



NCRI Report

Visitor Center Rehabilitation Project Reveals Secrets of the Vancouver Arsenal

by Bob Cromwell, NPS Archaeologist

As documented previously in the NCRI Report, the Vancouver National Historic Reserve (VNHR) Visitor Center will soon receive a rehabilitation to better serve the growing needs of increasing visitation. As part of this effort, and to be in compliance with Sec. 106 of the National Historic Preservation Act, an archaeological survey was conducted by NCRI staff and student volunteers on the grounds around the Visitor Center, and a Historic Resources Study of the immediate area was completed by NCRI Historian Greg Shine.

These efforts have detailed one of the least documented historical elements of the VNHR and of the park, the existence of the U.S. Army's Vancouver Arsenal (1852-1883). It turns out that the Visitor Center was built almost directly in the middle of the grounds that the Vancouver Arsenal once occupied. The Vancouver Arsenal has been all but ignored by historians to this point, and the area around the Visitor Center had never had an archaeological survey completed.

As detailed by the Historic Resources Study, the U.S. Army's Arsenal system was placed under the command of the Ordnance Department, based out of the War Department in Washington D.C. It had its own officer corps and, arguably, some of the best



Photograph courtesy of Fort Vancouver NHS

Stone foundation post for one the Vancouver Arsenal buildings

and brightest 19th century U.S. Army officers rose through the Ordnance Department's ranks. Ordnance corresponds to all arms, ammunition and martial equipment necessary to keep the Army supplied for its fighting roles. Arsenals were established throughout the country in order to produce, store, and develop this equipment. The Vancouver Arsenal was never developed further than being a temporary facility, mainly due to competing land claims between the Hudson's Bay Company (HBC), and the U.S. Army. The Army did not want to develop a permanent arsenal on

lands that may belong to a foreign corporation.

Greg Shine was able to complete historical research at the National Archives on the Vancouver Arsenal, and for the first time, developed a history of all of the commanders assigned to the post, as well as recording factual data such as the number of men assigned to the post, the construction sequence of structures, and many of the political imbroglios between the Arsenal commanders and the commanding officers of Vancouver Barracks.

continued on page 3

Historical Fragment

The Fort Vancouver Post Order Book offers interesting insights into the interactions between members of the U.S. Army and Hudson's Bay Company employees. The following is from March, 156 years ago.

From *Fort Vancouver Post Order Book* at Oregon Historical Society Library (MSS 183, Post Orders, Fort Vancouver).

Head Quarters, Columbia Barracks
March 3d, 1853

Orders No. 21

I. Complaints having been made that Soldiers are in the habit of frequenting the huts of the tenants of the Hudson's Bay Company, at Night, and conducting themselves while there in a disorderly manner, no soldier will hereafter be allowed to visit these huts, or to go in the vicinity of them after dark without a written permission from the commanding officer.

II. Absence from quarters after tattoo is a violation of Post Orders, and all non-commissioned officers in charge of rooms are required to report and confine all men who absent themselves from their bunks after that hour.

III. The Village between the Hudson's Bay Company Fort and the Quartermaster's house will be patrolled frequently during the night.

IV. The non-commissioned officers of the guard will visit the Sentinels frequently during the night. The Officer of the Day will see that they attend to this duty, and will visit the sentinels himself during the day and at night to see that they understand their orders and execute them.

V. The Sutler will not be allowed to trade with Soldiers or Citizens on Sundays; and is forbidden to sell liquor to Soldiers except with the written permission of their Company Commanders.

VI. Soldiers are forbidden to loiter in or around the sutler's store – If they visit the store for the purpose of buying anything they will leave as soon as they have made their purchases –

By Order of Lt. Col. Bonneville
Thos. R. McConnell
1 Lt. & Adj. 4 Infy
Bvt. Capt. USA

Under the Microscope:

Blair Wardwell

Blair grew up in Memphis, Tennessee. She migrated to Eugene to get her Bachelor's in Anthropology from the University of Oregon. Blair went on to get her Master's in Anthropology at the University of Cincinnati. She then moved to Nashville and did archaeology for a private cultural resource management firm. While in Nashville, Blair also volunteered at The Hermitage Museum. Since her days in Eugene, Blair has done archaeology all over the country, including Oregon, Tennessee, Mississippi, West Virginia, Indiana, Ohio, and Louisiana, among others.

Blair now lives in the Portland area, and has been back in the Northwest for four years. Blair met graduate student, and Fort Vancouver volunteer, Beth Horton at the Society for American Archaeology meetings last year in Vancouver, British Columbia. She started volunteering here last August, working on Beth's dissertation materials. Blair plans to get back into archaeology eventually, and enjoys volunteering in the lab here at Fort Vancouver.

Blair knits and gardens, and she's very glad to be back in the Northwest. She is in the process of building a treehouse in the backyard for 2 1/2 year old son, Otto, and 5 1/2 year old daughter, Kate.



Photograph courtesy of Fort Vancouver NHS

NCRI Director's Letter

On March 2, participants at the recent George Melendez Wright conference on Parks, Protected Areas, and Cultural Sites were treated to a few sublime segments of filmmaker Ken Burns' and historian Dayton Duncan's upcoming PBS documentary *The National Parks: America's Best Idea*. Wright is featured in the film as a pioneer in the use of science to better manage national parks and to provide authentic visitor experiences. The NCRI is an organization that highly values the contributions of Wright and all scientists who use their skills to better understand and protect our cultural and natural treasures. Science has the potential to bring new ideas and interpretations to the dynamic natural and cultural "living" laboratories that parks and protected spaces represent.

Another scholar, whose work transformed the way in which Americans think about their history, died on March 25 of this year. John Hope Franklin brought the history of African Americans to life, showing their important place in the development of the United States, and through his work helped to change the perception of race in this country. His scholarship, and that of those like him, have led to the development of some of the most important protected spaces in our country, like the Brown v. Board of Education National Historic Site in Topeka, Kansas, or the African Burial Ground National Monument in New York, NY. Like Wright, Franklin used his scholarship to change the way we think about places, history, and culture.

The continuing research of the NCRI on the multicultural Hudson's Bay Company Village provides new data to understand those who were poorly documented in the past and underrepresented in our history. We continue this thread in the studies of the soldiers and their families that made up the U.S. military post. The exploration of unique industrial endeavors, like the World War I Spruce Mill, enlarges our understanding of past human events and sheds new light on the decisions of important leaders.

I encourage our students and colleagues to strive to match the talents of Wright, Franklin, and the other scientists and academics who have made a difference in our world, and have changed the way in which we think about parks and other protected areas.

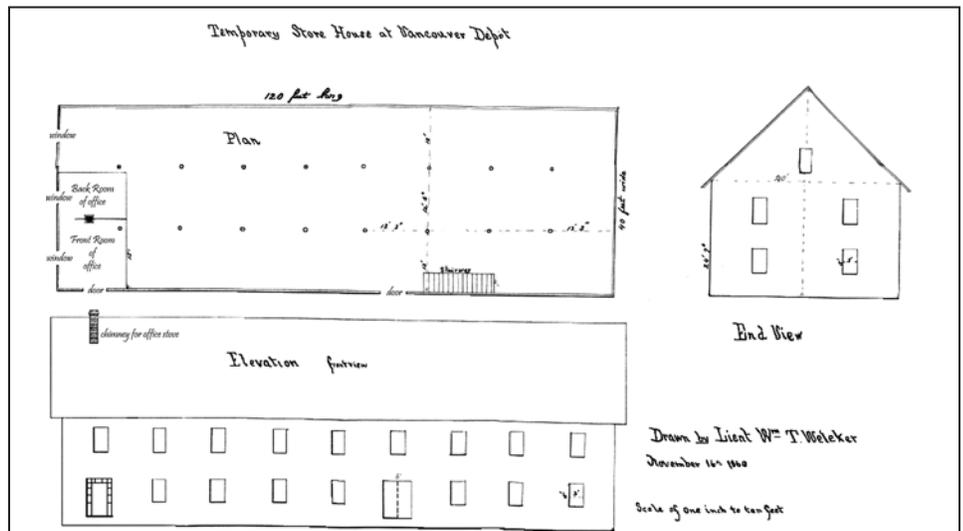
Doug Wilson

Vancouver Arsenal

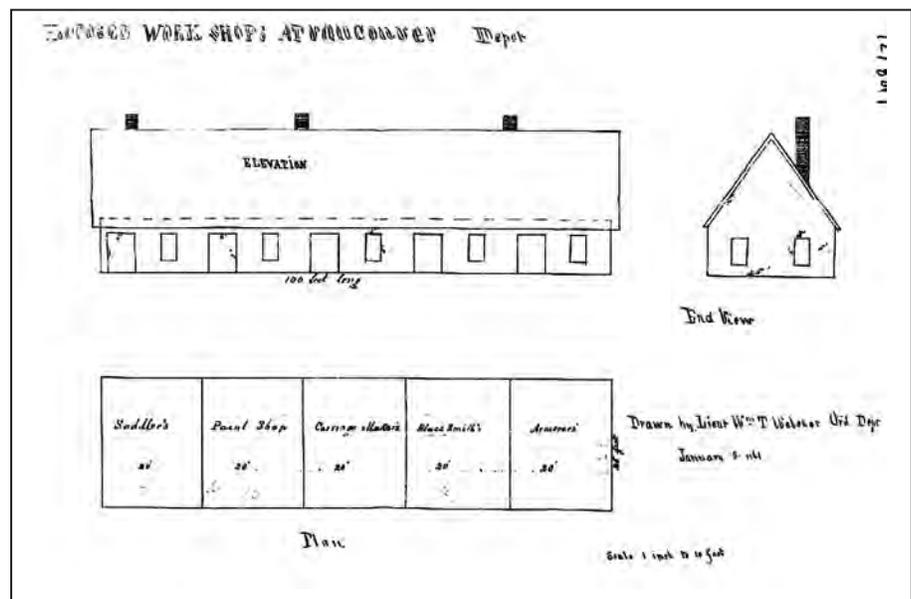
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These details revealed that the Vancouver Arsenal grew to contain up to 24 wooden structures, and at times had over 20 personnel attached to it. The Arsenal was primarily used for the storage of arms and ammunition manufactured at arsenals on the East Coast, or at Benicia Arsenal in California, but during the Civil War period tens of thousands of paper cartridges for muskets were actually manufactured at the Vancouver Arsenal. There was even a plot during the Civil War for southern sympathizers to take the Arsenal by force, in order to destroy the arms stored there, to prevent the Union Army from being an effective fighting force in the Pacific Northwest! The Arsenal was closed in 1883 when it was decided that a permanent arsenal was not required in the Pacific Northwest, and as the HBC land claim issue had still not been resolved. The structures were all either torn down, moved, or converted to different functions, as the space allotted to the Arsenal was converted to the new headquarters for the Army's Columbia Department.

Archaeological and historical research shows that the Visitor Center is constructed on top of the foundation remnants of a 1862-1886 Ordnance Storehouse. Archaeological testing to the south of the Visitor Center confirms the presence of foundation piers from the Storehouse, made of carefully placed piles of basalt stones. Remote sensing and archaeological survey units show the presence of several of these foundation piers, delineating the southern and western walls of the Storehouse, as well as hundreds of



1860 temporary storehouse plans for Vancouver Depot



1861 temporary workshop plans for Vancouver Depot

mid-19th century artifacts related to U.S. Army activities around the structure. It does appear that the Army kept the area clean of ordnance, and surprisingly, very few munitions were recovered in archaeological testing, all constrained to remnants of fired small arms ammunition.

The archaeological survey is helping to guide the proposed rehabilitation designs for the

Visitor Center, and analysis has helped to develop maps of areas of high archaeological sensitivity. This will ensure that the rehabilitated Visitor Center will be sensitive to the archaeological resources associated with the Vancouver Arsenal, and it is also anticipated that some of the new interpretive exhibits within the Visitor Center will help tell the story of the Vancouver Arsenal.

Images courtesy of National Archives and Records Administration

Musket Balls, Lewis & Clark, and the Fur Trade: Isotopic, Elemental, and Historical Analysis

by Doug Wilson, NPS Archaeologist

The chemical analysis of lead objects has been used in archaeology and forensics to tie a particular ore or manufacturer to a particular artifact. In 2005, the Park Service partnered with Portland State University to explore the Chinook “Middle Village” site/Lewis and Clark’s Station Camp at the mouth of the Columbia River. Isotopic and elemental analyses of artifacts from the site, combined with analyses of similar artifacts from the Cathlapotle and Meier sites in the Portland Basin, expand on Jamie Lockmann’s work, which explored artifacts from Fort Vancouver, a Hudson’s Bay Company site; and Fort Clatsop, and Travelers’ Rest, Lewis and Clark Corps of Discovery sites.

Historical records suggest that lead recycling of musket

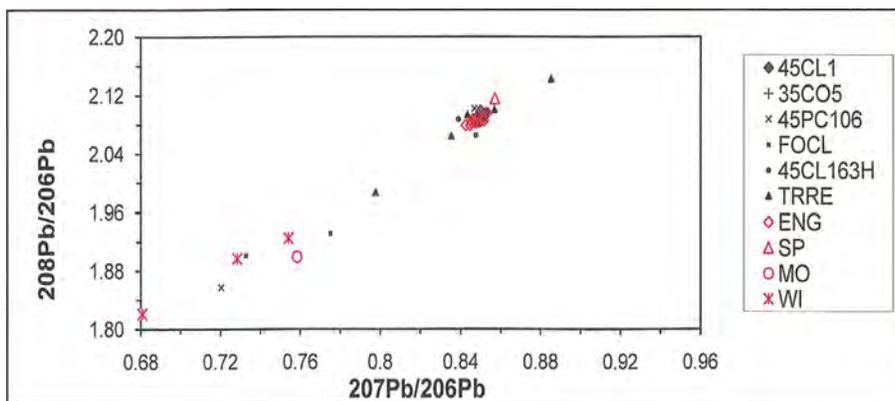


Image courtesy of Fort Vancouver NHS

Lead isotope characteristics of artifacts compared with likely sources. With one exception, all of the samples from 45CL1 (Cathlapotle, Clark County, WA); 45PC106 (Station Camp/McGowan site, Pacific County, WA); and 35CO5 (Meier site, Columbia County, OR) cluster with the English sources and artifacts from 45CL163H (Fort Vancouver site). While artifacts from FOCL (Fort Clatsop site, Clatsop County, OR) and TRRE (Traveller’s Rest site, Missoula County, MT) reflect a variety of origins, some tied to Wisconsin sources. The contexts of the finds suggest that post fur-trade deposition of lead bullets by settlers and hunters were likely responsible for these artifacts. (Bower et al. 2007: table 1; Lockman 2006: appendix A). ENG (English sources); SP (Spanish source); MO (southeast Missouri source); WI (Wisconsin Source).

balls and shot from multiple, chemically distinctive sources was probably minimal in the 19th century, and unlikely to confuse the contrasts between distinctive lead mining regions and distribution routes for lead artifacts. This suggests that isotopic and chemical techniques can be used to identify sources of lead in the Pacific Northwest during the fur trade period.

Likely sources of lead musket balls and shot in the Pacific Northwest are from England, perhaps Spain, and the Wisconsin and southeast Missouri areas of the United States. The results of this analysis suggest that the bulk of lead at Chinookan sites is from English sources. The elemental

analysis provides clues that early fur trade sources of lead might be different from later Hudson’s Bay Company sources of lead, and point to innovations in lead smelting and manufacturing technology. Contrary to popular accounts, the identification of a unique lead signature related to the Lewis and Clark expedition is still uncertain.

Regardless, isotopic analysis appears useful for inferring the source of lead artifacts and the technological development of lead products during the Industrial Revolution. Results of the study will be presented at the 62nd Annual Northwest Anthropology Conference, April 9, 2009 at Newport, Oregon.



National Park Service
U.S. Department of the Interior

The Vancouver National Historic Reserve is a partnership of the National Park Service, the City of Vancouver, the State of Washington, and the U.S. Army. It includes Fort Vancouver and its village, Vancouver Barracks and Officer’s Row, Pearson Field and Air Museum, portions of the Columbia River waterfront, the Water Resources Education Center, and the McLoughlin House unit in Oregon City, Oregon.

Fort Vancouver National Historic Site & Vancouver National Historic Reserve

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The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

Network News

Olympic Peninsula Basketry Book



Photographs courtesy of Washington State University



Basket weaver Maggie Kelly of Queets, Washington

Hands of Maggie Kelly, September 25, 1973. Photo by Charles K. Peck.

Olympic National Park anthropologist Jacilee Wray and the Olympic Peninsula Intertribal Cultural Advisory Committee are nearing completion of their new book, *From the Hands of a Weaver: Olympic Peninsula Basketry Through Time*. Olympic National Park is the repository for hundreds of wonderful baskets made by Olympic Peninsula weavers. Many of these baskets were donated directly to the park, while others were transferred from other parks after Olympic National Park was established in 1938. For example, a large collection donated to Mount Rainier that belonged to Portland socialite Mrs. J.B. Montgomery was transferred to Olympic in 1941. Montgomery's baskets were collected around the turn of the

20th century while her husband was surveying Puget Sound for the Northern Pacific Railroad. The Park currently has no museum to exhibit these baskets, so the idea arose to showcase some of them in a book on traditional basket weavers of the Olympic Peninsula.

The intertribal committee had previously worked with Jacilee Wray on the book, *Native Peoples of the Olympic Peninsula: Who We Are*, so they decided that this would be an excellent opportunity to delve into the topic of peninsula basketry.

The new book contains chapters by anthropologists who specialize in basketry and fieldwork with these tribes. The chapters are as follows: Twana and Makah chapters were written by

Carolyn Marr and Nile Thompson; Quinault Basketry by Joan Megan Jones; Quileute and Hoh by Jay Powell; and the Klallam Basketry chapter by tribal members Kathy Duncan, Jamie Valadez, and Marie Hebert, with Karen James. There is a chapter on ancient basketry by archaeologist Dale Croes, a chapter on the basketry materials beargrass and sweetgrass by ecologists Daniela Shebitz and Caren Crandell, as well as a chapter on marketing basketry and the Indian Arts and Crafts Act by Jacilee Wray. The Olympic Peninsula Intertribal Cultural Advisory Committee is proud to bring together this cadre of experts in a single compilation for the basketry enthusiast.

North Coast Cascades Network
Ebey's Landing, Fort Vancouver, Klondike, Lewis and Clark,
Mount Rainier, North Cascades, Olympic, and San Juan

High-Altitude Archaeology: Subalpine and Alpine Archaeological Sites in the Pacific Northwest

by Theresa Langford, NPS Curator, and Dave Conca, Bob Mierendorf, and Greg Burtchard, NPS Archaeologists

It has been called “science with a million dollar view,” but archaeologists doing work at high altitudes spend more time looking at the ground.

Conventional wisdom in earlier decades held that prehistoric populations seldom ventured into high mountain landscapes. However, work by dedicated archaeologists from the 1980s through the present has established a new understanding of high altitude settlement and travel. In the Pacific Northwest, several National Park Service archaeologists have been accumulating data on high altitude sites. Dave Conca (Olympic National Park [NP]), Bob Mierendorf (North Cascades National Park), and Greg Burtchard (Mount Rainier National Park) have spent many years surveying and testing sites in their respective parks, a meticulous, ongoing process that has already produced substantial results.

Archaeologists at North Cascades NP have excavated three test units at Cascade Pass (5,400 ft.), at present the oldest dated archaeological site in a Pacific Northwest alpine setting, as well as the oldest microblade technology site in the state. Twelve radiocarbon age estimates date the site to between 9595 and 2100 calibrated years before present. The intact subsurface deposits reveal a well-stratified, multicomponent site, interbedded with five primary volcanic ash layers from four Cascade volcanos. In addition, heating and cook-stone features were associated with each of the four cultural components. The site demonstrates for the first time ever that early Holocene foraging groups had already developed subsistence and mobility strategies consistent with alpine travel and resource use across the crest of the most rugged, glaciated, and high elevation portion of the northern Cascade Range of Washington and British Columbia.

At Olympic NP, archaeologists are investigating a large, subalpine ridge and meadow complex near the Hurricane Ridge Visitor Center (5,000



Photographs courtesy of National Park Service

Buck Lake landform (top); Bob Mierendorf at Cascade Pass (left); Chris Yamamoto at Hurricane Wellhouse (right).

± ft.). This area has a high density of archaeological sites, including at least five pre-contact lithic scatters. This year, archaeologists will be completing test excavations at several of these sites along with controlled surface collection and mapping. A special emphasis will be placed on gathering data for dating. Accurate dates will allow the sites to be placed into a regional context with dated sites at North Cascades and Mount Rainier. Another avenue of research involves determining the geologic sources for stone used to make tools. Using geochemical analyses, archaeologists at Olympic NP are developing a database that traces dacite and obsidian raw materials back to their geologic sources, which leads to a better understanding of trade networks and local resource procurement patterns.

Pacific Lutheran University field school students surveyed and tested areas of Grand Park (5,200 ± ft.), a subalpine tableland in Mount Rainier NP. Two previously documented sites were relocated and found to be in good condition. Last season, National

Park Service archaeologists also tested sites at Buck Lake (5,400 ft.), an area of unusually high artifact and feature density which reflects approximately 8,000 years of human use. Lithic, charcoal, and macrobotanical samples were taken, to support studies addressing both technological variation between early Holocene forager and late Holocene collector populations, and paleoenvironmental climate change studies.

Baseline data from these three national parks, in combination, will help build a radiocarbon chronology for Pacific Northwest sites, allow archaeologists to infer site functions, and better understand mountain land-use practices. The study has already proven that prehistoric peoples here were utilizing high altitude locales as natural passes and for resource extraction at an early date. It will continue to enhance our understanding of subsistence and settlement patterns in high altitude settings, answering some key questions about these understudied resources.

The Columbia River Crossing Project: Archaeology Underway

by Leslie O'Rourke, NPS Archaeologist



Photographs courtesy of Fort Vancouver NHS



Clockwise from top left: Cheryl Paddock and Jacqui Cheung work in the Village; unit in Village house area; dome tents protect the excavations; Ben Diaz in the Village; Eric Gleason conducting GPR with Leslie O'Rourke and Steve DeVore in the background.



The Columbia River Crossing Project (CRC)—the new Interstate 5 bridge between Vancouver and Portland—will involve widening both Interstate 5 and Washington SR 14 to accommodate the increased number of traffic lanes. CRC has contracted the archaeologists at Fort Vancouver NHS to conduct archaeological testing on the Vancouver National Historic Reserve lands that will be impacted by construction activities.

We began test excavations on March 2, after magnetometer

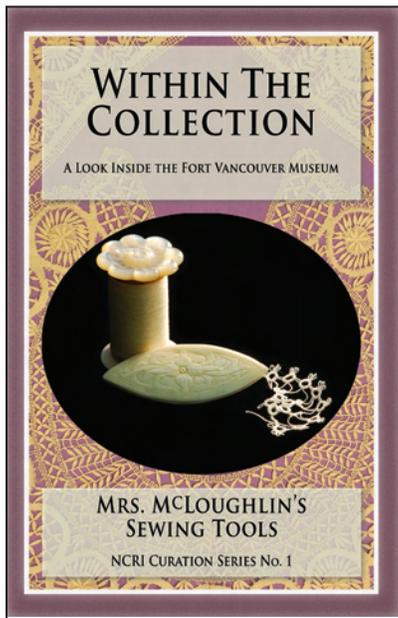
and ground penetrating radar (GPR) surveys were completed. Archaeological testing began at the west end of Officers Row, and has now moved to the Hudson's Bay Company (HBC) Village west of the Fort stockade. One of the first test units in the Village revealed a large quantity of HBC-era artifacts, either from House 4, or perhaps from an adjacent house. These test excavations are helping to determine the location of significant archaeological resources to avoid and preserve during construction. If these areas

cannot be avoided, we will conduct data recovery excavations to retrieve as much information as possible about these resources before they are destroyed.

Other areas to test will include the northwest corner of Old Apple Tree Park, the north side of SE Columbia Way, Anderson Road between the old post hospital and Interstate 5, and U.S. Army property south of East 5th Street. You will be able to spot our excavation sites by the large plastic domes that we set up over our test units. We hope to be finished with this phase of testing by the end of May.

Announcements

We are happy to announce the first volume in our NCRI Curation Series *Within the Collection: A Look Inside the Fort Vancouver Museum*, entitled **Mrs. McLoughlin's Sewing Tools** (see below). This booklet has photographs and descriptions of the sewing tools once housed in Marguerite McLoughlin's gilded and laquered sewing cabinet, and was authored by Park Service volunteer **Tracy Hill**. Our next volume, on tobacco pipes, will be available this summer.



Portland State University graduate student **Elaine Dorset** has been hired as the new lab director and volunteer coordinator for cultural resources. We are pleased to have her on board!

See our new **Network News** section (pages 5 and 6). This two-page section will highlight cultural resources projects going on around the North Coast and Cascades Network (NCCN), which includes the following National Park Sites: **Ebey's Landing, Fort Vancouver, Klondike, Lewis and Clark, Mount Rainier, North Cascades, Olympic, and San Juan.**

University Students Partner with NCRI to Conduct Research and Preserve Our Heritage

by Elaine Dorset, NPS Archaeological Technician



Portland State University (PSU) graduate students **Katie Wynia** and **Stephanie Simmons** are working on analysis in the lab.



PSU graduate student **Elaine Dorset** is doing her master's thesis on the Hudson's Bay Company gardens at Fort Vancouver NHS.



Washington State University graduate student **Beth Horton** is researching the early U.S. Army occupation for her Ph.D. dissertation.



PSU graduate student **Dana Holschuh** is planning to do her master's thesis research at Fort Vancouver NHS.

The NCRI is fulfilling its mission of providing support for education and research projects focusing on the cultural resources of the Pacific Northwest. Thirteen university students are currently conducting research with the assistance of the Institute, largely related to Fort Vancouver National Historic Site (NHS). Topics range from analysis of gender-based activities during the early US Army period, to investigations of spatial distribution patterns in the Hudson's Bay Company's Village and formal garden, to

the cataloging of artifacts in museum collections.

These research projects are invaluable to our Pacific Northwest community, helping us to understand the associations between the diverse, yet dependent, groups living here, both in the past and the present. The projects also address the importance of protecting and maintaining that information for the use of future researchers, whose questions may be different from ours as our cultural world moves into new forms.

Photographs courtesy of Fort Vancouver NHS

Material Culture Notes: Military Hat Insignia

by Greg Shine, NPS Historian

With 2009 marking the 160th anniversary of the U.S. Army's arrival in the area, it is fitting to note that the park's collection of artifacts includes military-related items found onsite. One interesting category is military hat insignia.

Thanks to John Wayne movies and Civil War souvenir manufacturers, the crossed rifle insignia has come to represent the 19th century infantry, but it was not until 1875 that the Army actually adopted this design. From 1858 through the Civil War



Figure 1. Enlisted men's infantry hat insignia, 1858-1972



Figure 2. Regimental hat insignia



Figure 3. Regimental hat or collar insignia



Figure 4. Standard enlisted infantrymen's helmet eagle, 1881-1903

Photographs courtesy of John Edwards

era, infantry soldiers sported a looped bugle horn (Figure 1) on their headgear. For identification purposes, regulations called for the soldier's regimental number and company letter (Figure 2) to be affixed on the front of the hat above the horn insignia, but many chose to place the regimental number inside the horn's loop. In later years, the regimental number and company letter were attached and formed one piece rather than three separate ones (Figure 3).

Soldiers possessed several different types of hats, depending on the occasion and assignment. At first glance, the size of the eagle pictured above (Figure 4) might suggest that it was worn by someone of high rank, but in actuality it would have adorned the front of the dress helmet of an

enlisted soldier between 1881 and 1903. Stamped from a solid piece of brass, about four inches in height, and highlighted by the crossed rifles motif, we know that it also belonged to an infantryman.

Today, these insignia continue to fulfill their intended role of providing information about the wearer. When compared with extant documentary evidence, the specific type, design, maker's mark, and any accompanying regimental and company information provides important clues to the wearer's identity, role, and time onsite; and their provenience (position in the ground) can help identify the date and function of surrounding archaeological features. Thus, these artifacts help forge a narrative that continues to connect visitors to the site's history.



National Park Service
U.S. Department of the Interior

Fort Vancouver National Historic Site
 612 East Reserve Street
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A partner in the
 Vancouver National Historic Reserve

EXPERIENCE YOUR AMERICA

MYSTERY ARTIFACT

This mystery artifact was uncovered during the 1984 Hudson's Bay Company jail excavations inside the fort proper. The artifact is cone-shaped, and approximately 3 inches across.

The mystery artifact in the last issue was a self-closing screen door hinge.

The Northwest Cultural Resources Institute is a cooperative partnership based at Fort Vancouver National Historic Site, dedicated to fostering cultural resources research, education, and stewardship in the Pacific Northwest. The NCRI brings together National Park Service staff, university professors, and subject matter experts to facilitate research and training, provide expertise, and support other innovative educational endeavors using national parks as laboratories.

Director of the NCRI, Archaeologist
 Dr. Douglas Wilson

Archaeologist
 Dr. Robert Cromwell

Curator
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Historian
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**Museum Technician,
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 Heidi Pierson, M.A.

Archaeological Technicians
 Eric Gleason, Jacqueline Cheung, Elaine Dorset,
 Leslie O'Rourke, and Martin Adams



Photograph courtesy of John Edwards