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## Notable Conservation Solutions

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In 1916, Congress mandated the National Park Service (NPS) to conserve historic objects as well as wildlife, scenery, and the natural environment, and one of the earliest NPS conservation efforts took place in the territory of Alaska.

Sitka National Monument was established in 1910 and brought under National Park Service jurisdiction in 1916. The chief cultural resource is a remarkable collection of nineteenth-century totem poles gathered from coastal Tlingit and Haida villages by the territorial governor for display in the 1904 Louisiana Purchase Exposition in St. Louis and the 1905 Lewis and Clark Exposition in Portland. The aim was to promote Alaska. Eventually, the poles were returned and installed along the Old Russian walk in a peninsula near the town of Sitka, where they remain today at Sitka National Historical Park.

The poles had been repaired at least twice during their journey to the mainland expositions, and NPS's first annual report to the secretary of the interior in 1917 specifically mentioned their poor condition. Fearing total loss of this resource, the NPS teamed with the Civilian Conservation Corps (CCC) to preserve the poles by hiring skilled native carvers and unemployed young native men to repair poles and replicate those considered beyond repair using traditional technology. By using this approach, not only were the poles preserved, but the traditional cultural technology was passed on to a younger generation.

By 1991, continued deterioration of the poles was again a major concern, and the NPS Harpers Ferry Center Division of Conservation began a new conservation campaign with a team of subject-matter specialists, conservators, biologists, and the local native and non-native community to reach consensus on a treatment approach. The question of the propriety of repairing the poles versus allowing them to naturally deteriorate, as is culturally accepted, was discussed in depth, and by consensus it was decided to preserve examples of earlier carvings to inform the public and contemporary carvers of the cultural tradition. Following the same spirit of the CCC work in the 1930s, the new conservation campaign had a strong cultural training component. Led by Al Levitan, a wooden objects conservator at Harpers Ferry Center, preservation of the poles took place over several summers, and Sitka became a clearinghouse for totem pole preservation issues. In 1998, the Division of Conservation, in partnership with Wrangell–St. Elias National Park and Preserve and Sitka, received a grant from the NPS Cultural Resource Training Initiative to bring together carvers, curators, conservators, and tribal administrators to provide a framework for understanding both cultural and technological aspects of carved pole preservation.

Preservation of the *Ki'i* figures at the *Heiau* at Pu'uhonua o Honaunau National Historical Park on the Kona coast of Hawai'i Island was similar in approach. The deteriorated *Ki'i* figures were faithfully replicated by native carvers using traditional technology and placed in protective storage, and the newly carved copies were installed in the original loca-

tions with appropriate cultural ceremony. And so, the original carvings were preserved along with the cultural traditions and skills.

Like Sitka, the Franciscan mission of Tumacacori in southern Arizona was named a national monument (in 1908) and brought into the National Park Service in 1916. But unlike Sitka, Tumacacori Mission became a test kitchen for “modern” preservation methods that began to be developed as the professional field of scientific conservation grew from what had been essentially a body of skilled craftsman techniques and practices.

The movement for professional conservation sought to set standards of practice based on scientific method and observation rather than empirical trial and error. In 1929, the Fogg Art Museum at Harvard University set up the first Department of Conservation and Technical Research, and staffed the department with a chemist, x-ray specialist, and an art historian as necessary components of modern conservation knowledge.

In 1949, Fogg Art Museum Conservation Director John Gettens visited Tumacacori and consolidated the friable interior plaster with polyvinyl acetate resin, marking one of the first uses of this resin in a wide-scale architectural application. Over time, the Gettens treatment failed as plaster continued to detach, but for the next 25 years attention was focused on preservation problems of the adobe structure by the former Ruins Stabilization Unit that moved from Globe, Arizona, to Tucson with the Arizona Archeological Center in the 1970s. After years of failed attempts to preserve the interior plaster by various agencies, a NPS Denver Service Center historical architect, Tony Crosby, sought the international community’s experience and knowledge of conservation of painting on plaster and enlisted the aid of mural paintings conservators from the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) in Rome to conserve the remaining original decorative scheme in Tumacacori’s domed interior. In 1982, an eight-week project was undertaken under the direction of Italian conservators, and conservators, historical architects, curators, and maintenance personnel from throughout the NPS were invited to participate and learn the approach and procedures (Figure 1).

The Tumacacori project was the first time ICCROM worked in the United States, and through this valuable contact Italian conservators returned to work on the missions of San Antonio in Texas and San Xavier del Bac in Arizona. Consistent with the approach at Sitka in teaching local and native community members techniques of preserving cultural resources, members of the local native community worked alongside professional conservators, sharing their cultural approach and traditional technology with the team to the enrichment and success of the project. This project developed into the Vanishing Treasures Conservation Program, spearheaded by David Yubeta.

In terms of traditional museum collections, the NPS was aware of advances in the newly developing field of conservation, and the 1935 Museum Preparation Memorandum

Figure 1. The author working in the dome of Tumacacori National Monument, 1984.

Photo by Mary Sherry, NPS, courtesy of the author.



dum #1 of the NPS Western Museum Laboratory in Berkeley actually refers to work by the British conservation pioneer Harold J. Plenderleith, arguably the founder of modern conservation. However, there were few, if any, people in the United States, let alone the NPS, with sufficient training in modern conservation techniques. Volunteers and civic groups including the Works Progress Administration (WPA) and the CCC were often employed to perform basic preservation procedures, and NPS exhibit preparers and archaeologists in specialized centers often performed remedial treatments.

In 1950, the NPS Museum Branch in Washington, D.C., hired the agency's first professionally trained paintings conservator, Elizabeth H. (Betty) Jones from the Fogg Art Museum. Paper conservator Anne Clapp was hired in 1956 and, in 1957, she set up a satellite lab at Independence National Historical Park. Paintings and paper were covered, but there was a need to treat increasingly complex materials in park collections.

In the 1970s, the Harpers Ferry Center's Division of Museum Services provided service-wide conservation services. The old Shipley School was renovated to contain specialized conservation laboratories for ethnographic and historic objects, furniture, archaeological material, metals, and textiles, as well as paper and paintings. Allied with the exhibits program of the Harpers Ferry Center, objects from parks throughout the country were sent to Harpers Ferry for treatment. Conservators also traveled to sites like circuit riders to undertake on-site treatments and oversee a variety of preservation activities. Training for park staff expanded to offer "Curatorial Methods Phase II," hands-on instruction in very basic conservation techniques for park collections that curators could undertake, as appropriate.

Regional centers offering conservation services to parks developed in the mid-1970s. The regional archaeology centers took off in the late 1960s and 1970s primarily in response to the National Historic Preservation Act of 1966. The Midwest Archeological Center developed from the original River Basin Survey collections in Lincoln, Nebraska, and is now associated with the University of Nebraska. The Southeast Archeological Center developed from the old Ocmulgee National Monument collections and is now associated with the Florida State University in Tallahassee. Both have a history of undertaking conservation of collections, and do so now on a limited basis. The present Western Archeological and Conservation Center grew from the original Southwestern National Monuments group organized under Frank Pinkley in 1923. The center is now associated with the University of Arizona and offers professional conservation services to parks in its service area. The former Northeast Cultural Resources Center grew from the old North Atlantic Historic Preservation Center that was developed in the 1970s. With the realignment of programs in the Northeast Region, the Collections Conservation Branch in Lowell, Massachusetts, is now part of the Northeast Museum Services Center, with the function of providing conservation services to parks in the Northeast Region.

Conservation providers in the NPS continue to cooperate with other institutions to ensure the best conservation outcome possible for our cultural resources. The Robert Gould Shaw memorial monument on the Boston Common is well known, but NPS has responsibility for the final version of the Shaw, a gilded plaster formerly installed at Saint Gaudens National Historic Site in Cornish, New Hampshire. Damage and deterioration by years of exposure in a semiprotected shelter outside, combined with the Saint-Gaudens trustees'

desire to mold and cast the plaster in bronze for continued outdoor exhibit, led to an ambitious conservation project to ensure the safety of the original art. Throughout the process of disassembling the original sculpture, preparing it for mold-making, pulling the molds, reassembling the sculpture, repairing the structure, and treating the surface, the NPS worked with expert sculpture conservators and mold-makers (Figures 2 and 3). The completed original Shaw memorial (in gilded plaster) is now exhibited in the National Gallery in Washington, D.C., on a renewable ten-year loan.



Figure 2. View of hidden soldiers' heads during disassembly of the Shaw Memorial at Saint-Gaudens National Historic Site by conservator Clifford Craine of Daedalus, Inc., 1996. Photo by Carol Warner, NPS, courtesy of Collections Conservation Branch, Northeast Museum Services Center.

Another large-scale project currently in progress is the conservation of the Gettysburg Cyclorama painting in preparation for installation in a new visitor center. The cyclorama has a long history, much of it not happy in terms of its preservation. It was restored and exhibited in various venues, and received its first major professional conservation treatment in 1960–61 by paintings conservator Walter Nitkiewicz. Past treatments created present problems, which are now being addressed by a team led by well-known paintings conservator Perry Huston in a multiyear project.

The NPS is once again collaborating with Harvard, this time at the U.S.S. *Arizona* Memorial in Pearl Harbor. With financial backing from Harvard, Ralph Mitchell, the world's leading expert on biofilms and director of the Laboratory of Applied Microbiology, is researching how microorganisms adhere to and grow on surfaces to form biofilms, which, like plaque on teeth, can chew through metal. The combination of saltwater, oil, microbes, and time is a formidable force for deterioration. About 500,000 gallons of oil remain in the ship and Mitchell and his team

of microbiologists and marine biologists seek to determine if the interaction between organisms and fuel oil is accelerating corrosion, and if it is possible to predict the amount of time left until the hull ruptures.

In recognition of the continuing need to further advance the preservation of our cultural patrimony, Congress established the National Center for Preservation Technology and Training in Natchitoches, Louisiana, in 1992. Through training and a broad grants program, the center provides an interdisciplinary approach founded in historic architecture, archaeology, cultural landscape, and traditional museum collections conservation in developing technologies for preservation of all cultural resources.

Figure 3. Installation of the conserved Shaw Memorial in the National Gallery of Art, 1997. Photo by Carol Warner, NPS, courtesy of Collections Conservation Branch, Northeast Museum Services Center.



Recognizing that dollars for remedial conservation treatment are declining and the body of knowledge about environmental causes of deterioration is growing, the current focus of instruction to parks is preventive care. Continuing the teaching mission of the old Museum Services Division, the Museum Management Program broadcasts information to parks and the museum community at large by way of the *Conserve O Gram* series, which is also available on the web. The *Exhibit Conservation Guidelines*, prepared by Toby Raphael and other Harpers Ferry Center conservators and produced in a CD format, is a major accomplishment and used by museums internationally. The influence of NPS conservation approaches is visible in the Institute of Museum and Library Services Conservation Assessment Program, among other national programs. Because of the size and diversity of park collections both large and small, NPS often sets precedents for conservation approaches and practices in the larger museum conservation community.