CAHO

CURRENT ARCHAEOLOGICAL HAPPENINGS IN OREGON

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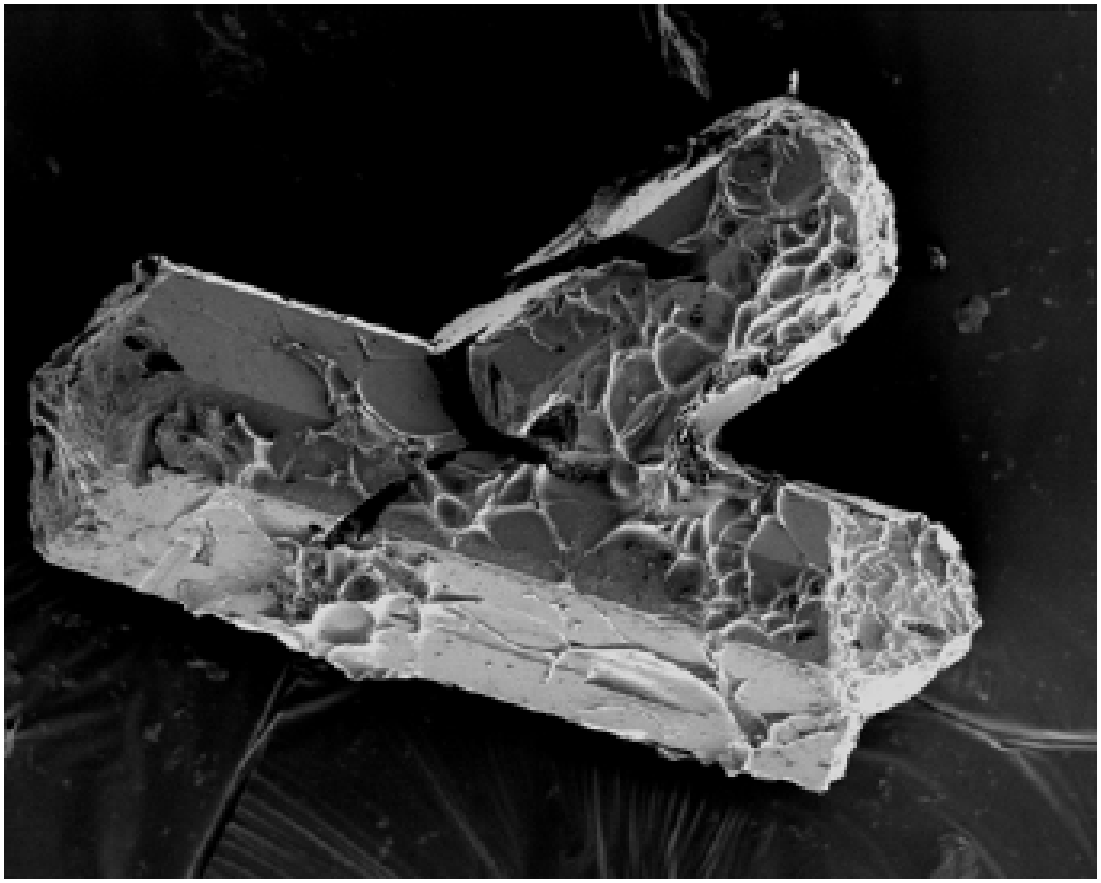

INDEX

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CAHO is published quarterly (March, June, September, and December) and is sent to all AOA members. The Association of Oregon Archaeologists is a non-profit scientific and educational organization dedicated to the protection and enhancement of prehistoric and historic archaeological sites. Dues are tax-deductible and are payable on a calendar-year basis.

Association of Oregon Archaeologists, c/o State Museum of Anthropology, 1224 University of Oregon, Eugene, OR 97403-1224
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Back issues of CAHO may be ordered from the Editor for $2.50 each.

AOA WEB PAGE: http://oregon.uoregon.edu/~osma/aoa.htm

NOTES AND NEWS

AOA NEWS

AOA Annual 2005 Spring Meeting

The Spring AOA Meeting was held Saturday, May 7, at the UO Museum of Natural and Cultural History in Eugene. The Business Meeting was held at 10:00 AM and was well attended by about 15 attendees. Presentations in the afternoon included Quent Winterhoff on "Oregon Bridges: Columbia River Gorge Archaeology", Cathy Poetchat on "OAS Contributions to Archaeology", and Del Spencer on "Tracking the Free Emigrant Road". A guided tour of the newly refurbished exhibitry at the Museum was provided in the afternoon following paper presentations.

AOA Fall 2004 Meeting Minutes
November 19, 2004, Salem BLM Office

The Business Meeting of the Association's annual Fall Meeting was convened at 9:30 AM by President Richard Hanes.

Minutes: The Minutes of the last fall meeting (2003) were approved as published in CAHO.

Treasurer's Report: Treasurer Marge Helzer reported that AOA has approximately $5,478 in its account, of which approximately $1,573 is being held in the OAC fund. She also reported that the corporation fee had been filed with the state for this year.

Old Business

Election of Officers: According to the Association's by-laws, during even years the positions of Vice-President and Treasurer come up for election. Scott Thomas, the current Vice President, agreed to stand for election and was re-elected by acclamation. Elizabeth Kallenbach agreed to stand for election to the post of Treasurer and was elected by acclamation.

2004 Oregon Archaeology Celebration: Fran Philipek reported that this year's celebration was a success and that she was still assembling data regarding the number of events, volunteers, and visitors. She announced that the OAC Committee is soliciting new members and is in need

of volunteers to serve as co-chairs. There was some discussion that OAC may coordinate with Washington's committee to produce a joint calendar and poster commemorating the Lewis and Clark bicentennial. Richard Hanes noted that 2006 will be the centennial year of the Antiquities Act and the 40th anniversary of the National Historic Preservation Act.

AOA Occasional Papers: Brian O'Neill reported that sales of the volumes at the NWAC meetings in Eugene netted $360. We have recouped our printing cost of Volume 7 and, with approximately $700 in the black, are in a financial position to consider printing another volume in the series. He also reported that we still have stock on hand of numbers 4, 5, 6, and 7. Suggestions were made to make the volumes available more widely.

Guy Tasa and Brian O'Neill have agreed to be co-editors for Volume 8 of the AOA Occasional Papers series, with a coastal focus. The schedule they envision is (a) have contributors identified and titles submitted by the end of February, 2005; (b) drafts in by August, 2005; (c) printed in time for NWAC 2006.

NWAC 2004: Richard Hanes reported on the AOA involvement in the recent very well attended NWAC conference held in Eugene. AOA was represented on the steering committee, sponsored a symposium, and manned a book table. Scott Thomas and John Zankenella hosted a workshop, "Opportunity Fair" which attempted to match people with projects.

Historic Artifact Standards: The Board has solicited the advice of a group of members to suggest recording and collection standards for historic artifacts found during archaeological investigations. Maureen Zehendner has agreed to serve as chair, with other members: Dave Brauner, Pam Endzweig, Dennis Griffin, Ann Rogers, Julie Schablitsky, and Beth Walton. The committee plans to make a status report at the Spring 2005 meeting.

New Business

Film Festival: Rick Pettigrew announced that there has been a schedule change for the Film Festival, from July to the first week in February 2006. He invited all to participate, attend, volunteer, and contribute.

CAHO: The SHPO requested a complete set of CAHOs from the State Museum of Anthropology. Instead of photocopying these, Guy Tasa reports they will be scanned and will be available on a single CD. Discussion ensued about the possibility of providing copies of this disc for sale.

Guy suggests having the front page of the current CAHO on the Association's web site.

Chip Oetting volunteered to put together a current index of CAHOs.

Governor's Heritage Conference: Dave Ellis reported on the potential for AOA involvement in this conference by providing guidance regarding the curation of collections and their treatment. Dennis Griffin thought it would be good for AOA to be visible at the conference, but did not think that it was a good venue for AOA because it is during the week and is expensive. Dave suggested providing a list of AOA skills and resources to the conference attendees instead of AOA attending.

ORS Amendments: Dennis Griffin reported that amendments are being made to state laws 358 (objects), 470 (burial), and 390 (permit) to have them refer to both public and private land.

Oregon Archaeological Society: George Poetschat provided an overview of OAS, its membership and activities. With 350 members, the Portland-based organization holds monthly meetings, and annually hosts an international speaker. The OAS has a training program for volunteers who have been called on to participate in projects. Their education committee has outreach in the Portland area and conducts field tours. OAS has a scholarship program and a regular publication – Screenings, numbers of which are being republished. The organization is also involved in site stewardship.

AOA Research Grant: The due date for the 2005 research grant is February 1.

Spring Meeting: Discussion about the location and date of the spring meeting was held, with no decision made.

SHPO: Dennis Griffin announced that the SHPO has a new web page. A new site form in Access is out for revision and he seeks comments. The Word-formatted form will be replaced soon.

Field Schools: Ken Ames announced that PSU has entered into an agreement with the Park Service and will have a field school at Fort Vancouver.

Julie Schablitsky announced that she would be directing a University of Oregon field school in historic archaeology at the Mill Site.

The Business Meeting was adjourned at 11:15 AM.

Paper Presentations

Beginning at 1 PM, five papers were presented during the afternoon session.

- Scott Thomas – Mortar Riddle Site
- Dennis Jenkins – Paisley Caves Blood Residues
- Tim Canaday – Operation Indian Rocks: ARPA Enforcement
- Guy Tasa/Jeanne McLaughlin – Teaching Forensic Archaeology to the Law Enforcement Community
- Dennis Griffin – Oregon SHPO Comes of Age

Respectfully submitted
Brian O'Neill, Secretary

OTHER NEWS

WHAT IS OREGON ARCHAEOLOGY CELEBRATION?

Under a proclamation by the Governor of Oregon, thirty days are set aside each year to celebrate and promote archaeology, heritage and history in Oregon. This celebration includes special events, exhibitions, demonstrations and lectures, with the intent of sharing Oregon's past with the public. To promote the celebration and heritage events occurring during this time, the Oregon Archaeology Celebration steering committee publishes a poster and a Calendar of Events. These posters and Calendars of Events are distributed to schools, museums, libraries, parks, state and federal agencies and event sites all over the state. The OAC steering committee is comprised of volunteers from State and Federal agencies, Indian Tribes, private firms, societies, museums, and informed members of the public.

You can be a part of this important celebration. This year is the 12th anniversary of Oregon Archaeology Celebration (OAC). The poster this year will feature the a view of the Columbia River looking west with the words "A Journey West."

OAC will begin on 9/17 and continue through 10/16. If you, your organization or facility are conducting talks, lectures, special exhibits, re-enactments or other events during this period, please share this information with the OAC committee. The Calendar of Events also lists a number of year-round permanent displays that might be experienced by the public during this celebration. If you wish this information to be in the Calendar, please fill out the form provided. Over 13,000 people will share in the information you provide.

What is an event?

These range widely from "Lake Billy Chinook Days" in Central Oregon, lectures at Oregon Museum of Anthropology (U. of O.), living history demonstrations at Tamastlikt Cultural Institute and The High Desert Museum to flintknapping demonstrations, tours of sites, and mock excavations conducted by archeologists at federal agencies or consultant firms. But events don't have to be grandiose or extravagant. The committee wants smaller organizations and communities to also be represented in the celebration. In past years, presentations in the public libraries, artifact or photo exhibits at county historical society museums, events at schools, parks or other facilities were all listed in the Calendar. These events are welcomed and wanted.

OREGON ARCHAEOLOGY CELEBRATION (OAC)

September 17 thru October 16, 2005

CALL FOR OREGON ARCHAEOLOGY CELEBRATION 2005 EVENTS

Events may be anything having to do with archaeology or related fields; and include displays, talks, tours, demonstrations, exhibits or other things that Oregonians would learn from and enjoy! Museums, don't forget your permanent displays!

The purpose of this annual "Celebration" is to inspire and inform people about Oregon's historic and prehistoric heritage with opportunities offered throughout the state. The activity YOU give for OAC, along with those activities others give is the basis for the "Celebration."

The committee for OAC creates a poster and a calendar of events each year and distributes thousands of them throughout the state. The calendar of events lists all activities submitted to the committee.

If you will be doing the same event as you have done in a previous year, please confirm the event information including date(s) and contact info.

This OAC Activities Submission Form is **DUE BY JUNE 3, 2005**

TOWN:_____DATE:_____TIME:_____

EVENT TITLE & PRESENTER:

LOCATION/ADDRESS:

SPONSOR:_____PHONE:_____

FOR: CHILDREN:_____ ADULTS:_____ FEE:_____ HANDICAP ACCESS?

CONTACT NAME, ADDRESS, PHONE:

EVENT DESCRIPTION:

I would like_____ calendars and/or_____ posters to advertise my and others activities for OAC.

MAIL, FAX OR EMAIL YOUR COMPLETED FORM TO:

Fran Philipek
Salem District BLM
1717 Fabry Rd. SE
Salem, OR 97306

fphilipe@or.blm.gov
FAX 503-375-5613

For additional information, contact Jorie Clark, cell (503) 803-8038 or Fran Philipek, 503-375-5613.

The AOA Historic Materials Committee has proposed the following guidelines for review by the AOA membership. Comments on the draft should be made to Historic Materials Committee Members.

PROPOSED GUIDELINES FOR COLLECTING HISTORIC MATERIALS (DRAFT-MAY 7, 2005)

(This draft is Part II of Parts I-III)

Approaches to Collecting Historic Materials

I. Pedestrian Survey

1) The AOA committee recommends that collecting should in principle be avoided at the survey level. Exceptions may apply in particular cases when archaeological material is threatened. In these cases, the project field director should determine when exceptions occur. In Oregon archaeological permits are required for archaeologists to collect artifacts from sites whether on non-federal public or private land.

2) In the field detailed recording should be made of historic artifacts in lieu of collecting, particularly where crews may lack adequate training for full assessment of the materials present.

3) Field Records should assess, or allow expert assessment, of site chronology and function (including relevant associations), and include descriptions of artifact types, rough counts, and the range of variability. Sampling may be necessary for large sites.

4) Field Records should include verbal and visual records, in particular ample photo-documentation (ideally digital). Photos should include overview, close-ups of artifact concentrations, and artifact details, with scale. Artifact illustrations are an excellent and welcome addition.

5) In exceptional situations where collecting takes place all records, including field notes, site forms and reports should:

- specify reasons for making the collection (e.g., emergency situation where artifacts might be threatened by vandalism or destruction)
- provide an inventory of all artifacts collected
- indicate curation location/provisions

II. Subsurface Reconnaissance (i.e., site discovery probes such as augers or shovel tests)

1) In Oregon an Archaeological permit must be obtained before subsurface reconnaissance is undertaken on any non-federal public lands.

2) An archaeological permit is not required for site discovery probes undertaken on private land.

3) If artifacts are not going to be collected during subsurface reconnaissance work, this must be stipulated in the archaeological permit and approved by the Oregon State Museum of Anthropology (OSMA). State law (ORS 390.235) links curation decisions to OSMA who reviews all permit applications.

4) If artifacts are going to be re-buried they should be thoroughly recorded and documented. When they are re-buried some method should be used to clearly indicate that they have been previously discovered – i.e. placed in bags in the bottom of the unit.

III. Excavation (Units 50x50 cm and larger used in Testing and Data Recovery projects)

1) Everything from excavation units should be collected in the field when work is being done under a State of Oregon Archaeological Permit, and taken back to the laboratory. Following analysis all artifacts should be curated. Modern items may be discarded in the laboratory. (According to state law [ORS 390-.235, sub-section 3] everything of archaeological significance 75 years and older must be collected under an excavation permit and curated.)

2) In some circumstances culling of historic material may be acceptable but this should happen in the laboratory and only after consultation with the repository that will be curating the collection (in Oregon this is predominantly OSMA for prehistoric collections, OSU for historic materials, or an alternate facility that OSMA has agreed upon).

    - An exception to the above policy may be made, particularly during data recovery excavations at large historic sites, if in the course of excavations the project director obtains an agreement from the director of the approved repository that allows for culling of some redundant materials types in the field.

    - If culling is allowed to be done in the field during excavation the agreement outlining the accepted policy to do so should be in writing and filed with SHPO in the archaeological permit file. Collection and culling policies should be adequately described in the project's final report.

    - Decisions on culling of artifacts should not be made in advance of excavation since such decisions are only appropriate within the context of each specific site.

    - Artifacts that are culled should be quantified and recorded, and documentation should indicate where the artifacts were disposed of. It is preferable that artifacts that are culled in the laboratory not be returned to the site for disposal.

3. The committee recognizes Federal Agencies have a range of policies regarding collections.

    - Some have a "No Collection" policy and others have adopted a variety of approaches to collection strategies and curation, which include culling of some artifact types.

    - Although ORS 390.235 applies only to collections made under a State of Oregon Archaeological permit, the committee recommends that Federal Agencies adopt these proposed recommendations in their approach to culling of historic artifact collections in Oregon.

4. For historic site excavations the preferred screen size is 1/8th inch mesh. However, other alternatives may be considered, based on site-specific contexts, but must be included in the research designed that is reviewed by SHPO during the archaeological permit process. The selection of screen size should be made by the Project Director and should be included in the research design, which will be reviewed during the permit process. Reasons for the decisions on screen sizes used should be explained in the methodology section of the report.

    - For historic sites, coarser mesh may be acceptable when controlled column samples of 1/8th inch are used for known features.
    - Screen size may vary based on soil type (e.g. coarser mesh in wet clay) or recovered artifact types (e.g., beads vs. tinned cans).
    - In some cases it may be appropriate to evaluate and adjust the screen size strategy (if needed) as an excavation proceeds.

Historic Materials Committee Members: Ann Bennett, NRCS; David Brauner, OSU; Dennis Griffin, SHPO; Beth Walton, Walton Enterprises; Maureen Zehendner, AINW

Letter sent by the AOA in response to the proposed elimination of Anthropology courses from Portland Community College curriculum:

Association of Oregon Archaeologists

Museum of Natural and Cultural History, 1224 University of Oregon, Eugene, Oregon 97403-1224

May 19, 2005

Dr. Preston Pulliams
District President
Portland Community College
SY CC 231
P.O. Box 19000
Portland, Oregon 97280-0990

Dear President Pulliams:

We are pleased to be informed that a proposal by Portland Community College to eliminate all anthropology courses at the end of the 2005-2006 academic year has been dropped. Since we view the potential elimination of these courses as a drastic and ill-advised action, we would still like to submit our comments for the record.

As the largest institution of higher learning in Oregon and one of the largest community colleges in the United States, Portland Community College has an obligation to provide a broad education to its students. Such an education includes an opportunity for exposure to both the diversity of American culture and the diversity of other human societies. Anthropology courses offer virtually the only chance for PCC students to learn of the development of the human species, to learn of the theory and practice of archaeology and the breadth of the human past, and to learn of the various expressions of human culture. It also contributes to a better understanding of multiculturalism and social diversity.

As the statewide organization for professional archaeologists in Oregon, we are also very concerned that the elimination of these courses would diminish the pool of future archaeologists. Professional archaeologists begin their careers in anthropology programs, and there are professionals in Oregon who began their careers at PCC. In addition many advocationalists received their training from PCC and became valuable volunteers for archaeological projects around the state. The elimination of the anthropology program at PCC would be a disservice to our profession, to the community, and especially to your students.

We would therefore like to go on record as opposing such a proposal if it should resurface in future budget deliberations. We trust you and the PCC Board will keep these factors in mind and maintain the anthropology program over the long term. Thank you.

Sincerely,

Richard C. Hanes, Ph.D.
President, AOA

CURRENT RESEARCH:

PHYSICAL EVIDENCE OF SHIPWRECKS ON THE OREGON COAST IN PREHISTORY

ALISON T. STENGER
Institute for Archaeological Studies, Portland, Oregon

Three prehistoric site areas on the Oregon coast have yielded Chinese porcelains. Two are located on the south side of the sand spit at Nehalem Bay (35-TI-4; 35-TI-4b), and the third site is located within the sand spit at Netarts (35-TI-1). While Spanish galleons are often suggested as the sole source of these materials, the archaeological and historical evidence suggests otherwise. In all, the remains of at least two and probably four ships have been reported. The timber from one ship and a ship's pulley have been radiocarbon dated, and much of the porcelain has been analyzed. Dates for the prehistoric sites, the ships' wood, and the porcelains are comparable. Stylistically, however, the two porcelain assemblages represent separate origins.

The porcelains excavated from the Netarts site were examined at the Ceramics Analysis Laboratory, part of the Department of Anthropology at Portland State University. At that time, two specialists in Asian porcelains separately inspected the material. Based upon stylistic and technical characteristics, the assemblage of available porcelains was identified as late Ming dynasty, thus dating from A.D. 1550-1650.[1]

The porcelains excavated from Nehalem were inspected even more thoroughly. The Ceramics Analysis Laboratory and two independent chemists were consulted, in an effort to employ all available criteria in the dating of the porcelains.[2] The qualitative and quantitative assessments of the assemblage suggested Ming period manufacture. Some of the porcelains were excavated from house floors, while others were collected from the lag zone along the spit's interior, yet all of the ceramics were of the same approximate age.

Many of the porcelains from both sites exhibited secondary modification, although there may have been a difference in the utilization of the decorated fragments.[3] Porcelains from both sites were flaked into projectile points, drills, and scrapers, with some of the heavily decorated fragments made into pendants (Cummings 1986). It is important to note that the unmodified fragments are still sharp and unstained, as this addresses the depositional environment. The edge rounding and glaze abrading that would have occurred on wares exposed to the surf are not evidenced by any of these sherds.

There is one important difference between the porcelain assemblages from Nehalem and Netarts, however. One group of Chinese porcelains was made for export to the West, while the other group is of the type manufactured for use by other Asians. Despite the commonality in date, the two assemblages represented two very different cargoes.[4]

The Netarts site was identified first. It was excavated by Tom Newman of Portland State University. When the porcelains were first excavated, site manager Daniel Scheans immediately identified them as Ming period.[5] Unfortunately, the

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[1] Laboratory notes, "Analysis at 4B", Scheans and Stenger (1984), Ceramics Analysis Laboratory. Methods described in "Dating Chinese Ceramics by Visual Glaze Analysis" (Stenger 1980) utilized, in conjunction with art historical criteria.
[2] Tektronix, Intel and U.S. Customs Laboratory chemists, Charles Dwire, Geoffrey Hodson and Fred Davis, independently analyzed the the ceramic bodies and glazes. The elemental profiles were obtained by OES, XRF and EDX.
[3] Scheans (1984) suggested that the Netarts fragments were separated into heavily decorated and undecorated groups, with the sherds having substantial decoration used for trade. Similar statements are made by Beals (1983) and Hajda (1989).
[4] Refer to "Ceramics: 1989 Testing at 35-TI-4B" (Stenger 1990), in *Summary Report on the 1989 Excavations at the Cronin Point Site [35-TI-4B] Nehalem State Park, Oregon.*
[5] Scheans was recently back from S.E. Asia, where he had been working with Ming and other period sites.

porcelains were taken to a visiting lecturer at the Portland Art Museum, who dated the porcelains as 18th C. A well circulated publication (Beals and Steele 1981) focused upon the later date. Despite the scholarly treatment of the material in that publication, only the more recent date remained in subsequent literature. Recent correspondence with one of the authors has revealed a change in their interpretation of the dates of the porcelains (Steele 2005):

> There is much data…to suggest that we have several source lots on the coast, resulting from (1) several wrecks, and (2) possible trade networks distribution of blue decorated sherds. Although I originally thought the Netarts items to be Transitional Period (1620-1680) -- based on a San Francisco conference I attended…I now agree that many, perhaps all, could be earlier, i.e. Wan Li (1579-1619). It is important to communicate to the CAHO archaeologists that the universe of discourse for studying this subject has changed and expanded greatly from the universe confronting Tom Newman, when he excavated and reported on Netarts and the later universe that we confronted in the late 1970s and early 1980s…." [6]

Shipwreck remains have also been documented. Two wrecks have positively been located with two additional ship locations suggested by informants and remote sensing. Radiocarbon dates from both the prehistoric sites and the ships' material validate the older dates suggested for the porcelains.[7] SHPO records reveal the following:

Shipwreck		
report 8082	beeswax 280 +/- 110	Shell News: 1961
report 8082	beeswax 300 +/- 30	LJ 5646
report 11199	ship pulley 319 +/- 2	
report 11100	teak cane 312 +/- 21	
report 9492	beeswax 390 +/- 80	BETA 27520
35-TI-1		
report 652	house plank 150 +/- 150	M 805
	charcoal 280 +/- 150	M 806
	charcoal 550 +/- 150	M 904
	shell 550 +/- 150	no #
35-TI-4		
report 17249	plant material modern	BETA 134157
report 8082	whale bone 170 +/- 0	BETA 7849
report 8082	basketry 380 +/- 60	LJ 5276
Near 35-TI-4B		
	hearth 660 +/- 60	BETA 38463

The two known vessels are in several sections, and distributed over a broad area. The wreck that is assumed to be of Spanish origin is well described both historically and in local lore. This ship is located near the large blue spruce tree, known locally as the "Witness Tree". The tree is located on a knoll that is north of the Nehalem Bay sand spit, facing the road that skirts the ocean as it connects Manzanita with the N.W. corner of the Nehalem spit. This vessel was exposed after several different storms, and partially excavated by a group of individuals from Astoria. The cane that was radiocarbon dated (SHPO report 11100) is made of wood removed from that wreck (Jensen 1989). An additional ship's section, assumed to be from this same ship, was located during a magnetometer survey, conducted by Woodward and Jensen.[8] Part of what is thought to be a

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[6] An email from Harvey Steele to the author (2/14/05) conveyed the history of the misattribution of the porcelain assemblage.
[7] Retired SHPO, Leland Gilsen, provided uncorrected and corrected dates for many of the samples (Gilsen 2005). The current SHPO provided, via email, additional information (Griffin 2005).
[8] The methods of investigation and the location of this wreck were verified during multiple conversations over two decades (1983-2003), in conversations between the author and Wayne Jensen, Jr., then Director of the Tillamook Pioneer Museum.

ship's hull was found during a very low tide, within the area that is typically the active surf zone. This large feature is in a nearly direct line westward from the Witness Tree.

Two questions arise from this second siting. First, the newspaper accounts provided by the group from Astoria suggest that the Witness Tree wreck was nearly intact. The feature causing the positive magnetometer results, therefore, may be the remains of something other than this wreck. The second issue is the transport source of the wax, which came out of Asia (Jensen 1989). Is the wax associated with an Asian wreck or a European wreck? Was the Witness Tree wreck the source, or was the tidal zone feature? The ship that wrecked on the Nehalem spit is another possible source.

The vessel that wrecked at the tip of the Nehalem spit was last positively exposed in 1901, between a series of particularly severe storms, some of record stength (Bryson 2005). The "Chinaman Wreck" was described in a journal page dating January 10, 1901. The journal describes in great detail the specific location of the ship, the best way to get to it, and some of the cargo from that wreck.[9] With the journal is a map, plus drawings of some of the porcelain fragments that littered the beach around the wreck.

Included in the journal page is a discussion of one of the landowners, who took the sherds and placed them around his rose garden. In 1989, archaeologists for the Institute for Archaeological Studies excavated that garden, and documented the porcelains illustrated in the 1901 letter (Stenger 1990).

It appears that the location identified as the Chinaman Wreck no longer exists. The tip of the spit has been modified in two ways. First, work at the entry of the bay has caused the ocean to enter the bay from a different angle and area. Thus, some of the tip has been eroded away by the ocean. Second, and more problematic, was an extensive excavation initiated by DEQ. A large section near the tip of the current spit, which appears to have included the wreck area, was removed. When that excavation occurred, ship's timbers were reportedly observed.[10] At that time, Portland State University was contacted, but no interest was expressed in the timbers by the institution.

Timbers were also reportedly contacted during construction of the runway (Jensen 1989). The airport runway is located slightly north and west of 35-TI-4B. The timbers observed during runway construction may be from the Chinaman Wreck, or another ship entirely.[11]

Two additional wreck sites has been reported, but not verified archaeologically. During archaeological work at Nehalem, a homeowner from Wheeler stated that in excavating his home, a partial ship's hull was contacted. The landowner left the wreck in place, and built his house over it. He declined to give his name. The other wreck, reported as a Chinese Junk by local inhabitants, was discussed in 1848 by the founder of Hobsonville. His informant reported a wreck on Nehalem spit, and several pieces of a Junk between Clatsop and Nehalem (Hajda 1989).

There is little doubt that the porcelains, timbers, and beeswax initiated the protohistoric period for this part of the Coast. The utilization of these foreign materials by the recipient population, and the depositional environment, argue for a fully prehistoric context prior to the arrival of the wrecks.

The two questions that remain are which countries are represented by these wrecks, and were there any survivors? There are ethnographic differences between the late prehistoric populations of Nehalem and other coastal areas, including house types (Woodward 1987) and physical features of the population (Gibbs 1877) that suggest direct contact, at least with an Asian population (Quimby 1986).[12] Oral histories of European contact also exist. There are specific references to a red haired

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[9] A letter was received by the author from a member of the Nehalem Bay Historical Society. Included was the actual 1901 diary page, the map, and drawings of some of the porcelains. A copy was sent to SHPO.

[10] Geologist, Dr. Leonard Palmer, conveyed to Dr. Daniel Scheans that timbers were found during excavations, and that the Department of Geology had referred DEQ to the Department of Anthropology. Neither the date nor the name of the caller was recorded.

[11] This may be the location of a shipwreck with two remaining masts, least exposed in the 1930's (Hajda 1989b).

[12] "Chinese coins were called 'Konapee's money' by Indians." (Hajda 1990).

individual, and stories of sailing ships, described as whales with trees (Thwaites 1904-1905, Cous 1897, Hajda 1989). The porcelain assemblage from Nehalem is predominately from the lower deposits (Woodward 1987). The metal and wax were recovered from areas of housepits that also reflect the earlier period of occupation.

The metals should also be noted. Based upon descriptions of some of the materials, and upon technical studies, some of the metal is undoubtedly from European sources. The spikes, fragments of iron, and fragments of copper can all potentially be attributed to Europe. However, bronze items including three chest handles have been firmly identified by the Smithsonian as being Chinese in origin (Hajda 1990).

One enticing fact remains. In southwest Washington, inland from the coast and just north of Vancouver Lake, are five closely located prehistoric sites. The inhabitants of these sites, for a brief period of time, had a cultural need for ceramics. They made and used several types of fired clay objects. Excavations at two of these sites have yielded several fragments of Chinese porcelain, which are of the same period of manufacture as the porcelains documented at the two coastal sites (Scheans and Stenger 1991). One of these inland sites was identified to Lewis and Clark as the Soto village (Hajda 1990).

Early historic records and the ethnographers who study them discuss the probability of European *and* Asian sources for the Nehalem and Netarts materials. "In the regional distribution system, each group tended to specialize in locally distinctive products: beargrass…came from the mountains, obsidian from central Oregon…. The lower Chinooks near Ft. astoria tried to monopolize the flow of foreign trade goods brought in by the whites…. Shipwrecked foreign goods may well have become local specialities, distributed throughout the region directly, by Tillamooks on trips inland or to the Columbia, or indirectly, from coastal group to interior group…with Tillamooks at places like Nehalem specializing in shipwrecked goods…." (Hajda 1990).

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WILLAMETTE VALLEY CLAY LINKED TO THICK BLANKETS OF MOUNT MAZAMA AIRFALL

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A study in the West Eugene Wetlands, has tied a 2 to 5ft (0.5 – 1.5m) thick surficial soil unit in the Willamette Valley to the eruption of Mount Mazama. The eruption occurred 7,700 years ago (6,850 BP). Age of sediments, mineralogy and chemistry supports the concept that a dense cloud of fine-grained volcanic ash fell into the valley during one of the phases of the multi-event eruption. This research began in an effort to understand the existing soil stratigraphy and unusual hydrochemical conditions of the West Eugene Wetlands (380 – 450feet a.s.l.) and may have ended in unraveling the mystery of an anomalous grey clay layer found near the surface throughout the Willamette Valley.

The study site is located eighty miles north-northwest of Crater Lake (Mt. Mazama) at the West Eugene Wetlands (Figure 1). Samples were collected from the profiles of 19 soil auger borings which were taken from a 3.5 mile transect across West Eugene (T17SR4W and T18SR4W). Included were samples from two 10ft (3m) deep trenches that were excavated in earlier investigations. As the study progressed, sample collection expanded northward up the Willamette Valley, into the foothills surrounding Eugene, and eastward to Waldo Lake on Hwy 58. Methods of analysis included sieving, microscopic observation of free grains, thin-section studies, radiocarbon dating, x-ray diffraction, micro-probe analysis, neutron activation and ion chromatography of soil slurries and surface stream waters.

In West Eugene, four distinguishable stratigraphic profiles were correlated to each other on the valley (Figure 2). These are identified as Units I, II, III and IV. Unit I is the surface soil with a loamy clay texture (4" – 18" thick) that is underlain by a sequence of clay (4'-5' thick). Unit II consists of a massive grey clay, overlying Unit III, which is an olive brown silty clay with a gradual boundary. The common characteristics of Units II and III suggest that both units are from the same source and are contemporaneous. They share the same mineralogy, texture, degree of weathering and lack of any soil formation.

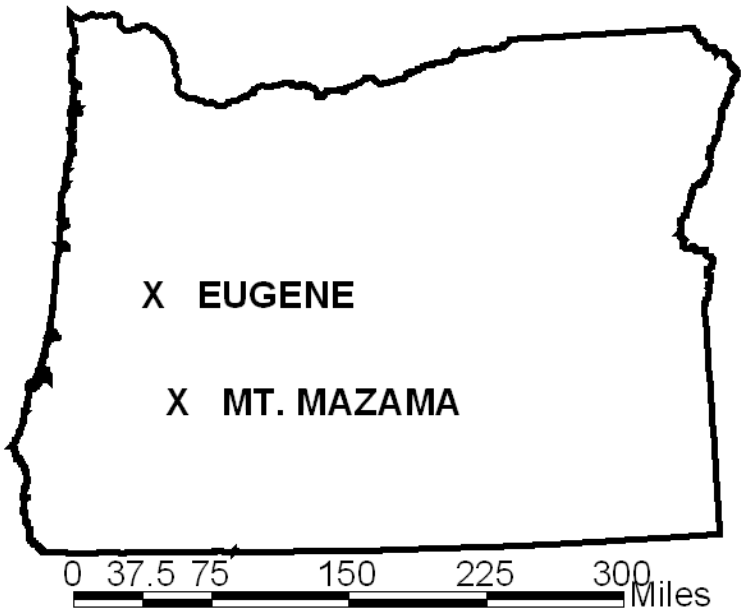

Figure 1. Location Map of Oregon. Mt. Mazama, today known as Crater Lake, is located approximately 80 miles southwest of Eugene.

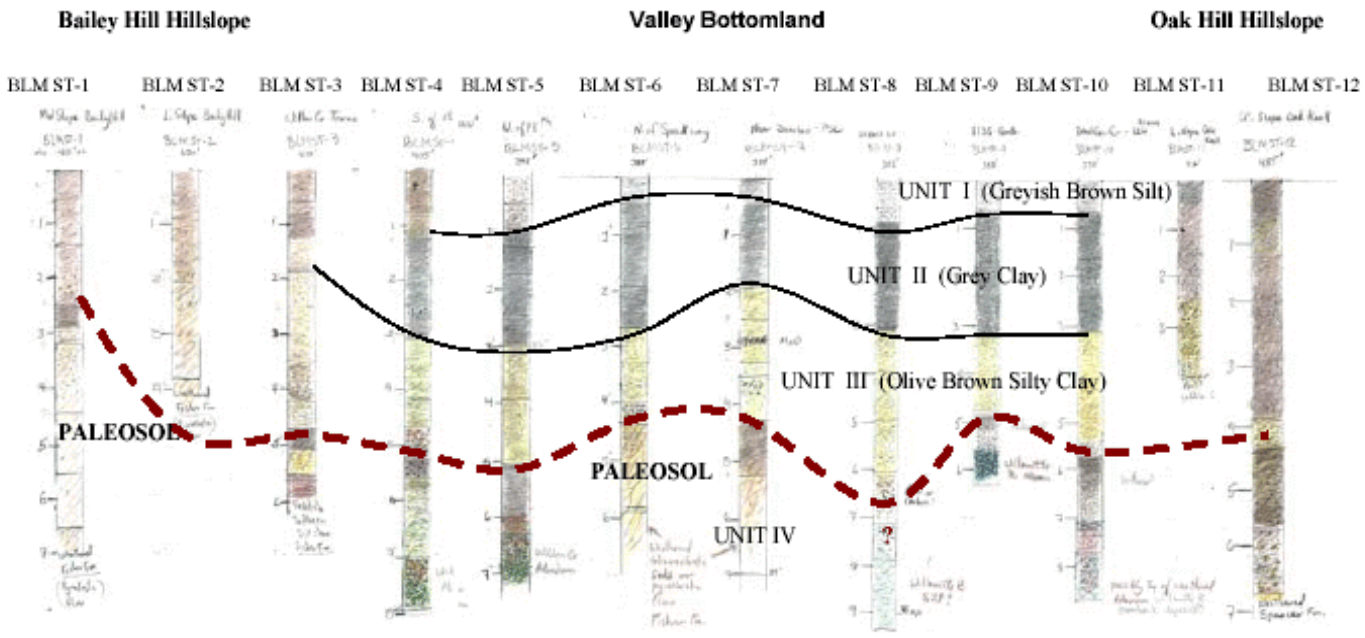

Figure 2. Stratigraphic Units from West Eugene. The transect ran from hillslopes at approximately 450 feet msl to the valley floor (380 feet msl).

Another distinguishing feature of Units II and III is that there is no fluvial bedding evident in the clay. The clay itself is massive with no reworking, suggesting that transport was not by water. Coarser grains, up to 1/8 inch (2 mm) in diameter are distributed randomly throughout the two deposits, with a sorting of denser particles toward the base of both units. Below these units is Unit IV which is composed of one of the following: 1) Eugene/Fisher and Spencer Fm. bedrock, 2) paleosols, or 3) fluvially bedded silts, sands, or coarse sand and gravel deposits from local tributaries and the Willamette River.

Surface soils in the hillslope profiles are different from the valley floor soils. Hillslope soils have weathered into well-drained silty brown soils, and do not contain the grey clay found on the valley floor. However, the upper 3ft (1m) of the soil profile contains the same unique mineralogy that is present in the upper three units of the valley floor and it is often found over a paleosol.

The minerals found in West Eugene are also found in the samples taken in other areas around the Willamette Valley. The unsorted minerals and lithic fragments found in the surface units are a minor accessory (0.85-8.0%) of each unit. The mineral crystals are very euhedral, lack rounding or abrasion, have appendages, and are shiny and easily loosened from their clay matrix. These features suggest little or no fluvial transport was involved in their arrival at the site (Figure 3). A loose matrix with minerals lacking clay coatings and iron oxide stains indicates that the soils are quite young. The euhedral characteristics of the crystals suggest that ample time passed as the minerals were floating freely in liquid magma before the eruption. Notable examples of this are bipyramidal

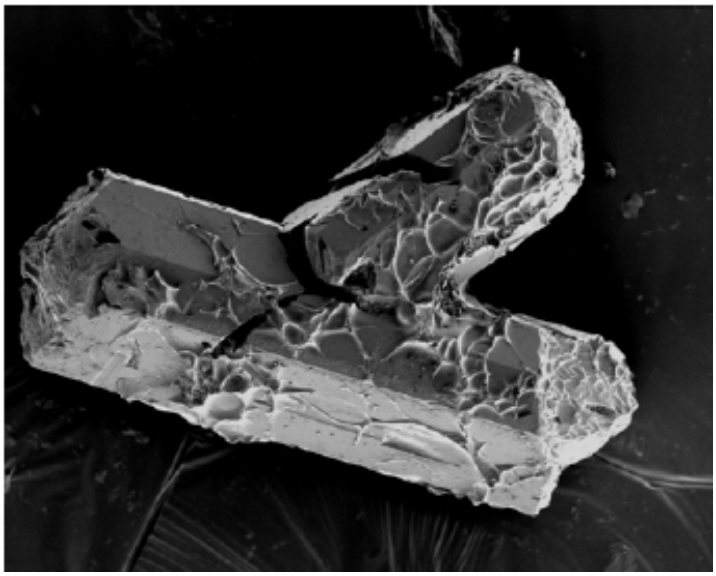

Figure 3. This is an example of the hypersthene found in the Mazama deposits. The mineral has appendendages and is not fluvially rounded.

quartz, hexagonal ilmenite and equant spinel grains, which are found in both Units II and III (Figure 4), along with a low calcium hypersthene with oxide and apatite inclusions as well as shiny hornblende laths found primarily in Unit II. Fractured quartz and plagioclase are present and especially visible in the lower olive brown Unit III. Fractured quartz is characteristic of a very explosive emplacement event. Of these minerals, light green hypersthene with inclusions of Fe and Ti oxides and apatite, fractured euhedral hornblende fragments, transparent euhedral plagioclase grains, shiny hexagonal ilmenite and magnitite grains are common in the "typical" pumitic Mazama ash found from the crest and east of the Cascade Mountains (Druitt and Bacon 1989).

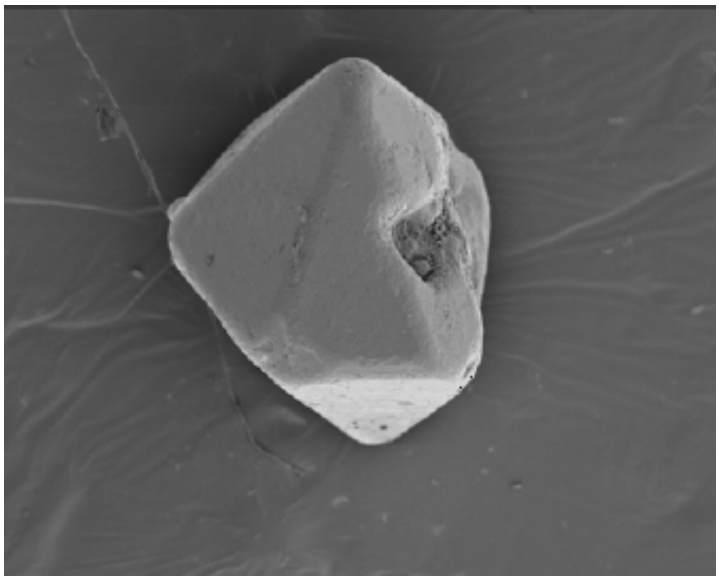

Figure 4. Bipyramidal quartz is a unique crystal found in the Mazama deposit.

This mineral suite is not the same as that produced by recent erosion of soils and weathered andesitic and basaltic andesite volcanics transported by the Willamette or McKenzie Rivers. Its distinctive minerals are more rhyolitic in nature and match the suite and compositions of Mt. Mazama tephra better than any other source (Druitt and Bacon 1989). Microprobe chemical analyses (Donovan 2003) confirm that the percentages of characteristic elements that make up the Eugene suite of minerals is also not the same as those of typical Cascadian andesitic and basaltic andesite volcanism. In addition, the minerals are not weathered and are very different from the rhyolitic volcanism of the Eugene/Fisher Fm. that dates to the Eocene and underlies these units (Figures 5 and 6).

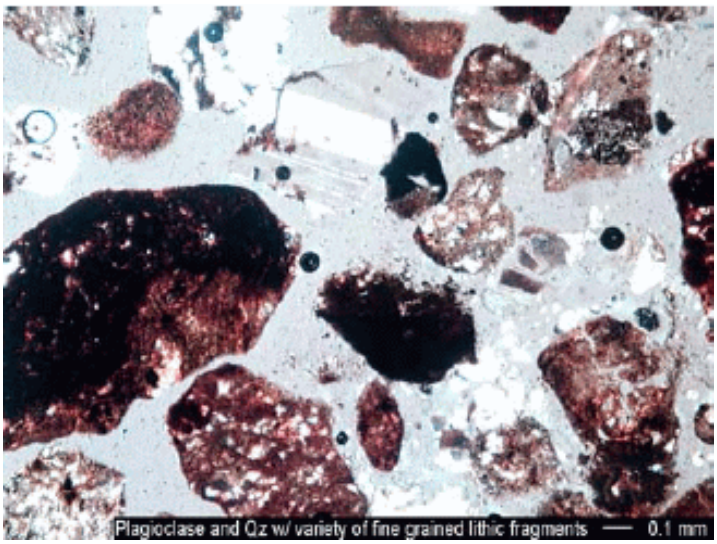

Figure 5. This is an example of a thin section under microprobe analysis of the minerals found in the surface soils of the West Eugene hillslope, approximately 24 inches into the profile. Present are plagioclase, fractured quartz, scoriacious/pumitic lithics, and fe-oxide stained lithics. There are no local source areas for these free crystals.

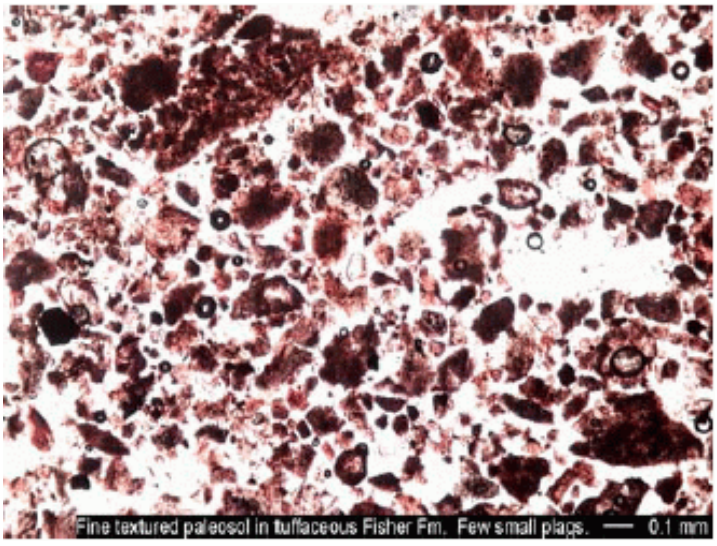

Figure 6. This illustrates the local parent material shown in thin section beneath Figure 1. At approximately 48 inches, the hillslope profile is a Fisher Fm. Paleosol containing high fe-oxide weather and lithified tuff.

Trace elements were analyzed using Neutron Activation (Schutfort 2003), and their patterns demonstrate that Units II and III have a common trace element "signature" which is quite different from the underlying rock, paleosols, or alluvial units.

The massive clay underlying the West Eugene Wetlands at one time was thought to be associated with the Missoula Floods. X-ray diffraction was used to study the clay mineralogy and in none of the samples are there signs of mica, K-feldspar, diopsitic pyroxene, or lithic fragments of granitic and metamorphic rocks. This confirms that no Missoula Flood Silts are present in the West Eugene area. Initial results using low intensity sample preparation methods (Sheldon 2003) indicate that the clay is an amorphous gel with little structural development. Using titration concentration and chemical saturation methods (Glasmann 2003), results indicated that the clays are different from any expected from a typical Cascadian soil source, because of a combination of well ordered kaolinite along with smectite in the immature grey clay. The kaolinite is surprising in such a young deposit and is indicative of hydrothermal alteration that would occur within a volcanic superstructure such as Mt. Mazama.

It was determined that the floodplain deposits in West Eugene are Holocene in age. Radiocarbon dating of the sediment in West Eugene was problematic due to a lack of datable material. However, bulk soil dates did provide Holocene ages. Archaeologic sites in the vicinity of West Eugene within the Willamette and the Long Tom River floodplains are Holocene in age at similar depths.

Of particular interest elsewhere in the Willamette Valley, is a radiocarbon date from a mega fauna site at Woodburn. There, a grey clay 3ft (1m) thick located in the upper 5ft (1.5m) of the stratigraphy (Stenger 2003) provided a radiocarbon date of 6,850 BP, contemporaneous with the Mt. Mazama eruptions. Soil development was also characterized in West Eugene samples by paleopedological methods (Retallack 2002) and results support short residence times of soils before burial. Less than ten thousand years of weathering was calculated to exist in the ten foot profile of the valley floor.

Glass and pumice are found in all samples of grey clay, however, they appear extremely weathered. Polarized light was used to identify individual pieces of glass. Less pumice and glass are found in the West Eugene samples, but dominate the samples in Woodburn. The Eugene pumice is a scoricious lithic containing gas bubbles with as much as 100% silicate values (Donovan 2004). The Woodburn pumice appears as a more typical light-weight tubular, bubble-filled siliceous lithic (Figures 7 and 8).

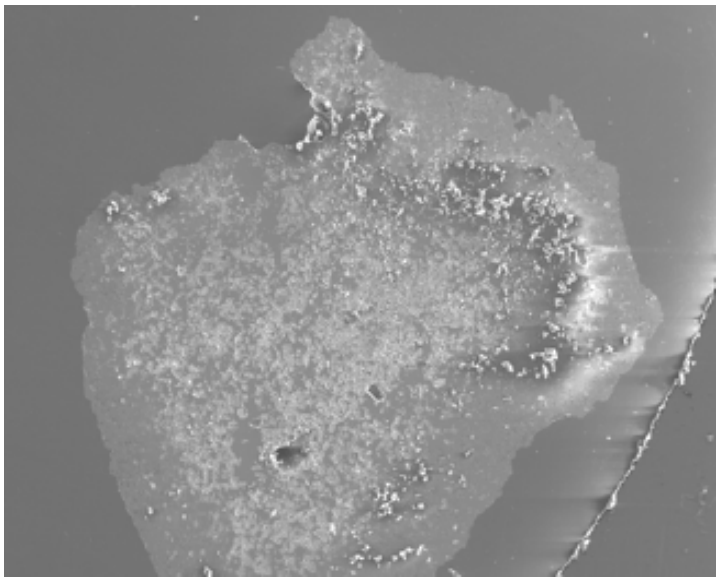

Figure 7. Using SEM it is possible to see the gas bubbles that formed in this scoricious silica rich lithic found in West Eugene profiles. The particle is too small for the human eye to see.

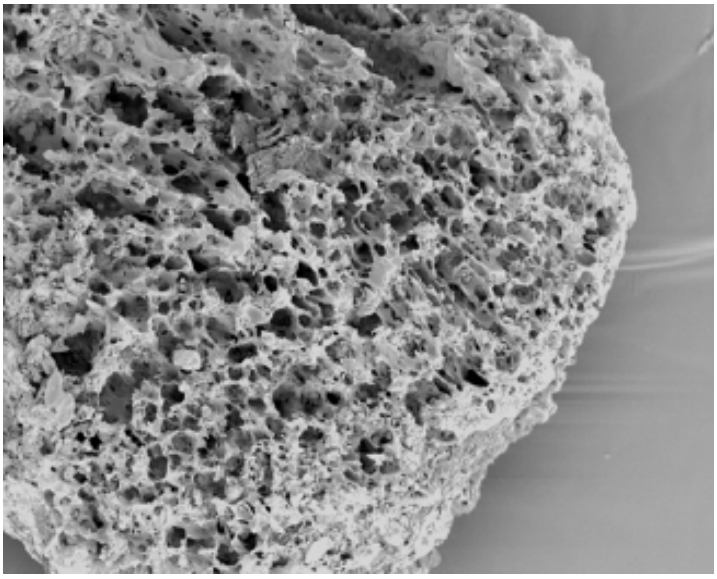

Figure 8. This photo illustrates the pumice that is found throughout the Woodburn, Oregon, profile. The pumice can be as large as 1 mm in diameter.

During this study, a soil/water chemistry signature was found in West Eugene that directly correlates to water quality data from Crater Lake (Engelking 2003; U.S.G.S. 2004). Anomalously high conductivities are found in some local streams of West Eugene such as Amazon, Willow and Coyote Creeks (James and Thieman unpublished data). Conductivities were measured from slurries made of West Eugene soil samples with observations taken daily for 7 to 10 days. Conductivities were found to be extremely high in the clays, especially the olive brown ones (Unit III). Using ion chromatography (Engelking 2003), specific anions were identified. Chloride and sulphate were always present, however, other dissolved elements present included fluorine, nitrogen compounds, phosphate and bromine. While very different from the waters of the Willamette and McKenzie Rivers, these results do mirror Crater Lake water quality data and suggest that a naturally high background rate of these elements emanates from the ash deposits of Mt. Mazama that fell into the Eugene area.

Mt. Mazama was a catastrophic event that would have affected human occupation in the entire region. Findings reveal that when the grey clay is present, no archeological lithics are found (Stenger, pers. com. 2003). The grey clay is always massive with fluvial bedding absent. The soils underlying the wetlands in West Eugene below the clay deposit reveal that the extent of the wetlands was nowhere near what it is today. At approximately 5ft (1.5m) below the wetland surface, the lower stratigraphic units and paleosols are red and brown in color, suggesting that more oxygenated soils existed in a better drained landscape. This coincides with paleoecologic data from Beaver Lake in the mid-Willamette Valley which suggests that the Willamette Valley experienced a pronounced change in drainage throughout an 11,000 year record. The Beaver Lake pollen study suggests that riparian gallery forests and wetland habitats begin to develop on the valley floor after 7,500 cal yr BP, replacing more xeric species such as oak, fir, and alder (Pearl 1999).

The results of this study suggest that a fine-grained pyroclastic surge came into the Willamette Valley from Mt. Mazama seven thousand seven hundred years ago. The flow would have traveled at speeds greater than 60 mph. The direction of the blast was north-northwesterly into the valley. The width of its distribution is unknown at this time, but the depths of the deposit near Eugene and Woodburn, suggests the trajectory of the blast fell directly onto the valley floor. The heat and blast would have ejected great quantities of fine dust, gas and lithic fragments into the atmosphere. Within an hour of the eruption, fine particles would have begun raining down in a density sorted regime with heavier scoriacious silicate rich lithics (Unit III) falling into the Eugene area, and lighter pumice and glass that blew higher into the atmosphere raining down secondarily on the first unit (Unit II). An ash and dust cloud would have billowed to the distal ends of the flow, as even lighter and purer glass and pumice drifted north, blanketing the Woodburn area. Where the ash fell onto well-drained hillslopes, the ash weathered into Andisol soils, still present

today. Where the ash fell into low lying areas that remained saturated for long periods of time, it weathered into an amorphous gel (a grey clay). The fine particle size of this ash deposit along with its smectitic and kaolnitic properties allowed the tephra to weather into a massive clay that shrinks and cracks in the summer and swells in the winter forming an impervious subsurficial layer resulting in the wetlands found in much of the Willamette Valley.

Stratigraphic evidence from the surface soils of the Willamette Valley point to a deposit of Mt. Mazama ash. The stratigraphic unit is related in time, related in mineralogy and related in chemistry to the Mt. Mazama eruption. Mt. Mazama erupted over a two hundred year period. The series of eruptions and the collapse of the caldera would have contained different densities of minerals at different times that could have blasted into the atmosphere and been a part of any of the eruptive phases. A change in vegetative species on the Valley floor, from drier oak and fir, to riparian and wetland species, the lack of archaeologic lithics in this stratigraphic unit, and climate change around the eruption of Mt. Mazama, suggests that the eruption may have led to immense landscape and occupation shifts in western Oregon during the early to mid Holocene.

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