



8.3 CULTURAL RESOURCES

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The DOE Richland Operations Office established a cultural resources program in 1987 that is managed by the Hanford Cultural Resources Laboratory (PNL-6942) as part of the Pacific Northwest National Laboratory. Pacific Northwest National Laboratory, Bechtel Hanford, Inc., and CH2M HILL Hanford, Inc. provided support to DOE for the cultural resources program on the Hanford Site throughout 2002. The U.S. Fish and Wildlife Service also has managed cultural resources on Hanford Site national monument lands since October 1999.

8.3.1 MONITORING CULTURAL RESOURCES

The DOE Richland Operations Office has the responsibility for determining effective management and protection policies for the Hanford Site's cultural resources. The Hanford Cultural Resources Laboratory has maintained a monitoring program since 1987 to determine the impact of DOE Richland Operations Office policies and to safeguard cultural resources from adverse effects associated with natural processes or unauthorized excavation and collection that violate federal laws.

Monitoring conducted during 2002 focused on four sites or place categories: Locke Island's erosion archaeological sites with natural and visitor impacts, historic buildings and structures, and Native American sites.

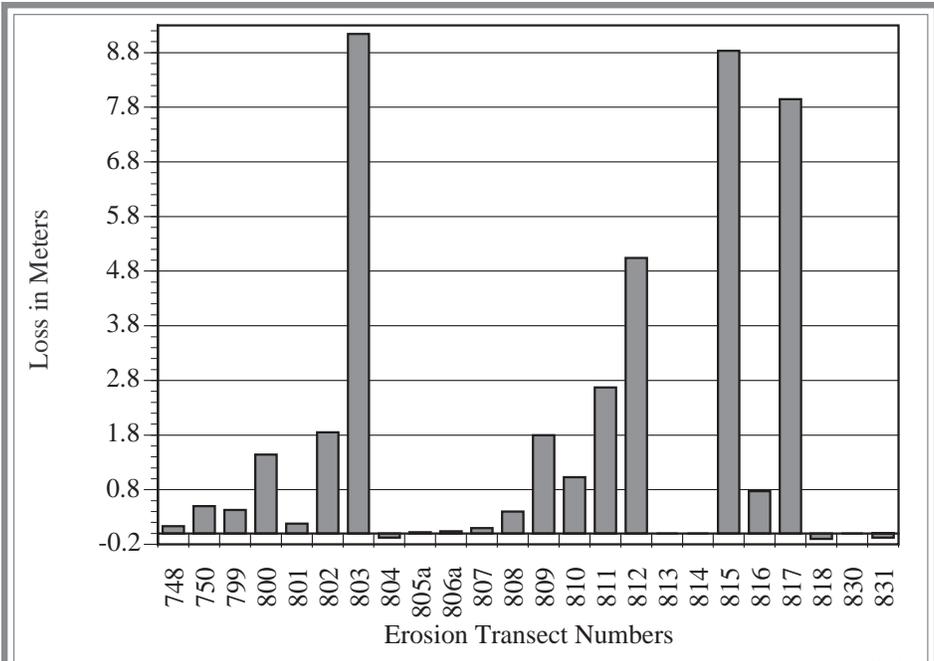
8.3.1.1 LOCKE ISLAND EROSION

Erosion monitoring at Locke Island has been ongoing since 1994. Locke Island, located on the Columbia River in the Hanford Reach National Monument, contains some of the best-preserved evidence of prehistoric village sites still existing in the Columbia Basin and is included within the Locke Island National Register Archaeological District. The island has sustained shoreline loss due to

erosion along its eastern shoreline that has affected archaeological materials. Recent studies have shown that this is due to a large landslide on the eastern side of the Columbia River.

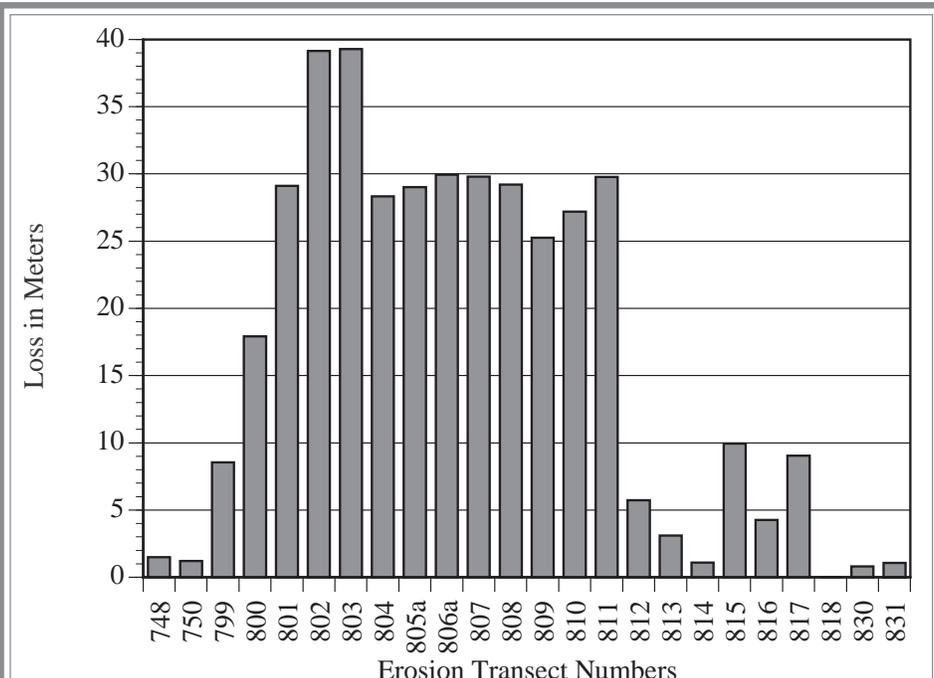
During the 1960s and 1970s, intensive irrigation development began to occur north and east of the White Bluffs, which form the eastern boundary of the Columbia River channel in this area. As a result, the White Bluffs began to show geological failures as irrigation water seeped out along the bluffs. One of the largest such slides, known as the "Locke Island Landslide," is located due east of Locke Island. By the early 1980s, this landslide extended into the river channel toward the island and directed the current toward the island's eastern perimeter. Erosion of the eastern bank of the island accelerated, threatening the cultural resources. By the early 1990s, the erosion had exposed cultural features and artifacts along the bank, leading to the beginning of intermittent monitoring of the erosion cutbank. During 1994, DOE initiated more scheduled, systematic monitoring of island erosion to better understand the physical processes involved as well as mitigate ongoing loss of the archaeological record (PNNL-11970).

Erosion monitoring continued at the Locke Island erosion transects during 2002. The greatest erosion recorded at any one monitoring transect was 9.14 meters (29.98 feet), as measured perpendicularly from the Columbia River (Figure 8.3.1). This amount of erosion was much less than the 19.6 meters (64.3 feet) of horizontal cutbank eroded to the river at a single transect in 1997 during a period of high water flow (PNNL-11970). Two transects showed gains of 0.08 meter (0.26 foot) and one transect showed a gain of 0.1 meter (0.32 foot) in 2002. These gains were caused by measuring discrepancies and bank separation prior to collapse. The overall reduction in erosion observed since the high water of 1997 was likely attributable to the fact that river flows have been lower since 1997, and the fact that the east channel was widened ~40 meters (~131 feet) as a result of erosion along the east bank of the island and along the toe of the landslide (PNNL-11970) (Figure 8.3.2).



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Figure 8.3.1. Measured Erosion at the Locke Island Erosion Transects Near the Hanford Site, 2002. Transects are spaced at eroding cutbanks along the full length of the island's eastern shoreline.



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Figure 8.3.2. Total Measured Erosion at the Locke Island Erosion Transects Near the Hanford Site Between November 1995 and September 2002. Transects are spaced at eroding cutbanks along the full length of the island's eastern shoreline.

8.3.1.2 ARCHAEOLOGICAL SITES

Monitoring archaeological sites with natural and visitor impacts began during 1998 and continued during 2002. Sixty-six archaeological sites were monitored to gather empirical data about the:

- Characteristics of each site (e.g., landform, stratigraphy).
- Processes adversely affecting the site (i.e., riverbank erosion, wind erosion, human visitation).
- Changes at the site (e.g., erosion, eventual stability).

Monitoring stations established at each archaeological site in this category facilitated the collection of standardized data unique to each site. During 2002, effects observed and measured at these sites were due to recreational use, collector digging, and/or weathering processes. The data collected at these archaeological sites are used to assess changes that may impact each site, predict outcomes, and manage other similar archaeological sites across the Hanford Site.

8.3.1.3 HISTORIC BUILDINGS

Monitoring of historic buildings during 2002 focused on Bruggemann's Warehouse, the only cobblestone structure remaining on the Hanford Site, the First Bank of White Bluffs building, Coyote Rapids Hydroelectric Pumping Plant, Hanford Electrical Substation, and the Hanford town site high school. The buildings were photographed and locations of structural deterioration were identified. Future monitoring inspections will continue to gather data about any crack widening and structural leaning.

8.3.1.4 CEMETERIES

Places with cemeteries or known human remains include locations that are sacred to the Wanapum, Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe. During 2002, all these places were monitored to document baseline conditions, determine whether wind or water erosion had exposed human remains, and assure that violations of federal laws were not occurring at these places. Overall, places with human remains were found to be stable during 2002. No violations were noted.

In summary, a total of 61 archaeological sites, 5 buildings, and a number of cemetery or burial locations were monitored during 2002. Of the findings recorded at these monitored places, 60 of 61 were related to natural causes such as animal trailing and digging, wind-caused erosion or aggradations, and water erosion. Twenty-seven percent of the findings were determined to be human-related. Most causes were related to vehicle traffic where sites are exposed in roads and sites near fishing or duck hunting areas. One percent of the findings were found to be associated with recent collector digging within archaeological site boundaries and/or surface collection of artifacts.

8.3.2 NATIVE AMERICAN INVOLVEMENT

Members of the Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Nez Perce Tribe, and the Wanapum were actively involved in the cultural resources program during 2002. Each tribe was involved in deciding DOE's cultural resource program work scope, budget, and schedule.

Seven tribal meetings on cultural resources during 2002 provided a venue for the exchange of information between DOE, tribal staff members, and site contractors about projects and work on the Hanford Site. These meetings included discussions of site-wide projects dealing with a wide range of topics: impacts of Bonneville Power Administration road maintenance project on Gable Mountain and a memorandum of agreement to mitigate the impacts, archaeological excavation reports resulting from Section 106 projects (Section 8.3.4), development of alternative Section 106 procedures, 100-K Area remedial actions, stabilization characterizations of eroding sand dunes (that exposed human remains) in the 100-F Area, Fluor Hanford, Inc. pesticide programs, and updates on the *Archaeological Resources Protection Act of 1979* violations, the draft archaeological programmatic agreement and the *Hanford Cultural Resources Management Plan* (DOE/RL-98-10). Tribal staff and site contractors worked together during the completion of several field surveys to identify and record cultural features, sites, and landscapes in advance of new construction and archaeological test excavations and to monitor numerous projects requiring excavation during the year.

One member of the Wanapum assisted with cultural resource surveys, site form preparation, records management, and equipment use during 2002. Interviews were conducted with Wanapum elders concerning traditional cultural properties on the Hanford Site.

8.3.3 PUBLIC INVOLVEMENT

Public involvement is an important component of a cultural resources management program. To accomplish this, DOE developed mechanisms that allow the public access to cultural resources information and the ability to comment and make recommendations concerning the management of cultural resources on the Hanford Site. Major interest groups involved in assisting DOE with cultural resource initiatives included the B Reactor Museum Association, White Bluffs-Hanford Pioneer Association, the Washington State Railroad Historical Society, and local historical societies and museums.

Since 1987, workshops have been organized and conducted to seek public comment on a variety of cultural resource initiatives and projects undertaken by DOE. These workshop discussions indicated continual strong support for the use of B Reactor as a publicly accessible museum. Since 2000, comments have been sought on drafts of the *Hanford Cultural Resources Management Plan* (DOE/RL-98-10). The final draft management plan was submitted to DOE for approval in December 2002, and was approved and published in February 2003.

Additional public discussions over the past several years focused on the ongoing curation of Manhattan Project and Cold War era artifacts into the Hanford collection. Public input was also sought on the draft *History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990* (DOE/RL-97-1047). Staff of the Hanford Cultural Resources Laboratory, Bechtel Hanford, Inc., and DOE distributed the draft report for public review during 1999 through 2000. The final document was submitted to DOE Richland Operations Office for approval and clearance in 2001. DOE approved and published the book in June 2002.

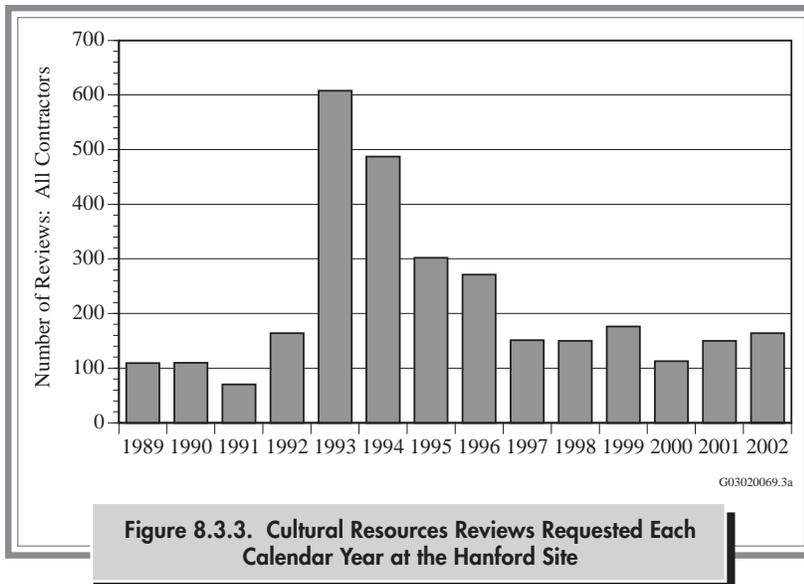
During 2002, DOE continued to document the oral histories of early residents of areas now part of the Hanford Site as well as Native Americans, former Hanford Site workers, and current site employees. A total of eight interviews were conducted during 2002.

8.3.4 CULTURAL RESOURCES REVIEWS

Pursuant to Section 106 of the *National Historic Preservation Act*, cultural resources reviews must be conducted before a federally funded, federally assisted, or federally licensed ground disturbance or building alteration/demolition project can take place. Because the Hanford Site is a federal facility, cultural resource reviews are required to identify properties within the proposed project area that may be eligible for, or listed in, the National Register of Historic Places and evaluate the project's potential to affect any such property. The recently modified cultural resource review process includes two review options. The first option allows DOE to consider the review process complete if the proposed projects have no potential to effect historic properties. The second option involves notification of the State Historic Preservation Officer, tribes, and interested parties if a project has potential to affect a historic property.

The Hanford Cultural Resources Laboratory worked closely with DOE during 2002 to educate Hanford Environmental Compliance officers on the Section 106 and the cultural resources review process.

During 2002, Hanford Site contractors requested 164 cultural resource reviews (Figure 8.3.3). A majority of the reviews involved areas that had been previously surveyed or were located on previously disturbed ground. Of the areas reviewed, 5 were monitored during the construction phase, 7 projects required an archaeological survey, and 33 involved proposed building modifications, demolitions, and Programmatic Agreement for the Built Environment (DOE/RL-96-77) exemptions. Exempt properties are those buildings and structures that are clearly not historic; therefore, they are not required to be evaluated for listing in the National Register of Historic Places due to their obvious lack of historic significance.



The following are major cultural resources reviews that were completed during 2002:

- Benton County Horn Rapids Park easement.
- Plutonium Finishing Plant decommissioning project.
- Demolition of 10 buildings that are eligible for listing in the National Register.
- Demolition and Deactivation of the Fast Flux Test Facility.
- Re-start of the Hanford railroad.
- Restore and maintain access roads under Bonneville Power Administration and transmission lines on Gable Mountain and on the Ostrander Line.

8.3.5 EVALUATIONS OF HISTORIC BUILDINGS OR STRUCTURES

Section 110 of the *National Historic Preservation Act* requires that federal agencies undertake a program to identify, evaluate, and nominate historic properties and consider the use and reuse of historic buildings or structures. Agencies are further required to maintain and manage historic properties in a way that considers preservation of their value and assures that preservation-related activities are completed in consultation with other agencies, the tribes, and the general public.

Since 1999, DOE has been evaluating the feasibility of retaining five buildings on the Hanford Site from the

pre-Manhattan Project era. An assessment of the structural condition of the First Bank of White Bluffs, Hanford town site high school, Coyote Rapids Hydroelectric Pumping Plant, and Bruggemann's Warehouse has been completed. The studies detailed existing conditions, interim actions, conservation needs, immediate stabilization requirements, and cost estimates for stabilization. A committee comprised of members of the interested public and staff of DOE, U.S. Fish and Wildlife Service, Bechtel Hanford, Inc., and Pacific Northwest National Laboratory continued to explore stabilization and restoration alternatives for the historic First Bank of White Bluffs building.

During 2002, management activities conducted to fulfill Section 110 requirements included continued implementation of the programmatic agreement for the built environment (DOE/RL-96-77) and application of the Hanford Site curation strategy to identify, evaluate, and preserve Manhattan Project and Cold War era artifacts (DOE/RL-97-71). Since Section 110 activities began on the Hanford Site, 506 buildings and structures within the current Hanford Site areas have been documented on historic property inventory forms and are on file at the Hanford Cultural Resources Laboratory (Figure 8.3.4).

Three surveys comprised the 2002 Section 110 efforts: the Groundwater Plume Survey-Phase I, the Fiscal Year 2002 Confederated Tribes of the Umatilla Indian Reservation Survey, and the Evaluate and Record Farm Sites Project. A total of ~4,923 hectares (~12,156 acres) were surveyed in 2002 for Section 110 compliance.

The Groundwater Plume Survey Phase I was designed as an initial investigation of lands overlying contaminated groundwater on the Hanford Site. The survey was intended as a proactive approach to identify cultural resources in areas that could be affected by ground-disturbing cleanup or monitoring activities related to groundwater contamination. The specific locale was also chosen for the pedestrian survey due to its close proximity to the Tsulim Bison Kill Site. It was hoped that direct archaeological materials, or other related data, could be revealed to gain more insight into the nature of activities that took place at this site.

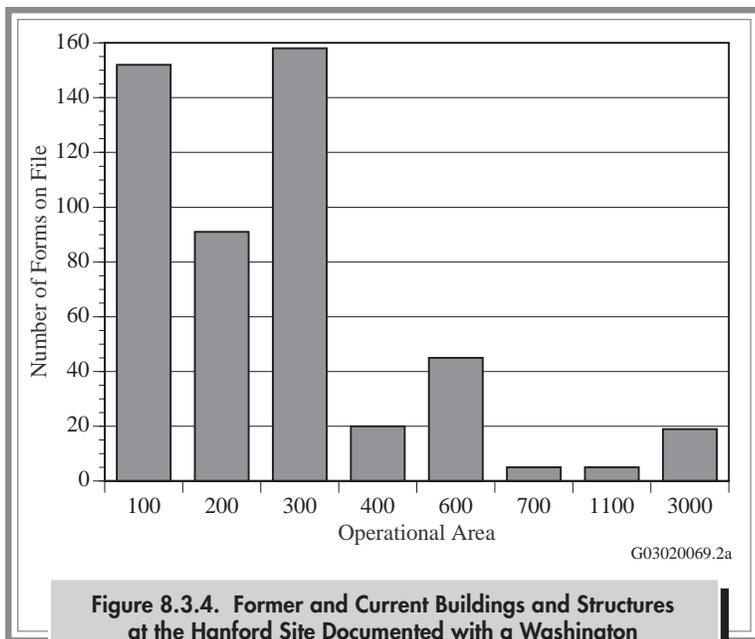


Figure 8.3.4. Former and Current Buildings and Structures at the Hanford Site Documented with a Washington State Historic Property Inventory Form

The survey was conducted in June 2002. Staff from the Nez Perce Tribe, the Yakama Nation, and the Wanapum assisted in the survey.

A total of 11 newly identified archaeological sites and 12 newly identified isolated artifacts were found during the Groundwater Plume Survey. Of this total, only one isolate and one archaeological site were regarded as pre-contact cultural resources. The remaining sites and isolates were of historic vintage, most likely dating to the first half of the twentieth century. Several hypotheses were generated relating to the almost non-use of this area by pre-contact indigenous people, all of which remain to be tested by further survey investigations.

The Confederated Tribes of the Umatilla Indian Reservation Cultural Resource Protection Program surveyed ~4,030 hectares (~9,956 acres) of the Hanford Site during 2002 as part of their Hanford scope of work. The report on this and previous work will be submitted to DOE during 2003.

The final Section 110 survey during 2002 was the Evaluate and Record Farm Sites Project. This was a comprehensive effort designed to identify all of the farming-related sites eligible for listing in the National Register. Although field surveys were involved, the bulk of the effort involved analyzing historic records, interpreting historic and

contemporary aerial photographs, and collecting and analyzing oral histories. During 2002, efforts concentrated on refining the methods to be used in preparation for finalizing the effort in 2003.

8.3.5.1 HISTORIC DISTRICT

During 2002, the building mitigation project continued to implement the Programmatic Agreement for the Built Environment (DOE/RL-96-77) and the site-wide treatment plan (DOE/RL-97-56) at the Hanford Site. The treatment plan is stipulated in the programmatic agreement and directs that a mitigation document be produced that chronicles the history of the Hanford Site during the Manhattan Project and Cold War periods. The *History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990* was completed and distributed during 1999 for public review, regulatory review, and peer review. Review comments were received by DOE and included in the final document that was published during 2002 (DOE/RL-97-1047).

The Hanford Site Manhattan Project and Cold War Era Historic District was established in 1996, and 185 buildings, structures, and complexes were determined eligible for listing in the National Register of Historic Places as contributing properties within the historic district recommended for individual documentation. A contributing property is a building, structure, site, or object that adds to the historic significance of a historic district (Figure 8.3.5). Subsequent public meetings and staff evaluations identified additional properties in the 600, 700, and former 1100 Areas, including the Hanford Site railroad and the Hanford Atmospheric Dispersion Test Facility, as contributing properties within the historic district and recommended for individual documentation, bringing the total to 190 (Figure 8.3.6). All of the buildings, structures, and complexes recommended for individual documentation have been documented according to standards identified in the site-wide treatment plan (DOE/RL-97-56). Six historic properties, including B Reactor, have been documented at the Historic American Engineering Record level, 46 have been documented with Expanded Historic Property Inventory Forms, while standard Historic



Figure 8.3.5. Historic Sites are Commonly Discovered During Cultural Resource Surveys Conducted at the Hanford Site

Property Inventory Forms have been prepared for the remaining 138 buildings and structures.

Approximately 900 buildings and structures have been identified as either contributing properties with no individual documentation requirement or as non-contributing/exempt buildings and structures. These buildings will be documented in a database maintained by DOE. According

to the Programmatic Agreement for the Built Environment (DOE/RL-96-77), certain property types such as mobile trailers, modular buildings, storage tanks, towers, wells, and structures with minimal or no visible surface manifestations are exempt from the identification and evaluation requirement.

8.3.5.2 HANFORD CURATION STRATEGY

The application of the curation strategy for artifacts and records associated with the Hanford Site Manhattan Project and Cold War Era Historic District continued during 2002. The strategy is stipulated in the programmatic agreement for the built environment (DOE/RL-96-77), which directs DOE to assess the contents of Hanford's historic buildings and structures prior to the commencement of deactivation, decontamination, or decommissioning activities. The purpose of the assessments is to identify and preserve any artifacts (e.g., control panels, signs, scale models, machinery) that may have interpretive or educational value as exhibits within national, state, or local museums. The assessments are accomplished by conducting walkthroughs



Figure 8.3.6. K-West Reactor, Eligible for Listing in the National Register of Historic Places as a Contributing Property Recommended for Mitigation within the Hanford Site Manhattan Project and Cold War Era Historic District

of the contributing properties within the historic district by teams of cultural resources specialists, historians, archivists/curators, and facility experts. Six walkthroughs were conducted during 2002, including two in facilities in the 200 Areas, three in the 300 Area, and one in the 400 Area. Industrial artifacts were tagged and recorded by the Hanford Cultural Resources Laboratory and transferred to the custody of the Columbia River Exhibition of History, Science and Technology museum in Richland for curation.

DOE's archaeological collections and associated records continued to be housed in Pacific Northwest National Laboratory's repositories during 2002. A draft management plan that deals specifically with archaeological collections, developed during 1998, was used during 2002 to guide access and use of the collections and to provide guidelines for acquisition and transfer of collections. A pest management and monitoring effort was conducted during 2002 of all archaeological collection repositories. The effort found some insects in Battelle's Sigma V Building repository.

8.3.6 EDUCATION AND RESEARCH

Educational activities associated with the cultural resources program during 2002 consisted of lectures on a variety of topics, to groups ranging from public school classrooms to civic groups, colleges, and professional societies. Several symposia were organized throughout the Pacific Northwest region to present DOE's cultural resources management techniques to professional groups and societies. Washington State's Archaeology Month provided educational opportunities in the form of lectures and for residents of the Tri-Cities' area. Staff and professionals from the Confederated Tribes of the Umatilla Indian Reservation, DOE, Fluor Hanford, Inc., and the Pacific Northwest National Laboratory conducted a one-day archaeology workshop at DOE's

Hazardous Materials Management and Emergency Response facility for the Girl Scouts from the Mid-Columbia Council.

The Hanford Cultural Resources Laboratory reprinted the booklet *History of the Hanford Site, 1943-1990* (Harvey 2000) during September 2002. The Hanford Cultural Resources Laboratory wrote the booklet during 2000 to educate the Hanford Site workforce on the historic significance of the Hanford Site, its important industrial buildings, and the significance of the Manhattan Project and Cold War era landscape and artifacts.

Several cultural resources newsletters were written by staff of the Pacific Northwest National Laboratory, DOE, and Bechtel Hanford, Inc. that focused on Hanford histories and cultural resources management issues on the Hanford Site, including the preservation of the Hanford Site's signature facilities, construction of the Hanford Site, identification and assessment of Hanford's Manhattan Project and Cold War artifacts, nomination of a Wanapum traditional fishing site to the National Register of Historic Places, declassification of historic Hanford photographs, identification and preservation of archaeological sites, early history of the railroads in the lower Columbia Basin, publication of the Hanford historic district book, and how properties are nominated to the National Register of Historic Places.

The Pacific Northwest National Laboratory participated in the Office of Fellowship Programs by hosting two student interns involved in field and laboratory work with Hanford Cultural Resources Laboratory staff.

Research activities continued during 2002 as part of compliance work. Research in the field of archaeology and history focused on archaeological site preservation and protection and documentation of the site's built environment from the Manhattan Project and Cold War periods.