transformed hunters.

Another interesting case is *ch'ich'iyu'y elxwi'kn* – the Sisters – who have some messaging of culture and peacemaking because of their role in stopping a war between the Sḵwx̱wú7mesh and northern warriors (Johnson 1911), but they were transformed into twin mountain peaks for causing discord by fighting over a mountain goat wool blanket. The connection with mountain goat wool may be significant in both a symbolic and a pragmatic sense. The snowy peaks of the mountains symbolized the white blanket the sisters fought over (Bouchard and Kennedy 1986:248); the coming of snow also corresponds with the presence of mountain goats arriving in that area and would likely be

when hunters began tracking them. When the snow melts and mountain goats shed their winter coats it would have been much easier to collect the wool from the ground of caught on bushes (Rudy Reimer personal communication 2019).

Some of the other sites by the water describe canoeing in their stories, which strengthens the connection with travel that the Transformers have in oral traditions. The rock *ch'ech'el-hí7kw* at Point Grey was an individual who had power over wind and tried to challenge *Xaays*. He sent waves and winds to rock their canoe, but they paddled through and turned him to stone. Joe Capilano said that if one touched their canoe paddle to this rock, they would have good winds to take them home (Johnson 1911:89-102) – another gift left by the Transformers. The presence of recorded canoe skids close to this site suggests that Sḵwx̱wú7mesh and Musqueam people may well have taken advantage of this boon, as Sḵwx̱wú7mesh people summered in this area (Bouchard and Kennedy 1986:13; Maud 1978:28). *Tl'etl'ch'áĺkm* is a set of boulders that was once mortals in canoes that were transformed when they were punished for their bad behaviour (Bouchard and Kennedy 1986:256). *K'ák'p'nech* are also two boulders that were once canoes (Bouchard and Kennedy 1986:388; Hill-Tout 1900:523).

Travel and transportation do not usually leave lasting remains in the archaeological record, but these sites' stories make landmarks on the landscape of travellers passing through these places, only to be frozen in time forever.

All the stories described above are more than that: the names and stories of these Transformer sites provide a link between the Sḵwx̱wú7mesh people and their use of the landscape. This is relevant for archaeological research projects concerned with the archaeology of these places, for CRM archaeology, for AOA surveys defining the archaeological potential of these areas, and for the Sḵwx̱wú7mesh themselves, as the oral traditions of these activities are an important foundation for their ongoing treaty negotiations with the federal and provincial government, in which specific information about land use supports Indigenous title.

5.2. Interpreting Narratives within and across Cultures

The Sḵwx̱wú7mesh were not the only ethnolinguistic group in the Central Salish area who have Transformers in their oral traditions. The island *Hul̓q̓umín̓um̓* name for their individual Transformer is *Xeel's* (Thom 2005:48), while the mainland *Halq̓eméylem* name for them is *Xa:ls* (Mohs 1987:41). An alternate version of *Xa:ls* is *X̱ex̱á:ls*, the four children of Red-Headed Woodpecker and Black Bear, who went travelling and transforming to make the world right after their mother died (Carlson and McHalsie 2001:6). There is some discussion that these varying accounts came from a more recent telling of *X̱ex̱á:ls* 'story with a Christian influence, in which the elements and actions of the story remained consistent, but a singular Christlike figure replaced the black bear siblings (Carlson and McHalsie 2001:6). The Lil'wat Transformers were siblings – like the Sḵwx̱wú7mesh figures – and were joined in their journey by the trickster, Mink (Bouchard and Kennedy 1977). Secwépemc oral traditions have many Transformer figures (Stsptékwle): Coyote (Skelép) (Ignace and Ignace 2017:36), four foreign Transformers called the Qwiqwt'qwet who came from Coast Salish territory (2017:43), Qwle7íĺt who was the son of a woman and the Qweqwíle plant (biscuitroot) (2017:45), and finally, Tllí7sa and his brothers (2017:46) who first fought and then joined Qwle7íĺt to travel together. The characters in all these narratives perform deeds of changing the world and transformation, and like *Xaay Xays*, there are many sites and landmarks associated with their actions.

There are intercultural messages that can be interpreted through Transformer sites. In the stories describing individuals being turned to stone for acting badly, the individuals in question are rarely specified as being from the local group or community but are sometimes specifically described as being from neighbouring groups that were in the wrong place. In Howe Sound – predominantly Sḵwx̱wú7mesh territory – the story of *lexwlúxwels* formation says that Lil'wat stopped here to eat sea urchins, and when *Xaays* saw them, they were rebuked both for eating taboo food and for being outside their territory. The same is true for *stsatskwim*, except that it was Sḵwx̱wú7mesh people who were rebuked for being in Lil'wat territory. There is also the question of continuity of travel for the Transformers themselves. Each culture's Transformer story ends when the

Transformers leave their familiar territory. In some cases, there is continuity of direction and travel of the Transformers movement across the boundaries of neighbouring groups. The Lil'wat Transformers came with Mink from Harrison Lake, into Lil'wat territory, and exited their narrative into northern Sḵwx̱wú7mesh territory (Bouchard and Kennedy 1977). Four Transformer brothers collectively called *Qoa'qLqaL* followed the Stó:lō (Fraser) River into Secwepemc territory, but were sent away by Coyote who was a more powerful local figure (Ignace and Ignace 2017:44). The extent to which the narratives of neighbouring ethnolinguistic groups align may be a useful proxy for the level of cultural exchange between these groups. Closer analysis of these perspectives could lead to a greater understanding of Coast Salish territoriality and inter-group relations during the time these stories originated, or of how they changed through time.

There is a clear pattern of cultural exchange in these traditions, in that neighbouring groups have similar variations of culture heroes. Sometimes the narratives overlap in geographic zones, so that the same places have varying stories describing their genesis based on their different cultural backgrounds. There is, however, a strong sense of local identity that reflects the autonomous political relations of Coast Salish ethnolinguistic groups (Angelbeck 2016). There is much potential for gleaning information about inter-cultural relationships and connections based on comparisons of stories, but more than that, the overlapping and interconnecting themes of landscape significance and Transformer presence demonstrate the relevance and reality of these narratives within the cultural groups in question. The stories are foundational to the identity and territoriality of these cultures.

5.3. Sense of Place

The significance of stories and place can be applied in archaeological study of tangible past activities, but also hold internal cultural knowledge that affects the social cohesion and identity of a group. In some Transformer stories, ancestors of communities are transformed into part of the landscape. This made non-human characteristics and places on the landscape cognitively kin with the descendant people of those communities, a fact that is often reflected in the hereditary names of those people (Thom 1998). Genealogies

are well understood and passed on, so that people are aware of the stories of their ancestors (Thom 1987, 2005:117) and how they may be connected to the land in a visceral and personal way. The communities who trace their heritage back to those events have exclusive rights to valuable lands or resources in those locations that are only extended through marriage, kinship ties, or exchange of other materials. Access to obsidian from *Nch'kay* (Mount Garibaldi) was restricted in this way (Reimer 2018b, 2015). The places associated with the stories have spirit power, and the spiritual activities associated with that power act as a way for people to manifest their relationship with the land. The relationships between humans and non-human plants, animals, and places create a sense of obligation and reciprocity with a people's environment, which can be understood in the stories that remind people of those relationships and reinforce sustainable and social behaviour. Basso's work with Apache oral traditions and place names shows how this kind of social reinforcement can take place (Basso 1996). He found that many stories and place names have been crafted to subtly influence social behaviour. There are moral lessons present in the stories of places that are invoked when calling out someone else's actions. Basso uses the phrase "stalking with stories" (Basso 1996:58-59) to convey the unexpected and subtle ways the audience of the place or story is nudged to act in a more culturally and socially acceptable manner.

In a society that uses maximally socially relevant actions while minimizing actual verbal and linguistic critiques, there is moral and social importance to places that allow teaching moments which do not outwardly shame the person who is being rebuked. Stories do that effectively in the moment but tying stories to places causes the lessons to be anchored in a visual mnemonic that reminds people of the story whenever they view it, and so reaffirms the lesson. Examples of such lessons may tell of the horrible deaths of people who acted against traditional gender roles or broke sexual taboos (Basso 1996:52-53).

For Western Apache and many other Indigenous peoples, their lives and subsistence are based on the natural world, and so their social identities are intertwined with a sense of place and history (Basso 1996:35). Even the descriptions and names of places are designed or referring to a specific place where a person's feet are planted –

‘where ’is more important than ‘when’. The Cibecue Apache word *badnyu* refers to being in front of a site, and quite literally in the tracks of their ancestors (Basso 1996:90).

For Sḵwx̱wú7mesh people too, a sense of one’s history and relationship to past and place is vital to their cultural identity. Traditionally, most Coast Salish people who considered themselves upper class or worthy were those who knew their history (Suttles 1958:501). That sense of the past is connected to what happened in each place and to the reading of the history of the landscape. Transformer sites and other storied places provide a sense of grounding for people who see their history written on the landscape, making them feel at home in these culturally familiar places. Conceptions of place are present and relevant across cultures. The role these have in daily lives is difficult to quantify but is impactful, not only for people’s interactions with the environment, but also for their interactions with each other.

5.4. Tangible and Intangible Heritage

While Transformer sites are tangible places, often with substantial physical features, what makes them significant as heritage objects is largely intangible. UNESCO defines intangible heritage as:

> …the practices, expressions, knowledge and skills that communities, groups and sometimes individuals recognise as part of their cultural heritage. Also called living heritage, it is usually expressed in one of the following forms: oral traditions; performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and the universe; and traditional craftsmanship (UNESCO 2020).

In 2003, UNESCO’s Convention for Safeguarding of the Intangible Cultural Heritage and subsequent ratification by many countries made clear that the acknowledgement and conservation of this type of heritage was an internationally recognized priority (Blake 2014, Smith and Akagawa 2009). To be able to move through the landscape, to see its landmarks and know your people’s stories around them is what it means to maintain intangible heritage on a landscape scale (Armstrong-Fumero and Gutierrez 2017; Wilson 2019). The intangible heritage is in the stories themselves, and the relationship between story, land, and people (Zabbini 2012). Despite the challenges of colonialism and the

many changes to the demographics and skyline of Indigenous territory, the practice of telling landscape stories is very much alive. A painting by Ian Campbell captures the essence of Sḵwx̱wú7mesh intangible heritage across the landscape (Figure 14). The map is populated with characters and symbols from Sḵwx̱wú7mesh oral traditions – *Xaay Xays*, but also other monsters, heroes, and events that took place in specific places within their cultural landscape. The stories and legends of the past are layered seamlessly over the familiar landscape of traditional Sḵwx̱wú7mesh territory, so that time and place are inextricably woven together. To move through and interact with the landscape is to look back through time to the beings and ancestors who shaped it.

Given the importance of sites such as those considered here, limits on accessibility, preservation, and protection are infringements on the rights of people to maintain and practice their heritage (Bernbeck 2008; Nicholas and Smith 2019; Smith 2007). Under current legislation, neither tangible nor the intangible heritage of Transformer sites is secure. Within British Columbia there has been a movement in the past several decades towards an Indigenous archaeology that has greater respect for, and involvement of, Indigenous peoples in the apparatus of heritage management (Klassen, Budhwa and Reimer 2009), which corresponds with wider efforts to decolonize archaeology (Nicholas 2017; 2006). The ideas of Indigenous archaeology – archaeology done for, with, and by, Indigenous peoples – have become more widely accepted and expected. Many First Nations have their own permitting systems that are supported by the Archaeology Branch, and consultation and involvement of First Nations people in heritage management projects has become more common as well (Klassen, Budhwa, and Reimer 2009:224-225). However, these increased standards of practice and policy should not be a replacement for official protection. Without a mechanism in the law to protect these sites, they will be vulnerable to lapses in vigilance in holding to those unofficial standards.

Figure 14. Photo of *Temixw* by Ian Campbell, displayed in the lobby of the Museum of Vancouver, which shows Indigenous stories populating the natural landscape

The heritage status and management of Transformer sites is inconsistent and inadequate. Under provincial legislation of the Heritage Conservation Act (HCA) in

British Columbia, there is legal protection against the disturbance of archaeological sites, which are defined as:

1. Places that demonstrate human activity predating 1846.
2. All burial and pictograph sites.
3. Shipwrecks more than two years old.

Common site types in this culture area are lithic scatters, cultural depressions, culturally modified trees (CMTs), rock art, cultural earthworks, and rock shelters. What is lacking is any official protection for culturally significant natural places, as well as other aspects of the intangible heritage of Indigenous peoples. For the time being, Transformer sites are not officially protected under provincial or federal legislation, unless they qualify as archaeological or historic sites for the reasons mentioned above. Many sites have been impacted as a result of this practice (Figure 15).

Figure 15. Transformer site ch'ech'el-hí7kw

Under section 4 of the HCA (Government of British Columbia 1996), the provincial government can make a formal agreement with First Nations to extend legal protection to certain types of sites that are particularly important to those nations, but to my knowledge that protection has not been extended to Transformer sites in any nation's traditional territory. That is not to say that culturally significant places have been wholly unprotected, they have not. But the credit for that lies with the Indigenous communities being vocal about their right to their heritage and stepping up to implement their own

management practices. In response to development projects and a slowly forming land use plan by the BC government, the Sḵwx̱wú7mesh Nation created their own official land use plan and identified areas in their territory that they wish to be protected from development for their natural/wilderness importance, and their cultural significance. The plan was named *Xay Timixw* ("sacred land") (Sḵwx̱wú7mesh Nation Land and Resources Committee 2001). The landmarks and signage along the Sea to Sky highway were shown in their traditional language, along with information booths to promote the idea of travelling through a heritage landscape (Clarke and Waterton 2015; Wilson 2019). Other documents address issues of consent related to developments (Bruce and Hume 2015). The Stó:lō people's official heritage policy specifically mentions that "Transformer sites must be preserved and protected from adverse impact" (Stó:lō Nation 2003:13), and that the same standard of management and protection should be applied to culturally significant natural places and places associated with spirits or ritual activities as are available to protect more traditionally material based archaeological sites.

The status of *slhxi ʔelsh* is an exception to the rule, as it is formally recognized as a Historic Place in BC, but those sites are meant to be post-1846 places that should be protected because they "provide a sense of place and contribute to BC's unique identity. They serve as touchstones of memory and catalysts for community revitalization. Formal recognition of such places builds awareness of our shared heritage" (Government of British Columbia 2020). This definition is compelling for many of the reasons intangible heritage is important, and the drive towards cultural revitalization and community connection and navigation are all laudable. While the definition does not capture the longstanding Indigenous significance of *slhxi ʔelsh*, its protection and acknowledgement are good things. But if *slhxi ʔelsh* qualifies for this type of recognition, why are no other Transformer sites on this list? Is it only a matter of visibility and awareness of the public that separates *slhxi ʔelsh* from sites such as *chʼa ʔens* and *s7ens*, several hundred meters to the east?

The destruction and impacts of a people's heritage are human rights issues that must be addressed (Nicholas and Smith 2019). The desire to protect such heritage is not new. The Sḵwx̱wú7mesh people and other communities with their own important

heritage sites have voiced their concerns about impacting developments, but in the past, there has been some effort to accommodate them. The First Narrows – or Lion's Gate – Bridge had its original construction plans altered to avoid being built on top of *s7ens* (Bouchard and Kennedy 1986:57). There are other examples of mitigation efforts made to avoid damaging known Transformer sites, legal protection or no, but the same is true for the destruction of sites. Some sites have been hurt by intentional developments such as the Sea to Sky Highway and adjacent railway, while other sites have suffered from environmental degradation – as is the case for sites like *s7ens* (Figure 16), showing the difference between a historic photo (Matthews 1933) and the present day – or vandalism – as is the case for sites like *chichelʔhikw*. Official protection would protect these sites from development and, while more difficult to prevent, management could mitigate incidental impacts from the general public and the environment.

Figure 16. Historic (left, Matthew 1955:40) and present-day (right) photos of s7ens.

The problem on a management and protection level is inconsistency. There is at least a limited awareness among people and in government that Indigenous heritage and

intangible heritage are important, but they have not yet decided how to address those types of sites and places in the proper way.

Transformer sites have not been ignored in the professional archaeological community of BC. Stó:lō archaeological site reports have a formalized and repeated introduction that specifically references the importance of Transformer sites to their people (Stó:lō Research and Resource Management Centre 2016:3). In the reports of projects that take place near known Transformer sites, that is frequently mentioned in the report and considered when executing Archaeological Impact Assessments (AIAs). However, this is a testament to the efforts of land stewardship and advocacy by First Nations groups, and the standards that professionals in that industry hold themselves to, rather than an indication of legislative protection. Culturally sensitive places are known to developers, and there are discussions on how best to operate and approach these areas in the absence of regulations (Ehrlich 2013:8).

Of the 26 sites surveyed for this research, only 9 have legal protection (Table 8), and many are simply not recorded and registered by RAAD, the Archaeology Branch, or the Heritage Branch. There are clearly inconsistencies in how Transformer sites are protected. For instance, *wáwnti* – mentioned in above in discussion of Transformer rocks that reference and facilitate fishing – is recorded as an archaeological site in RAAD while *si'ýám* is not. This demonstrates an inconsistency with either the reasoning or theory of archaeological legislation in BC. This comes from evaluating and registering sites based on their archaeological or material remains, with little to no consideration of cultural significance. Transformer sites area only one example of important places that slip through the cracks of the current system: many other culturally significant landmarks and places only receive legal protection if they somehow qualify as archaeological sites for other reasons. As many of these types of sites as possible should be incorporated into current heritage management plans, as culturally sensitive and storied places have value to Indigenous communities and the study of heritage in general. Transformer sites are a particularly compelling example of this problem because of their acknowledged significance to their associated communities, but a dialogue and input from Indigenous communities is necessary to know and protect their most important places.

In addition to protection for individual sites, care must be taken to conserve the heritage landscape in which they lie. Much of the meaning and importance of sacred places comes from their environmental context or relationships with other parts of the landscape. Preserving the physical integrity of a sacred site while reshaping its surroundings is damaging to the intangible heritage and experience of community members interacting with that location.

Archaeology and its role in management of heritage must be held to a higher standard. Sites that have archaeological potential and cultural significance to Indigenous peoples should be managed and protected from natural and anthropogenic impacts. In order to properly address and handle the management of Transformer sites and other such places, BC must re-evaluate how its heritage laws classify and treat archaeological sites. The legal protection and measures taken to protect a site from alteration or development should consider the cultural significance of those places to Indigenous groups.

Legal Status and protection of Transformer Sites		
Site Name	**Registration Status**	**Protection?**
elksn	Not recorded	No
ch'ech'el-hí7kw	Not recorded	No
slhxí'7elsh	BC Historic Place	Yes
ch'á'7ens	Registry Candidate	Yes
s7ens	Decision Pending	Yes
sch'eĺ'k's	Not recorded	No
ch'ich'iyu'y elxwi'kn	Not recorded	No
tl'etl'ch'áĺkm	Not recorded	No
xel'xeĺú's	Registry Candidate	Yes
yiyk'm	Not recorded	No
lexwlúxwels	Not recorded	No
quin-ace	Not recorded	No

Legal Status and protection of Transformer Sites		
Site Name	**Registration Status**	**Protection?**
skaĺáw'	Not recorded	No
stá7mes	Decision Pending (village site)	Yes
st'et'e7ímin	Not recorded	No
wáwnti	Legacy	No
st'áwekw'	Legacy	No
si'ýám	Not recorded	No
k'ák'p'nech	Not recorded	No
nexwyúxm	Not recorded	No
kiyáýakep	Not recorded	No
tsewiĺx	Not recorded	No
xwmitl'm	Registry Candidate (archaeological site)	Yes
nepítl'	Registry Candidate (archaeological site)	Yes
nkwú'7say	Registry Candidate	Yes
stsatskwim	Registry Candidate (archaeological site)	Yes
Total	15 not recorded, 1 BC historic site, 6 registry candidates, 2 decision pending, 2 legacy	9 protected, 17 unprotected

Table 9. Legal site status and protection of Transformer sites.

Accepting and encouraging Indigenous stewardship is another important element of this discussion. The Sḵwx̱wú7mesh Nation, the Stó:lō Nation, and other First Nations have already implemented broadened heritage approaches and have gone to great lengths to advocate for and protect their heritage. But the legal and practical support of indigenous self-stewardship is still insufficient, as they lack funding to implement their own resource management programs (Mohs 1987:150) and ignoring First Nations permitting processes does not have the same repercussions as violating provincial permits. Moving towards broader heritage policy concerning culturally significant places

and indigenous self-stewardship is the academically and morally responsible choice for the BC provincial government.

There are other places we can look to in order to improve heritage policy and practice in British Columbia. Western Australia's model for natural resource management and cultural heritage management prioritizes a landscape approach, Indigenous community involvement on all levels, and tangible legal protection for physical heritage and intellectual property (Guilfoyle et al. 2009:150). The holistic landscape approach protects the cultural connections and relationships between people and places that are lost when only one small site is given protection. The involvement of Indigenous peoples as both project managers and community drivers for these policies has also been essential to their success and encourages project proposals to be beneficial on the local level. Tasmania has a Wilderness World Heritage zone that limits development and recreational activities in order to conserve traditional use and the natural and cultural landscape. These areas have popular support and "the highest level of statutory protection available in Australia" (Kirkpatrick 2010:828). The adoption of many of these policies would greatly benefit BC and Canadian heritage policy, both from an ethical and a pragmatic point of view.

6. Conclusions

6.1. Analysis of Transformer Sites

This research makes a strong case that people interacted with Transformer sites, visually and in close physical proximity during daily life, at home, on excursions, and during seasonal travel. The visibility of most sites is such that they could hardly have been avoided, and the attached meanings each site had helped people navigate through their cultural landscape and reaffirmed the knowledge and lessons from the stories associated with them. The meaning that Transformer figures held for morality and proper living cannot be ignored either, as the sites would have acted as reminders to avoid bad behaviour – defiance of authority, hoarding resources, or being overly proud – lest they suffer supernatural or social consequences.

This research has also shown that there are strong associations at many sites with ethnographic and archaeological activity that is either at or around that site. Archaeological sites adjacent to Transformer sites means that while transformed areas were considered supernatural places they were not treated as dangerous or private areas, but rather as places that would be passed and interacted with landmarks in daily life. Ethnographic accounts consistently describe the activities referenced in Transformer oral traditions, indicating that the stories reflect observed knowledge and behaviour being passed down through generations. Many of the accounts of the storied origins and ethnographic activity around these places also reference facets of the environment at these locations. That such references could be shorthand for environmental knowledge that could easily be transmitted through those stories.

The results of this study show that the areas at and around Transformer sites have signs of activity in the archaeological and the ethnographic record. This indicates that Transformer places were a normal part of life at least in certain periods in the past. Often the environment or activities practiced at the site have an association with the Transformer story of that location, indicating that Transformer stories retained observed information of these places.

So, Transformer sites are frequently distinct landmarks populated throughout the Sḵwx̱wú7mesh cultural landscape. It would be impossible to miss them travelling through this area, or when engaging in activities at the many archaeological sites at and around Transformer sites. Transformer sites were therefore part of regular life in these areas for at least as long as these sites were occupied, and the stories were told. In addition, the fact that so many sites have elements in the stories that describe the activities and phenomena taking place in the environment around the site indicates that there was a level of observational awareness in those stories. They were not purely moral or mythological, but instead described those places and practices in the Transformer narrative. Through this medium, people could convey information to those who had never been to the site and could retain environmental knowledge throughout generations. Therefore, Transformer sites have been important parts of Sḵwx̱wú7mesh culture and environmental interaction, and their physical and narrative contexts are a valid and rich source of knowledge available to those studying the history of human-environmental relations in this area.

6.2. Reflections on Policy

By all rights, Transformer sites should be protected for three aspects of their significance: as culturally significant sites that are an important part of Indigenous heritage; as archaeologically relevant sites whose context and ecology can tell us much about the past; and as geologically notable phenomena that preserve part of this landscape's geoheritage.

This research reveals a hole in provincial and federal heritage legislature, as culturally significant sites are not protected from alteration or erosion unless they have associated material remains – or are otherwise treated as historic sites. However, the cultural value of many seemingly natural features has can be determined in many other ways outside of archaeological potential. Transformer sites, and other places with great significance to Indigenous peoples, need official and tangible protections if they are to be conserved in the future. Measures must also be taken to manage and maintain certain aspects of the landscape important to Indigenous peoples. Wild places and sites with

great natural significance are denigrated when their contexts are damaged, even if a small, specific section is roped off from alteration. This is an achievable heritage policy goal that has seen success in other contexts but must have community involvement and stewardship from local First Nations at all levels of the process to properly function and benefit the community (Schaepe et al. 2017).

Changing policies towards protecting Indigenous heritage is not an idle goal, but rather one of the many specific objectives on the road to reconciliation. In May of 2016, Canada rescinded its last qualifications, and fully adopted the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). The Truth and Reconciliation Commission of Canada is also based on the principles of UNDRIP (Truth and Reconciliation Commission of Canada 2015), conforming to the recommendations of these documents is a stated goal in Canada. Read together, there are several elements of these documents that support moves to better protect Transformer sites. Article 12.1 of UNDRIP recognizes that Indigenous people have "the right to maintain protect, and access in privacy to their religious and cultural sites" (United Nations 2008:6). Article 25 expands that right to "traditionally owned or otherwise occupied and used lands, territories, waters, and coastal seas" (United Nations 2008:10): such language could apply to landscape use and perception, and the space between cultural sites. Article 26.3 affirms the need for legal recognition and protection of these areas. Article 38 reinforces the need for states to act on developing legislation with the consultation and cooperation of Indigenous peoples to address these issues (United Nations 2008:13). From Indigenous peoples 'right to continue use of these types of sites, to the state's responsibility to protect them, the reasoning behind, and way forward for, this course of actions is clear. If Canada is to honestly claim that they have accepted UNDRIP and are working in good faith towards reconciliation, Transformer sites must be better managed than they are now.

Transformer sites also represent part of the landscape's geoheritage, as notable geological sites that humans have interacted with in the past, and through to the present, whether natural or anthropogenically altered (Valjavec, Zorn, and Ribeiro 2018). Geoheritage is the diversity of minerals, rocks, fossils, landforms, sediments and soils, together with the natural processes that constitute the topography, landscape and the

underlying structure of the Earth (McKirdy et al. 2010). Both specific geological phenomena and the landscape are parts of this heritage resource that exists within and around many urban environments. Wilson and Jackson (2018, 2014) highlight 10 geoheritage sites across the Greater Vancouver area, including one Transformer site and several other sites connected to Indigenous culture heritage. Like ecological diversity, geodiversity is important to conserve in an increasingly anthropogenically impacted world. There is only limited public awareness of this issue, but geologists have argued for geoheritage being incorporated into environmental impact assessments (Croft 2018; Erikstad 2013; Erikstad et al. 2008; Vegas et al. 2015), and otherwise adding protections into conservation policy to protect these sites for posterity and future research.

Reconciliation requires precise, wider, culture change in addition to precise policy changes. To communicate and preserve the Sḵwx̱wú7mesh landscape heritage, there should be a greater effort to use the original Indigenous place names for landmarks, especially culturally significant ones. The colonial name for *slhx̱í7lsh* was Siwash Rock, "siwash" being a Chinook jargon word for whose etymology is traced back to the French word "sauvage", meaning wild or undomesticated (Steele 1993:59-61) – an unacceptable erasure of Indigenous culture for a colonial narrative. Fortunately, there has been an effort on the municipal level to change the name officially to *slhx̱í7lsh*, give names representing Vancouver's diverse history to otherwise unnamed places, and to work with local First Nations to re-establish Indigenous place names for village sites and landscape features. This is an excellent step in the right direction, as article 13.1 of UNDRIP guarantees the rights of Indigenous communities to revitalize their oral traditions and place names for future generations, and article 13.2 gives the responsibility to the state for facilitating this process (United Nations 2008:7). The official use of Indigenous place names for especially prominent landmarks – such as popular tourist sites like *slhx̱í7lsh*, and mountains that are frequently in view – have the effect of showing Indigenous occupation and history on the landscape in a very visceral way. The process of restoring place names is ongoing, and the results of this current push remain to be seen, but the work must be continued for it to have the desired impact on future generations.

6.3. Future Directions

There are many questions and opportunities for research in more detail and beyond the scope of this thesis. This research focused on Sḵwx̱wú7mesh Transformer narratives, and while there has been excellent work done on the Transformer narratives of other ethnolinguistic groups (Thom 2009; Ignace and Ignace 2017), those projects were focussed far more on the cultural aspects of the oral traditions than the physical, natural, and material relationships between sites. This project barely scratches the surface of the storytelling and nuanced aspects of linguistics employed in Sḵwx̱wú7mesh place names connected to the Transformers.

There is also great potential for comparing and cataloguing all Transformer sites from across culture areas and studying the cultural exchange and relationships between neighbouring groups based on the connections between their oral traditions.

It should also be noted that Transformer sites are not the only places with important connections to the landscape, though a culturally central narrative connects them. There are many other Sḵwx̱wú7mesh stories about mythical beings and ancestors who interacted with them. How these types of sites differ in perception from sites associated with transformation has already been subject to some research (Reimer 2012), but only for the Sḵwx̱wú7mesh Nation. Natural places with great cultural significance are a frequent occurrence in many Indigenous communities in British Columbia and beyond, and because they tend to benefit from fewer legal protections, it is particularly important that they be researched in order to protect their stories.

Aside from the academic and policy applications of this type of research, it is important that people who live in an area understand its cultural and geological heritage, whether they come from a settler or Indigenous background. I am not Indigenous, and I grew up in Vancouver: to me and many other people who trace their ancestry around the world, the mountains, coastlines, and forests of the Lower Mainland area are our home. In learning from Sḵwx̱wú7mesh sources about the stories and Indigenous names that overlap with familiar landmarks, I developed an increased, and what felt like more whole, appreciation for this landscape. It is not my heritage, nor do settlers have an inherent right

to the knowledge of Indigenous peoples, but the reality is that everyone who is here now contributes to the identity of present-day communities here. Seeing the whole story of this landscape and bringing attention to the Indigenous existence through time here is an inevitability, and it also fights the erasure of Indigenous people from public discourse and the public consciousness. Knowing the story of *slhxi ʔelsh* and seeing the mountains as *nch ʔkay* and *ch ʔich ʔiyu ʔy elxwi ʔkn* instead of Garibaldi and the Lions makes it hard to ignore the past and the Indigenous presence on the landscape.

Current residents should know that this was not a pristine wilderness untouched by humans, and that Indigenous life here was not confined to a few specific areas where you can read about it on a plaque. Constant movement and activity over thousands of years meant that people's travels had crisscrossed all through the known world, and noticed the unique attributes of distinctive stones, streams, and trees. Those observations and understandings were woven into stories and passed on internal morality and culture lessons – as well as knowledge about the environment in which they lived.

In the world in which we live, with a changing climate, growing populations, expanding urbanism, and increasing fixation on modern life and modern problems, it is important to maintain a link to the land and our natural environment. Not only is it the foundation of every ecosystem – including humanity's – it is where the stories and heritage of people both past and present are anchored. The mountains, forests, and horizons are worth experiencing and preserving, as they connect us with each other and with ourselves. The knowledge encoded in these ancient stories reaffirms the importance of respecting our surroundings and knowing where we are from, a lesson that must be performed and experienced in order to be truly understood.

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