A Field Report from the Sunken Village Wet Site (35MU4)

By Dale R. Croes, Michael Martin, John L. Fagan, Maureen Zehendner, Michele Punke, Kathleen Hawes and Olivia Ness

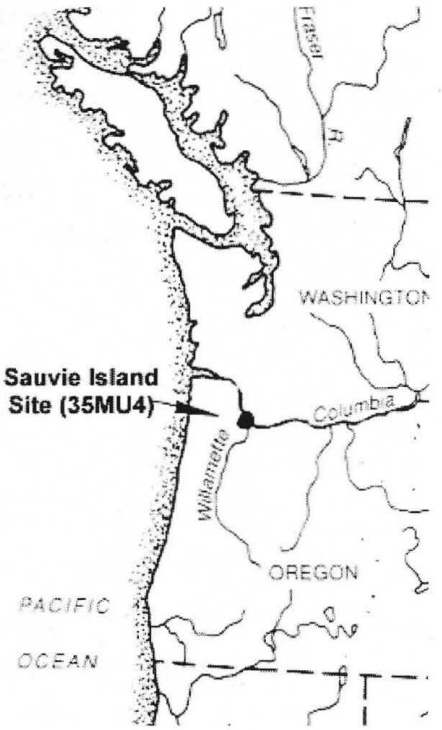

Figure 1. Location of the Sunken Village wet site (35MU4) at confluence of the Willamette and Columbia Rivers.

Forward

For the past several years the Confederated Tribes of the Grand Ronde Community of Oregon have partnered with the Confederated Tribes of Siletz Indians, and the Confederated Tribes of the Warm Springs to assist Dr. Dale Croes of South Puget Sound Community College (SPSCC) in providing stewardship and management over a unique site named the Sunken Village Site. This site is unique not just due to its preservation and content but also in that it has been an opportunity for International (Japanese sponsorship in this case), federal, state, and local agencies to work with Tribes in the preservation of a area that is geologically distinct and vitally important to the maintenance of the culture of the three Tribes involved. This world-wide partnership will not only allow us to better understand but also better protect one of the best wet sites on the Columbia River.

Eirik Thorsgard MAIS is Cultural Protection Coordinator for the Confederated Tribes of the Grand Ronde Community of Oregon

Figure 2. Japanese Team and Sponsors of 2007 Field Investigations of the Sunken Village wet site (35MU4). Bottom, left to right, Dr. Toru Miyao , Team Leader Dr. Akira Matsui, Dr. Tomonori Kanno; Top, left to right, Dr. Atsushi Iwasaki, Project Coordinator Dr. Dale Croes, and Dr. Naoto Yamamoto (Photo by Gina Bramlett / The South County Spotlight).

Summary of Fieldwork

During low waters of September a wet site team, sponsored by an international grant from Japan, returned to further record the National Heritage Landmark wet site of Sunken Village (35MU4), Sauvie Island, Portland, Oregon (Figure 1). The one week project (September 16 through 22, 2007) was designed to accurately map the surface features (especially over a hundred *in situ* acorn leaching pits and wooden stakes) and surface artifacts (especially lithic debitage and faunal remains) as revealed in the limited evaluation of 1060 linear feet (320 metres) of beach before the riprap repair was permitted by the U.S. Corps of Engineers in October of 2006 (Croes, Fagan and Zehendner 2007; a PDF copy of this 2006 field work is available on the web — see *References* below). The project continues to be co-managed through the direct in-put by Cultural Resources Protection Specialists Eirik Thorsgard, Confederated Tribes of the Grand Ronde, and Robert Kentta, Confederated Tribes of Siletz Indians and in consultation with the Confederated Tribes of Warms Springs.

A joint team provided the expertise needed to carefully map and record the Sunken Village National Historic Landmark site, consisting of (a) the SPSCC Wet Site Archaeological Investigations and Laboratory team, lead by Dr. Dale Croes, and the SPSCC Computer Aided Drafting Department, lead by Professor Michael Martin, (b) the AINW geoarchaeological and laboratory team, lead by Dr. Michele Punke and Maureen Zehendner, and (c) the internationally known Wetland Archaeological Team from the National Institute for Cultural Heritage, Nara, Japan, lead by

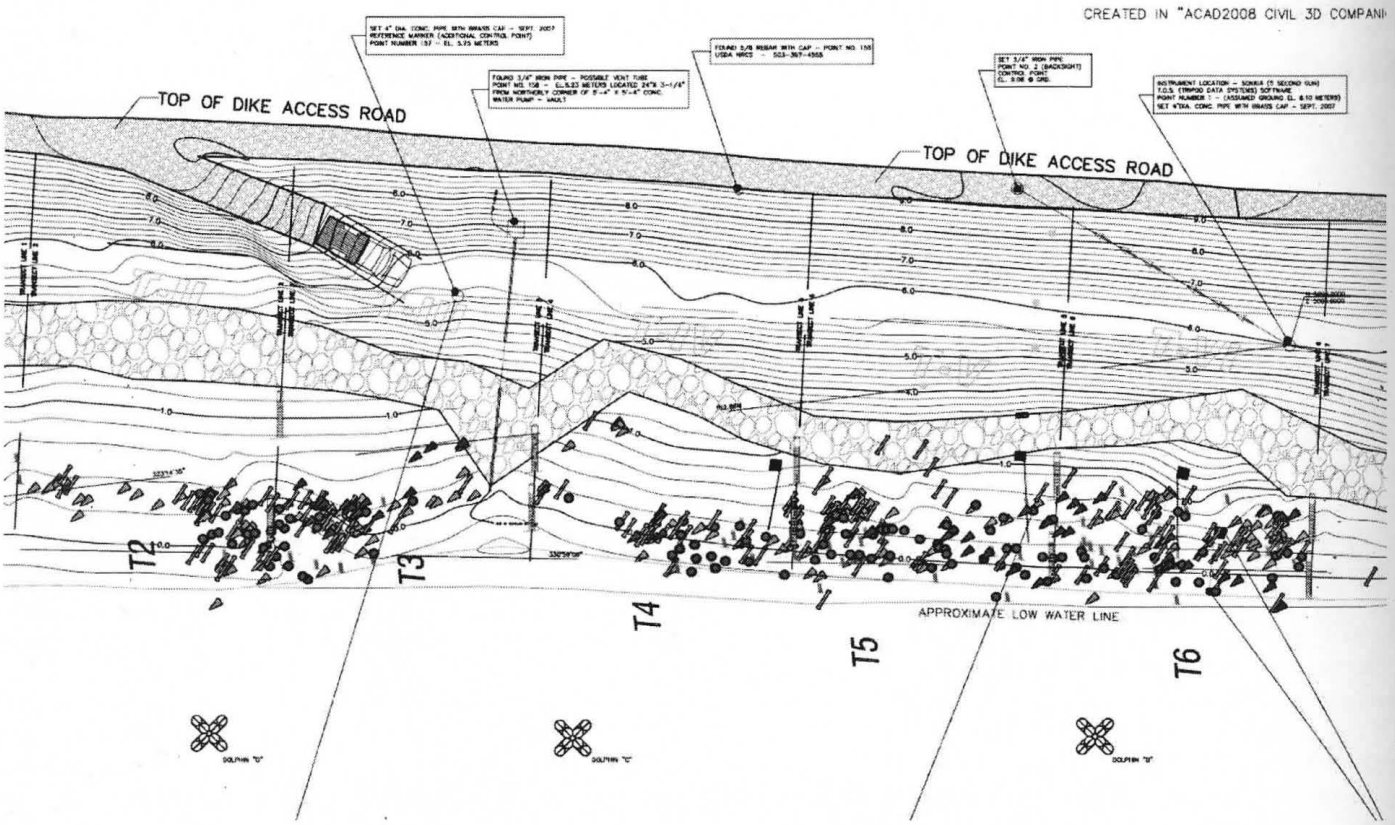

Figure 3. View of Transects II through VI, the actual area of acorn leaching pits, stakes and surface cultural materials, lithics and fauna, found at Sunken Village Site (35MU4).

Dr. Akira Matsui.

This project was conducted through the sponsorship of a Japanese international grant under the administration of Dr. Akira Matsui, Chief Archaeologist, National Institute for Cultural Heritage, Nara, Japan, as well as support through the SPSCC Anthropology Club, an SPSCC Exceptional Faculty grant, Jean and Ray Auel, and volunteers from Portland State University and the Oregon Archaeological Society. Dr. Matsui brought four Japanese associates to participate in the field work: Dr. Naoto Yamamoto, Dr. Toru Miyao, Dr. Atsushi Iwasaki, and Dr. Tomonori Kanno (Figure 2). Dr. Matsui is a wet site expert and Pacific representative (along with Dr. Croes) of the Wetland Archaeology Research Project (WARP) out of Exeter, England. Dr. Matsui personally recognized the value of this waterlogged site on the Northwest Coast and especially the similarity of this site to a number of Jomon period wet sites that contain preserved acorn pits and basketry throughout Japan. His team had worked at a number of these Jomon wet sites.

The work at 35MU4 consisted of intensive horizontal mapping and monitoring of *in situ* (a) acorn leaching pits, (b) wooden stakes, to review (from 2006 mapping) any indirect effects caused by the 2006 riprap placement, and (c) surface mapping and collecting of any exposed cultural materials, including lithics, animal bone, wood chips, basketry strips, and split wood. To continue linear control along the main area of the shoreline, the ten transects established in 2006, each 25 metres wide, were used (Figure 3). All surface finds, acorn pit features, wooden stakes, were mapped by SPSCC Professor Michael Martin and assistant Roy Griggs using a Sokkia Set5A (5 second gun) total station with tripod data systems software using an HP85 data collector.

To expand our vertical evaluation of the site depth, two cores were taken to a maximum of 20 feet (6-7 metres) in an area of the site that appeared to be well-preserved, with numerous vegetal mat layers exposed in Test Unit 4 in 2006. Dr. Michele Punke, Archaeological Investigations Northwest, proposed a hypothesis in the 2006 final report that this area may reveal deep cultural deposits (Punke 2007:28-58). A Geoprobe Model 7730 Track Rig, which is a direct push corer, was used. The cores are approximately 2 inches in diameter, providing enough sediment for litho-and bio-stratigraphic studies.

The main objective of the project was to accurately map and record features encountered on the surface beach area, and especially (a) *in situ* circular pits averaging 80 cm. in diameter, lined with hemlock boughs and containing whole acorn remnants and (b) *in situ* wooden stakes averaging 5 cm in diameter and driven into the beach surface. At this time 114 pits were mapped in Transects II through VI, an increase from the 60 acorn leaching pits that were mapped rapidly in 2006 (Figure 4). These pit features were hydraulically surface cleaned, photographed and sampled with better precision in 2007.

Fifty five *in situ* wooden stakes were mapped and recorded, increased from 32 in 2006. These also were drawn in plan and cross-section view and photographed in each view. The angle lean and direction of the stake was recorded. In 2006, after consultation with Grand Ronde and Siletz representations, two stakes were hydrauli-

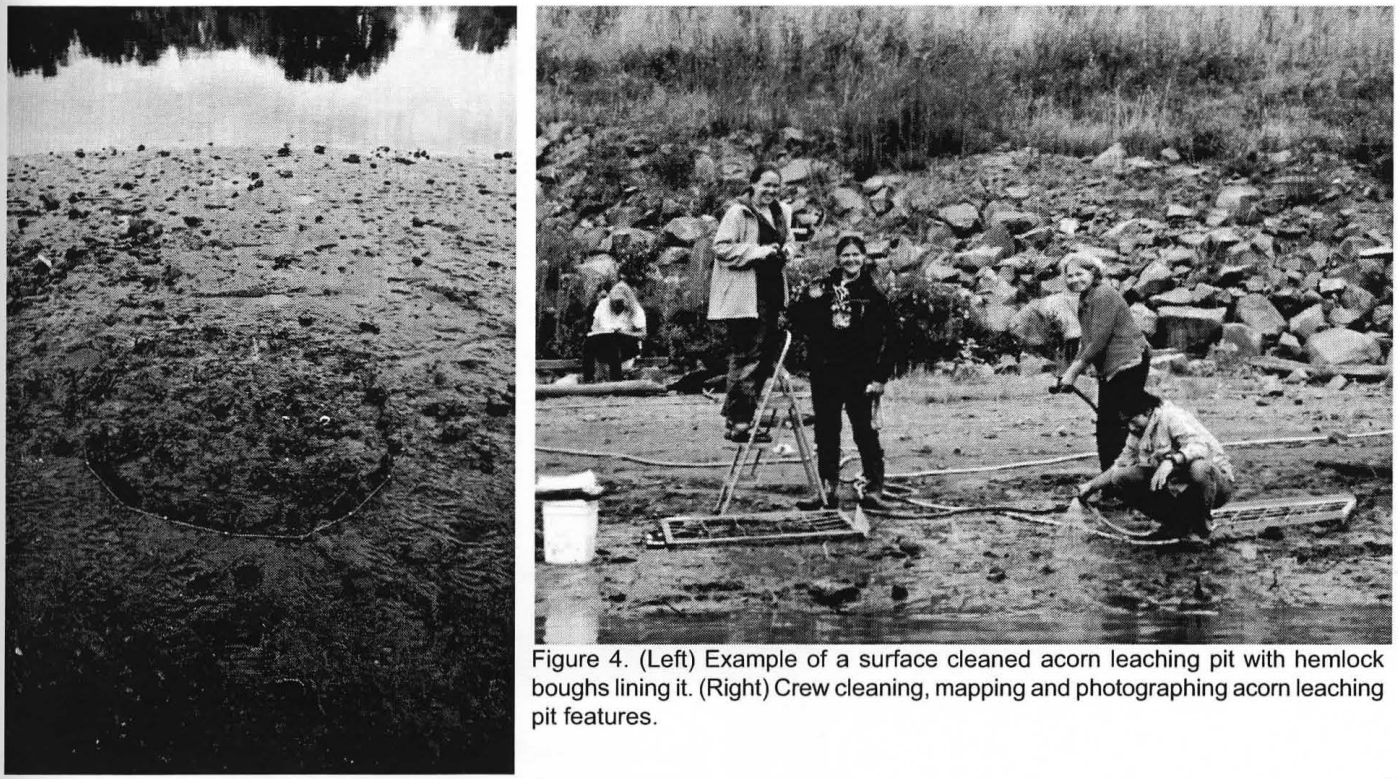

Figure 4. (Left) Example of a surface cleaned acorn leaching pit with hemlock boughs lining it. (Right) Crew cleaning, mapping and photographing acorn leaching pit features.

cally excavated showing that they are long (approximately 1 meter), adze sharpened at their ends, and one had its bark still adhering to the pole (Hawes 2006:93-102). These recovered stakes currently are stabilized in our lab. Many of the acorn pits had a stake on their south edge, no doubt marking the location of a pit.

Depth of Deposits

The actual bottom of TU 4 vegetal mat layers could not be reached in the time available for excavation in 2006, however it appeared that it would extend well below 50 cm in this well-preserved area of the site. In 2007 we excavated two 2" cores from the current surface of TU 4 and another one a few metres below TU 4. The second core, currently under analysis, demonstrated a likely depth of vegetal mat deposits containing cultural layers to at least 3.5 metres below surface. The results of this analysis will include two AMS dates that are from lower vegetal mat/cultural layers.

Brief Description of Site Stratigraphy, Cultural Features, and Artifacts

Stratigraphic analysis of sediments from the site revealed relatively fine-grained sands and silty loams that were emplaced over time as levee deposits on a riverine point bar. Sediment size varies across the site both vertically and horizontally, and the exact nature of these stratigraphic changes is being investigated through the analysis of sediments from tests units, pit features, profile descriptions, and 2006 and 2007 extracted sediment cores. Dr. Curt Peterson, Portland State University, and students also conducted north-south remote sensing tests, using a portable, digital pulseEKKO 100 Ground Penetrating Radar (GPR) system, and they are currently reviewing the results of this exploration (Figure 5). Distinct changes in strata morphology and constituent sediments will be used to create a representative east-west and north-south cross sections of the site. These cross sections will be used to recreate original depositional conditions and to determine the nature and extent of erosion and destruction of cultural strata.

The extensive *in situ* acorn pits are the most remarkable features at this Landmark site. During surface exposure and mapping, all such pits had remnants of whole acorns (Mathews 2007:67-74; Punke 2007:28-58). Also wood and fiber artifacts were observed in and around these pits, including a shredded cedar bark cape/skirt fragment, cedar bark checker matting (Figure 6), broken wooden wedges and wedge tips, wooden arrow shafts, and well-preserved basketry distinctive of the region's fine basket work.

One distinct piece of basketry found has what is called a *diamond plaiting* weave over 2-strand strings, and appears to be made of delicate rush-like sedge plants (still being analyzed through cellular analysis; Hawes 2007:93-102) and probably is a large soft bag. This basket has caught the attention of Great Basin basketry experts Dr. Catherine Fowler, Dr. Eugene Hattori (U. of Nevada) and Dr. Margaret Mathewson (Figure 7-10). They have tracked this style of soft-bag weave from 9,000+ years ago examples from Nevada with some in Puget Sound in Duwamish and Skokomish collections — therefore this Sunken Village example links through the two geographical areas. They also make it clear that this style of distinct soft-bags are seen in ancient Japanese wet sites and therefore may be one of the few artifact styles that can be traced around the North Pacific Rim. We are currently conducting cladistic analyses of basketry from museum and ancient collections from along the Northwest Coast, including Chinook museum baskets and Sunken Village examples (ours and from collections attributed

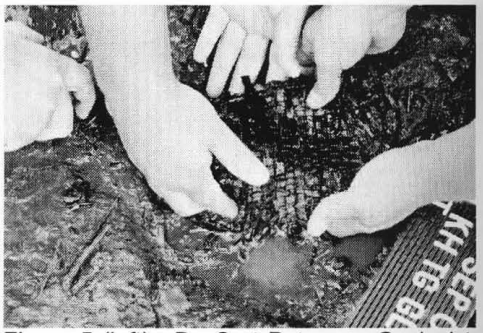

Figure 5 (left). Dr. Curt Peterson, Geologist, Portland State University, lead students in conducting ground penetrating radar (GPR) remote sensing along a transect one meter above waterline at the Sunken Village wet site.

Figure 6 (top). Removing piece of cedar bark, checker weave matting from the Sunken Village site.

to Sunken Village). These tests have been encouraging, but it appears we should be looking beyond the Northwest Coast in tracing basketry styles and their ancestries (Ness et al. 2007:102-113).

Approximately 1,793 artifacts were recovered (items that are the result of human activity) from cleaning surfaces of acorn leaching pits (n=1,453) and the beach surface collections (n=340). All these materials are concentrated only within Transects II-VI along the rip-rap (see Figure 3). In total the 2007 field effort recorded from the acorn pits and surface 87 wood chips, 206 split wood pieces, 615 acorns, 44 hazelnuts, 32 basketry waste elements (both bark and bough/root splints), 17 cherry bark curls, 28 wood and fiber artifacts, 17 macrofloral elements, 3 twig elements from acorn pit liners, 431 lithic debitage, 276 bone faunal elements, 4 shell faunal elements, 28 lithic artifacts, 4 bone artifacts and 13 miscellaneous samples. The exact counts of the artifact types may likely change after further cleaning and analysis. The tools included wooden wedge tips, bone chisels, bone points/awls, projectile points, scrapers, knives, and flake tools. The projectile points recovered during the testing are in good condition and are typically made of fine grain chalcedony.

Samples Collected

The excavations produced a preliminary total of 756 wood, fiber and lithic debitage elements (wood chips, split wood, basketry waste elements and lithic flakes), representing 42% of the collection. Acorns and hazelnuts represent 659 examples, or 37% of the collection. Shell and mostly mammalian fauna elements represent 280 examples, or 16% of the materials (approximately and *only* 4 salmon vertebra were found). Therefore material cultural debitage and food resource remains, especially acorns, represent approximately 96% of the materials recovered from the site during the 2007 mapping.

The 2-in cores will provide the newest samples for dating. We will select two samples for AMS dating to determine the potential basal dates for the cultural layering at the site.

Summary of Preliminary Findings

Our one week mapping of a 150-linear-meter area of Sunken Village beach clearly demonstrates why this has been designated a National Heritage Landmark site and considered, before any professional excavations, one of the most famous such sites in Western United States (Newman 1991). The site appears to have progressively eroded, with only the bottom surface of most acorn leaching pits (n=114) surviving today. This erosion is often mentioned by persons who have visited the site through the past 50 years, so what's left becomes increasingly more important as a Landmark cultural resource. We found a few large remnant areas that are better preserved: Transect VI with at least 3.5 metres of vegetal mat layering recorded through coring. This ancient beach area remains fairly intact. Fortunately we found these critical areas in the short period of time we had to observe and map the entire area.

Additional Recommendations

The following recommendations are offered as a means of protecting and managing this unique and important archaeological site.

- The site should be patrolled on a regular basis during times of low water to deter vandalism.
- The individual and well-mapped and recorded *in situ* cultural features should be observed and any destruction, through erosion or vandalism, reported.

- Use of surveillance cameras and signage indicating that the area is being monitored by cameras are suggested.

- A barrier should be constructed along the edge of the site between the dolphins (shown on map in Figure 3) to break the wave action from wind and passing boats. Log rafts stored in the area in the past reduced the wave action erosion and deterred the use of private boats to use prop wash to erode the bank.

- Measures for site protection and/or emergency recovery of sensitive deposits should be put into place in the event that the cultural features are found to be threatened by erosion, construction impacts, or vandalism.

- A long-range plan for the curation, analysis, and interpretation of artifacts and environmental data from the site should be developed as one means of mitigating the adverse effects of the bank protection work at the archaeological site.

- Funds for site stewardship, analysis of recovered materials and interpretation should be sought by federal, state, county, local public agencies and Tribes for site protection, interpretation, and enhancement.

Dale R. Croes, Ph.D., is a Professor of Anthropology, South Puget Sound Community College, Olympia, Washington, and Adjunct Faculty at the Department of Anthropology, Washington State University in Pullman, Washington.

Michael Martin is Professor of Computer Aided Drafting (CAD) at South Puget Sound Community College, Olympia, Washington.

John L. Fagan, Ph.D., is Corporate President, Senior Archaeologist, and Lithic Technology Specialist at Archaeological Investigations Northwest, Inc. (AINW), Portland, Oregon.

Maureen Zehendner, M.A., is Laboratory Director and Senior Archaeologist, with AINW, Portland, Oregon.

Michele Punke, Ph.D., is Senior Geoarchaeologist at AINW, Portland, Oregon.

Kathleen Hawes is a Laboratory Director at South Puget Sound Community College, and a student at Evergreen State College, Olympia Washington.

Olivia Ness is a Laboratory Director at South Puget Sound Community College, and a student at Evergreen State College, Olympia Washington.

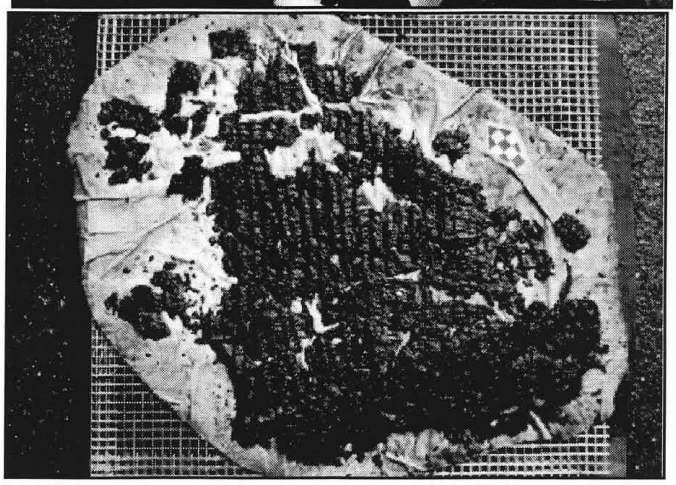

Figure 7 (top). Hydraulically uncovering the delicate diamond plaited sedge soft bag from acorn leaching pit.

Figure 8 (middle). Grand Ronde Tribal members and crew placing diamond plaited soft bag onto board to move to the lab.

Figure 9 (bottom). After turning over and careful cleaning of sediments from woven piece.

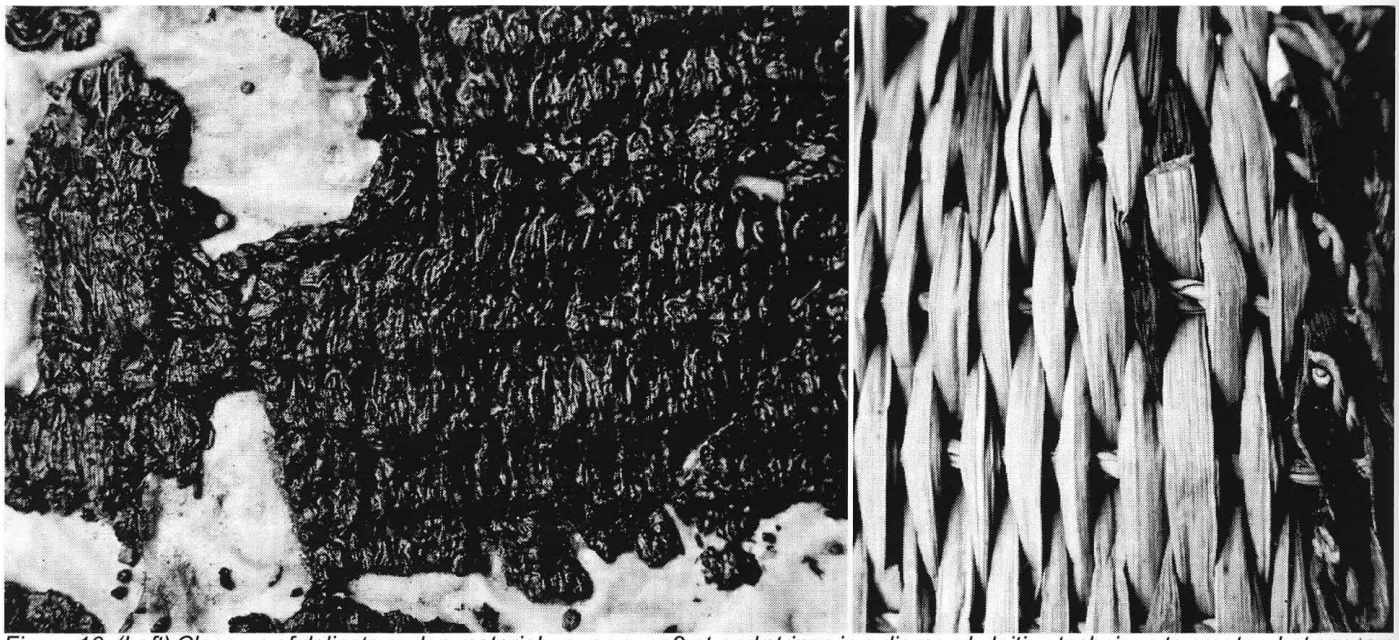

Figure 10. (Left) Close up of delicate sedge material woven over 2-strand strings in a diamond plaiting technique to create what appears to be a soft bag. (Right) Replication of this weave using Scirpus americanus *a sedge called sweet grass in the Northwest.*

References

Croes, Dale, John L. Fagan and Maureen N. Zehendner (Editors)

2007 *Testing the National Historic Landmark Wet Site, 35MU4, The Sunken Village Archaeological Site, Multnomah County, Oregon.* Prepared for Sauvie Island Drainage Improvement Company, Portland, OR., Report No. 4, Department of Anthropology, South Puget Sound Community College and Archaeological Investigations Northwest, Inc. (This report can be found on PDF at: http://www.library.spscc.ctc.edu/crm/crm.htm).

Hawes, Kathleen

2007 Woodworking Debitage: Woodchip Analysis of TU-4. In Croes, D., J. Fagan, and M. Zehendner (eds.) *Testing the National Historic Landmark Wet Site, 35MU4, The Sunken Village Archaeological Site, Multnomah County, Oregon.*, 93-102. Prepared for Sauvie Island Drainage Improvement Company, Portland, OR., Report No. 4, Department of Anthropology, South Puget Sound Community College and Archaeological Investigations Northwest, Inc.

Mathews, Bethany

2007 Acorns and Acorn-Leaching Pits. In: Croes, D., J. Fagan, and M. Zehendner (eds.) *Testing the National Historic Landmark Wet Site, 35MU4, The Sunken Village Archaeological Site, Multnomah County, Oregon.*, 67-74. Prepared for Sauvie Island Drainage Improvement Company, Portland, OR., Report No. 4, Department of Anthropology, South Puget Sound Community College and Archaeological Investigations Northwest, Inc.

Ness, Olivia, Dale Croes, Robert Kentta, Bud Lane and Patrica Courtney Gold

2007 Sauvie Basketry, Basketry Waste Materials and Experimental Archaeology. In: Croes, D., J. Fagan, and M. Zehendner (eds.) *Testing the National Historic Landmark Wet Site, 35MU4, The Sunken Village Archaeological Site, Multnomah County, Oregon.*, 102-113. Prepared for Sauvie Island Drainage Improvement Company, Portland, OR., Report No. 4, Department of Anthropology, South Puget Sound Community College and Archaeological Investigations Northwest, Inc.

Newman, Maureen McNassar

1991 *Description and Management Plan for 35MU4, The Sunken Village Archaeological Site at Sauvie Island, Multnomah County, Oregon.* M.A. Thesis, Portland State University.

Punke, Michele

2007 Geoarchaeological Investigations. In: Croes, D., J. Fagan, and M. Zehendner (eds.) *Testing the National Historic Landmark Wet Site, 35MU4, The Sunken Village Archaeological Site, Multnomah County, Oregon.*, 28-58. Prepared for Sauvie Island Drainage Improvement Company, Portland, OR., Report No. 4, Department of Anthropology, South Puget Sound Community College and Archaeological Investigations Northwest, Inc.