

Enabling Archaeological Research within a Cultural Heritage Management Context: A View from the United States

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Abstract

In the United States, preventive archaeology is governed largely by the National Historic Preservation Act, which requires federal agencies to identify and manage heritage resources within their jurisdiction and to consider heritage resources affected by an undertaking involving the federal government. A large industry has developed around the implementation of the Act. Thousands of preventive activities are performed each year, resulting in tremendous stores of data and, in some case, spectacular research findings. Yet, project planning and management is often reactive to development and efforts are focused on reducing costs within a competitive environment. While the industry faces many challenges, archaeological research has benefited in important ways from commercial archaeological work. There are a number of things that both the industry and individual commercial firms can do to improve research outcomes. In this paper, we highlight two regions in the United States where structured scientific research has been conducted within a commercial context and discuss ways in which individual companies and the industry can foster research to serve the discipline and public better.

Keywords: *preventive archaeology, scientific research, coastal southern California, Papaguería*

Introduction

In the United States, the primary legal driver behind heritage resource management is the National Historic Preservation Act (NHPA) of 1966. NHPA was created in response to rapid development in the United States in the two decades after World War II. Without appropriate legal protections, massive transportation, public works, and urban renewal projects and suburban sprawl was leading to widespread destruction of environmental and heritage resources. Although important heritage preservation laws had previously been passed, they were insufficient to protect the thousands of resources impacted by this development. To address this problem, NHPA requires that federal agencies take into account potential impacts to heritage resources that could occur as a result of a federal undertaking, such as infrastructure development or conducting military training exercises. Other federal laws (Table 1), as well as state laws and local ordinances, are likewise concerned with heritage preservation, but the large majority of cultural heritage management (CHM) in the United States is compelled by the NHPA.

Regulation	Purpose
<i>Antiquities Act of 1906</i>	the first Federal law to provide for the protection of ruins and objects of antiquity on federal lands
<i>Historic Sites Act of 1935</i>	established a national policy to identify and preserve historic sites, buildings, objects, and antiquities of national significance
<i>National Historic Preservation Act of 1966</i>	provided the basis for Federal heritage preservation programs and the CHM industry
<i>National Environmental Policy Act of 1969</i>	established national policy for productive harmony between Federal actions and the environment, including heritage resources
<i>Executive Order 11593, Protection and Enhancement of the Cultural Environment (1971)</i>	directed the federal government to provide leadership in preserving, restoring, and maintaining the historic and cultural environment
<i>Archaeological and Historic Preservation Act of 1974</i>	provided for the preservation of archaeological and historical information that could be lost due to federal undertakings
<i>Archaeological Resources Protection Act of 1979, as amended</i>	increased penalties for unauthorized excavation, collection, or damage of archaeological resources
<i>Native American Graves Protection and Repatriation Act of 1990</i>	protected human remains, funerary objects, sacred objects, and items of the cultural patrimony of indigenous peoples on Federal lands
<i>Executive Order 13006, Locating Federal Facilities on Historic Properties in Our Nation's Central Cities (1996)</i>	ordered the federal government to utilize and maintain historic properties and districts

Regulation	Purpose
<i>Executive Order 13007, Indian Sacred Sites (1996)</i>	required federal agencies to accommodate access to and ceremonial use of Native American sacred sites by native religious practitioners, and avoid adversely affecting the physical integrity of sacred sites
<i>Executive Order 13287, Preserve America (2003)</i>	directed Federal agencies to advance the protection, enhancement, and contemporary use of the historic properties under Federal control

Table 1. *The United States Federal preservation laws and executive orders.*

The NHPA declares that “[t]he spirit and direction of the Nation are founded upon and reflected in its historic heritage” and that this heritage “...should be preserved as a living part of our community life and development.” The Act compels federal agencies to identify heritage resources, evaluate their significance and integrity, and consult with stakeholders to decide how to treat important resources that may be impacted. Federal agencies are required by the NHPA to develop CHM programs that identify and manage resources within their jurisdiction and to assume responsibility for those resources. Further, the NHPA mandates that every state and territory have a state historic preservation officer (SHPO) that is responsible for ensuring that heritage preservation is carried out effectively in their state. SHPO duties include preparing and implementing a state-wide preservation plan, identifying and nominating properties to the National Register of Historic Places (NRHP), issuing permits for archaeological investigations, reviewing project plans and reports, maintaining an inventory of heritage resources, and advising and assisting Federal, state, and local government in matters of heritage preservation.

The CHM Industry in the United States

A large industry has grown up in the United States around the implementation of these preservation laws. What began as small companies, museums, and universities doing salvage work (i.e., last-minute excavation with minimal research) evolved into an industry that employs roughly 10,000 people working for approximately 1,300 commercial firms (Grenda, et al. 2013). Large numbers of archaeologists also work for government agencies as well as in museums and universities. As of 2013, approximately 1,220 permanent staff were employed by the federal government as archaeologists.¹ Altschul & Patterson (2010) (see also Childs 2009) estimated that as of 2008,

1 <https://dougssarchaeology.wordpress.com/2014/01/07/how-many-archaeologists-are-employed-by-the-us-federal-government/>

State and Tribal Historic Preservation Offices employed 1,420 staff, approximately 850 of whom could be classified as archaeologists. If we include land planners, historians, architectural historians, and tribal liaisons, in addition to archaeologists, the total number of government employees working in CHM in the United States was 4,220 as of 2008.

The amount of work done by the CHM industry is staggering. Each year, an average of 30,000 field studies are conducted and millions of acres are surveyed for archaeological sites. An average of 2,000 data recoveries were sponsored by federal agencies per year between 1998 and 2012. The annual gross revenue for the industry is now estimated to be in the range of \$1 billion, a figure some 40 times larger than the amount of funding for academic research (Altschul & Patterson 2010; Grenda, et al. 2013; Altschul 2016). The fact is, most archaeological research in the United States is done within a CHM context.

Since the passage of the NHPA, over 140 million acres of land have been surveyed, vast numbers of heritage resources have been recorded and investigated, and tremendous amounts of data have been collected. As of 2015, some 90,000 historic properties have been listed in the National Register and more than 800,000 archaeological sites have been recorded. Regions and resources that had been difficult to access, were not as glamorous to study or were only studied piecemeal came to be more thoroughly investigated. Much of the work was accomplished by commercial firms hired to help government agencies and private developers fulfill their legal compliance requirements.

As a result of these efforts, important and surprising findings have challenged and changed our interpretations of the past and stimulated new insights, including those concerning the emergence of sedentism, agriculture, and complex societies; human-environment interactions and response to climate change; ethnogenesis and identity formation; colonial processes and impacts to Native society; the conditions and effects of slavery; and industrial development. As the industry has matured, methods and standards have generally improved in conducting and documenting archaeological activities and in developing and managing archaeological data and collections. Although there certainly is variation in the quality of research done in the CHM industry, there is a lot of good work being done.

Challenges Faced by the CHM Industry in the United States

There is a wide variety of challenges faced by the CHM industry in the United States. Challenges are organized below into three main themes: laws and regulations; funding, staffing, and training; and the big picture.

Laws and Regulations

Preservationists frequently need to combat attempts to weaken the law. For example, conservative legislators will often include provisions in bills that, if passed, would establish loopholes to minimize compliance requirements for special circumstances, such as border protection, rapid infrastructure development, or national security. The American Cultural Resources Association (ACRA) (the trade association for the US CHM industry), professional associations such as the Society for American Archaeology (SAA) and Society for Historical Archaeology (SHA), and preservation advocacy groups, like Preserve America, routinely lobby legislators to advocate for adequate regulation and funding and to prevent harmful measures from being passed. Another problem is that although existing preservation laws have compelled a great deal of archaeological research, these laws do not cover everything. For development projects on private land that do not involve federal funding or invoke federal, state, or local laws, archaeological work and consideration of heritage resources are not required and whatever efforts take place are left up to the developer.

Staffing, Funding, and Training

Another problem is that the industry is underfunded and faces many staffing and training challenges. Government archaeologists who oversee and review the work often lack authority within their own agencies as well as adequate resources to fund CHM projects. Although SHPOs are charged with a wide range of duties needed to ensure that archaeology is done appropriately and well, SHPOs are notoriously underfunded. Like many government offices, SHPOs are stressed by both increasing workloads and diminishing resources to accomplish the work. While Congress long ago authorized up to \$150 million in annual funding for SHPOs, funding has never come close to the total that could be allotted and has instead remained low at around \$40 million per year.

Limited funding for CHM projects also affects the bottom line for the CHM companies that bid on projects. When project funding is low, companies compete with each other to win projects and lower costs. As a result, pay is low in comparison with other industries; it is difficult to maintain permanent staff, particularly specialists; and there is not enough money or time to do intensive or specialized analyses.

A disturbing trend is that the level of training and continued education does not always meet industry needs. While much archaeological work in the United States has shifted from an academic sphere to CHM, academic departments struggle to adapt education and training to meet this challenge. Students may now attain academic training designed specifically for work in the CHM industry but may lack graduate-level training in research methods and archaeological theory.

On the other hand, many graduate programs provide students with specialized and advanced training in academic archaeological research, but do not prepare students for work in the CHM industry in which many graduates will inevitably carry out their careers.

The Big Picture

One of the biggest challenges is that a lot of CHM work in the United States is conducted with minimal attention to the big picture. What are we learning? What do all these data mean? How can we do things better? These are questions that are not asked often enough. Since the passage of the NHPA, most CHM work in the United States is conducted according to a site-by-site, project-by-project approach that is reactive to the development and often focuses effort on redundant sites that contribute little new information, while more important sites are incrementally destroyed through neglect and development. Consideration of heritage resources comes late in the planning process, limiting the potential for proactive, long-term preservation planning and structured scientific research. Further, while many data have been generated, data are often unstandardized, difficult to compare or access, and insufficiently integrated and harmonized in databases for regional analysis. Similarly, research findings are not published widely and the number of studies and projects is so large it is now impossible for any single individual to read and digest all that has been produced. Curation facilities, also, are no longer adequate for storing existing collections or accepting new ones.

Examples of Successful Archaeological Research within a Heritage Management Context

Despite the many challenges faced by CHM in the United States, it is worth noting how commercial archaeology has contributed to the archaeological research. Below, we briefly turn to two regions of the western United States where archaeological research has benefited largely as a result of work in CHM.

Coastal Southern California Region

Beginning in the early 20th century, the Los Angeles basin became one of the most intensively developed regions of the United States (Fig. 1). Archaeological discoveries were made as the region was developed, but with the exception of a few salvage reports and surveys by amateurs and students, there was virtually no organized research conducted and almost nothing published. As late as the 1970s, the Gabrielino people

who inhabited this region remained “one of the most interesting—yet least known—of native California peoples” (Bean & Smith 1978:538). Earlier ethnohistoric studies led researchers to believe the Gabrielino were among the “wealthiest, most populous, and most powerful ethnic nationality in aboriginal southern California” next to their northern neighbors, the Chumash (Bean & Smith 1978:538). Yet, little was known about the prehistory of these people and their lifeways, and what was known was based primarily on comparison with the Chumash. Even the chronology was based largely on studies from surrounding regions and the ages of the few dated finds were grossly misinterpreted (Homburg, et al. 2014; Stoll, et al. 2003).

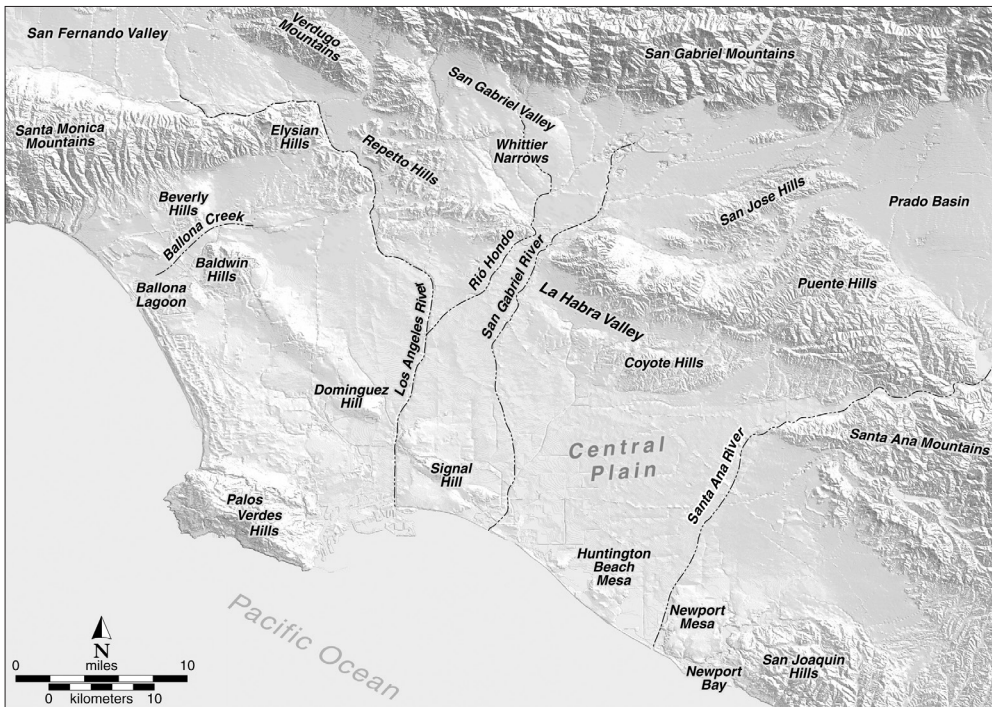


Fig. 1. The Los Angeles Basin along the southern California coast.

Beginning in the late 1980s, commercial archaeologists began working in the region on several large development projects. For the first time, regional research designs were developed and large, multi-site excavation projects were completed. These projects included archaeological excavations and analyses of material culture (Cleland, et al. 2007; Douglass, et al. 2005; Freeman & Van Horn 1987; Mason & Peterson 1994a; Vargas, et al. 2016), multidisciplinary studies of the changing coastal environment (Ciolek-Torello, et al. 2014; Homburg, et al. 2014), and detailed archival studies (Stoll, et al. 2009). These efforts led to an entirely new understanding of

mainland Gabrielino culture and its development that differed in major ways from the Chumash. It was previously believed the Gabrielino were a maritime adapted, complex society, living at high population densities. New research showed, however, that subsistence was focused on exploitation of coastal lagoons and surrounding terrestrial environments rather than a maritime adaptation and that settlements were large palimpsests of episodic and seasonal occupations that shifted in response to climatic conditions, rather than large, permanently occupied towns (Ciolek-Torello & Garraty 2016; Cleland, et al. 2007; Freeman & Van Horn 1987; Grenda & Ciolek-Torello 2015; Grenda, et al. 1998; Koerper, et al. 2002; Mason & Peterson 1994b; Reddy et al. 2016).

It was also discovered that Gabrielino culture was radically transformed after Spanish contact. New plant and animal resources were introduced that drastically altered subsistence patterns (Reddy, et al. 2016). Native economies and social organization were transformed by wage labor and new sources of wealth in the form of glass trade beads and mass-produced shell beads. Epidemics and population movements resulted in demographic upheavals and increased interaction among Gabrielino, the Chumash, and other native groups. It was these events that led to the emergence of the complex society documented by ethnohistorians rather than the pre-Colonial development postulated by previous investigators (Ciolek-Torello, et al. 2016).

The Papaguería Region

Another region where archaeological research has benefited from CHM is the Papaguería region, a hot, arid, and remote region in the Southwestern United States (Fig. 2). Like coastal southern California, little academic research was carried out in the Papaguería region prior to commercial archaeology, other than a number of early pioneering efforts that established a basic outline of regional prehistory (Haury 1950; Hayden 1965, 1967; McGuire 1982). Several decades of intensive survey and a number of important excavations and specialized studies have led to a much richer and more detailed understanding of the region. Since much of the work has been conducted for Federal CHM programs that control large areas of land and several commercial firms have shared a long-term focus in studying the region, research questions and methods have been relatively consistent across many projects and comparable data have been integrated into resource management databases.

While there is much that still stands to be learned, and a need for more excavation and technological analysis, a variety of topics that have been the focus of research in the region have benefited from this commercial work. Importantly, several large synthetic works on the region have been published (Altschul & Rankin 2008; Heilen & Vanderpot 2013; McGuire & Schiffer 1982).

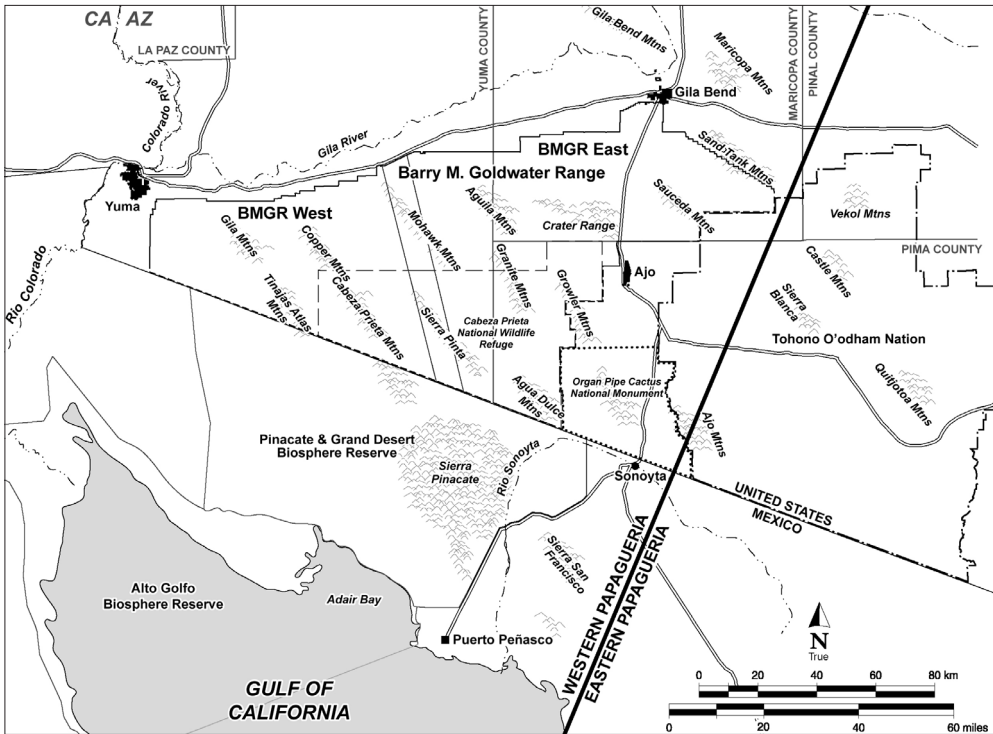


Fig. 2. The Papaguera region of the southwestern United States.

50 Years of CHM in the United States: Where do we stand?

In 1974, William Lipe published a landmark article—"A Conservation Model for Archaeology"—that provided a vision for how to do archaeology within a CHM framework. He emphasized that archaeology is a non-renewable resource and that salvage archaeology, which had become the focus of work undertaken in the decade immediately following the passage of the National Historic Preservation Act, should be a last resort. Lipe argued that archaeologists needed to involve the public through education and consultation; guide comprehensive planning efforts, and promote conservation through establishment of archaeological preserves and by taking responsibility for the entire resource base. In the more than forty years following Lipe's publication, we have amassed vast amounts of data, but synthetic research is lacking and we still do most work on a reactive, project-by-project basis. In revisiting Lipe's conservation model, Schlanger, et al. (2015:96) concluded that "*What we have not achieved is that integration of data collection, information management, site preservation, resource preservation, research, and planning for the long-term that was envisioned in*

Lipe's 1974 model." We are now faced with two crises stemming from vast amounts of CHM work, but a lack of integrated, comprehensive, long-term planning: a "Curation Crisis" and a "Data Management Crisis" (Heilen & Altschul 2013; Childs 1995; SAA 2003; Schlanger, et al. 2015; Wilshusen, et al. 2016).

What Can Commercial Firms do to Promote Research?

While commercial firms have a profit motive and are motivated to stay in business, most archaeologists work in the industry not simply to earn a wage, but to learn about the past and help preserve important heritage resources for current and future public benefit. Many employees in the CHM industry have a deep and abiding interest in archaeological research and advancing scientific knowledge. There are ways that individual companies can promote research. These involve:

- having a mission statement focused on research;
- maintaining high professional standards and developing leadership in research;
- knowing and cultivating staff skills and interests and investing in staff for the long term;
- pursuing and linking projects that can foster cumulative research;
- promoting active participation in professional organizations, workgroups, and conferences;
- finding ways to publish and disseminate findings more widely, including through blogs, public lectures, newsletters, and professional journals;
- working with academic departments and other companies;
- investing in data management systems that make work more efficient and enhance research outcomes;
- questioning and innovating methods and approaches; and,
- involving and serving the public whose taxpayer dollars fund the work.

What can the CHM Industry do to Improve Preservation and Research Outcomes?

There are certainly a number of ways that the industry could achieve better preservation and research outcomes. For one, professional organizations like ACRA and the SAA can, and frequently do, combat attempts to weaken the law by lobbying legislators against attempts at deregulation and arguing for better funding and improved management practices. There is increasing recognition that, in complying with the law, we need to change our approach from a reactive, "just-in-time" approach to

a proactive, programmatic approach with long-term and regionally integrated preservation and research goals. Along these lines, the SAA has organized several task forces to identify best practices for agencies to follow (Doelle, et al. 2016; Green, et al. 2013; McManamon, et al. 2016; Wilshusen, et al. 2016).

We can make access to data more open and share findings in more widely accessible formats. To alleviate the gray literature problem, the SAA founded a new journal aimed primarily at innovations in CHM: *Advances in Archaeological Research*. We can integrate the many databases now in existence to make them more useful and relevant. Efforts are currently underway to improve state-wide heritage resource databases and integrate them into a national system.

The intent of the NHPA was to identify and preserve places of value; balance historic preservation with economic development; and share knowledge of heritage with the public in ways that benefit society. In complying with the law, impacts to heritage resources are avoided, where possible; when impacts are unavoidable, excavation and intensive documentation are standard mitigation measures. We can mitigate impacts in more creative ways to address major scientific challenges and better serve both the public and the discipline. Creative mitigation measures are allowed by law and include such efforts as synthesizing regional data, developing historic contexts, public outreach, specialized analyses, or investigating especially important or rare sites in place of commonplace ones. While federal agencies are starting to recognize the value of creative mitigation efforts in advancing archaeological research and better serving the public (see e.g., Schlanger et al. 2013), there is a lot more that can, and hopefully will, be done to promote structured scientific research.

A number of the major issues archaeologists in the United States face today involve the question: how do we use the many data collected over decades of CHM work to address major scientific challenges in archaeology? Kintigh, et al. (2013:1) recently conducted a study funded by the National Science Foundation to invest in “computational infrastructure that would transform archaeology’s ability to advance research on the field’s most compelling questions with an evidential base and inferential rigor that have heretofore been impossible.” Stemming from this effort, a large group of archaeologists has identified 25 of the field’s greatest scientific challenges and has published the results in the *Proceeding of the National Academy of Sciences* and *American Antiquity*. These include questions of emergence, complexity, demography, mobility, identity, resilience, and human–environment interactions.

To do this, leaders in the field are working to develop a National Center for Archaeological Synthesis. In 1995, ecologists formed the National Center for Ecological Analysis and Synthesis (NCEAS) in Santa Barbara, California that has since become highly successful in addressing grand challenges in ecology. We have high hopes that a National Center for Archaeological Synthesis will leverage archaeological data and

research findings developed over decades of both academic and commercial work to make structured scientific research more successful and relevant.

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