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Joint Tribal/College Wet Site Investigations: A Critical Need for Native American Expertise

Rhonda Foster and Dale R. Croes

ABSTRACT

The calculated addition of 90–95% of the material culture provided by wood and fiber artifacts in wet or waterlogged sites along the Northwest Coast of North America has hugely expanded the understanding of items of daily manufacture and use for at least 9,000 years. To understand the manufacture and use of these "foreign" (to archaeologists) but dominant artifacts, Native Americans now, more than ever, provide a critical analytic and interpretive cultural knowledge. Our recent tribe/college team effort at the Qwu?gwes wet site in Washington State, U.S.A., is one example of how this partnership is not only analytically needed, but also, because of the wet site importance to Native Americans, why archaeologists need to become trained and involved in wet site investigations.

Keywords: NORTHWEST COAST, WET – WATERLOGGED SITES, NATIVE AMERICAN, QWU?GWES, SQUAXIN ISLAND TRIBE, SHELL MIDDEN, NET, FISH TRAP, BASKETRY, COAST SALISH, PHYLOGENESIS.

Introduction

Rhonda Foster, Director, Squaxin Island Tribe Cultural Resources Department and Tribal Historic Preservation Officer, and Dale Croes, Professor, South Puget Sound Community College and Adjunct Faculty, Washington State University, co-direct the management of the Qwu?gwes Archaeological Wet Site on Mud Bay, south Puget Sound, Washington, USA. Through a formal cooperative agreement between the tribal nation and the college as a state institution, Rhonda provides the cultural knowledge through her tribe and Dale provides the scientific approach through his archaeological training (see implementation and full agreement in Foster and Croes 2002). This paper combines the two perspectives

Authors' Addresses: **Dale Croes**, Department of Anthropology, South Puget Sound Community College, Olympia, WA, 98512 USA; **Rhonda Foster**, Cultural Resources Department, Squaxin Island Tribe, 70 SE Squaxin Lane, Shelton, WA, 98584 USA

to demonstrate why each adds to a much more comprehensive overview of an ancient site. Since the scientific side is easier to relate to by the majority of the readers of this paper, in the following consideration of the site Dale will normally open with a scientific observation followed by Rhonda with a Native perspective – neither is exclusive, and both contribute to the understanding of the science and the cultural interpretations and explanations.

Dale: Waterlogged or wet archaeological sites on the Northwest Coast of North America have provided a look at the 90–95% of ancient artifacts which were made from wood and fiber; these are normally not seen in dry shell midden sites, where only the 5–10% of artifacts that were made from stone, bone and shell are known. A recently explored wet site, Kilgii Gwaay on the south end of the Queen Charlotte Islands, dates back to 9,450 BP; it is the earliest known wet site on the Northwest Coast (Figure 1; Mackie *et al.* 2003)..

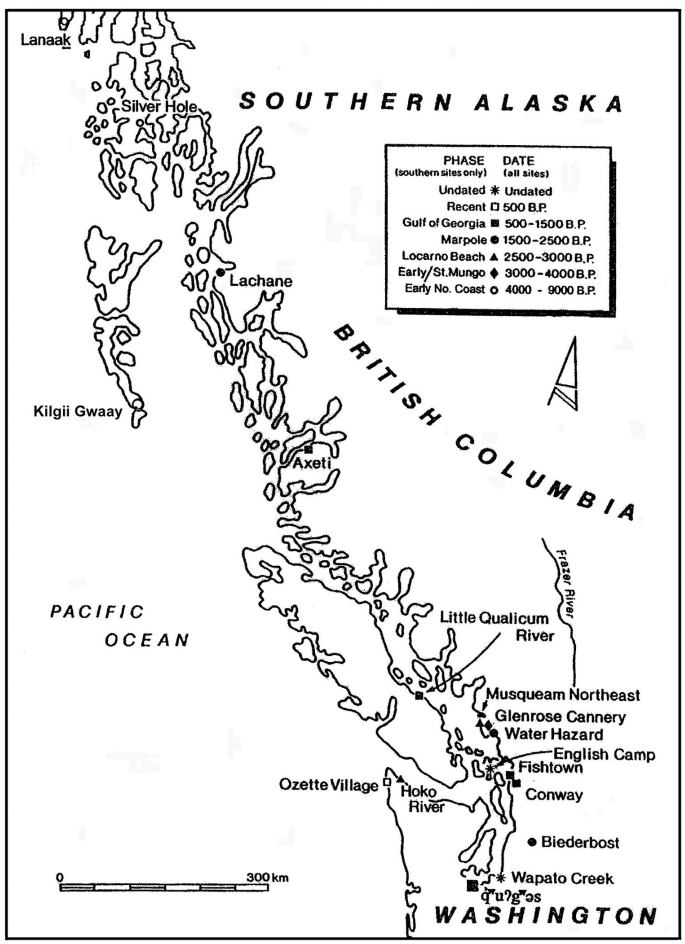

Fig. 1. Distribution of explored Northwest Coast Wet Sites (based on map by S. Rouillard)

Professional archaeologists often follow a learning tradition that focuses on stone, bone and shell artifacts, and possibly pottery where it is common. When it comes to wood and fiber artifacts, archaeologists often consider this the work of specialists and they may avoid wet or waterlogged areas in their sites. When they have to deal with wood and fiber artifacts they often give them only token mention, and focus instead on what is familiar to them.

Rhonda: That 90–95% of the Northwest Coast wet site artifacts are wood and fiber is not surprising, considering the rich and monumental works in this medium common to the ethnographic Pacific Northwest Coast peoples. No one realizes this more than Native Peoples who quickly perceive the value of wet sites, even when the archaeologists may shy away. We hope to do two things here at Qwu?gwes:

1. show how the 90–95% wood and fiber material culture is much better understood through generation-to-generation transfer of cultural knowledge by Native Peoples than is the 5–10% that archaeologists try to emphasize
2. Native Peoples more and more request that archaeologists in this region (and elsewhere) expand their technical training to include the recovery and preservation of the 90–95% of the archaeological record from wet site components of their archaeological sites.

Dale: Rhonda Foster and I co-direct the newly discovered and recently excavated site of Qwu?gwes in southern Puget Sound of Washington State. This is a shared effort, through a formal cooperative agreement (Foster and Croes 2002). The agreement provides the basis for the sharing of archaeological technical skills and the tribal cultural knowledge for explaining these materials. Most artifacts recovered by our combined efforts are being publically presented in the newly constructed Squaxin Island Tribal Museum, Library and Research Center and this display will continue to expand as more joint fieldwork and research is completed.

Rhonda: The Squaxin Island Tribe determined over six years ago the need to protect and manage its own cultural resources within the traditional lands of the Squaxin Island Tribe. Additionally, the need to correct the inaccurate histories written by non-tribal representatives was and is of utmost concern to the Tribe. Preserving and protecting and presenting our true culture and history for our tribal members is an obligation the tribe takes seriously. It is also important for the tribe to reach out its hand, demonstrating the need to share histories and support other groups that are attempting to do the same.

Dale: The tribe and the college initiated testing of the Qwu?gwes shell midden site during the summer of 1999, and through auguring discovered cultural materials such as twisted withes cordage in a waterlogged portion of the site. With the site area better defined, we began full scale excavations of the site each summer from 2000 through 2004 and found that the site complex includes:

- a 100 m long shell midden village site, exposed on a beach front, and extending 15 m back from the shore
- a fish trap with over 440 cedar stakes that we mapped up the bay from the shell midden village site

- well defined onshore living areas containing areas where plank houses once stood, and a large array of stone and bone artifacts typical of the last 1000 years in style
- a buried waterlogged portion in the intertidal area with excellent preservation of wood and fiber artifacts; to date these include a large section of cedar-bark net, basketry, a carved harpoon shaft, a wide array of fiber cordage and bindings, and large amounts of basketry debris and wood chips, all dating to approximately 500–700 years old (C14 dating)
- and, southeast of the ancient Squaxin Island Tribe village, a Euro-american homestead established on the property in 1853

To demonstrate the results of sharing the research between the college and the tribe, and the value in general of wet site explorations on the Northwest Coast to the tribes, Rhonda and I will jointly proceed through my scientific approach to the analysis of wood and fiber artifacts from the site complex followed by her cultural approach to the analysis of these same artifacts, mainly to show the contrasts and benefits of a equal partnership and ownership of research involving the 90–95% wood and fiber component of the ancient Northwest Coast material culture, no doubt common to most shell midden sites if they were tested for waterlogged areas. We will examine the cedar bark net, the up-bay fish trap area, and the woven basketry.

The Net

Dale: In a 1 x 1 m test excavation in 1999, in a location expected to have waterlogged deposits through auguring, we reached wet layers and began finding 2–strand twisted strings that quickly turned into an entire fiber net (Figure 2). At this point we knew for sure

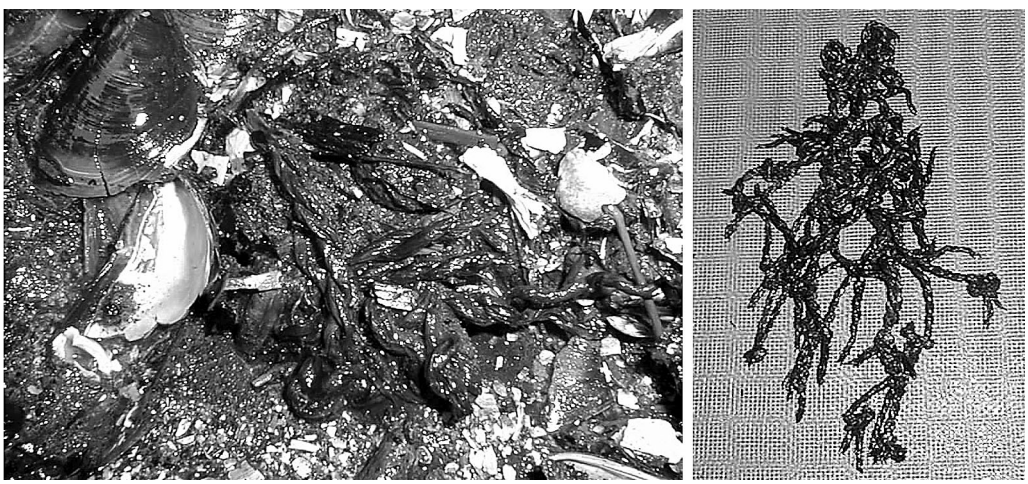

Fig. 2. Cedar bark gillnet being first exposed in midden, and section after being cleaned in lab for preservation

that the site had preserved perishable artifacts, and we were faced with the task of recovering a sizable section of fiber net. Rhonda Foster, a master basket weaver, immediately recognized the fiber to be made from the inner bark of western red cedar (*Thuja plicata)* and, as a fisherperson, she observed the web size and identified the probable function as a small salmon species gillnet (she will elaborate below). In a wet site logistical sense, we knew this would be a fragile artifact to excavate, and we used appropriate hydraulic techniques to carefully recover as large a section of net as possible. We were actually quite successful and brought several large sections of the net back to our laboratory for conservation. At this date, from the preliminary net-knot count and the web size, we can estimate that at least 5.5 square meters of net is represented from current excavations (Figure 2).

The identification of it as a net is primarily visual, based on the series of knots that were established to create a consistent web. Like all other reported Northwest Coast wet site ancient nets, the Qwu?gwes net is made of string-gauge cordage, tied into a net with square knots, sometimes called reef knots or, if collapsed, lark's head knots. The square knot is a no-slip knot, and therefore very practical for nets. Also square knots in western nets are said to be tied by hand, without using a netting needle (Ashley 1944:64–65).

The cordage is twisted using 2 strands and most of the cordage single elements were twisted to the left (L, or clock-wise) and plied together with a right directed twist (R, or counter-clockwise). This forms a Z-lay. However it was not uncommon to see a few S-laid 2–strand cordage examples in the web. Z-lay is the main type recorded for twisted 2+ strand cordage at most other Northwest Coast wet sites.

Rhonda: The net was made from cedar bark, to fish for the smaller salmon species in our traditional areas. It measured as a 12.5 cm stretch mesh, which was measured in three separate locations on the day of the discovery and while still wet. It was used to catch coho, blueback, and steelhead salmon. There are several ways to fish this gillnet; the two basic ways are using a landline, and drifting. When we started removing the gillnet in layers, it was immediately evident to me that there was something out of the ordinary. Hundreds of salmon jaws were still in the net. No fisher person in their right mind would leave salmon in a gillnet even today. For one person to hand-make a cedar gillnet would take over 8 months. Salmon left in the net would rot the net out very rapidly. Something had happened that was not normal, and possibilities are:

1. Major disaster which covered up the gillnet, or required our ancestors to leave
2. The net was being fished, got caught on a snag underwater which would require the fisherman to cut the net, leaving a portion of the net underwater, and unreachable
3. It's normal for a juvenile to ask an elder if there are any abandoned gillnets nobody wants. Every fishing person can remember their solo fishing experience. Some juveniles, although participating in many fishings, maybe became overwhelmed when they caught more salmon than anticipated.

Most fishermen could read a run, determine the amount of net to let out, and harvest only what the family could process. I've witnessed teenagers who get in over their head, sink a boat, sink a net, and lose a lot of equipment.

Wet Site	Approximate Date	Construction Material	Ply Direction	Mesh Size	Proposed Use
Lanaak, Baranof Island, SE Alaska (49XPA78; Bernick 1999)	5,000 B.P.	Picea sitchensis: Sitka Spruce Root	None- Single Filament	3.5-5.0 cm	Dip Net
Hoko River (45CA213; Croes 1995) NW Olympic Peninsula	3,000 B.P.	Picea sitchensis: Sitka Spruce Splint Limbs	None- Single Filament	10 cm	Gillnet
Musqueam Northeast (DhRt4; Archer and Bernick 1990) Fraser Delta	3,000 B.P.	Thuja plicata: Western Red Cedar Inner Bark	Z-ply	15 cm	Gillnet
Water Hazard (DgRs30; Bernick 1989) Fraser Delta	2,000 B.P.	Thuja plicata: Western Red Cedar Inner Bark	S-ply	8.9 cm	Gillnet
Qwu?gwes (45TN240) Southern Puget Sound	500 B.P.	Thuja plicata: Western Red Cedar Inner Bark	Z-ply	8.4 cm	Gillnet
Ozette Village (45CA24; Croes 1980) NW Olympic Peninsula	300 B.P.	Picea sitchensis: Sitka Spruce Root	Z-ply	3.8 cm	Dip Net

Table 1. Currently recorded Northwest Coast wet site net summary, oldest to youngest

Comparison to Other Wet-Site Nets

Dale: Nets have been found from many other Northwest Coast wet sites. The oldest net so far dates to approximately 5000 years old (C14 dating); it comes from the Lanaak wet site (49XPA78) on southern Baranof Island, Southeastern Alaska (Figure 1, Table 1; Bernick 1999) and its survival shows that netting is an ancient technology along the Northwest Coast. The uses of nets vary from smaller-mesh dip nets to larger web gillnets (Table 1).

The Fish Trap

Dale: Slightly up bay from the Qwu?gwes wet shell midden site is a well-preserved waterlogged inter-tidal fish trap made from cedar stakes. Over 440 stakes were visible, crossing in two directions across the cove and to record this large structure properly we needed to do extensive mapping. I felt, and Rhonda agreed, that before we sampled any stakes, we needed a detailed map showing the location and elevation of each stake. To do this, I recruited the college survey class to begin mapping the entire area, including the ancient village and shell midden, the area of waterlogged site and the fish trap up the inlet. College professor Michael Martin's CADD/Survey program provided the Hewlett Packard 48 Total Station, with a programmed Survey GX Card, that the students needed for this complex mapping task. The objective was to compile a complete set of generated maps that chart, categorize, classify, and visually document the entire area (Figure 3).

Our fish trap maps shows the contour of the inlet, the shoreline, and the position of all the visible fish trap stakes. Fish Trap A contains 108 visible stakes and Fish Trap B contains 332 visible stakes, running across the channel of the inlet (Figure 3).

With these maps completed, Rhonda Foster and I decided that we would have students remove a numbered fish trap stake every 5 m and replace that stake with a mapped and

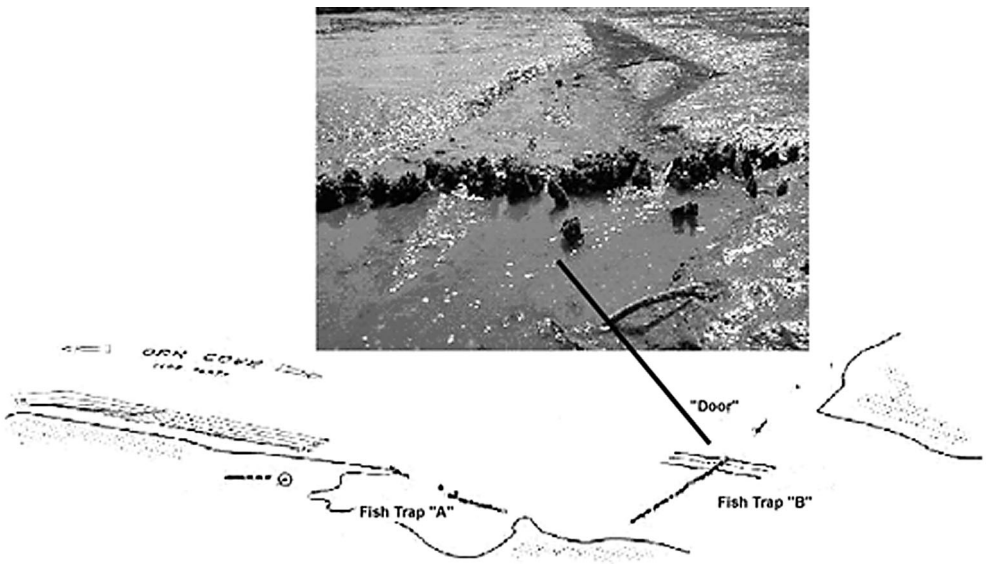

Fig. 3. Map of fish trap areas A and B, with insert of double row of stakes for inserting the plank door in the low-tide creek outlet

labeled modern stake. Each designated 5 m-interval stake was photographed (with stake map number) before excavation, then excavated, cleaned and photographed in position, then removed, measured and photographed on all sides before removal to the lab. The stakes were then conserved and are now stabilized and displayed in the new Squaxin museum. Removal of the stakes allowed us to see how they were made. Each stake is a split cedar post, approximately 10 x 10 cm in cross-section, and the bases are sharpened for placement. Some of the stake points were cut with a metal axe as seen through the sharp-angled cuts. These were thought to be possibly later replacement stakes. In the central "door" area, with double rows of stakes and split plank remnants slid between the rows (Figure 3), we found stakes that appeared to be adze cut, less sharp angled, followed by splitting off sections of wood. To determine if this wood was part of an ancient structure, we submitting an outer-ring sample from one of the adzed stakes for C14 dating which returned a calibrated date of 470 years old, and thereby removed any doubts of pre-contact constructions. Along this part of the coast, the first signs of contact with European peoples that brought metal blades, are dated to 1778 with the visit of English Captain James Cook's expedition.

With the mapping procedures completed, we have a good record of the current trap, and can now also examine individual stakes and trap construction.

Rhonda: The fish traps (A and B on mapping) were used in conjunction with one another (Figure 3). The side trap was used first, where the door would be opened to catch as many chum and/or Chinook salmon as possible. Herding schools of salmon takes talent.

Once the side trap was full, or held the amount of salmon needed, the door to the side trap would be shut. The door to the main fish trap would be open to allow the remainder of the school to be caught. Numerous choppers still remain at these traps. They are perfect to use on chum salmon, which to the Squaxin people are the strongest-spirited salmon. Determined, independent, they will not give up. Most chum gear is replaced much sooner then any other gear. Cedar posts would last much longer than a net, and would be the ideal way to catch a chum.

The Basketry

Dale: So far, three main types of basketry have been found at the Qwu?gwes site: cedar bark checker weave matting, open-twined small to large "pack" baskets of cedar splints (Figure 4) and fine twill and checker plaited ornamental basketry.

Rhonda: *Cedar bark checker and fine twill basketry:* Everyone knows cedar was the main wood and fiber used to make tools, clothing, containers, etc. for "The People". The fragmented cedar bark weave could have once been either a mat or basket bottom. Whatever was made of the cedar bark strips, the process to thin and cut these small identical pieces took skill.

Cedar splints open-weave baskets: When the Tribe realized a portion of basket was exposed, and knew a basket would be excavated the following day, invitations were sent to The People. In addition, other tribal groups were encouraged to be a part of bringing out the baskets. Tribal basket weavers were present to identify design, material, and

Fig. 4. Sumiko Yashado helping to recover pack baskets with water excavation (left). Tribal basket weavers Rhonda Foster (left), Barbara Henry (right) and Lynn Foster (below) discuss the composition of the ancient Squaxin basket

weaving technique (Figure 4). To not be allowed to participate while so- called experts were studying, and interpreting your culture is a violation to all humankind, and one of the most disrespectful belief systems, and something to shy away from. Distrust prevents positive communication, and without communication how can anyone present a comprehensive theory, interpretation, or view of any culture?

The two baskets excavated that day were made of cedar splints (from roots or boughs). The design, although not complete, is demonstrating or stating what family is represented, and these types of baskets are utilitarian, made to haul heavy items. We call them pack baskets. The handles were woven in a special way to handle heavy loads, and a strap could be used to tie to the handles if using as a burden basket (Figures 4 and 5). Most clam baskets were built to hold at least 50 pounds, and needed handles such as the ones on these baskets (Figure 5), because the basket was lifted and moved many short distances while collecting clams.

Dale: With this growing basketry data base, I conducted an initial basketry attribute presence/absence comparative analysis with other ancient basketry collections from Northwest Coast wet sites, to begin to see what degrees of similarity might be demonstrated from this new southern Puget Sound wet site. Because of the way the pack baskets are constructed, with the distinct open-twining, the looped rim, and especially the double looped opposing 2–strand cordage handles and elaborate top hitching (see Figures 4 and 5), we used these basketry attributes to compare the degree of similarity with other major Northwest Coast wet sites. Qwu?qwes clustered with two other recent (within last 1000 years) Lushootseed language area wet sites, Fishtown and Conway

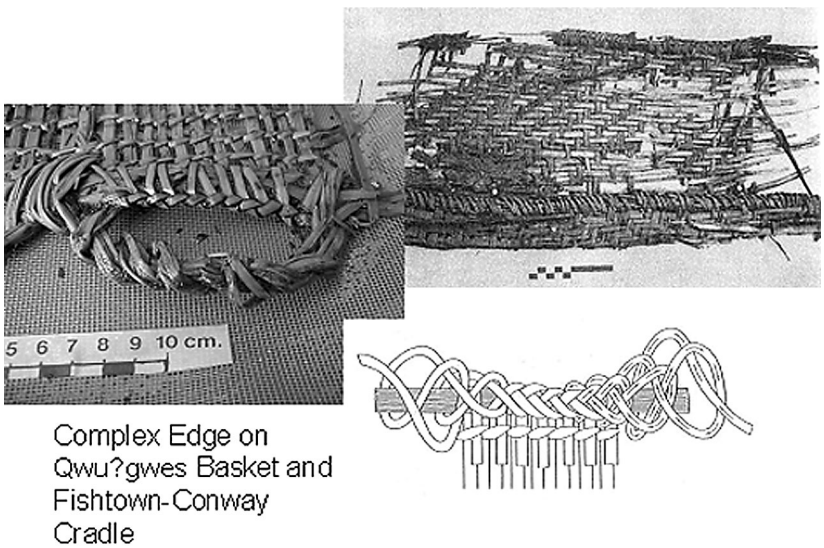

Fig. 5. Examples of looped handles on ancient Lushootseed language area baskets and elaborate hitching over selvages on the same

(Figures 6 and 7). However these Lushootseed area sites are about 150 miles north of Qwu?gwes on the Skagit River Delta (Figure 7; in contrast to Ozette, at same distance and time period). Though baskets do not speak, if they did I am sure the weavers of these Puget Sound baskets shared an ancient tradition of Coast Salish Lushootseed teachings and learning in terms of basketry traditions.

In comparison to Northwest Coast stone, bone, antler and shell artifacts, wet site basketry appears to better signal lines of ethnicity, or who the people were who carefully passed on, from generation to generation, the complex family basketry traditions. We have seen these styles change, but still statistically relate in style through thousands of years in different major linguistic regions established along the Northwest Coast (Croes 1977, 1987, 1989, 1992, 1995, 1997, 2001, 2003). This signaling of ethnicity follows a process called phylogenesis, demonstrating a style of ethnic-identity passed exclusively through a cultural group from one generation of family to the next. In our traditionally Coast Salishan region, we have documented at least 3000 years of Salishan basketry phylogenesis, different from other areas and demonstrating part of their deep-rooted heritage (Figures 6 and 7). The chart represents a cladogram (cladistic test) and unrooted tree diagram statistically comparing the degree of similarity of basketry types found at Northwest Coast wet sites (Figure 6; for more detail see Croes, Kelly & Collard 2005). The C cluster is rearranged in a phylogenetic, branching chart through time, representing ancient Coast

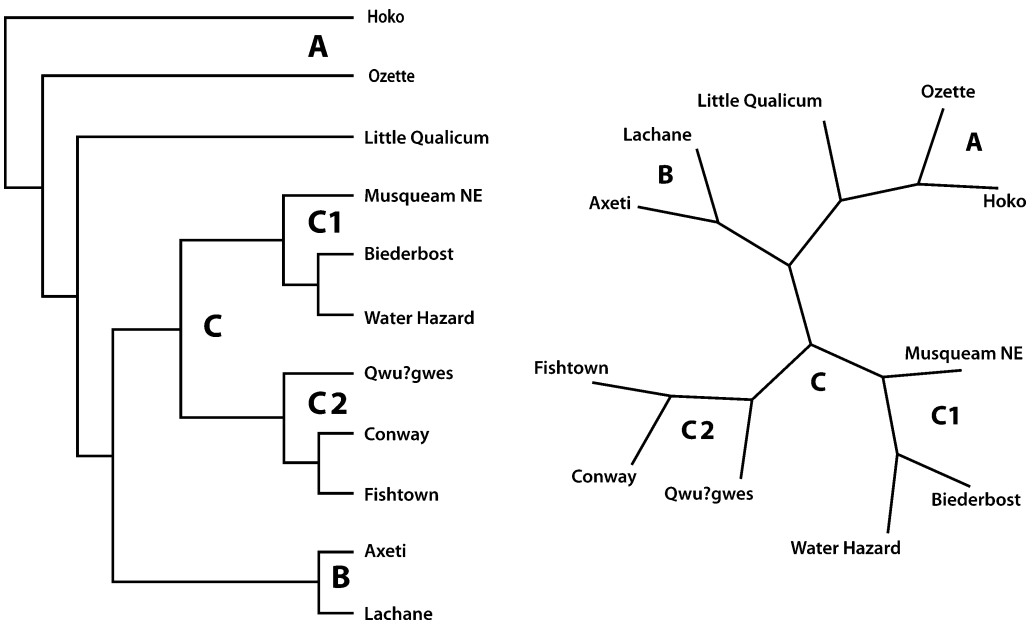

Fig. 6. Cladogram (cladistic test) and unrooted tree diagram based on PAUP software, showing the degrees of similarity in basketry types from wet sites throughout the Northwest Coast. The "C" clusters are all sites from the Coast Salish regions, dating from 500 to 3000 years ago (see temporal arrangement in Figure 8)*

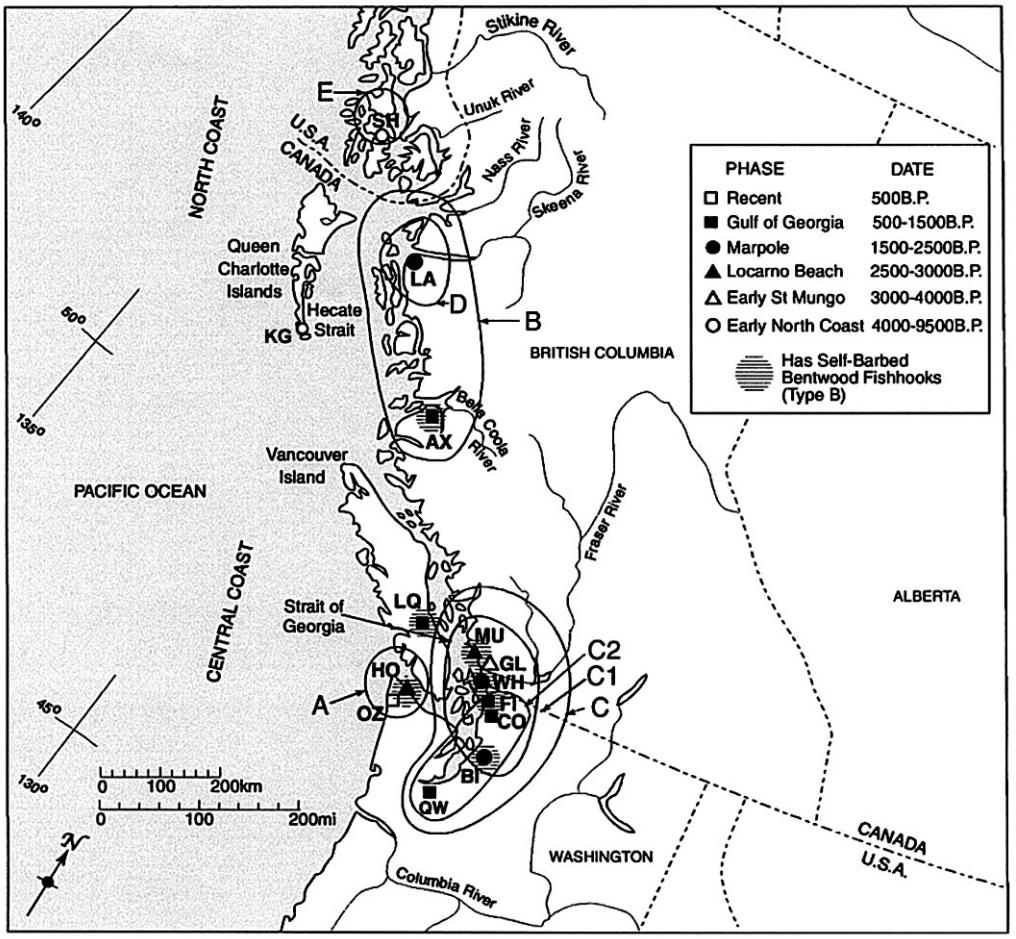

Fig. 7. Regions of phylogenetic continuity in basketry and cordage styles on the Northwest Coast. Letters assigned to circles of relationship from cladogram, Figure 6. Site abbreviations: SH: Silver Hole, KG: Kilgii Gwaay, LA: Lachane, AX: Axeti, LQ: Little Qualicum River, MU: Musqueam NE, GL: Glenrose, WH: Water Hazard, FI: Fishtown, CO: Conway, BI: Biederbost, Qw: Qwu?gwes, HO: Hoko River, OZ: Ozette. See also Fig. 8 below. (Croes 1995, 2003. Cartographer: Susan Matson; reprinted with permission of the Publisher from Emerging from the Mist *by R.G. Matson, G. Coupland and Q. Mackie. Copyright University of British Columbia Press 2003. All rights reserved by the Publisher)*

Salish Wet Sites including Qwu?gwes (Figure 8). Few of us can point to specific evidence of at least 3000 years of our cultural identity. Now, with well-preserved wet site archaeology, several major Northwest Coast ethnic groups, including the Squaxin Island Tribe, whose oral history documents this, can point to scientific proof of at least 3000 years of their identity through basketry styles, to further complement their histories.

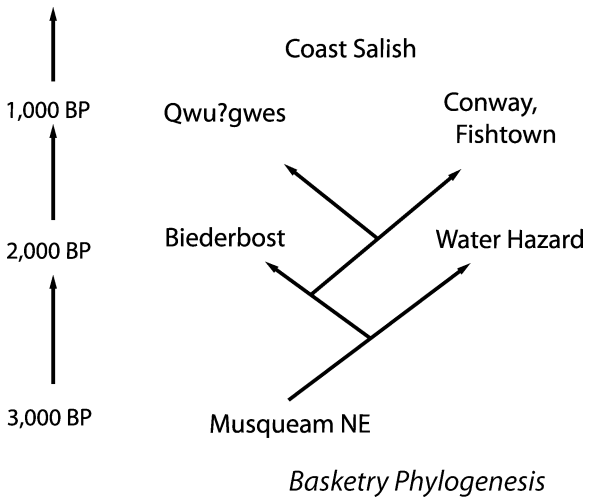

Fig. 8. Example of proposed phylogenesis tree diagram of Coast Salish basketry style and proposed ethnic inter-connections for 3000 years. See this as Area C on statistical tests, and map above (Figures 6 and 7)

Summary and Conclusions

Dale: We have provided a preliminary summary of the major categories of artifacts from the Qwu?gwes wet site, the wood and fiber items. I have considered these items from a "scientific" analysis approach and Rhonda Foster has provided the cultural knowledge passed down by multiple generations of Squaxin Island Tribal peoples. These approaches can be complementary, and provide everyone with a much better understanding of the 90–95% of the material culture that commonly survives only in waterlogged sites.

Rhonda: These wet sites are important to the tribes because they provide a much more complete link, up to 95% of the continuous chain since time immemorial. Why wouldn't any group of people want to see the majority of their own history revealed?

Dale: Wet sites are also important to archaeological analysis, since they represent the vast majority of items to be found in any Northwest Coast or other sites. It is time to recognize this together. For some time we have investigated Northwest Coast wet sites, but they have yet to be a central focus of Northwest Coast archaeology. More and more tribes have encouraged archaeologists to start moving their focus in this direction, to best understand the rich heritage of this region. Possibly it will be the tribes' interests in this kind of preservation, involving the vast majority of their material culture (90–95%), that will convince archaeologists to shift their training into locating and properly investigating wet sites in any part of the Americas where they might occur.

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