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 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK

(2018)

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3 Glen Canyon, Dolores, and Animas-La Plata

Big projects and big changes in public archaeology

William D. Lipe

In this chapter, I attempt to characterize the structural changes in the practice of public archaeology that took place as a reactive “salvage” approach gave way to a more proactive “cultural resource management” (CRM). I note the cultural, disciplinary, social, and statutory/regulatory contexts that affected the development of CRM, as well as how CRM has affected the discipline of American archaeology. A well-accepted marker of this shift is the 1974 Denver Cultural Resource Management Conference (Lipe and Lindsay 1974) which ensconced “CRM” in the vocabulary of American archaeologists and federal agency managers.

To assess what changed and when, I compare selected characteristics of three very large Bureau of Reclamation (BRec) reservoir projects in the American Southwest (Table 3.1)¹. The Glen Canyon Project (GCP) (1957–63) took place late in the salvage era; the Dolores Project (DAP) (1978–85) embodied many aspects of the emerging CRM paradigm but retained aspects of salvage; and the Animas-La Plata Project (ALP) (2002–10) was a product of early twenty-first century CRM². I analyze the legal, societal, and professional/disciplinary changes that took place in the years between these three projects and that affected how they were done. All three projects made significant substantive contributions to archaeological knowledge, but I don't try to review or summarize their results.

The Glen Canyon Project (1957–63)

During the late 1950s and early 1960s, the Upper Colorado River Basin Archaeological Salvage Project undertook surveys and excavations in several areas that would be impacted by reservoirs constructed by the BRec. Geographically, the GCP was the largest of these projects (Figure 3.1); it focused on the archaeological sites to be lost by the formation of Lake Powell behind the Glen Canyon Dam (Fowler 2011, 2014). When the GCP began, the only applicable federal laws were the 1906 Antiquities Act and the 1935 Historic Sites Act. These expressed a general federal responsibility for archaeology, but did not address how to put this into practice on federal construction projects, or how to pay for archaeological salvage. However,

Table 3.1 Comparisons of the characteristics of the three projects

Characteristic	Glen Canyon Project (1957-63)	Dolores Archaeological Project (1978-85)	Animas-La Plata Archaeological Project (2002-10)
Geographic scope	Regional, including areas well outside the reservoir	Reservoir and buffer zone	Reservoir, borrow areas, and buffer zone
Reservoir size	186 miles long; area 254 mi ²	10 mi. on Dolores R., plus tributaries; area 4470 acres (7 mi ²)	Reservoir 1500 acres (2.3 mi ²), plus borrow areas
Project area scope	Glen Canyon basin; 14,400 mi ²	16,000 acres (25 mi ²)	6,000 acres (9.4 mi ²)
Sites recorded	"over 2000" (Jennings 1966:43)	933 within project take line	About 242
Number of sites excavated	>100	101	78
Site sizes & density	Small sites, low density	Some very large; high density	Some very large; high density
Periods represented	Archaic, Basketmaker II, Pueblo II-III; historic	Predominantly BM III and P I; traces of other periods	Mainly P I; some Archaic, BM II, and historic
Agency responsible	Bureau of Reclamation, delegated to National Park Service	Bureau of Reclamation, plus BLM and U.S.F.S. collaboration	Bureau of Reclamation
Contracting organizations	University of Utah and Museum of Northern Arizona	University of Colorado; main subcontract with Washington State University	Ute Mountain Ute Tribe, subcontracted to SWCA
Cost in 2015 dollars	Est. \$4,529, 000 to \$5,727,000	Est. \$27,183,000	Est. \$19,111,000
Native American involvement	None	None	Much
Theoretical orientation	Culture history; culture ecology	1970s processual	"Processual plus"
Research designs	General questions; detailed operations manual	Detailed research designs for fieldwork and lab analysis	Detailed research designs for fieldwork and lab analysis
Prior survey	Minimal; survey completed after start of excavations	Partial; survey completed after start of excavations	Complete prior to start of excavations
Remote sensing	Not used	Some use	Extensive use
Field & lab recording protocols	Standardized, but low detail	Detailed; multiple forms for fieldwork	Detailed in field and lab
Artifact analysis	Basic descriptive categories	Typological and some attribute analysis	Typological and attribute analysis
Computer use	None	Extensive	Extensive
Biological and geological materials	Coarse-grained analysis of some plant and animal remains	Systematic analysis of biological and geological materials	Systematic analysis of biological and geological materials
Multidisciplinary studies	Alluvial geology; regional botanical survey; S. Paiute ethnohistory	Extensive local and regional environmental studies	Alluvial geomorphology, regional botanical survey, tribal resource surveys
Dating	Pottery cross-dating; no C-14; minimal dendrochronology	Dendrochronology, archaeomagnetism, C-14	Dendrochronology, C-14, archaeomagnetism
GIS	Not used	Not used	Extensively used
Statistical methods	Not used	Descriptive statistics; probabilistic sampling	Descriptive and inferential statistics
Human remains	Few encountered; standard descriptive analysis	Uncommon; descriptive and bioarchaeological analysis	279 individuals; intensive bioarchaeological analysis
Historical archaeology	Survey and documentary study by historians; no archaeology	Documentary research; some survey; no excavations	Historical archaeology an important project component
Records management	Paper records only; standardized forms	Paper records; extensive computer databases	Paper records; extensive computer database tied to GIS
Field and lab personnel	Mostly students; MNA had Navajo crews in some areas	Students and CRM techs	Mostly CRM techs and tribal members
Published reports	Descriptive reports; several topical reports	17 large reports: excavations, artifacts, environmental studies	16 large reports: excavations, artifacts, environment, cultural affiliation, bioarchaeology
Curation of records and collections	Museum of Nat. History of Utah; Museum of N. Arizona	Anasazi Heritage Center	Anasazi Heritage Center
Public education	Films; general summary report	Anasazi Heritage Center exhibits	Some publicity via media coverage
Women on staff	None in field; lab staff primarily female	Women in supervisory and crew positions in field and lab	Women in supervisory and crew positions in field and lab

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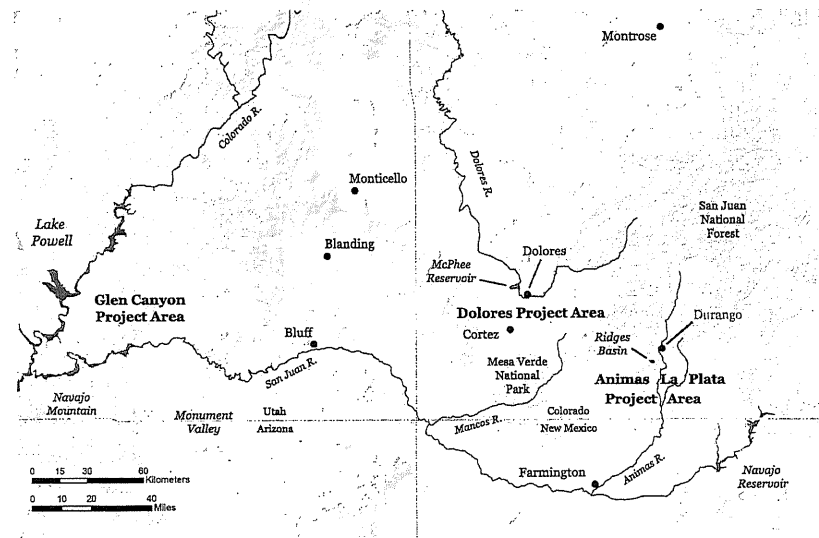


Figure 3.1 Map of the Four Corners area showing the locations of the Glen Canyon, Dolores, and Animas-La Plata archaeological projects

Source: Prepared by Colin Christiansen, Washington State University

in the 1940s, the Smithsonian Institution's River Basin Surveys (RBS) and the National Park Service's (NPS) Interagency Archaeological Salvage Program (IASP) provided for varying levels of salvage archaeology for federally funded projects, especially those that involved reservoirs and waterways (e.g., see Banks and Czaplicki 2014). In 1960, this approach was formalized by passage of the Reservoir Salvage Act. Archaeologists were sometimes directly employed by the RBS, but the IASP often negotiated contracts with universities, museums, or state archaeological or historical societies. Private-sector archaeological consulting firms were a thing of the future.

Fowler (2011) describes the complications surrounding the initial funding of the GCP, but enough of these problems were resolved to get the first crews into the field in the summer of 1957. The majority of the Glen Canyon work was contracted to the University of Utah (UUT), with a smaller share to the Museum of Northern Arizona (MNA). The IASP funding was supplemented by National Science Foundation and Wenner-Gren Foundation grants to the UUT for several field projects designed to explore the regional context of the reservoir area archaeology. The GCP fieldwork began in 1957 and was largely completed in 1962, with report writing continuing into early 1964 (Jennings 1966: 4).

Between 1957 and 1969, numerous monographic reports of project results were published by the UUT and the MNA. Jennings (1966) published a summary report of the entire project oriented to the general public as well as to archaeologists. Fowler (2011: 242–326) devotes several chapters to the GCP and Lipe (2012) reviews the theoretical and methodological orientations of the UUT part of the GCP.

The GCP took in by far the largest area of the three projects discussed here. Damming the Colorado River at Page, Arizona, created Lake Powell, which stretches 186 miles upstream on the Colorado and nearly 50 miles up the San Juan River arm. The UUT and MNA teams were given great latitude, and in fact were encouraged by their NPS project manager (Jennings 1959a: 5–6) to investigate sites not directly impacted by the reservoir. The assumptions were that a proper understanding of the sites to be lost required a better understanding of the regional culture history, and that in any case the remote Glen Canyon area would be significantly affected by the future surge of population and economic development that Lake Powell would bring. The entire Glen Canyon Basin of nearly 15,000 square miles was considered the region of interest (Jennings 1966: Fig. 1), and some fieldwork (with NSF grant support) took place as far away as the Virgin River drainage near the Utah-Nevada border (Aikens 1965).

The reservoir area and its immediate surroundings receive low levels of precipitation, so sites left by farmers were typically small, scattered, and without long occupations. Archaic period sites were also present, but rare, and often were not sufficiently recognized by the UUT crews (Geib 2006; Lipe 2012). The higher elevation DAP and ALP reservoir areas included much larger Formative era sites.

“Culture history” (Trigger 2006) was the predominant theoretical and methodological stance current in American archaeology at the beginning of the GCP. Artifacts were classified into types and complexes of types were used to define archaeological phases or “cultures” that occupied particular places in time and space. Superimposed on the diversity of local cultural chronologies were very general and widespread cultural stages such as Lithic, Archaic, and Formative (Willey and Phillips 1958). In the northern Southwest, the “Pecos Conference” periods (Basketmaker [BM] II and III; Pueblo [P] I–V) structured GCP discussions of chronology. Also employed was a general concept of cultural ecology, using environmental factors to account for the low site density and often transient character of occupation in the Glen Canyon area (Jennings 1966: 62–66).

Neither the UUT nor the MNA branches of the GCP drew up what would be recognized today as research designs, i.e., a characterization of explicit research questions with specific plans for obtaining data relevant to those questions. The questions that were raised in GCP publications were generally about apparent gaps in the occupational chronology or about relationships among large-scale cultural taxa (e.g., Kayenta, Mesa Verde, and Fremont). Expectations were that project excavations would sample (though not in a

formal sense) the archaeological diversity that was present and cultural patterns would be identified when the archaeological evidence was considered. As head of the UUT GCP, Jennings emphasized that “descriptive” reporting was the primary responsibility of a salvage project. Such reports could then form the basis for unspecified synthetic and interpretive studies, presumably to be done after project funding had ended (Jennings 1959a; Lipe 2012). In order to promote consistency in data gathering and reporting, a detailed “operational manual” was prepared for the UUT work (Jennings 1959b)

Although some survey had been done prior to the start of the GCP, primarily along the Colorado River proper, many of the tributaries, including the lower San Juan, had received little survey. Consequently, survey was concurrent with the excavations during the first years of the GCP. In addition to the areas that would be covered by the reservoir, surveys and excavations were frequently extended to the upper parts of tributary canyons, and in a few instances to highlands thought relevant to understanding the sites that were to be flooded (e.g., MNA work in the Navajo Mountain area [Lindsay et al. 1968]). No attempt was made to obtain detailed survey coverage of the huge Glen Canyon Basin. Instead, survey that was well outside the reservoir area proper either consisted of rapid, low-intensity reconnaissance, or focused on specific areas expected to provide context for what would be lost when Lake Powell filled.

The historical archaeology of the reservoir area was investigated with field survey and documentary research conducted by professional historians (e.g., Crampton 1960, 1962, 1964). No historical sites were excavated. The post-Pueblo Native American occupation was addressed only by a study of Southern Paiute ethnohistory carried out by Catherine Sweeney under the direction of Robert Euler (Sweeney and Euler 1963; Euler 1966). There was no comparable study of the early Ute or Navajo occupation. To my knowledge, no formal input was sought from tribes regarding the design and conduct of the GCP.

During the salvage era, it was sometimes assumed that federal funding would only cover fieldwork and that analysis and reporting would be done by researchers employed by the universities and museums that had been contracted to do the fieldwork. Perhaps because of its scale and multi-year extent (and Jennings’ insistence), the GCP contracts provided funds for laboratory work and reporting. Also covered was preparation of collections and records for permanent curation. Currently, they are maintained by the Museum of Natural History of Utah and the MNA.

Most of the UUT field and lab crew members were students, many of whom went on to obtain advanced degrees. The MNA employed students and also Navajo crews for the Navajo Mountain area fieldwork. The 1950s were probably the low point for American women hoping to develop archaeological careers, at least if those plans involved excavation. The standard of “guys in the field, girls in the lab” was applied throughout the GCP. Knudson (2014) has a detailed account of women’s roles in the River Basin Surveys.

What changed between 1957 and 1978?

The 21 years between the start of the GCP (1957) and DAP (1978) saw a number of new laws and regulations that provided legal underpinning for the emergence of CRM (Table 3.2). These changes were in turn fostered by large-scale sociocultural shifts that affected many aspects of American society. Concurrently, the field of archaeology was being transformed by a more anthropologically and scientifically ambitious “new” or “processual” archaeology.

Table 3.2 Major changes between the start of the Glen Canyon Project (1957) and the Dolores Archaeological Project (1978)

<i>Categories of Change</i>	<i>Specific Actions (1957–1978)</i>
Federal laws, regulations, and agency actions	Reservoir Salvage Act (1960) National Historic Preservation Act (1966) Department of Transportation Act, Section 4(f) (1966) National Environmental Policy Act (1969) Executive Order 11593 (1971) 36 CFR Part 800 (Section 106 regulations) promulgated (1974) Archaeological and Historic Preservation Act (1974) Development of individual agency CRM programs, elaboration of agency contracting protocols American Indian Religious Freedom Act (1978)
Advocacy movements and social/cultural trends	The environmental movement, e.g., Sierra Club leads fight against Grand Canyon dams The civil rights movement and increased Native American advocacy, e.g., American Indian Movement (AIM, 1968) and Native American Rights Fund (NARE, 1970) The feminist movement, e.g., National Organization for Women (1966) The historic preservation movement, e.g., the National Trust for Historic Preservation develops more active advocacy
Professional and disciplinary developments	“New Archaeology” intellectual movement within the profession, aka, “Processual Archaeology” (1960s and 1970s) Society for Historical Archaeology founded (1967) Denver CRM Conference (1974) Airlie House Seminars on The Management of Archaeological Resources (1974, published 1977) Society of Professional Archaeologists (SOPA) founded (1976) Private-sector consulting firms begin to appear Archaeology graduate training programs grow at universities

Important legislative changes include the National Historic Preservation Act (NHPA) of 1966 and the National Environmental Policy Act (NEPA) of 1969. In 1971, President Richard Nixon's Executive Order 11593 established a federal responsibility for sites that were deemed *eligible* for the National Register (not only for those already listed on it). This paved the way for the promulgation in 1974 of Section 106 regulations that helped turn the NHPA into a planning as well as a commemorative tool (see Chapters 1 and 2, this volume).

In 1966, Section 4(f) of the Dept. of Transportation Act expanded protection for historic (including archaeological) sites affected by highway construction. And in 1974, the Archaeological and Historic Preservation Act (AHPA) expanded the Reservoir Salvage Act to make it clear that federal agencies must provide for the preservation of archaeological data that might be destroyed as a result of any of their activities, and that they could use project funds to do so. By the time of the 1974 Denver CRM Conference, federal agencies were beginning to hire their own archaeologists and to manage their own compliance contracting, instead of transferring funds and responsibility to IASP.

The 1960s and 1970s saw a number of changes in American society. This ferment promoted the rise of advocacy groups, which in turn promoted further change. A newly active environmental movement was given impetus by Rachel Carson's 1962 book *Silent Spring*. In addition to NEPA, Congress passed the Clean Air and Clean Water Acts (1963 and 1972) and in 1970 established the Environmental Protection Agency. The Sierra Club became a major environmental advocacy organization. The Glen Canyon was presented as an exemplar of lost wilderness through Elliot Porter's Sierra Club book *The Place No One Knew* (1963), followed by Francois Leydet's *Time and the River Flowing* (1964), which dramatized the Club's ultimately successful goal of keeping the Grand Canyon un-dammed.

In the 1950s, the civil rights movement mounted multiple challenges to prevailing "Jim Crow" laws, leading to dramatic and often bloody confrontations. This finally led to passage of the 1964 Civil Rights Act, which prohibited discrimination based on race, color, sex, religion, or national origin. The civil rights movement also provided a context for the growth of Native American advocacy. Vine Deloria's book, *Custer Died for Your Sins: An Indian Manifesto* (1969), raised public consciousness about Native American concerns. The American Indian Movement (AIM) was established as an action-oriented advocacy group in 1968, and the Native American Rights Fund (NARF) was organized in 1970 to promote legal remedies. By 1978, the American Indian Religious Freedom Act had been passed to secure Native American access to sacred sites, use of traditional paraphernalia, and freedom from interference with religious ceremonies.

The feminist movement was revitalized in the 1960s by (among other things) publication of Betty Friedan's book *The Feminine Mystique* (1963), and the formation of the National Organization of Women (NOW) in 1966.

Fighting against gender-based employment discrimination became a major focus. This played out in American archaeology as field crews increasingly included women as well as men, and more women took on supervisory positions on field projects. Academic employment is notoriously slow to change, but by the late 1970s, the number of women employed as faculty members had begun to increase.

The interstate highway system was authorized in 1956, and construction ramped up in the 1960s and 1970s. Numerous battles were sparked by construction that destroyed or threatened to destroy historic buildings or districts. In 1965, a committee of the U.S. Conference of Mayors reviewed the loss of historic properties and proposed new legislation. Their report, published in early 1966 as *With Heritage So Rich* (U.S. Conference of Mayors 1966), helped rally public support for passage of the NHPA later that year. Increases in dam-building and other major federal infrastructure projects that affected both historic and archaeological sites also led to amendment of the 1960 Reservoir Salvage Act, broadening its applicability to other kinds of projects that impacted archaeological resources. Enacted in 1974, the law was variously referred to as the Archeological and Historic Preservation Act (AHPA), the Moss-Bennett bill, and the Archeological Recovery Act (McManamon 2000).

Dramatic changes also took place in the 1960s and 1970s in the goals and practice of American archaeology, under the influence of Lewis Binford and other "new archaeologists" (e.g., Binford 1962, 1964; Binford and Binford 1968; Watson et al. 1971). Previous emphases on culture history and archaeological taxonomies were replaced or supplemented by a more explicitly theoretical archaeology oriented to understanding past sociocultural systems and the processes responsible for their operation and change (hence the eventual label, "processual" archaeology). Favored research topics included demography, social organization, and adaptation of sociocultural systems to both natural and social environments. Also favored were detailed research designs; use of sampling theory and both descriptive and inferential statistics; more attention to environmental archaeology; applications of experimental approaches; increased use of ethnographic evidence; and, multidisciplinary collaborations. Historical archaeology gained a stronger voice and following during this period with the founding of the Society for Historical Archaeology (1967) and agreement that archaeologists working with historic period sites needed training in both history and historical archaeology.

Concern about the increasing pace of archaeological site destruction was forcefully expressed by Hester Davis (1972) in a widely read article "The Crisis in American Archaeology" published in the journal *Science*. C.R. McGimsey's 1972 book *Public Archeology* argued that archaeologists must gain public support for responding to this crisis. My "Conservation Model" article (Lipe 1974) gained attention by treating archaeological remains as non-renewable resources to be managed for broadly construed public as

well as scholarly values. These and other articles, in combination with the new laws, set the stage for the emergence of a more proactive, resource-management response to federal projects that threatened archaeological sites. The year 1974 was the tipping point for the replacement of the “salvage” approach with one based on “CRM”.

Survey archaeology came into its own in the 1970s as a major source of information for some of the goals of processual archaeology, including settlement and community patterns, and regional demographic reconstructions. Greater emphasis on survey was also compatible with the emergence of CRM, which emphasized initial assessment of sites in proposed project areas so they could be avoided rather than excavated.

Also in 1974, the Airlie House Seminars (McGimsey and Davis (1977) grappled with a growing awareness of the implications of CRM for the professional practice of archaeology. The seminars focused on six topics that exemplified the opportunities and challenges of the new world of CRM (McManamon 2014: 236–238). One of these was certification, which C. R. McGimsey (Society for American Archaeology [SAA] president at the time) argued was essential if archaeologists working outside academia were to be accepted by government and the private sector as true professionals. In 1976, when the SAA failed to establish a certification program, McGimsey convened a committee that formed the Society of Professional Archeologists (SOPA) to do the job. SOPA promulgated an ethical code and standards for research performance; a grievance process was set up to adjudicate complaints about a member’s failure to adhere to the code or the standards. (In 1998, SOPA was transformed into the Register of Professional Archaeologists).

The increased pace of legally mandated non-academic archaeology provided openings for private CRM consulting firms and the beginnings of a shift away from universities as the primary recipients of federal contracts. New job opportunities in CRM began to be reflected in graduate enrollments, especially at the MA level, and the SAA began to pay more attention to government affairs and public education.

The Dolores Archaeological Project, 1978 to 1985

The “DAP” remains one of the largest federally funded archaeological projects ever carried out in the United States. It was formally a “program” but is generally referred to as a “project”. Although damming the Dolores River downstream from the town of Dolores, Colorado created a relatively small reservoir (Lake McPhee), there was a heavy concentration of sites (including some very large ones) especially for the BM III and P I periods (ca. AD 500 to 900). Fieldwork was from 1978 to 1983, with analysis and reporting completed in 1985. Thirteen volumes, some with several parts, were published and widely distributed by the BRec. In addition to the final synthetic report (Breternitz et al. 1986), there are overall assessments of the project by Breternitz (1993) and Lipe (2000). In 2012, a collaborative project among

researchers at Washington State University, the Center for Digital Antiquity, and the BRec made it possible for the 20 final synthetic reports and 21 analytical datasets of the DAP to be uploaded to tDAR (the Digital Archaeological Record) where they can be easily accessed for current and future use of the data and documents.³

The University of Colorado (CU) was the principal contractor for the project, with David Breternitz as the senior Principal Investigator. The primary subcontractor was Washington State University (WSU), with William Lipe and Timothy Kohler of that institution, and Allen Kane, field director for CU, serving as DAP co-PIs. Several other smaller subcontracts were active during parts of the DAP. Robinson et al. (1986) describe the project’s organization and its cultural resource base.

The extensive “canals and laterals” system that delivered Dolores water to outlying areas was treated as a separate CRM mitigation project by the BRec under its Four Corners Archeological Program (Hurley 2000). The DAP cost figures in Table 3.1 refer only to the work in the reservoir area done by CU and its subcontractors.

Like the GCP, the DAP did not obtain input from Native American tribes or their participation in the work. There was evidence of a light Native American occupation in the general DAP area in post P III times. The Beaver Point Phase (AD 1500–1800) and a Protohistoric Phase (AD 1750–1870) were defined largely on the basis of surface finds of probable Numic Brownware sherds and P IV period Pueblo trade sherds, plus the presence of Euroamerican trade goods with two burials (Kane 1986b: 398–402).

Unlike the GCP, the DAP contract was managed by BRec archaeologists. Ward Weakly, Senior Bureau Archaeologist and then Bureau Preservation Officer, played an important role in initiating and overseeing the project; the DAP final report is dedicated to him. BRec regional archaeologists were also involved, and a project archaeologist was based in Cortez throughout.

Only a partial survey of the reservoir pool and “take line” buffer zone had been done when the DAP contract was let and excavations began in 1978, so survey continued concurrent with excavations for several years. Ultimately, 933 sites were recorded – 205 in the pool area and the rest in the buffer zone (Orcutt and Goulding 1986). In addition, a sample of quadrats was surveyed in several localities to provide information on settlement in the uplands surrounding the Dolores Valley (Schlanger and Harden 1986; Schlanger 1986).

Because survey coverage was so incomplete at the start of the DAP, it did not become clear until 1979 that the DAP was going to be a very large archaeological project in a relatively small reservoir. The 1974 AHPA limited funds for archaeological mitigation projects to 1 percent of the overall cost of a federal project. A bill creating an exception for the DAP was introduced by Colorado Congressman Ray Kogovsek in October, 1979, and it was passed as P.L. 96–301 in July, 1980. A mechanism for accommodating exceptional archaeological costs was then made part of the 1980 amendments to the NHPA.

The DAP differed from the GCP in that it devoted considerable effort to writing and implementing a detailed mitigation design (Kane 1986a). This consisted of a general research design and a set of implementation designs (Kane et al. 1983; Kane et al. 1986; Knudson et al. 1986). The general design, in tune with the processual archaeology of the late 1970s, addressed five problem domains: economy and adaptation; paleodemography; social organization; extra-regional relationships; and cultural process. The implementation design proposed methods and measures for obtaining an adequate sample of data to be used in addressing the general research questions. Because the sites within the take line varied from small limited activity sites to villages that once housed several hundred people, the concept of "Full Site Equivalent" (FSE) was used to allocate fieldwork effort (Robinson et al. 1986: 44–45; Breternitz 1993). Each FSE represented the approximate labor invested by a ten-person field crew for a 40-hour week.⁴

By the end of the last (1983) field season, excavations ranging from complete to minimal had been conducted at 101 sites, most within the pool area. The sites within the pool area represented an estimated total of 4,582 FSE's, of which only 8 percent were actually excavated (Robinson et al. 1986). If number of sites rather than of FSE's were used to characterize the mitigation effort, then approximately a third of the sites received some level of excavation (Breternitz 1993).

From the outset, the DAP was designed to create computer databases for all aspects of the project. Data were collected on detailed coding forms in both the field and lab; large batches of punch cards were regularly sent to Denver for entry in the BRec mainframe computer. The DAP database is maintained at the Anasazi Heritage Center (AHC) and continues to be available to researchers and agency resource managers (Wilshusen et al. 1999).

In 1980, the BRec mandated a synthetic report of the results so far in order to plan for completion of the project. The question was "How much is enough?" (Breternitz 1993). This report was completed in 1981 (Breternitz 1984). One of the BRec decisions resulting from this assessment was to cancel the historic archaeology program, which for various reasons had only begun to be implemented (Bloom 1984; Breternitz 1993). A team from the HABS-HAER program of the NPS ultimately produced a monograph that synthesized documentary and oral history and produced drawings of some of the major standing buildings in the pool area (Kendrick 1982).

By the time the DAP began, the long-time resistance in Southwestern archaeology to hiring women for fieldwork had begun to crumble. Women had roles as crew members, crew chiefs, and assistant crew chiefs, and both men and women worked in the project laboratory. However, in a cumulative list of the 40 people who had served as excavation or survey crew chiefs during the project, only 13 were women (Robinson et al. 1986: Table 1.3).

The DAP did not produce any films or books oriented to the general public, but P.L. 96–301 authorized funds for building the AHC. This is operated and staffed by the Bureau of Land Management (BLM). In addition to

being a major repository for physical collections and records from the DAP and other federal projects in the area, it has outstanding exhibits and public education programs, some of which are based on the DAP results.

What changed between 1978 and 2002?

The ALP began fieldwork in 2002, 24 years after the start of the DAP in 1978. The first piece of consequential CRM legislation in that period was the 1979 Archaeological Resources Protection Act (ARPA). ARPA strengthened the permit and penalty provisions in the 1906 Antiquities Act (Friedman 1985). Promulgation of ARPA regulations in 1984 and subsequent amendments in 1988 made it effective as a law enforcement tool, and many successful prosecutions of looters have resulted (McManamon 1991). These regulations also gave tribes a voice in the issuance of permits for archaeological research (Table 3.3).

Table 3.3 Major changes between the start of the Dolores Archaeological Project (1978) and the Animas-La Plata Archaeological Project (2002)

<i>Categories of Change</i>	<i>Specific Actions (1978–2002)</i>
Federal laws, regulations, and agency actions	Archaeological Resources Protection Act (1979) 1980 National Historic Preservation Act amendments, Section 110 added; Certified local governments given role under Section 101 Native American Graves Protection and Repatriation Act (1990); Regulations published (1995 and subsequently) 1992 National Historic Preservation Act amendments; Section 110 strengthened; Qualified tribal historic preservation programs under Tribal Historical Preservation Officers given responsibilities
Advocacy movements and social/cultural trends	Increased visibility and influence of Native American tribes and interest groups National Museum of the American Indian created (2004) Increased number of tribal CRM programs Archaeological education and participation programs increase
Professional and disciplinary developments	Post-modern and post-processual archaeological theory develops Scientific methods proliferate for archaeological analyses Geographic Information System (GIS) and Global Positioning System (GPS) technologies become widely used

(Continued)

Table 3.3 (Continued)

<i>Categories of Change</i>	<i>Specific Actions (1978–2002)</i>
	CRM career tracks develop in consulting firms and federal/state agencies
	CRM contracting increases in private sector, decreases for universities
	Large multidisciplinary consulting firms increase CRM, public education, and Native American relationships play larger roles in SAA
	Society of Professional Archaeologists (SOPA) becomes Register of Professional Archaeologists (RPA, 1998)
	Large majority of U.S. archaeological data now come from CRM-based investigations and projects
	Initial efforts to make CRM results more accessible, e.g., the National Archeological Database (NADB)

There were significant amendments to the NHPA in 1980, including adding a new Section 110. This made it clear that agencies have affirmative responsibilities for inventorying and managing cultural resources that go beyond conducting Section 106 reviews. The amendments also provided a process by which some activities of the State Historic Preservation Officer (SHPO) could be delegated to certified local governments.

In 1992, another round of NHPA amendments further strengthened Section 110, and also enabled qualified tribal preservation programs to take over many responsibilities for carrying out NHPA mandates on tribal land. The role of Tribal Historic Preservation Officer (THPO) was defined, with responsibilities on tribal lands that parallel those of the SHPO.

By far the most consequential legal development was passage in 1990 of the Native American Graves Protection and Repatriation Act (NAGPRA). This, along with other legislation and the growing societal influence of Native American tribes and interest groups, resulted in large changes in the conduct of CRM. It has made consultation with affiliated or potentially affiliated tribes a regular responsibility for federal agencies, either on a project-by-project basis or through negotiated memoranda of agreement. As a result, Native American human remains and associated funerary objects are usually avoided or not removed for analysis in excavations at sites that will not be destroyed by a development project. For those that will be destroyed, how the human remains and associated items will be treated is something ordinarily negotiated with tribes before the start of excavations.

The period between the DAP and ALP saw continued increases in public appreciation for Native American culture and awareness of the dark history of Native American treatment in the United States. A new National

Museum of the American Indian was authorized in 1989 and opened in 2004 as a highly visible symbol of Native Americans' place in U.S. society. Among other trends were increasingly positive and nuanced portrayals of Native Americans in films and television. Tribes and tribal advocacy organizations also increased their efforts to pursue land claims and treaty rights through the courts, and to achieve legislative goals through lobbying; NARF played a leading role in passage of NAGPRA.

With the start of the "Reagan revolution" in 1980, federal agencies were increasingly encouraged to outsource activities to private-sector firms. Although some private consulting firms had been established in the early 1970s, their number grew dramatically in the period considered here (e.g., Doelle and Phillips 2005). Large environmental consulting firms also began to add cultural resources to their list of specialties. The long-established pattern of contracting with universities and museums increasingly shifted toward the private sector, which generally proved more "nimble" in responding to increasingly specific contract requirements. State universities also wished to avoid the appearance of using tax-supported staffs and facilities to compete with the private sector.

The Archaeological Conservancy was formed in 1979 as a private non-profit organization designed to preserve privately owned archaeological sites by acquiring them by purchase or donation. It now manages over 500 sites in the United States. Qualified archaeologists may apply to do research on Conservancy sites, and in some cases sites may be transferred to suitable governmental or non-profit entities for continued protection.

In the 1980s and 1990s, partly in response to the growth of CRM, there were increased efforts to enable the general public to learn about and become involved in archaeology. "Project Archaeology" was founded by the BLM in the early 1990s to help K-12 educators incorporate archaeological concepts and information in school curricula. The SAA established and staffed a Public Education Committee to promote archaeological public education in numerous ways. State and local amateur societies were already long established, but many increasingly moved to strengthen their educational programs, and to ensure that any excavations they did met basic standards. There was also the emergence of hands-on participatory archaeology programs such as those of the Crow Canyon Center in Colorado, as well as the Forest Service's "Passport in Time". The Earthwatch organization also helped people join field research projects, including archaeological ones.

Changes in the discipline of archaeology between 1978 and 2002 included recognition of CRM employment as fully professional, running parallel to established academic and museum tracks. By the mid-1990s, even the academically-oriented SAA regularly had officers and board members who were employed in CRM. The proportion of U.S. field archaeology that was done in academic versus CRM contexts continued to shift toward the latter, so that by 2002 by far the predominant source of new excavation and survey data was from CRM work. Altschul and Patterson (2010) provide a

review of the trends in training and employment in American archaeology brought about by the growth of CRM activities.

On the theoretical side, “post-modern” approaches to archaeology gained ground in the 1980s, but for the most part U.S. archaeologists – or at least those working in CRM – adopted what Hegmon (2003) has called “processual-plus” approaches (also see Lipe 1999). These adapt some of the concepts promoted by post-modernists, while rejecting their epistemological relativism. On the methodological side, GIS became well-established to manage the spatial aspects of archaeological and environmental data, and computer modeling of complex sociocultural systems began to take off. The use of both established and new analytical methods from the physical, earth, and ecological sciences expanded greatly. Large well-funded CRM projects such as ALP have enabled such methods to “show what they could do.”

The Animas-La Plata Archaeological Project, 2002–10

The Animas-La Plata Reclamation project was initially authorized in 1968, but was repeatedly delayed by numerous disputes over its size, cost, and environmental impacts (Potter 2010: 357–369). In 1998, a downsized version was approved in order to satisfy Indian water rights under the 1988 Colorado Ute Indian Water Rights Settlement Act (as amended in 2000). The project will provide water for the Southern Ute and Ute Mountain Ute tribes. Both dam construction and the ALP Archaeological Project started in 2002.

The reservoir (Lake Nighthorse)⁵ located in Ridges Basin is a small one, but it and the borrow pits on nearby Blue Mesa impacted a number of sites, including some large ones with numerous human remains. A number of archaeological excavations of variable quality had been done in the project area before the ALP began (Potter 2006). In the 1980s, a high quality survey of the project area was completed (Fuller 1988), providing detailed data used to base site selection for the mitigation phase of the ALP.

Paleoindian, Archaic, BM II, P I and Historic components were represented in the project area. Of these, a large majority were from the P I period, with lesser numbers from the other periods. Of the 242 sites recorded in the impact areas, 78 were selected for data recovery. Fieldwork started in 2002 and ended in 2005. Analysis and report writing were completed in 2010. Sixteen detailed reports were published between 2006 and 2010 (Potter 2006, 2010).

The primary contractor for ALP studies was the Ute Mountain Ute Tribe, which retained the firm SWCA to undertake the archaeological and cultural investigations. James Potter served as principal investigator for SWCA throughout the project. The greatest contrast between the ALP and the other two projects discussed here was an unprecedented level of involvement by Native Americans in every aspect of ALP. Potter (2010: 367–375) briefly describes the consultations that guided determinations of cultural

affiliation, compliance with NAGPRA, and identification of traditional cultural properties. Perry and Potter (2006) describe the extensive cultural affiliation study that was conducted and reproduce the programmatic agreement (PA) governing the conduct of the project. The PA was signed by the Advisory Council, BRec, the BIA, the Colorado and New Mexico SHPOs, the chairmen of the Southern Ute and Ute Mountain Ute tribes, and the Navajo Nation THPO. The ALP provided training and employment opportunities for Native Americans, including students. “At several points, a full third of ALP project employees were Native American, including Ute Tribe members . . .” (Potter 2010: 375).

Separate research designs were developed for prehistoric, protohistoric, and historic resources. The prehistoric research design for ALP exemplifies a “processual plus” scientific orientation (Hegmon 2003). It rejects the assumption often made in 1970s processual archaeology that adaptations to natural and social environments occur at the level of sociocultural systems, with little input from the constituent individuals and social groups. Instead, Potter (2006) sees a multi-level interaction between the goals and actions of individual and group “agents” and the opportunities and constraints offered by the natural environment and the context created by existing social and cultural practices.

The prehistoric research design identified three problem domains, focused on the Archaic, BM II, and P I periods (Potter 2006). Because of the predominance of P I settlement in the ALP area, this period had the most elaborated research topics (Potter 2010). Of the 78 sites that had field investigations, 35 were identified as P I habitations (Potter 2010: Tables 1.2 through 1.5); the bulk of the project effort in the field and lab was devoted to these sites. Three BM II habitations were also excavated, and a number of artifact scatters and limited activity sites were surface collected or excavated. Of the 16 volumes reporting on the ALP, six of the larger ones were devoted to presenting the results of excavations at prehistoric sites (most of them P I). The volumes on lithic and ceramic studies also focused heavily on P I assemblages.

Unlike the two earlier BRec projects discussed here, the ALP devoted considerable effort to historical sites, and two of the final report volumes deal with history and historical archaeology (Gilpin 2007; Gilpin and Yoder 2007). Nine protohistoric Native American sites were investigated, mostly by surface collecting and documentation, but in several cases with some excavation. The Euroamerican historic sites design treated historical archaeology as the study of social history (Potter 2006: 36) and focused on subsistence, demography, ethnicity, and ideology/world view. Data recovery (primarily through surface mapping and collections, but with some excavations) was conducted at eight sites (Gilpin and Yoder 2007). Extensive archival and in some cases oral history research was done for both the protohistoric and historic periods (Gilpin 2007; Gilpin and Bollong 2010).

The ALP also placed much more emphasis on bioarchaeology than did the GCP and DAP. In part, this was because the ALP encountered larger numbers

of human remains. The remains of 279 individuals were recovered from 23 sites; an additional site had a large deposit of fragmentary human remains; and isolated fragments of human bone were not infrequently encountered in excavations (Stodder et al. 2010). Methods of bioarchaeological analysis had also been considerably refined since the 1970s. Furthermore, the field recovery and laboratory studies of human remains were guided by a detailed NAGPRA compliance plan developed with extensive tribal consultations (Stodder et al. 2010). The volume devoted to bioarchaeology (Perry et al. 2010) is the largest (by a few pages) of the 16 in the final report.

Conclusions

All three of the large, multi-year projects summarized here required successfully organizing and supervising a large staff, managing large budgets, fully reporting extensive results in a timely way, and ensuring that records and collections were ready for long-term curation. All made important and lasting substantive contributions to American archaeology, and provided training and experience for many students and young professionals. The three projects span a period that saw fundamental changes in archaeological method and theory and in the technical capacities of archaeology and related disciplines to gain information from the archaeological record.

Changes in federal law and regulations under which these projects were carried out over the years account for major differences in how the three projects were organized and conducted. These changes, and the way archaeologists and federal agencies responded, resulted in the shift from a reactive “salvage” to a more proactive planning-based “CRM” approach to dealing with the impacts of economic development on archaeological sites. The legal mandates that gave rise to CRM have resulted in an enormous expansion of the amount and scale of public archaeology, and created a new category of CRM professionals who are not employed primarily in academia.

Another major structural shift has taken place as NAGPRA and NHPA amendments have required agencies and archaeologists to incorporate Native American views and concerns in the design and conduct of CRM projects. This shift is still a work in progress, but the ALP provides an example of a largely successful attempt that took place relatively early in this process. Archaeology seems increasingly to be playing a proactive rather than strictly reactive, role in the construction of the new relationships required by this structural shift.

Changes in sociocultural attitudes and values, and the ability of advocacy groups to harness these changes to influence the political system, have played key roles in shaping the current legal and regulatory structure of CRM in the United States. Over the years, archaeologists have often had a greater role in this political process than their numbers would seem to warrant, but even so, they usually have been minor players. The overall system will continue to be dynamic, and we can hope that future changes will improve rather than

weaken its ability to do what the label “CRM” implies – to effectively manage cultural resources for the long-term public good.

Notes

- 1 Costs were estimated as follows: For the GCP, Fowler (2011: 250) cites Jennings' archived correspondence that “for the final four years of the project, Utah had \$80,000–90,000, and MNA \$30,000–50,000”. This would be \$110,000 to \$140,000 combined per year. I assigned this rate to the 1958 through 1961 work and assumed that half that amount was available for 1962 and 1963. Fowler (2011: 250) also notes that \$17,000 was available for 1957. All this adds up to a total project federal expenditure of \$567,000 to \$717,000, not counting grant funds used in 1961 and 1962. Assuming these are 1960 dollars, the total federal expenditure in 2015 dollars would be \$4,528,629 to \$5,726,679.
For the DAP, Breternitz (1993: 118) reports that federal funding totaled \$9,990,562. Assuming these are 1981 dollars, the 2015 cost would be \$27,183,127.
The total cost of CRM component of the ALP was approximately \$15,000,000 (James Potter, personal communication, May, 2015). Assuming these are 2004 dollars, the total cost in 2015 would be \$19,111,123.
- 2 I was a crew chief on the GCP 1958–60, and a crew member in the summer of 1961, after I had returned to graduate school. On the DAP, I was a co-principal investigator, responsible for the Washington State University subcontract. I had no role in the ALP.
- 3 Two of the major reports and a number of unpublished ones can be downloaded from the Anasazi Heritage Center's (AHC) website. All of the major DAP reports and databases are available at The Digital Archaeological Record (tDAR) <https://core.tdar.org/collection/27893/dolores-archaeological-program-dap>, accessed 27 August 2015. Also see Ellison (2011).
- 4 The FSE concept was possibly related to the “EU” (Excavation Unit) used by the River Basin Surveys. Instead of quantifying the effort required to excavate a standard site element (as in the FSE), the EU covered the annual cost of an archaeological team of 15 persons, and covered laboratory analysis and reporting as well as fieldwork. Efforts devoted to particular sites could be expressed as fractions or multiples of EUs (Moratto and Riddell 2014; Lyman 2014).
- 5 The lake is named for former Colorado Senator Ben Nighthorse Campbell, a member of the Northern Cheyenne tribe, and a key figure in gaining Congressional approval of the Animas-La Plata Reclamation Project.

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4 The co-development of CRM and archaeological ethics, 1974 to 2015

Don D. Fowler

Introduction

The principal concerns of those attending the 1974 Denver CRM conference (Lipe and Lindsay 1974; see also McManamon, Chapter 1, this volume) were: first, the implications of a “conservation archaeology ethic”, as set forth in Bill Lipe’s (1974) seminal article (see also Pastron 1971); second, how to properly “manage” archaeological sites and other “cultural resources” within the requirements of federal legislation, rules and regulations; and third, to further develop appropriate professional standards and codes of ethics within American archaeology (Miller 1974).

The history and practice of archaeology in the United States for the next four decades, from 1974 to 2015, was shaped in large part by how the three concerns were approached and ultimately intermeshed within an operative CRM framework. This article focuses on the ongoing development of standards and codes of ethics in that time frame.

Ethics have been a central ideological concern in Western thought since Classical times. According to Webster’s Dictionary (2015), “Ethics [is] the study of standards of conduct and moral judgment . . . the standards that govern the conduct of a person, especially a member of a profession.” There is a distinction between “normative ethics” concerned with moral issues, and “applied ethics and ethical relativity” specific to human rights, social implications of scientific research, social equality, and professional practice. Archaeological standards and codes are instances of applied ethics.

Archaeology shares long-held values in Western ideology about noble purposes carried out for the common good. An underlying value is that knowledge-making – the pursuit of more “valid” data and theories about the world, how it operates, and the human situation within it – past and present – is a noble purpose (Moneyppenny 1955: 98). New knowledge (publications, archives, databases, etc.) becomes part of the human commons, in theory available to and shared by everyone.

Archaeology necessarily deals with objects and related contextual materials of the human past; these, together with relevant records, are integral parts of the commons knowledge base to be held in trust by public institutions for education and future study. A related assumption is that noble