INVESTIGATING INDIGENOUS ADAPTATIONS TO BRITISH COLUMBIA'S EXPOSED OUTER COAST

Introduction to These Outer Shores

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ARCHAEOLOGY, INDIGENOUS PEOPLES, AND THE OUTER COAST

The starkly beautiful outer Pacific coast features long sweeping stretches of sandy beaches, rocky headlands and islets, inlets and sounds, and numerous island archipelagos (Figures 1 and 2). In many places the mountainsides drop precipitously into the sea along the fjord-like inlets that stretch far inland. This highly convoluted coastline offers a variety of habitats, from protected to semi-exposed to exposed. Each of these settings had its own suite of resources available to those with long familiarity with their potential.

As anyone with personal experience navigating the BC coast can attest, finding one's way and making a living along exposed shorelines is challenged by the geography, variable weather systems, wind and tides, and, on the exposed coast, ocean swell. Storms that imperilled coastal voyagers could develop with little warning, requiring practised and decisive action. Travelling safely and provisioning are only successfully accomplished with specific local knowledge and a thorough familiarity with the various states of the Pacific Ocean. The ancestors of the modern First Nations acquired the detailed knowledge and skills essential to thrive in this environment and transmitted these over successive generations, extending back many millennia.

These outer shores were the homelands of many diverse First Nations (Figure 3). Although major villages tended to be politically autonomous, they can be classified into larger groups by their languages. The Tlingit on the islands that make up southeast Alaska, the Haida of Haida Gwaii, and the Nuu-chah-nulth of western Vancouver Island are the best-known "outer coast" groups. These are the peoples who made first

Figure 1. Aerial photograph of the exposed west coast of southern Haida Gwaii in summer. Photo by I. McKechnie.

Figure 2. Looking into Barkley Sound, western Vancouver Island, from near its south-eastern entrance. Photo by A.D. McMillan.

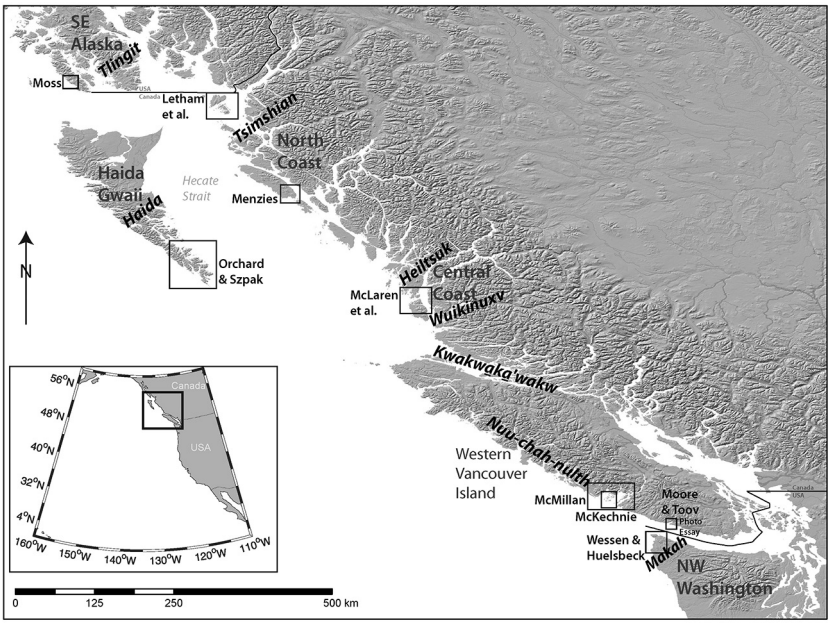

Figure 3. Map of coastal British Columbia and adjacent regions, showing study locations for articles in this volume and First Nations traditional territories mentioned in the text.

contact with European explorers during the late eighteenth century and participated most fully in the maritime fur trade that followed. Other Indigenous peoples inhabited the outer mainland coast and its numerous offshore islands, including areas exposed to the full force of the Pacific. These include the Tsimshian peoples on the outer portions of the north coast and the Heiltsuk and Wuikinuxv of the central coast, along with some of the northern Kwakwa̲ka̲'wakw communities. Some of these groups, such as the Heiltsuk, Wuikinuxv, Kwakwa̲ka̲'wakw, and Nuu-chah-nulth, spoke related languages, potentially indicating shared origins in the distant past. Many languages spoken along the coast, however, were distinct and unrelated, testifying to the diversity of Indigenous settlement over a lengthy period.

Despite being distinct peoples, the occupants of the outer coast were connected by travel and trade. Large, elegant, ocean-going canoes made coastal travel possible throughout much or all of the year. The Haida and Nuu-chah-nulth, with access to abundant large cedar trees in their outer coast territories, were particularly famed as canoe makers, often exporting these valued craft to their neighbours. Trade networks linked coastal communities, ensuring the movement of people and ideas, as

well as goods. Major social or ceremonial events in the larger villages could attract hundreds of people from distant locations. Intermarriage, particularly of high status individuals, ensured kin ties between communities, often at considerable distances and across linguistic and political divisions. In addition to the cultural commonalities that emerged through social contacts over many generations, the peoples of the outer coast based their lives on similar ocean settings, leading to many shared aspects of their lives that distinguish them from Indigenous groups of the sheltered inner coast, such as those around the Salish Sea.

One theme that runs through this volume is a rejection of the commonly held notion of the outer coast as an isolated periphery. There remains a widespread conception that the outer coast has long been a sparsely populated region that lies at the "outer edge" of western Canada, an area settled relatively late in British Columbia's history. One source of this historically false view relates to the outer coast as a "Pacific gateway" for international trade and transport. Another stems from its portrayal as a rugged "wilderness" for outdoor recreation despite the area's long-standing Indigenous presence. Such contemporary views neglect a wealth of archaeological and ethnohistoric evidence that shows much of the outer coast was densely occupied, with larger populations than live there today, prior to the devastating impact of introduced diseases and other disruptions of the early historic period. These circumstances belie a much more expansive history wherein "these outer shores" were by no means marginal but, rather, held a vital centrality for the overwhelming majority of the lengthy human history in British Columbia.

A disproportionate amount of past archaeological research in coastal British Columbia has been concentrated around the protected waterways of the Salish Sea (encompassing the Strait of Juan de Fuca, the Strait of Georgia, and Puget Sound). The rapid growth of urban centres such as Vancouver and Victoria, along with industrial and agricultural development, has posed continuing threats to archaeological heritage, stimulating research and recovery efforts. Currently, more than 75 percent of the provincial population resides in close proximity to the shores of the Salish Sea and over half occupy the Greater Vancouver area (British Columbia 2014). Archaeological fieldwork has been facilitated by proximity to major population centres and educational institutions. In contrast, research teams attempting to gain access to more distant study locations on the outer BC coast, requiring sea-worthy boats and capable operators, have to overcome significant logistical challenges. Archaeological survey efforts over the past fifty years demonstrate that

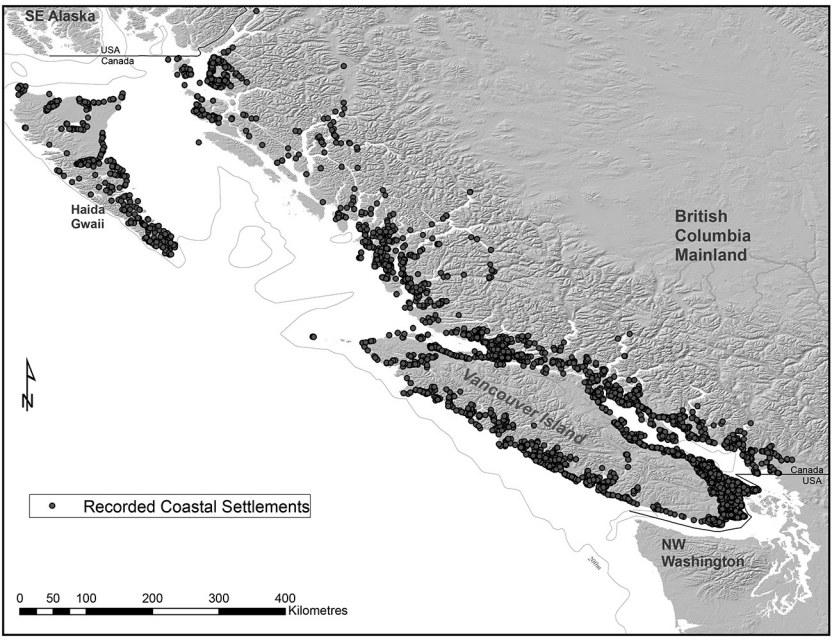

Figure 4. Recorded coastal archaeological settlements (shell middens only) documented in the BC provincial archaeological database as of 2010 (McKechnie 2013, 302). This does not include many Indigenous heritage sites recorded on federal lands, including National Park Reserves and First Nations reserves.

dense concentrations of long-occupied Indigenous settlements occur along the entire coast of British Columbia (Figure 4), although few of these sites have witnessed sustained research efforts beyond initial identification and documentation. The outer coast, considered "remote" by many today, was once home to large populations in substantial village communities.

The eight articles included in this volume deal with the results of archaeological research in various regions of the outer coast, from the islands of southeast Alaska in the north to the Olympic Peninsula of Washington State in the south (Figure 3). Modern geopolitical boundaries are superimposed on the significantly older Indigenous landscape, arbitrarily separating closely related peoples. The two articles that describe research just outside the provincial boundaries of British Columbia, at the northern (Moss) and southern (Wessen and Huelsbeck) entrances, bracket the six studies between. Three articles (Orchard and Szpak; McKechnie; and McMillan) present results of research along the outermost shores (Haida Gwaii and western Vancouver Island), while

three others (Letham et al.; Menzies; and McLaren et al.) deal with work on the islands offshore from the BC mainland in settings exposed to the full force of the Pacific Ocean. The contributors to this volume present emerging archaeological insights into a human history that spans a period of about thirteen thousand years as it unfolded throughout dynamic changes in coastal geography and the terrestrial and marine environments.

The photo essay, by Moore and Toov, originated through correspondence with the University of Minnesota Archives regarding use of the cover image for this volume. The photograph of a Pacheedaht couple by their large ocean-going canoe,[1] taken at the beginning of the twentieth century, is part of a collection of images curated by that institution. Moore and Toov tell the story of the Minnesota Seaside Station, operated by the University of Minnesota at Botanical Beach near Port Renfrew from 1901 to 1907, and their recent collaboration with the Pacheedaht Heritage Project. The selection of images in the photo essay brings this little-known collection to the broader attention of BC researchers.

Over twenty years have passed since this journal's last theme issue on BC archaeology (Fladmark 1993). That volume, along with its two predecessors (Carlson 1970; Fladmark 1981), presents summaries of archaeological research from around the province. In contrast, our goal is to present a more focused theme, examining long-term human adaptations in similar environmental settings along the outer coast. In addition, BC archaeology has seen major advances in the past several decades, not just in terms of knowledge amassed but also in basic techniques of fieldwork and analysis. Multi-site coring and augering programs have allowed testing and dating at a large number of sites in a specific region (Letham et al., this vol.; McKechnie, this vol.; McLaren et al., this vol.; Cannon 2000). Recent refinements in radiocarbon dating and calibration allow much greater temporal precision, and project analyses are now often chronologically secured through a substantial series of such dates (e.g., Letham et al., this vol.; McKechnie, this vol.; and McLaren et al., this vol.). Interpretations have also shifted from their traditional focus on artefacts and architecture to animal and plant remains, with zooarchaeology becoming a major contributor to the field. Vast quantities of faunal remains (primarily shells and the bones of fish, birds, and mammals) make up much of the archaeological deposits at coastal sites,

[1] The Pacheedaht, at modern Port Renfrew on Vancouver Island, are closely related to the Nuu-chah-nulth and Ditidaht, although they are politically autonomous.

allowing examination of diet and many other aspects of past lifeways. Many articles in this volume are heavily based on zooarchaeological analyses, with some also employing more specialized techniques, such as isotopic and DNA studies. Examination of the past use of plants also plays a prominent role in contemporary research, with archaeology contributing significantly to a recent theme issue of *BC Studies* dedicated to ethnobotany (Turner and Lepofsky 2013). Also, the previous broad generalizing models that sought to explain cultural change along the Northwest Coast have now been challenged by more localized approaches that focus on specific ecological settings (see Orchard and Szpak, this vol.; Moss 2012).

While a variety of new scientific techniques are employed, most coastal archaeologists also consider Indigenous oral narratives to be important sources of knowledge that can be integrated with other data to create a more detailed and meaningful picture of the human past (see McKechnie, this vol.; McLaren et al., this vol.; McMillan, this vol.; Moss, this vol.; Ames and Martindale 2014; Martindale and Marsden 2003). As increasing numbers of First Nations scholars turn to the techniques of archaeology to investigate their own heritage, they have enriched the field with local knowledge and perspectives, resulting in a new subfield termed "Indigenous Archaeology" (see papers in Nicholas 2010). Menzies (this vol.), as an Indigenous scholar, maintains that he is not "doing archaeology" but is instead appropriating the field's techniques to pursue an Indigenous research strategy. Community involvement and shared decision making characterize much of the archaeological fieldwork done in British Columbia today.

CHANGING PERCEPTIONS OF COASTAL CULTURES

Indigenous peoples of the BC coast have long been recognized as playing a foundational role in shaping the development of the discipline of anthropology in North America, beginning in the late nineteenth century. This was most notably through the prolific pioneering work of Franz Boas, his Indigenous collaborators, and his students (Darnell 1992, 2000). Among the latter was Edward Sapir, a gifted linguist and anthropologist, whose work with his Nuu-chah-nulth colleagues allowed him to compile extensive ethnographic and oral historical information, comparable to Boas's vast documentation on the Kwakwa̲ka̲'wakw (Darnell 1990; McMillan 2009). The transcribed texts, presenting the direct words of traditional knowledge holders from a century ago, provide invaluable

insights into the Indigenous past that can be evaluated alongside archaeological information (see McKechnie, this vol.; McMillan 2009; St. Claire 1991). Although these early field investigators collected detailed information on the extent to which Indigenous peoples demonstrated a deep familiarity with their maritime environment, the prevailing view denied any great antiquity for Indigenous presence on the coast.

Many early studies featured speculative hypotheses linking coastal peoples to land-based migrations from elsewhere. In his major North American synthesis, Alfred Kroeber (1939, 28) placed coastal origins in the interior, claiming that "the Northwest Coast culture was originally a river or river-mouth culture, later a beach culture, and only finally and in part a seagoing one." The disciplinary fixation on such movements of people was so pervasive that anthropologist Wayne Suttles wrote in 1979: "For over 60 years anthropological thinking about the Northwest Coast has been dominated by the image of waves of immigrants coming out onto the coast from the interior" (Suttles 1987a, 265). This underlying concept is evident in the formative archaeological studies of Charles Borden, in which cultural changes in the coastal archaeological record were generally attributed to new waves of arrivals from the interior. Borden viewed the Nuu-chah-nulth as those who have "lived longest on the coast," speculating that this was due to "their isolated location, a position to which they probably withdrew under the pressure of later intrusive groups" (Borden 1951, 39). This notion of multiple land-based migrations to the coast by the ancestors of modern First Nations began to lose ground rapidly in the 1970s, when an increasing number of archaeological observations dramatically extended the documented antiquity of Indigenous peoples in their coastal homelands. Recent research has now accumulated a wealth of archaeological information that demonstrates an enduring and continuous Indigenous presence along the outer coast of British Columbia stretching back many millennia (Letham et al., this vol.; McLaren et al., this vol.; Fedje et al. 2011; Mackie et al. 2011).

This increased pace of archaeological research on the outer coast has provided abundant evidence of numerous large settlements in areas that are not as intensively occupied today. Large village locations with deep midden deposits and visible house platforms are often relatively closely clustered, indicating a "filled landscape" (Acheson 2005; Marshall 1993, 2006) prior to the late-eighteenth-century arrival of European and Euro-American explorers and traders. In the decades following, Indigenous populations declined dramatically, primarily due to the impact of introduced diseases such as smallpox. The Haida and Nuu-

chah-nulth, who were major participants in the fur trade with outsiders, suffered catastrophic population losses. Boyd (1999, 264) estimates that the Nuu-chah-nulth lost nearly three-quarters of their population during the century following contact, and that the Haida suffered losses that approached 90 percent. Other coastal groups such as the Heiltsuk were also heavily affected.

The documentation of numerous large village sites in outer coast settings challenged earlier views of settlement that emphasized a seasonal pattern of movement based on ethnographic accounts for the nineteenth century (e.g., Mitchell 1983). On western Vancouver Island, archaeological surveys revealed dense clusters of large village sites on the outer coast that were interpreted as year-round locations of independent political groups (Marshall 1993; McMillan 1999). The dramatic population decline of the early historic period led many Nuu-chah-nulth groups to amalgamate, greatly reducing the number of independent political units (McMillan 1999, 2009; St. Claire 1991). The much larger territory then held by such polities led to the adoption of a seasonal pattern of movement after a variety of resources, as documented by ethnographers (e.g., Drucker 1951), while the large "outside" villages that were once their major centres were reduced to seasonal resource camps. A very similar pattern of late amalgamations into large centralized villages with increased seasonal mobility has been documented for southern Haida Gwaii (Acheson 2005; see also Orchard and Szpak, this vol.). The modern Heiltsuk First Nation also formed through the amalgamation of formerly independent groups at a single centre (White 2011). These political and settlement shifts, along with devastating population losses, have impeded understanding of the complexity of earlier Indigenous life on the outer coast.

THE CHANGING LANDSCAPE

In contrast to the early anthropological preoccupation with land-based migrations to the coast, present understanding of initial settlement involves people with watercraft moving along the outer coast shortly after (or during) glacial retreat. As Madsen (2015, 271) states: "a Pacific coastal model may be the most viable explanation for the initial peopling of the Americas." However, the landscape and climate encountered by these early peoples differed considerably from present conditions. Huge glacial masses along the inner coast depressed the land that they covered, raising the outer coast and resulting in markedly different relative sea levels depending on proximity to glacial ice loading (Hetherington et al. 2004;

McLaren et al., this vol.; Shugar et al. 2014). As the glaciers retreated, relative sea levels rose rapidly. These substantial changes in sea levels challenge archaeological research into the earliest human settlements along the outer coast as the former shorelines that may contain the traces of their presence are now underwater (Mackie et al. 2013).

In British Columbia, the most intensive paleoenvironmental investigations, involving researchers from a variety of disciplines, have focused on Haida Gwaii (Fedje and Mathewes 2005; Scudder and Gessler 1989). This work shows the existing archipelago to be the remnant of a now-drowned landmass that once extended across most of Hecate Strait when sea levels were lower during the last glaciation (Fedje et al. 2004, 2005a; Mackie et al. 2011). Evidence of human presence along this former coastal landscape is now inundated. However, humans also used inland locations at higher elevations for activities such as hunting, and two karst caves in such settings have yielded brown bear (*Ursus arctos*) bones with chipped stone points dating to about 12,600 calendar years ago (Fedje et al. 2011; Mackie et al. 2011; McLaren et al. 2005). Rapid transformation of the environment, including sea level change, would have been evident over the course of human generations, leaving lasting impressions on Indigenous peoples. This may be reflected today in the many Haida oral narratives that feature dramatic floods and a landscape covered with water (K̲ii7iljuus and Harris 2005; Swanton 1908).

Following deglaciation, sea level changes continued to affect the location of human settlements on the outer coast. On Haida Gwaii sea levels rose rapidly from their late Pleistocene/early Holocene lows to levels well above the present shoreline, then gradually dropped to their present levels, leaving sites dating to between ten thousand and three thousand years ago on elevated terraces that are today well inland (Fedje et al. 2004, 2005b). Similarly, on western Vancouver Island post-glacial sea level rise surpassed the modern level about six thousand years ago, then stabilized several metres above present levels before gradually dropping (Dallimore et al. 2008). As a result, archaeological sites dating from about five thousand to twenty-five hundred years ago are found on elevated landforms that are often directly inland from late Holocene and early historic village locations (McMillan, this vol.; McMillan et al. 2008). Wessen and Huelsbeck (this vol.) also report a series of elevated "paleo-shoreline" sites on the Olympic Peninsula that predate the contact-era villages.

Although dramatic sea level changes along the outermost coast present significant challenges to archaeological investigations, a somewhat dif-

ferent situation characterizes the islands adjacent to the BC mainland (see Letham et al., this vol.; McLaren et al., this vol.). Sea levels have been remarkably stable along the stretch of coast between the continental shelf edge and the deep fjords of the coastal mainland, at least compared to areas on either side, leading McLaren et al. (2011; 2014) to describe a sea level "hinge" extending from the central coast northwest to the Dundas Islands (see also Shugar et al. 2014, 186). Such relatively stable landforms could support persistent settlement throughout most of the Holocene. Archaeological research in such areas documents a lengthy record of human familiarity with coastal environments. Indigenous origin stories, along with carefully maintained systems of inherited titles to the land and ceremonial prerogatives, also cast light on the persistent occupation of such relatively stable landforms (McLaren et al., this vol.).

Coastal peoples also had to contend with infrequent but catastrophic seismic events. Mega-thrust earthquakes and their consequent tsunamis destroyed villages and reconfigured the shoreline, causing great loss of life. Indigenous communities kept these events in memory through their oral traditions and incorporated elements that referred to earthquakes into their ceremonial practices (McMillan and Hutchinson 2002). Life on this dynamic landscape required resilience to cope with such unpredictable disasters.

CONSIDERING CULTURAL ADAPTATION

The phrase "the outer shores" was popularized by the maverick American marine biologist and ecologist Ed Ricketts, who, in 1939, published a seminal book on coastal ecosystems along western North America, *Between Pacific Tides* (Ricketts and Calvin 1939). The structure of the book was revolutionary in that it was organized around environments rather than taxonomies, providing a perspective that became highly influential in the emerging discipline of marine ecology. A revised second edition, released in 1948, featured a foreword by author John Steinbeck. Ricketts and Steinbeck also published *Sea of Cortez* in 1941, based on their shared travel and research. Ricketts then turned his attention to the north, travelling to western Vancouver Island and Haida Gwaii to study coastal environments. In 1948, the two men were planning additional fieldwork in British Columbia for a third book, to be titled "The Outer Shores" (Scudder and Gessler 1989, i-ii). Tragically, Ricketts died in a car crash just before the expedition was to start.

Ricketts's big-picture perspective, emphasizing multiple scales of environmental variability along the coast from southeast Alaska to the Baja peninsula, paralleled and complemented anthropology's increasing recognition of the complex multi-layered regional variation in cultural and environmental phenomena. Such ecological observations strengthen the persistent theme in Northwest Coast anthropological scholarship of an emphasis on the diversity of environments, languages, and cultural traditions specific to various areas of the coast (e.g., Suttles 1987b). Today it is commonplace among anthropologists and Indigenous peoples to emphasize the role of landscape, the environment, and localized patterns of resource availability as formative factors underlying long-term cultural practices and identity.

"Cultural adaptation" is a commonly employed concept to describe how Indigenous peoples oriented much of their lives in relation to their coastal environments (Kew 1992; Langdon 1979). However, use of this phrase tends to disproportionately weight environmental circumstances relative to the structure of social relations and historical causality (Miller 1989; Moss 2008). Such archaeological considerations of Indigenous societies tend to focus on the environmental and geographic circumstances of Indigenous history rather than on foregrounding how that history was ultimately driven by particular human actions in given circumstances (Cannon 2011; Martindale and Letham 2011). In addition, Northwest Coast archaeologists increasingly recognize that earlier people did not simply "adapt" to their coastal environment but managed and shaped many of the biotic communities on which they depended (e.g., Deur and Turner 2005; Grier 2014; Lepofsky et al. 2015; Moss 2011; Thornton and Deur 2015; White 2011).

The problem of discerning past human agency, as opposed to more passive "adaptation," is exacerbated by the coarseness of archaeological data, sampled from a small number of archaeological localities and often with low chronological resolution. Archaeological interpretations tend to have an understandably materialist orientation, focusing on the most abundant and readily preserved elements of material culture, such as food harvesting and processing technologies (artefacts) and subsistence remains (zooarchaeological data). Such analyses are well suited to examining long-term economic practices, although they are less able to achieve interpretations based on the often tenuous relationship between specific social actions and their material correlates.

Zooarchaeological studies can reveal differing patterns of cultural adaptation. For example, McKechnie and Wigen (2011) utilized faunal

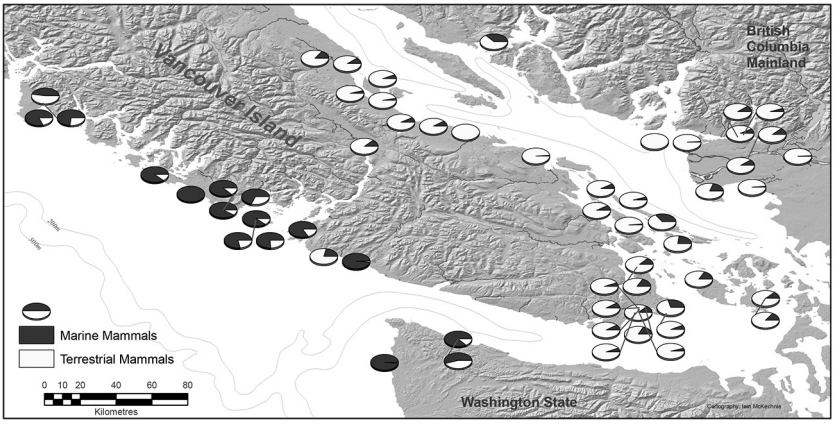

Figure 5. Relative composition of marine versus terrestrial mammal bone specimens for excavated sites in southwestern British Columbia and adjacent Olympic Peninsula (adapted from McKechnie and Wigen 2011).

collections from fifty-eight archaeological sites to demonstrate marked geographic differences in the relative proportions of terrestrial and marine mammals.[2] Sites along the west coast of Vancouver Island and the adjacent Olympic Peninsula are characterized by a dominance of marine mammal remains over terrestrial mammals (see also Wessen and Huelsbeck, this vol.), whereas the reverse holds true for sites along eastern Vancouver Island and the Gulf Islands (Figure 5). Differing environments – the outer coast versus the protected waters of the Salish Sea – certainly played a role in creating these patterns that span millennia of human history. Yet attributing these differences to environmental circumstances alone would be deterministic and incomplete. The division shown in this study also marks a cultural break, with the Wakashan languages of the Nuu-chah-nulth and Makah along the outer coast and speakers of various Coast Salish languages along the Salish Sea. Cultural traditions, involving multi-generational transfer of complex knowledge, skills, and preferences resulted in distinct cultural patterns that persisted through time and can be discerned in the archaeological record. For outer coast people such as the Nuu-chah-nulth, sustained success in hunting marine mammals required not only detailed knowledge of animal behaviour and an effective technology to take them but also specific rituals and prayers

[2] Whales were excluded from the marine mammal sample, which would have further amplified the differences given the established whaling traditions in Nuu-chah-nulth territory (see McMillan, this vol.).

that were jealously guarded prerogatives transmitted through successive generations (Drucker 1951; McMillan, this vol.).

The authors in this volume present recent archaeological research in the important but relatively underexplored outer coast region, showcasing the continuous human presence over the *longue durée*, or the broad scale of human history that occurs beyond the history of individual events (Braudel 1970). Such a perspective accommodates the extended periods of time represented in the deep archaeological deposits of the outer coast, while also recognizing the short-term everyday activities repeated over many generations that formed the material record investigated archaeologically. Although in many areas of the outer coast the earliest traces of human presence have been lost to the encroaching sea, other locations reveal evidence of human settlement that spans about thirteen thousand years (Fedje et al. 2011; McLaren et al., this vol.). Persistent long-term ties between people and specific places are demonstrated in the archaeological record, in oral traditions, in systems of ownership rights to land and resources, and in deep-seated cultural practices stemming from regular and repeated use of the land and sea over generations. Rather than the popular view of much of the outer coast as a "wilderness," archaeological research, oral traditions, and Indigenous knowledge clearly situate these outer coast places as familiar "homelands" that sustained substantial populations of diverse human cultures over millennia.

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