

7. IT'S TIME TO GET WET—WET SITE RESEARCH IN THE PACIFIC NORTHWEST

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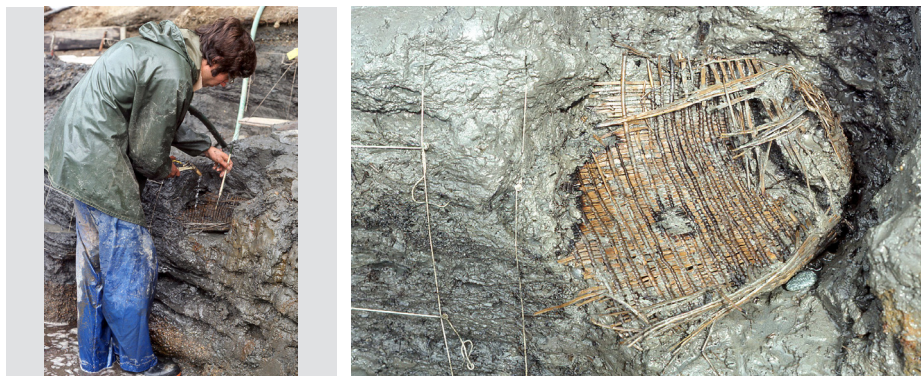


FIGURE 1. Me getting wet as tide comes in at Hoko wet site in 1977, using hose and nozzle to hydraulically recover a 3,000-year-old burnt burden basket of a distinct West Coast style—burnt damage, an example of three millennium year-old frustrated discarding.

INTRODUCING GETTING WET

Why have wet sites been recognized from the earliest archaeological surveys on the Northwest Coast (over 80 years ago) and still have not become a mainstream part of current research? Pioneering Northwest anthropologist/archaeologist Dr. Philip Drucker demonstrated in his 1938 survey efforts that “along the entire coast, sites... are both numerous and large,” and that not only objects of bone and antler, but “even... wood are well preserved even in the deepest of the perpetually damp levels” (Drucker 1943:23; Borden 1976:257). I would argue that every large shell midden site has a wet component with excellent preservation of wood and fiber artifacts, if sought.

A good example of “not seeing,” “not knowing how to look,” or (hopefully not) “avoiding” the wet component of a shell midden site comes from one of the largest explored and well-documented sites on

the coast, the Glenrose Cannery Site (DgRr6), on the Fraser River Delta, B.C., Canada (Matson 1976). A very deep and continuously occupied shell midden “dry” site, it was carefully excavated since the 1970s. Only in the 1990s, when an offshore intertidal survey was conducted in front of the site, was a wet site, 250 m long by 15 m wide (3,750 sq m), discovered, dating to approximately 4500 cal B.P., including hundreds of fish trap stacks and parts of six basketry items, and representing the oldest wet site found in Coast Salish Territory (Eldridge 1991; Croes 2019:1). One must ponder why excavators for years did not see this intertidal wet site component (especially hundreds of fish trap stakes), no doubt walking the intertidal on breaks, during low tides, etc. Probably it required someone who knew “how to look,” and I argue it’s high time for Pacific Northwest archaeologists to learn this critical skill as an integral part of their approach to any sizable site. Morley Eldridge, Glenrose wet site lead surveyor, has published an excellent guide to finding these wet sites (2019:17–37).

I had zero reason to believe that the *Qwu?gwes* wet site, Olympia, Washington, contained a wet site component until testing. Using an auger, a drive in the intertidal midden brought up a piece of twisted cedar bough; only humans twist cedar boughs into ropes (Figure 2). A follow-up 1x1 m test square exposed two-strand bark strings that soon turned into a large area of webbed gill net; our equal partner on the dig, the Squaxin Island Tribe, were delighted (Figure 3, today Tribes openly and often financially support the recovery of the other 90% of their ancient material culture from wet sites).

THE CASE FOR US GETTING WET

As mentioned, wet sites contain the other 80–90% of the artifacts made and used by early Northwest Coast peoples....

Following a number of sites excavated in the 1970s and early 1980s, it became clear that all these sites were producing up to 90% of the ancient perishable material culture (Croes 1976, 1995, 2019, 2021). Also wet sites better preserve fauna and flora remains (the critical carbohydrate/sugar side of subsistence [Croes 2022]). At *Qwu?gwes*, the dry site shell midden mostly preserved salmon vertebra, while the connected wet site discard midden produced salmon vertebra and the more fragile heads and rib components in the correct ratio—an example of better wet site



FIGURE 2. (Top left) A twisted cedar bough rope piece from an auger test at the *Qwu?gwes* wet site—first indication of a wet site component with wood and fiber cultural materials was preserved.



FIGURE 3. (Bottom left, bottom right) The first sections of bark gill net recovered from the *Qwu?gwes* wet site in 1999 testing.

taphonomy (Croes et al. 2013). Also abundant, acorn shell remains at *Qwu?gwes* and acorns remains in over 100 hemlock branch lined acorn leaching pits at the Sunken Village wet site, Portland, Oregon, began demonstrating the value of acorn nuts to ancient central coast diets (Croes et al. 2009, 2013; Croes 2022).

Besides the spectacular Ozette household wood and fiber artifacts, observe the oldest (3,000-years-old) Hoko River wood sculptured and painted art, the end-hafted quartz crystal microblades (a defining artifact in Northwest archaeology), and the un-modified pebble hafted as a toy war club from the *Qwu?gwes* wet site (Figures 4–5). Also recovered are a beautiful formline-carved cedar handle from the 2,000-year-old Lachane wet site in Prince Rupert, B.C. (Inglis 1976:178), and the serpent sculpture on the yew wood atlatl dating to 1,700 years ago from the lower Skagit River, Washington (Fladmark et al. 1987). A unique aspect of wet site work is the frequent surprise discoveries. A founding figure in modern Northwest archaeology, Roy Carlson, pointed out early: “The fact that wet sites offer as many if not more ‘fossilized’ behavior patterns than the usual kind of



FIGURE 4. Hoko River wet site (45CA213): (left) oldest sculptured, and painted, wooden mat creaser dating from 3000 cal B.P. Both sides have a female (left) and male (right) belted kingfisher peak-to-peak forming the handle; (right) end hafted quartz crystal microblade on a cedar stick handle and bound with cherry bark.



FIGURE 5. Illustrated four sides and photograph of the tiny toy war club from the *Qwu?gwe*s wet site (45TN240; cm scale); the handle is split cedar wood, the wrapping is a cherry bark strip, and the head is a green sedimentary pebble (Illustration by Candra Zhang).

sites is quite true. They provide us with that many more artifact types, culture traits, and culture complexes to compare and trace through both time and spaces” (1976:264).

WET SITES OCCUR FROM THE EARLIEST OCCUPATIONS OF THE NORTHWEST COAST

A Paleoindian wet site dating to 10,700 cal B.P., the Kilgii Gwaay wet site (1325T) on southern Haida Gwaii, B.C., Canada, produced wooden wedges (showing the long-term success of this major woodworking technology), wrapped sticks, and a string spruce root and grass braid (Figure 6) (Fedje et al. 2005:187–203). This wet site demonstrates that these kinds of preserved sites should be found for as long as people have occupied the unglaciated coastal margin.



FIGURE 6. (Top left) Wooden wedge recovered in 2012 excavations at Kilgii Gwaay wet site; (top right) Daryl Fedje, Project Director, holding 10,700-year-old braid string fragment (bottom) made of spruce root and grass. Photographs courtesy of Daryl Fedje and Al Mackie.

Elsewhere wet sites have proven to be much earlier, even before anatomically modern humans, such as the 350,000 cal B.P. wooden spears/javelins found with butchered horses in a pond deposit, Schonigen, Germany, no doubt crafted and used by *Homo heidelbergensis* (Thieme 1997:807–810).

WHY WET SITES ARE DOABLE

I too often hear that wet sites are avoided because of the expense and unique equipment involved. If I can do 11 summer field seasons of wet, and dry, site excavations, operating out of a community college, at *Qwu?gweš*, then **any** university-based, or large cultural resource management (CRM), program can certainly investigate these kinds of sites. Yes, it requires different equipment, especially hydraulic excavation (pumps, hoses, fine adjust nozzles—easily obtained locally), but, in fact, such equipment is often used for wet screening at non-wet sites anyway. For conservation, it can involve purchasing polyethylene glycol (PEG, a very safe chemical) and plastic tubs to hold a 50/50 mixture of water and PEG. Of course, this is the basics of the approach, but like any archaeological work, the specific logistics can be worked out (e.g., Bernick 2019:39–58).

AND THEN THERE’S BASKETRY AND CORDAGE...

Recovered basketry and cordage artifacts (often numbering hundreds if not thousands from wet sites) are often emblematic of cultural evolution.

Through four decades of basketry and cordage research, I have tested style similarities in specific regions of the Northwest Coast. In recent work with Salishan Master Basketmaker Ed Carriere, Suquamish Elder, we have coined our approach as *Generationally-Linked Archaeology* (Carriere and Croes 2018:216–218; Croes, Carriere, and Stapp 2018). Fortunately Ed was raised from infancy by his Great-Grandmother Julia Jacobs, who grew up in Old Man House, a cedar plank longhouse, until she was a teenager. Also importantly Ed, as a teenager, learned from her how to make the old-style clam baskets from split cedar limbs and roots, emphasized in all ancient Salish Sea basketry from 4,500-year-old Glenrose Cannery wet site on to Julia’s training.

Working from as far back as possible (deep time), I have tested degrees of similarity of basketry and cordage attributes (modes) and types from all

available wet sites (for examples, Figure 7A–7E and associated map, Figure 8). The different statistical tests and accompanying map shows regional evolution and relatively stable cultural styles, especially in Ed Carrier’s (Salishan) region and those from the outside (Wakashan) West Coast sites for 3,000 years (Croes 2019, 2021) (Figure 9, Figure 10). Also, up north, 2,000-year-old Lachane wet site styles linked well with historic Tsimshian museum styles and the single 6,000-year-old Silver Hole basket linked best with historic Tlingit museum styles (Croes 1989, 2001) (Figure 7E, Figure 9).

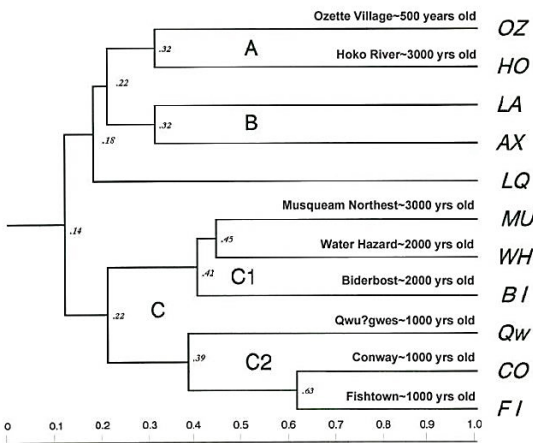
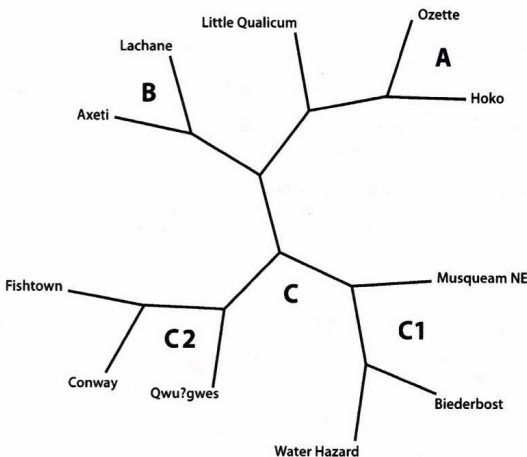


FIGURE 7.

7A. (Top) Average linkage cluster analysis dendrogram (after 40 years of data collection) representing links in Northwest Coast wet site basketry attributes (modes) (Croes 2019:144).

7B. (Bottom) A Cladistic unrooted cladogram representing tests derived from Northwest Coast basketry types (Croes et al. 2005:146–147).



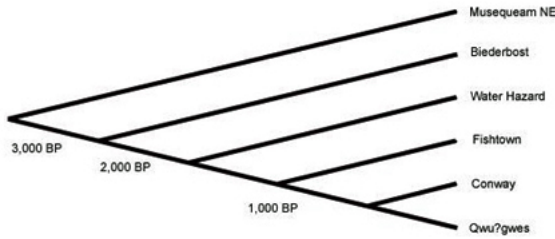
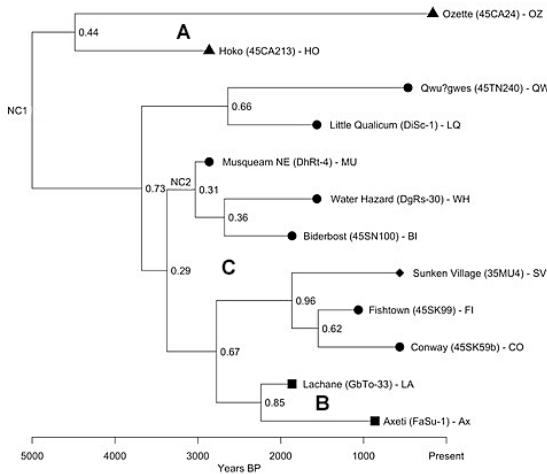


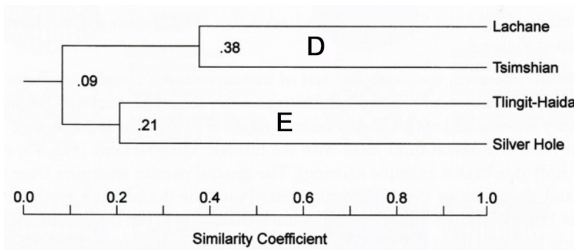
FIGURE 7. (cont.)

7C. (Top) A Cladistic test produces a slanted cladogram from only inner Salish Sea wet sites (Cluster C of the unrooted cladogram [7B]), and arranges in distinct temporal ordering, even though site dates are not considered as part of the testing (see Figure 8, below; Carriere and Croes 2018:1333–136; Croes 2019:192).



7D. (Middle) Bayesian phylogenetic test time-calibrated maximum clade credibility tree based on 66 cordage subtypes from 12 wet sites—incorporating chronological data (Croes 2021:86–87).

7E. (Bottom) Average linkage cluster analysis of North Coast basketry attributes (modes) from (1) Lachane wet site, (2) historic Tsimshian museum collections, (3) historic Tlingit-Haida museum collections, and (4) the Silver Hole wet site basket (Croes 1989, 2001, 2019:395).



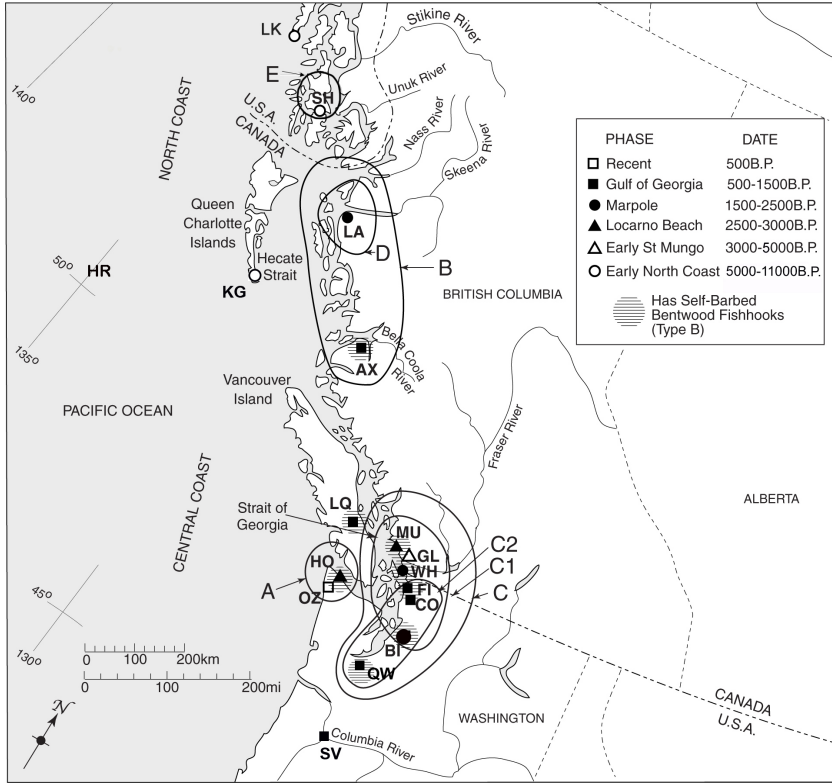


FIGURE 8. Northwest Coast wet sites distributions showing major areas of basketry and cordage style continuity. Site key: LK=Lanaak (49XPA78), SH=Silver Hole (49CCRG433), LA=Lachane (GbTo-33), KG=Kilgii Gwaay (1325T), AX=Axeti (FaSu-1), LQ=Little Qualicum (DiSc-1), MU=Musqueam NE (DhRt-4), GL=Glenrose Cannery (Dg Rr-6), WH=Water Hazard (DgRs-30), FI=Fishtown (45SK99), CO=Conway (45SK59b), BI=Biderbost (45SN100), QW=*Qwu?gwes* (45TN240), SV=Sunken Village (35MU4), HO=Hoko (45CA213), and OZ=Ozette (45CA24). Map adapted from original by Susan Matson.

MAKING THE TRANSITION INTO WET SITE EXPLORATION AND NEEDED FACILITIES

My institutions of work have been happy to support the acquisition of needed pumps, hoses (fire and garden), and fine adjust nozzles for exploring wet sites (whether Ozette, Hoko River, *Qwu?gwes*, or Sunken Village). For general survey work, a battery-operated garden hose pump from a boat was really useful for cleaning and exploring riverbank blue-gleyed clay banks.

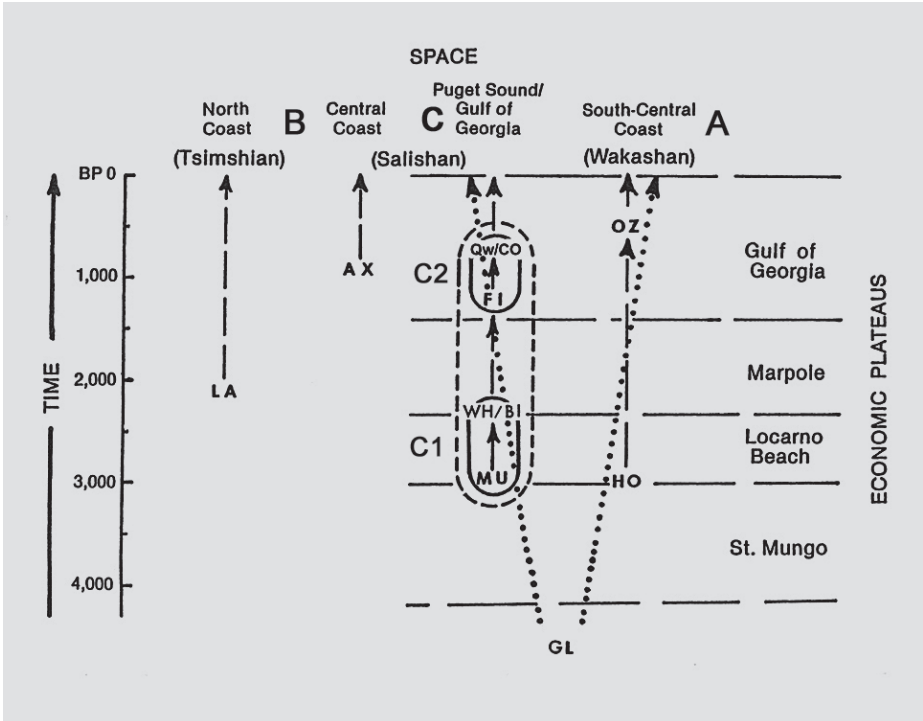


FIGURE 9. Following four decades of testing, this chart represents stylistic/ethnic continuity patterns, based on basketry and cordage statistical analyses and tests (Figure 7), through time and space (Croes 2015, 2019, 2021). Economic Plateaus on right are the designated archaeological phases that south-central coast areas passed through together based on comparisons of their stone, bone-antler, shell (SB-AS) artifacts; these SB-AS artifacts mostly reflect subsistence and manufacturing activities (Croes 2015). Main regions of basketry and cordage style continuity (labelled A–C, and subgroups C1 and C2) can be seen in Figure 7 tests and map with site designations in caption (Figure 8).

In terms of providing wet site lab space, my wet site works with South Puget Sound Community College (SPSCC) at *Qwu?gwes* and Sunken Village gave them incentive to provide needed facilities, as required for permits. They identified a low-use men's locker room on campus and easily converted the shower area into opposing stainless steel sinks with overhead sprayers, and the lockers were removed and lab tables and storage shelves installed for instruction. Grants from the college allowed the purchase of polyethylene glycol preservative and sealing plastic tubs for conservation of wood and fiber

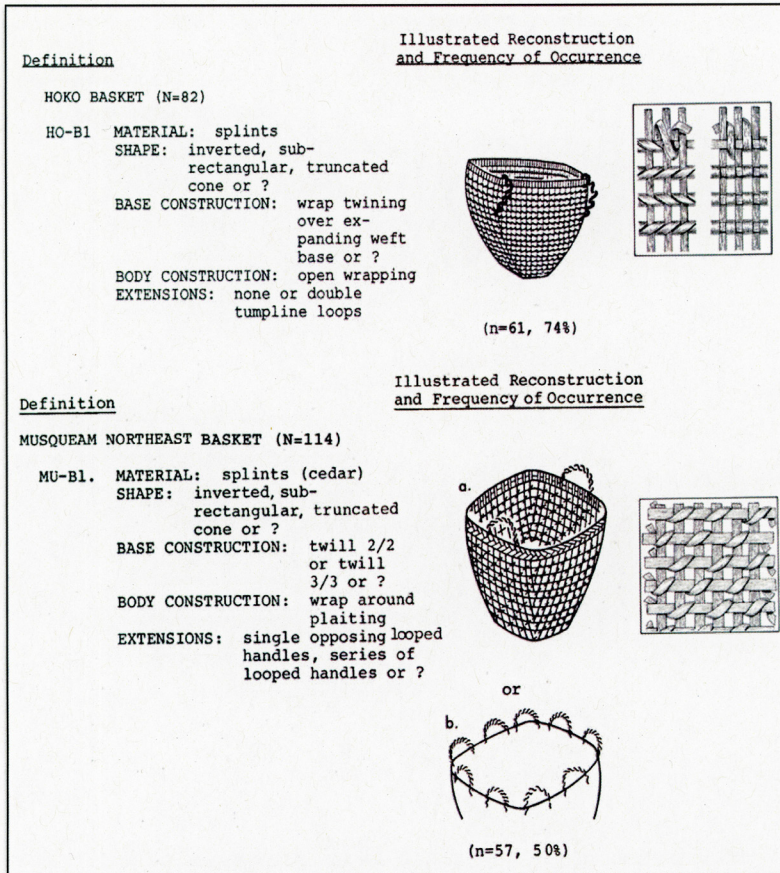


FIGURE 10. Definitions of the common pack basket types from the contemporary 3,000-year-old Hoko River and Musqueam Northeast wet sites (Croes 1995, 2015, 2019). Though functionally equivalent pack baskets, note the considerable stylistic difference—likely carrying emblematic identity symbolism.

artifacts. Later, a new building was planned, and the SPSCC administration had me design how my classroom/lab would be constructed. Rows of sinks on one side of the classroom were installed, and a back room was fitted with a large stainless steel flotation sink, a refrigerator/freezer, and ample shelving for artifacts and space for excavation equipment.

The eventual curation facilities of recovered archaeological items, whether fauna/flora, wood, fiber, bone, shell and stone artifacts, etc., usually needs to be demonstrated for a permit. For *Qwu?gwes*, the equal-

partner on the project, the Squaxin Island Tribe, had a state-of-the-art curation facility at their new museum, and the agreement always was to keep heritage items in their Tribe. For Sunken Village, a National Historic Landmark Site, the National Park Service assumed responsibility for the proper curation, and a conservator was brought in, and she properly labeled and packed the preserved/processed artifacts for movement to the Museum of Anthropology at the University of Oregon in compliance with our permits from the Oregon State Historic Preservation Office.

SUMMARY AND CONCLUSION

Pacific Northwest Coast wet sites are both common and not that difficult to investigate and have abundant new kinds of data to add to our understanding of the archaeology of this dynamic coastal region. Wet site work remains “new current research” since it is not a mainstream approach yet. We need to encourage new and future Pacific Northwest archaeologists to get wet—or much wetter—for the great benefit of ongoing Pacific Northwest archaeological research.

A summary of water-mark points for getting wet:

- We need to start becoming familiar with “how to look”—read Morley Eldridge’s guide to finding wet sites (2019:17–37).
- The other 90+% of ancient Northwest Coast material culture can be recovered, including
 - Complete composite tools with wood and/or fiber components;
 - Superior faunal preservation, as well as critical flora food remains;
 - Painted and sculptured art and status symbols;
 - Analytically sensitive basketry and cordage artifacts;
 - Complete subsistence, manufacturing, and storage technologies.
- This kind of archaeology is not expensive, with equipment and conservation techniques easily available.
- Museums and repositories typically and enthusiastically accept wet site artifacts, often providing popular display materials.
- Northwest Native peoples, as well as the overall public, appreciate and support the comprehensive/all-embracing recovery of the ancient past from wet sites.

Therefore, wet sites have abundant new kinds of data to add to our understanding of the ancient history of our dynamic region. We need to encourage current, new, and future Pacific Northwest archaeologists to get wet—or much wetter—for the greatly expanded benefit of Pacific Northwest archaeological research.

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