

ANCIENT LIFE AND DEATH · ARCHAEOLOGY FROM THE SKIES · WHERE THE BISON ROAMED

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A photograph of two women working at an archaeological site. They are kneeling on wooden planks on a rocky shore next to a calm lake. The woman on the left is wearing a brown shirt and green pants, and is focused on examining a small object on the ground. The woman on the right is wearing a black t-shirt and a black skirt, and is writing in a notebook. Various archaeological tools and equipment are scattered around them. The background shows a dense forest of evergreen trees reflected in the water.

Working at the **Mud Bay
Wet Site**

Waterlogged Wonders



A large open-twined basket is carefully cleaned with paintbrushes and a fine spray from garden hoses before it's removed from the ground.

Much of the ancient material culture of the Pacific Northwest was made of perishable substances. Exceptional preservation at the Mud Bay wet site has allowed archaeologists to recover fragile ancient artifacts.

By Douglas Gantenbein

Perhaps 600 years ago, a young ancestor of the Squaxin Island Tribe in what is now Washington State lost a treasured possession: a tiny war club, less than two inches long, crafted from a small cedar stick and a pebble, held together with strips of cherry bark.

That child's loss was archaeology's gain. Due to an accident of geology, the soft wood and bark of the club survived hundreds of years buried in the shore-line mud of Puget Sound, the glacier-carved, multi-fingered body of saltwater that juts south into Washington from the Strait of Juan de Fuca. It was uncovered last August during an excavation along the shores of one of Puget Sound's many inlets, a place where the Squaxin (pronounced SKWOK-sin) gathered food for centuries.

"This little kid contributed a lot to archaeology," says Dale Croes, an archaeologist at South Puget Sound Community College (SPSCC), who for nine years has co-managed an investigation with the Squaxin. "He probably was pretty distressed by (losing the club) at the time. But it's a pretty spectacular find."

The war club is one of hundreds of artifacts unearthed at the site known as Mud Bay but referred to as Qwu?gwes by the Squaxin, a tribe of several hundred that has lived in the Puget Sound area for many centuries. Along the shores of Mud Bay in Eld Inlet, one of seven inlets the tribe traditionally utilized, members of a particular family whose longhouse was located nearby regularly camped to catch shellfish and salmon, and hunt game as long as 700 years ago.

About three feet below the surface is a layer of blue-green clay that once was the floor of ancient Lake Russell, which was formed some 16,000 years ago when glaciers blocked water from draining out through Puget Sound. Around 1,000 years ago, a massive earthquake caused the lakebed and much of the surrounding area to drop by some nine feet, drowning surrounding forests but also creating new tidal estuaries that proved to be ideal habitat for shellfish and salmon. Not long after the earthquake, members of what are now referred to as the Southern Lushootseed language group, descendants of maritime clans that had long inhabited the area and ancestors of the Squaxin, began to harvest shellfish and salmon there.

Normally, the primary evidence of such a site would be durable artifacts made from stone, bone, and shell. But in addition to these types of items, Mud Bay is also yielding artifacts made of perishable materials such as the war club. The researchers have also found ropes, various kinds of baskets, and gillnets made of cedar bark and root. (The inner layer of cedar bark was peeled and shredded into long fibers that were woven to make everything from baskets to clothing.) "Ninety percent of the material culture on the Northwest coast was





The crew works at the wet portion of the site while the tide is out. It is estimated that only two percent of the site has been excavated.

in wood and fiber,” says Croes. “So when we start to see that 90 percent, it really adds to our understanding” of the site.

The Mud Bay site is located on a picturesque tidal inlet just south of Olympia, the state capital. Ralph Munro, who once served as Washington’s secretary of state, owns the property. The Munros used the site as a swimming beach. Over the years, as the beach eroded due to storms, tides,

and the shifting course of a freshwater spring that flows out through the bay, the Munros noticed a thick layer of shells just below the surface. The thousands of broken rocks that littered the ground at low tides were also unusual. So in 1989 they contacted Croes, whom they knew from working together on a state centennial project that year.

“They showed me a shell dump, but I knew that was modern material—Pacific oysters that were being excavated,” says Croes, an amiable 59-year-old. “But when I looked at where the bank was eroding, I could tell this was an ancient site from the midden and all the fire-cracked rock.”

For several years the site was left undisturbed. Then in 1998, Croes had a new student in one of his classes—Rhonda Foster, a member of the Squaxin Island Tribe who was the director of the tribe’s Cultural Resources Department. Foster realized that many of the archaeological sites within her traditional lands were not surveyed nor recorded with the State of Washington. After inspecting the Mud Bay site, SPSCC and the tribe agreed to assemble a field school for one season to record this site and teach students how to conduct a survey. A piece of cedar rope was found during the survey, prompting a test excavation that uncovered a piece of cedar bark gillnet.

In 2000 SPSCC and the Squaxin Island Tribe signed an agreement to excavate the site, with Croes and Foster codirecting the project. Both parties saw an opportunity to marry the college’s archaeological expertise to the tribe’s cultural



Squaxin Island Tribal archaeologist Larry Ross examines a section of the shell midden.

knowledge. The Squaxin wanted to learn archaeological skills to help them preserve their ancestors' artifacts. They also wanted "to correct the inaccurate histories written by non-tribal representatives," Foster later wrote in a paper about the project. "Archaeologists have often exploited the tribes," she says. "Here we're helping students learn how to work with tribes, and teaching tribal members how to work with archaeologists."

The site has three components—a deep shell midden that extends for about 300 feet along the beach; an area several yards inland where stone ovens, charcoal, and fire-shattered rock indicate shellfish, salmon, and other foods were cooked; and an area in the northernmost and highest portion of the site, where testing has uncovered house post-molds, family-size hearth areas, and house floors. The shell midden component is called a "wet site" because the cultural material is waterlogged. Most work to date has taken place in the midden and the cook areas.

The cultural material in the wet site, including wood and cord items, is remarkably well preserved. The researchers have uncovered waterlogged materials—the tidal action and the freshwater spring that flows there keep them wet—about 20 inches below the surface in an oxygen-free environment. This environment is also free of the bacteria and fungus, which require oxygen, that cause organic materials to decay.

When excavating a wet site, shovels and trowels are



Dale Croes (left) talks with Mike Davis, the state elder of the Shaker Indian Church, who said a prayer over the basket before removal. The church was started by tribal members.

exchanged for a garden hose and tongue depressors. The spray from the hose—a fine mist is used when uncovering delicate items—removes the sand and natural debris such as pieces of wood and fiber, what Croes calls "vegetal mats." The tongue depressors, which have pointed ends, are used to dislodge the debris that the hose can't. The sand and vegetal mats are then gathered in a dustpan and run through fine screens that capture small artifacts.

Croes estimates only about two percent of the site has been excavated because he and Foster are focusing on



Dale Croes and several members of the tribe carefully lift the huge basketry piece onto a plywood platform so that it can be transported to a laboratory.

LARRY GILL

Sharing the Past

Archaeologists are trained to believe that “we own the past,” says Dale Croes. When working on his first dig in 1968, he was surprised that a visiting Native American felt a connection to the items that were being uncovered.

But the times, and Croes, have changed. He now codirects an archaeological project in which his institution, South Puget Sound Community College (SPSCC), works in full partnership with the Squaxin Island Tribe’s Cultural Resources Department. Though partnerships between archaeologists and tribes aren’t that unusual, Croes says that most of them are informal. The SPSCC’s agreement with the Squaxin is far “more than a handshake.” In fact, Croes considers it a model for archaeology in the future.

Their agreement calls for training tribal members in archaeological techniques, sharing expertise and knowledge between the tribe and archaeologists, and displaying the recovered artifacts with both a scientific and cultural interpretation in the Squaxins’ museum. “The agreement brings together the science of archaeology and the cultural component of the tribe,” says archaeologist Larry Ross, the Squaxin’s cultural resource specialist. That cultural knowledge can inform archaeologists in their interpretations of the evidence they uncover.

Ross also believes the SPSCC-Squaxin agreement will be emulated by others due to changes in federal laws that expand the jurisdictions of Tribal Historic Preservation Officers (THPOs). In addition to having exclusive jurisdiction on their reservations, THPOs share jurisdiction with State Historic Preservation Officers on their traditional territories, which are the lands on which they have historically hunted and gathered, fished, traded, conducted ceremonies, and buried their dead. Ross estimates that the Squaxin’s traditional territories cover about 2 1/2 million acres in western Washington. Having jurisdiction means the THPO has to be consulted during any activity involving the federal government, such as a construction project, that could affect historic properties on these territories and therefore require archaeological work.

The THPO program requires that tribes be trained in archaeology as part of a comprehensive cultural resource management strategy that protects and preserves archaeological sites, burials and cemeteries, customs, beliefs, and traditional practices. The agreement provides a framework for this training to take place.

The SPSCC-Squaxin agreement also clearly defines the commitment each party is making to the other, and it’s revised as necessary and renewed every two years. Since hiring Ross, for example, the tribe isn’t as reliant on SPSCC’s archaeological expertise as it once was. “The agreement has shifted more and more toward working together on the courses” SPSCC offers,” says Ross. If the college is offering a course on Native American history in the Pacific Northwest, for example, the tribe gives input as to what will be taught. If an SPSCC student hopes to publish a paper about Mud Bay research in an academic journal, the tribe reviews the paper prior to submission. “We actually do edit,” Ross says.



Recovered artifacts are displayed with both a scientific and cultural interpretation in the Squaxins’ Museum Library and Research Center.



LARRY GILL

A traditional Squaxin Welcome Pole was given to the property owners by the tribe as an expression of appreciation. Beneath the head are two extended hands, a gesture meaning “come into my heart; you are welcome.” The pole also looks over the site to protect it. It is crowned by a raven, the crest of a Squaxin family that lives near the site. The seven red and black paddles at the base represent the seven inlets of the tribe’s traditional territory.

Sometimes there are differences between native and European cultural perspectives, Ross acknowledges, but those differences haven’t been problematic. “There’s certain knowledge that’s always guarded” by the tribe, Croes says. When a large basket fragment was removed from the shell midden and taken to the tribal weavers last summer, non-Squaxin crew members, Croes included, were excused so that the weavers could analyze the fragment in private.

Many archaeologists, according to Ross, consider themselves to be experts about a particular tribe despite lacking “a personal relationship with anyone in the tribe.” He says students have come from all over the country to work at Mud Bay in order to experience that relationship. Ross, who isn’t Native American, was once one of those students.

“It’s never an easy thing,” Croes says. “Like any relationship, it has its ups and downs. But it works most of the time.” —Michael Bawaya

DALE CROES



These artifacts were all recovered from the wet site. (Top) A green ground slate knife. (Middle) A two-strand rope fashioned from cedar. (Above) The toy war club in situ. (Right) A projectile point made of red jasper.

education rather than excavation. Excavating a site with dry and wet components offers a broader educational experience for the field school students. Working with the Squaxin also gives Croes and the SPSCC students insights into the lifestyles of the site's former inhabitants that they would otherwise lack. "That combination has really created benefits for the students we've had here," says Croes.

For example, one of the first significant finds was a 21-square-foot fragment of a fiber net. The tribe recognized it as a gillnet woven from western red cedar bark and designed to catch small types of salmon such as coho and steelhead. Only two other similar nets have been found in the Pacific Northwest. Hundreds of salmon jaws were still lodged in the net, an extraordinary occurrence given that nets were always cleaned after a catch. The tribe concludes this resulted from an accident, one possible scenario being that this portion of the net snagged and was cut loose.

An excavator scrutinizes a strand of cherry bark used to bind objects.



LARRY GILL

Student Heather Haigh records the layers of the ancient shell midden by carefully drawing them. The bottom layer is 700 years old.

“It’s huge,” Croes says, assessing the value of the Squaxin’s cultural knowledge. “They told us that the decorations (on a basket uncovered last summer) could have indicated who the family was that owned the basket,” he says. “How would we know that if we weren’t sharing information?”

Three types of cedar basketry have been recovered from the wet site: checker-weave matting used for making mats and bags for carrying goods or tools; fine twill used primarily for ornamentation; and open-weave baskets that were used to carry heavy loads of clams and other items. They have also found scores of bone and stone projectile points and tools, jadeite adz bits, the remains of two fish traps, basket-making debris, and thousands of wood chips. “A lot” of woodworking took place there, Croes says. The people fashioned planks for houses, poles for fish traps, and paddles for canoes.

Croes, with the help of other researchers such as Mark Collard of Simon Fraser University in British Columbia, Canada, employs cladistics to place Mud Bay’s artifact assemblage in a cultural and historical context with other sites in the region. Cladistics is a method of analyzing the evolutionary relationships between groups that is commonly used in biology. In this case, Croes and his colleagues are trying to trace the constancies and changes in cultural knowledge

over time that informed the production of these artifacts.

Mud Bay’s stone, bone, and wooden tools and projectile points resemble those found at other sites as far away as British Columbia. But the basketry does not. The items found at Mud Bay have distinctive weave and decorative patterns, as does the basketry produced by other tribes. This indicates that the knowledge used to make some of these items was widely shared. “Things like a good fish hook or a good net went lightning quick between people,” says Croes. “But some things aren’t transmitted because they represent who you are, an identity,” he adds, referring to ethnographic evidence that tribal identity was expressed in basketry styles.

The large shell midden speaks of massive shellfish gathering. More than 210,000 intact shells representing five major shellfish species have been collected—Olympia oysters, butter clams, bay mussels, littleneck clams, and horse clams. The midden’s bottom layer is 700 years old and people continued to dump empty shells there until the 1800s. It’s assumed that the recovered baskets and nets are of a similar age since they were found near the bottom of the midden.

The researchers believe the site was a huge processing site where a large family likely gathered to catch seafood, much of which was dried to preserve it for those times when

the salmon weren't running or storms and tides prevented shellfish harvesting. Preserved shellfish were also valuable trade items. Squaxin oral traditions recount that members of the Yakama tribe, who lived 150 miles to the east beyond the Cascade Mountains, and members of tribes to the south, visited Mud Bay to trade for dried clams.

Croes surmises that Olympia oysters were cooked and eaten on the spot because, due to their high fat content, they didn't dry well. "That must have been pretty pleasant," he says. Shellfish were cooked by placing them in baskets made from coiled cedar bark that were so tightly woven that they held water. Rocks heated as high as 600 degrees Fahrenheit were placed in the baskets, and the contents quickly steamed or boiled. (The researchers' conclusions about the temperature are based on subjecting rocks to 600-degree heat and discerning fire-crack patterns that match those of rocks found at the site.)

Evidence shows that the Mud Bay occupants didn't take their bounty for granted. Butter clam shells found at the site have growth rings that show the vast majority of them were seven to 10 years old. Butter clams can live to be 15 years old, and are edible when much younger. So it seems the clams were harvested on a regular cycle, with an eye toward ensuring their survival.

The occupation of Mud Bay continued into the 19th century. In 1854 the Squaxin's ancestors signed the Medicine Creek Treaty with the federal government that resulted in their displacement to Squaxin Island, north of Mud Bay,

where the government tried to convert them to farming. They were moved to make way for settlers.

In the years that followed, loggers stripped the hills around Eld Inlet, causing sediment to wash into the narrow inlet, hence the site's name. Mud Bay has become something of a wasteland due to sediment run-off, pollution, over-fishing, and other ills that have had an impact on much of the area. Fish and shellfish populations are diminishing. It seems a far cry from the place that offered the incredible bounty evident in the midden at Mud Bay.

"I'm guessing that our people didn't have to work too hard when it came to gathering natural resources because the clams, fish, cedar, and other resources were so plentiful," Margaret Henry, a cultural resources technician with the tribe, speculates about her ancestors.

Regardless of the environmental depredations, the site is no less significant to the tribe. "It's very powerful to be out here and realize that our ancestors made these things," she continues. "I pray every day before I come down here, and I never know what I'm going to find. It's very exciting."

DOUGLAS GANTENBEIN is the Seattle correspondent for the Economist. His article "The History and Beauty of the Pacific Northwest" appeared in the Summer 2007 issue of American Archaeology.

For more information about the Mud Bay/Qwu?gwes excavations, visit the web site www.library.spscc.ctc.edu/crm/crm.htm and click on the link "Qwu?gwes Articles."



LARRY GILL

The day's work has concluded as the tide floods the wet site. Two members of the crew watch as the water advances.