

# CHAPTER 29

## The Fraser River Salish as Innovators

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### Introduction

Anthropologists have tended to view the Coast Salish as the "country cousins" of their culturally more complex neighbors to the north. Kroeber (1939), for example, ranked Salish culture lower in socio-cultural complexity than that of the Kwakiutl (*Kwakwaka'wakw*) and particularly less complex than the Tlingit, Haida, and Tsimshian. During the late 19<sup>th</sup> and early 20<sup>th</sup> century when the observations on which this evaluation was based were made, this view was correct. Much of this evaluation was based on Salish art work that was less complex than that of their neighbors, and was sometimes interpreted as a crude attempt to copy the more sophisticated works found in cultures to the north. In addition, with few exceptions the Salish didn't carve totem poles and their masks were dominated by one unusual style, the *XweXwe* mask. Unlike other NW religions the *XweXwe* religion emphasized cleansing and purification (Suttles 1983, 1990). Villages were autonomous with the highest ranked family head as the nominal village chief. Salish social organization was the bilateral extended family, and lacked the same degree of emphasis on social rank found among more northern groups. Their potlatches exhibited lesser degrees of aggrandizing behavior. Cole Harris (1997:3-30) and Pamela Amoss (1993) have challenged this picture of Coast Salish culture as typifying pre-contact conditions. Harris forcibly points out that the late 19<sup>th</sup> and early 20<sup>th</sup> century image of relative simplicity was the result of demographic collapse from diseases introduced beginning in the protohistoric period that decimated the Coast Salish to a greater extent than their northern neighbors. Late pre-contact Coast Salish society as reconstructed by Amoss comes across as what is probably a truer picture of the Coast Salish prior to the smallpox epidemics beginning in 1782 than that found a century later. Amoss (1993:29) also wonders if the Coast Salish experienced multiple advances and retreats of social stratification during the pre-contact period that would indicate periodic shifts in socio-cultural complexity.

The Coast Salish of the lower Fraser River, and I mean not only those with permanent settlements on the lower Fraser and its tributaries, but those who traveled from their winter villages on the offshore islands to the fishery on the Fraser during the times of the major salmon runs to as far up-river as the Fraser Canyon. These groups were and are at the center of distribution of the Coast Salish peoples. They had

access to a larger salmon resource than their neighbors with the predictable result that, barring mitigating factors, Fraser River Salish society would through time maximize this resource, increase in population density, evolve greater cultural complexity than their less endowed neighbors, and conversely that periodic declines in salmon productivity would result in diminution of complexity. The present archaeological record (Carlson et al. 2017; Lepofsky et al. 2005) indicates that there was a long period of complexity between about 3900 and 1600 calibrated <sup>14</sup>C years ago followed by a period of reduced complexity that may have lasted into the contact period. There were probably shifts in complexity within these two major periods, but the archaeological record so far is not precise enough to identify them.

Although this volume is centered on the archaeology and prehistory of the lower Fraser Valley and most chapters provide new information on this sub-region, the vagaries of archaeological sampling and the nature of culture are such that in order to present as full a picture as possible it is necessary to emphasize some of the archaeology at both ends of this river corridor. The Milliken site (Borden 1960, 1968, 1975, 1983) with its punctuated evidence of occupation beginning at 10,000 cal BP is at the up-river end of the coastal bio-geographic zone flanking the Fraser River, and is still the earliest dated site in this sub-region. At the lower end of this zone in which I am including the Fraser delta and the offshore Gulf and San Juan Islands, is a long and well known sequence beginning about 9000 cal BP with the Glenrose Cannery site (Matson 1976, 1996; Stantec 2015) and the earlier Stave Lake assemblage (McLaren and Steffen 2008) (Chapter 18), and continuing through the Mayne/St. Mungo/Locarno/Marpole sequence of 5500 <sup>14</sup>C to 1600 cal BP followed by the Gulf of Georgia phase (Borden 1970; Burley 1980; Carlson 1960, 1970; Rousseau et al. 2003) that lasted to contact. Lepofsky (2000) points out that the Marpole phase while known best from the saltwater localities also encompassed the people of the Fraser Valley. No single site provides a complete picture of the prehistory of this sub-region, but together they give an idea of what was happening in the past. Those customs that are known earlier in this sub-region than elsewhere on the NWC are the NWC art tradition including the depiction of ribs, joint marks and protruding tongues; the ceremonial complex involving use of masks that indicates transfor-

mation beliefs; and the ritual of feeding the ancestors that is the logical prototype for the potlatch.

### **Innovation and Materialization**

Innovation is a response to perceived needs and is frequently the result of trial and error. Accumulated knowledge and current or on-going events interacting through individuals bring about innovations. Innovation is a mental process that can occur under conditions of either stress or plentitude. Innovations derived from stress may come about as responses to needs in subsistence or defense, whereas those from plentitude may arise from the desire to maximize an economic surplus that would otherwise be wasted. It would be difficult to believe that the early inhabitants of the Fraser River observing the thousands of salmon migrating annually up-river wouldn't have rapidly improved methods of harvesting this bounty, such as fish weirs, and evolved or improved existing techniques of preservation and storage. Kroeber (1939:28) observed that a characteristic of Northwest Coast (NWC) ethno-historic culture was the reworking of both native and imported material to an unusual degree. Although there are local differences the NWC shares its basic cultural patterns with much of the rest of the northern hemisphere, particularly its hunting and fishing technology, but also the beliefs in spirit power, regeneration from bone, and transformation that underlie much art and ceremonialism, and in the efficaciousness of the shaman. These widespread beliefs along with the ritual of feeding the ancestors are found throughout the NWC culture area during the ethnographic period, and are the logical basis for the innovations that led to the complex ceremonial life that typifies much of the NWC, and to the NWC art tradition that is a graphic expression of these beliefs (Carlson 1999, 2011).

Archaeologists can discover the results of innovations such as the fish weir if preservation permits, and can sometimes reconstruct the relevant events that lead to innovations, but another problem is materialization. While technology and some subsistence pursuits are fairly easily inferred from tools and faunal remains, non-material aspects of culture such as beliefs must have been expressed in a preservable material form in order to be included in the socio-cultural inventory of a given society at a designated time period. The earliest material evidence of these beliefs on the NWC is found at both ends of the lower Fraser sub-region at the Pender Canal site (DeRt-2) in the late Mayne phase component (Carlson 2005; Carlson and Hobler 1993; Carlson et al. 2017) and in the Baldwin phase at the Milliken site (DjRi-3) (Borden 1983) dated by <sup>14</sup>C between 4000 and 3000 cal BP. It is unlikely that these developments could have taken place without the economic surplus provided by storage and preservation of the anadromous salmon by Fraser River peoples and by storage and preservation of herring and other seafoods including salmon by residents of the marine environment. Whereas the Coast Salish were at the lower end of the scale of social complexity during the ethno-historic period, the archaeo-

logical record indicates that in the earlier period of about 3600 to 1600 cal BP their ancestors on the lower Fraser and Salish Sea were at the top of this scale, and as such were the innovators who evolved many of the customs that later spread to the rest of the NWC.

### **Chronological Considerations**

The earliest inhabitants of the NWC brought with them a suite of customs, beliefs, behaviors, and technical knowledge necessary for survival in the environment they inhabited previously. They were participants in industrial complexes using flaked stone techniques found throughout the world. Their immediate previous habitat at the close of the Pleistocene was the arctic and sub-arctic. At that time these habitats were marginal in an environment that severely limited population growth and required a nomadic settlement pattern and specialized skills in hunting and fishing. The simplest hypothesis and one supported by the archaeological evidence is that the peoples who brought two early flaked stone tool traditions – foliate bifaces and microblades – are the ancestors of the peoples living on the coast of British Columbia and in the coastal river valleys such as the lower Fraser at the time of European contact. Foliate bifaces of which some exhibit incipient stems, are found at the Milliken site between 10,000 and 9000 cal BP (Borden 1968, 1975; Carlson 2008:6), in the Stave Lake sites on the lower Fraser at this same time period or earlier (McLaren and Steffen 2008; Ch. 18), and in the earliest component at the Glenrose Cannery site by 9000 cal BP (Matson 1996). Foliate bifaces are found earlier coast wise to the north at Haida Gwaii between 12,500 and 9000 cal BP (Fedje et al. 2008:19), nearby at On-your-knees Cave on the coast of SE Alaska at 12,400 cal BP (Dixon 2008:1), at Namu at 11,000 cal BP and in the Bella Coola Valley at probably the same time period (Carlson 2008: 61-70; Hobler 2001), and later up-river on the Fraser at Prince George at 9790 cal BP (Burford et al. 2008). This time-transgressive distribution of foliate bifaces suggests movement of ancestral Salish peoples down the Coast and then up the river valleys between 12,500 and 9700 calendar years ago. Microblade technology, that appears about 500 years later on the northern coast, is generally thought to have been brought from Siberia to Alaska by the ancestors of the NaDene speakers (Matson and Magne 2007:171-188), and may have been introduced by NaDene ancestors to the earlier foliate biface-producing migrants already on the coast. It is probable that the early flaked stone assemblages with foliate bifaces that are found before the appearance of microblades in Haida Gwaii (Fedje et al. 2008), and on the central coast at Namu and TsinniTsinni (Carlson 2008), were left by the ancestors of Salish people moving down the coast who settled into the river valleys of the Bella Coola and Fraser and smaller rivers. They were followed by the ancestors of the Wakashan speakers who may have had both biface and microblade technologies, who settled the outer coast.

Evidence of innovations that took place after the initial colonization of the Fraser and before 6000 cal BP is mostly limited to changes in the size and form of bifaces, variations in simple scraping tools, and an increase in the numbers and forms of pebble choppers particularly in the lower reaches of the Fraser Canyon (Borden 1975, Haley 1996, Matson 1976; Stantec 2015). Flaked stone tools continued to dominate the known artifact inventories although the beginning of grinding and polishing steatite to make tools or ornaments begins in the Milliken phase (Borden 1968:13, 1983:132). A shift to ground slate points and knives appears during the Eayem phase (6000 to 4000 cal BP) up-river (Borden 1968:13) and in the Gulf Islands at Helen Point at about the same time (Carlson 1970). Trade in obsidian from an unknown Oregon or Washington source is also present (Carlson 1994:313). Use of salmon on the Fraser probably began quite early as there would have been no other reason for the initial occupancy of the Milliken site at 10,000 BP, although no bones were preserved. Mass harvest of salmon began by 5400 cal BP, the earliest date on the Glenrose fish trap near the mouth of the Fraser River (Stevenson 1998).

### The Salmon Fishery

Both population growth and the development of an economic system with a surplus above and beyond subsistence needs was necessary for the evolution of the complex ceremonial system first encountered in the Gulf Islands and up the Fraser at the Milliken site. The original colonizing populations of the Coast were predictably quite small and the cultural elaboration at this later date indicates a considerably enlarged population with specialists in various technologies as well as in religion and ceremonialism. Since the Fraser is the largest salmon producer in the world (Northcote and Atagi 1997), and salmon is both preservable and storable (Schalk 1977), the logical inference is that salmon provided the surplus necessary for population growth and the economic expansion beyond subsistence that resulted in the cultural efflorescence that characterizes the period between about 4000 and 1600 cal BP. That the late fall and winter were the seasons for ceremonial activities and for specialized technologies such as wood-working is well documented ethnographically (Drucker 1955). Documenting the presence of a surplus archaeologically has, however, proven difficult.

Specific evidence for the mass harvest of salmon was not present on the Fraser until discovery of an extensive fish weir in the mudflats fronting the Glenrose Cannery site near the river mouth (Eldridge and Acheson 1992). There is much earlier evidence for salmon abundance elsewhere on the coast of British Columbia (Cannon 1991, Moss and Cannon 2011), and it is probable that earlier evidence of fish traps on the Fraser has been buried or destroyed by erosion. Moss et al. (1990) emphasize the importance of weirs and traps to mass harvest and as evidence of storage technology. It is perhaps significant that the earliest evidence of cultural elaboration found so far post-dates the time of this earliest known fish weir. The time gap between the earliest weir and

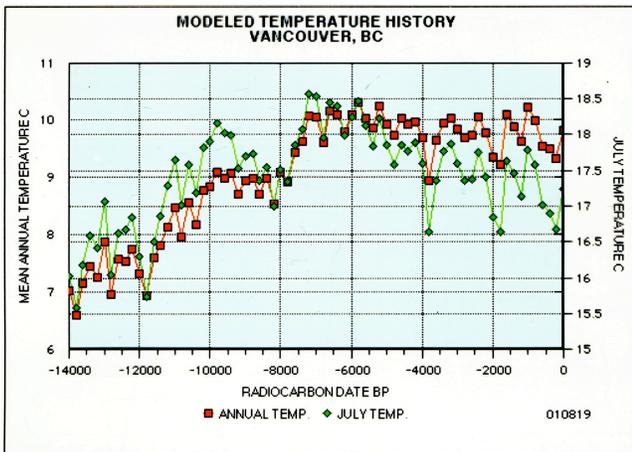
the earliest evidence for art and ceremonialism probably means the earliest evidence for the latter has not been found.

The intensification of salmon use on the Fraser may well have begun with the onset of the cool wet Neoglacial climatic interval dated at 5000 BP from a core in Saanich Inlet although cooling began earlier about 6000 BP (Pellett et al. 2001; Tunicliffe et al. 2001). The increased volume in the river and the cooler temperature would have contributed to an increase in the salmon population. Fluctuations in fish populations seem to follow climatic oscillations with the northeastern Pacific salmon population varying with the Pacific Decadal Oscillation and the ground fish populations following the El Niño variability (Francis et al. 1998). The implication for culture history is that when salmon became less abundant the human population could fall back on the ground fish resource to meet basic subsistence needs, but would lack the surplus necessary to maintain an elaborate culture. During the Marpole phase the Fraser River fishery would have been the most predictable and abundant fishery in the region (Lepofsky et al. 2005).

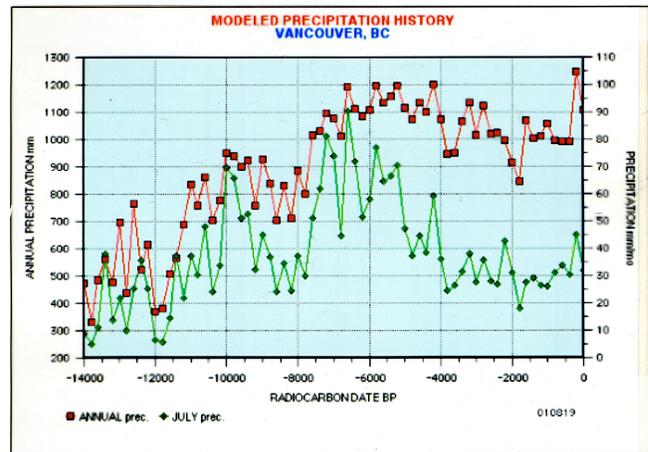
The climate graphs for the lower Fraser sub-region (Figures 1 to 4) show a period of relative stability between about 3800/3600 and 1800 <sup>14</sup>C years BP (ca. 4000 to 1600 cal BP) with only minor fluctuations in temperature, volume of Fraser River discharge, and precipitation. At each end of this relatively stable period is a colder episode with reduction in volume of the Fraser River discharge, and a decline in precipitation that would mean that migrating salmon would be unable to breach the rapids at Hells Gate and reach up-river spawning grounds. Changes in atmospheric temperature and sea surface temperature are related phenomena (Glassow 2008), and salmon will follow the colder water.

The archaeological sequence for this region during this relatively stable period shows the beginning of cultural elaboration in the down-river late Mayne (Carlson and Hobler 1993, Carlson, Szpak, and Richards 2017) and up-river Baldwin (Borden 1983) phases with continued cultural growth through the Locarno, Marpole and Skamel phases (Borden 1970, 1983, Burley 1980) until about 1600 BP when a simplification of culture marks the end of the main Marpole phase (Carlson 1970, Borden 1983). These cultural changes correlate with the climatic changes at the beginning and end of this 4000 to 1600 cal BP period. Its beginning should have been marked by a surplus of stored and preserved salmon accompanied by an increase in socio-cultural complexity, and at its end by a decline in complexity and a more dispersed settlement pattern caused by a significant disruption in the supply of salmon. More and better data are needed to make this idea more than a working hypothesis.

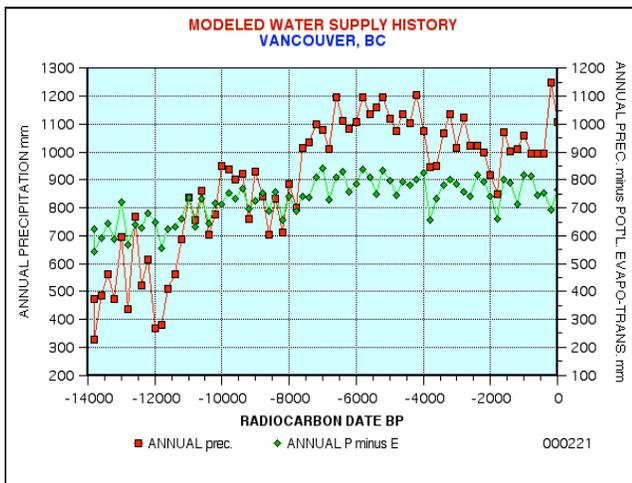
These climate changes would also have affected the range of herring populations (*Clupea pallasii*) (Perry and Schweigert 2008) that was also a preservable resource (Barnett 1939) whose bones appear in large numbers in sites around the Salish Sea (McKechnie et al. 2014; Greene et al. 2015).



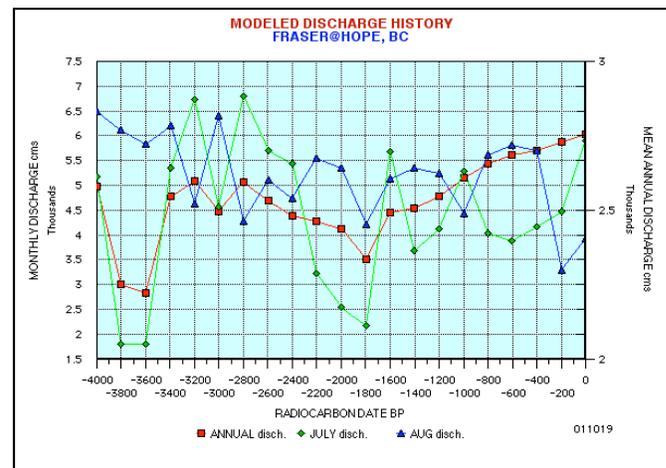
**Figure 1. Temperature history for Vancouver B.C. over the past 14,000 <sup>14</sup>C years BP.** The peaks of lowered temperature at 3800 <sup>14</sup>C (cal 4200) and 1800 <sup>14</sup>C (cal 1700) years BP bracket the period of intense cultural elaboration encompassing the late Mayne, Locarno Beach, and Marpole phases during which temperatures were relatively stable. Prepared by Reid Bryson of the Archaeoclimatology Laboratory at the University of Wisconsin, Madison.



**Figure 3. Modeled Precipitation History Vancouver, B.C. for the past 14,000 <sup>14</sup>C years BP.** The peaks of low precipitation at 3800 <sup>14</sup>C (cal 4200) and 1800 <sup>14</sup>C (cal 1700) years BP bracket the period of intense cultural elaboration encompassing the late Mayne, Locarno Beach, and Marpole phases. Prepared by Reid Bryson of the Archaeoclimatology Laboratory at the University of Wisconsin, Madison.



**Figure 2. Modeled Water Supply History Vancouver, B.C. for the past 14,000 <sup>14</sup>C years BP.** Annual precipitation is shown in red and precipitation minus evaporation in green. Of particular interest is the period between 3800 <sup>14</sup>C (cal 4200) and 1800 <sup>14</sup>C (cal 1700) years BP with its abundant water supply bracketed by short periods with the lowest water supply in the last 8,000 years. This 2500 year-long period with a relatively stable water supply witnessed the development of complex culture from the late Mayne phase through the Locarno and Marpole phases. The decline in cultural complexity at the end of the Marpole phase is probably related to the reduced water supply and its effect on the salmon resource at that time. Prepared by Reid Bryson of the Archaeoclimatology Laboratory at the University of Wisconsin, Madison.



**Fig. 4. Modeled water Discharge History of the Fraser River at Hope, B.C. for the past 4000 <sup>14</sup>C years BP** Note the low water levels at 3800/3600 <sup>14</sup>C (cal 4200/3900) and 1800 <sup>14</sup>C (cal 1700) years BP that bracket the period of intense cultural elaboration encompassing the late Mayne, Locarno Beach, and Marpole phases. The low water levels would have seriously impacted the supply of salmon by blocking access to spawning grounds beyond Hell's Gate particularly during July. Prepared by Reid Bryson of the Archaeoclimatology Laboratory at the University of Wisconsin, Madison.

Diane Hansen (2008), in a complex quantitative analysis, compared the reported faunal remains from 15 pre-contact period Strait of Georgia village sites of which four (Marpole, Glenrose Cannery, St. Mungo, and Musqueam NE) are on the lower Fraser, and five others are on the mainland near its mouth. An additional two (Pender Canal and Helen Point) are in the Gulf Islands off the mouth of the Fraser. Her analysis finds few salmon bones in Marpole phase assemblages, and as many or more in post-Marpole assemblages. In her opinion (Hansen 2008:144-45) this fact calls into question the cultural-historical model that an economic surplus based on salmon was a major contributing factor in the socio-cultural efflorescence of the Marpole phase. In my opinion her data on scarcity of salmon bones in Marpole and their greater abundance in post-Marpole assemblages do not support this conclusion, and actually support the opposite model that preserved and stored salmon were crucial to this elaboration. The presence of few salmon remains in the assemblages of Marpole phase and earlier sites such as Pender (DeRt 2) and other large winter villages indicates that the inhabitants relied on preserved salmon caught and processed elsewhere, and that the low frequency of salmon bones in these sites is an indicator of the use of preserved salmon and is thus evidence of a relationship of salmon preservation and storage to the cultural elaboration also present in these sites.

Assuming that the post-Marpole decline in cultural elaboration was accompanied by a move to smaller and more dispersed settlements was a response to a decrease in large salmon runs with a concomitant decrease in preserved and stored salmon, the expectation would then be that in the smaller dispersed post-Marpole settlements that lack much evidence of socio-cultural complexity, the fish bone assemblages would contain more salmon remains than in the earlier villages as more salmon would have been caught individually and eaten fresh with cleaning and the discard of bones at the settlement. Hansen (2008:144-45) finds that there are as many or more salmon bones in these settlements than in the Marpole phase assemblages, and this finding again supports the idea that salmon abundance is related to socio-cultural complexity, and that the absence or decline of a preserved and stored salmon surplus contributed to this post-Marpole decline. There was undoubtedly variability in the disposal or use of salmon bones, but scarcity in winter village sites is a predictable result of mass processing for drying and storage and disposal of the bones at the processing site. There is great variability in percentages of salmon bones found in NWC archaeological sites as a result of many factors (Coupland et al. 2010). At winter village sites such as Namu (Cannon 1991) that is actually on the small river where the salmon are caught, their bones are found in large quantities, whereas on large rivers with an up-river fishery the bones were probably discarded at the processing site. The disproportional presence of cranial and post-cranial salmon bones in an assemblage as an indication of either storage or fresh consumption is not supported by ethnographic data (Carlson 2012:23).

Variability in the use and disposal of salmon bones is expectable for the Northwest Coast as a whole, and ethnography as a guide may overly generalize such behavior and provide a normative pattern, but not give exceptions or variations. Eight of Barnett's (1939:237) ten Coast Salish informants indicated that salmon bones were thrown back into the river. We know that all the bones were not always thrown into the river as many salmon bones are found in Coast Salish archaeological sites. Barnett (1955:62) later seems to contradict himself by stating that, "...the heads, tails, fins and bones of the fish were removed and saved for roasting by the direct fire method or stewing by the boiling method". In either case few bones would be found archaeologically and quantitative analyses of those recovered directed at determination of the percentage of salmon in the diet, meaningless. Olsen's (1936:40) remark on the Quinault that, "...if the head, tail, and backbone were to be dried the entrails were removed..." indicates that the backbone was sometimes dried, but not always. Drucker's (1950:283-285) data for the rest of the NWC is less complete, but he does indicate some variability in the ritual disposal of salmon bones. Stewart (1977:131) noted that both tails and backbones were roasted and eaten which would leave little or no archaeological evidence. Boas (1921:241) for the Kwakiutl seems to indicate that the thicker fillet without the backbone is made into preserved salmon whereas the other with the backbone is not preserved (eaten fresh?). Krause (1956:121) for the Tlingit indicates that the head, tail and backbone might be dried and that the heads, tails and fins were strung on strings and dried. These accounts do not tell us where this is taking place or what is the usual practice regarding the bones. Drucker (1951:63) notes that the northern *Nuu chah nulth* kept heads attached for storage. Since the flesh of the salmon is more desirable than the bones, a logical practice at the time of large salmon runs at up-river fisheries would be to spend the time and energy in processing and preserving the salmon fillets and discarding the bones. My own observation of salmon processing for drying and storage on the Fraser in 1959 is that the heads were hung up to dry along with the fillets, and the backbones thrown into the river along with the guts (Carlson 2012) (Figure 5). This practice would result in few, if any, backbones transported to winter villages where stored salmon were eaten. The presence of large numbers of head bones could be an indicator of stored salmon. The frequency of salmon bones in winter villages is not a valid measure of their importance in storage-based societies.

Researchers need to differentiate between those foodstuffs significant to the economic system and those significant to the subsistence system. Salmon are significant to both, but it is the former – the economic system – that relies on a surplus of salmon and other preservable and storable resources such as herring and clams (Barnett 1939) that enables cultures to expand beyond the necessities of life.



1. Cutting off the head.



2. Cutting off the dorsal fin.



3. Slicing down the back.



4. Grasping the backbone and guts and discard into the river.



5. Thinning the thicker side.



6. Scoring the fillet.

**Figure 5. Photos 1 to 10: Mike Victor preparing a salmon from his gill net for drying at his fishery near the mouth of the Fraser River Canyon just up-river from Yale in August 1959. The head was cut off and placed in a bucket and later hung on the drying rack. The dorsal fin was then cut off and the salmon sliced down the back far enough to loosen the vertebral column so it and the guts could be grabbed and thrown into the river. The double fillet was then spread and the thicker side thinned by slicing off a layer of flesh. The double fillet was then scored horizontally so air could penetrate and assist in the drying. A spreader stick was then attached across the back to keep the fillet from curling as it was drying on the rack. Smoke drying was not necessary as the continuous up-river wind in August was sufficient to dry and preserve the salmon. R.L. Carlson photos.**



7. Spreader stick added to decrease curling.



8. Fish heads and fillets on drying rack.



9. Mike Victor at fresh water pool with live salmon for immediate consumption.



10. Gill net on pole.

### Socio-cultural Complexity

Socio-cultural complexity refers to the presence of institutions above and beyond those essential to subsistence that are dependent on an economic surplus used to support full or part-time specialists who do not need to spend all their time in food procurement and preparation, and can spend it on arts and crafts, ceremonies and ritual, house or canoe building, trade and politics, or a myriad other non-food-getting activities for which they can be recompensed materially or socio-politically. How is socio-cultural complexity measured? In NWC archaeology the most commonly employed bases for inference are burial practices and art. Neither is fully satisfactory because of taphonomic processes, but of the two, art objects provide a better basis than does our present knowledge of NWC mortuary practices. Vast differences in quantity and quality of grave goods are not apparent in the 1130 pre-contact NWC burials studied by Burchell (2006) although southern coast burials did yield more art objects. Much of NWC material wealth ethnographically was in perishable items that would not survive burial. Art is a concept derived from western intellectual thought, and was not a concept employed by the NWC peoples who viewed what we call art in the context of everyday living, life and death, ceremonial practices, and

religion. As such art objects found archaeologically can be guides to the belief system and ceremonial activities that are a considerable part of cultural complexity.

Although it has long been recognized that what Roy Carlson (1960) named the Marpole phase is culturally complex and represents a cultural climax (Kroeber 1939:30), meaning that it is followed by a decline in complexity, some researchers seem unaware that this complexity extends backward in time to the late Mayne phase for at least one thousand years before the beginning of Marpole (Carlson 1999, 2005; Carlson and Hobler 1993). The Mayne, Locarno Beach, and Marpole phases form a cultural continuum, and although there are some cultural differences between these phases these differences are not indicative of significant differences in the way of life throughout this sequence, and the climatic variation (Figures 1 to 4) during the period of their existence from about 3800 to 1800 BP (ca 4000 to 1600 cal BP), is minimal compared with climatic episodes at the beginning and end of this period when precipitation declined, temperatures were lowered, and the volume of water in the Fraser River system was significantly reduced.

The Mayne phase was formulated in 1970 as the ancestor of the Locarno Beach phase on the basis of the excavations



**Figure 6. Miniature Sandstone Mask from the Baldwin component at the Milliken site dated 2800 to 2000 BP.**

at Helen Point (Carlson 1970). The St. Mungo phase, which is contemporaneous with the Mayne phase, was formulated later (Matson 1976) and is probably a seasonal aspect of the same culture. Mayne, St. Mungo, and Eayem phases have sometimes been lumped as the Charles phase (Borden 1975:96) that is a demonstration of their similar content and the inter-connectedness of the societies from the Fraser canyon to the Salish Sea at this time period. Terry Clark (2013) has recently revised the local sequences, but his revisions do not affect the discussion presented here. Socio-cultural complexity as measured through examination of the graphic and plastic art is present throughout the sequence, and is also inferred from the presence of luxury goods such as beads and soapstone ornaments and artifacts indicative of social rank such as labrets (Carlson et al. 2017; Dahm 1994). Although there has been much written on the determination of whether social rank is achieved (considered to be a feature of equalitarian societies) or ascribed (meaning hereditary), this evolution should be no mystery as once the economic surplus was transformed into inherited goods the logical outcome is ascribed rank based on wealth. By 4000 cal BP wealth accumulation in the form of thousands of stone and shell disc beads is present in many sites in the Salish Sea and Lower Fraser River regions (Coupland et al. 2016).

The Central Coast Salish socio-political system (Suttles 1990:463-465) was based on bilateral kinship, with kin groups interacting in both cooperative and competitive endeavours in and between villages within a network of similarly constituted villages without overall chiefly authority. This system has aptly been labeled “anarchic” meaning that it is neither egalitarian nor a chiefdom nor chaotic, but a system in its own right (Angelbeck and Grier 2012). This system seems to have sufficient flexibility to allow for both growth and decline in complexity.

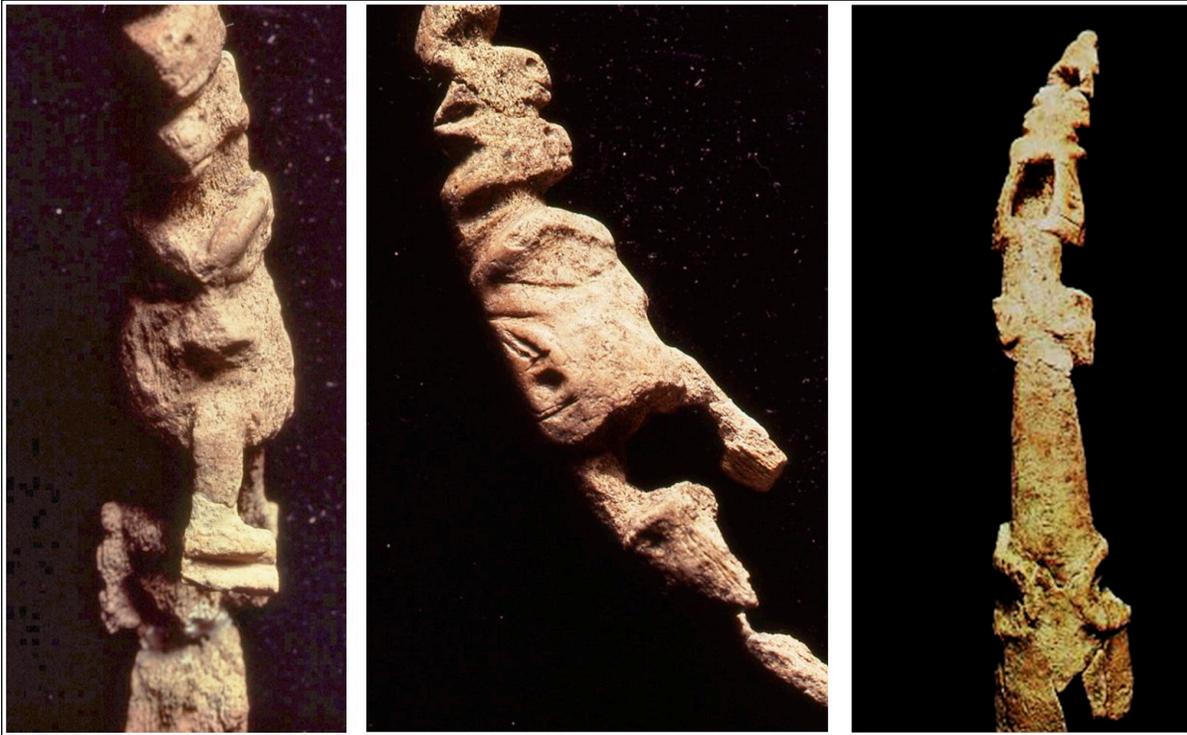
Borden (1968, 1975, 1983) pointed out long ago that the up-river end of the NWC culture area on the Fraser at the Milliken and Esilao sites, and the downriver end at sites on the lower Fraser and Gulf Islands share many traits during the period between 9000 and 1650 years ago. While the stone art objects from Milliken do not tell us as much as the bone and antler carvings from the shell middens nearer the salt water, objects from Milliken do include life forms with

ribs and backbones, and there is one miniature mask (Fig. 6) (Borden 1983:132-139). Images of masks and life forms with ribs and backbones (Figures 7 to 9) are found at Pender Island at the same period and earlier (Carlson 1999, 2005, 2009, 2011) indicating that the belief system behind this art extended throughout the lower Fraser region. These motifs are found later throughout the NWC from the Columbia River north to Alaska, but their early presence on the Fraser strongly suggests that the innovations that transformed beliefs into material objects and ceremonial behavior took place earliest there, and then spread to the rest of the NWC. Masks indicate transformation beliefs such as are found throughout the mythology of the NWC, and ribs and backbones suggest beliefs in regeneration from bone (see Kan 1989), the repository of the life force (Carlson 2011).

How does art serve as an indicator of socio-cultural complexity? We know from ethnography that decoration is not the primary function of NWC art. Art objects were both means of communication and symbols of wealth and power. Power, while frequently secular in practice, was nevertheless sanctioned by the supernatural, and art motifs communicated the supernatural sources of that power. NWC art objects are among the best material expressions of socio-cultural complexity because they are not idiosyncratic individualistic objects, but are patterned following cultural norms, and with few exceptions such as some hidden Salish guardian spirit images existed in a social context. This context can be observed and documented. With prehistoric art objects this context can sometimes be inferred from the form of the object, from its archaeological context, or from the forms of the carved or incised motifs that are depicted.

The carved antler spoons (Figures 7 to 9) from the Pender Canal site (DeRt-2) qualify in all three of these categories as the basis for inferring a high level of cultural complexity in the period between 3500 and 2600 cal BP (Carlson et al. 2017). Images of masks are present on four of the antler spoons from the Pender Canal site. These images are clearly masks as they are open either in the back as with ethnographic facemasks, or on the base as in forehead masks. Both face and forehead masks carved of wood are present ethnographically, and these images carved on the handles of these antler spoons from Pender are depictions of ceremonial regalia worn by individuals impersonating ancestors or supernatural beings and were part of a system of beliefs and practices that included public performances.

Masks are the products of craft specialists who require workspace for themselves, their raw materials, and their tools. Unless destroyed after use, masks require permanent storage space. Ethnographically NWC masks were most commonly used in public performances although the Tlingit shaman was unique in using masks to identify his spirit helpers. All of these aspects of NWC mask production and use indicate the presence of permanent structures in permanent locations in the prehistoric cultures from which these masks depicted on the Pender spoons came. Wooden masks are not products of nomadic bands foraging the countryside in search of food, but of complex societies with



**Figure 7.** Images on a spoon handle from DeRt-2 dated at 3139 cal BP. At left and center are front and side views of a humanoid mask with a protruding tongue and two fish-form masks. A solid bird-form at the top is not shown. At right the back of the spoon shows the open backs of the masks and joint marks at the shoulders and hips.



**Figure 8.** Back, side and front views of humanoid mask surmounted by a bird form on the handle of an antler spoon from the Pender Canal site dated between 3900 and 3200 cal BP. Note the ear spools. On the back of the mask are incised lines suggestive of the cedar bark strips still used in costuming the body of a dancer wearing a large mask.



**Figure 9. Fragmentary Spoon Handles from Pender (DeRt-2). Upper: Two views of humanoid in hocker position with pronounced backbone dated  $3246 \pm 263$  cal BP. Lower: Salamander with protruding tongue, joint mark, and ribs ca. 3000 cal BP.**

permanent villages and an economic surplus. All the spoons with masks date within the 290 year period from 3257 to 2967 cal BP (Carlson et al. 2017). These dates include both a marine reservoir correction and calibration that make them slightly younger than previously published dates.

Masks are indicators of transformation beliefs that are part of the underlying ideology of all NWC ethnic groups whether they used masks or not. These images of masks are in much the same style as some of the ethnographic wooden masks. On the handle of one fragmentary spoon dated at 3139 cal BP there are three masks topped by a solid bird-form (Figure 7). Two of these masks are fish-form forehead masks and the third is an anthropomorph with a protruding tongue and incised wing form ear ornaments on both sides. The arms, legs, and joint marks of this anthropomorph are carved on the sides and back of the bowl of this spoon. This figure represents a significant supernatural being.

A second spoon handle bears carved effigies of both a mountain goat forehead mask and a bird-form mask, probably an eagle. A third spoon has a forehead mask carved on the handle representing a wolf-like creature confronting a rockfish, and is probably the sea-wolf that appears widely in NWC mythology under different names



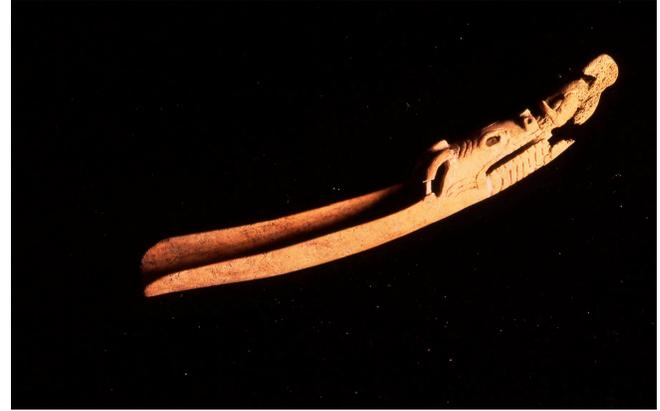
**Figure 10. Fish form stone bowl from Pender (DeRt-2) from deposits dated ca 3000 cal BP.**



**Figure 11. Broken handle from an antler spoon from Pender (DeRt-2) from deposits dated ca 3000 cal BP. The incised designs on the front and back probably represent feathers. The head of a bird was probably at the upper end, and the bowl of the spoon at the lower. Zigzags carved in relief on both sides probably represent lightning indicating this was an image of a thunderbird.**



**Figure 12. Antler Spoon with image of a Wolf Mask confronting a Rock Fish carved on the Handle dated 3220±220 cal BP.**



**Figure 13. Antler Spoon from DeRt-2 with Images of a Mt. Goat Mask and an Eagle mask carved on the handle dated 2967±199 cal B P.**

such as the Wasco among the Haida. The final mask is a humanoid topped by a solid bird form, has ear spools on both sides, and on the back incised lines representing strands of cedar bark suggesting that this is a large mask covering the head and body to be worn by a crouching dancer as can still be seen at ceremonies today.

The presence of masks and costumed dancers in Pender society is not the only indicator of complexity at that time period. J. L. Fisher (1961) using a sample of art from different tribal societies discovered a correlation between complexity of art objects and complexity of society. While a modern more widespread study looking at this correlation would be very desirable, the presence of art motifs in complex arrangements could be a further indicator of the presence of a complex socio-cultural system. One of the earliest spoons shows three stacked joined figures of a humanoid and two owls sculptured in the round. These figures, as on the other spoon handles with two figures, are joined, but are not interlocked to the extent found in ethnographic northern NWC art. This feature could mean that Pender society was less complex than that of the ethnographic Haida, Tsimshian, and Tlingit, but more complex than that of the ethnographic Coast Salish.

There are examples of masks and ceremonial regalia from other pre-contact sites in the Coast Salish region, but not from pre-contact sites in other NWC regions. From the Crescent Beach site there is a small miniature mask of a long-beaked bird, and from the Eagles Nest site on Vancouver Island a plaque with incised bird images resembling masks used by the *Hamatsa* secret society among the *Kwakwaka 'wakw* (Carlson 2005: Figs. 8 and 9). Some of the seated human figure bowls of the Marpole phase seem to be wearing masks. Secret societies may well have originated in the Coast Salish region rather than being weak imitations of practices further north as has frequently been speculated. The image carved on the handle end of the Skagit atlatl (Carlson 2005: Fig. 11) dated at 1600±121 cal BP (Fladmark et al. 1987) with its human face and sea wolf headdress is probably an image of a dance costume with a

transformation mask similar to those used historically by the *Kwakwaka 'wakw*. The earliest piece of art from Kwatna on the central B.C. Coast, dating between 1200 and 200 BP, is an antler figurine pendant (Carlson 1983: Fig. 7:2) like those found more commonly in northern Puget Sound sites. Further north at Prince Rupert Harbour ribs and joint marks are found on art beginning about 3000 BP (MacDonald 1983). The quality and abundance of early art objects and their similarity with the lesser number of such objects in adjacent regions strongly suggests that the materialization of beliefs into art and ceremony took place first in the Coast Salish region and spread from there.

### Conclusions

The Coast Salish were not always the less sophisticated cousins of their neighbors to the north as they are depicted in much of the ethnographic literature. The ancestral forms of art, ritual, and ceremonial complexes that later typify much of the Coast as a whole are known earliest in the central part of their region centered on the Fraser River and offshore islands, which suggests they originated there. All regions of the NWC have now been investigated archaeologically, and while there are some blank spots in the archaeological record, enough work has been done to support the model that the Coast was initially populated during the close of the Pleistocene by small bands of Salish ancestors spreading coast-wise from the north who settled in the coastal river valleys. By 5400 BP their descendants on the lower Fraser were using fish weirs to mass harvest salmon that they stored and preserved along with other sea foods to create an economic surplus. Between 4000 and 1600 years cal BP the economic surplus coupled with favourable climatic conditions resulted in population growth on the lower Fraser and offshore islands, and the efflorescence of culture manifested archaeologically in the art work and inferred ceremonialism found in many sites of this period in the Coast Salish region. This elaboration spread to other parts of the Coast as it declined in its region of origin following the Marpole phase. This decline in art

and ceremonialism was the result of a major climatic change that altered the availability of salmon for mass harvest and resulted in a more dispersed population and smaller villages with fewer specialists in non-subsistence activities. Population decimation in the protohistoric period reduced

the complexity of Coast Salish culture even further. This hypothetical model of what happened in the prehistory of the lower Fraser region is based on presently available data that will hopefully be augmented in the future through new and exciting archaeological research.